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The Power of Us:

Counteracting Decreasing Sustainability

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Acknowledgements and thanks

To my indescribably precious daughter Ariel; thank you for understanding "mommy wants to work". I'm sorry I've been missing in action – I've missed you in every moment I've been away from you writing this thesis. Since you arrived, everything I do, I ultimately do for you. I pray that the world you and your friends grow up in is a better place.

To Dora my steadfast mentor, supervisor and friend through good and bad; without you this PhD would quite simply never have become. Your spirit and persistence is embedded in this work as deeply as mine is.

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To all my supportive friends who've tolerated and weathered my unavailability during this period, thank you! I hope in some way the quest for increasing sustainability might also be worth something for you.

To all the people who've taught me so much, knowingly or unknowingly.

To South Africa and to Australia.

To this beautiful world in its fragility and immensity; to its people and its places…

Thank you.

With deep love and with deep gratitude,

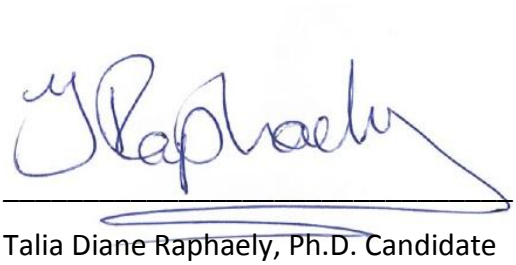
Thank you.

Yesterday I was clever, so I wanted to change the world…

Today I am wise, so I am changing myself. Rumi

Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.



Talia Diane Raphaely, Ph.D. Candidate

Date: November 6, 2012

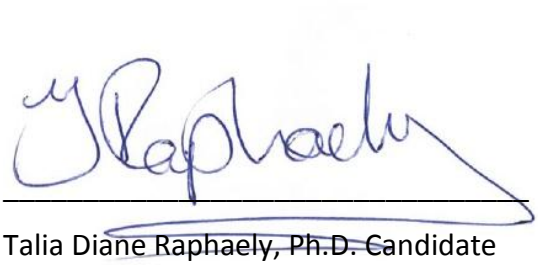
Publications submitted as part of this thesis

Statement of Contribution of Others

All of the written materials submitted as part of this PhD by Publication were conceived and coordinated by Talia Diane Raphaely. All of the writing for each publication was undertaken by Talia Diane Raphaely.

Signed detailed statements from each co-author relating to each publication are provided as appendices at the back of this volume (Appendix 1).

Signed:



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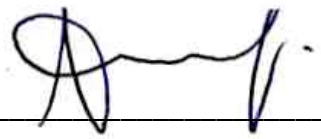

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Abstract

This PhD thesis comprises nine published papers covering three case study areas namely flexitarianism, the new human agenda and sustainability humanistic education. Whilst the case studies are concerned with three deliberately diverse areas, specifically food choices, development and tertiary education, they are united by the common conceptual themes of individual empowerment and action as a way of countering increasing unsustainability. The thesis takes a strong stance against the vast geopolitical megasystem of vested interests flourishing within the dominant geopolitical economic discourse and emphasises the role of personal power.

To date, most attempts at countering mounting local and global unsustainability have failed, because those tasked and trusted to develop and implement solutions have a conflicting, short-term vested interest in maintaining the sources of the global human and environmental crisis. These globalised economic and political profit and power forces are subverting essential transformative change.

The central premise on which the thesis is built is that there is an urgent need for a solution that offers an accessible and immediate opportunity for regaining, repairing and renewing human and biophysical wellbeing. Its main argument is that the possibility of countering increasing unsustainability perpetuated by global power alliances lies in the collective actions and outcomes of uncoordinated individual choices and endeavours mobilised through awareness, empowerment and education. Through such personal liberation from the duplicity of the megasystem and the ability to take back their power, humanity, comprising a collective of individuals and personal actions the world over, holds the key to a more sustainable future.

In this previously academically unexplored area flexitarianism, the new human agenda and sustainability humanistic education are examples of how the sum of individual, uncoordinated actions, holds restorative and transformative opportunities for the achievement of a more sustainable world.

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INSPIRATION

This PhD is inspired by my birthplace South Africa and the hope, power and beauty of its people who fought the duplicity and domination of an oligarchy to bring about change and liberation. The South African revolution was due, in no small measure, to the diverse and wide-ranging collection of sometimes coordinated, but often uncoordinated, individual actions and responses to the Xhosa and Zulu rallying, mobilising call for change "Amandla Awetu" – "Power to us". The responses of the multitudes of individuals from every sector of society, a few I personally knew and the millions anonymous, the events they shaped, and the synergistic outcomes of their personal actions, forever remain a beacon. Whenever I grabble with the dark might and ravages of unmitigated political and economic power I remember how the *power **of** us* overcame the *power **over** us.* Each individual and personal action contributed –adding up over a period of time - to collectively overcome an apparently insurmountable and seemingly infinitely more powerful force. The power of one, multiplied and added together into the power of us – offers an immense opportunity for the creation of a better more sustainable world.

Subsequently, the challenges and opportunities I've been offered over the last two decades or so working in Southern and Sub--Saharan Africa and Western Australia with inspirational individuals from a diversity of races, colours, creeds and socio-economic circumstances, have reinforced this perception. Whilst in Africa, I worked with marginalised individuals- much of my activity during this time was funded and influenced in one way or another by international aid organisations. So many of the people I've been privileged to meet have consciously or unconsciously recognised or been victims of the ongoing and seemingly unending failure of governments, leaders, corporations, and decision and policy makers to prioritise the public good over economic and political vested interests. Working with them, either in a formal or informal position of student, teacher, colleague, friend, mentor or simply fellow human being, has shown me over and over again that individuals can and do make a difference, and can and do defy "the system". In so doing, they bring it closer to what it ought to be and create a better future.

During this time, I've also come to understand and appreciate how individuals (me included) feel overwhelmed and thwarted by the apparent enormity of the task of challenging and

finding alternatives to our ongoing subjugation heralding our demise. Such feelings of helplessness lead to feelings of powerlessness that allow the dominant destructive global economic and political discourse to further entrench itself perpetuating the increasingly rapid creation of a fragile, vulnerable, threatened and threatening world and unsustainable planet for all.

I've been privileged to see firsthand that when people believe they are insignificant they become insignificant. They give away their power, at best to the indifferent, at worst, to those willing to subordinate human and planetary wellbeing to the goals of greed and domination. Conversely, when people recognise and believe in their personal power they become powerful! Once this personal power is acknowledged and given value it has the potential to become an unstoppable force. We are each, individually and together, a source of infinite potential and possibility. Anyone who has ever done anything brave in their lives and tasted the freedom and result that such action brings will have glimpsed the liberating opportunity of tapping into personal potential.

The future of humanity and the planet waits for us to seize our power.

Over and over again, global governments and corporations have proven themselves incapable of the cooperation, vision, goodwill or compromise needed to ensure the greater good or save the world and all who dwell here.

This PhD research is about achieving a more sustainable world through the recognition of our individual potential and the courage to use this power to counter unsustainability. Redemption, recovery and renewal are in the hands of each of us – whoever we are and wherever we are.

Together, individually, all of us are the inspiration for this thesis.

PREFACE: INFLUENCES AND TEACHERS

I have had many teachers before embarking on this research. They have all had a profound influence in one way of another in who I am and what I do. Let me share my story and how I came to this point.

Influence 1- Country as teacher

I was privileged to be born in South Africa - a passionate, outspoken, tormented and triumphant land. My foundational worldview developed in this proudly self-christened rainbow nation that boasts almost unsurpassed social blending (race, colour, politics, class, economic wellbeing or lack thereof, creed and 11 official national languages), and biological diversity. It offers a microcosm of the global capitalism system with all four[1] constituent worlds within its borders including a group - overwhelmingly comprised of the white section of the population - whose popular culture and standard of living belong to the so called developed world, and, those living in the rural hinterlands whose lives do not differ much from their counterparts in Africa struggling to maintain even basic, minimal levels of survival (Marais 2001). It was, during the apartheid years, a place of legalised, seemingly unstoppable domination, discrimination, persecution, injustice and wide-spread suffering. Throughout the world persistence of poverty is an inherent element of capitalist development (Fine 2002). South Africa's then flourishing economy (the benefits of which were strongly felt if you were white) was built on the backs of the black majority - apartheid's cheap purposefully disempowered and legally subordinated labour force (Worden 2000).

From a very early age it was unarguably clear to me that "the system" was responsible for vulnerability and dependency. I glimpsed this in our nanny, garden 'boy' and the other black domestic employees who moved shadow-like around our neighbourhood streets. I did not know of a single rich or wealthy black person in South Africa. They simply did not exist at the time and my country showed me that long before formal education and enquiry reached me. Contrary to the neoliberals who told me blacks were lazy and thus poor (and this

[1] According to Marais (vii;2001), the 'statist' policies of the former white rulers put the country in a category that used to include the so-called socialist countries of the 'second' world and most of the urban black population belong to the modern, industrialising 'third' world.

indolence was the obstacle preventing capitalist gain for them), I comprehended that capitalism, and South Africa's semi-capitalist economy, required poverty.

It was not hard to fathom. I lived in the lap of relative luxury surrounded by visibly hard working people forced into near slavery in usually abhorrent circumstances. This was the case on friends' farms, on the mines – we regularly heard of mine tragedies, and even in our homes where "maids" worked 14-16 hours days with no choice. Political power, legislation and economic manipulation were making sure they occupied menial labouring positions in a society. Such legislative slavery and denial of basic human rights, and the resulting land and resource grabs this facilitated, were the foundation under the white minority affluence and privilege in South Africa's then flourishing economy.

Influence 2- Mr Edwards

I still feel the helplessness I experienced as I began understanding the world around me. The laws and policies which through a historical hierarchy of deprivation, limited mobility and land dispossession ensured a reservoir of cheap black labour for South Africa's farms, gold mines and manufacturing sector. Examples include: The Natives Land Act 1913 which prohibited Africans from acquiring, owning or renting land - it severely limited their economic options forcing them to sell their labour to the mines and white farms, and, the Urban Labour Preference Policy of 1950 which fortified the discriminatory system of labour. A range of so-called pass laws, officially called influx controls, limited the size of the urban African population to the number required for labour purposes. Africans who were surplus to the labour needs of the system were legally forced to return to the black reserves. These labour migration laws also served the purpose of delaying the consolidation of black workers into any sort of class-conscious or organised group. The apartheid system was fiendish in its brilliance at devising ways to consolidate, justify and maintain class and racial power to serve the vested interests and aspirations of a select few.

Auspiciously I had an undercover anti-apartheid activist as a high school history teacher. It was the 1970s and Mr Edwards' activism, my first encounter with liberation through awareness and education, was peaceful. It was exposing South Africa's socio-political, economic and legislative malevolence but also peppering it with passion, opportunity and

optimism. In these youthful, still naive days, personal passive resistance was the only available option. So awakened I begun recognising individuals acting against apartheid whose influence and flame of affluent resistance despite detention, persecution and intimidation, burned brightly and radiated widely. I witnessed first-hand the collective and personal power of the individual to bring about change. I began to glimpse the future…

Influence 3 - Lamb

Around the same time, at about 9 years of age, I watched lambs I'd just been feeding and petting being loaded for slaughter. As the laden truck pulled away, I heard a crack punctuate the pitiful bleating and saw an animal with its broken leg protruding between the bars of the truck. Maybe it was crying in pain. Maybe it was crying for its mother. Maybe it was frightened… I hadn't understood why they'd been corralled nor that my fleeting touch was the last if not only human kindness shown to them…

Domination, suffering, injustice, deceit may have so many different forms… I was confronted with one of them. I have never eaten meat, chicken or fish since…I have never looked back…

Influence 4 - Lechwe of the Kafue Flats

Shortly after encountering lamb as teacher, at Kenneth Kaunda International Airport, Lusaka, Zambia, I came upon a bronze statue titled *Lechwes*[2] *of the Kafue Flats*, with the following engraved quote:

"…We patronize them for their incompleteness, for their tragic fate of having taken form so far below ourselves. And therein we err, and greatly err. For the animal shall not be measured by man. In a world older and more complete than ours they move finished and complete, gifted with extensions of the senses we have lost or never attained, living by voices we shall never hear. They are not brethren, they are not underlings; they are other nations caught with ourselves in the net of life and time, fellow prisoners of the splendour and travail of the earth." (Beston 1928:n.p.).

[2] The Lechwe is an antelope classified as vulnerable and the Kafue River and Flats sustains one of the world's great wildlife environments.

Such "other nations", without interruption, shared my childhood. All, in one way or another, were highly influential teachers of compassion, humility, beauty, purity, loyalty, unconditionally and empathy. Over the years each animal whom I rescued and brought home taught me about the best and worst of humanity.

I began to understand and follow Ghandi and learnt that "the greatness of a nation and its moral progress can be judged by the way its animals are treated" (Gandhi n.d.:n.p). Unavoidably I began to draw parallels between the domination of humans and the domination of animals. I came to understand that ever-increasing industrialised farming for production and consumption of food animals and meat, the mass commodification of sentient life is just another manifestation of the same malevolence, indifference, selfishness, domination, injustice, deceit and depravity that underpinned apartheid's greed. It was fast destroying the biophysical planet and all its life-forms including humanity.

Over the ensuing years as the depth and breadth of my insight grew, I began to inescapably see these characteristics corresponding to domination, abuse and subordination of and cruelty to nature. Cruelty, whether inflicted on ecosystems, humankind or animals ultimately came to exist in one personality for me – the personality of the greedy, who will subordinate all in order to appease an insatiably avaricious appetite.

The passage of time has only served to strengthen my conviction including the research evidence collected for this thesis.

Influence 5- Hector Pietersen

June 16, 1976 – the Soweto Riots rocked South Africa and set a stage from which there was no turning back. It was the year that students took power focusing attention on South Africa's apartheid policies and sowing the seeds of a revolution that matured into a democracy 18 years later. Over 20 000 scholars, concealing their plan from their elders and parents who they considered too subservient to the apartheid regime, took to the streets under the charismatic leadership of Tsietsi Mashinini of the South African Students' Movement. It started peacefully, but, in the face of police aggression, turned violent.

I was 10 years old – just 2 years younger than Hector Pietersen, the first student killed by police.

Sam Nzima's photograph of Hector being carried bleeding from the scene by another young student … remains indelibly printed on my brain. It put the whole concept of education into a new perspective, i.e. freedom and liberation through education…

Influence 6 - Mandela and Jack

The Eastern Cape, where I sojourned as a journalism student during the mid-1980s, is a highly politicised area and the birthplace of key anti-apartheid organisations[3] including the African National Congress (ANC), the Pan African Congress (PAC) and the Black Consciousness Movement (BCM). In 1984 the apartheid regime responded to a spontaneous, rolling revolt with extreme violence leading to the detention and death of many activists including some I knew.

In 1985, Mkhuseli Jack, a visionary Eastern Cape youth leader, began directing people's energy into strategic nonviolent action including an economic boycott of downtown businesses, all of which were owned by whites (Ackerman and DuVall 2000). The government declared an excessive state of emergency and I, together with a large group of others, was arrested and detained for weeks without trial, emerging unscathed but ever angrier.

Cracks were appearing in the apartheid regime. Jack's fledgling United Democratic Front (UDF) seized the day asserting itself with non-violent acts of defiance: rent boycotts, labour strikes, school stayaways and demands for the release of jailed ANC leader Nelson Mandela. The effect was powerful.

By 1989, South Africa was on its knees, a situation largely brought about by widespread passive defiance. There were uncountable numbers of tragic acts of uncontrolled violent rage, but it was the sum of the individual peaceful actions of millions of South Africans that captured the world's attention. They ensured debilitating economic and other sanctions,

[3] Some of these organisations' well-known political heroes include Nelson Mandela and Steve Biko

discredited the regime's authority, destroyed its strategy of shielding apartheid from the many forces arrayed against it and, ultimately, resulted in liberation.

In 1990, I watched Nelson Mandela walk free from Pollsmoor Maximum Security Prison and in 1994 I listen to his inaugural speech as the first democratically elected President of a free South Africa. Whilst the following quote didn't form part of this speech, it was widely accredited to him. It made a deep impact on all who heard its timely and affirming message: *"Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure. It is our light, not our darkness, that most frightens us. We ask ourselves, who am I to be brilliant, gorgeous, talented, fabulous? Actually, who are you not to be? …We are all meant to shine…It's not just in some of us; it's in everyone. And as we let our own light shine, we unconsciously give other people permission to do the same. As we're liberated from our own fear, our presence automatically liberates others."*(Williamson 2005:n.p.).
This was a message of personal emancipation as a means for achieving widespread liberation.

Influence 7 - Mama Grace

I'd grown up and joined the workforce. Every day my colleagues and I took lunch to the office. I never managed to walk more than 10 steps away from the bin I threw my food scraps into before it was surrounded by children digging for food that held the difference between life and death. Sixty percent of South Africa's population live below the poverty line (Schwabe 2004). Deeply and inextricably woven into the country's fabric then and now are remorseless hunger and unemployment, homeless people scattered on pavements, huddled in doorways, merciless AIDS and tuberculosis, inaccessible drugs and widespread dependence on inadequate social security.

One day Mama Grace knocked on my front door. She needed a job, was from the Transkei Bantustan[4], and had come to Cape Town to work. Despite endlessly trying since her last employer had left South Africa, she hadn't found employment in over 7 years. Mama Grace was a single mum (with 4 children), living in a shack in the violent Site C, Khayelitsha (an

[4] Pseudo-national black homelands created by the Apartheid government to exclude blacks from the South African political system and marked by extreme unemployment.

informal, urban black shanty town). She'd spent her last coins on a one-way bus fare, hadn't eaten for days, and was sleeping on the streets at night, knocking on doors looking for work during the day. A similarly impoverished neighbour cared for her children while Mama Grace was away.

Inexplicable patience was etched into her beautiful face alongside humble pride, hunger, worry and hopelessness. This was a woman symbolic of all the black subordinate women who lived with the hourly struggle of sourcing means of survival for herself and her children without respite or hope of change. Mama Grace was Mama Africa – the manifestation of the suffering inflicted by the loss of choice created by the apartheid concept of "separate development", the pass laws and the so-called "Bantustans" or black homelands. They ensured that, despite the high personal costs, the migrant labour system remained one of the most important survival strategies for African households.

Mama Grace was neither the first nor the last dignified impoverished woman to grace my threshold. Her particular personal lack of self-pity, her resignation and her ongoing determination against all odds made a special impression, humbling me in an unprecedented way. Even now in Australia her gaunt dignified face is often in my imagination greeting me when I open my front door, reminding me of my privilege and blessings.

In Africa, the soul of poverty is everywhere; its spirit is one's constant companion, its pain part of the soil and vegetation, its cry in the wind of every stormy night. It is inescapable whether one is a victim or observer of its consequences. South Africa's first nationally representative household income and living standards survey indicated that over half of all black South Africans lived in poverty in 1993 (Project for Statistics on Living Standards and Development 1994) – "a stunning portrayal of material deprivation and inequality in an upper middle-income country with a per capita income in excess of $3,000" (Carter and May 2001:1987). Apartheid and its structures and mechanisms actively disposed black people and curtailed their ability to accumulate and use assets. It is estimated that up to 70 percent of South Africa's poor households remain caught in a structural, post-apartheid poverty trap (Carter and May 2001:1987). For these "dynamically poor" households (Marx and Charlton

2003:9) "the end of apartheid has thus far at least proven to be only one kind of freedom" (Carter and May 2001:2002). Unlike in Australia (where poverty is a distant albeit possibly regrettable concept for those who stop to think about it), in South Africa the scarcity experienced by the majority, is part of everyday life. Its encircling reality stands in direct and stark contrast to the affluence of the minority. No matter where I am, no matter how far removed, poverty's gaunt face and diverse character haunt me at every meal and in every life choice I make.

I could write a PhD thesis illustrating how poverty (in all its various definitions) in Africa is not the result of lazy people. Rather it is the result of western domination and the economic and political power structures and mechanisms of the west perpetuate and maintain a myth of developed and underdeveloped peoples and countries. This legend of progress and lack of progress is necessary in order to facilitate dependence and the resulting unimpeded, cheap and legitimised access to the South's abundant resources that maintain western economies and lifestyles. Black women work harder than any successful, accomplished western professional I've met. They are, almost without exception, proud, indescribably courageous and creative people retaining a sense of humour in the face of indescribable hardship.

I have known uncountable numbers of black people who despite working incredibly hard have never risen above poverty. I know many black men and women who work voluntarily in Non-Government Organisations (NGOs) and Community Based Organisations (CBOs) because they are unable to find paid work but yearn to be "valuable". I also know tens of men, women and children, who since informal business operation became legal in South Africa in the late 1980s[5], have found opportunity, hope, economic liberation and success through self-employment and self-determination.

Influence 8 - Muhammad Yunus

During the first half of the 1990s, I worked with three related but distinct non-government organisations facilitating self-employment business opportunities in impoverished

[5] It was previously illegal in order to maintain black labour as cheap fodder for the apartheid economy.

communities. They focused on special interest groups such as women, youth, ex-prisoners and their families, retrenched workers and victims of political violence. In light of ongoing unemployment in Southern and Central Africa and the incapacity of the formal sector to create sufficient job openings, informal business was increasingly seen as the answer to job creation. Funding, in varying degrees came from the World Bank, the United States Agency for International Development (USAID), the British Overseas Development Institute (British ODI) and the Development Bank of Southern Africa all focused on promotion of western-style economic growth and development (Development Bank of Southern Africa 2011). The funding and the programmes were a dismal failure and I saw, first-hand, the effects of loss of hope caused by ongoing disempowerment and subordination disguised as assistance. While people continue to be patronised by alleged assistance interventions, discourses and paradigms, sustainability will remain an illusion.

Around the same time I was exposed to the Bangladeshi Grameen Bank. This community development organisation broke from traditional modernisation models of development and was exceptional in many ways. It was founded on the belief that economic redemption lies in the under-utilised skills and creativity of the poor rather than in the top-down interventions of distant agencies and governments. The Grameen paradigm created home-grown approaches rather than employing the tactics of the West. It specifically focused on the unique and particular needs and circumstances of local participants with the understanding that charity and aid perpetuate dependence, propagate helplessness and destroy the confidence needed to move beyond the cycle of poverty. It is (and was) unique in that the overwhelming majority of participants in its programme – over 96% - are women (Grameen Bank 2011a). It also distinguished itself in that it regarded all human beings, including those stricken by poverty, as being equal and having endless potential. Accordingly, the Grameen Bank seeks to unleash the creativity in each individual as the answer to eliminating poverty (Grameen Bank 2011).

Since its inception in 1976, the Grameen Bank approach has seen unprecedented success. As a direct result of its practice, more than 50 million people have risen beyond acute poverty. The measurements for this include having all children of school age in school, 3 meals a day for all household members, a rainproof dwelling, a sanitary toilet, clean drinking water and the ability to repay the loan – capacities determined by loan recipients

themselves as measures of achievement (Fraser 2007, Grameen Bank n.d.). The approach proves poverty may be resolved by the efforts of locals (Norwegian Nobel Committee 2006) independent of the constraints of their first world subjugators. The Grameen model has inspired similar projects in more than 40 countries around the world (Khandker et al. 1995). In 2006 the Grameen Bank and its founder Muhammad Yunus were jointly awarded the Nobel Peace Prize for their "efforts to create economic and social development from below" (The Nobel Peace Prize 2006:n.p.).

Thus, I was privileged to understand the dangerous human destruction wrought by traditional top-down development interventions and to participate in the beauty and awesome power of locally conceived, iterative, dynamically transformative, flexible, connected, engaging, participatory and empowering development approaches. I explored this topic further for my Master's thesis at the University of Cape Town (UCT) with the Bushmen of Tsumkwe, Namibia and subsequently working with the Hunger Project.

Consequently working with government, a range of NGOs and teaching Master's students at university level, have increasingly reinforced my appreciation that powerful seeds of future sustainability lie in liberating individual creativity, under-utilised skills and recognising the endless potential in all human beings.

Influence 9 – Dumisani

Whilst coordinating a metropolitan-wide, week-long Festival of the Environment in Cape Town during the last year of last century I met bedraggled and barefoot teenager Dumisani standing proud in overused clothing a few sizes too big. He was there courtesy of the Festival's funded Youth Education Schools (YES) outreach programme. It involved over 80 organisations giving presentations on wide-ranging aspects of sustainability to 2000 children each day bussed in from surrounding and township schools. I saw love, realisation and lucidity brighten many young faces that week as children of all ages - at least three-quarters who came from severely disadvantaged, impoverished homes – were exposed to the urgency and opportunity inherent in sustainability.

Like Mama Grace, Dumisani was inexplicably different. After his initial visit with his school he came back every day that week, spending all his time at the Cheetah Outreach presentation. I have no idea how he got there or where he found the train fare. It was none of my business - but I did ask why he kept coming back, and received the following response: "Because I've never seen a cheetah before. Now, I will start the job to teach people about cheetahs**".**

I followed up his story, long-distance, 3 years later. Dumisani, with the support of Cheetah Outreach's director, had sourced funding to create a unique niche career for himself presenting at schools about protecting endangered cheetahs. Although still a student he was living proof of the power of liberating people through awareness and the opportunity that often lies in unearthing dreams despite the fact that following such dreams may challenge the status quo.

The so called "poor" (children and women in particular), are the dormant seeds of the global sustainability revolution to end poverty and hunger. If liberated from the scarcity of dependence on, charity of, and subordination to the ways of the West, they hold infinite hope for an end to deprivation. However, there needs to be an acknowledgement and realisation that the circumstances of the "poor are diverse, and thus themselves are not amenable to one type of solution" (Aliber 2003:488). Thus the solution lies with removing impediment through liberation from the alliance of the global development, industry and political interests.

Influence 10 – Ghandi and Tutu

Non-violent resistance is embedded in the histories of many nations. None is more so than in the core ideas and strategies of peacefully combatting discrimination as advocated by Ghandi who spent twenty years in South Africa at the turn of the last century. It was in South Africa that Gandhi created and first used his concept of satyagraha: "insistence on truth" , "soul force" or "truth force" advocating that if one is able to see beyond a current situation to a universal truth, then one has the power to make change through focused, passive resistance to a particular injustice (Majmudar 2005:138).

"I suppose that human beings looking at it would say that arms are the most dangerous things that a dictator, a tyrant needs to fear," explains South African Nobel Peace Prize winner Desmond Tutu. "But in fact, no - it is when people decide they want to be free. Once they have made up their minds to that, there is nothing that will stop them (York 2000: n.p.).

I was poised to leave South Africa at this time having just been offered an opportunity to work in Perth, Australia. I had witnessed the vanguard of the struggle firsthand, participating whenever possible. Liberation and democracy had come to South Africa through the will and minds of the people. I was having difficulties coming to terms with leaving my home, but was also filled with excitement for the adventure that beckoned. I was torn but then I realised that wherever I go in the world, whatever I find myself doing, I have personally been part of a collective movement for freedom. I know what individuals, together, are capable of achieving. I have participated in, and been carried by, the people's will that overthrew tyranny. I now hold the lesson of the people of South Africa, the power of us may overcome all, irrevocably deep in my soul.

Influence 11 - Sunrise, Sunset

Africa is a place definable by a collective, innate consciousness of, and connection to weather, land, flora, fauna, river, wind, rain, ocean, bushveld, forest, mountain and desert. For me personally, nothing is more fundamentally provoking or inspiring than an African sunrise or sunset, the smell of the African earth after rain, the tangible power in the air before the release of an African storm. Whilst the ethic of Ubuntu (kinship and people's interconnectedness and allegiances with each other) is unchallenged in this dynamic land it is also unchallenged that in Africa people may survive and even thrive without mother, father, kin or friend and, if necessary, without human love. However survival and flourishing are not possible without or apart from the earth - that place upon which the sun rises and sets. The African soul, in all its sometimes destructive, sometimes constructive, always dynamic, multi-faceted complexity is intrinsically ecocentric and, as such, completely incapable of concerning itself with the affairs of humankind separated from the land.

I am African and I am no exception. I have since become an Australian citizen but I remain an African Australian.

It is no accident that I chose Perth for here I am at home away from home. Perth and Cape Town are positioned around a similar latitude – 30° South[6], both have Mediterranean climates with hot dry summers and mild, moderately wet winters, both are on the west coast of great continents and both are located with Conservation International Biodiversity hotspots having unique floristic regions (each part of the world's six floral kingdoms). On hot Perth summer afternoons the Fremantle Doctor often blows in from the south west providing relief from the warm desert north-easterly winds. Summer afternoons in Cape Town are soothed by the Cape Doctor – a south easterly wind, which cools the air from the hot berg wind[7] that comes from the desert interior and blows pollution away.

I try to watch the day end as often as possible and always as the sun sets here, as it does in Cape Town, over the ocean, I marvel at how deeply connected I feel to two places many thousands of kilometres apart. As I breathe in the cooling evening air I understand, everything is connected, all people and all places. Whether in Cape Town or Perth, the world is one.

Influence 12 - Lyn White

Lyn White, gentle warrior and unassuming campaign director for Animals Australia has had profound impact on me in recent years. Formerly a police officer, she was selected as the Australian Broadcasting Corporation's 2011 Newsmaker of the Year for her work exposing the cruelty of Australia's live export trade which sparked unprecedented political and public pressure and legislative and policy change (Animals Australia n.d.:n.p.). There is much work to be done, but Lyn, with "objectivity, clarity, fair-mindedness and humanity" (HRH Princess Alia al Hussein of Jordan cited in Animals Australia n.d.:n.p.) continues to lead the peaceful but powerful revolution against inhumanity to animals. For me, Lyn represents one of the world's only true great leaders and visionary thinkers, who, together with her colleagues at

[6] Perth is 31°58'S, Cape Town 33°55'S. Both are on the west coast of continents.
[7] mountain wind

Animals Australia is working tirelessly "to bring the institutionalised suffering of animals to the forefront of Australia's agenda, ensuring that animal protection is the next great social justice movement" (Sherman cited in Jacobs 2011:n.p.).

Whilst best known for exposing the cruelty of live export, Lyn's work to make Australian consumers aware of the conditions endured by animals in factory farms has been particularly inspirational. She treats consumers' lack of awareness respectfully and insightfully, blaming instead "the secrets of this cruel industry" supported by government complicity and lack of transparency: "Tragically the profits of the pig industry have been underpinned by consumers buying factory-farmed products, blissfully unaware of the animal cruelty that they are financially supporting" (White cited in Animals Australia: n.d.: n.p.). Her expose on the Australian pig farming sector (Howard Sacre in *60 Minutes*: *The Hidden Truth,* November 2 2009) led to unprecedented consumer pressure on major retailers to cease selling factory farmed pork. Shortly after, the Australian pork producing industry announced it would phase out the use of one of its cruelest practice, sow confinement stalls.

Lyn offers hope and vision of a kinder world through individual empowerment*:*

"Simply through refusing to financially support animal cruelty, and by making cruelty-free choices at the supermarket, each one of us can vote for a kinder world, and put an end to the cruelty of factory farming" (White in Animals Australia n.d.:n.p.).

Her impact and influence is a powerful example of how widespread liberation, including human, animal and environmental liberation, can be achieved through creating growing awareness. The widespread and continually growing civil support for Lyn's work is illustrating that citizens do not want to participate in cruelty or environmental destruction. However, they do so inadvertently through trusting the picture painted, in this case of happy farms, by the marketing accomplices of the forces of industry and politics.

Influence 13 - Kenner, Schlosser, Pollan, Nestle, Eisnitz, Singer and Mason, Scully, Nation Earth, Bakan, Safran-Foer and many other like-minded, courageous but as yet uncoordinated agents of truth and transformation

Prior to and having commenced this PhD journey, the following people have inspired me and confirmed my direction. Individually and collectively they are courageous agents of transformation. These compassionate members of the loving vanguard include:

- Director Kenner whose courage resulted in the making of *Food Inc* (2008), the revealing, hard-hitting documentary exposing the domination of a handful of agribusiness giants behind the US corporate and government controlled food industry and their environmentally destructive, excessively cruel and unhealthy, sometimes lethal secret practices. I have used this in teaching a Master's unit on sustainability topics at Curtin University and have been able to share the insights provided by him with my students.
- Schlosser's *Fast Food Nation: The Dark Side of the All-American Meal* (2001, 2012), the book which examines the local and global influence of the US fast food industry. This is a valuable reference for my research.
- Scully's *Dominion* (2002) and its call for mercy and the moral restraint of the strong. This reaffirmed my beliefs and gave me support to continue on this research journey.
- Pollan's *In Defense of Food: An Eater's Manifesto* (2008) and *Food Rules: An Eater's Manual* (2009) reinforced my dismay at the power and dishonesty of the food industry. These have been other important references.
- Singer's *Animal Liberation* (1975, 2009) and Singer and Mason's books, *Animal Factories* (1980) and *The Ethics of What We Eat: Why Our Food Choices Matter* (2007) graphically detail corporate deception, desensitization to inhumane factory farming practices and the long, frightening trip between factory farm and plate. The books ultimately show how those most vulnerable are abused and have no locus standi, how the food industry keeps consumers in the dark about the ethical components of their food choices, allowing farmers to do whatever they like to increase their profits protected by legislation and political support from any scrutiny. Singer's high profile as a philosopher and free thinker has attracted some controversial attention. However this cannot detract from his moral stance about animal rights and the positive influence this has had, and continues to have, in furthering research and human understanding.
- Nestle in *Food Politics: How the Food Industry Influences Nutrition and Health* (2003), The *Politics of Food Safety* (2007) and *What to Eat* (2010) demonstrates how

powerful food industries oppose safety regulations, deny accountability and blame consumers. These are other excellent sources that I have used in my teaching and research.

- Eisnitz's *Slaughterhouse* (2007) explores industry consolidation, increased line speeds, and deregulation in the meatpacking industry and the impact of this on workers, animals, and consumers. A sound, disturbing source of information exposing hidden practices that, whilst now becoming increasingly uncovered, neither I nor my friends, colleagues or students knew about. Most still have difficulty believing the scale of malevolence and inhumanity required in slaughterhouse practices.
- *Earthlings*, the 2005 movie by Nation Earth documenting, through the use of hidden cameras, humanity's use of animals and the day-to day practices of some of the largest industries in the world, all of which rely on animals. It has been too painful and shameful to show this film to my students but the lives of those who have seen it have been dramatically changed.
- Bakan's *The Corporation: The Pathological Pursuit of Profit and Power* (2004) which argues that "the corporation is a pathological institution, a dangerous possessor of the great power it wields over people and societies" (2004:2) and whose "legally defined mandate is to pursue, relentlessly and without exception, its own self-interest, regardless of the often harmful consequences it might cause to others" (2004:1). The documentary made a big impact on my research work and perspectives about the disjunction between what we as individuals consider right and what we tolerate in society.
- Finally, perhaps the most painful book I have read in a long time is Jonathon Safran-Foer's *Eating Animals* (2009) who, at the end of his heartbreaking, confrontational, provocative description of meat production and consumption declares: "To accept the factory farm-to feed the food it produces to my family, to support it with my money – would make me less myself, less my grandmother's grandson, less my son's father" (Safran-Foer 2009:267).

At the time of reading, I was mother of a 1-year old angel. I vowed I would never lie to my daughter about where her food comes from. As a result, she has never eaten meat, chicken or fish. She knows that to produce meat animals suffer, animals die. Now at the ripe old age

of three, she is telling her friends and their mothers why they should be vegetarian. Already she is an advocate for sustainability and increasing human and environmental wellbeing. I have also taken this message to my students and continue to share it in my research under the concept of flexitarianism, i.e. reduced meat consumption or part-time vegetarianism. This has been a conscious decision on my part as one animal saved through less meat consumption is more important than all the animals I believe I would fail to save if I tried to call for a complete abstinence from products of slaughter.

I also believe in human kindness and intelligence. The more people have access to information and research findings, the better they will be positioned to make their own informed and substantiated moral judgments as to what is right and wrong. Perhaps I am naïve or overly optimistic. The ascendency of human goodness is something I firmly believe in and my PhD thesis is a result of this conviction.

Through their creative courage these advocates continue to emphasis for me the urgency of finding ways of making individual choices and taking individual decisions that, collectively, synergistically hold the power to dismantle the corporatocracies bringing about the demise of humanity and the planet. I know it may sound like a big order but "it's also the only option left on the menu" (Gupta 2009:n.p.). Individual by individual, the movement gathers momentum.

Influence 14 - Love and courage

I now call Australia home and embrace this country's welcome with gratitude and humility. However as I write I see the dusty twisting and winding paths of Southern Africa which have brought me to this research. It is possible to overcome domination, greed, and abuse of power – the sum of the negative social and environmental programming that serves only the interests of a handful - through personal empowerment and liberation that negate the human and environmental destruction inherent in the "leave the thinking to us" political-economic oligarchy.

Until this happens, and whilst power remains concentrated in the hands of those whose primary motive is profit maximization, the world will continue on its trajectory of increasing unsustainability and ever-decreasing human and environmental wellbeing. There is much to

be done. Ordinary citizens everywhere hold the key to protecting themselves, the vulnerable, the earth and animals from political and industrial abuse and supremacy. Awareness and liberation from mental slavery will enable them to claim back their individual power, give up fear and ignorance and release their personal creativity.

Influence 15 – Impact of Influences and Teachers

This thesis has given me the opportunity to teach myself through my research findings, university tutoring and public seminars but most importantly through the academic publications that comprise its main body. It is proving as formative and as much a part of my personal journey as all that has come before. Now, more than ever, I am aware of the long road to travel ahead of us if we are to reclaim the beauty and integrity of this planet and its people. Yet I continue to believe, perhaps even more so than ever, in our universal ability and our oneness.

Amandla Awetu, Amandla Umhlaba.

Power to Us, Power to the Planet

INTRODUCTION

A Planet in Crisis

The world and its inhabitants are in crisis: people are sweltering, freezing, starving, thirsting and drowning. Climate change promises increasingly violent, chaotic, life-threatening extreme weather events and climate disruption tragedies will become more commonplace (Parry et al. 2007). Today's children will have to navigate through violent storms, depression and mental health conditions, breakdown of families and communities (Climate Institute 2011), and increasingly brittle social and economic systems susceptible to collapse (Beddoe et al. 2009). A *New Scientist* cover story (Pearce 2010) outlines how, out of nine fundamental ecological health indicators, we are currently exceeding three (i.e. rate of biodiversity loss, nitrogen fixation and climate change), very close to the limit for another three (i.e. stratospheric ozone depletion, ocean acidification and phosphorus cycle) and without a proper understanding of the boundaries and where we stand on the last two, namely chemical pollution and atmospheric ozone loading.

We understand many of the effects this ecological deterioration will have on human and ecological wellbeing. Many are already causing devastating impacts and the IPCC (Intergovernmental Panel on Climate Change) and Millennium Ecological assessments (e.g. Australian Academy of Science 2010, Corvalan et al. 2005, Intergovernmental Panel on Climate Change 2007) have provided ample scientific evidence as to what is happening with the planet and what will ensue if the spiralling deterioration continues unimpeded. Peak oil, rising food prices, increasingly uncertain present and future food security, alarming and rapid global growth in non-communicable diseases, mounting anti-microbial resistance, escalating global pandemics, ongoing land and water degradation, rapid loss of critical life-supporting ecosystem services, enduring and growing poverty and hunger, and persistent, rising national and global inequity are just some of the ongoing and serious threats facing the planet. An Oxfam report estimates 375 million people may be directly affected by climate-related disasters by 2015, 26 million people have already been displaced (Renton 2009:4)) The true cost will be measured not in dollars but in lives and human potential. That price is already being paid and is starting to cost humankind dearly, with the poorest paying first. However, people in developed countries are by no means immune and are also

experiencing the costs of living with inaction. A 2011 Australian report describes the human health impacts and toll of increasing extreme weather events and climate change including increasing mental illness, long-lived insecurity and anxiety, post-traumatic stress disorder and other mental and emotional pressures in both adults and youth (The Climate Institute 2011).

Whether young or old, rich or poor, we all face, at best, an increasingly uncertain future – a future that many individuals erroneously have been led to believe lies beyond their control and beyond their sphere of influence. Although this crisis has been bearing down on us for a quarter of a century (Renton 2009) global leaders have done, and continue to do, little to address its causes and effects.

Urgent and immediate responses are needed: actions that are capable of ending or at the very least mitigating these multifarious potentially existential threats. Such vital responses ideally should not only be capable of ending the destruction but also of heralding in a new age of healing involving human and planetary rehabilitation, renewal and reconstruction.

The Causes of the Crisis

The root cause of the planetary crisis including both human and environmental concerns remains firmly in place. It may be essentially summarised as the total reliance on the model of infinite economic growth. According to Boulding, “anyone who believes that exponential growth can go on forever in a finite world is either a madman or an economist” (cited in Choucroun 2011:n.p.). The dominant economic growth discourses, rather than people’s rights and welfare or environmental processes and limits, are considered inviolable. The model however has failed to deliver on promises of global prosperity, poverty alleviation, increased human wellbeing or environmental stability. All other causes directly or indirectly may be traced back to this dominating economic discourse. Its international geopolitical influence continues to protect the interests of a select few at the expense of the greater good.

The global economic model does not factor in environmental benefits and costs, people’s marginalisation and inequities. Industry and governments worldwide support the

unimpeded growth model but human, ecological and animal welfare concerns have also started to emerge in the light of the evidence of significant social and environmental deterioration. Over the last 20 plus years, sustainability initiatives are identified by top-down commitments, plans and tools developed at numerous conventions such as the first Rio Earth Summit in 1992, the subsequent Rio + 10 Earth Summit in Johannesburg and the recent Rio + 20 Earth Summit (also known respectively as the Rio, Rio+10 and Rio+20 United Nations Conference on Sustainable Development) (see also the section 'What's Happened To Date' on page 45) However, their number is more impressive than the depth of each commitment or any consequent changes beyond lip service (Meritt 2000).

It is paradoxical that the very economic approach that has caused the existence and persistence of modern-day poverty and environmental problems is the one we continue to rely on to solve these problems. This ensures that sustainable development remains at best a 'virtual world" (Bass 2007:12). De facto endorsement of business is at best a damning indictment of political inability to take the hard truth or any criticism. At worst it is politicians putting self-interest and profits before people.

Either way - our current trajectory remains all in the wrong direction. Poverty and environmental destruction continue to increase. Whilst appearing to support and attempt to further the sustainability agenda, institutions and industries are producing "aggressive deceptions at the margins that protect privileged ways of life: for example carbon offsets rather than system-wide change that transforms everyone's way of life by reducing the use of fossil fuels (Bass 2007:12).

In its millennium development report the World Bank outlined a Comprehensive Development Framework (CDF) to combat poverty more effectively, almost every aspect of which was based on promoting ongoing unlimited economic growth. The obvious, seemingly common sense of physical dimensions– namely that the economy is a subsystem within the larger system that is earth (Meritt 2000) – are ignored. Since the earth is finite, the human economy can grow only within the size of the earth itself (Daly 1996:47). Yet current rates of growth and consumption are already approaching biological boundaries (Pearce 2010). While the World Bank itself states "a development path is sustainable only if it ensures that

the stock of overall capital assets remains constant or increases over time" (World Bank 2000:28) it seems deliberately to ignore the natural limits. At the end of all complex analyses, the human economy cannot pull resources out of the earth at a rate faster than the earth can replenish them (Meritt 2000). Within this simple guideline, achieving sustainability is about what humanity stands to gain (Quinn 1999:86) from changing the current economic growth model. However, those who have their power through unfettered economic opportunity – irrespective of the human and environmental cost – do not want to see such a change. Accordingly, they continue to greenwash (Pearce 2008:n.p.) infinite growth economic models and development initiatives revealing a corporatocracy (Oxford Dictionaries 2012:n.p.) – a society or system governed or controlled by corporations and corporate gains and comprising a web of vested interests maintained at the expense of humanity and the planet. While citizens continue to believe their elected and other leaders are acting in the world's best interests they, albeit unwittingly, are becoming accomplices in the planet's destruction.

We cannot carry on expecting politicians and corporations to develop and implement policies, practices and opportunities to mitigate our demise and intransigence. They are the very cause of this misfortune and have not given us many reasons to believe they are willing to change. Despite the urgency to address this multi-dimensional social, political, economic, and biophysical multifaceted and entangled planetary emergency, endless numbers of conferences, talk fests, declarations and bilateral and multilateral agreements, have to date yielded little if any progress towards a more sustainable world. On the contrary, powerful economic forces, supported by political allies, continue to centralise and concentrate power in the hands of a few who increasingly influence policy and legislative national and international processes controlling the world's current direction. The globalised economic and political profit and power forces are arrayed against creating a fairer, sustainable world. A group of oligarchical and corporate energies dominate governments and, with little regard for the common good, are maintaining the current system of unsustainable consumption and growth. These immense forces of profit, greed and control are manipulating sustainability to meet their own ends and stand in the way of an essential transformative change (Parsons 2012). Consequently sustainability is an internationally imposed agenda

rather than a globally constructed project shared by many. It continues to support privileged economic growth at the expense of social justice and environmental thresholds.

The way forward

After more than two decades of political sustainability attempts, people and groups beyond the inner circle of profit and power are beginning to wake up – in fact, they've been starting to sound the alarm since the turn of the century[8]. It is increasingly evident that if we are to have any chance of regaining, repairing or renewing human and biophysical wellbeing, an alternative solution to government and industry leadership and problem-solving needs to be found. In light of this lack of action at national or international level and the absence of any effective policy, legislative, political or related inter, intra or transboundary approach or solutions it is no longer an option to accept talk or opportunities designed to perpetuate the continuation of the existing economic growth models when urgent action to save the planet is required.

The solution must clearly be found elsewhere – beyond the geo-political reach of industry, its profit stakeholders and easily influenced governments. The main argument offered in this PhD thesis is that a powerful opportunity for achieving increasing human and planetary wellbeing lies in the collective impact of uncoordinated individual action and endeavour. Through awareness and education, humanity, comprising ordinary citizens the world over, holds the key to a better future. Through personal liberation and the ability to take back their power, people, individually and thus collectively, have an opportunity to take action that will facilitate a more sustainable future. This leads towards a greater global bottom-up (as opposed to top-down) morality, leadership and responsibility.

This research suggests that counteraction at a personal level, facilitated by processes of Individual liberation and empowerment, has the potential to become a collective energy capable of overcoming the pervasive domination of national and international governments

[8] (Ansell and Tinsley 2011, Atcheson 2012, Bakan 2004, Banarjee 2002, Bass 2007, BBC News 2009, Beddoe et al. 2009, Brooks 2012, Bussey 2010, Charlton 2011, Chasek and Wagner 2012, Choucroun 2011, ETC Group 2011, Friends of the Earth 2012/2012a, Global Transition Initiative 2003, Goldman 2005, Greenpeace n.d., Halle 2012, Harris 2012, Harvey 2012, Hawken 2007, James 2010, Klein 2007, Kriegman 2006, Leahy 2012, McKibben 2012, Meritt 2000, Nestle 2010, Oxfam International 2012, Parsons 2012a/2012b, Pearce 2008, Perera 2012, Rampton and Stauber 2000, Raskin 2010, Russo 2012, Sharma 2008, Sebastian 2012, Tamayo, 2012, Tyler 2003, van Gelder 2011/2011a, Walsh 2012, Watts 2012)

and corporations. Such peaceful unorganised and uncoordinated counteraction against the prevailing economic model and its stakeholders, the synergistic sum of personal actions for a better world undertaken by ordinary people, holds a most important source of hope for a more sustainable present and future world of human and planetary wellbeing.

"Winning from the megamachine, broader and broader spaces in which the 'logic of life' can unfold freely" (Gortz n.d. cited in Audouin 1996), is the aim of the PhD research and its objectives are to show whether this can be done. It consists of nine publications which in their combination answer the research question as to how individual actions can prevent further human and planetary deterioration. I have chosen three case studies namely Flexitarianism (part time or flexible vegetarianism), The New Human Agenda (a way for releasing human potential and capacity for poverty alleviation), and Humanistic Sustainability Education (also referred to as Sustainability Humanistic Education, for empowering students to challenge the current grand economic narrative and develop alternatives for a better world). Together these develop the research argument that this can be done through the power of us.

After all, if we cannot be reached through an appeal to the threatened conditions of our own survival, what can reach us (Lee 2005)?

RESEARCH QUESTION AND OBJECTIVES

The research question of this PhD thesis is:

In light of the scientific evidence about ecological deterioration, continuing poverty and decreasing human health, how can individuals counteract political and economic vested interests responsible for the ongoing global destruction and prevent further deterioration?

The specific aims of the research are to*:*

• Describe the duplicity of the current dominant political and economic discourses and their impacts on human and planetary wellbeing

• Offer simple realistic ways of improving global sustainability through personal empowerment independent of existing power and industry structures

• Offer policy recommendations that support individual contributions to achieving increasing human and biophysical wellbeing

- Use practical case studies to demonstrate how this can be achieved namely Flexitarianism, The New Human Agenda and Sustainability Humanistic Education.

The conceptual design and steps taken in answering the research question are illustrated in Figure 1.

Table 1 summarises some of the key theoretical writings underpinning the research.

Figure 1: Conceptual Diagram of Thesis

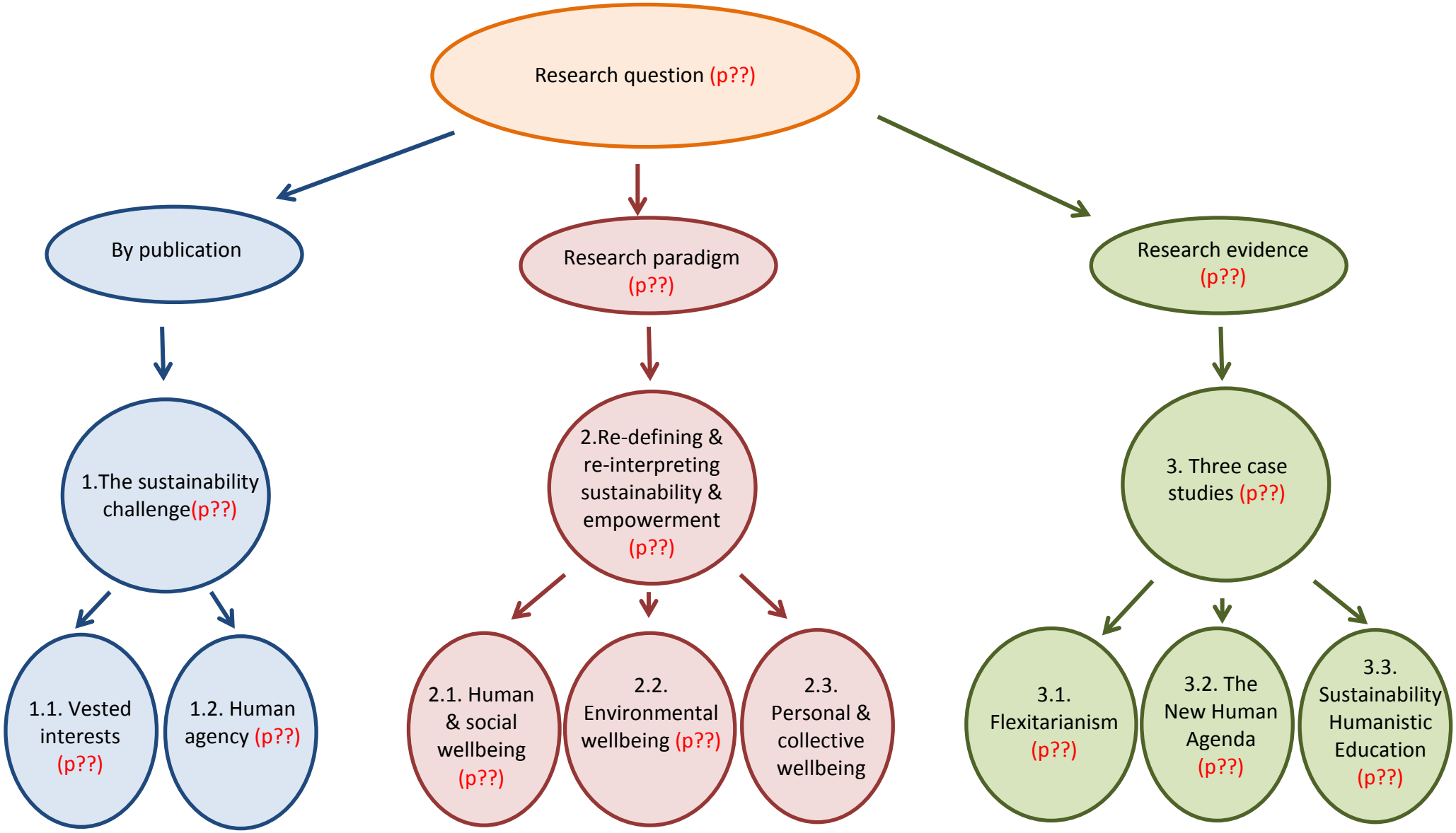


Table 1: Key theoretical writings underpinning the research

1. Sustainability challenge	Beddoe et al. 2009, Daly 2007, Dauvergne 2005, Hardin 1968, 2001, Meadows et al. 1972, Merchant 1992, Ratner 2004
1.1.Vested interests	Atcheson 2012, Bakan 2004, Banerjee 2002, Beddoe et al. 2009, Best and Nocella 2006, Bok 2003, Campbell 2006, Campbell et al. 2006, Carsons 1962, Chasek et al. 2010, Chasek and Wagner 2012, Clapp and Dauvergne 2005, Clonan 2007, Costanza et al. 2007, Dauvergne 2005, Diener and Diener 1995, Evans 2009, Freir 2004, Grigorov 2009, Hardin 1968, Harvey 1996, 2012, Hawkens 2006, 2007, Helliwell 2003, High-level Panel on Global Sustainability 2011, Humes 2008, Juma 2002, Kahn 2008, Klein 2007, Kutting 2010, Layard 2005, Lee 2005, Manteaw 2008, Mitchell 1989, Nestle 1999, 2010, Parsons 2012, 2012a, 2012b, 2012c, Princen et al. 2002, Ratner 2004, Redclift 2000, Rojas 2006, Rotmans and Kemp 2003, Sacks 2009, Schyns 2003, Shiva 1991, Slaughter and Rhoades 2004, Spretnak 1999, van Gelder 2011a, Washburn 2005, Watts 2012
1.2. Human agency	Ackerman and DuVall 2000, Bandura 1998, Bennis & Nanus 1985, Burke 1986, Carr 2003, Chavis & Wandersman 1990, Conger 1989, Conger and Kanungo 1988, Dean 2005, Diener & Biswan-Diener 2005, Eylon 1998, Fawcett et al. 1995, Firesheets et al. 2012, Florin and Wandersman 1990, Freire 1970, Ghandi n.d., Gortz n.d., Gutierrez 1995, Hawken 2006, 2007, Humes 2008, Kabeer 1999, Kahn 2008, Kanter 1997, Khwaja 2005, Kriegman 2006, Majmudar 2005, Mason 2012, Mayo 1999, McMillan et al. 1995, Menon 2001, Narayan-Parker 2005, Nozick 1980, Nussbaum 2000, 2003, Page and Czuba n.d., Parker and Price 1994, Perkins 1995, Rappaport 1987, Raskin 2010, Rich et al. 1995, Rocha 1997, Rowlands 1995, Severine and Shahani 2009, Simon 1990, Speer & Hughey 1995, Thomas & Velthouse 1990, Trickett 1984, Uphoff 2005, Wallerstein 1992, Wilson 1996, Zimmerman 1990, Zimmerman et al. 1992.
2. Re-defining & re-interpreting sustainability	Carsons 1992, Daly 1996, Choucroun 2011, Delaney 2005, Deffeyes 2008, de Graaf et al. 2001, Fukuda-Parr 2003, Garnaut 2008, Goodland 2009, Hamilton and Denniss 2005, Harvey 1996, Holmberg and Sandbrook 1992, James 2010, Larson 2003, Lippert 2004, Mann 2009, 2011, Martinex-Alier 1987, Meadows et al. 1972, O'Connor 2006, OECD n.d., O'Neill 2006, OzPolitic n.d., Pecci and King 1963, Porrit 2003, Redcliff 2000, Sen 1985, 1993, 1999, Stern 2006, Thomas and Odum 2001, Williams and Millington 2004, UN Agenda 21 2004, UNDP 1998, WCED 1987, 2011
2.1. Re-defining & re-interpreting human & social wellbeing	Alkire 2002, Camfield et al. 2006, Campbell 2006, Coetzee and Graaf 1996, Costanza et al. 2007, Cummins 2000, Deci 2001, Devine et al. 2006, Diener and Diener 1995, Doyal and Gough 1991, 1993, Finnis 2011, Galtung 1994, Griffin 1996, Helliwell 2003, Layard 2005, Max-Neef 1993, Narayan et al, 2000, Nozick 1980, Nussbaum 2000, 2003, O'Neill 2006, Pineau 2004, Rojas 2006, Rawls 1993, Ryan and Deci 2001, Schyns 2003, Sen 1985, 1993, 1999, Sirollo 1995, Uchida et al,

	2004
2.2. Re-defining & re-interpreting environmental wellbeing	Crutzen 2002, Devall and Sessions 1984, Goodland and Daly 1996, Grey 1993, Naess 1973, Salleh 1984, Spretnak 1999
2.3. Re-defining & re-interpreting personal & collective empowerment	Bandura 1998, Bennis & Nanus 1985, Burke 1986, Carr 2003, Chavis & Wandersman 1990, Conger 1989, Conger and Kanungo 1988, Diener & Biswan-Diener 2005, Eylon 1998, Fawcett et al. 1995, Firesheets et al. 2012, Florin and Wandersman 1990, Freire 1970, 2004, Fukuda-Parr 2003, Gortz n.d., Gutierrez 1995, Hanna et al. 2000, Hawken 2006, 2007, Kabeer 1999, Kahn 2008, Kanter 1997, Khwaja 2005, Mason 2012, Max-Neef 1993, Mayo 1999, McMillan et al. 1995, Menon 2001, Narayan-Parker 2005, Page and Czuba n.d., Parker and Price 1994, Perkins 1995, Perkins and Zimmerman 1995, Rappaport 1987, Rich et al. 1995, Rocha 1997, Rowlands 1995, Simon 1990, Speer & Hughey 1995, Thomas & Velthouse 1990, Torr 1986, Trickett 1984, Uphoff 2005, Wallerstein 1992, Wilson 1996, Zimmerman 1990, Zimmerman et al. 1992.
3. Case studies	Baxter and Jack 2008, Bolt 2009, Flyvbjerg 2006, Harling 2002, Stake 1995, Yin 2003
3.1. Flexitarianism	Barilla Center for Food and Nutrition & the Worldwatch Institute 2012, Biswan and Martin 2011, Coetzee 1999, Compassion in World Farming 2004, Dixon et al. 2007, Dummer et al. 2011, Fraser 2005, Garnaut 2008, 2011, Gilligan et al. 2010, Gold 2004, Goodall 2005, Goodland and Anhang 2009, Goodland 2010a, 2010b, 2010c, Gore 1993, Gorobets 2011, Hamilton 2006, Haq et al. 2007, Henning 2011, Kaufman 2009, Kennedy and Krogman 2008, Kolbert 2011, Lappe 1971, Lee 2005, MacMillan and Durant 2009, Marsh et al. 2012, McMichael 2003, Min et al. 2011, National Health and Medical Research Council 2011, Nestle 1999, 20067, Nordgren 2011, Page 2006, Pimental and Pimental 2003, Pinheiro 2010, Popkin 2009, Panayotov 2010, Porcher 2006, Posner and Weisbach 2010, Rahaman 2012, Riboli and Lambert 2002, Rose 2009, Posner and Weisbach 2010, Schmidtz 2011, Schneider 2009, Shaw 1999, Shue 2010, Singer 2002, 2010, Singer and Mason 2006, 2007, Smail 2004, Spellberg et al. 2008, Stallworthy 2009, Stanton 2012, Stehfest et al. 2009, Sterba 2011, Stern 2006, Sutcliffe 2007, Vanderheiden 2008, Vidal 2010, Voiceless 2012, Wirsenius 2011, Yotopoulos 1985
3.2. The New Human Agenda	Adams 1995, Alkire 2010, Amin 1990, Asian Human Rights Commission and People's Vigilance Committee for Human Rights 2006, Audouin 1996, Blanchard et al. 1996, Cavalcanti 2007, Coetzee 1989, Coetzee and Graaff 1996, Crush 1995, Dodson 1996, Escobar 1995, Esteva 1985, Giherardi and Nicolini 2000, Goldman 2005, Goodland 1995,Jakimow 2008, Kabeer, 1994, Kahn 2008, 2010, Kelley 2002, Lasersohn 2005, Lushaba 2009, Matthews 2004, McFarlane 2006, McGinnis 1999, Nonaka et al. 2000, O'Donoghue 1997, Pieterse 1998, 2000, Power 2006, Rahnema and Bawtree 1997, Ratner 2004, Schuurman 2000, Sen 1999, Tapscott 1995, Thrift 1998, Wilson 2007,

3.3 Sustainability Humanistic Education	Ashton et al. 2002, Baker and Holsinger 1996, Beck et al. 2003, Bar-Tal and Rosen 2009, Best and Nocella 2006, Bussey 2010, Bussey et al 2008, Carson 1962, Cobb 1992, Dryzek 2000, Dunlap and Van Liere 2008, Evans 2009, Freire 1972, 2004, Gadotti 2000, 2008, Giroux 2000, Grigorov 2009, Guitierrez and Prado 1999, Habermas 1989, Held et al 1999, Holloway 2002, Humes 2008, Joshi 1992, Kahn 2003, 2008, 2010, Kahn and Humes 2009, Knight Abowitz and Harnish 2006, Kogan 2010, Kolbert 2011, Manteaw 2008, Marinova and McGrath 2005, Meadows et al. 1971, Matthews 2011, Mayo 1999, Ohmae 1996, O'Sullivan 2001, Palmer 1998, Pooley and O'Connor 2000, Porfilio and Yu 2006, Princen 2005, Rennie 2008, Rogers 2005, Sarabhai 2007, 2009, Saravanamuthu 2006, Spretnak 1999, Slaughter and Rhoades 2004, Tilbury 2009, Weil 2004, Wenden 2004, Williamson 1989, Yencken and Henry 2008

RATIONALE FOR A PHD BY PUBLICATION

During a standard PhD thesis, whilst the author may attend and present at conferences, papers on the subject are traditionally published once the PhD has been submitted. However, I felt an urgency of impact - to make a meaningful, immediate contribution to the arsenal of weapons to use against the unsustainable trajectory the world is on. Together with this was a concomitant need to expedite the academic community's approval and acceptance of the argument presented here. These goals could best be achieved by publishing as part of, and throughout, the PhD journey rather than after its conclusion.

The three distinctive areas were selected both because of my personal experiences in these fields and more so, because they each lie within mainstream subjects, namely food, nutrition and health, and development and education, thus making the argument easy to communicate to, and engage with, three distinctive academic audiences. This immediately increased the reach and potential sphere of influence of this research and has allowed all the PhD publications here to be peer-reviewed by experts in each of the three specific fields chosen. Every paper which forms part of this thesis has already been blind peer-reviewed by two or three (depending on the requirements of the accepting publication outlet) independent academic scholars recognised and acknowledged as experts in their field.

Based on the nine publications produced as part of this PhD thesis, the main argument of this research is already accepted in the selected realms of the academic world thereby achieving its goal of addressing the urgency of making an impact and adding to the toolkit of opportunities to mitigate against unsustainability. The final stage of this research is to bring all publications into a coherent whole, including the use of definitions, methodology, research findings and contributions.

SUSTAINABILITY AND EMPOWERMENT DEFINED

Before proceeding it is pertinent to define what is intended throughout this PhD thesis by the use of the terms and concepts of sustainability, empowerment and liberation. These definitions are not explicitly cited in any of the publications because their nature and associated restrictions did not allow for an extended discussion. However redefining sustainability and the possible ways of attaining it are the essence of this research and they require clarification.

Sustainability

As early as 1800s, prominent artist, patron and social thinker John Ruskin began to question the Victorian obsession with profit and the beginnings of the Industrial Revolution (Mann 2011) observing that the same economic system (capitalism) that creates wealth also has a dark side – *illth*- or the opposite of wealth– namely poverty, pollution, despair and illness. This darker side of capitalism makes life comfortable for some at considerable discomfort to others (Crook 1982). The term illth is still used by modern economists such as Daly to describe negative externalities (Daly 1996, 2007, Goodland 2009). In 1949, using a series of graphs to show the impact of exhaustion of energy supplies, Hubbert argued that oil production would peak in the early 1970s and warned of "a catastrophic collapse" (Delaney 2005:n.p.) unless a culture evolved that was more compatible with the limitations imposed upon us by the basic properties of nature (Deffeyes 2008).

From the early 1950s onwards a growing number of writers and thinkers began to add their voices to the dangers of the perpetuation of infinite growth supported by finite resources. Perhaps most notable in these early years were the seminal books and articles of ecologists and brothers Howard Thomas and Eugene Pleasants Odum credited with pioneering the concept of the ecosystem and the interdependence of diverse ecosystems as the basis for the earth's functioning[9]. Rachel Carson's *Silent Spring* (1962), which documented the harmful impact of pesticide use on the environment (including birds, animals and humans), inculpated the chemical industry and public officials in duplicity. It is seen by many as the

[9] The last book written by H.T Odum *A Prosperous Way Down* co-authored with his wife Elizabeth just before his death describes how in the face of "energy descent" (Odum and Odum 2001:4), civilization might decline thoughtfully and happily rather than collapse miserably (Odum and Odum 2001).

catalyst that launched the environmental movement. The formation of the global think tank the Club of Rome in 1963 by Aurelion Peccei and Alexander King continued to raise public consciousness of a world increasingly under pressure with its *Limits to Growth* (Meadows et al. 1972) and representing the first real attempt of making the concept and science of what was to become known as sustainability, available to the public (Mann 2011).

The World Conservation Strategy (IUCN, UNEP and WWW 1980), with the objectives of maintaining essential ecological processes and life support systems, preserving genetic diversity, and, ensuring the sustainable utilization of species and ecosystems (Larson 2003, Organisation for Economic Cooperation and Development n.d.) was a further step forward in the direction of recognizing the impeding environmental crisis being caused by the economic model of infinite growth. "Sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987:41) was the first (and still most widely used) formal definition of sustainability[10]. Its critiques include questions on how this definition should be operationalized and how sustainability should be measured, what exactly is meant by human needs and wants and how "individuals not yet born have ontological difficulties in making their presence felt in today's market for exhaustible resources" (Martinez-Alier 1987:17). Its proponents also recognise it as the first pragmatic attempt to integrate environmental and economic considerations, together with a concern for the wellbeing for present and future generations (the social component) dissolving the previous compartmentalisations between these areas. Whilst remaining highly controversial, widely debated, contested and criticized most conceptualisations of sustainability stem from this definition, with many having at their core the three pillars of society, environment and economy. However most subsequent definitions seem to accept that the wellbeing of these three areas is intertwined not separate.

Sustainable development and sustainability are often used interchangeably and synonymously in both academic and popular discourse. There are currently hundreds of definitions of the terms (Holmberg and Sandbrook 1992, Lippert 2004). Because the concept is promoted by "situating it against the background of sustaining a particular set of social"

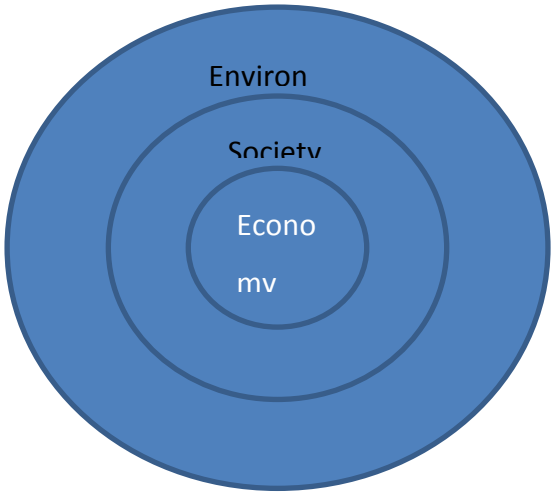
[10] Often referred to as the Brundtland Definition named after the first author of the report.

and economic "relations by way of a particular set of ecological projects…" the debate about resource scarcity, biodiversity, population and ecological limits is ultimately a debate about the "preservation of a particular social" and economic "order rather than a debate about the preservation of nature per se" (Harvey 1996:148).

Mann (2009) found over 255 schematics of the notion of sustainability. Discussion on such definitions, notions and distinctions continues in the academic literature without conclusion. However it is of value to illustrate the centrality of traditional growth economics as a consideration of sustainability in all definitions. None of the primary conceptualisations argue for a fundamental rejection of the modern economic model's core intentions, assumptions, worldviews and mindset. It seems a world without this concept of economics, albeit factored in with social and ecological considerations cannot exist. None of the mainstream models, definitions and interpretations of sustainability argues for the redemptional kind of economy which offers a new paradigm truly built on present and intergenerational environmental responsibility, innovation and creativity for a truly shared "prosperity" of present and intergenerational equity.

Perhaps the two most cited and used graphic illustrations of sustainability (which appear with various adaptations but with one of these two understandings at their core) are Figure 2 and Figure 4.

Figure 2: Strong Sustainability (Bullseye) Model



The model in Figure 2 does not have a specific area representing sustainability. Instead, the hierarchical relationship of the three pillars of sustainability in concentric circles defines the so called "strong" approach to sustainability. This model recognises that the economy is a subset of society and only exists in the context of society. It also acknowledges that aspects of society do not involve economic activity and that society and economic activity within society are totally constrained by the natural systems of the earth (Williams 2008). However, whilst being embedded within environmental constraints, economics none-the-less remains at the heart and centre of this model – implying that sustainability requires an economic component. It is unquestionably evident that attainment of economic wellbeing as defined by capitalist, western economic models requires long-term environmental wellbeing in order to be sustainable (Garnaut 2008, Stern 2006). However, whilst mainstream economies need a healthy environment to flourish, neither social nor environmental wellbeing necessarily require economic wellbeing in order to be attainable and sustainable.

"People can be happy with very little wealth and few possessions or miserable with plenty" (Porritt 2003:6). Numerous studies support the view that increased consumption does not automatically lead to increased wellbeing and indicates quality of life is determined rather by more by the quality of a person's working life, their family life and their overall social relationships (de Graaf et al. 2001, Hamilton and Denniss 2005, James 2010). These life qualities seem to be more important relatively to determining wellbeing than the amount of consumption individuals are able to enjoy (Porritt 2003). If consumption is increasingly eroding the quality of these other aspects of overall wellbeing, then it is clearly far less beneficial than it might at first sight appear. Further, rising GNP is not necessarily correlated with increasing life-satisfaction(de Graaf et al. 2001, Hamilton and Denniss 2005, James 2010, Porritt 2003). Neither is it necessarily correlated in improvements in capacities to function - an observation that was influential on the development of the U.N. Human Development Index[11] (O'Neill 2006:169).

[11] The Human Development Index (HDI) is a composite statistic of life expectancy, education and income indices used to rank countries into four tiers of human development. It was created with the explicit purpose of shifting the attention of policy-makers, academics and the public from evaluating development not by economic advances but rather improvements in human wellbeing (Fukuda-Parr 2003). The HDI is about "advancing the richness of human life, rather than the richness of the economy in which human beings live" (Sen cited in UNDP 1998)

Thus sustainability, if defined as the achievement of immediate and long-term human and environmental wellbeing, may feasibly be achieved without the involvement of western capitalist economic activity. Realistically, sustainability could accordingly be defined as the achievement of social and biophysical wellbeing that can be attained and maintained with or without dependence on the inclusion of a sustainable economic component. An economic component may or may not be included depending on the particular circumstances within which the model is being operationalized. This perspective may be depicted as in Figure 3 where a sustainable society is embedded in and dependent on a sustainable environment. However, a sustainable economic component, which revolves around a healthy environment and society, may or may not be relevant depending on local or specific circumstances.

Figure 3: Alternative Strong Sustainability Model showing economic wellbeing as variably relevant or irrelevant

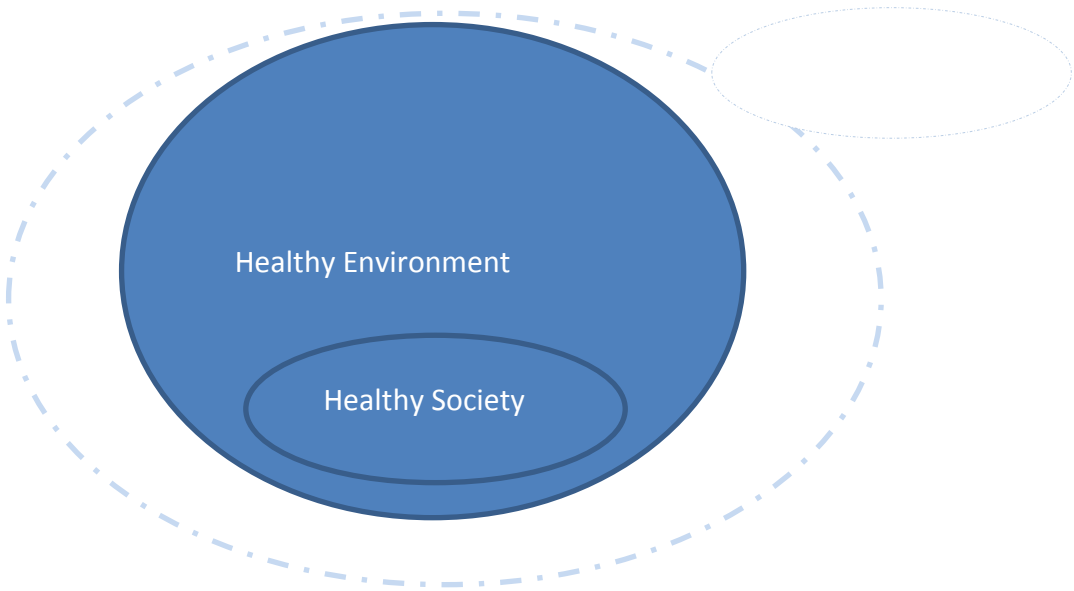
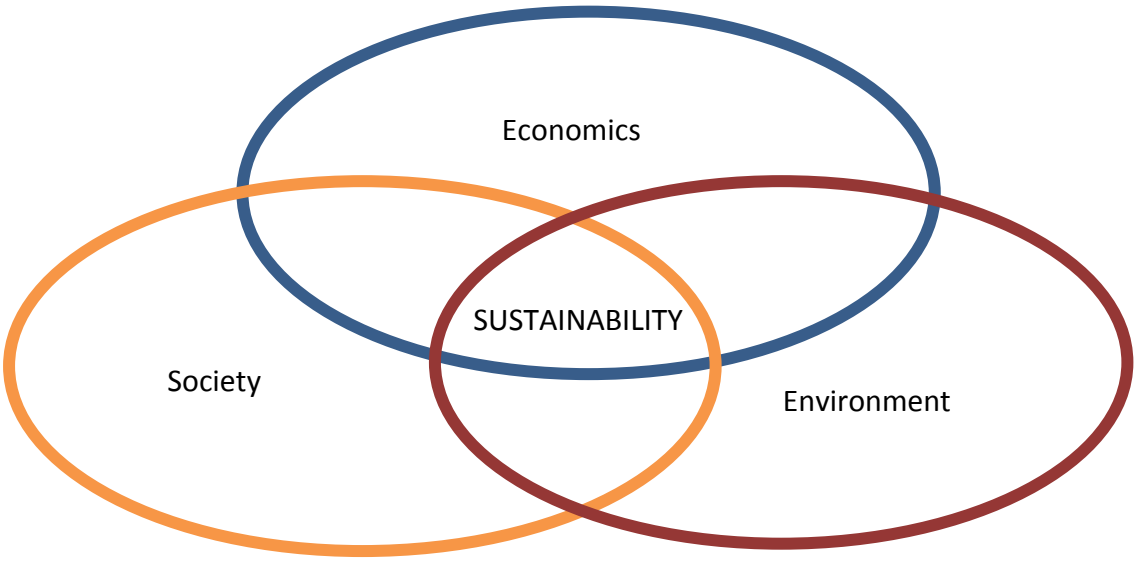


Figure 2 and Figure 3 are in contrast to the more commonly used Venn diagram or Weak Sustainability Model that shows sustainability at the intersection of the pillars of society, environment and economics. Thus sustainability is depicted as the common ground where each of the circles converge but the "main priority in this model is the health of the economy" (Williams 2008:xii). In the weak sustainability model is it possible to consider each pillar in isolation (Mann 2011) and thus to assume that degradation of one group of assets (environmental, social or economic) can be compensated for by improvement in another. Further, because of this separation of components, the model is best understood

within the western traditional economic discourse where negative externalities[12], namely the true social and environmental costs of production or consumption, can be hidden from view. Thus any social or environmental destruction occurring as a result of economic activity may be hidden behind claims that the economic component is flourishing and thus making a disproportionately positive contribution to achievement of sustainability. This can occur despite the fact that society and the environment are bearing the unaccounted for external costs of production and consumption. One only need look at western societies such as the USA and Australia where economic wellbeing is considered critical despite its environmental and social costs.

As this model allows for consideration of each component in isolation the same may be said for consideration of any two components. Thus again, sustainability may be considered and achievable with or without the inclusion of economic wellbeing as depicted in Figure 4.
It may be argued that this may hold true for any of the three components. So, if it possible to take out economic wellbeing and still achieve sustainability - then it should be possible to remove social or environment wellbeing and, with the remaining component's intersection with economic wellbeing, still achieve sustainability.

Figure 4: Weak Sustainability Model

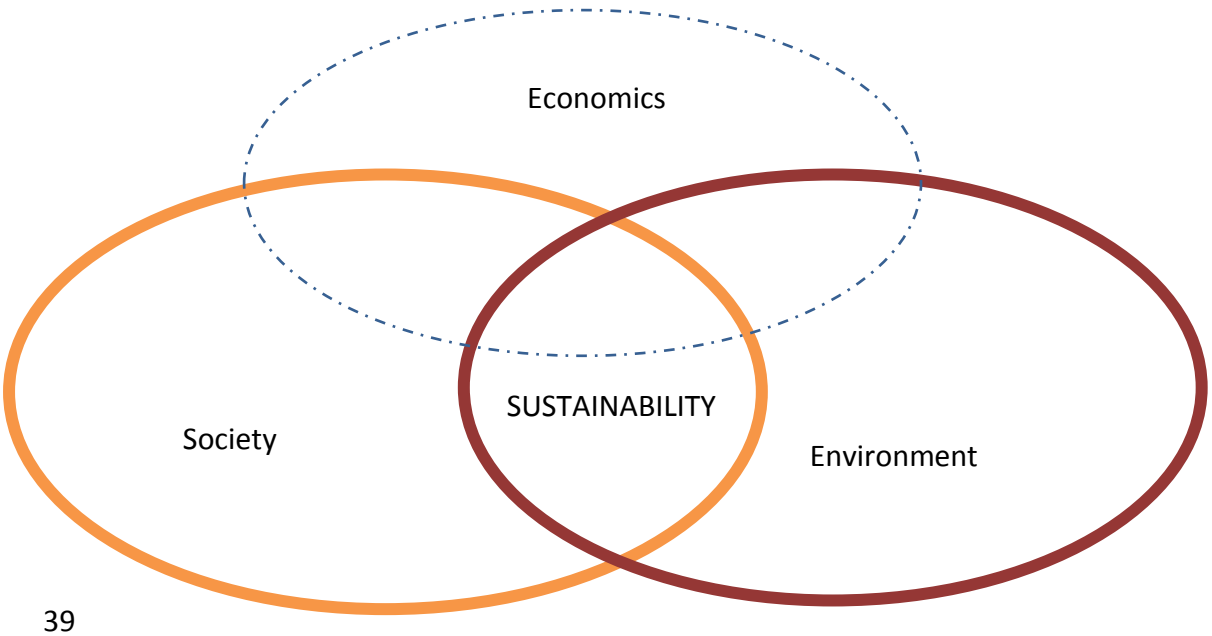


[12] The negative costs and impacts of an economic activity on individuals, communities or the biophysical environment other than the people engaged in, or directly benefiting from, that economic activity. These negative costs and impacts are not reflected fully, or more often at all, in the prices. This is a form of market failure as the amount of activity carried out, if left to the free market producing artificially cheap goods, will be an unsustainable use of resources.

However the counter argument is that, most critically, the weak sustainability model fails to acknowledge the ecological constraints within which humans and the economy must operate (Parliamentary Commissioner for the Environment 2002). Without ecological wellbeing human and economic wellbeing cannot be attained (Garnaut 2008, Stern 2006). Thus removing the environmental component and achieving sustainability through attaining economic and social wellbeing is not possible as neither can be maintained in the absence of environmental wellbeing. Further, removing society and merely defining sustainability as achievement of economic and environmental wellbeing is not applicable in the anthropocentric context within which the model has relevance and value – namely that both environment and economics exist for their value, opportunity and contribution to humanity.

Further argument in favour of the dispensability of the economic component but not the social or environmental component, is the recognised importance of diversity. Diversity, which exists both in the environmental and the social realms, is acknowledged as being a cornerstone in the achievement and maintenance of sustainability. Nobody denies diversity's value in these domains. However, in the economic realm, the dominating western discourse doesn't allow for or accommodate any economic diversity. This economic hegemony undermines resilience and negates, or at best subordinates, the acknowledged values of cultural and biophysical diversity.

Figure 5: An Alternative Weak Sustainability Model

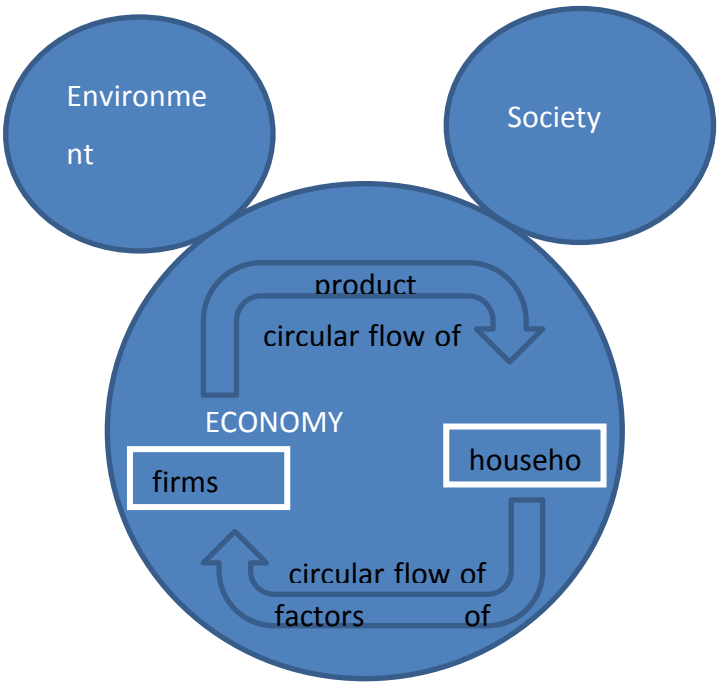


The increasingly well-articulated notion that the concept of sustainability (or sustainable development) has been hijacked by global political, economic and financial institutions to further the reach and power of their vested interests is of particular relevance. Such vested interests continue to capitalize on the belief that growth and ecological sustainability are not in conflict and that the cause of environmental problems is not industry but poverty. Thus ongoing modernisation, economic growth and population control in developing countries are promoted as the only meaningful solution (Lippert 2009). This is entrenched in all the dominant hegemonic sustainability discourse including for example within the World Bank's Approach and the UN's Agenda 21: "An effective strategy for tackling the problems of poverty, development and environment simultaneously is economic growth in developing countries that is both sustained and sustainable and…direct action in eradicating poverty by strengthening employment and income-generating programmes" (section 3.2 and 3.3 of Agenda 21: UN 2004:n.p.). So, the cause of the sustainability crisis appears to be hegemonically entrenched as being located in **"**developing" countries as a result of the need for development.

Ongoing and infinite growth continues to be seen as the major means of achieving sustainability albeit through the "improvement of production systems through technologies and processes that utilize resources more efficiently and at the same time produce less waste. Achieving more with less is highlighted as "an important pathway towards sustainability for business and industry" (Section 30.4 of Agenda 21: UN 2004:n.p.). However, how the created wealth is distributed or consumption trends are issues left to the market.

The appropriation by vested political and economic interests of the sustainability concept under the guise of sustainable development appears to justify ongoing domination, subordination and abuse of people and the biosphere to meet this dictate of unlimited economic and material growth. They are the causes behind the rapid decrease in human and biophysical wellbeing. This is probably best depicted in the "Mickey Mouse" Model shown in Figure 6.

Figure 6: A Mickey Mouse Model of Sustainability



(A non-social, non-ecological economic world view adapted from O'Connor 2006 and Ozpolitic n.d.)

The Mickey Mouse Model shows a disconnection between economy, environment and society. The economy's self-perpetuating power seems to operate independently from the other two, creating the illusion of representing the real world. (The similarity with a Disney park is not far-fetched.) Whilst being depicted as the old, outdated or discarded way of viewing the interaction between environment, society and the economy (OzPolitic n.d.:n.p.), it is the contention of this research that nothing has changed. If anything, the centrality of economics is ever further entrenched as a result of the increasing duplicity, alliance and power between global governments and industry. Despite appearances and utterances to the contrary, economy remains most important with society and the environment being separate, minor, side issues. In order to justify this perspective, environment and society are often depicted as luxury issues that only the rich can afford to concern themselves with. A strong economy and economic wellbeing remain the primary focus and the core requirement for the achievement of environmental and social wellbeing. Even "within mainstream sustainable development discourse there are no ideological conflicts with the

dominant capitalist industrialising model, only debates about methods and priorities" (Adam 1995:90). Yet whilst this is almost globally translated into national and international policies that focus on and prioritise increasing GDP, research shows that increases in individual income have no lasting effect on people's reported level of happiness of wellbeing (Easterlin 2003).

It is argued that it is this subtle but insidious, non-transparent representation created and supported by global government and industry, that is responsible for the environmental and human crisis facing the world. Essentially economic wellbeing is not necessarily a criterion for achieving human and environmental wellbeing although it may, in different ways, and using a variety of possible alternative definitions of what constitutes economic wellbeing, be a contributing factor. Western economic rationalization, and its progenies of greed and profit, can be uncovered at the essence of almost all environmental destruction and human degradation. Contrary to popular dictates and definitions, achievement of sustainability can be defined as achievement of ongoing and sustained human and environmental wellbeing completely distinct from economic wellbeing. Economic wellbeing may be included but is not necessarily a prerequisite for achievement of sustainability. If economic wellbeing is to be included, the definition of what comprises such economic wellbeing should incorporate and allow for alternative definitions and perspectives to western economics.

Thus, sustainability as intended throughout this thesis may be understood as follows:

> *Ongoing improvement in local, bioregional and global human and environmental wellbeing achieved through continuous implementation of individual and collective actions and choices that mitigate or avert looming planetary emergencies.*

Human/social wellbeing

For the purposes of this research, and in all the papers it contains, human and social wellbeing are used synonymously and interchangeably. Wellbeing - interchangeably referred to as happiness, quality of life, basic human needs, social or human development and even as universal human values (Alkire 2002), when used in specific contexts is a concept whose intention and meaning is generally understood. Yet, despite its common use,

there remains no conclusive conceptual framework or coherent system or approach to measure or properly evaluate trends in, and aspects of, human wellbeing (van Kamp et al. 2003). As with sustainability, characterisation, classification, application or measurement of what constitutes human wellbeing remains elusive. Within a range of academic areas including psychology, sociology, anthropology, political studies and economics there are as many lists as there are definitions devoted to measurements, determinants, aspects, criteria, components of and interventions for increasing wellbeing (Camfield et al. 2006). These lists:

- Are incomplete such as Galtung's (1994:20) which concludes "longer lists could be imagined"
- Attempt to be final for example Max-Neef's ''fundamental human needs are finite, few and classifiable'' (1993:20).
- Are offered as one person's opinion of what is universally true: ''It does not matter if you disagree with my list'' (Griffin 1996:30)
- Are presented as best (to date) attempts at a general account ''I suggest that other objectives…will be found, on analysis, to be ways or combinations of ways of pursuing. . .one of [these] basic forms of good, or some combination of them.'' (Finnis 2011:90)
- Include elements which remain undefined such as Doyal and Gough's use of the term "autonomy" (1993)
- Are quite specific e.g. Nussbaum's list which describes essential elements such as having property rights and the right to seek employment on an equal basis, being able to work as a human being and being able to enter into mutual relationships of mutual recognition (2000:82)
- Have direct political implications (such as Rawls 1993) whilst others are supported by economic rationalisations, philosophical arguments or qualitative or quantitative evidence, broad consensus or common sense (Alkire 2002:181).

One of two perspectives usually underpins these discussions namely the hedonic approach (which defines wellbeing in terms of pleasure attainments and pain avoidance), and the eudaimonic approach (which focuses on meaning and self-realisation and defines wellbeing in terms of the degree to which a person is fully functioning) (Ryan and Deci 2001). They

have given rise to different research foci and bodies of knowledge that are sometimes divergent and sometimes complementary. A more detailed discussion of this is however not essential for the purpose of this research other than to say that both are relevant and intrinsically part of the definition developed and applied here.

The following discussions and thinkers have informed the description of human wellbeing as intended in the papers of this thesis.

Nussbaum (2000, 2003) defends a list of ten central human indicators of wellbeing that "should be respected and implemented by the governments of all nations" (2000:5) and are "central requirements of a life with dignity" (Nussbaum 2003:40) namely:

1. Life - being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living
2. Bodily health - being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter
3. Bodily integrity - not subject to violation
4. Senses, thought and imagination-being able to use the senses, to imagine, think, and reason—and to do these things in a ''truly human'' way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training; being able to use imagination and thought in connection with experiencing and producing self-expressive works and events of one's own choice, religious, literary, musical, and so forth; being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise; being able to search for the ultimate meaning of life in one's own way; being able to have pleasurable experiences, and to avoid non-necessary pain
5. Emotions – being able to have attachment to things and people beyond ourselves; to love, grieve, experience gratitude, longing and justified anger without fear or anxiety
6. Practical reason - being able to form a conception of the good and to engage in critical reflection about the planning of one's own life
7. Affiliation - being able to live for and towards others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able

to imagine the situation of another and to have compassion for that situation; to have the capability for both justice and friendship

8. Other species - being able to live with concern for and in relation to animals, plants, and the world of nature
9. Play – being able to laugh, play and enjoy recreational activities
10. Control over one's environment including political control - being able to participate effectively in political and other choices that govern one's life.

Whilst essentially comprising a moral basis for people who otherwise may have very different views of what a complete good life for a human being would be (Nussbaum 2000:74) all indicators Nussbaum offers are directly relevant here[13]. Also of particular relevance to this PhD is Nussbaum's acknowledgement that in order to be valuable the list must be considered flexible, contestable and re-makeable (2000). This is consistent with the intention of the concept of wellbeing as used in all the papers included in this thesis namely a human wellbeing achieved through liberation of individual and collective human potential in an iterative, evolving, participatory, dynamically transformative, locally conceived, connected, empowering and engaging process (Raphaely and Marinova 2006).

Max-Neef's matrix of basic human wellbeing further reinforces this with indicators including subsistence, participation, creation, understanding, and freedom which should be considered in a participatory manner in order to enable a community to interpret its own situation holistically (1993). This again informs the understanding of wellbeing adopted in this research.

Nozick also offers a valuable contribution describing wellbeing as wanting and being able to do certain things, not just to have the experience of doing them but, because, "we want to be a certain way, to be a certain sort of person" (1980:43). Thus what we can do and what we can be (O'Neill 2006), "the various things a person may value doing or being" (Sen 1999:75) and our capacity to achieve valuable functioning - are essential determinants of wellbeing.

[13] Particularly to the papers on Flexitarianism

Narayan et al. (2000), in the only cross-cultural study to date (representing over 60 000 people including primarily poor, illiterate and in some cases remote respondents, in 23 developing countries), describe dimensions of wellbeing such as the ability to manage assets, freedom of choice and action, and, psychological well-being - feeling in control of one's life. The ability to manage physical, human, social and environmental components (Pineau 2004) of your own life is another important aspect emphasised in this research.

The United Nations Development Programme includes "a process of enlarging people's choices", leading a long and healthy life and self-respect (UNDP 1990:10). Alkire defines wellbeing as "human flourishing in its fullest sense" (2002:182). Concurrent with Sen's capabilities approach (1985, 1993) she refrains from developing a specific set of wellbeing criteria (such as health, economic or education measures etc.) but rather chooses what she terms the "dimensions and capabilities approach" (Alkire 2002:184), with capabilities referring to an "expansion of capability"– specifically a personal or group freedom to promote or achieve valuable functionings (Alkire 2002). Both Sen and Alkire state that the dimensions and capabilities approach provides a philosophical foundation for human wellbeing that avoids derivation from a particular metaphysical standpoint, being overspecific or too prescriptive. Rather it requires a locally-valued, conceived and relevant defined capabilities set that is "non-hierarchical, irreducible, incommensurable and hence basic kinds of human ends" (Alkire 2002:186).

Doyal and Gough (1991) limit their definitions to two fundamental *preconditions* of wellbeing rather than attempting to arrive at a definitive list of the full range of relevant areas of wellbeing, namely physical health and autonomy, which are universal and "apply to everyone in the same way" (Doyal and Gough 1993:5). Physical health is conceived as physical survival and the absence of specific disease where disease is defined according to the biomedical model. Autonomy is defined as the capacity to initiate an action through the formulation of aims and beliefs (1993:9). Relationships, more than any other factor, seem to determine what people are able to do or be and what they actually achieve and become (Campbell et al. 2006). They may even influence people's "capacity to aspire" (Appadurai 2004 cited in Campbell 2006:26). "Relatedness" is also highly correlated with subjective wellbeing (Ryan and Deci 2001) and has been shown as a means through which autonomy is

realised (Devine et al. 2006). Partnerships is also considered an essential component of attainment of longer-term human wellbeing meaning people are active not passive participants in determining the destiny of the planet and their inextricably linked personal destiny (Raphaely and Marinova 2006). This again is directly relevant particularly if relatedness is applied to belonging to a global family.

Definitions and experiences of wellbeing are lucidly culturally specific: In the European-American context, happiness has been shown to possibly be more associated with the achievement of personal individuated goals whilst in the East Asian context, happiness seems to be more founded on the realisation of positive social relationships "of which the self is part" (Uchida et al. 2004:226). Thus wellbeing has both significant personal as well as social or relational aspects and judgements are influenced by social and cultural contexts. Accordingly an awareness of the heterogeneity of people's experiences is crucial to any attempt to define or understand wellbeing which is increasingly being understood as a varied experience.

Sirolli (1995) and Coetzee and Graaff (1996) illustrate how revealing the potential and power already within local communities increases levels of human wellbeing by intensifying empowerment, social justice, comprehensive joint decision making, respect for local eco-systems and local social and cultural patterns. This helps the advancement of people through their own endeavours, including freedom of expression and impression. The most important implication from the concept of increased humanness is the understanding of progress, according to the meaning and specific circumstances within which action takes place. Progress is not quantifiably measurable but is instead dependent on a continuous affirmation of meaning and creative interpretation. Essentially, humanness, or the quality of being human, is directly linked to the influence people have on their choices in life. Accordingly, human wellbeing should focus on increasing human freedom from dependence on the "system" or the "megamachine" through uncovering people's own definition. It should not be conceived as a mechanism to improve material circumstances but rather should focus on people's aspirations.

Lastly, but perhaps of most relevance to sustainability as defined for the purposes of this thesis (as the achievement of human and environmental wellbeing), is that research

indicates higher incomes are not necessarily associated with positive appraisals of quality of life. In fact, "poverty and happiness may be unlikely partners, but they are not wholly incompatible" (Camfield et al. 2006:3). In Bangladesh, one of the poorest and most densely populated countries of the world, people seem to enjoy levels of happiness that are higher than those found in other countries including "developed" economies where people have larger per capita incomes and access to a wider range of public services and goods (Camfield 2006). In Bhutan, the new democracy sought a way to combine economic modernity with cultural health and social wellbeing. Consequently Bhutan's self-directed ecomonic challenge focuses not on growth in gross national product (GNP) but rather on growth in grow national happiness (GNH) measured by a Gross National Happiness Index and managed by a Gross National Happiness Commission chaired by the prime minister (Robson n.d.). Gross national happiness -the achievement of non-economic aspects of wellbeing, is given equal or greater importance than economic wellbeing. Bhutan is not a wealthy country – it ranks 124th in the world with a per capita income of about $1400 pe annum (Robson n.d.). Yet in July 2011 the United Nations General Assembly passed a Bhutanese-initiated resolution recognising the pursuit of happiness as a fundamental human goal not reflected in GDP. This recognises the value of reorientating national and global government policies towards wellbeing and happiness (Singer cited in Robson n.d.:66).

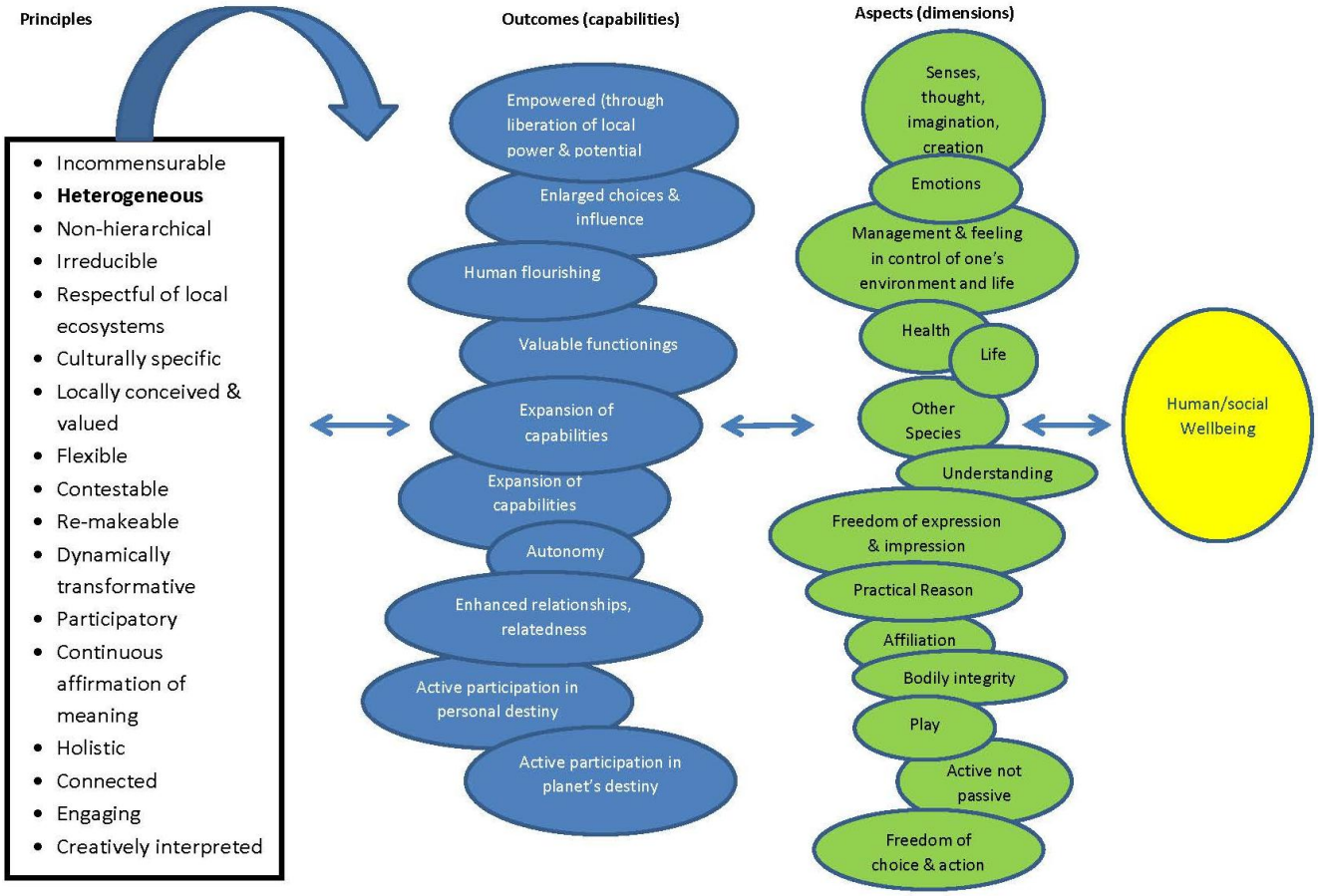
Overall, the relationship between national wealth and subjective wellbeing is weak (Campbell 2006, Schyns 2003) and there is ample evidence suggesting that other sources of wellbeing are equally, if not more, important (Diener and Diener 1995, Rojas 2006).Thus, any possible objective economic indicators of wellbeing, if any may be conclusively agreed on and established, may be used to assess the possibilities and opportunities that individuals have to improve their wellbeing. However, they should not be used to assess or determine achievement of wellbeing itself.

Thus social economic improvement may be seen as a means to potentially but not necessarily improve wellbeing rather than as an end in itself (Costanza et al. 2007). Equally important is an understanding of "basic needs satisfaction" and "adequacy of income" (Campbell et al. 2006:9) based on the "threshold theory" that once people's basic needs have been satisfied, the returns from income in terms of improved quality of life are diminished (Helliwell 2003, Layard 2005). Thus, the development industry's historic and

ongoing focus and emphasis on increasing income and the West's unwavering political adherence to this economic model as the principal method of attaining wellbeing is woefully misplaced and at best misguided. Whilst the instrumental value of income is often promoted, the extent to which economic growth can or does make people happy is neither obvious, nor clear. Thus, for the purposes of this thesis, increasing income and economic growth are seen as valuable only in so far as they enable people to succeed in areas of their life they consider important and to live according to their ideas about what will make them happy (Campbell 2006). Hence they relate to their conceptual referent for a happy life or what they understand by wellbeing (Rojas 2006). They are not, contrary to common definitions and interpretations of sustainability, considered integral or important to the achievement of sustainability defined here as comprising the two considerations of combined human and environmental wellbeing.

For the purposes of this research then, human wellbeing comprises the aspects (dimensions) and outcomes (capabilities) described in Figure 7 and, if partially or wholly achieved, may facilitate the sustainability of both human populations and the planet over time.

Figure 7: Human Wellbeing



Environmental wellbeing

Complex assortments of "deep", "shallow", anthropocentric and biocentric arguments as well as a diverse range of more middle of the road positions have been proposed for what comprises environmental wellbeing.

Shallow ecology essentially treats humans and human activity in isolation from, rather than as part of, nature. This anthropocentric discourse on humans and nature is composed of three strands: the perception that people are separate from nature; the idea that nature is a 'resource' to be used for the benefit of society or individuals (Costanza et al. 1997); and the view that we have the right to dominate nature" (Williams and Millington 2004). In contrast to the deep ecology holistic organic conception of human organisms as nodes in complex biotic webs, within the shallow ecology discourse humankind is seen as a discrete and separate interacting unit. This sharp distinction between humanity and nature, and the denial that the nonhuman world possesses intrinsic value, is characteristic of anthropocentric thought. Shallow ecology assumes an extremely short-term view about the consequences of human actions (Grey 1993).

In contrast, deep ecology, which addresses the complex web of interdependencies supporting the lives of individuals and populations in the biological world, believes the whole system is superior to any of its parts and as such the earth does not exist as a resource to be freely exploited by humans (Naess 1973). It is a direct rejection of the shallow ecology movement which fights against pollution and resource depletion with the central objective of "the health and affluence of people in the developed countries" Naess 1973:96). As such, deep ecology is an attempt to "transcend the short-sighted instrumental pragmatism of the resource-management approach to the environmental crisis" (Salleh 1984:339). The ideological change is mainly that of appreciating *life quality* (dwelling in situations of inherent value) rather than adhering to an increasingly high standard of living (Duvall and Sessions 1984:457). Regarding achievement of environmental wellbeing, deep ecology is accordingly concerned with uncurtailed human behaviour and the uncritical acceptance of anthropocentric values or human chauvinism that abets reprehensible practices to the non-human world. Such attitudes sanction extravagant and reckless interference with the intricate biological interdependencies and life support networks

allowing these to be compromised (Grey 1993). Deep ecology and ecological consciousness are in sharp contrast to the "dominant worldview of technocratic-industrial societies which regards humans as isolated and fundamentally separate from the rest of Nature, as superior to, and in charge of, the rest of creation" (Devall and Sessions 1984:455). A common thread running through most deep ecology discussions is the rationale behind the claim that the nonhuman and natural environment merits the same consideration as the human world, having intrinsic, absolute and inherent value in its own right and not only in terms of its utilitarian worth. Humanity, other than to satisfy vital human needs, has no right to undertake activities that impoverish and degrade the quality of these living systems. According to deep ecology, the wellbeing and flourishing of the natural world and nonhuman life on earth should thus be considered independently of its usefulness for human purposes. "Richness and diversity of life forms contributes to the realisation of these values and are also values in themselves" (Devall and Sessions 1984:456).

Stepping too far beyond the scale of the recognisably human and anthropocentric frame of reference may not be helpful for promoting and encouraging human action towards increasing environmental wellbeing. What thus seems more valuable is an approach aimed at facilitating expansion and enrichment of our individual and collective moral, emotional and knowledge horizons to extend human concern to appropriately consider nature in its entirety across time and species. One of deep ecology's core principles is that "like humanity, the living environment as a whole has the same right to live and flourish" (Environment and Ecology 2012:n.p.). Accordingly, "we should be concerned to promote a rich, diverse and vibrant biosphere in which human flourishing may certainly be included as a legitimate part of such a flourishing" (Grey 1993:n.p.). Such an adjustment of the potentially existentially threatening view of humanity as distinct and separate from the natural world will hopefully facilitate our concern for human well-being to flow and expand into concern for the nonhuman world.

We are increasingly confronted with reasons to reject short term and narrow conceptions of human interests and concerns not so much because of their so called "shallow" focus on the wellbeing of humans, but because they do not really consider enough in what that well-being consists. Beyond contestation, current modes of production prevailing in most parts

of the global economy are causing swift exhaustion of natural resources such as topsoil, groundwater, forests, fisheries, and biodiversity. The rapid depletion of these essential resources, coupled with the degradation of land and atmospheric quality, shows that the human economy, as currently configured, is already inflicting serious damage on global supporting ecosystems and is reducing future potential biophysical carrying capacities. The global ecosystem is finite and has reached a stage where its regenerative and assimilative capacities have become very strained (Goodland and Daly 1996). The period of stability known as the Holocene – which has seen human civilisations arise, develop and thrive – is now threatened by the Anthropocene – the new geological era that has arisen since the start of the Industrial Revolution (Crutzen 2002) for which human actions have become the main driver of global environmental change (Crutzen 2002, Crutzen & McNeill 2007, Steffen et al 2004, Zalasiewicz et al. 2010). The transition from the Holocene into the Anthropocene will largely (although not totally – Greenland for example is currently greening and booming) be to the detriment of humans. The present and likely future course of environmental change seems set to create substantially more losers, globally, than winners (Zalasiewicz et al. 2010:2231). Worse, it may prove catastrophic for large parts of the world (Rockstrom et al. 2009) and at best, less conducive to human wellbeing (Steffen et al. 2007). Without such human pressure, the Holocene was and can still be expected to continue for at least several thousands of years (Berger & Loutre 2002)

Rockstrom et al. (2009:472) identify nine ecological thresholds or planetary boundaries of Earth-system processes which, if crossed, could generate unacceptable environmental change: Climate change, rate of biodiversity loss (terrestrial and marine),interference with nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global freshwater use, change in land use, chemical pollution, and, aerosol loading. They suggest humanity is fast approaching the boundaries for global freshwater use, change in land use, ocean acidification and interference with the global phosphorous cycle and has already significantly overshot/transgressed the boundaries of climate change, rate of biodiversity loss and interference with the nitrogen cycle. Such significant overshooting of these three boundaries cannot continue without significantly eroding the resilience of major components of Earth-system functioning (Rockstrom et al. 2009:473) and challenging the viability of contemporary human societies. Also when any one boundary is transgressed –

then the other boundaries are also under serious risk (Rockstrom et al. 2009:474) although the feedback mechanisms are not fully yet understood. Clearly achievement of environmental wellbeing is precursor to, and determinant of sustainable human wellbeing.

Irrespective of how the discussion unfolds, the Anthropocene represents a new phase in the history of both humankind and the earth – a time when natural and human forces became irrevocably intertwined so that the fate of one determines the fate of the other. Geologically, this is a remarkable episode in the history of this planet (Zalasiewicz 2010:2231). Perhaps for planet earth this is just another incident in a four and a half billion year saga. Life will go on – in some guise or another. However, we should take steps to maintain and preserve our sort of living planet; one that suits us and our biotic co-existents. In order to engage individuals as widely as possible[14], I believe developing and enriching an anthropocentric notion of human interest that replaces the dominant short-term, sectional, self-regarding and ultimately self-destructing conception that currently dominates, will initially be the most successful approach. This PhD research focuses on encouraging steps in the right direction. Whilst ultimately aiming for a complete transformation of the current predominant narrative on nature and the existing dominant discourse on economic progress and development this definition is intended as a first step on a more sustainable journey. The main contribution of this research is examining personal empowerment for sustainability and this requires a people-oriented focus.

Thus environmental wellbeing comprises an individual and collective recognition and awareness that the environment provides vital inputs and supports for all aspects of human and social wellbeing. The continuation of the goods and services, including the aesthetic, provided by natural ecosystems, is a key concern for maintaining human and other life functions. Further, environmental wellbeing requires a rejection of dominion over, and domination of, nature and other species and an acceptance of the amorality of such social power both in terms of present-day ethics and in terms of the legacy left to future generations.

[14] I personally remain more aligned with a deep ecological perspective. Assuming a more anthropocentric perspective is a strategic decision to facilitate an engagement and uptake with as wide an audience as possible.

In this perspective, environmental wellbeing is inextricably linked to individual human and overall social wellbeing and as such may be understood to be both a sustainability issue in its own right and a critical component in achieving and maintaining the wellbeing of humanity.

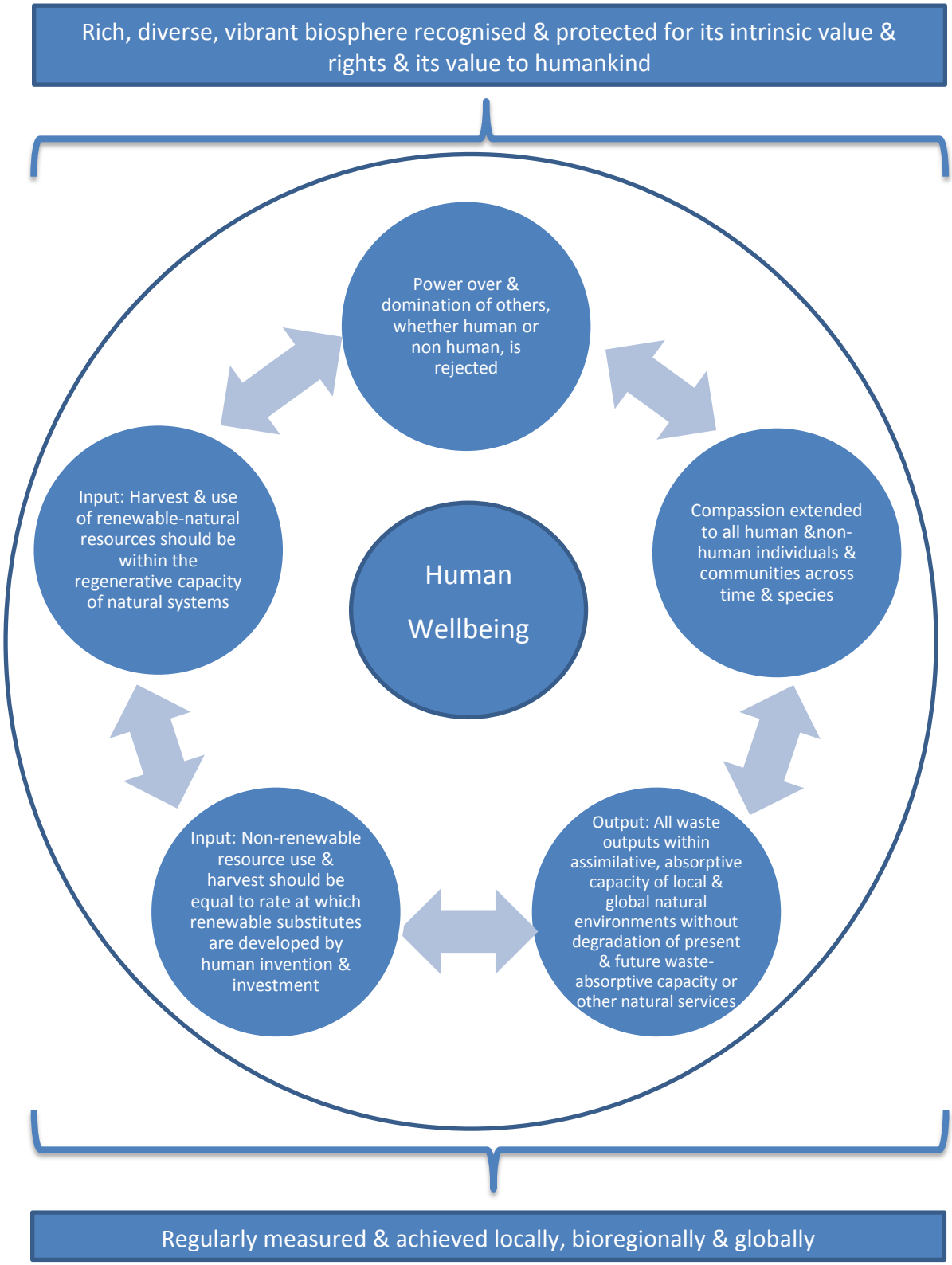
The definition of environmental wellbeing intended for the purposes of this PhD thesis is:

A rich, diverse and vibrant biosphere in which human flourishing is included as a legitimate part and where individuals and societies understand and value nature and all its offerings, extending compassion to nonhuman individuals and populations now and across time and species both in terms of their value to human wellbeing and their intrinsic value and right to exist.

Accordingly all waste outputs and impacts should be within the assimilative, absorptive capacity of the local and global natural environment without degradation of present and future waste-absorptive capacity or other natural services. The harvest and use of renewable-natural resource inputs should be within the regenerative capacity of their natural systems. Non-renewable use and harvest should be equal to the rate at which renewable substitutes are developed by human invention and investment in consideration of the above (namely, without exceeding the assimilative, absorptive capacity of the biosphere or harvesting renewables beyond their regenerative capacity). This is illustrated in Figure 8. Overall, all environmental source and sink functions and services should be maintained unimpaired irrespective of country, sector or epoch including renewable natural resources and non-substitutable, non-renewable natural resources and all net increases in waste emissions beyond absorptive capacity should cease (Goodland and Daly 1996).

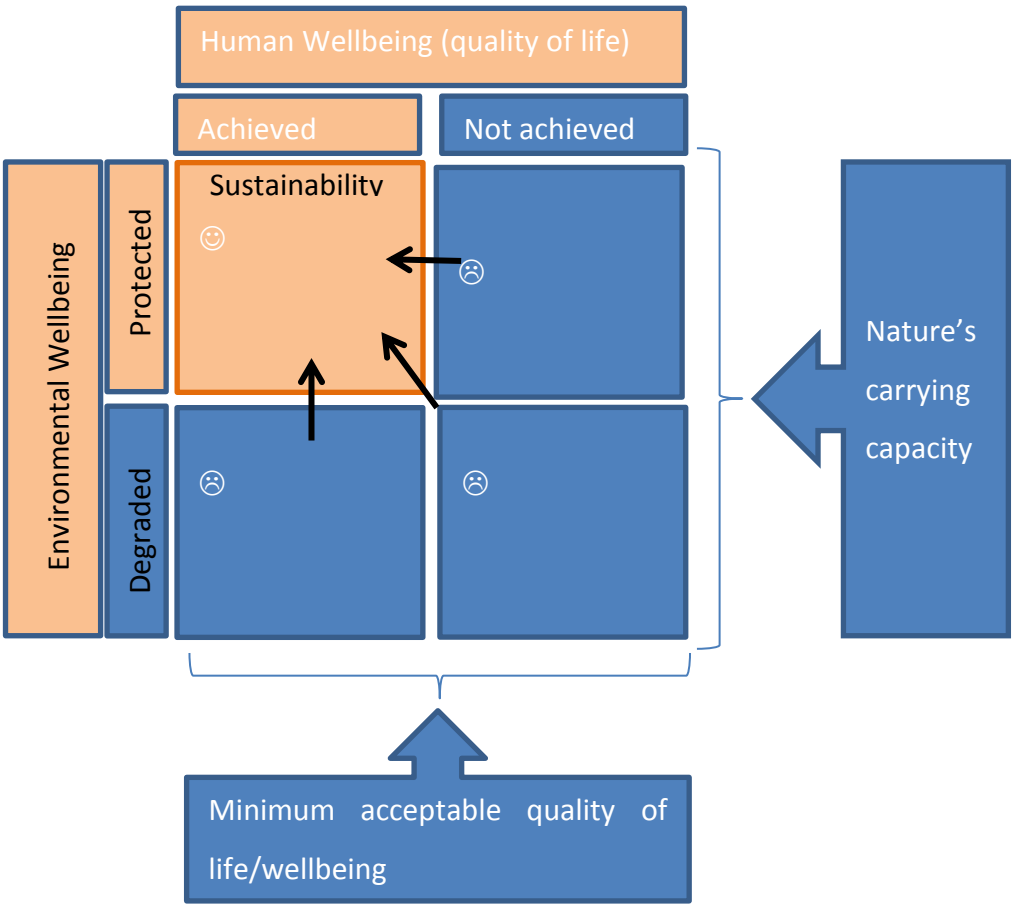
Ongoing consideration of achievement of such environmental wellbeing should be continually measured at the local, bioregional and global scale.

Figure 8: Environmental Wellbeing



Achievement of sustainability may thus be illustrated as shown in Figure 9:

Figure 9: Sustainability as achievement of human and environmental wellbeing



It is only once the inextricably interconnected and interdependent nature of human and environmental wellbeing is understood that the world will be able to start working towards achievement of a more sustainable trajectory. Without this awareness and resulting action, despite all its possible good intentions, the concept of sustainability will remain nothing more than a subset of the western value and economic system, with a number of fatal flaws, which continue to subordinate people and the environment through the concept and possibility of unimpeded and unrestrained economic and material growth.

Achieving sustainability through individual liberation from the current model, which perpetuates economic growth, is ultimately about exercising freedom of choice and action. The responsibility for this lies with the moment-by-moment decisions we make as individuals and collectively (Mann 2011:10). Choice and action amongst the more affluent in the western and developing world are, to a large degree, a factor of transparency, awareness and knowledge. Amongst those in the developed and developing world who

have less choice because of existing socio-economic circumstance, it is about being freed from the disempowerment of western economic discourse and its prerequisite domination that maintains the status quo of inequity and dependence to serve the resource grabbing and financial interests of profit and greed.

Ultimately, realisation of sustainability, defined as achievement of human and environmental wellbeing, is about the liberation of individual potential, opportunity and creativity, locally and globally and irrespective of socio-economic circumstances.

Empowerment

An extensive desk top review revealed no academic literature concerned with the concept or application of individual liberation or empowerment for increasing sustainability. This highlights that the concept has yet to be used or explored in terms of its potential contribution to increasing human and environmental wellbeing. Ultimately, individual liberation through personal empowerment that contributes towards the achievement of a more sustainable world is proposed as the mainstay of this thesis and the solution to countering the ongoing duplicity and perfidy inherent in the global political and economic dominant model. This deceit is responsible for bringing us to this point where humanity and the world are facing an environmental and human crisis of potentially existential proportions.

The world's leaders and policy makers have to date failed to solve any of the sustainability issues confronting this and future generations. On the contrary, the concerns are rapidly escalating and the causes and effects remain almost entirely unmitigated. It is well documented and accepted (Garnaut 2008, Pelletier and Tyedmers 2010, Stern 2006) that destroying the natural environment, forcing species to extinction, perpetuating poverty, global resource grabs and other such economically-driven actions, will cost more in the medium and long-term than can possibly be made through forestry, mining, chemical pollution or industrial processes. Yet national and international political and business vested interests continue to perpetuate the destruction. I refer to this as "the megamachine". In so doing this megamachine continues to maximise short term profit and power while ensuring

that, like national debt, the true costs of its actions, policies and decisions are deferred and transferred to others both in present and future generations.

If sustainability is to become more than a contested concept or meaningless, society should be moving towards a more egalitarian model built on reciprocity, mutual aid, understanding, truth and respect for all life forms. Yet we are prevented from doing so by the misinformation of the dominant profit-driven global discourse. Thus it rests with individuals to take actions, make decisions and enact lifestyle choices that better serve their ultimate wellbeing based on the understanding that “what is good for all of us, is the only true good for any of us” (Mason 2012:137).

The megamachine is defined by indices of financial, political and military strength. In comparison, any people’s counterforce is an “unarmed pauper” but it is none the less indicative of a stirring from below, a “physiological response of the body politic” – a response that everyone one may be part of, even if indirectly (Hawken 2007:25). As Hawken (2007) describes, humanity is older than the oldest forest and its capacity to adapt and restore is vastly underestimated. We are capable of creating a new narrative, a narrative in which a significant portion of human beings are able to find a new series of adaptive traits and stories more alluring that the current ideological fundamentalisms and economic model that have caused so much suffering (Hawken 2006). In the face of the failure of the world’s top-down leadership, a new form of power may offer the most viable and accessible solution, a world that creates solutions to our pressing problems from the bottom up rather than depending on a dominant minority. To this end, individual liberation and empowerment have a valuable contribution.

A desk-top review of the concept of personal empowerment reveals that it is being prolifically considered in academic discussion. As such personal empowerment is explored and discussed here as an avenue and means for explaining personal empowerment and liberation of the individual. The following definition is used as the basis for discussion: "the process of increasing personal, interpersonal, or political power so that individuals, families, and communities can take action to improve their situations" (Gutierrez 1995:229).

The goal of empowerment is the socio-political (Carr 2003) and mental liberation of marginalised individuals and communities. Given the current dependence on global political and industry leaders to show the way to a more sustainable world, and the resulting helplessness in the face of the ongoing and increasing sustainability crisis, individuals may be considered marginalised. Thus they urgently need empowerment that enables liberation from the powerful, seemingly omnipotent international financial and political megamachine. The answer lies in

"winning from the megamachine, broader and broader spaces in which the 'logic of life' can unfold freely, and in making the system compatible – by its orientations, its techniques, the limits of the space it occupies and the restrictions and rules to which its functioning is subject – with that of the free unfolding of life" (Gortz n.d. cited in Audouin 1996).

The notion of personal empowerment (with core concepts rooted in the 1960s social and 1970s self-help and socio-political movements), is relatively new - analytically coming of age in the early 1980s and exploding into multi-disciplinary mainstream practice soon after (Rocha 1997). A psychology literature review between 1974 and 1986 shows 96 articles containing the term and in the six years during 1987 and 1993, this number increased to 686 journal articles and 283 edited book chapters. Other social sciences experienced similar growth of interest in the topic: for example in educational research the number of articles on the topic rose from 66 between 1966 and 1981 to 2,261 from 1982 to 1994 (Perkins and Zimmerman 1995:571). The idea appears academically across a range of disciplines and is frequently used by economists, anthropologists, sociologists, psychologists, educators, health care practitioners and researchers, environmental managers, community workers, political scientists, demographers and those involved in development (Narayan-Parker 2005).

However, it is not used by sustainability practitioners although environmental empowerment (community mobilisation against environmental threats such as industrial plants or negligently operated landfills) features in the literature and discourse. There are also tens of thousands of local, national and international initiatives implemented in many different parts of the world that encourage and call for more sustainable choices. Hawken (2007) documents a "vast and nameless uprising of peoples and organisations fighting for

justice, places, communities, diversity and health – the planetary immune system" (Orr cited in Hawken 2007:n.p.) – the direction humankind is moving in its struggle for survival (Anderson cited in Hawken 2007:n.p.). Yet the concept and value of personal empowerment and individual liberation for increasing human and environmental wellbeing – sustainability – remain conspicuously absent.

Typically empowerment discourse seems to focus on 4 broad areas[15]:

1. Empowerment within the corporate context including workplace, worker/employee, business and management/managerial empowerment, empowerment training and leadership empowerment (which is not directly relevant to this research)
2. Socio-political empowerment including local and community empowerment (often through research, and Participatory Action Research or PAR), empowerment as a mechanism to combat powerlessness, empowerment through development interventions, empowerment against disadvantage, empowerment to combat oppression, gender empowerment (particularly empowerment of women), special interest group empowerment (e.g. youth) and political empowerment, empowerment to combat poverty, economic empowerment (all of which have value in terms of this thesis' purpose being related to components of achievement of aspects potentially related to human wellbeing)
3. Environmental empowerment including grassroots empowerment and community mobilisation against environmental threats such as industrial plants or negligently operated landfills (of value to this research being related to increasing environmental wellbeing)
4. Personal empowerment including psychological empowerment, empowerment for health (which may also be a form of social or community empowerment). This area seems most relevant to this thesis' purpose of increasing sustainability defined as increasing human and environmental wellbeing.

[15]Bennis & Nanus 1985, Burke 1986, Chavis & Wandersman 1990, Conger 1989, Diener & Biswan-Diener 2005, Fawcett et al. 1995, Firesheets et al. 2012, Freire 1970, Khwaja 2005, Mayo 1999, McMillan et al. 1995, Menon 2001, Narayan-Parker 2005, Parker and Price 1994, Perkins 1995, Rappaport 1987, Rich et al. 1995, Rocha 1997, Rowlands 1995, Speer & Hughey 1995, Thomas & Velthouse 1990, Trickett 1984, Uphoff 2005,Wallerstein 1992, Wilson 1996, Zimmerman 1990, 1992.

Most of the above are described through various empowerment initiatives and interventions involving top-down approaches or the creation of partnerships and coalitions - for example of non-profit organisations to bring government and private sector service agencies into cooperative relationships with local communities. Whilst indirectly encompassing the second and third area, this research is only directly concerned with the fourth areas namely personal liberation or personal empowerment.

The process of personal empowerment has been described as having the goal of ridding individuals of the consequences of oppression and, through a process of "humanization" Freire (1970), enabling the discovery of the validity and importance of each person's existence in a way that inspires effort to improve one's socio-political circumstances. To this end personal empowerment entails developing three important constructs namely critical consciousness, positive identity and taking social action (American School Counselor Association 2007, Carr 2003, Gutierrez 1995).

Critical consciousness in this context means an awareness of oppression in society – oppression of the individual and future generations by perpetuation of the dominant profit-driven global discourse supported by international political discourse. Through developing a critical consciousness or awareness, individuals are empowered and liberated to reject the dominant discourse, to be aware of the systemic barriers entrapping them. In so doing, they can recognise their individual power and potential to contribute to a more sustainable world of increasing human and environmental wellbeing. Through developing this understanding of personal power and potential (as a result of critical consciousness) individual actions for sustainability may be validated and people may be inspired to make changes. Critical consciousness leading to positive identity develops perspicacity "which can be described as the ability to see beyond appearances, to 'see through situations, or 'read between the lines'" (Hanna et al. 2000:434) allowing individuals to understand the manipulation, deceit, duplicity and perfidious nature of the global political economic system and thus to reject misinformation, propaganda and misleading messages.

The most important component of personal empowerment is individual social action that results from 'oppressed' individuals (subordinated by the dominant socio-political and

economic discourse) liberating themselves from the psychological and socio-political effects of the unsustainable paradigm. Outcomes, characteristics and values of personal empowerment and liberation include:

- Developed individual potential (Eylon 1998)
- Developed autonomy, self-direction, self-confidence, self-worth and an expansion of freedom of choice and action to shape one's own life (Narayan-Parker 2005:4)
- Transferred power and its impact on empowering individuals (Kanter 1977, 1983)
- Increased intrinsic task motivation (Thomas & Velthouse 1990)
- Enhanced self-efficacy though reduced feelings of powerlessness (Conger & Kanungo 1988) and perceptions (Parker and Price 1994)
- Increased individual determination over one's own life (Rappaport 1987)
- Increased critical understanding of context and environment (Zimmerman et al. 1992)
- Increased democratic participation in community life (Rappaport 1987).

Menon (2001) describes three main dimensions of the experience of the personal empowerment process all of which may also be interchanged, used and understood with the experience of personal liberation namely:

- Empowerment/personal liberation as perceived control
- Empowerment/ personal liberation as perceived competence
- Empowerment/personal liberation as being energised towards achieving valued goals.

Personal empowerment, also sometimes described as motivational empowerment (Conger and Kanungu 1988), refers to the psychological enabling or enhancing of feelings of self-efficacy by removing conditions that foster powerlessness. Power is seen as energy –to empower is to energise (Thomas and Velthouse 1990). Personal empowerment can thus be understood to be increased intrinsic energy and motivation comprising four basic underpinnings: meaning, competence, self-determination and impact. Thus in this context, empowerment is about the internal processes or psychological state of the individual. Diener and Biswan-Diener (2005) further lend weight to this, rejecting behaviouristic and mechanistic positions that describe empowerment as residing outside of people in the

material world. Instead they argue that empowerment must include the causal force of people's beliefs about their efficacy. While certain external conditions may support empowerment and empowerment activity and agency, such externalities alone are not sufficient to achieve anything meaningful (Diener and Biswan-Diener 2005). Individual internal feelings of competence, energy and the desire to act are the prerequisite for positive outcomes of any empowerment initiative. Thus the most important aspect of empowerment or mental liberation is not objective power but *feelings* of power. Accordingly, personal empowerment and liberation may be said to have occurred by evaluating the results, in this case, increasing human and environmental wellbeing, arising from the agency of the person who feels empowered.

However there is a glaring lack of conclusive definition, definitive qualitative or quantitative standards regarding the concept of personal empowerment and liberation probably because measurement to date remains an empirical issue. Additional challenges probably include that personal empowerment is:

- A latent phenomenon – its presence can only be deduced through its action or its results
- A multifaceted rather than unitary concept having many dimensions that do not necessarily move together
- Multi-dimensional - interventions or initiatives may empower and liberate in some respects but not others
- Conceptually complex and methodologically challenging to measure and analyse.

Further, links between causes of personal empowerment, and particular aspects of that empowerment and liberation, are weak and measurement proxies do not necessarily provide a satisfactory answer. Consistency and comparability in the indicators used to measure personal empowerment across social settings also present a stumbling block to conclusive measurement as does reconciling universal perspectives with the realities and values of those whose personal empowerment and liberation are an issue. Lastly, the dynamics of personal empowerment and liberation are linked to all levels of global society including a macro, meso and micro level. It is cultural and relative and does not happen in a

vacuum but rather is always defined in relation to prior status or to others in one's reference group (Narayan-Parker 2005:23) .

Whatever the reasons, personal empowerment and liberation in the academic literature remains "a term that confuses even as it inspires" (Simon 1990:27), there is little shared understanding of the concept (Eylon 1998) and an absence of definitional and conceptual clarity in empowerment research (Menon 2001:155). Yet rather than being a weakness this may be seen as a strength that allows the concept of personal empowerment and liberation to be a continual and ongoing process. Zimmerman (1990) concurs, asserting that any single definition would render personal empowerment formulaic and prescription-like which would contradict the very concept.

Irrespective of the lack of a definitive or conclusive definition, there are some core components directly relevant to an understanding of the intention of personal empowerment and liberation (see Table 2).

Table 2: Core components of personal empowerment and liberation

1. It should be understood as a series of progressions; a change from a previous state to a new state of greater freedom through "the expansion of people's ability to make strategic-like choices in a context where this ability was previously denied to them" (Kabeer 1999:437)
2. It is linked to subjective wellbeing (Diener and Biswan-Diener 2005) when people gain confidence that they have the personal resources, energy and competence to achieve important goals thus encompassing both the objective ability to control one's environment and the subjective conviction that one can do so
3. It has value for intrinsic and instrumental reasons. Intrinsically, having more power over one's own life is valued for its own sake in almost all societies and instrumentally, empowerment also has potential to directly and indirectly impact other aspects
4. It may be said to have occurred when individuals exercise agency with a reasonable prospect of having an influence on sustainability processes and outcomes (agency here implies the actor is able to envision alternative paths of action, decide amongst them, and individually take action to advance the chosen path) (Narayan-Parker

2005)
5. An increase in both the capacity of individuals "to make purposeful choices and their capacity to transform these choices into desired actions and outcomes" (Narayan-Parker 2005:40)
6. An increase in the extent to which people are able to control their own destinies even when the people with whom they interact oppose their interest
7. People are not empowered (or disempowered) in a vacuum but rather relative to other people or groups whose lives intersect with theirs and whose interests differ from theirs, even if only in part (Narayan-Parker 2005:90)
8. It is not only about the gaining of new individual capabilities but also about the emergence of new beliefs about the right to exercise these capabilities and take advantage of possibilities and opportunities
9. Mental space facilitates "power within": "The most important condition for empowerment to take place is an expansion of the person's mental space" (Narayan-Parker 2005:113)
10. Information and knowledge about the power structures within which an individual's life is embedded are critical to unleashing a process of empowerment (and social mobilisation)
11. The notion of synergy is key – where interacting individuals, through creating mutually dialectic interaction, create more through "group synergies" than they could separately (Eylon 1998:20) 12. Synergistic positive outcomes - positive individual outcomes also lead to new enhanced outcomes for society as a whole – societal liberation – defined as the achievement of social change (Torre 1986)
13. The development of new abilities and insights creating boundless personal (and collective) resources (Florin and Wandersman 1990, Zimmerman 1990)
14. "A multi-dimensional social process that helps people gain control over their own lives" (Page and Czuba n.d.: n.p.)
15. A process that challenges assumptions about the way things are or can be and challenges basic assumptions about power, helping, achieving and succeeding
16. It is multidimensional and occurs on numerous levels including sociological, psychological, economic, educational, personal, community, local, national and

	international and societal levels and "helps people gain control over their own lives", circumstances or situations (Page and Czuba n.d.:n.p.)
17.	It is an ongoing, iterative process that fosters the capacity to implement in people "for use in their own lives, their communities and their society by acting on issues they define as important" (Page and Czuba n.d.:n.p.)
18.	The individual and community are fundamentally connected (whether community refers to the local or the global community) (Eylon 1998)

There is growing recognition that individual change is a prerequisite for social and political transformation and personal empowerment and liberation manifests in the synthesis of individual and collective action for change (Chavis and Wandersman 1990, Florin and Wandersman 1990, Speer and Hughey 1995, Wilson 1996). Clearly the wide range of interpretations of personal empowerment and liberation give full scope to the full range of human ability and potential to undo negative social constructs through a personal awareness of having the capacity and right to act and influence. As Bandura explains: "People's beliefs that they can produce desired effects by their actions influence the choices they make, their aspirations, level of effort and perseverance, resilience to adversity, and vulnerability to stress and depression" (Bandura 1998:51).

Personal liberation is concerned with the ability of individuals to be autonomous, to act independently and take control of their own lives (Ranis et al. 2006). Essentially it is a process for individuals to take back their personal power in order to move beyond the dangerous alliances and seemingly unstoppable megamachine of destructive international relationships and discourses and to mitigate the potentially existential trajectory we are all on. Empowerment is both an end in itself and a means to a specific end (Khwaja 2005). It is through the liberation and facilitation of this personal power, and the subsequent individual actions that ensue, that hope remains for the achievement of a more just and sustainable world of improving human and planetary wellbeing. After all, it is "the choices we make now and in the critical decades ahead (that) will set the trajectory of global development for generations to come" (GTI Proposal 2003:n.p.).

"Whether we are aware of it or not, our everyday behaviours and practices are determining our destiny and that of the entire community of life for generations to come" (Keep

Oklahoma Beautiful n.d.:n.p.). Essentially, the future rests in the collective individual empowerment and liberation of all of us and our desire and ability, as a result of such redemption, to counteract the forces perpetuating increasing unsustainability.

Hence the working definition of sustainability adopted for this research is:

Ongoing improvement in local, bioregional and global human and environmental wellbeing achieved through continuous implementation of individual and collective actions and choices that mitigate or avert looming planetary emergencies.

The sections which follow describe the current sustainability challenge and the role of vested interests which exacerbate the problems.

The need for human agency to counteract these trends is then outlined.

THE SUSTAINABILITY CHALLENGE

At first, when it became apparent that the world was headed towards a socio-ecological emergency, it seemed governments and their instruments together with corporations and other agencies were going to rise to the challenge of collaboration to mitigate, side-step and avoid the approaching danger. Sustainability or sustainable development looked set to become a global umbrella and an international rallying call for all the world's leaders to work together to protect the global family and the planet. It seemed this "sustainability ideal" (Ratner 2004:51) and its apparent world-saving offer would transcend the ideological and power battles of the past and build bridges to the future. An apparent broad-based endorsement and acceptance of the concept of sustainability, with all its many definitions (by inter alia, the World Bank, the International Union for Conservation of Nature {ICUN} , most international development agencies, many environmental agencies and the UN), offered hope and apparent opportunity for building world-wide consensus for action and cooperation focused on the imperatives of environmental protection, economic development and social equity. Many expectations lay in the fact that these goals had been characterised as mutually inclusive and reinforcing because this seemed to define a basis for cooperation amongst previously and frequently opposing or competing parties, including governments of the developed and developing world, industry and corporations and the broad spectrum of environmental and local development activists (Ratner 2004).

Today, as testimony to the original optimism born of the sustainability ideal, there are over 10 global environmental agreements 1520 bilateral environmental agreements, 1131 multilateral environmental agreements and 247 other (non-multilateral or non-bilateral) environmental agreements (Mitchell 2002-2012). There are also 197 bilateral environmental non-binding instruments, 211 multilateral environmental non-binding instruments and 98 other (non-multilateral, non-binding) environmental non-binding instruments (Mitchell 2002-2012). Examples of some of the numerous International and multilateral environmental agreements are listed in Table 3. Such a wide, multi-facetted range and number of agreements may create an illusion that the concept of sustainability and its rallying call did indeed provide the basis for consensual, cooperative direction and action amongst historically apposing groups including "mainstream and grassroots environmental

organisations, scientists and political activists, and, First World and Third World concerns and peoples "(Merchant 1992:232). Yet, despite this initial promise, unchanging adherence to the dominant economic paradigm of a world of unlimited material growth and consumption remains firmly entrenched. Little, if anything, has happened to prevent the ongoing subordination of the earth and the world's people by the forces of profit, greed and control. On the contrary, the power of corporations grows ever more pervasive and their sphere of influence ever-wider. Despite the "full knowledge that the world is perched on the edge of an ecological abyss" (Atcheson 2012:n.p.), our leaders continue prioritising economic growth above all else (Hickel 2012, Parsons 2012b).

Table 3: Examples of international and multilateral agreements related to sustainability

Nature conservation and terrestrial living resources
• Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat, Ramsar, 1971 • World Heritage Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris, 1972 • Convention on the International Trade in Endangered Species of Wild Flora and Fauna, (CITES), Washington DC, 1973 • Convention on the Conservation of Migratory Species of Wild Animals (CMS), Bonn, 1979 • International Treaty on Plant Genetic Resources for Food and Agriculture 2001 (previously the FAO International Undertaking on Plant Genetic Resources for Food and Agricultural, Rome, 1983 • Convention on Biological Diversity (CBD), Nairobi, 1992 • Convention to Combat Desertification (CCD), Paris, 1994 • International Tropical Timber Agreement, (ITTA), Geneva, 1994
Atmosphere
• International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties Intervention Convention, Brussels, 1969 • Convention on Long-Range Transboundary Air Pollution (LRTAP), Geneva, 1979 • Montreal Protocol on Substances That Deplete the Ozone Layer, Montreal, 1989[16] (a protocol to the Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985) • International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), London, 1990 • United Nations Framework Convention on Climate Change (UNFCCC), New York, 1992 and the update, the Kyoto Protocol

[16] Considered perhaps the most successful international agreement to date due to its widespread adoption and implementation (The Ozone Hole Inc 2012)and the belief that if adherence continues to the international agreement, the ozone layer may recover by 2050 – (Speth 2004:95). However, although attributable in part to the unusually chilly stratosphere, 2011 saw an unprecedented depletion of the Earth's protective ozone layer above the Arctic – a situation that is likely to continue with the increase in climate change (NASA/Jet Propulsion Laboratory 2011:n.p.)

- Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Aarhus, 1998

Freshwater resources

- Convention on the Protection and Use of Transboundary Watercourses and International Lakes[17], Helsinki, 1992

Marine living resources

- International Convention for the Regulation of Whaling (ICRW), Washington, 1946
- International Convention for the Conservation of Atlantic Tunas (ICCAT) Rio de Janeiro, 1966
- Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), Canberra, 1980

International and regional conventions and agreements concerning the transboundary movements, use, transport and disposal of hazardous waste

- Partial Test Ban Treaty 1963[18]
- Nuclear Non-Proliferation Treaty, Washington, London and Moscow, 1968
- FAO International Code of Conduct on the distribution and use of Pesticides, Rome, 1985
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 1989
- Convention on the Transboundary Effects of Industrial Accidents, Helsinki, 1992
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, Rotterdam, 1998

[17] Also known as The Water Convention

[18] Prohibiting all test detonations of nuclear weapons except underground

• Stockholm Convention Stockholm Convention on Persistent Organic Pollutants Stockholm, 2001
Marine environment – global conventions • International Convention for the Prevention of Pollution of the Sea by Oil, London 1954, 1962 and 1969 • International Convention on Civil Liability for Oil Pollution Damage (CLC), Brussels, 1969, 1976, 1984 and 1992 • Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention), London, 1972 • International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), London 1973 and 1978

Whilst on paper it may appear that there exists a broad framework for moving towards a more environmentally sustainable future, the rich body of treaties, action plans and other instruments has not reversed global ecological decline and almost every biophysical indicator continues to decline. Climate change persists unabated at alarming levels, species extinction is at the highest rate since the end of the dinosaur era, fish populations are crashing and toxic chemicals are accumulating in every part of the planet and in every living organism including humans (Hunter 1999). While the global financial crisis which started in 2008 pales in comparison to the numerous and increasing global biophysical crises, the urgent environmental threats are given little significant by comparison. Governments and their institutions and instruments continue to accomplish mutually reinforcing financial goals that persist in moving the world in an unsustainable direction with little or no redeeming attention given to the relationship between the biophysical crisis and the market economy (Beddoe et al. 2009, Daly 2007).

Consequently, the likelihood of multilateral cooperation to avert impending social and environmental crisis and potentially catastrophic human and planetary consequences seems ever-more unlikely. While there may be some degree of ongoing rhetorical consensus around the most general notions of sustainability it has proven impossible to bridge competing interests, multiple values, value systems and social constructs competing for legitimacy (Ratner 2004). Despite ongoing conferences and global meetings aimed at international collaboration and cooperation to save the world and its people, we are witnessing an increasingly polarized climate of global policy-making. Although on the surface there may appear to be diverse voices and players, the dominant economic-political discourse and supporting institutions act as an insurmountable monolithic force against sustainability.

While the language of sustainability may remain at the centre of global policy and decision-making debates and discussions, translating talk into consensual actions is ever more unlikely. As Garret Hardin (quoting the philosopher Whitehead) described in his famous essay *The Tragedy of the Commons* (1968), the essence of tragedy "resides in the solemnity of the remorseless working of things" (Whitehead cited in Hardin 1968, 2001). In wake of the Rio+20 Conference dubbed an "epic" (Russo 2012:n.p.), "complete" failure (Naidoo

cited in Perera 2012:n.p.) it is unavoidably clear that nothing is changing and the remorseless working of things continues unimpeded leading us ever closer to tragedy.

The failure of the international community to properly address the sustainability challenge can be explained by the enormous difficulties inherent in negotiating with and overcoming vested interests.

VESTED INTERESTS

The situation of ongoing subordination of the earth and the world's people by the discourse and forces of profit and related power networks is not new. For the early days of industrialisation, the interests of finance and profits have given priority over environmental and social wellbeing. This western economic model's domination and ongoing perpetuation has been refined and entrenched so pervasively that it is difficult to imagine any alternative. In this case – in the absence of any other options - the future, with its predicted trends of ongoing and increasing environmental destruction and compromised social wellbeing, may appear inevitably bleak. However, this research and its case study outcomes demonstrate a counter opportunity to vested interests. Before describing the case study findings, it is useful to contextualise the background in which this research is being conducted, a backdrop governed and dominated by geo-political and financial powers (the "megamachine") that render any significant progress towards sustainability seemingly impossible.

Since the first alarm bells sounded about the impending social and environmental crisis, global politicians have continued to exhibit unwavering loyalty to short-term electoral deadlines, traditional economic dictates and corporate masters. Whilst it's now well understood that this adherence to and perpetuation of the dominant economic and political model means they are selling out future generations, what is perhaps less understood is that the maintenance of the status quo and the subsequent rates of deterioration this creates means they are also failing present communities. The primary problem is not a lack of solutions or options but a lack of political will and action (Harvey 2012) and the power and influence wielded by self-serving corporations on government (van Gelder 2011). Behind the phenomenon of government venality, duplicity and timorousness lie powerful oligarchical and corporate forces – relatively small groups of wealthy elite and vested interests that consolidate power and civic duty with no regard for the common good and no sense of civic duty (Parsons 2012). Most of the world's economies and governments are under the control of corporations, which seem to be successfully tightening their grasp in a politically endorsed and sustained corporatization of the world (Hawken 2006, 2007). This global corporatization and its vast reach of political and financial influence is the

megamachine - the alliance and concentration of political, economic and media power that firmly underpins and upholds the existing system founded on unsustainable consumption and growth in order to protect their own political and economic power. This powerful megamachine in no way protects or safeguards the interests of the common or greater good. Rather, its influence manifests in ways that guarantee the continuation and increase of devastating human and biophysical outcomes.

The three case studies of this PhD namely research broadly relate to the areas of food, development and education and research. The characteristics of the vested interests are very similar across these three areas indicating the destructive global power of the megamachine.

- ***Food* -** Concentration of power, manipulation of power, lack of transparency, powerful national and global alliances, westernisation and homogenisation, globalisation, unimpeded access to relatively unprotected resources of the South, ability to act beyond the scope or cover of the legal system, legalised, endorsed cruelty and malevolence, continued enslavement of nature and economic and cultural colonisation of peoples, lack of accountability, financial drive and motivation, promoting a shrinking world for the alleged benefit of the human race, "biostitution" – or corporate junk science used to deceive and manipulate the public (Hawken 2007:59), perpetuation of corporate hegemony and authority is part of the long list of characteristic features of the geo-political and financial powers operating in the food area.

- ***Development* -** Global networks of power, the West as a model of achievement, westernisation and homogenisation, ongoing mapping and production of impoverished communities and societies (Escobar 1995), domination and maintenance of the North-South divide and status quo, entrenched inequity (black/white, developed/underdeveloped, civilised/uncivilised, European/native, parent/child), creating and perpetuating dependence, elitism, conflict generation, consumerism, hunger and poverty, access to cheap, unprotected resources required for profits, protection of the 'development industry' (Crush 1995), continued enslavement of nature, economic and cultural colonisation of peoples as the inputs for economic growth, broken promises, financial drive and motivation, promoting a

shrinking world for the alleged benefit of the human race, perpetuation of corporate hegemony and authority is again only part of the features characterising the actions of the megamachine in promoting development around the world.

- ***Education and Research*** **-** Social engineering, validifying research, maintenance of the economic model and required status quo, shaping education as a tool to help individuals achieve lucrative careers, continued enslavement of nature, economic and cultural colonisation of peoples as the inputs for economic growth, lack of transparency, financial drive and motivation, slow response to urgent environmental challenges, disempowerment, supplying labour for existing corporate needs and requirements in order to further dependence and compliance, "biostitution" – or corporate junk science used to deceive and manipulate the public (Hawken 2007:59), sustainability as a conspiracy against capitalism, a form of fascism, rationalist, reductionist, mechanistic, anthropocentric, instrumental reasoning, devoid of spirituality, compartmentalisation of life and its various processes, manipulation of facts, humans in opposition to nature, shrinking world for the alleged benefit of the human race, perpetuation of corporate hegemony and authority are yet again some of the dominant characteristics of the western educational and scientific input for the functioning of the megamachine.

Below are some examples, past and present, of the destructive use of control that has prevented achievement of meaningful advances in this area. The last part of this section describes how this trend is likely to be extrapolated into the future if the status quo continues unchallenged.

Past Examples

Examples of the devastating asymmetry between corporate and civil and environmental rights abound from the outset of the industrial revolution[19]. A more recent illustration is the expose, in *Silent Spring* (Carson 1962), of the human and environmental poisoning caused by the aerial spraying of DDT over Long Island and New England by the United States

[19] These include child labourers, without any form of locus standi, in the early nineteenth century subjected to appalling working conditions, common accidents and early death from work-place related diseases.

Department of Agriculture (USDA). This industry-supported, government-sponsored initiative, an attempt to eradicate fire ants, gypsy moths, caterpillars and mosquitoes, resulted in the widespread killing of fish, birds and animals as well as causing cancer and other diseases in human beings (Carson 1962). Carson's spotlight on the "barrage of poison on the surface of the earth" which made it "unfit for all life" (1962:2) invoked the wrath of big business and government who, rather than respond with attempts to mitigate or change a visibly dangerous initiative, embarked on condemnation, assaults and mockery. *Silent Spring* stands historically as one of the first challenges, albeit perhaps unintentionally, to the notion of corporate hegemony and authority, highlighting the historic struggle between human and commercial rights. The arsenal of techniques and approaches developed and refined to destroy Carson's reputation and credibility in order to protect vested political and economic interests continues to be used today, in ever more sophisticated ways, with seemingly plausible and reasonable claims widely accepted (see Box 1).

The Bhopal gas leak and related human and environmental calamity offers another example where corporate rights and interests were prioritised and safeguarded despite the visible costs and consequences (see Box 2).

Whilst the scale and circumstances differ, both Carson's *Silent Spring* and the Bhopal Tragedy, and the political and industrial responses they invoked, are situations duplicated, not only in recent history but ongoing in the present day with ever-increasing sophistication in many areas where large corporations operate in the developed and developing world including in the United States, United Kingdom, Australia, Africa, Asia, South and Central America.

Box 1: Carson's *Silent Spring*: The start of the environmental movement against the megamachine

Rachel Carson's *Silent Spring*, exposing the human and environmental impacts of uncontrolled spraying of chlorinated pesticide, in particular DDT, called for reduction and elimination of this class of pesticides in agriculture. The book appealed for social and environmental justice pointing out that the' "war" corporations were "waging against nature" (1962:2) was inevitably a war against humankind itself. This claim created an uproar that has never truly subsided and, in all likelihood, was the seminal confrontation that started corporations and governments on the road of marginalising any social and scientific data that conflicted with their financial interests and goals. Strategies and techniques developed and used to destroy Carson's reputation and credibility have since been refined, perfected and implemented to consistently counter social or environmental movements that may operate contrary to industry profit and government power interests. Some examples follow below:

1. Countering troubling evidence by foreshortening time

This often-used technique, familiar to present-day environmental and social advocates, is industry's strategy of emphasising imminent problems over long-term concerns (Hawken 2007). Carson hypothesised, for example, that it would take a century for the full effects of pesticides to be seen. In response pesticide makers warned of devastating, widespread crop losses that would occur the next planting season. In 1997, when Kyoto was being negotiated, this technique was used by the automobile and fossil fuel industry who sponsored far-reaching advertisements showing people forced into dangerously small cars or having no fuel at all. There are numerous other ongoing examples of foreshorting, including government and industry's warning of immediate, widespread job losses and increased monthly household expenses to counter proposed carbon taxes and other related carbon mitigation plans and proposals.

2. Undermining science on an emotional level

Unable to counter the claims of social and environmental advocates with facts, food producing giants, the pest control industry, agribusiness, chemical companies and government agencies such as the USDA, worked separately and together to destroy Carson's credibility and to frame the use of chlorinated pesticides as a security issue namely safeguarding the nation's food supply to prevent famine and hunger: "The real threat, then, to the survival of man is not chemical but biological, in the shape of hordes of insects…" depicted as being everywhere and universal –in every home, field, beneath the waters and even inside people (Monsanto 1962). A similar tactic is currently used by those corporate and political spokespeople who suggest the

3. Personal discrediting

Misogyny was a subtext in the denigrating of *Silent Spring*'s claims with the following commentary in the *Archives of Internal Medicine*: *"Silent Spring,* which I read word for word with some trauma, kept reminding me of trying to win and argument with a woman. It can't be done." (Lear 1997:429). Time Magazine called it "an emotional and inaccurate outburst" (cited in Hawken 2007:55). The National Agricultural Chemicals Association – the pesticide industry trade group – spent several million dollars refuting her claims and assured that DDT would disappear from the human body within 90 days. It denounced *Silent Spring* as "more poisonous than the pesticides she condemned" (cited in Hawken 2007:55). Monsanto, already a $1 billion company, chose instead to mock Carson, parodying her style in its company magazine. The same strategy continues to be meted out today to scientists and advocates. For example those who question the social and environmental safety of GM foods are accused of presenting one-sided arguments that ignore other so-called enormous benefits, such as increased food production and decreased incidence of diseases (Hickman 2012). During an Australian Senate hearing following the expose of Australian cattle being mistreated in Indonesian abattoirs, a senator stated that the temporary suspension of the $320 million-a-year live-trade industry was based on a lie and that, the incidents reported were not true reflections of reality as the meat workers in Indonesia had been bribed (Franklin and Rout 2011:n.p.). "Inconsistent arguments" and "not proven" are also regularly used strategies along similar lines (Meyer 2010:n.p.)

4. Biostitutoin

Carson's *Silent Spring* was one of the first documents to publically critique what has become known as corporate junk science –a tactic also dubbed "biostitution" (Hawken 2007:59). This strategy is regularly employed by global warming sceptics who provide alternative junk scientific to counter climate change science or to show it is unproven (Bolt 2009:n.p.)

5. Falsifying

As if to underline the ongoing entrenchment and perpetuation of vested interests, right on cue, the Cato Institute, a think-tank partially funded by ExxonMobil (see Appendix 2) released a book *False Crises of Rachel Carson: Silent Spring at 50*. The book shows that Carson "cost hundreds of millions of lives and elicited antagonism towards many products and technologies that could have benefited the planet and its inhabitants" (cited in Meiners et al. 2012:n.p.).

Box 2: The Bhopal Disaster – The world's largest ongoing industrial disaster

The gas leak incident in India considered "the world's worst industrial disaster" (BBC 2010:n.p.), delivers another sad illustration of the ongoing conflict between human and environmental rights and corporate and industry rights. Whilst Bhopal may seem ancient news for most, it remains a daily reality for the hundreds of thousands of people who lost family members or became chronically disabled. Some 3,500 people died within days, more than 15,000 perished in the years since (campaigners put the death toll at 25,000), and the effects of the gas continue to this day (BBC 2010:n.p.). At least 100,000 people have sustained persistent injuries, debilitating illnesses and disabilities from gas inhalation including birth defects and diseases of the lungs and eyes (Ansell and Tinsley 2011).

The explosion and leak occurred because human and environmental concerns were side-lined, legal corners were cut, and safety standards were sidestepped to allow cheap production and export of pesticides (Hawken 2007). Essentially, Union Carbide had the rights to operate without any prerequisite social, environmental or legislative accountability. Yet the company has done everything to minimise the consequences to itself and, in so doing, has maximised the impact on its victims.

Twenty-one years Union Carbide and its new owners later have still not disclosed the nature of the chemical releases or their toxicity thereby rendering medical treatment frustrating and difficult (Hawken 2007:63). Further, Union Carbide chose India as the juridical venue for litigation because damage awards are considerably smaller there than in the USA. Victims were never consulted (the all-inclusive settlement arrangements amounted to less than US $ 1000 per plaintiff) (BBC 2009:n.p.). The money agreed was sufficient only to build a hospital to provide care for those who survived but would never work again, and no person under 18 was allowed to file a claim (Hawken 2007:64).

Although Bhopal has an unusually high incidence of children with birth defects and growth deficiency, as well as cancers, diabetes and other chronic illnesses, not only among survivors of the gas leak but among people born many years later, Dow Chemicals (which bought Union Carbide in 1999), says compensation payments made to the Indian Government over 22 years ago (less than a tenth of the amount the Indian government requested) represents full and final settlement of Union Carbide's liabilities (BBC 2009). Studies undertaken by Greenpeace and the Centre for Science and Environment in India show soil, groundwater, well-water and vegetables in and around the plant site and in the residential areas up to 3.5 km from the Bhopal site leak are highly contaminated with toxic heavy metals, chemical compounds pesticides and chlorinated benzenes many of which are

Present Examples

The ongoing corporate and political duplicity that continues to subordinate human and environmental wellbeing may be seen in the funding distributed by ExxonMobil, one of the principal funders for the oil and automobile industry campaign the Global Climate Coalition – "a voice for business in the global climate debate" (Hawken 2007:65). ExxonMobil, the world's largest publicly traded international oil and gas company, explores for, produces and sells crude oil, natural gas and petroleum products. The company self-describes as "providing energy that helps underpin growing economies and improve living standards around the world" and has an organisational structure built on the concept of "global business" in order to allow the organisation to "compete most effectively in the ever-changing and challenging worldwide energy industry" (ExxonMobil 2012:n.p.). ExxonMobil, which is known to have forbidden the use of the word sustainability in all its internal and external communications, operates facilities, or markets products, in most of the world's countries and explores for oil and natural gas on six continents. A list of a handful of the organisations and government bodies ExxonMobil funds is offered in Box 3 to illustrate the extent and reach of the company's influence. These are examples of over 200 so-called think-tanks funded by ExxonMobil to delay or fight policy on CO2 reduction, to corporatise science and create scepticism and cynicism about efforts to mitigate climate change (other organisations receiving ExxonMobil funding are listed in Appendix 2). All these academic, economic and political organisations have been selected and funded by ExxonMobil to the amount of $22,123,456 since 1998 (Greenpeace n.d.:n.p.). All in one way or another are credibly denying the science and impacts of climate change. Also all (albeit some more transparently than others) support the discourse and doctrine of unlimited economic growth and freedom as the ultimate vehicle for achieving environmental and social/individual wellbeing. Interestingly, ExxonMobil has consistently had the largest global corporate earning of all time in 2003, 2004, 2005, 2006, 2007, 2008 and 2011 (ExxonMobil 2003, 2004, 2005, 2006, 2007, 2008, 2001, Business Wire 2012).

Box 3: Organisations receiving ExxonMobil funding – selected examples of corporate influence

- Accuracy in Media (AIM) - self-describes as being "a non-profit, grassroots citizens watchdog of the news media that critiques botched and bungled news stories and sets the record straight on important issues that have received slanted coverage" (Accuracy in Media 2012:n.p.)
- Competitive Enterprise Institute – they "make the uncompromising case for economic freedom because we believe it is essential for … prosperity to flourish" (Competitive Enterprise Institute n.d.:n.p.).
- Accuracy in Academia - "a non-profit research group…wants schools to return to their traditional mission – the quest for truth. To promote this goal, AIA documents and publicises political bias in education..." and focuses on "the use of classroom and/or university resources to indoctrinate students; Discrimination against students, faculty or administrators based on political or academic beliefs; and Campus violations of free speech" (Accuracy in Academia n.d.:n.p.)
- Acton Institute for the Study of Religion and Liberty (2012) - their core principles include "Integrating Judeo-Christian Truths with Free Market Principles" (Acton Institute 2012:n.p.)
- The Advancement of Sound Science Coalition - founded by Philip Morris "for the express purpose of generating scientific controversy regarding the link between second-hand smoke and cancer" (Rampton and Stauber 2000)
- US Russia Business Council - "provides market intelligence services to its American and Russian member companies" (US Russia Business Council n.d.: n.p.)
- American Council on Science and Health –their stated goal is to "bring common sense back into the public health debate" and their list of other corporate funders includes the American Meat Institute, ALCOA Foundation, American Cyanamid Company, Ashland Oil Foundation, Burger King, Chevron, General Motors, Ford Motor Company, Merck Company Foundation, Monsanto Fund, National Agricultural Chemical Association, The National Dairy Council, National Soft Drink Association, Pfizer inc, Procter and Gamble Fund, Shell Oil Company Foundation, Sterling Drug Inc., Union Carbide Corporation (of the Bhopal disaster) and Uniroyal Chemical Co. (Seventh Annual Report 1984)
- American Legislative Exchange Council (ALEC) - "works to advance the fundamental principles of free-market enterprise" (ALEC 2012:n.p.)
- American Recreation Coalition - catalyses "public/private partnerships to enhance and protect outdoor recreational opportunities and the resources upon which such experiences are based, conducts regular research, organises, conducts and presents at national conferences and meetings, disseminates information through a variety of media, works with government agencies and the US congress to study public policy issues that will shape future recreational opportunities and monitors legislative and regulatory proposals" (American Recreation Coalition 2008).
- Aspen Institute - an educational and policy studies organisation fostering leadership based on enduring values to provide a venue for dealing with critical issues (The Aspen Institute 2012)
- The Arizona State University Office of Climatology - known for, and associated with others also known for denying the impacts of global warming and promoting the message that global warming is good for the planet (Greenpeace n.d.).

Additional local, national and international recipients of ExxonMobil funding are listed in Appendix 2.

Influential and powerful organisations such as the World Trade Organisation internationally protect and serve business interests, working unceasingly to promote and defend such concerns as well as to remove or undo any restrictions on global corporate opportunity. There is however no equivalent organisation that addresses global corporate responsibility

or any leading body that globally seeks to promote or protect social and environmental interests.

The ETC Group, which has been monitoring global corporate mergers, acquisitions and ownership trends for 30 years shows that the result of such business interest protection creates a trend line that remains steady and unchallenged: more monopoly everywhere. This relentless drive of increasing global corporate power continues unchecked with some of the global control and domination implications listed below:

- Ten multinational seed companies control 73% of the world's commercial seed market (up from 37% in 1995) (ETC Group 2011:22)
- Ten pesticide firms control 90% of the global pesticide market (ETC Group 2011:25)
- Ten companies control 76% of animal pharmaceutical sales[20] (ETC Group 2011:34)
- Ten animal feed companies control 52% of the global animal feed market[21][22] (ETC Group 2011:33)
- Ten chemical firms account for 40% of the chemical market (ETC Group 2011:11)
- Ten forestry companies control 40% of the forestry market (ETC Group 2011:31)
- Ten mining companies control a third of the mining market (ETC Group 2011:29),
- Ten energy companies control a quarter of the energy market (ETC Group 2011:10).

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[20] These 2009 figures do not reflect the more recent consolidation trends. However, more recent figures are not available. For example, in March 2010 Merck & co., Inc. and Sanofi-aventis announced a new joint venture, equally owned by Merck and Sanofi-aventis, to create the largest seller of animal drugs and vaccines in the world – overtaking number one ranking Pfizer (Intervet 2010).

[21] Perhaps more globalised than any of the other top-ten sector industries, the companies that buy and sell animal feed reflect seismic demographic shifts in livestock production, soaring demand for meat/farmed fish and the colossal market power of emerging markets. The world's largest feed-producing conglomerate is CPF of Thailand, which is expanding in Russia, parts of Africa and India. Three of the top ten animal feed companies are based in China and Brazil is home to the world's sixth largest firm (ETC Group 2011:33). All of these countries have significant poverty and hunger considerations yet are shipping their grain, and the embedded natural resources entailed, to the west

[22] There is no top ten list for the livestock genetics industry, the companies that control breeding stock for commercial poultry, pigs and cattle. This is because this industry sector is dominated by just three or four breeders that dominate the global market for each major industrial livestock species. For example, just four chicken breeding companies control all global commercial poultry breeding stock. Just three companies control the global market for layer hen genetics. Tyson Foods, Inc. is the world's largest processor and marketer of chicken, beef and pork, operating in 90 countries and contracting 5, 835 farmers to grow its animals. Tyson also owns Cobb-Vantress, making it one of the four companies that control the world market for broiler genetics (In 2010, the company slaughtered over 42 million chickens, nearly 144, 000 cattle and nearly 400,000 pigs per week) (ETC Group 2011:35)

Another manifestation of widespread human and environmental control is documented by Klein (2007) who shows human-made crises such as the Falklands war and the war in Iraq were deliberately created with the intention of maximising global profit for a small elite. The same doctrine was applied in Poland, Russia, South Africa and to the tiger economies during the 1997 Asian financial crisis (Klein 2007). It continues to be propagated by economic institutions such as the World Bank and the International Monetary Fund: "Neocons see the ideal ratio of super-rich to permanent-poor as consistent with an uber-class of business oligarchs and their political cronies from the top 20%" (cited in Clonan 2007:n.p.). The remaining 80% of the world's population, the "disposable poor", would subsist in "planned misery" unable to afford adequate housing, privatised education or health care (Clonan 2007:n.p.). According to Klein (cited in Amidon 2007:n.p.) big business and politics use and create global disasters for their own ends.

Future Projections

There seems no limit to the expanding domination of the vested interests inherent in the political and industrial alliance steering the direction of the world. Alarmingly, a green economy – which promises to solve the problems and threats of peak oil, to arrest climate change and to facilitate sustainable development, is widely being promoted and supported by these corporatocracies as the key to humanity and the planet's survival. Proponents envisage a post-petroleum future where industrial production (of plastics, chemicals, fuels, drugs, energy etc.) depends on biological feedstock, rather than on fossil fuels, transformed through high technology bioengineering (ETC Group 2011). However, the greatest storehouse of terrestrial and aquatic biomass are located across the global South, safeguarded primarily by local farmers, livestock keepers, fisher folk and forest people whose livelihoods depend on them. Further subordination of these people will be required to ensure corporations and their governments are able to access the desired raw materials and resources. Already the world's largest companies are creating "new constellations of corporate convergence around diverse industry sectors" (ETC Group 2011:ii). For example, Dow Chemical, Unilever, Chevron, Bunge Ltd, the US Navy and Department of Defence, and Japan's San-Ei Gen, France's Roquete Freres are partnering with synthetic biological company Solazyme which defines its market areas as fuels, chemicals, nutrition and health

sciences and "specialises in transforming low cost plant sugars into high-value renewable oils" (ETC Group 2011:ii).

The so-called "green economy" is lending support to and driving new, even more powerful corporate alliances and creating new constellations of corporate power. According to ETC Group (2011) the major players include big energy companies (British Petroleum, Chevron, ExxonMobil, Shell and Total); Big Pharma (Roche and Merck); big food and agriculture companies (Cargill, DuPont, Monsanto, Procter & Gamble, Unilever) and big chemical companies (BASF, Dow, DuPont). Thus the green economy may just be another way to placate populations whilst securing ever-growing and more powerful and pervasive global corporate and political domination that attends to the profitability and vested interests of the handful of powerful corporate and political players served by the current economy[23].

Consequences

The reasons for this ongoing and ever more alarming failure to achieve political and economic consensus and cooperation leading to increases in sustainability are discussed at length in the academic literature. They are summarised in Table 4.

[23] In sharp contrast to the centralised control of industrial livestock genetics, an estimated 640 million small farmers and 190 million pastoralists raise livestock and over centuries, have developed thousands of genetically diverse animal breeds which contain crucial traits such as disease resistance, high fertility and the ability to thrive in harsh conditions that are proving essential genetic attributes for adapting to and surviving climate change (ETC Group 2011:36). Yet the FAO estimates that 20% of these 7,616 unique farm animal breeds, are at risk of extinction thanks largely to the growth of industrial livestock production and the worldwide reduction in the number of breeding companies via buy-outs. During "the last six years, 62 breeds became extinct – amounting to the loss of almost one livestock breed per month" (FAO 2007:5).

Table 4: Reasons for ongoing unsustainability

1.	Short-termism: the planet's leaders operate within short time frames such as the next election, preventing them from experiencing societal solidarity with future generations and present human forces
2.	The absence of achievement of a global unifying vision (primarily due to the domination of the global agenda by those with vested interests)
3.	The lack of a mutually recognised and cherished good (again largely due to those seeking to maintain their economic and political vested interests)
4.	The absence of achievement of a single accounting framework
5.	The lack of technical consensus
6.	The absence of the necessary political will (not least because politicians are funded or on the boards of industries whose interests are served by ongoing maintenance of the status quo)
7.	Competitiveness and a dominating economic paradigm that prioritises private market goods and services at the expense of public goods and social and environmental wellbeing
8.	The absence of a single global unifying sustainability ethic or morality (ethics consensus)
9.	The lack of sufficient shared sustainability-based values or current economic/capitalist values compromise
10.	A lack of urgency amongst global leaders (not least again because of the skewed science paraded as fact by industry funded research bodies and think tanks)
11.	Failure to properly price natural resource use and the market's inability to tackle inequity
12.	Selfish nationalist thinking
13.	Venality and duplicity
14.	Timorousness and cowardice
15.	The fact that these sustainability crises are wicked problems – issues with large complexity, great uncertainty and high stakes
16.	Little may be achieved by addressing each of the symptoms (such as deforestation, global warming, soil and water pollution etc.) - the root causes need to be addressed
17.	The absence of consensus regrading a holistic and mutually reinforcing view of sustainability and what comprises human and environmental wellbeing
18.	Lack of political will due to few incentives: policies, politics and institutions disproportionately reward the short term. In other words, the policy dividend is long-term, often intergenerational, but the political challenge is often immediate
19.	Most economic decision makers still regard sustainable development as extraneous to their core responsibilities for macroeconomic management and other branches of economic policy
20.	Sustainability discourse focuses on uniformity and order, organising the future into resources, energy, populations, towns and cities, with little or no place for multiplicity, difference or plurality
21.	The concept of sustainable development has not yet been incorporated into the mainstream national and international economic policy debate … economists, social activists and environmental scientists simply talk past each other –almost speaking different languages, or at least different dialects
22.	In academic and popular discourse, sustainability is promoted against a background of

	sustaining a particular set of social relations by way of a particular set of ecological projects ensuring that the debate about population, ecological limits, biodiversity and resource scarcity is ultimately a debate about the preservation of a particular social order rather than a debate about the preservation of nature per se
23.	The ongoing belief that better technology and management and better procedures by international institutions like the World Bank and the World Trade Organisation can save the world
24.	Rather than reshaping markets and production processes to fit the logic of nature, sustainable discourse uses the logic of markets and capitalist accumulation to determine the future of nature
25.	There is broad consensus that growth and wealth must continue to be created but without resource depletion – yet exactly how this is to be achieved remains a mystery
26.	Governments and institutions are responsible for determining what is legitimate and this power to determine legitimacy is firmly entrenched and upheld with customers, employees and other stakeholders made to believe they are not empowered to withdraw legitimacy
27.	Lack of corporate and government public accountability and transparency
28.	Sustainable development, like development, is managed through ethnocentric, capitalist notions and has becoming corporatised namely that something can only be deemed sustainable if it is profitable and can be transacted through the market

Source: Compiled from Atcheson 2012, Banerjee 2002, Beddoe et al. 2009, Chasek et al. 2010, Chasek and Wagner 2012, Clapp and Dauvergne 2005, Dauvergne 2005, Harvey 1996, High-level Panel on Global Sustainability 2011, Juma 2002, Kutting 2010, Parson 2012a, 2012b, 2012c, Princen et al. 2002, Ratner 2004, Redclift 2000, Rotmans and Kemp 2003, Sacks 2009, Shiva 1991, Watts 2012.

All of the reasons for ongoing sustainability can be condensed under the canopy of blind adherence to economic growth, an adherence underwritten and continually founded on industrial and political venality despite the availability of information regarding the negative, potentially existential implications. Maximising profits and power through the possibility of infinite growth makes corporations do whatever works to sell products, including lobbying governments to eliminate economically unfavourable regulations, co-opting experts by supporting professional organisations and research and expanding sales by marketing directly to children and the more vulnerable (Nestle 1999, Hawken 2007). They also dominate the development industry to maintain western influence and access to the resources of the South. Even science, health and education can be manipulated to serve the interests of the powerful corporate sector. Universities, educational institutions, researchers and members of the public are often forced to pursue industry support, consciously or

unconsciously contributing to profit maximisation (Bok 2003, Slaughter and Rhoades 2004, Washburn 2005).

The outcome of this past, present and future pursuit of economic growth through perfidious, unimpeded, unrestrained and unrestricted resource extraction and economic expansion is essentially extinction of species and cultures. Other sub-impacts include:

- Global systems of extraction including land, water and natural resource grabs by powerful foreign financial corporations and interests that devastate poor communities and are subsidised by the most vulnerable nations presenting an ongoing threat to the subsistence of fisher folk, pastoralists, farming communities, indigenous peoples, rural populations and small farmers everywhere (GRAIN 2012);
- The lack of meaningful financial reforms in the financial industry despite the phenomenal unavoidably clear failure of international banks that led to the world system failure known as the Global Financial Crisis and the subsequent and ongoing colossal government bail-outs. These amounts could have wiped out the last traces of poverty, hunger, malnutrition and squalor from the face of the Earth - if only our global leadership prioritised the poor with the same level of urgency as the financial crisis (Sharma 2008);
- The immense subsidies paid to the fossils fuel industry and other global destructive industries despite the critical need for transferring support to cleaner or more sustainable alternatives (Conlin 2012, McKibben 2012);
- Global human health deterioration and decreasing rather than the alleged increasing human wellbeing (Appleby 1999, Barilla Center 2012, Cross et al. 2007, Fox 2007, Gardner and Halweil 2000, Henning 2011, FAO 2006, Ayers 1999, Moritz 2009, , Ornish 2012, Popkin 2001, 2009, Stone 2011, USDA 2011, WCRF/AICR 2007, WCRF 2011/2011a, WHO 2003);
- An education system that reinforces the status quo promoting economic and material growth, wellbeing and progress, and enforces the existing state of affairs by impeding truth and stifling academic freedom leading to decreasing human and environmental wellbeing (Best and Nocella 2006, Evans 2009, Freir 2004, Grigorov 2009, Humes 2008, Kahn 2008, 2010, Manteaw 2008, Spretnak 1999);

- Consumerism - what makes people happy is no longer clear (Campbell 2006, Campbell et al. 2006, Costanza et al. 2007, Diener and Diener 1995, Helliwell 2003, Layard 2005, Rojas 2006, Schyns 2003).

Case Study Background

The essence of this thesis is in nine publications in three distinctive areas that are laden with vested interests. Below is selected evidence of this.

- Food

The global livestock sector offers an excellent illustration of the work of the megamachine. A case in point is the response to the United Nation's Food and Agricultural Organisation's (FAO) claim (FAO 2006) that livestock's emissions internationally exceed global transport emissions. Numerous credible researchers and environmental authorities have shown FAO's calculation to be an underestimation rather than an overestimation (Fazeni and Steinmueller 2011, Garnett 2009, Goodland 2010a, 2010b, Goodland and Anhang 2009, Henning 2011, MacMillan and Durant 2009, Pelletier and Tyedmers 2010, Posner and Weisbach 2010, Stehfest et al. 2009, Wirsenius et al. 2011). Three years after the FAO report, Goodland and Anhang (2009) deemed the 18% figure to be far too modest a calculation and showed that livestock production's overall contribution was closer to, or exceeded 51% of total to anthropogenic GHG emissions – making the industry by far the single biggest sectoral contributor to global climate change[24]. Simply replacing 25 percent of today's livestock production with plant-based analogues and alternatives would achieve a 12.5 percent global greenhouse gas reduction – the same reduction negotiators tried but failed to achieve at Copenhagen (Goodland 2010). Further, just one percent reduction in worldwide meat intake would have the same benefit as US$3 trillion in solar investments (Menzel cited in Goodland 2010:51).

[24] Goodland and Anhang (2009:11) show that 25,048 million tons of C02e attributable to livestock have been undercounted or overlooked: of that subtotal, 3,000 million tons are misallocated and 22,048 million tons are entirely uncounted. Uncounted, overlooked and misallocated livestock-related GHG emissions include respiration by livestock (13.7% of worldwide total), overlooked land use – for both livestock and feed production (≥4.7% of worldwide total), and undercounted methane (7.9% of worldwide total).

Livestock dying from drought in Kenya have been proposed as possibly the first ever source of violent climate conflict (Jha 2009) and that overall, the most harm to crops and livestock will occur in countries where people can least afford it. Overall, it is forecast that 80 percent of harm caused by increasing levels of atmospheric carbon will occur in developing countries, although they contribute only about one-third of GHG emissions (Goodland 2010:51).

Yet, rather than recognize or acknowledge and attempt to mitigate the existential threat the ongoing growth of this sector presents to humanity and the planet, the livestock industry has launched a counter campaign to contradict the science and overturn the findings in order to continue to perpetuate meat production and consumption. They've coopted academia by appointing an academic as chairman of a FAO-led partnership to "improve how the environmental impacts of the livestock industry are measured and assessed" (Webster 2012:n.p.). Other participants include the American Feed Industry Association (AFIA), the International Feed Industry Federation (IFIF) and the European Compound Feed Manufacturers' Federation (FEFAC).

Other academic researchers are refuting the FAO figure as and subsequent findings on the climate impacts of the livestock sector, through a study funded by the Beef Checkoff- the Cattleman's Beef Promotion and Research Board, a producer-funded marketing and research programme created and designed to increase domestic and international demand for beef (Cattlemen's Beef Board 2012). The Cattlemen's Beef Board and the USDA oversee the collection and spending of checkoff funds (Cattlemen's Beef Board 2012). The study is being funded to the small amount of US$26,000 and one must question how serious is such research around the critical and potentially life threatening phenomenon that is livestock's contribution to climate change. The research funding source was not disclosed when the report was published nor has the source been disclosed in any of the related media releases or articles (Center for a Livable Future 2010).

Studies that are deliberately distorted or undertaken to raise public doubt about, for example, the virtues of consuming less meat or the realities of climate change, take away from consumers the most direct and achievable form of protest against industrial food and

its destructive impacts on human and environmental wellbeing – namely consumer action. "It takes away our awareness and related ability to do our personal part for ourselves and Mother Nature" (McWilliams 2010:n.p.).

Like the pesticide industry and its government and industry allies did with Rachel Carson's *Silent Spring*, like ExxonMobil and its funded partners are doing to cause doubt about Climate Change, the livestock global corporate megamachine is going all out to ensure that science, universities, researchers, the media, direct and indirect stakeholders and all members of the public are manipulated in the industry's pursuit of ongoing profits. Even NGO's are not immune to participating in the venality and duplicity. The World Wildlife Fund (WWF) has also been included in the new livestock partnership, seemingly a good sign. However, WWF's Senior Vice President of Market Transformation and the organisation's representative in FAO's new partnership currently heads up the international "Sustainable Beef" roundtable which prescribes bigger herds and more intensification. He is also an ex-employee of the United States Department of Agriculture (mandated with promoting the interests of agri-business) (McCarthy 2012). Further, WWF has hired a new director of "sustainable livestock" whose only work experience prior to joining the WWF was on the business development of meat companies.

- Development

It is becoming increasingly complex and difficult to penetrate the black box of present and future industry and government networks and alliances and the truths they are concealing through ever-more sophisticated science and information management and manipulation strategies. Even the United Nations, the apparent bastion of people's representation and protection of universal rights, has been hijacked by the growing influence of large corporations and business lobby groups (Friends of the Earth 2012, Narberhaus et al. 2011). "Increasingly we see UN policies that do not serve the public interest but rather support the commercial interests of companies or business sectors: the UN has been captured and taken over by the corporate sector" (Friends of the Earth 2012:n.p.). As a result, "every tree, every plant, every drop of water and every natural (is) being into a commodity…", every product of nature "into money, business profit" whilst controlling the "countries of the south" (Morales cited in Tamayo 2012: n.p.).

Adding another layer of complexity, yet another manifestation and perpetuation of corporatocracy is evident in that many political leaders, through a "revolving door" (Greenpeace n.d., Parsons 2012) phenomenon, become advisors to, or board members of, major companies when their political days are over. In this way, through tightly spun and tangled webs, private interests are again prioritised over public interests both nationally and internationally and as a result, workable solutions for the world's multiple and sustainability crises, many of them potential existential, are blocked or weakened. Fundamental changes in the way corporations and industries function are unlikely to occur unless there are corresponding shifts in the larger political economy and fundamental questions regarding the role of industry and its license to operate in society are addressed. Corporations, originally conceived in the eighteenth century as entities to serve the public interest, have systematically diminished the power of governments to regulate their activity. Today there are no legislative requirements, anywhere in the world, that corporations serve the public interest (Banerjee 2002:2), opening up infinite "pathways to greed" (Greenspan cited in Banerjee 2001:4) .

As a result, instead of searching for comprehensive responses to the plethora of threats facing humanity and the planet, wealth and profit continue to be protected and the world continues to fail to tackle the core of any of the potentially existential environmental and social challenges or to achieve human and environmental wellbeing.

Beyond the high level gatherings of selected political and business leaders exists the majority world with a global population of people living in both western and developing countries who feel stripped of power, security and hope. As leader of the Zapitistas[25] stated: "When we rose up against a national government, we found that it did not exist. In reality we were up against financial capital, against speculation, which is what makes decisions in

[25] The Zapatista Army of National Liberation (*Ejército Zapatista de Liberación Nacional*, **EZLN**) is a largely indigenous, primarily nonviolent revolutionary group based in Chiapas, the southernmost state of Mexico. On January 1, 1994, the day the North American Free Trade Agreement came into effect, several thousand Mayan soldiers declared war against the "global corporate power that rules Mexico". Zapatista ideology, although reflective of libertarian socialist politics, is unique in part because of the integralness of Mayan beliefs. EZLN aligns itself with the wider alter-globalisation, anti-neoliberal social movement seeking indigenous control over their local resources especially land. They have a strong local, national and international web of support (Rowley 1998).

Mexico as well as Europe, Asia, Africa, Oceania, North America, South America – everywhere" (Subcomandante Marcos cited in Rowley 1998:n.p.).

This reality is applicable to indigenous and developing communities everywhere – one of the principal reasons for my choice to include The New Human Agenda as part of this PhD. In the case described above, officials of the World Bank meeting in Geneva agreed to give a loan to Mexico on condition they export meat under the agreements laid down by the World Trade Organisation. Land used by local communities to grow corn is now used to raise cattle for the American fast food market illustrating how politics and economics in alliance rob locals of any individual or collective self-determination.

"What is left is the clear sense that the future we want is not one our leaders can actually deliver" (Naidoo cited in Brooks 2012:n.p.) and "governments and corporations (are) using the environmental and social crisis we are facing as an opportunity for continuing the rhetoric of enlightened self-interest namely making ever more and greater profits" (Parsons 2012:n.p.). Essentially, Rio+20 overall, is recognized as "a gift to corporate polluters" (Friends of the Earth 2012).

- Education

Education institutions and universities in particular, have become crucial conduits for globalising modernity (Bussey 2008). Whilst modern education has achieved great things it is now failing to prepare people for a future that asks different questions of humanity (Bussy, Inayatullah and Milojevic 2008, Gatto 2002, O'Sullivan 2001, Slaughter 2004). Essentially, through corporate and political influence, tertiary academic institutions have become instruments of social engineering creating graduates trained to continue and support the dominant economic and political status quo. Tertiary education institutions and their everyday western cultural pedagogies are proving an extremely efficient way of educating for unsustainability: teaching ways of living, being and doing that threaten to destroy humanity and other life forms. Education is in the business of helping corporations and ensuring continuation of dominant industry-based ideological and material realities (Matthews 2011). Within the context of the neoliberal education model in force in most western societies, universities, educational institutions, researchers and academics are

forced to pursue industry support, consciously or unconsciously contributing to profit maximisation (Booth 1999, Bok 2003, Slaughter and Rhoades 2004, Washburn 2005, World Bank 2002).

Consensus for inaction simply means a consensus for more pain for all.

Sustainability is fundamentally a question of people's opportunities to influence their future, claim their rights and voice their concerns (United Nations Secretary-General's High-Level Panel on Global Sustainability 2012). It is truer than ever today that vested interest can only be counteracted through individual freedom. Individual choice "can have global consequences" (United Nations Secretary-General's High-Level Panel on Global Sustainability 2012:6) and our common future lies in the sum of all these individual choices.

It is with this individual empowerment opportunity that this research is located, namely enabling people to make personal sustainable choices and then to act on them.

HUMAN AGENCY

If you want to awaken all of humanity then awaken all of yourself. If you want to eliminate the suffering in the world, then eliminate all that is dark and negative in yourself. Truly, the greatest gift you have to give is that of your own self-transformation.
(Lao Tzu cited in The Old China Man n.d.:n.p.)

It is time to recognise that there is nothing to suggest the necessary political will, ability, vision, integrity or compassion will ever exist to respond appropriately to the planetary emergency backed up by ample comprehensive evidence from leading scientists about the ongoing degradation of natural resources, the unprecedented decline in biodiversity and the ecological boundaries that humankind is pushing up against (Parsons 2012a). Sadly the Rio+20 Declaration bears further testimony to this, in no way reflecting any global level of sharing, unity of cooperation that might set humanity on a sustainable path. The most recent global multilateral meeting yet again simply underscores how any viable possibilities are effectively pushed off the table in international forums by minority vested interests and competitive nationalistic thinking. The talks do not keep pace with or in any way address the rapidly changing and increasingly threatening conditions in our world. False solutions and opportunities are promoted. They protect wealth and profits and fail humanity and the environment on an ever-increasing scale. With the passing of each critical year, we bear seemingly helpless witness to the further concentration and control of private interests, political and corporate, over land, resources, the environment and all aspects of people's lives and environments. Yet again, world leaders and policy makers continue to pay nothing more than lip service to the unfolding environmental and human catastrophe that lies before us all. "If there's one lesson we can take from Rio, it's that top-down problem solving isn't an option any longer" (Walsh 2012:n.p.).

These colossal forces of control, politics and power need to be challenged if there is to be any hope of a more sustainable world of human and environmental wellbeing. We have watched more than two decades of failed summits, conferences, meetings, talk-fests, goals and visions and gatherings come and now, it is unavoidably evident that existing institutions not only are not capable of the tasks of initiating or implementing urgently needed and

wholesale systemic transformation, but that humanity and the planet will continue being traded on the altar of profits.

"The Failure of Rio+20 is a wake-up call for people power" (Parsons 2012:n.p.). When will ordinary people rise up and start the process, one personal action by one personal action at a time, of transforming the world? With no-where else to turn and the crises ever deepening, people are starting to realise that the creation of a just and sustainable world rests firmly in the vision and actions of civil society, ordinary individuals who must find some way to challenge the immense forces that stand in the way, a new movement of ordinary people to turn the tide. As Kreigman (2006:1) describes:

"From the point of view of any single individual, the world and its future appear to be constructed by vast social forces, elite power networks, and continent-spanning institutions with their own internal logics. Many people would like to help address the intimidating challenges of our times, yet they feel powerless and this diminishes their potential agency for change. They do not know where to begin or what would be an effective contribution to the creation of a hopeful future and a better world. … Although difficult to disentangle from other aspects of the global system, human agency—the capacity of people to reflect, make choices, and act collectively to realize those choices—plays a critical role in shaping the course of events."

There is an almost overwhelming, daunting amount to be done before we might realise an effective people's movement, a collection of individual power and action, mighty enough to create an implacable, countervailing force that no government or vested interest can withstand. In the face of overpowering political and corporate duplicity, the only option where hope and inspiration remain is in the individual response of ordinary, informed and engaged citizens and lay people. Individually, we each have a formidable, unprecedented and urgent contribution to make towards creating a united, liberated public opinion and force that is stronger than any megamachine or vested interest. The key is for individuals to understand their personal power and potential and in so doing to arrive at new ways of doing, seeing, being and believing. This will empower them to defy the ongoing destruction caused by dominant discourses and paradigms.

RESEARCH DESIGN

This PhD research commenced, was undertaken and is concluded, with an ever more purposeful transformative intent. It originally had three starting points that defined its scope, layout and methodology:

1. An unwavering pessimism regarding the seemingly limitless political and corporate greed, venality and duplicity that have brought us to the present ecological and impending human crisis and that have proven unable to change.
2. An equally unwavering, unshakeable and corresponding belief in the transformative potential of empowered, committed, and engaged individuals to ensure widespread social and environmental repair, renewal and increasing wellbeing.
3. A desire to explore how individuals, with total independence on external policies, decisions or leaders, might contribute their personal power to countering the political and economic forces currently threatening the planet and its who dwellers.

Data Sources

Thorough literature reviews in three distinctive areas were undertaken. The methodology used is interpretation of publicly available data and previous research in three case study areas all of which focus on personal liberation and empowerment towards increasing environmental and human wellbeing. Publically available data sources and bodies of information used include credible and reputable reports, databases, journal papers, publications, media and press releases, movies and documentaries, books, web material, narratives, magazines, blogs, academic discussions and conference papers.

Given that the research is about power to the people, the material has been written in a way that is readily accessible to non-specialists and can be easily scrutinised by specialists. Thus it does not rely on unique data stored on a password-protected computer deep within the ivory towers of a university but rather can be easily challenged and verified by anybody. Thus the decision was made not to collect new empirical data. The alternative research model (eg undertaking original empirical data collection) is counterproductive to a real empowerment as the only way the reader may challenge its findings would be by repeating the study in all its conditions which more often than not is an impossible task. All the data

used in the development of this PhD thesis is available and can be easily accessed and cross-checked by anyone with a computer and a basic knowledge of how to use a search engine. However, the way the data has been assimilated and analysed offers new and empowering re-interpretation of known information and established ideas.

This is in line with the idea of individual empowerment in sustainability, namely that it requires personal emancipation from the influence and hegemony of dominant destructive discourses. The ability to understand and re-interpret existing data autonomously from the vested interests it often serves and, through the resulting ability to question and challenge prevailing worldviews and mainstream thinking, holds enormous hope for the achievement of a more compassionate, connected, safe and sustainable world.
This PhD thesis has thus been written using readily available data interpreted in a manner accessible to all interested parties and people who may choose to answer its call.

Case Study Methodology

A case study methodology was selected as a means of undertaking a multiple-case study "to investigate a contemporary, complex phenomenon" (the problem of increasing unsustainability) within its "natural setting" or context using a variety of data sources (Baxter and Jack 2008, Harling 2002:n.p.). It allows and supports the deconstruction and subsequent reconstruction of various phenomena and thus, enables the research to arrive at possible solutions. Three case study areas were selected to explore and illustrate how individuals might personally start to rise up against the powers threatening humankind and the planet.

The qualitative case study approach was chosen because of this research method's ability to "facilitate exploration of a phenomenon (or set or related phenomenon) within its context using a variety of data sources" (Baxter and Jack 2008:544). Selecting this methodology ensured that the research was able to address the issue through a variety of lenses (rather than just through one lens) and in so doing to facilitate understanding of multiple facets of the phenomenon (Harling 2002:n.p.).

Further, the constructivist paradigm within which most case study research is located, lent itself well to the nature of the research, namely that reality is socially constructed (Stake 1995, Yin 2003). This is in keeping with the concept of personal empowerment –that each of us can influence, effect and contribute to the creation and existence of a desired reality or world. There isn't only one version of life and existence (inevitable diminishing human and environmental wellbeing caused by continuing domination by global political and economic vested interests and alliances) but an endless number of possibilities – including the possibility of a compassionate, safe world free of poverty, domination, cruelty, ill-health and potential existential anthropogenic environmental threats.

Based on Stake's definition (1995), the case study type used here may be described as instrumental. That is the case studies have been used to provide insight and understanding into the human and biophysical negative consequences of global power, greed and duplicity and as such play a supportive role in, and add value too, facilitating an understanding of the opportunity inherent in personal empowerment for achieving sustainability. This is as opposed to an intrinsic case study where research is undertaken purely to understand a particular case better.

Multiple (Yin 2003) or collective (Stake 1995) case studies were chosen in order to describe similarities and illustrate the pervasive and wide-spread impacts of the current global and political status quo. Employed instrumentally, the three case study areas were useful in providing analytical as opposed to statistical generalisations (Yin 2003). Further, multiple case studies enabled me to explore differences within and between cases with the goal of replicating findings across the cases. The three case study areas were deemed sufficient to predict similar findings across the cases and enough to allow adequate and appropriate representation and analysis to arrive at a research conclusion and generalisation (Yin 2003). More case studies and areas would have enriched the findings but would have been unlikely to add further depth to the discussion and the main argument.

As much detail as possible within the word constraints and editorial limitations of the selected journals was provided to enable readers to easily access the information used. In this way they could access the validity and credibility of the research and its conclusions,

namely that governments and industry will continue to perpetuate economic imperatives that benefit a select few at the expense of human and planetary wellbeing. This was considered necessary to offer credibility to the research proposition that, in light of the scientific evidence about ecological deterioration, continuing poverty and decreasing human health, individuals, through a process of personal empowerment leading to actions, are able to counteract political and economic vested interests responsible for ongoing global destruction.

Finally, in the words of Flyvbjerg (2006:228), the "force of example" as a source of scientific development is grossly underestimated. Thus the choice of using case studies was deliberately chosen in order to provide examples of what may be achieved through individual empowerment and personal endeavour.

The case study areas selected and explored were chosen because of my previous or ongoing personal and professional engagement in these areas (described at the outset of this exegesis). This enabled me to identify and empathise more closely with the subject matter. They were also selected as being representative of 3 critical areas of economic and political domination and subordination and corporatocracy (the control of economic and political systems by corporations or corporate interests[26]), namely the tertiary education industry, the development industry and the livestock industry.
These are encapsulated under 3 key headings:

1. Flexitarianism – namely flexible or part time vegetarianism as a means of individual empowerment to combat corporate and political duplicity and its destructive, potentially existential impacts on people, animals and the environment;
2. The New Human Agenda as a way of liberating people in the developing world from the megamachine that seeks to maintain dependence and the first world-third world divide in order to sustain power in the hands of a few seemingly indestructible political and industrial power bases, and in so doing to ensure access to the natural resources of the South;

[26] The Oxford Dictionary defines corporatocracy as "a society or system that is governed or controlled by corporations"

3. Sustainable Humanistic Education (also termed in the included papers as Humanistic Sustainability Education and Sustainability Education) for empowering students to challenge the current grand economic development narrative, develop alternatives and contribute to a better world through a sustainability revolution that counters the status quo and rejects dominant practices which continue to destroy the planet, animals and humanity. Rather than assume existing positions in society, Sustainable Humanistic Education liberates students individually and collectively to take the lead in creating a better world by challenging the dominant paradigms, cultural norms and local, national and international politics.

The New Human Agenda, Sustainable Humanistic Education and Flexitarianism all offer perspectives into the global domination of vested political and economic interests and, given the failure of other efforts, propose personal empowerment and liberation as the counter-response for increasing human and environmental wellbeing.

RESEARCH SIGNIFICANCE

The current Australian Research Council assessment of research quality defines research "as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings" (Monash University 2012:n.p.). This definition of research is consistent with a broad notion of research and experimental development (R&D) as comprising creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications (Monash University 2012). As is the case with this PhD by publication, and based on the Frascati Manual (Organisation for Economic Cooperation and Development 2002) this includes synthesis and analysis of previous research to the extent that it leads to new and creative outcomes. This is the research paradigm employed in this thesis, namely the synthesis and analysis of previous research in a way that leads to new and creative outcomes and possibilities that add to the urgent search and need for opportunities and sustainable alternatives to increase human and environmental wellbeing other than those explored in the academic literature to date.

More than a decade ago, the Earth Charter sounded a clarion call to "inspire in all peoples a sense of global interdependence and shared responsibility for the well-being of the human family, the greater community of life, and future generations" (The Earth Charter Initiative 2012). Yet while the drumbeats of crises ripple deafeningly across the world, nothing worthwhile has happened to date. Indeed there is a seemingly almost endless list of local, national and international calls for individual actions and contributions to sustainability, such as Keep Australia Beautiful, World Environment Day, World Water Day, World Day of Social Justice, Earth Day, Save the Frogs Day, World Fair Trade Day, World Oceans Day, World Day to Combat Desertification and Drought – there is almost an event scheduled for every day in the calendar year. There are also weeks such as "Bike to Work Week Victoria", "Conservation Week", "European Week for Waste Reduction", years such as "World Population Year", "International Year of Planet Earth", International Year of Forests" and many others and even decades such as the "International Drinking Water Decade 1981-1990" the "United Nations Decade of Education for Sustainable Development – 2005-2014" and the "United Nations Decade on Biodiversity".

However, apart from extensive research regarding the value of empowerment in the development literature, there is yet to be any academic analysis of the benefits, opportunities or outcomes of individual empowerment for sustainability. No academic work to date focuses specifically on exploring the powerful opportunity that lies within approaches for liberating the personal potential of individuals as the principal mechanism, most immediate, easily accessible and achievable opportunity - for the attainment of an increasing sustainable world. Nowhere does the scholarly body of literature discuss individuals as principal agents and actors in creating a sustainable world nor does it explore specific opportunities or areas for such individual and consequently collective action.
Rather academic work is concentrated on technological, institutional, policy, political, moral, ethical, and economic and industry, sociological and environmental considerations, concerns, challenges and opportunities.

There are a handful of thought-leaders who have made some inroads into this opportunity: Kriegman (2006:2) imagines a new and powerful political actor in the form of a global citizens' movement (GCM*),* a socio-political, value-led process rather than a political organization or party structure and recognises that "although difficult to disentangle from other aspects of the global system, *human agency*—the capacity of people to reflect, make choices, and act collectively to realize those choices—plays a critical role in shaping the course of events" (Kriegman 2006:1). Hawkens (2006:n.p.), described the emergence of "a fiercely independent, dispersed, inchoate social movement, the largest in all of human history, without manifesto, doctrine or over-riding authority to lead it, a movement developing to save the planet from life-threatening disease marked by massive ecological degradation and rapid climate change". In describing this "largest social movement in history" that is "…restoring grace, justice, and beauty to the world" Hawken (2007:3) states that "salvation does not exist in the domination of a single system or ideology" but will "be found in diversity…humanity's immune response to resist and heal political disease, economic infection and ecological corruption caused by ideologies…so it is up to us to decide how will we be, who will we be, this is what we are building, the capacity to respond…it is about possibilities and solutions. Humankind knows what to do". Hawken's work however does not attempt to explore or understand what lies behind such a powerful

social movement but rather documents its existence as reason for hope. His research does not explore or discuss the particular opportunities or specific potential of individual empowerment, actions and counteractions.

Uncountable numbers of other organisations and prominent individuals recognise the role of personal actions for contributing towards increasing sustainability. For example Suzuki used to urge people to think globally, act locally, but he says: "that was a mistake. When people think globally, they feel helpless" (cited in Dean 2005:n.p.). He suggests people do small things, on an individual level, such as using nontoxic lawn care products, in order to make a difference (Dean 2005:n.p.).

In reality millions of people of goodwill in every country are vocalising the need for a just, safe, sustainable and compassionate world order and a clear sense of the burgeoning articulation of civil action against corporate and political duplicity is becoming increasingly evident to those who are looking. Clearly, the hope of living improved lives in a just and caring world is a most empowering and liberating psychological response to the turbulence and existential challenges of our times.

We no longer have time to rely on global agencies to lead us to a more sustainable future. To date they have failed, there is no indication that they will ever be capable of delivering solutions and answers. Rather than facilitate increasing sustainability, they continue to develop, support and implement policies, plans and projects that perpetuate ongoing unsustainability and deterioration of human and planetary wellbeing.

There is still time, but the hour grows late and the time is propitious. Consequently, today's world, with all its terrifying social and environmental challenges and threats, is a world of heartbreak and heartache. Light can still be poured through the collective actions of individuals rising to resist, a global coming together mobilised to change the world and save it.

This PhD thesis is being completed at a critical time in environmental and human history, a time when "we are facing a planetary emergency" (Gaffney cited in Leahy 2012:n.p.), a time when "humanity is facing major challenges…urgent actions are needed" (Biermann cited in

Leahy 2012:n.p.). People everywhere are feeling helpless, hopeless or irrelevant in the quest to mitigate the forces causing decreasing human and environmental wellbeing. This work strives to describe and discuss the power of us – people power through the facilitation and release of individual empowerment expressly for the purpose of its contribution to increasing sustainability. As such it contributes to the ever more urgent search for sustainable alternatives other than those explored in the academic literature to date.

It is about possibilities and solutions: the possibility of humankind, and its capacity for human consciousness and action, through being and becoming an ever more empowered and engaged collective of individuals, as the solution to the existential challenge of our moment. It is not clear yet whether a coalescence of such engaged, aware, empowered individuals will be sufficient to challenge the immense forces of profit, power and control. Certainly however the people of the world's whisper is turning into a yell…"enough is enough".

Margaret Mead's (1928) famous dictum: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has"– requires a caveat: the moment must be ripe (Raskin 2010). In fact, particularly in light of the many failed summits, meetings and conferences and the burgeoning planetary and human crisis, the time is overripe. In such a time, even small actions can have large consequences, releasing latent forms of consciousness and political association (Raskin 2010) and ushering in a united force that opens a door to world repair and renewal.

The published papers of this thesis illustrate how this may be possible.

OUTLINE OF THE PUBLICATIONS

Flexitarianism

List of publications

1) *Raphaely, T., Marinova, D., Crisp, G., Panayotov, J. (2012). Flexitarianism: A User-based Dietary Choice for Improving Personal, Population and Planetary Wellbeing. International Journal of User-driven Healthcare (forthcoming, acceptance date 22 October 2012).*

2) *Raphaely, T., Marinova, D. (2012). Flexitarianism: A More Moral Dietary Option. International Journal of Sustainable Society (forthcoming, proofs received 31 August 2012).*

3) Raphaely, T., Marinova, D. (2011). Preventing further climate change: A call to individual action through a decrease in meat consumption. *MODSIM 2011 International Congress on Modelling and Simulation*, Modelling and Simulation Society of Australia and New Zealand, Perth, Australia, 3066–3072.

Background

The idyllic Old MacDonald farm has long been replaced in the western world with the intensification and industrialisation of animal production, the creation of meat factory production systems (Fraser 2005) and the concomitant promotion of excessive meat consumption. This is having a devastating impact on human, animal and ecological welfare while only a select few are benefiting from the short-term profits. The resulting health and environmental consequences of this vast scale industrialized meat production and consumption represent the greatest challenges humanity has ever faced. However, rather than stop this march of social and natural devastation most governments, their agencies and instruments and the corporations they are in alliance with, continue to promote meat consumption and ignore the numerous existential threats its production is causing.

Argument

The pervasive and insidious influence of the livestock sector and related industries (such as pharmaceutical industries), backed by governments, continue to promote meat as a healthy, necessary food source ensuring a burgeoning increase in meat production and consumption. The result is people are getting sicker, global poverty and hunger remains inevitable, we are exploiting and killing billions of sentient beings all while risking the very future of the planet. Flexitarianism is thus offered as a powerful and empowering, immediately available and instantly accessible personal action to combat the geo-political and industrial duplicity that is destroying the world and its people.

Novelty and contributions

1. Flexitarianism as a personal dietary choice is one of, if not the, most direct, powerful and immediately achievable and effective individual forms of action and protest against, and liberation from, the powerful economic and political influence of the global livestock sector.
2. For the first time in the academic literature the three aspects of excessive meat consumption, namely environmental devastation, human health deterioration and animal cruelty, are brought together and directly linked to sustainability. The novelty and importance of the research are recognised by allowing a double length article in the *International Journal for Sustainable Society*.
3. The original policy recommendations offered in support of individual action allow for the building of widespread support for flexitarianism.
4. In today's internet-based society, the link between information access and individual dietary choices that promote social and environmental wellbeing is another original contribution of this research.

The New Human Agenda

List of Publications

1) *Raphaely, T., Marinova, D. (2010). The New Human Agenda: An Agenda for Sustanable Transformation. Transformations 66-67(3-4), 375-391.*

2) Raphaely, T., Marinova, D. (2009). The New Human Agenda: Partnerships for Human Bioregional Development, in Ho, G., Mathew, K., Anda, M. (eds). *Sustainability of Indigenous Communities in Australia.* Murdoch University, Perth, Western Australia, 163 – 172.

3) Raphaely, T., Marinova, D. (2006). The New Human Agenda: An Empowering Approach to Poverty Alleviation. *Global Poverty: Sustainable Solutions*. Perth, Western Australia. Retrieved 27 February 2007 from http://www.sustainability.murdoch.edu.au/

Background

The papers in this section are concerned with exploring a way in which individuals and thus communities may liberate themselves from the ongoing process of so called "economic development" (and assumed resulting political development) which has shown itself to be another way to ensure the maintenance of hunger, suffering, disempowerment, deprivation and inequity in order that global land, water and other environmental and human resource grabs by powerful foreign financial corporations and interests may continue. Developed countries conceal the fact that their hegemonic model of infinite growth is totally dependent on the resources of the so-termed under-developed world – a global system of extraction that, for its continuation, must create and maintain immense poverty, vulnerability and dependence. As articulated by Lushaba (2009), developed and under-developed nations do not exist parallel to and independent of each other but are directly and inextricably connected to each other in a global set of geo-political and economic relations. Accordingly, the western model of infinite growth requires infinite poverty and corporations, governments, their instruments and agencies have an ongoing vested interest in ensuring maintenance of such fragility.

Argument

It comes as no surprise that the United Nations reported in 2010 that since 1970 the number of very poor countries has doubled and the number of people living in extreme poverty has also grown two-fold (United Nations Conference on Trade and Development 2010). “Poverty, like Apartheid, is not an accident. Like slavery, it is man-made and can be removed by the actions of human beings” (Mandela cited in Merin 2012:n.p.). Poverty may be overcome by rejecting western models and economic development theories and interventions and defining and progressing its own understanding of wellbeing and sustainability, which reflects local values, cultures and aspirations.

Within the New Human Agenda local people are the primary authors of the work to end poverty through self-reliant actions that enables liberation from the global development industry and its perpetuation and maintenance of subordination and impoverishment. The New Human Agenda liberates people from the institutions and agencies and dictates and dependencies of the ‘megamachine” and results in ongoing and increasing wellbeing and expansion of individual and community empowerment.

Novelty and contributions

1. The New Human Agenda as used in the case study is an original work connecting self-reliance to humanness, partnerships and bioregionalism as the answer to sustainability.
2. It offers an analysis and applicability of the concept to combat poverty in developing countries (for example Africa) and underprivileged communities in developed countries (for example Aboriginal people).
3. It provides a benchmark for analysing the possible success of any development initiative aimed at addressing poverty.
4. It suggests locally conceived and implemented, dynamically transformative, flexible, connected, iterative, engaging, participatory and empowering alternatives to traditional development paradigms.

Sustainable Humanistic Education

List of publications

1) Raphaely, T., Marinova, D. (2013). Sustainability Humanistic Education within an Asian Context. In Marinova, D., Guo, X. (eds). *Sustainability Issues in Asia*, Edward Elgar, Cheltenham, United Kingdom (forthcoming).

2) Raphaely, T., Marinova, D. (2012). Humanistic Sustainability Education for a Better World. *Rajshahi University Journal of Environmental Science* 2 (forthcoming, acceptance date 15 March 2012).

3) Raphaely, T., Marinova, D., Todorov, V. (2010). Sustainability Education: What on earth are we doing? *Management and Sustainable Development* 26(2), 49–60.

Background

This area is based on a personal and professional recognition that universities, particularly in the neo-liberal approach to tertiary education, have become commercial enterprises viewing students as customers or consumers who will sell themselves on completion of their degree to the highest bidders. As such, individuals are nothing more than exploitable human resources, dehumanised, lacking voice and robbed of the impulse to participate in the determination of their own human situation (Grigorov 2009). Accordingly, tertiary education institutions and programmes now serve to further the symptoms of the disease and thus to further the decline of human and biophysical wellbeing. Such traditional educational paradigms typically reinforce the destructive and oppressive worldview of the hegemonic ideologies and are unable to cope with having to explain the moment we are living in or in answering our future needs.

Argument

Sustainability, and thus education for sustainability, is a unique area and as a relatively new field, much is still unknown in terms of documented or proven outcomes. The world, its students and our common future require a new paradigm in order to survive; a new

response to ways of being, learning, solving, addressing, doing and seeing. Tertiary education is a primary institution for affecting social and ecological changes for the better. Its approaches, and the concepts it endorses should facilitate this urgently needed transformation by empowering students to feel able to challenge the current destructive system and its various components and in so doing, to create a world that better represents their dreams for the future. Yet current education systems reflect that which has already been created and thus do not comfortably allow for futuristic images, forecasts or dreams. Typical characteristics include progressivism, objectivity, rationalism, reductionism, mechanistic views of the world, scientism, efficiency, anthropocentrism, instrumental reasoning, compartmentalisation of life, human opposition to nature and the shrinking of the world for the human race. A new education paradigm, one capable of unteaching such unsustainability, requires learning to question and challenge everything we do, the institutions and systems that reinforce life as we know it. This requires envisioning a new and better way and world, where life interacts with itself and all around it in a completely different way. This is difficult and contrary to much traditional education and requires a brave new worldview and unproven, uncharted direction. It also requires spiritual and intellectual strength to deal with all the obstacles.

The new education and its concepts described in these papers, offers a liberating opportunity for students to start challenging destructive dominant discourses and paradigms and promotes transformation as opposed to supporting the mainstream, dominant hegemonic discourse. Tertiary education is a primary institution towards affecting social and ecological change for the better. Sustainable Humanistic Education, rather than continuing tertiary academia's traditional function of producing individuals wishing to achieve lucrative careers in a world of continued enslavement of nature and economic and cultural colonisation of people as the inputs for economic growth - is transformative - existing for humanity and the planet not for commercial interests. Such an approach to education is pedagogy for survival and progress in a dangerous time. Ultimately it is a call for a peaceful sustainability revolution that enables students to participate in the revolution for survival and sanity and to be in the world, not as corporate clones, in safe jobs that continue to serve the interests of very few, but as courageous visionaries and leaders able to go forth and make the changes the world needs to survive: a future of hope and possibility in which nature and future generations and their wellbeing will be safeguarded.

Four case studies of students who have participated in SHE illustrate the power and potential of this new, liberating and empowering approach to education. Each tells a story of personal growth and achievement that makes a meaningful contribution to the achievement of increasing human and environmental wellbeing rather than merely personal materialistic advancement.

Sustainability Humanistic Education, by drawing on the best of that which has come before, and by transforming and replacing traditional views of the world and teaching, offers an effective way to empower students to participate in creating a world of increasing rather than decreasing human and environmental wellbeing.

Novelty and contribution

1. The papers put forward a new educational approach which is transformative, enriching and visionary.
2. Examples of students achievements are analysed and defining characteristics for success are outlined.
3. For the first time sustainability education is linked to peaceful revolutionary transformation of the economic basis of society in order to allow for diversity and meaningful satisfaction
4.

Discussion

In summary, all three case study areas, by describing the existing situation and dominant worldview and paradigm, propose an individually-based opportunity to challenge the forces of vested interest, politics, economics, power, profit, greed and destruction that are causing the planetary emergency that currently and increasingly threatens present and future generations and biophysical wellbeing. All three case study areas explore and illustrate how, through liberation of individual awareness, power and potential, the growing planetary emergency may be addressed.

The nine original papers selected for inclusion in this “thesis by publication” within the three case study areas have all been published or accepted for publication whilst enrolled as a PhD candidate. They highlight the potentially earth-saving personal contribution

empowered individuals may make to the emergence of a new sustainable world of common sense, liberation and democracy in which everyone in one form or another can partake and benefit and in which nature is treasured and the wellbeing of present and future generations is safeguarded.

All 3 areas and the papers within them are connected by the following central themes of this thesis namely:

1. The clear and urgent need for addressing the ongoing destruction of human and environmental wellbeing;
2. The ongoing and seemingly unstoppable failure of top-down interventions, policies, agreements and solutions conceived by national or international organisations, industries, governments or other influential decision or policy making agencies which continue to cause more harm than good and are caught up in an inextricable web of vested interests and duplicity;
3. The value and urgent criticality of liberating individuals from global megamachines (specifically, education, livestock or development megamachines) and releasing the inherent human potential and capacity innate in lay individuals all over the world;
4. Empowering lay individuals, through self-reliant actions, to liberate themselves from dependence and reliance on leaders, decision makers and other external national and global policy makers and to become the principal authors and actors as the pathway to a more sustainable world and a better life for all
5. All papers are sceptical of traditional and dominant paradigms, approaches and interventions and all propose the alternative of individual empowerment as the solution to achievement of a more sustainable world.

All papers discuss opportunities for personal liberation and empowerment to confront, and counter duplicity, domination and unsustainability.

As such, all papers offer a way to counter feelings of isolation, to show that when people are outlawed or made invisible, there is beauty where no beauty seems possible and kinship where all is represented as separation. It helps us to remember something we are subliminally forbidden to see, a forgotten future of hope and the continuous redefining of freedom from oppression, even when that oppression uses the golden handcuffs of material

wealth and economic wellbeing as its jailors. Even the most sympathetic governments, institutions and corporations will not be able to break the impasse of political short-termism, selfish nationalistic thinking, timorousness and venality without massive, informed public support and urging. However, the responsibility for change rests with us, the ordinary people of the world capable of demonstrating the values of caring, mutual respect, vision, and action for improving human and planetary wellbeing.

This PhD research is ultimately about hope and personal empowerment and responsibility to participate in the search for alternative ways to achieve human and environmental renewal and repair without any traces of ideology, political or economic frameworks. The changes do not need to be led by any political party or civil society organisation but can come about through the unorganised, free coalescing of the actions of ordinary people to transform the world.

The collective *Power Of Us* potentially offers a synergistic opportunity to transform the world and it is an opportunity we cannot afford to leave unexplored.

SUMMARY OF CONTRIBUTIONS

As I reflect and finalise compilation of this PhD research a paper, *Life after Rio* (Halle 2012), has just been released summarising the multitude of perspectives, commentaries and sentiments surrounding the recent gathering in Brazil. In describing the feelings and outcomes of the Rio+20 UN conference, he is simultaneously and timeously also summarising and reaffirming the relevance, validity, importance and contribution of the findings of this PhD (a journey that commenced for me almost 6 years ago), namely that government and industry vested interests continue to sabotage opportunities to achieve sustainability and they continue to impede attempts and efforts to address and stop the decline in human and planetary wellbeing. As I reflect on the validity of my original assertion, that the "megamachine" if left to its own devices will continue to perpetuate increasing unsustainability, my argument about personal choice becomes even more prominent. Individual agency, i.e. "The Power of Us", is a direct polarising response to the changing structural, institutional and cultural conditions which continue to drive unsustainability.

This research suggests that governments and industry will continue to look after their short-term political and profit interests at the expense of human and environmental wellbeing. By redefining sustainability, empowerment and human agency, this research gives a new perspective in the academic understanding of sustainable development. This is a starting point not only for changing research directions but also for policy support.

The research departs from the mainstream approach and provides justification as to why this is the case. The green economy uses price mechanisms to protect nature and is likely to extend corporate control into new areas. The burgeoning corporate emphasis on a bio-economy will spur even greater convergence of corporate power, a frenzy of mergers, acquisitions and joint ventures around the biomass economy, new green oligopolies converging over diverse industry sectors as large players position themselves to dominate the future economy. Such oligopolies will unleash the most massive resource grab in more than 500 years (ETC Group 2011).

The research presented here offers, enriches and expands academic understanding by offering a dynamic:

1. new methodology for understanding empowerment,
2. new educational way to communicate and facilitate sustainability,
3. thorough representation of the gravity of the sustainability problems,
4. in-depth analysis of the embedded barriers for achieving sustainability including outlining the role of the megamachine, and,
5. new roles and responsibilities for well-informed individuals in the quest of sustainability.

In Summary, the PhD research concludes that individual empowerment and awareness can lead to individual actions and choices that have the power and potential of changing our current destructive and potentially existential trajectory and ensuring the creation of a more just, sustainable world. It demonstrates that this represents a real opportunity to negate the pessimistic scenarios about the future and replace them with visions of hope and actions of real importance.

Lastly and perhaps most importantly, it may happen with the urgent timeframes and imperatives confronting humanity and the planet without waiting. The practical examples described in the publications are convincing evidence for the change that can happen today.

FUTURE RESEARCH DIRECTIONS

It may appear over-optimistic at this stage to imagine the advent of a more just, equitable, compassionate, connected and sustainable global democracy, movement or something similar that currently lacks a name - a collection of empowered individuals taking actions that are capable of steering the world onto a more sustainable course. Numerous further questions arise including:

- Is this even a plausible scenario?
- Is it capable of happening spontaneously or does it need some modern day leader (such as Ghandi) or Council (such as the World Future Council, formed after the failure of the Johannesburg 2002 Earth Summit with the purpose of focusing world citizens' attention on the priorities for action) or Initiative (such as The Widening Circle formed in 2010 which seeks to catalyse a diverse, popular international moment of concerned citizens) to capture the hearts and minds of enough people?
- What might such a "movement" look like with the passage of time?
- What would be its values and its nature if any?
- How would such a movement be able to cooperate on global issues of agreed shared concern? If so, how?
- How could having a majority of public opinion concurrence create long-term changes to society?
- How does the achievement of human and environmental wellbeing be assessed across temporal and spatial scales?
- What is the impact of reduced meat production and consumption on local, national and global food security?
- What are the impact and value of The New Human Agenda as a means for achieving environmental and social wellbeing undertaken without any top-down aid or intervention and the contribution of this Agenda towards achievement of the Millennium Development Goals?
- What is the impact and value of the Sustainable Humanistic Education (Humanistic Sustainability Education) as a means for countering unsustainability and achieving some of the goals of the Decade for Sustainable Education?

Another area that needs further research is the effect and transformation of the existing industries and economic systems. Similarly, how are the issues of governance likely to respond and unfold?

These possible future and arising questions are important. The timely value and significance of exploring the central research question - In light of the scientific evidence about ecological deterioration, continuing poverty and decreasing human health, how can individuals counteract political and economic vested interests responsible for the ongoing global destruction? - allowed for a new worldview to be developed. This is important not only from the perspective of theoretical interest, and academic contribution and value but perhaps as beneficially as a most important source of hope if the world is to somehow create and traverse a safe passage through the 21st Century.

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PUBLISHED PAPERS

Final authors' versions of the nine original refereed journal articles, book chapters and conference proceedings comprising part of this "thesis by publication are included. They are:

Refereed journal articles

1. *Raphaely, T., Marinova, D., Crisp, G., Panayotov, J. (2012). Flexitarianism: A User-based Dietary Choice for Improved Wellbeing. International Journal of User-driven Healthcare (forthcoming, acceptance date 22 October 2012).*

2. *Raphaely, T., Marinova, D. (2012). Flexitarianism: A More Moral Dietary Option. International Journal of Sustainable Society (forthcoming, proofs received 31 August 2012).*

3. Raphaely, T., Marinova, D. (2012). Humanistic Sustainability Education for a Better World. *Rajshahi University Journal of Environmental Science*, 2 (forthcoming, acceptance date 15 March 2012).

4. *Raphaely, T., Marinova, D. (2010). The New Human Agenda: An Agenda for Sustainable Transformation. Transformations 66-67(3-4), 375-391.*

5. Raphaely, T., Marinova, D., Todorov, V. (2010). Sustainability Education: What on earth are we doing? *Management and Sustainable Development* 26(2), 49–60.

Refereed book chapter

6. Raphaely, T., Marinova, D. (2013). Sustainability Humanistic Education within an Asian Context. In Marinova, D., Guo, X. (eds). *Sustainability Issues in Asia*, Edward Elgar, Cheltenham, United Kingdom (forthcoming).

Full-text refereed conference proceedings

7. Raphaely, T., Marinova, D. (2011). Preventing further climate change: A call to individual action through a decrease in meat consumption. *MODSIM 2011*

International Congress on Modelling and Simulation, Modelling and Simulation Society of Australia and New Zealand, Perth, Australia, 3066–3072.

8. Raphaely, T., Marinova, D. (2009). The New Human Agenda: Partnerships for Human Bioregional Development. In Ho, G., Mathew, K., Anda, M. (eds). *Sustainability of Indigenous Communities in Australia*, Murdoch University, Perth, Western Australia, 163–172.

9. Raphaely, T., Marinova, D. (2006). The New Human Agenda: An Empowering Approach to Poverty Alleviation. *Global Poverty: Sustainable Solutions*, Perth, Western Australia. Retrieved 27 February 2007 from)http://www.sustainability.murdoch.edu.au/

The papers are presented within the three case study areas namely flexitarianism, the new human agenda and sustainability humanistic education.

Case Study Area 1: Flexitarianism

1.1 Raphaely, T., Marinova, D., Crisp, G., Panayotov, J. (2012). Flexitarianism: A user-based dietary choice for improved wellbeing. International Journal of User-driven Healthcare (forthcoming, acceptance date 22 October 2012)

Refereed journal article

Flexitarianism: A user-based dietary choice for improved wellbeing

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Introduction

In contemporary society meat has become accessible for billions of people and is often cheaper to buy than fruit and vegetables. Yet this increasing affordability has a cost for the overall wellbeing of people and the planet. Drawing on publically available data, this paper offers some perspectives on the human and environmental consequences of current western meat consumption patterns. The sectors associated with meat production, including the livestock and pharmaceutical industries, have influenced many healthcare related areas within society affecting healthcare practices and recommendations, government dietary and health recommendations, academic research and food politics. This paper, through the promotion of user-based reduction in meat consumption, invites people to rethink their personal dietary choices arguing that this could improve individual health whilst at the same time contributing to the health of society and the planet. The "users" this paper targets are multiple actors, including lay individuals, professionals, policy makers and also "health professionals as well as patients and anyone who uses the web with a user name" (Biswas and Martin, 2011: ii)

We examine the direct and indirect impacts on human and ecological health of diets based on excessive meat consumption and explain that many consumers may have been misinformed about their nutritional choices. Flexitarianism (flexible or part-time vegetarianism) is offered as an alternative, personal and user-driven opportunity to improve individual health and planetary wellbeing. Lastly, we outline and assess information strategies to combat the widespread misrepresentation about the value of meat. They can potentially decrease health inequality and improve the average health status of people, populations and the planet.

Meat and health

Whilst people may believe eating meat is nutritionally necessary and generally beneficial, an increasing number of studies are showing that excessive production and consumption of meat is adversely affecting human wellbeing. Direct human health implications now associated with meat include increased nutrition-related illness (such as cancer, diabetes type 2 and obesity), antimicrobial resistance (i.e. resistance of microorganisms to antimicrobial medicines to which they were previously sensitive (WHO, 2012)), spread of global pathogens (such as SARS and swine flu) and mental health outcomes linked to meat production. Indirect meat-related human health impacts include the consequences of anthropogenic climate change, water and land pollution by the livestock sector, loss of biodiversity as a source for potential medical cures and threats to food security due to impaired ecosystem services. These are discussed below.

Nutrition-related illness

A 2011 update by the World Cancer Research Fund clearly recommends people should limit red meat intake to no more than 500g per week and the report calls for complete avoidance of processed meat (bacon, ham, salami, sausages, deli meats and some burgers) (WCRF, 2011a). There is ample and growing scientific evidence confirming the correlation between increasing meat consumption and a wide range of escalating nutrition-related non-communicable and serious diseases, including cancer. Research outcomes from reputable international health organisations, such as the World Cancer Research Foundation (WCRF), the World Health Organisation's International Agency for Research on Cancer (IARC), the

European Prospective Investigation into Cancer and Nutrition (EPIC) and the American Institute for Cancer Research (AICR), confirm the negative connection between the consumption of red and processed meat and various cancers, particularly bowel cancer (Groenen et al., 1976; Riboli and Lambert, 2002; Jakszyn and González, 2006; WCRF/AICR, 2007; AICR, 2010; Ferlay et al., 2010; WCRF, 2011a; AICR, 2012). These and other studies also conclusively link cancers of the oesophagus, liver, lung, stomach, bladder and prostrate to red and processed meat consumption (Cross et al. 2007, 2011; Ferrucci, 2010).

Increasing meat consumption is implicated as a major factor for rising rates of debilitating, potentially life-threatening illnesses and costly diseases, such as obesity, hypertension, diabetes, heart disease, stroke, cancers, rheumatoid arthritis, multiple sclerosis, lupus, gallstones, atherosclerosis, diverticulitis, food-borne illnesses, osteoporosis, immune system disorders, allergies and asthma (Appleby, 1999; Monday, 1999; Gardner and Halweil, 2000; Popkin, 2001, 2009; WHO, 2003; LEAD, 2006; Cross et al., 2007; Fox, 2007; WCRF/AICR, 2007; Moritz, 2009; Henning, 2011; Stone, 2011; USDA, 2011; WCRF, 2011a, WCRF, 2011b; Ornish, 2012; Research Highlight, 2012). It is also understood to be responsible for severe but less threatening health conditions, such as constipation and bowel problems, and the related negative consequences on psychological and physical wellbeing particularly in children. For example, in the case of Australia, a 2007 National Children's Nutritional and Physical Activity Survey found that by the age of 14-16 only 1% of adolescents ate enough fruit and 5% ate enough vegetables; further, 41% of primary school-age Australian children experience regular bowel problems, pain and constipation due to lack of fibre in their diets (Department of Health and Ageing, 2007). In the US, only 1% of the 14-18 olds consume the recommended daily fibre intake and this low-fibre diet is associated with higher visceral adiposity and lower inflammatory-related biomarkers putting the adolescents at higher risk of cardiovascular disease and diabetes (Parikh et al., 2012).

Meat consumption in traditional or impoverished societies, where there are limited or no food options, may be necessary for survival. However in more affluent communities there is abundance of alternatives and, in light of the research evidence, meat should no longer be promoted as a wise nutritional choice. Whilst prolonged western life spans can in part be

traced to increases in food security, "about 80 percent of elderly people (over age 65) suffer from at least one chronic disease and about 50 percent suffer from two or more chronic diseases…" largely attributed to excessive meat consumption (Barilla Center, 2012:239). The publicising of the benefits of eating meat has encouraged unhealthy levels of consumption resulting in an increasingly unhealthy western population and a disturbing prophecy that today's children may not outlive their parents (Stone, 2011). Paradoxically, this negative health trajectory is preventable. If individuals are made aware of the risks associated with excessive meat consumption, they may be in a better position to protect themselves from misleading messages.

Due to the global influence of western life styles, people climbing out of poverty (for example, in emerging economies such as India, Brazil and China) are changing their traditional diets of grains, vegetables pulses, roots and tubers to high meat consumption. Consequently non-communicable nutrition-related diseases are overtaking communicable disease (Goodland, 2001; Stamoulis et al., 2004; Karelina and Fritschel, 2011). For instance, the rate of increase of global cancer is now more than four times faster than the spread of HIV (WCRF 2011a and b). The World Health Organisation's policies are explicitly now targeting the "double burden of malnutrition (i.e. undernutrition, and obesity and diet-related NCDs)" (WHO, 2013:15). In a similar vein, FAO (2013:v) recognises that the "challenge for the global community…is to continue fighting hunger and undernutrition while preventing or reversing the emergence of obesity".

Food that has potential harmful effects should not be promoted as a healthy option without any caveats. People should "have access to a diverse range of nutritious foods and to the knowledge and information they need to make healthy choices" (FAO 2013:v). While it can reasonably be expected that government and health institutions should protect and inform the public, this does not seem to be the case as far as meat consumption is concerned and it is increasingly evident that the global food agenda is managed by vested interests (Raphaely and Marinova, 2012). Accordingly, the onus is on the individuals to access the necessary information needed to take care of themselves and their loved ones.

Antimicrobial resistance

Industrialised factory meat production also poses serious threats to human health and again consumers seem largely unaware of these dangers (Nestle, 2007). The use of antibiotics, growth hormones and genetic modifications has facilitated cheap mass meat production. Industrialised farms routinely administer sub-therapeutic doses of antibiotics to animals to counter their compromised immunity caused by unsanitary breeding and living conditions. Such use of antibiotics maintains high productivity, increased growth rates and weight gain but is also known to be exacerbating a global "epidemic" of antibiotic resistant infections (Spellberg et al., 2008; Chee-Sanford et al., 2009; Price at al., 2012).

As early as 1969, the Swann Report, presented to the British parliament, concluded that non-therapeutic administration of antimicrobials to food-producing animals resulted in a dramatic increase of bacteria resistance which posed a significant risk to human and animal health and recommended more prudent use (Swann Report cited in FDA, 2010:5). In 1997, a World Health Organisation (WHO, 1997) study reported that all use of antimicrobials, including antibiotics, disinfectants, antivirals, antifungals and antiparasitics, leads to the selection of resistant forms of bacteria and other microorganisms. Moreover, such "low-level, long term exposure… may have greater selective potential than short-term, full dose therapeutic use" (WHO, 1997:5). Consequently, WHO called for termination of the use for food animals of all antimicrobials used for humans. In 2004, the United States Government Accountability Office (GAO cited in FDA, 2010:11) confirmed that antibiotic-resistant bacteria have been transferred from animals to humans and that animals were the source of human infection. It further warned that "this transference poses significant risks for human health" (GAO cited in FDA, 2010:11). In response to the GAO and 11 other supporting studies, the US Department of Health and Human Services (HHS) stated that there is "significant and growing evidence demonstrating the human health consequences of drug resistant infections related to antibiotic use… We believe that there is a preponderance of evidence that the use of antimicrobials in food-producing animals has adverse human consequences…There is little evidence to the contrary" (HHS cited in FDA, 2010:12).

The world's medical community has been calling for controlled and responsible use of antibiotics in human medicine in order to delay microbial resistance and adaption; yet over half of all antibiotics produced worldwide are now administered non-therapeutically to meat-animals (Steinfeld et al., 2006:273). Limiting antibiotic use in humans to mitigate antimicrobial resistance may not be effective when the overwhelming majority of antibiotics used worldwide are given to livestock.

By contributing to the spread of antimicrobial resistant infections and infectious diseases, the mass production and overconsumption of meat now constitutes one of the single greatest threats to public health (Henning, 2011:66). Despite the conclusive evidence and numerous calls from reputable national and international health bodies for restricted use or a ban, none have occurred to date. It appears that the global alliance of concerned public-health organisations and individuals do not have enough influence to illuminate, prevent or halt the existing antibiotic use and practices in meat production.

Antibiotic resistance also has indirect consequences and health services would be very different without reliable effective medicaments. For example, elective surgery and other invasive interventions would become problematic. Whilst billions of meat animals are kept "healthy" in unhealthy industrial farms, the world's population faces a possible prospect of losing antibiotics as a tool to treat and prevent human illness (Safran Foer, 2009). This is one of the many true costs to human health of cheap and abundant meat.

Global pathogens

Breeding genetically modified, uniform, antibiotic-maintained animals in overcrowded, stressful, faeces-infested, artificially lit conditions creates an environment for development and propagation of pathogens. These mass production meat facilities are now understood to be responsible for rapid selection and amplification of pathogens as well as an increasing risk for disease entrance and/or dissemination. It was in industrial farms that scientists saw, for the first time, viruses that combined genetic material from bird, pig and human viruses. Columbia and Princeton University scientists have traced 6/8 genetic segments of one of the most feared viruses directly to US industrial farms (Safran Foer, 2009). The H1N1 swine flu

outbreak originated at a large-scale hog farm in North Carolina and spread throughout the Americas and the world (Safran Foer, 2009; Nordgrens, 2011).

Again, this raises serious questions about how food that compromises the health and wellbeing of individuals, local and global communities is being promoted as a nutritional option (Safran Foer, 2009). While ordinary citizens around the world rightfully believe governments and health related agencies have responsibilities in the name of the common good, it seems that in the case of meat consumption, consumers are left to unearth the nutritional and health facts on their own.

Mental health

According to Halweil (2008:2), 650 animals are killed every second of every day for food consumption. In human societies, crimes of abuse and aggression against the vulnerable, e.g. the young or the old, are considered to be the most heinous of acts. In slaughterhouses and industrial farms, the same acts of indifference, malevolence, cruelty, brutality and lack of compassion are legally practised, socially acceptable, necessary and financially rewarded.
It stands to reason that in order to perform these violent tasks (prohibited in society yet sanctioned within the walls of industrial farms and slaughterhouses), people employed in the livestock industry must become desensitised. Numerous studies show the link between meat production and consumption and violent behaviour in society (Hamilton, 2006; Singer and Mason, 2006; Safran Foer, 2009). Such anthroparchy and indifference to what happens to sentient beings during meat production is morally detrimental: "(r)elations to one's self and to others are altered, and the relation to death is 'pathologised'" (Porcher, 2006:e56). For example, the quantitative findings of Fitzgerald et al. (2009:158) "indicate that slaughterhouse employment increases total arrest rates, arrests for violent crimes, arrests for rape, and arrests for other sex offenses in comparison with other industries". This suggests a sociology of violence unique to the workplace of industrial farms and slaughterhouses. The authors conclude these conditions are very different to any other industrial production processes as they result in a growing list of mental health and related social problems caused by the little understood social role of animals. Being informed about the societal mental health pathology associated with meat production, should enable all

members of society to make personal nutritional decisions that are more conducive to individual and collective human wellbeing.

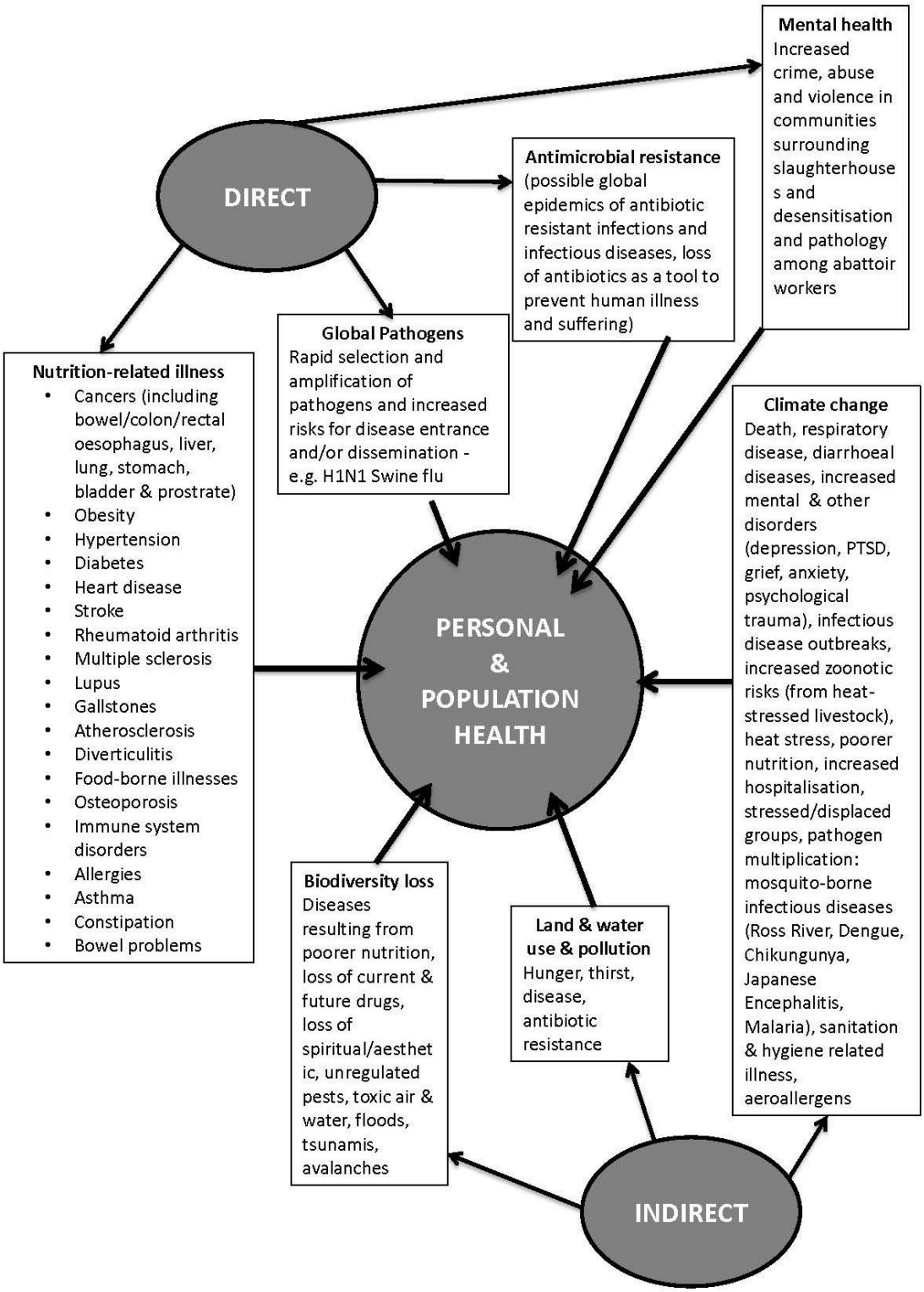
Climate change

Anthropogenic climate change is considered to be one of the biggest environmental crises in human history (Gold, 2004:4) and indirectly the biggest global health threat of the 21st century (The Lancet, 2009). The livestock sector is the largest contributor of global anthropogenic Greenhouse Gas (GHG) emissions and based on widely-used rules of GHG accounting, is responsible for 51% of all worldwide emissions (Goodland and Anhang, 2009; Pelletier and Tyedmers, 2010). Predictions are that by 2050 the livestock sector will singlehandedly account for 72% of the total "safe operating space" for human-caused GHG emissions, 88% of the safe operating space for biomass use and as much as 300% of the safe operating space for reactive nitrogen mobilisation (Pelletier and Tyedmers, 2010). This alone will bring irreversible changes irrespective of any technological methods of addressing climate change. Simply stated, the direct and indirect financial and physical impacts of livestock-induced climate change on the world and human health are unprecedented.

Reduction in meat consumption thus offers an immediate, accessible and effective opportunity to mitigate climate change and its negative health impacts (Goodland and Anhang, 2010a, b and c; Raphaely and Marinova, 2012). Changing weather patterns, increased weather extremes and varying spatial distribution of temperature, precipitation, humidity, air and water currents are already disrupting existing livelihoods (Min et al., 2001; Pall et al., 2011; Dummer et al., 2011). The next five years are likely to be the world's last chance to combat this threat before projected climate, and resulting health disruption, become irreversible (IEA, 2011; The Climate Institute, 2011). Yet, misrepresentation and concealed information regarding the true costs of cheap meat production and consumption are ensuring individuals are prevented from choosing the opportunity to act or participate in mitigating greenhouse gas emissions.

Climate change impacts on human health (see Figure 1) are already far-reaching and are likely to continue to increase in scale and intensity.

Fig 1: Direct and indirect health impacts of meat production and consumption



Impacts pathways include water availability, extreme weather and other natural events, loss of eco-system services (especially the consequences on food security), communicable disease transmission and social disruption caused by migration, displacement and conflict

over resources. Direct consequences include: fatalities and injuries from extreme weather events, such as floods, famine, droughts, fire, diarrheal illness, foodborne and vector-borne diseases (e.g. malaria, encephalitis and dengue fever), heat exhaustion, heat stroke, increased zoonotic risks from heat-stressed livestock and pathogen multiplication and survival, reduction in sanitation and hygiene related illnesses, increasing aeroallergens and air pollution (McMichael, 2003 and 2012; Huq et al., 2007; McMichael et al., 2007; Kovats and Hajat, 2008; Berry et al., 2010).

The impact of climate change on mental health (The Climate Institute, 2011) is already manifested through at least three pathways: firstly, through inflicting more and worse natural disasters on human settlements causing serious anxiety-related responses, chronic and severe mental health problems; secondly, through increasing the risk of injury and physical health problems causally and reciprocally related to mental health; and thirdly, through endangering the natural and social environment on which people depend for their livelihoods (Berry et al., 2010: 129). Whilst felt by everyone, these effects "will fall disproportionately on those who are already vulnerable, especially on indigenous peoples and those living in developing countries, which will bear the brunt of adverse climate change" (Berry et al., 2010: 129). People are yet to be transparently given the necessary information to understand and acknowledge the large contribution excessive meat consumption has on affecting the pathways leading to these bleak health related projections.

Land and water

The livestock sector is the single largest anthropogenic user of land. At least 26% of the world's ice-free, terrestrial surface is occupied by grazing, 33% of all arable land is dedicated to feed-crop production and in all, livestock production accounts for 70% of all agricultural land use and uses 30% of the land surface of the planet (FAO, 2006; Pachauri, 2008). The ecological impacts of such land use are costly, particularly because at current consumption levels, the human population is already reaching the earth's carrying capacity. With the predicted livestock and human population growth figures, it will not be possible to provide enough food to sustain humanity or the animals it consumes (Smail, 2004). For example,

90% of the globally grown soya is used to feed meat animals instead of people (FAO, 2006). Consuming meat is a highly inefficient conversion of protein and consequently a questionable use of land for the production of food for a growing world population which faces hunger and food shortages (Raphaely and Marinova, 2012).

Clearing and cultivation of land for pasture or feed crops are also of significant concern (Henning, 2011:72) as these cause desertification, decreased vegetation, reduction of available water, reduction of crop yields, increased salinity and soil erosion (IPCC, 2007) as well as facilitate invasion by alien species. The quality of the land used for meat animals is significantly compromised or destroyed as a habitat or natural resource for alternative purposes. Such inefficient use and resulting degradation may be largely prevented through user-based actions when these facts are made transparent.

The impacts keep coming. According to FAO (2006), 64% of the world's population will live in water-stressed areas by 2025. Whilst human population growth has an impact on this expected water shortage, the livestock sector's key role in depletion and degradation of freshwater supplies is often downplayed (Henning, 2011: 70). "Domestic" water use accounts for 10% of freshwater consumption while agriculture accounts for around 70% (FAO, 2006). Hidden in this high percentage of water use by agriculture is the amount dedicated to livestock. For example 1kg of beef requires around 100,000l of freshwater which is 100 times more than the amount needed to produce 1kg of grain protein for human consumption (Pimentel and Pimentel, 2003; Millston and Lang, 2003).

The negative implications of livestock production on water extend beyond the inefficient use of an increasingly scarce resource, but also impact the replenishment and quality of these freshwater stocks. The meat industry is the largest single sectoral source of water pollution. Animal wastes (containing antibiotics and hormones), chemicals from tanneries, fertilisers and pesticides used for feed crops together with sediments from eroded pastures contribute for eutrophication or "dead zones" in fresh and marine water bodies. Such pollution further weakens stressed marine ecosystems such as coral reefs, exacerbates human health problems due to polluted water, causes compounding antibiotic resistance

and has also been responsible for massive fish kills (FAO, 2006; Henning, 2011). Slaughterhouse and waste lagoons, which can be 20 acres large and feet deep (Schlosser and Wilson, 2006: 166) often break, leak or overflow, polluting underground water supplies and rivers with nitrogen and phosphorus compounds, including nitrates. All of these pose serious health risks, but information is rarely easy to find and people lack the necessary awareness that might prompt them to search for the facts.

In a world with fragile marine ecosystems and increasingly limited water resources, raising and consuming animals in the western way create dangers that in the short, medium and longer term will prove to outweigh any benefits. "Indeed, given that eating meat is nutritionally unnecessary and detracts more from the global supply of food than it provides, not only is the inefficient and wasteful use of increasingly scarce freshwater ecologically unsustainable, it is morally unacceptable to continue to preference the acquired taste of meat over the need for life-giving freshwater" (Henning, 2011:71). As populations in water scarce regions continue to grow, governments and health authorities could cut these deficits by shifting water to grow food for people not livestock in order to safeguard public health. To date there is little indication of this happening; however the informed individual can take a personal stance.

Biodiversity

The impacts of industrial livestock production on ecosystems and species are equally severe and unsustainable for human health. Forests contain 80% of the world's terrestrial species. They provide a range of essential ecological functions, including: a vital source of global oxygen supply, moderating climates, preventing floods, defending against soil erosion, recycling and purifying water, offering habitat for flora and fauna and providing housing, wood and cooking fuel. In addition, they embody beauty, inspiration and solace. Yet the worldwide rate of deforestation for pastureland annually exceeds more than 13 million hectares, an area the size of Greece or Nicaragua (UNEP, 2003), and is contributing to an unprecedented, rapid reduction in biodiversity.

In the face of increasing human health challenges, biodiversity is the basis for resilience (CBD, 2011). With only 1% of tropical rainforests tested for medicinal benefits, they already

supply 25% of all medicines and researchers believe that these ecosystems contain the medicines of the future (Sussman, 2000:67; Gore, 1993:23). Over half (~60%) of all medicines used today are sourced from nature, including drugs such aspirin and quinine (Rose, 2009). According to Bernstein (2010:n.p.), "two thirds of all new drugs licensed in the US from 1981-2006 would not exist if they hadn't been found in or patterned after compounds that nature designed. This proportion is yet higher for cancer drugs and antibiotics." Biodiversity is a source of current and future drugs; fulfils spiritual and aesthetic needs and is essential for sustaining life on earth. Clearly, excessive meat production and consumption, by contributing so significantly to deforestation and loss of biodiversity, is creating a yet unquantified, but serious direct and indirect threats to human life.

Despite all the existing evidence regarding its negative impacts on human health, excessive meat consumption continues to be supported and promoted through formal nutrition and health public channels and in official guidelines. The consequence is a global trend of expanding meat consumption. As Bittman (2012:n.p.) succinctly summarises: "on the world scale there's troubling movement in the wrong direction".

Misinformation about meat

The currently disseminated information can be held largely responsible for the unsafe trajectories discussed to this point. It is thus interesting to briefly explore the origins and consequences of the vested interests of political and industry stakeholders supporting the global livestock sector. It is a complex task to disentangle all relationships and channels of influence, but for the purpose of this analysis we arbitrarily look at some examples of political influence, regulations and subsidies, health research, practice and nutritional guidance and homogenisation of diets.

Political influence

The links between the goals of trade and industry facilitation and the protection of public health are very blurred at a national and global level (Dixon et al., 2007). Public interests may be directly affected through this lack of transparency about political priorities. For example, the United States Department of Agriculture (USDA) was originally established

with the dual mandate of supporting and promoting farmer and agricultural interests while at the same time advocating consumer interests by setting nutrition standards and food assistance programs. The double mandate created an inherent conflict of interest that allowed the meat and supportive industries (such as pharmaceutics) to wield considerable political and economic influence over USDA and other government policies (Simon, n.d; Safran Foer, 2009). This power has been consolidated over the years and the USDA is now credited with having the greatest global influence on nutrition and nutritional choices due to its role in setting dietary directions. In Australia the situation is no different with the Meat and Livestock Association (MLA) contributing to the funding of prestigious government research organisations, including the Commonwealth Scientific and Industrial Research Organisation (CSIRO) (Russel, 2009).

On a global stage, in response to the increasing scientific evidence about the numerous negative impacts of excessive meat production and consumption, a partnership was announced at the World Meat Congress (June 2012) between the International Meat Secretariat and FAO. Its task is to establish global standards to assess the GHG generated by livestock production (The Meat Site, 2012). According to Nestle (1999), in the name of profit maximisation, the livestock industry and related stakeholders will do the necessary to continue producing and promoting meat products, including lobbying politicians, co-opting government food and nutrition experts and supporting professional and public organisations and research bodies. For example, in Australia the livestock sector is exempted from the carbon tax despite being recognised as one of the major GHG emitters.

Yet again, it should be apparent that whilst citizens around the world rightfully believe that governments and related agencies have been established and are responsible for policing in the name of the common good, thanks to the political and economic influence of the global meat megamachine, this is not the case. National governments (e.g. in Australia Department of Agriculture and Food, 2012) and international organisations (such as the European Union) support farmers through policies that result in transfers of taxpayers' money to producers. This government support needs justification which is reflected in most public information promoting meat production and consumption.

Subsidies and regulations

Subsidies to the livestock industry were originally intended to be a temporary fix to save farms in the 1930s following the hardships of the Great Depression (e.g. the New Deal in the USA, Schlesinger, 2003). At the time farmers accounted for large sections of the population (e.g. 25% in the US) and were in need of financial assistance. Due to rapid industrialisation and urbanisation, today's farmers account for 1% of the population and during good years earn well above national averages (Bernanke, 1983). However, governments continue to give ongoing farm subsidies which artificially keep meat prices low, encouraging excessive meat-based diets particularly for the socio-economically disadvantaged (Fox, 2007, Cross et al., 2007). For example, the American Physicians Committee for Responsible Medicine (2011) estimates that in US the livestock sector is the biggest beneficiary of government food subsidies, directly receiving 63% and indirectly benefiting from the 20% grain subsidies. By comparison, the fruit and vegetables sector receives less than 1% and the nuts and legumes sector less than 2% of government food subsidies.

In countries such as Australia and US, there is also subsidisation through diesel excise. Whilst this applies to both crops and livestock, the disproportionate energy used in livestock production effectively means far greater subsidisation by government. These politically entrenched subsidies are perpetuating the misinformation about the nutritional importance of increasing meat consumption.

In further support of livestock farmers, legislation and regulations reflect the priorities of mass production and consumption. Domestic animals are protected (to a degree) in law, but there are no laws defending food animals or people from the inherent cruelty of industrial farming (Safron Foer, 2009; Voiceless, 2012). If information about the true cost of livestock were available, current subsidies would be revealed as endangering the wellbeing of the planet and human health.

Health research, practice and nutritional guidance

It was already reported in 1961 that a vegetarian diet could prevent 90-97% of heart and other non-communicable diseases and many called for a return to a more "traditional"

plant-based diet for environmental, social and health reasons (Lappé, 1991). Yet, despite years of credible conclusive findings showing the disturbing health and environmental impacts of excessive meat consumption, and the benefits of plant-based diets, the science continues to be concealed behind political and food industry propaganda and vested interests (Moritz, 2009; Safran Foer, 2009).

For example, the original 1956 US food guide pyramid today still promotes the importance of a high animal protein diet. In 2011, the US Government replaced the graphics of MyPyramid with MyPlate – an "easy to understand visual cue to help consumers adopt healthy eating habits" (USDA, 2011: n.p.). "Unfortunately, like the earlier US Department of Agriculture Pyramids, MyPlate mixes science with the influence of powerful agricultural interests, which is not the recipe for healthy eating" (Willet cited in Harvard School of Public Health, 2011:n.p.). In response, the Harvard University School of Public Health unveiled a Healthy Eating Plate which specifically emphasises "healthy proteins" such as nuts and beans and recommends limiting "red meat and avoiding processed meats, since eating even small quantities of these on a regular basis raises the risk of heart disease, type 2 diabetes, colon cancer, and weight gain" (Harvard School of Public Health, 2011:n.p.).

In Australia, in 2005 the CSIRO released "The CSIRO Total Wellbeing Diet" (TWD) which is based almost entirely on red meat consumption (Noakes and Clifton, 2005). The MLA funded some of the CSIRO's research into the TWD. The then Australian Prime Minister promoted TWD with a mail-out to over 2 million school children. This highlights the blurred lines between political, industry and public health interests. Another example of duplicity is the MLA's "expert panel" to investigate the link between red meat and bowel cancer. The National Health and Medical Research Council of Australia (NHMRC), the designated government body for health advice, cited the MLA's findings in the 2003 Australian Dietary Guidelines without informing the public who had conducted the research or the conflict of interest of the panel (Russel, 2009).

The medical profession and the health insurance sector are typically not equipped to question the reliability of such information. Doctors and nurses receive little or no training

in nutrition (Stone, 2011). Meat is also part of daily dietary recommendations suggested by the health and wellbeing industry, including weight loss programs (such as Weight Watchers International Inc.).

Despite conclusive evidence of the harmful health and destructive environmental implications of excessive meat consumption and the benefits, at all life stages, of a plant-based diet (Campbell and Campbell, 2006; Stone, 2011), people continue to be told that the more meat they eat, the healthier they will be (Bittman, 2007; Simon, n.d.). In the face of such a pervasive misinformation, even those looking to make the right food choices face a difficult task.

Homogenisation of diets

The global nutrition transition towards diets of more meat, less complex carbohydrates and reduced fruit and vegetable intakes has been encouraged around the world by the western cultural hegemony: if you are rich, you eat meat, and if you are poor, you eat stable plant food like potatoes and bread (Campbell and Campbell 2006). These increasingly dominating food trends are not simply a matter of taste, or elitism. Essentially, globalisation, harmonisation of food standards, retailer and wholesaler consortium domination, mass marketing and advertising and the erroneous belief that the western-style diet is the best, are leading to a rapid worldwide adoption of high meat consumption (Campbell and Campbell, 2006; Goodland, 2001). Poor and emerging economies are regarded as new and growing markets. They are expected to generate the biggest increases in meat consumption over the next 45 years (Elam, 2006). Where acknowledgement is made to the role of diet, such as in the projected cancer growth statistics – 75% by 2030 with over 90% of these in developing countries (Bray et al., 2012), no explicit attention is given to preventative nutritional strategies or mitigatory interventions that avoid propagation of the western food model. It seems morally inappropriate to combat diseases of poverty in ways that cause diseases of affluence.

Meat consumption is also promoted to the socially disadvantaged within society, for example as part of school feeding programs and food assistance in impoverished areas,

including charity initiatives (e.g. sausage sizzles). The result is an increasingly sick population and a real possibility that today's children will have shorter life expectancies than their parent. They willalso will inherit a world of scarcity, ill health, hardship and suffering (Stone, 2011). Some commentators claim that similarly to peak oil, humanity has already attained peak health, namely "the point in time when the maximum rate of health care delivery is reached, after which further demand ensures terminal decline in standards of health" (Judge, 2008). However, unlike peak oil, health need not be a finite resource and may exist in abundance through a shift in the current nutritional trajectory.

More information appears to be urgently needed in order to allow people to reaffirm their own traditional diets and forego the western experience of expensive morbidity and mortality associated with meat-rich diets. However**,** this change will not happen whilst meat continues to be promoted as a healthy, necessary food source (USDA, 2012; Healthy Food Guide, 2012; Russel, 2009). Informed individuals and communities should hopefully be able to make a shift away from the current food paradigm and look for healthier alternatives.

Flexitarianism and information

Given the health and environmental impacts of excessive meat consumption, there is a lucid need for urgent dietary reform. Potentially less harmful food choices and options should be easily and immediately accessible for as many people as possible. There are numerous dietary options that avoid red meat altogether, including**:** veganism, vegetarianism, pescatarianism, fruitarianism and macrobiotic diets**.** However, these all require significant changes and fundamental nutritional commitments for those accustomed to regular meat consumption. An alternative approach that allows for almost instantly beneficial yet gradual, incremental and progressive advances is flexitarianism. Despite being voted the most useful word of 2003 by the American Dialect Society (2004), the term is still infrequently used. Its definitions vary to include semi-, part-time, partly or flexible vegetarianism (Hirsch, 2004; Berley, 2007) or meat-reducers. The way the word is intended in this article is to describe a dietary shift towards increasing the vegetarian component in personal diets and gradually reducing meat consumption. According to Raphaely and Marinova (2012), flexitarianism encourages people to substitute meat with plant-based

foods. Although the more the better, the level of meat reduction chosen through adopting a flexitarian diet is a matter of personal choice.

Personal choices about how much to reduce one's meat consumption may be informed by reputable global medical research bodies with no other apparent vested interests than human health. Recent recommendations by the World Cancer Research Fund (WCRF), the American Institute of Cancer Research (AICR), the Harvard School of Public Health, and the Oxford European Prospective Investigation into Cancer (EPIC) study suggest that meat consumption should be limited to a maximum of 500 g a week or 26 kg per year. This recommendation is now endorsed by the UK Government (Campbell and Campbell, 2006; WCRF/AICR, 2007; Harvard School of Public Health, 2011:n.p.; Campbell, 2011). A similar consideration (i.e. a limit of 455 g of lean meat per week) is included in the current Australian draft dietary guidelines (National Health and Medical Research Council, 2011) in light of increasing scientific supports for predominantly plant-based diets (Stanton, 2012; Marsh et al., 2012; Saunders et al., 2012 a, b and c; Zeuschner et al., 2012; Reid et al., 2012; Radd and Marsh, 2012). Further, recommendations suggest that processed meat products, such as bacon, ham, salami, sausages, deli meats and some hamburgers should not be consumed at all (Harvard School of Public Health, 2011:n.p.). However, for populations in many countries current levels of per capita meat consumption are drastically different from these recommendations (see Table 1).

Table 1. Meat consumption: recommended and selected countries, 2007

	Per capita average annual consumption (kg)	Per capita average weekly consumption (kg)	Per capita average daily consumption (g)
Recommended*	<26.0	<0.500	<71
Luxembourg	136.73	2.629	376
USA	122.79	2.361	337
Australia	122.70	2.360	337

Spain	111.56	2.145	306
Denmark	98.20	1.888	270
Italy	92.65	1.782	255
Argentina	91.42	1.758	251
France	88.77	1.707	244
Germany	87.88	1.690	241
United Kingdom	85.51	1.644	235
Brazil	80.49	1.548	221
Greece	75.73	1.456	208
Mexico	63.29	1.217	174
Russia	60.88	1.171	167
South Korea	55.85	1.074	153
Saudi Arabia	54.03	1.039	148
China	53.45	1.028	147
Malaysia	48.99	0.942	135
South Africa	48.87	0.940	134
Japan	46.13	0.887	127
Bulgaria	45.32	0.872	125
Cuba	39.04	0.751	107
Burma	28.50	0.548	78
Libya	27.84	0.535	76
Morocco	25.02	0.481	68
Turkey	24.40	0.469	67
Egypt	22.08	0.425	61
Peru	20.40	0.392	56
North Korea	14.68	0.282	40
Pakistan	13.42	0.258	37
Indonesia	11.14	0.214	31
Sri Lanka	6.82	0.131	19
Malawi	5.90	0.113	16

Rwanda	5.64	0.108	15
Congo, Democratic Republic of	4.61	0.088	13
Bangladesh	3.62	0.069	10
India	3.26	0.062	9
Global	46.6	0.896	128
*Studies show meat consumption is nutritionally unnecessary. If it is consumed, the WCRF/AICR and UK government and others, recommend for health reasons that no more than 0.5kg per week (26kg per annum) be consumed.			

Source: Food and Agriculture Organization of the United Nations (FAO) (2010) Livestock and Fish Primary Equivalent, 02 June 2010, FAOSTAT on-line statistical service, FAO, Rome, http://faostat.fao.org/site/291/default.aspx (accessed 1 November 2010).
http://chartsbin.com/view/bhy

Flexitarianism is an individual journey which may be difficult for some in light of the current dominant nutritional discourse, misrepresentation and misinformation regarding the value of meat-rich diets. A population transition towards decreasing meat consumption should be supported by targeted public, private and community-based health initiatives. Through education and information, people should be assisted to make good dietary choices for better nutrition (FAO 2013). To facilitate and encourage such a broad-based change, a number of public health information initiatives and partnerships are proposed below:

(1) Publically available and easily accessible government nutritional recommendations based on trustworthy research – government-based nutritional recommendations which rise above industry interests could encourage people to eat less meat and more plant based protein sources;
(2) Targeted information distribution and campaigns for reducing meat consumption, particularly in high-risk groups or populations vulnerable to misinformation from the meat industry – parallels can be drawn with anti-smoking, anti-drinking, SunSmart and healthy lifestyle campaigns and other initiatives which promote better health;

(3) Web- and telephone-based public and private health information services (e.g. health lines or HealthDirect in Australia) should provide easily accessible, widely available and transparent information on the health benefits of reduced meat consumption as part of their healthcare triage, health advice and health information services;

(4) Health funds incentives – like car or household insurance bonuses or incentives geared towards attracting those less likely to make big claims, health funds could offer a sliding scale of incentives to those who consume less than 26 kg meat per year. These funds could also distribute information to support these incentives, including facts and figures about the numerous diseases associated with excessive meat consumption and the financial and resource drain this has on healthcare systems;

(5) Building government-industry-community-NGOs partnerships that encourage flexitarianism – supportive incentives and funding (such as tax concessions and superfund bonuses) could be given to such partnerships for promoting meat substitutes and plant-based alternatives;

(6) Government health department led informative and educative labelling of food – similar to cigarettes (e.g. smoking is a danger to your health), meat labelling could be introduced and the consumer provided with information about the true environmental and health costs of meat production and consumption. For example, packaged meat could disclose information about GHG generated, grain and water required per kg of the final product. In addition, advice to "enjoy responsibly", "meat-wise" or maximum daily limits as part of a balanced healthy and sustainable diet, could be included on packages and in advertisements;

(7) Publicise successful flexitarian initiatives to mainstream meat reduction and create a sense of global community responsibility and practice – for example, prominent individuals (e.g. Nobel Peace Prize winner and chair of IPCC Dr Pachauri) have called for weekly meat-free days to reduce anthropogenic climate change and improve human health. The city councils of Cape Town (South Africa), Sao Paulo (Brazil), Bremen (Germany), Mechelen, Ghent and Hasselt (Belgium) have already officially endorsed one meat free day a week taking the lead in encouraging flexitarianism. Another example is Europe's "Meat Reducers" movement with millions of participants part-fuelled by the global mad-cow scare. Tim Lang, Professor of food policy at City University in London

and advisor to the World Health Organisation recommends eating meat one day a week or on special occasions, i.e. meat as a treat, offering another illustration of promoting a flexitarian diet;

(8) Include flexitarian messages in general health messages (together with messages such as walk, cycle, exercise, stay connected to your community) for all stages of life;

(9) Include wide range of vegetarian options in mainstream media, such as magazine and newspaper lifestyle sections, TV cooking programs and series – this will encourage people to experiment with new meat-free options and possibilities. A flexitarian celebrity chef could be wisely used to spread the message;

(10) Flexitarianism could be promoted through menus at public and private events and facilities, such as conferences, workshops, launches, canteens, cafeterias and restaurants in hospitals, schools, sporting facilities and other public venues – this could be done through public–private partnerships and collaboration. Tourist initiatives such as "veggie street maps" highlighting and promoting eateries and venues that offer meat-free choices (Mason 2009) can also be part of such partnerships.

A major aspect of the flexitarianism transformation is related to the role and influence of the health profession itself. Equipped with the necessary research evidence, medical practitioners and healthcare providers should educate, support and encourage individuals in their striving for better health. In the name of medical integrity these professionals should feel compelled to advise against food that is bad for health, as in the case of excessive meat consumption. After all, doctors still take their Hippocratic Oath whose original classic version states: "I will use those dietary regimens which will benefit my patients according to my greatest ability and judgment, and I will do no harm or injustice to them" (North, 2002).

Health benefits of flexitarianism

Broad-scale adoption of flexitarianism is a win-win health proposal with individuals, local and global populations standing to benefit from the direct and indirect positive outcomes. Currently there is a striking food paradox in the world with 1.3 billion people overweight or obese and 1 billion starving. Further, 20% of the world population continues to consume 80% of the global food produced (including the grains consumed by meat animals). The

dominant global food system has to date been primarily directed towards increasing the amount of calories available without too much consideration of the health impact. The western meat-rich diet, in dislocating traditional diets, has resulted directly and indirectly in a full-blown global health emergency (De Schutter, 2012).

According to De Schutter (2012: n.p.), it is this "food system itself that is making people sick". In 2012 the Health Professionals (1986-2008) and Nurses' Health (1980-2008) follow-up studies of 3 million person-years confirmed that "[r]ed meat consumption is associated with an increased risk of total, CVD [cardiovascular disease], and cancer mortality. Substitution of other healthy protein sources for red meat is associated with a lower mortality risk", namely 7-19% lower premature overall mortality risk and 9.3% preventable deaths for men and 7.6% for women if all of these individuals consumed less than 0.5 servings per day (approximately 42 g per day) of red meat (Pan et al., 2012: 555). Flexitarianism calls for such reduction in meat consumption through substitution with alternative healthy protein choices.

Food security through cheap meat production and availability is unsustainable. It is neither nutritionally sound nor ecologically viable. Changes in the dominant political and economic systems are unlikely to occur fast enough to address and mitigate the growing human and environmental health crisis. Flexitarianism has the potential to address this emergency with immediate results. Whilst the current forces of politics and profit may resent and resist such a change, there is compelling evidence that the adoption of more sustainable alternatives holds a lot of opportunity and in fact, may be essential for planetary and economic wellbeing (Stern, 2006; Garnaut, 2008 and 2011).

It is encouraging to know that just 25% reduction in global meat consumption will achieve a 12.5% reduction in GHG emissions, the same target delegates tried, but failed to achieve at the 15th Conference of the Parties (COP15) of the United Nations Framework Convention on Climate Change (UNFCCC) in Copenhagen in 2010. It is estimated that halting climate change (i.e. stabilising atmospheric CO_2 at 450ppm) will cost US$ 40 trillion by 2050; a worldwide

shift from 2010-2030 to a low-meat diet would reduce this cost by more than 50% (Stehfest et al., 2009).

It is not important by how much an individual starts reducing their meat consumption, as any reduction has immediate personal and global health and environmental benefits. The immediate personal, population and environmental benefits include among others:

• Decrease in nutrition-related chronic and non-communicable diseases
• Decreased mortality
• Preventing nutrition related personal and public health costs due to excessive meat consumption
• Slowing the alarming biodiversity loss with ongoing human health and biophysical gains
• Decreases in GHG emissions and livestock induced climate change
• Improved environmental health, including decreases is water and land pollution
• Arresting further livestock-related deforestation and freeing up agricultural land and water resources
• Freeing grain for direct human consumption.

Widespread personal adoption of flexitarianism in western and emerging economies holds a key to increasing wellbeing. Essentially a high-meat and low-plant diet perpetuates high health inequality and low average health status at any level**,** while high-plant and low-meat diet immediately contributes towards decreasing health inequality and increasing health and wellbeing. In Table 2, the contribution of the information policy interventions proposed in this paper are assessed against their impact on key stakeholders and their overall value for public health and environmental wellbeing. The methodology used in this analysis (see Panayotov, 2010) allows for a general and quick overview of the "***winners***" and "***losers***" illustrating the net benefit of increasingly available information leading to promotion and adoption of flexitarianism.

Without any of the suggested information policies, there are more *losers* than *winners* and the *winners* are heavily skewed against public health. The assessment shows that after intervention, the net benefit is significant with overwhelmingly more *winners* than *losers*. In

every case illustrated without intervention, excessive meat consumption continues and the average health status is likely to continue to deteriorate, as is health inequality. Without exception the average health status improves and the health inequalities decrease after these policy interventions. It is thus clear that information leading to increasing uptake of flexitarianism is likely to have an overall significant positive net gain for individual and public health.

Table 2. Assessment of proposed policies

		Livestock industry	Agronomy	Pharmaceuticals	New business opportunities	Research	Political parties	Government	Media, including the web	Public health	Individual consumers	Lower socio-economic communities	Developed countries	Emerging countries	Bio physical world	**Average Health Status**	**Health Inequalities**
1. Government-based trustworthy nutritional information	pre	W	W	W	W	W	W	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
2. Targeted information campaigns	pre	W	W	W	W	W	W	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
3. Web- and telephone-based public and private health	pre	W	W	W	W	W	W	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
4. Health funds incentives	pre	W	W	W	W	W	L	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
5. Partnerships for flexitarianism	pre	W	W	W	W	W	W	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
6. Food labelling for social and environmental outcomes	pre	W	W	W	n/a	n/a	n/a	L	n/a	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
7. Publicise successful flexitarian initiatives	pre	W	W	W	n/a	n/a	n/a	L	n/a	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
8. Flexitarian messages in general health messages	pre	W	W	W	n/a	n/a	n/a	n/a	n/a	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
9. Mainstreaming vegetarian menus in media	pre	W	W	W	n/a	n/a	W	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓
10. Flexitarianism in public and private event and facility menus	pre	W	W	W	n/a	n/a	W	L	W	L	L	L	L	L	L	↓	↑
	post	L	W	L	W	W	W	W	W	W	W	W	W	W	W	↑	↓

W - winner; L - loser; n/a - mot applicable

In fact, consistently the only possible *losers* from all policy initiatives are the livestock and pharmaceutical stakeholders. Given the recent historic and current economic and political power wielded by these players, any public health information policy about increasing flexitarianism is likely to be met with resistance and counterclaims. It is therefore necessary to empower consumers and related government and industry nutritional bodies to understand the health and planetary consequences of excessive meat consumption and allow for an informed user-driven health transformation.

Conclusion

Is meat bad for human health? According to Omish (2012: 563): "In a word, yes". Is meat bad for planetary wellbeing? Again, the short answer is "yes". All scientific evidence shows that everyone and everything in the world will benefit from a global reduction in meat consumption. Yet despite some positive indication of a shift in the right direction, the dominant trend of ever-increasing excessive meat consumption remains unchanged and the health of populations as well as the planetary prospects appear bleak.

Information offering individuals the ability to make a significant difference to their own future is the most powerful source of potential human and closely related environmental redemption. However this personal journey may be undermined by the dominant meat-rich nutritional discourse and the ongoing misrepresentation of the benefits of a meat-based diet. The policies outlined in this paper may serve to counter this and in so doing, facilitate a growing awareness, individual and community empowerment**,** and ultimately a transition to healthier food choices. There are no downsides to such a transformation as the assessment of the recommended policies shows. The only potential losers would be livestock and pharmaceutical stakeholders**,** if they continue to resist the imperative for change. If they do recognise the proven unsustainability of their business practices, there is vast opportunity in developing and marketing alternative healthier food products, including meat analogues. Flexitarianism, supported by sound information dissemination and policy strategies, creates abundant favourable conditions for many new and exciting dietary, human and planetary wellbeing initiatives.

Excessive meat consumption is at the core of the most challenging social and environmental problems we currently face. Although reducing animal protein intake in people's diets offers an immediately accessible solution, vested interests of political and industry stakeholders supporting the global livestock sector may continue to stifle the debate. The appropriate policies may not be put in place straight away or fast enough. With profit being prioritised over people and the planet, hope lies in the potential of informed individuals to arrest the seemingly inevitable ecological and human decline by making more sustainable and healthy user-based dietary choices. As such flexitarianism offers a substantial opportunity for improving personal, population and environmental wellbeing.

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Case Study Area 1: Flexitarianism

1.2 Raphaely, T., Marinova, D. (2012). Flexitarianism: A More Moral Dietary Option. *International Journal of Sustainable Society* (forthcoming).

Refereed journal article

Flexitarianism: A more moral dietary option

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Abstract

It is morally impossible to justify the power wielded by the livestock industry. This paper describes the human, ecological and animal welfare concerns caused by excessive meat production and consumption including climate change, water depletion and degradation, land misappropriation and degradation, rainforest destruction, biodiversity & rapid species loss and the significant threats and challenges presented to human health and wellbeing. It offers flexitarianism (flexible or part-time vegetarianism) as a personal opportunity and moral responsibility to combat the destructive duplicity of the global livestock megamachine. Through a personal nutritional paradigm shift and resulting food choices individuals can reclaim the possibility of a more sustainable world and global society.

Keywords: flexitarianism; flexible vegetarianism; part time vegetarianism; moral dietary options; personal nutrition, ecological health; animal welfare; livestock; meat consumption; meat production; climate change; water depletion; water degradation; land degradation;, rainforest destruction; biodiversity; species loss; human health; sustainable world; global society

1. Introduction

Achieving sustainable production and consumption is essential in the transformation towards a more sustainable society. The environmental, health and animal welfare impacts

of current western excessive meat production and consumption realities are irreconcilable with achieving this goal.

Many people think that meat consumption is a personal choice that doesn't harm anyone else. This may hold true when food animals are produced and consumed in quantities and using practices more in keeping with traditional animal husbandry. However, the idyllic Old MacDonald farm has long been replaced in the Western world. The massive intensification and industrialisation of animal production has created meat factory production systems (Fraser, 2005) which are having deep impact on the world and significantly threatening its short and longer-term sustainability. Meat consumption therefore should no longer be seen as an individual freedom. Industrialising livestock production, together with the economically distorting effects of vast agricultural subsidies and other environmental and economic externalities, has provided affordable meat for billions of people which is often "cheaper" than fruit and vegetables (Henning, 2011:64). Whilst seemingly a good thing, in reality, this has resulted in excessive meat consumption that has come at a devastating cost for human, animal and ecological welfare, while only a select few are benefiting from the short-term profits. The resulting consequences of mass scale industrialised meat production represent the greatest challenges that humanity has ever faced.

The global human population has been projected to increase by 40% between 2006 and 2050, and this growth, coupled with a near-doubling of per capita GDP is expected to result in the world's total meat production increasing more than 135% to about 13 animals per person per year (Elam, 2006). Some claim that this represents the road to improved food security, a better diet and the realisation of prosperity following the Western model (Henning, 2011). In 2007, 275 million tons of meat (beef, pork, chicken and lamb) were produced worldwide and this was a fourfold increase in meat production over the last half century (Halweil, 2008:1; Henning, 2011:63) through the breeding and slaughter of 60 billion animals a year (an average of 650 animals every second or about 10 animals per person per year). Statistics from the Food and Agriculture Organisation show that by 2010 this figure had increased to more than 63 billion (authors' calculations from FAO, 2012). Considering both direct and indirect effects, meat production and consumption are leading

causes for climate change, water depletion and pollution, deforestation, land degradation and desertification, loss of biodiversity, rapid species extinction, ongoing hunger and increasing ill-health, malnourishment, obesity, chronic disease, antibiotic resistance and the spread of infectious diseases and possible global epidemics (Gold, 2004; LEAD, 2006; Bittman, 2008; Goodland and Anhang, 2009; Stehfest et al., 2009; Pelletier and Tyedmers, 2010; Hamerschlag, 2011; Henning, 2011). Rather than stop the march of this devastation it appears that current western levels of meat consumption continue to be promoted and their negative impacts ignored.

This paper is a rallying call to flexitarianism (flexible or part-time vegetarianism) as an individual action to combat the geopolitical and industrial duplicity that is destroying the world and its people. This may be the most liberating, empowering, immediate, cost effective and independent choice possible for individuals throughout the developed and emerging world to mitigate climate change and widespread environmental and social destruction to regain and restore the reality of a better world. The approach we use draws on publically available data and is based on generalisation and extrapolation to offer perspective into the human and environmental consequences of current meat consumption. Despite the fact that such information is available, people are constantly bombarded by the misleading messages of the meat megamachine. This paper attempts to expose the truth in the three main areas of human health, ecological health and animal wellbeing. Based on this awareness, it then exposes the existing deceit, calls for individual action and proposes policy pathways in support of flexitarianism.

2. Human health

The impact of meat on human health can be seen in two distinctive areas, namely the excessive consumption of meat and the way meat is produced to meet this increasing demand. Both have negative consequences for humanity. There is a plethora of issues too vast to cover here which all point as to how dangerous current meat consumption and production have become. To validate this claim we focus on some of these threats.

2.1 Meat consumption

There are big differences in meat consumption around the world (see Table 1). Whilst life expectancies in the western world are higher, this is the result of many development related factors, such as improvements in living conditions, advances in public health and medical technologies, access to medical and healthcare, education, economic resources, high childbirth and childhood diseases survival rates (AIHW, 2011). However, despite the prolonged western life span, "about 80 percent of elderly people (over age 65) suffer from at least one chronic disease and about 50 percent suffer from two or more chronic diseases. In the face of a steady increase of life expectancy and the dramatic rise in the spread of the leading chronic diseases, it is probable that humanity will soon experience, for the first time in modern history, a widespread old age characterized by a sub-optimal average quality of life, for a significantly longer period of time" (Barilla Center, 2012:239).

One of the main reasons for this is that the West is significantly exceeding the recommended healthy levels of meat consumption (see Table 1). Studies by recognised international health related organisations repeatedly confirm the link between meat consumption and a wide range of serious non-communicable diseases, the most prominent being cancer. The American Institute for Cancer Research (AICR), the World Cancer Research Foundation (WCRF), the World Health Organisation's International Agency for Research on Cancer (IARC) and the European Prospective Investigation into Cancer and Nutrition (EPIC) repeatedly confirm the negative connection between the consumption of red and processed meat and various cancers, particularly bowel cancer (Groenen et al., 1976; Jakszyn and González, 2006; WCRF/AICR, 2007; AICR, 2010; Ferlay et al., 2010; WCRF, 2011a). The findings from the EPIC study, the largest study of diet and health ever undertaken, are based on over half a million people recruited in ten European countries, Denmark, France, Germany, Greece, Italy, the Netherlands, Norway, Spain, Sweden and the United Kingdom (Riboli and Lambert, 2002; AICR, 2012). Other studies have also conclusively linked cancers of the oesophagus, liver, lung, stomach, bladder and prostrate to red and processed meat consumption (Cross et al. 2007, 2011; Ferrucci, 2010). Obesity, hypertension, diabetes, heart disease, stroke, cancers, rheumatoid arthritis, multiple sclerosis, lupus, gallstones,

atherosclerosis, verticulitis, food-borne illnesses, osteoporosis, immune system disorders, allergies and asthma are just some of the many other costly, debilitating and potentially life-threatening illnesses conclusively linked to excessive meat consumption, the incidence of which plummets when more traditional plant-based diets persist (Appleby, 1999; Monday, 1999; Gardner and Halweil, 2000; Popkin, 2001, 2009; WHO, 2003; LEAD, 2006; Cross et al., 2007; Fox, 2007; WCRF/AICR, 2007; Moritz, 2009; Henning, 2011; Stone, 2011; USDA, 2011; WCRF, 2011a, WCRF, 2011b). A 2011 update by the AICR/WCRF reinforces that people should eat no more than 500g of red meat per week and calls for complete avoidance of processed meat (bacon, ham, salami, sausages, deli meats and some burgers) (WCRF, 2011a).

Table 1. Meat consumption, 2007

	Per Capita Average Annual Consumption (kg)	Per Capita Average Weekly Consumption (kg)	Per Capita Average Daily Consumption (g)
Recommended*	<26.0	<0.500	<71
Luxembourg	136.73	2.629	376
USA	122.79	2.361	337
Australia	122.70	2.360	337
Spain	111.56	2.145	306
Denmark	98.20	1.888	270
Italy	92.65	1.782	255
United Kingdom	85.51	1.644	235
Brazil	80.49	1.548	221
Greece	75.73	1.456	208
Russia	60.88	1.171	167
South Korea	55.85	1.074	153
Saudi Arabia	54.03	1.039	148

China	53.45	1.028	147
Malaysia	48.99	0.942	135
South Africa	48.87	0.940	134
Japan	46.13	0.887	127
Bulgaria	45.32	0.872	125
Libya	27.84	0.535	76
North Korea	14.68	0.282	40
Pakistan	13.42	0.258	37
Sri Lanka	6.82	0.131	19
Malawi	5.90	0.113	16
Rwanda	5.64	0.108	15
Congo, Democratic Republic of	4.61	0.088	13
Bangladesh	3.62	0.069	10
India	3.26	0.062	9
Global	46.6	0.896	128

*Studies show meat consumption is nutritionally unnecessary. If it is consumed, the WCRF/AICR and UK government and others, recommend for health reasons that no more than .5kg per week (26kg per annum) be consumed.

Source: Food and Agriculture Organization of the United Nations (FAO) (2010) Livestock and Fish Primary Equivalent, 02 June 2010, FAOSTAT on-line statistical service, FAO, Rome, http://faostat.fao.org/site/291/default.aspx (accessed 1 November 2010), Central Intelligence Agency (2012) The World Factbook, *https://www.cia.gov/library/publications/the-world-factbook/geos/as.html* (accessed 30 April 2012).

Given the credibility of these research findings, one would expect people to be aware of the risks from excessive meat consumption and the health implications from such easily

preventable causes. Yet the pervasive and insidious influence of the livestock sector backed up by government has ensured this isn't happening and meat continues to be promoted as a healthy, necessary food source (USDA, 2012; Healthy Food Guide, 2012; Russel, 2009). The result is an increasingly sick Western population, a horrifying prophecy that today's children may not outlive their parents (Stone, 2011).

This situation is also being exported. It is sad testimony to the great disparity in wealth that, perhaps for the first time in human history, there are more overfed (1 billion) than hungry (800 million) individuals in the world (LEAD, 2006:6; Henning, 2011:68). Ironically due to the global duplicity and spread of western hegemony, throughout the emerging world people climbing out of poverty are shifting from traditional diets of grains, vegetables pulses, roots and tubers to high meat consumption. Consequently non-communicable nutrition-related diseases are overtaking communicable disease (Goodland, 2001; Stamoulis et al., 2004; Karelina and Fritschel, 2011). For example, the rate of increase of global cancer is now more than 4 times faster than the spread of HIV (WCRF 2011a). The developing world represents new and growing markets for the meat industry and the global livestock mega machine is now focused on these people. Is it ethical to replace poverty and hunger in ways that cause diseases of affluence and environmental destruction? What is urgently needed is not simply finding ways to live longer but finding ways to live longer and healthier without the onset of non-communicable and chronic diseases (Barella Center, 2012).

2.2 Meat production

The promotion of meat consumption has completely changed animal husbandry. Antibiotics, growth hormones and genetic modifications have become the basis for industrial livestock production. The consequences for humanity are ominous and include a global "epidemic" of antibiotic resistant infections (Spellberg et al., 2008; Chee-Sanford et al., 2009; Price at al., 2012). Warning studies were presented to government as early as 1969 (FDA, 2010:4). A 1997 World Health Organisation study reported that all uses of antimicrobials lead to the selection of resistant forms of bacteria (WHO, 1997:5). In 2004, the US Government Accountability Office confirmed antibiotic-resistant bacteria have been transferred from animals to humans through meat production (FDA, 2010:11). Despite calls

by the world's medical community to cease the non-therapeutic use of antibiotics, over half of all antibiotics produced worldwide are now administered non-therapeutically to meat-animals (LEAD, 2006:273) and for the US this figure is 90% (Center for a Livable Future, 2010). The response so far has been a commitment to "working with animal drug sponsors… the animal agricultural community and all other interested stakeholders… minimising disruption to the animal agriculture industry…" (FDA, 2010:17). It is not hard to see whose interests are being protected.

The breeding of genetically modified and uniform, sickness-prone, antibiotic maintained animals in the overcrowded, stressful, faeces-infested, artificially lit conditions of factory farms promotes growth and mutation of pathogens creating perfect environments for rapid selection and amplification of pathogens and an increasing risk for disease entrance and/or dissemination. For example, the H1N1 swine flu outbreak originated at a hog factory farm in North Carolina spreading all over the world (Saffran Foer, 2009; Nordgren, 2011). By contributing to the spread of antibiotic resistant infections, the increase of infectious, chronic and new diseases, mass production and overconsumption of meat now constitutes one of the single greatest threats to public health (Henning, 2011:66). Despite the evidence of the dangers to humanity, no mitigating measures have occurred to date because the livestock–pharmaceutical industry alliance is more powerful than the global alliance of public-health professionals. Eating meat, albeit unwittingly, funds and perpetuates the hold and influence of these powerful interests.

There is something morally reprehensible, almost culpable, about directing antibiotics to healthy animals bred and kept alive only for a short while to supply the West's insatiable appetite for meat. Whilst billions of animals are kept "healthy" in unhealthy meat production factories, the world's population faces a possible future where we are forced to accept the loss of antibiotics as a tool to prevent human suffering (Safran Foer, 2009).

Another reality of meat production is that animals now detract far more from the total global food supply than they provide (Henning, 2011). Western countries feed grains to meat animals instead of feeding people which is an inefficient way of producing calories (Saffran Foer, 2009) and compromises global food security (Yotopoulos, 1985). In 2008/2009 approximately 2.27 billion tonnes of cereals were produced globally (FAO, 2009), over one

third of which are used to feed livestock (FAO, 2006) while nearly a billion humans suffer in hunger (FAO, 2009). If the grain currently used to feed livestock were reallocated to people, there could be an immediate end to world hunger and food security into the foreseeable future without any additional ecological resource requirements. As it stands, while there is 60 billion grain eating livestock, overpopulation should not be blamed for global undernutrition, hunger or environmental problems. Concerns regarding dependency, distribution and corruption are justified, but in a world with increasingly stressed ecosystems, a rapidly growing human population and political unrest caused by high and distorted food prices (Pinheiro, 2010), it is difficult to morally justify this profligate use of edible nutrition (Henning, 2011:69) and the argument for reduced meat consumption becomes ever more lucid.

It seems the choice is simple: cheap meat or global human health – we can't have both. Consuming factory-produced meat is unethical. Whilst citizens around the world rightfully believe that governments and related agencies have been established and are responsible for policing in the name of the greater, common good, this is not the case. The duplicity of the dangerous alliance, the seemingly unstoppable megamachine of relationships between politics, pharmaceuticals and the livestock sector ensures that governments fail in their obligation to safeguard the health of their civilians. There is no indication this will change soon. Individuals however can take back power and immediately take action.

3. Ecological health

The impact of meat consumption on the global ecological health is immense and again, we only focus on a limited number of aspects, namely the connections between livestock and climate change, water, land use, rainforests and biodiversity. It is not possible to consume quantities of meat and consider oneself to be an environmentalist; as Singer (2002:167) said: "We are, quite literally, gambling with the future of our planet – for the sake of hamburgers".

3.1 Climate change

Climate change looms as one of the biggest environmental crises in human history (Gold, 2004:4) and human-induced emission of greenhouse gases cause global warming (IPCC,

2007). The lifecycle and supply chain of livestock products is the largest contributor of Greenhouse Gas (GHG) emissions worldwide (Goodland and Anhang, 2009). Already the impacts of climate change are disruptive (Min et al., 2001; Pall et al., 2011; Dummer et al., 2011) and the next five years are likely to be the world's last real chance to combat climate change before climate disruption is projected to become irreversibly catastrophic (IEA, 2011; The Climate Institute, 2011). Shifting to alternatives to fossil fuel energies is most commonly discussed as the solution but replacing them and any related infrastructure with renewable alternatives will require decades to implement (Goodland, 2010b). Reduction in meat consumption can happen right now.

The climate impacts of meat production have been officially known for at least a decade. In 2001, the Australian Greenhouse Office reported that the Australian livestock subsector was the nation's largest source of GHG emissions (Hegarty, 2001). In 2006, the FAO calculated global meat supply emissions were 18% of total annual worldwide GHG emissions (LEAD 2006). By 2009, calculations by the Worldwatch Institute showed that, despite being recognised as the biggest anthropogenic contributor to global GHG emissions, the climate impact of the global livestock sector was vastly underestimated and in fact accounted for at least 51% of all annual worldwide anthropogenic GHG emissions (Goodland and Anhang, 2009). A Canadian Study released in 2010 warns of a "livestock greenhouse gas boom" – where soaring international production of livestock could, by 2050, release enough carbon into the atmosphere to "single-handedly exceed 'safe' levels of climate change: the livestock sector's emissions alone, if continuing on the current demand, supply trajectory, could send temperatures above the 2 degrees Celsius rise optimistically said to be the threshold above which climate change will be dangerously destabilising" (Pelletier and Tyedmers, 2010:3). Many of these reports suggest reduced meat consumption and production as a viable and urgent measure of climate change mitigation (Audsley et al., 2009; Garnett, 2009; MacMillan and Durrant, 2009; Stehfest et al., 2009; Pelletier and Tyedmers, 2010; Wirsenius et al., 2011).

Estimates show that a 25% reduction in global consumption of livestock products worldwide would yield the 12.5% reduction in global anthropogenic GHG emissions (Goodland, 2010a)

that delegates tried, but failed, to negotiate in 2009 at the UN Climate Conference in Copenhagen. Yet, despite the massive opportunity for mitigating climate change offered by a reduction in meat consumption in the developed and emerging world, this option has "fallen through the cracks" (Hegarty, 2001:3) and "one of the gravest threats to the long-term sustainability of humankind remains all but ignored" (Gold, 2004:5). Politicians in developed countries have a long history of supporting their farmers and the global livestock industry has significant influence in every sphere including academic research, agricultural policy development and government regulation and enforcement (Nestle, 1999; Campbell and Campbell, 2006; Bittman, 2007; Cross et al., 2007; Dixon et al., 2007; Fox, 2007; Moritz, 2009; Russel, 2009; Safran Foer, 2009; Stone, 2011). Resultantly, almost all attention given to livestock sector GHG emissions to date focuses on technical, biological and technological best practices which may reduce overall emissions and environmental harmful impacts, but ultimately will not be sufficient (Goodland, 2010b; Nordgren, 2011). Financially, a "low-meat" or completely meatless diet will reduce monetary costs of climate change mitigation by 2050 by between 70% and more than 80% (Stehfest et al., 2009:96).

Clearly, personal choices and actions can make a significant contribution to rapid GHG reductions and climate change abatement. Whilst some people may have difficulty believing that eating or abstaining from meat will have any impact on climate (see Table 2), overwhelming evidence shows the most valuable, meaningful, fast and inexpensive action that individuals can take to prevent the impending, irreversible tragedies of global warming is to eat less meat and to consume alternatives to livestock products (Myers, 1984; Campbell and Campbell, 2006; LEAD, 2006; Singer and Mason, 2006; Stern, 2006; Bittman, 2007; Goodland and Anhang, 2009; Safran Foer, 2009; Stehfest et al., 2009, Godfrey et al., 2010, Goodland, 2010a, 2010b; Pelletier and Tyedmer, 2010; FAO, 2011; Fazeni and Steinmueller, 2011; Hamerschlag, 2011; Nordgren, 2011; Stone, 2011).

Table 2. Meat consumption impacts based on beef

	1 kg beef	1 quarter pounder burger (113g beef burger patty)	Annual impact of an average Australian/American's meat consumption
CO2 generated [kg]	35	4	4305
Equivalent to			21525 km with a mid-size car
Freshwater required [l]	100000	11340	12300000
Equivalent to	455 days of an Australian's water use 55 years of an average Bangladeshi's water use	52 days of an Australian's water use 6 years of a Bangladeshi's water use	
Grain required [kg]	11	1.2	
Equivalent to			Feeding 8 people on a grain diet
Rainforest levelled [sqm]	50	6	6205
Biodiversity lost from rainforest beef		25 plant species, 100 insect species, >24 birds, mammals nd reptiles	
Manure generated [kg]	40	4.5	4920

Source: Authors' calculations based on data from: Australian Bureau of Statistics http://www.abs.gov.au/ (accessed 4 May 2012); Department of Environment, Food and Agriculture Organization of the United Nations http://www.fao.org/corp/statistics/en/ (accessed 4 May 2012); Food and Rural Affairs http://www.defra.gov.uk (accessed 20 200

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Note: As livestock production systems vastly differ across regions, all figures used are the average points of results reported by others. For example, estimates of quantity of grain required to produce 1 kg of beef vary between 6 kg, e.g. Beef Cattle Community (2008), http://www.extension.org/pages/35850/on-average-how-many-pounds-of-corn-make-one-pound-of-beef-assuming-an-all-grain-diet-from-backgroundi (accessed 30 April 2012), and 16 kg, e.g. U.S. Department of Agriculture's Economic Research Service in Goodall, J. (2005) *Harvest for Hope* (New York: Warner Books); hence we have used 11 kg.

3.2 Water depletion and degradation

The livestock sector accounts for 10% of global human water use, mostly for irrigation of feed crops (Deutsch et al., 2010). Overall, it is estimated that producing one kilogram of animal protein needs 100 times more water than producing one kilogram of grain protein for human consumption (Pimentel and Pimentel, 2003; National Geographic, 2010). This is an inefficient use of an increasingly scare environmental resource without which life cannot continue. Around the world, as water is increasingly diverted to growing feedstock for meat animals instead of crops for direct consumption, millions of wells are drying up (Monday, 1999) and already stretched freshwater stocks are being polluted during meat production. The meat industry is the largest single sectoral source of water pollution. Animal wastes, antibiotics, hormones, chemicals, fertilisers and pesticides used for feed crops, and sediments from eroded pastures result in eutrophication or "dead zones" in fresh and marine water bodies, destroyed ecosystems such as coral reefs, massive fish kills and human

illness (LEAD, 2006; Henning, 2011). Soil compaction resulting in reduced infiltration, degraded watercourse banks, drying up of floodplains and lowering water tables is also directly attributable to livestock farming practices (LEAD, 2006).

According to Henning (2011:71), "given that eating meat is nutritionally unnecessary and detracts more from the global supply of food than it provides, not only is the inefficient and wasteful use of increasingly scarce freshwater ecologically unsustainable, it is morally unacceptable to continue to preference the acquired taste of meat over the need for life-giving freshwater". As populations in water scarce regions, such as Australia continue to grow, governments should, morally and ethically cut these deficits by shifting water to grow food for people not livestock. Instead, the livestock megamachine continues to promote itself through highly selective data, incomplete life cycle assessment-based methodologies and deceptive analysis (Ridoutt et al., 2011). As the calls for reducing meat consumption gather momentum, we are likely to see more and more of such behaviour which strongly resembles climate change scepticism.

Through duplicity the freshwater global commons are being destroyed. Some schools of thought even predict that the resultant scarcity will lead to water wars and conflicts in the future (Rahaman, 2012). In the face of such unethical theft, individuals again have the choice to adopt a flexitarian lifestyle to disassociate themselves and make a meaningful and important contribution to protecting and saving global water.

3.3 Land misappropriation and degradation

Being the single largest anthropogenic user of land, the livestock sector occupies 30% of the land surface of the planet, exploits at least 26% of the world's ice-free, terrestrial surface for grazing, 33% of all arable land is dedicated to feed crop production and in all accounts for 70% of all agricultural land use (FAO, 2006). Cereals are thus shifted from direct human consumption to indirect consumption of meat, an inefficient food conversion process where a significant "shrinkage" of cereals occurs (Yotopoulos, 1985) and world poverty is perpetuated. Both the clearing and subsequent cultivation of land for pasture or feed crops is of great concern (Henning, 2011:72) causing desertification, decreased vegetation,

reduction of available water, reduction of crop yields, increased salinity and erosion of soil (IPCC, 2007) as well as invasion by alien species. The value and quality of the land used for meat animals is significantly compromised or destroyed as a habitat or natural resource for alternative purposes. Such misappropriation and resulting degradation may be largely prevented with these facts made transparent prompting individuals to reject a high-meat diet.

3.4 Rainforest destruction

Referred to as the "hamburgerization of our forests" (Myers, 1984:127)**,** increasing meat demand is the biggest cause of deforestation, (Monday, 1999; LEAD, 2006). Seventy percent of previous Amazon forest is now cattle pasture and feed crops cover a large part of the remainder (LEAD, 2006). Brazil, the country with the world's largest commercial cattle herd, loses around 1.8 million hectares a year of the Amazon forest (Rofe, n.d). In Central America, between 2004 and 2005, an estimated 1.2 million hectares of rainforest was cut down as a result of soybean expansion for feed crops (FAO, 2011). Worldwide, the rate of deforestation for pastureland annually exceeds more than 13 million hectares, an area the size of Greece or Nicaragua (UNEP, 2003).

Forests, whilst confined to countries, are essential for the survival of the global population containing 80% of the world's species of land vegetation, being a vital source of global oxygen supply, moderating climates, preventing floods, defending against soil erosion, recycling and purifying water, offering habitat for millions of plants and animals, providing housing, wood and cooking fuel and embodying beauty, inspiration and solace. Yet every second, an area the size of a football field is destroyed forever (LEAD, 2006). A single Standard American Diet (SAD) meal (assuming ±30% of the calorific intake is derived from meat), levels 17 sqm of rain forest (City of Cincinnati, 2008). The vegetarian alternative to this hamburger would protect enormous rainforest areas. Faced with such figures, the need for a more moral and sustainable dietary choice becomes ever more compelling.

3.5 Biodiversity

In the face of increasing environmental challenges, biodiversity is the basis for resilience (CBD, 2011). As the major driver of climate change, deforestation, land and water pollution

and degradation, the livestock sector is the leading player in biodiversity reduction. Resource conflicts with pastoralists further threaten wild predators and most of the world's endangered species are suffering habitat loss where livestock are a factor (LEAD, 2006). The sheer quantities of animals being raised for human consumption are an ongoing threat. For example, livestock are identified as "a current threat" in 306 of the 825 eco-regions identified by the Worldwide Fund for Nature and 23 of Conservation International's 35 "global hotspots for biodiversity" are affected by livestock production (FAO, 2006). The importance of these hotspots is enormous. There are as many species of ants on one rainforest tree in Peru as in the British Isles; 700 species of butterflies have been counted within a 3-mile radius in an Amazon rainforest in contrast to only 321 known in Europe; the number of bird species in 1 square mile of the Amazon rainforest exceeds the total found in North America; 25 acres of Indonesian rainforest contain as many different tree species as those native to North America (Sussman, 2000:67; Gore, 1993:23). With only 1% of these tropical rainforests tested for medicinal benefits, they already supply 25% of all medicines and researchers believe these ecosystems contain the medicines of the future (Sussman, 2000:67; Gore, 1993:23). Clearly the risks of unabated meat consumption outweigh any benefits.

With estimates of human population reaching 9 billion by 2050, the current trends in meat consumption will ensure the planet's ecological health continues to deteriorate at a shocking rate. However if all humans obtained their recommended daily intake of protein from plants, e.g. soya, the swop would create a 98% reduction in predicted GHG emissions and a 94% reduction in biomass appropriation (Pelletier and Tyedmers, 2010). This will secure a more optimistic future for all, as well as a more conscious way of living and a more likely end to widespread suffering.

4. Animal welfare

The duplicity of the meat megamachine continues to conceal the truth when animal welfare is concerned as keeping people ignorant is a necessary pre-requisite for the existence and perpetuation of factory farming, including how animals are bred and killed for human consumption.

4.1 Producing animals

Peter Singer recognised decades ago that animals are no longer raised but produced in modern factories where specially bred stocks are maintained in confined spaces and quickly fattened to slaughter weight through a high protein diet, usually of corn and soy (Singer, 2002). According to Voiceless (2012:n.p.), "(t)hese emotionally complex, intelligent beings may never see the sun, feel the earth under their feet…or socialise as nature intended. Instead they are confined in cages… or packed together in such large numbers they struggle to find space to move or reach their food. Baby animals are mutilated without pain relief… because it's practical, cheap and lawful to do so."

A film about meat production would be a horror movie. The power brokers of factory farming however do not want consumers knowing the truth and to this end, significantly influence academic research, agricultural policy, government regulation and enforcement (Safran Foer, 2009). This industrialisation of life has resulted in an unimaginable scale of suffering and misery: animals raised in meat factories lead very short lives of immense denial and distress. Such scale of misery currently affects 60 billion animals a year slaughtered for human consumption. The inhumanity of the breeding and slaughtering practices of this industry, which turn living animals into what is euphemistically called meat and livestock by-products, dwarfs all other animal welfare abuse and is a crime of stupefying proportions (Coetzee, 1999). This is the perhaps the hardest component of the livestock sector to discuss as it moves away from the science of measured impacts and consequences requiring instead confrontation about social sentient beings who feel terror, fear, loss, pain, playfulness, and joy, turned into grossly genetically engineered and modified, faceless living production units in the name of profit maximisation and large scale efficiencies.

Eating meat produced in today's industrialised meat factories degrades humanity and is a condition of inhumanity or inhumanness, the quality of lacking compassion or consideration for others (Farlex, n.d). Factory farming is legalised cruelty for higher profits and cheaper meat with activities legitimised by government agencies, which operate with a stark conflict of interest and little transparency (Voiceless, 2012). There is no such thing as humanely mass produced meat. One cannot make the choice to eat meat today and still consider oneself to be a humane being. In factory farms and slaughterhouses animals are handled en

mass as industrial, economic units rather than sentient life forms. Inevitably, there there will be widespread suffering and inconceivable fear.

4.2 Slaughtering animals

Life in all forms demands respect and for human beings, self-aware and reflective creatures, destroying something for no good reason is, at best, the moral equivalent of vandalism (Schmidtz, 2011). Eating excessive quantities of meat is an act undertaken to meet the non-basic or luxury needs of humans and such actions should be prohibited when they aggress against the basic needs of individual animals (Sterba, 2011). According to Halweil (2008:2), 650 animals are killed every second of every day for food consumption. The mass slaughter inherent in the current and growing global livestock trade is mass vandalism on an inconceivable and unjustifiable scale given that we do not need to eat meat to survive and that current excessive meat consumption levels are detrimental to human health.

Slaughterhouses are the inevitable reality of factory farming which is a violent way to end animal life and a desensitising working environment. Even in a highly regulated country such as Australia and US, legislation and standards do not protect factory-farmed animals from being brutally killed. Footage from Australia shows young pigs exposed to extreme cruelty in their final moments, stabbed in the eyes and ears with stunning equipment, killed with sledgehammers and scalded alive (Animals Australia, 2011). A US meat inspector describes: "Cattle dragged and choked…knocking 'em four, five, ten times. Every now and then when they are stunned they come back to life, and they're up there agonising. They're supposed to be restunned but sometimes they aren't and they'll go through the skinning process alive… If people were to see this, they'd probably feel really bad about it" (Eisnitz, 1997:197).

For factory workers, slaughter is a job requiring indifference, malevolence, cruelty and violence. It should come as no surprise that in the USA slaughterhouse workers have the highest turnover rate (Campbell and Campbell, 2006). The choice is leave or become desensitised to the legally practised and socially acceptable behaviour normal in abattoirs all over the world.

Indifference to what happens in the slaughterhouses to other sentient beings is deadly for human-based morality (Singer and Mason, 2006). As the Australian 2011 newsmaker of the

year Lynn White describes: *"… for the first 38 years of my life I ate animals — completely unaware of the existence of factory farms, and ignorant of what animals experienced in slaughterhouses. Becoming informed was life-changing. No-one had reminded me that eating animals was a choice… That regulations and standards didn't protect these animals from cruelty — and that even if they had — that they would still have been afraid, that they still would have suffered. The story of their final moments is so seldom known or told-yet it desperately needs it to be, because we live on, and we still have choices to make...They need us to make informed and compassionate ones"* (Animals Australia, 2011).

Such actions remain largely with each individual. As humans don't need to kill other creatures in order to survive or even thrive, we need to morally justify what we do (Henning, 2011). Exercising their freedom of choice individuals are able to make a uniquely personal decision to either act humanely or inhumanely.

Perhaps it shouldn't be the consumer's responsibility to figure out what's right or wrong, cruel or kind, humane or inhumane. In a moral world, cruel or destructive practices should be illegal and we shouldn't be given the option of buying factory-farmed (Safran Foer, 2009:266). However, this is not the case and factory farming and meat consumption are encouraged through a widespread deception.

5. Duplicity of the meat megamachine

Meat production and consumption tell an ongoing story of domination, corruption and deceit. Significant, politically supported and ever-more powerful influence by the livestock industry is evident at every turn: in academic research, the development of nutritional guidelines and recommendations, agricultural policy development and government legislation, regulation and enforcement (Nestle, 1999). This perfidy is spreading around the world as illustrated in nutritional guidelines and the westernisation of traditional diets.

5.1 Nutritional guidelines

The global nutrition transition towards diets of more meat, less complex carbohydrates and reduced fruit and vegetable intakes has been underpinned by tensions between the global goals of trade and industry facilitation and the national and international protection of public health (Dixon et al., 2007). The US Department of Agriculture (USDA), credited with

having the greatest global influence on nutrition and nutrition choices, was originally created with a dual mandate: to support and promote farmers' and agricultural interests, and advocate consumer interests through setting nutrition standards and food assistance programs. This established an inherent conflict of interest that allowed the meat and related agricultural industries to wield considerable political and economic power and influence over government policies (Simon, n.d). As a result, despite conclusive evidence of the harmful health and destructive environmental implications of excessive meat consumption and the benefits of a plant-based diet (Campbell and Campbell, 2006; Stone, 2011), people continue to be repeatedly told that more meat they eat, the healthier they'll be (Bittman, 2007; Simon, n.d.). The US government hands out massive farm subsidies to keep meat prices low, further encouraging high-risk excessive meat-based diets particularly for the socio-economically disadvantaged (Fox, 2007, Cross et al., 2007). Essentially, all US federally endorsed nutritional information (which is also exported all over the world through the mass media and global hegemonising marketing mechanisms) comes from an agency that must support and promote the livestock industry and the agricultural and pharmaceutical power base. Its megamachine will say and do whatever works to sell products, including lobbying congress to eliminate economically unfavourable regulations, co-opting food and nutrition experts by supporting professional organisations and research and expanding sales by marketing directly to children (Nestle, 1999).

Despite fifty years of conclusive and credible findings showing the devastating health and environmental impacts of excessive meat consumption, and the benefits of plant-based diets, the science continues to be buried amongst political and food industry propaganda and vested interests (Moritz, 2009; Safran Foer, 2009). For example, the original food guide pyramid developed by the US Government in 1956, which promoted high meat consumption, still forms the basis of today's advice for healthy eating. MyPlate, the most recent nutritional guidelines, recommend the original intake of meat despite the addition of two new nutritional groups (USDA, 1996, 2011). Thus it advises people to consume more food per day, not to consume less meat. This mixes science with the influence of powerful agricultural interests, which is not the recipe for healthy eating (Harvard School of Public Health, 2011). In response, Harvard School of Public Health's Healthy Eating Plate limits "red

meat and… processed meats, since eating even small quantities of these on a regular basis raises the risk of heart disease, type 2 diabetes, colon cancer, and weight gain" (Harvard School of Public Health, 2011:n.p.). Meat consumption should be limited to a maximum of 500 grams a week (Campbell and Campbell, 2006; WCRF/AICR, 2007), a recommendation endorsed by the UK government (Campbell, 2011).

The absence of such limitations will result in an increasingly sick Western population and the horrifying prospect that today's children may not outlive their parents (Stone, 2011). Yet through globalisation, mass marketing, harmonisation of food standards, retailer and wholesaler consortium domination, US subsidies, and the erroneous belief that the American diet is good, there has been rapid worldwide adoption of Western-style diets (Campbell and Campbell, 2006; Goodland, 2001).

5.2 Westernisation of diets

The western cultural hegemony promotes the message: if you are rich, you eat meat, and if you are poor, you eat stable plant food like potatoes and bread (Campbell and Campbell, 2006). Such excessive and inequitable meat consumption is widely destructive and has no benefit other than the maintenance of ongoing vested political, economic and industrial interests that ensure the global livestock megamachine has significant power and influence at every turn (Nestle, 1999; Campbell and Campbell, 2006; Bittman, 2007; Cross et al., 2007; Dixon et al., 2007; Fox, 2007; Moritz, 2009; Russel, 2009; Safran Foer, 2009; Stone, 2011). Developing countries so far have avoided the impacts of chronic diseases but increasing meat consumption is predicted to have a growing negative influence on life expectancy in both developed and developing countries (AIHW, 2011).

Many look darkly at the number of babies being born in developing countries and blame this for diminishing environmental and human wellbeing whilst ignoring the ecological burden of a western diet. If we stop dislocating traditional diets and reduce meat consumption in the West, there is enough food for everyone. Overpopulation of livestock rather than people is the source of food scarcity. It is the number of meat-eating humans, or the amount of meat

eaten per human, that needs to be restricted rather than the number of humans as such (Nordgren, 2011).

If the westernisation of diets continues, irreversible human and ecological consequences are likely to ensue (IEA, 2011). Those pointing fingers at overpopulation in poorer countries are those in the developed world who eat the most meat. Clearly this provides a compelling justification for a call for a personal reduction in meat consumption and a move towards a more plant-based diet to end the impending and ongoing destruction and, in so doing, to facilitate the emergence of a more sustainable, liveable world.

6. Call for flexitarianism

Which countries and individuals have the ability, moral obligation and responsibility to address these huge challenges for the benefit of present and future generations? Because of their consumption patterns, the developed countries have largely caused the problems and they also have abundant food options. They can afford the luxury of selective actions (Nordgren, 2011). However, in emerging countries, such as Brazil, Russia, India, China and South Africa, meat consumption is on a very rapid increase, so there should also be some action taken in these places. The FAO predicts the more than a doubling of global meat production by 2050 will occur mainly because of increasing consumption by the growing middle class (Goodland, 2001; LEAD, 2006, Campbell and Campbell, 2009; Nordgren, 2011; Singer, 2011:229). Excessive meat consumption and related impacts are increasingly a significant feature and problem facing the emerging world.

Reducing meat consumption is not an option for poor people in poor countries. The poor do not usually eat much meat. McMichael et al. (2007) suggest a "contraction and convergence policy" – a reduction of per capita meat consumption to a certain level in developed countries and an increase in per capita meat consumption up to this level in developed countries. However, an ongoing global decrease in meat consumption is essential as is affirming the continuation of plant-based diets to avoid the huge economic and negative medical implications associated with Western ways of eating.

Clearly, in light of the current social and environmental impacts of the global meat sector, and the present and projected size of the human and livestock population and related consumption habits, the morality, humaneness and sustainability of one's diet, both now and into the future, is inversely related to the proportion of animals and animal products consumed (Henning, 2011; Singer, 2011). Adopting flexitarianism is an obvious way to start to address this with immediate effect. Voted the most useful word of 2003 by the American Dialect Society, the term encourages people to substitute meat with plant-based foods; it is also described as part-time or flexible vegetarianism (Hirsch, 2004; Berley, 2007).

The vast-scale industrial production of animals simply to please human taste buds, with all the huge concomitant human, ecological and animal welfare costs, is impossible to justify from a moral perspective (Caney, 2009; Singer, 2010; Posner and Weisbach, 2010; Nordgren, 2011):

- It is causing harm to present generations (hunger, malnutrition and diseases of overconsumption, social and environmental impacts, injustice and inequity) and violating basic rights (to clean water, food and stable climate);
- It will cause harm to future generations and violate basic human rights, such as the right to life (lack of water and extreme weather events leading to human deaths), subsistence (higher temperatures and sea level rise leading to crop failure as will lack of water and/or arable land), health (spreading of diseases), property (extreme weather events, fire and flooding leading to destruction of property) and the right not to be climate refugees;
- It is an injustice to future generations who will experience the adverse effects of environmental resource overuse and depletion as well as the associated economic burden without having caused these.

Use of the global environmental commons to satisfy excessive demands for meat constitutes an injustice to present generations and all those who will inhabit the planet after us and many ethical perspectives converge around agreement that the present generation

has a moral obligation to mitigate the damage (Page, 2006; Vanderheiden, 2008; Shue, 2010; Nordgren 2011).

The individual decision about flexitarinism as an urgent action for averting imminent destruction is not a call for a complete end to all individual meat consumption or a wholly vegetarian/vegan diet (although such a radical change would be better). Immediate and ongoing results can be achieved through the more moderate response flexitarianism embodies. The important thing is to start reducing meat consumption now (Nordgren, 2011).

7. Possible Policy Pathways

The call for individual action requires a major change in the nutritional paradigm and as shown in other cases of excessive consumerism (Gorobets, 2011; Kennedy and Krogman, 2008; Kaufman, 2009), a number of policies can be developed to address this at personal and governmental levels. Table 3 depicts elements of this change and proposes a new ethics model in support of flexitarianism and personal empowerment.

Table 3. Old and new individual paradigm

Old individual paradigm	New individual paradigm
Meat is an important part of a healthy diet	Meat can be detrimental to health
Public funds are rightly used to support meat consumption, the livestock industry and its associates	Public funds must be directed to support plant based protein consumption and related industries
Industry and government know best and protect the wellbeing of consumers	Industry and government protect their own interests to the detriment of consumers
Don't challenge and question the food industry and its institutions; it all makes good economic sense	Challenge the food industry and its institutions; it's time for good environmental and social sense to prevail, economic benefits will follow
Choose to ignore the environmental, social, economic or animal welfare realities of meat production and consumption	Choose to be completely aware of the environmental, social, economic or animal welfare considerations of the food we consume
Westernisation is best where nutrition is	Many traditional diets are nutritionally better

concerned	
Food sustainability is a national or global agenda	Food sustainability relies on personal choice of aware, empowered and active individuals
People do not recognise themselves as authors of transformation; the future lies in the hands of politicians and leaders	People recognise themselves as authors of transformation; the future lies in each of our hands (or mouths)

Given the wide and powerful lobby of vested economic and political interests, reduced meat consumption, despite its multiple benefits is unlikely to be popular among meat producers and related industries, many politicians and decision-makers or even many meat consumers. It is unrealistic to expect the meat megamachine to relinquish its power or for government to take the lead. There are however a number of local policies that can be implemented at a community level to support flexitarianism. Below are some suggestions with examples:

- *One meat-free day a week*: The city councils of Cape Town (South Africa), Sao Paulo (Brazil), Bremen (Germany), Mechelen, Ghent and Hasselt (Belgium) have officially endorsed one meat-free day a week. Schools and numerous public venues (canteens, cafeterias, hospitals, restaurants, public sporting facilities) support this in their menu selections. "Veggie street maps" promote venues that offer vegetarian and vegan choices (Mason, 2009).
- *Meat as a treat*: Meat should be eaten on special occasions, only once per week or as a treat. This can be supported by labelling; for example, packaged meat could carry messages such as: "enjoy responsibly", "enjoying your meat treat as part of a balanced diet", "be meat-wise" or "for the sake of your health and the health of the planet, please enjoy in moderation".
- *Nutritional recommendations*: these could be made independently from industry interests, e.g. Harvard's Healthy Eating Plate. Educational information on maximum safe consumption levels could be offered on the back of packaged meat products.
- *Private health insurance incentives*: Like car or household insurance bonuses or incentives geared towards attracting those less likely to make claims, health funds could offer a range of bonuses to those who consume les meat. This will send powerful messages to the community and support a transition towards flexitarianism.

- *Support for alternatives*: Financial incentives, such as tax concessions, could be given to industries promoting meat substitutes and plant-based alternatives.
- *Educational initiatives*: Public education campaigns (similar to anti-cancer or anti-smoking campaigns) can be run on the dangers of excessive meat consumption. There are already active individuals (e.g. Rajendra Pachuria, Paul McCartney, Tim Lang, Al Gore) whose efforts are aligning with other initiatives, such as UK's Meat Reducers program.
- *Internalising the externalities*: The price of meat should reflect its true production costs, subsidies for livestock industries should be phased out and a meat tax could address current environmental and social production and consumption impacts.

8. Conclusion

Flexitarianism is an opportunity for individuals to liberate themselves from the global meat megamachine and in so doing to make a meaningful and immediate contribution to increased international sustainability at no extra cost, without any politically controversial government or policy regulation, intervention and without dependency on politicians, decision-makers, leaders or those seeming more powerful. To date, politicians have largely ignored the widespread and growing negative impacts caused by the livestock sector and continue to support and perpetuate excessive consumption of meat. Despite this leadership failure and inaction, there remains the need to promote and further awareness and acceptance of the critical importance of decreasing meat consumption.

Flexitarianism calls for an awareness of our personal impact on the world and an understanding that the morality of our diet is linked to the ecological and social conditions of human and nonhuman beings. Through such self-reflection we are given the opportunity to make a vital contribution to a better world through moral activism (Lee, 2005).

Conversely those choosing to continue to eat excessive quantities of meat are accomplices in perpetuating the problems associated with malnutrition, environmental destruction, climate change, poverty and the ongoing ever-growing suffering and genocide of billions of sentient beings. Through flexitarianism, within the power and reach of most individuals in

developed (and to a lesser degree, in emerging) countries, lies the greatest opportunity for interspecies, intergenerational and international compassion and consideration. Liberating the planet, people and animals from the livestock industry is within reach for every person and can be achieved through the choice to reduce excessive meat consumption. Flexitarianism offers a unique liberating opportunity and an ethical dietary option. It is not simply a call for individual action for a more sustainable future but is also call for individuals to lead the way towards a greater global morality and responsibility. After all, if we cannot be reached through an appeal to the threatened conditions of our own survival, what can reach us (Lee, 2005:250)?

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Case Study Area 1: Flexitarianism

1.3 Raphaely, T., Marinova, D. (2011). Preventing further climate change: A call to individual action through a decrease in meat consumption. *MODSIM 2011 International Congress on Modelling and Simulation*, Modelling and Simulation Society of Australia and New Zealand, Perth, Australia, 3066–3072.

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Preventing further climate change: A call to individual action through a decrease in meat consumption

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Abstract: As the threats and realities of global warming, and the concomitant urgency of decarbonising cities and regions become increasingly apparent, academics, governments, NGOs, local and international think-tanks and policy initiators, continue to concentrate on initiatives largely aimed at reducing fossil fuels (specifically transport and energy use) and increasing development of economies based on renewable energies. Yet, to date, the progress has been slow. Despite being one of the greatest causes of anthropogenic greenhouse gases, meat production and consumption seldom get attention. The negative effects of the ever-increasing livestock sector are felt across a wide range of areas and much scientific evidence is left unnoticed. This includes serious contributions to environmental concerns, including climate change, water and air pollution, deforestation, land degradation, decreases in habitat and biodiversity as well as direct negative social impacts such as direct responsibility for deteriorating human physical and mental health, global inequality and world hunger, and non-sensitivity to factory farming and slaughter.

This paper uses extrapolation and generalisation in assessing the impact of meat consumption on the globe, including putting it into perspective in comparison to other commonly acknowledged and accepted factors, such as transport. It also highlights some

stumbling blocks, vested interests and existing attitudes that make the meat problem not only persist but also expand over the developing world.

The study suggests that current decarbonising focuses are disempowering and as a result, to date, insufficiently effective. It proposes a new ethics model of increasing vegetarianism to empower individuals to make a meaningful and significant, personal contribution to climate change mitigation. It is easy and does not require significant policy, institutional or industrial changes. If adopted and implemented, such an ethics model will ensure that, individually and collectively we have the power not only to address and resolve a currently overwhelming number of social and environmental threats, but essentially, to change the current global warming trajectory and return the planet's climate patterns to safer levels.

Keywords: Sustainability, vegetarianism, empowerment, decarbonising

INTRODUCTION

The affluent middle to high-income class in the developed world, living in relative privilege, with an abundance of support systems, life options and choices, has so far largely been protected from the early onset impacts of climate change. Yet the world is in crisis: people are sweltering, freezing, starving, thirsting and drowning. Climate change promises to cause increasingly violent, chaotic, extreme weather events every year and climate disruption tragedies will become more commonplace (Parry et al., 2007). Today's children will grow up in a world of life-threatening weather: violent storms, depression and mental health conditions, breakdown of families and communities (Climate Institute, 2011), unexpected droughts, expanding deserts and food scarcity (Goodland, 2010a). Shifting to alternatives to fossil fuel energy is most commonly seen as the solution but although crucial, changing to renewable energies is not fast enough. Ample scientific evidence (e.g. Corvalan et al., 2005; IPCC, 2007; CBD, 2010) shows that carbon dioxide (CO_2) emissions continue to grow and if this trend continues for another 10 years, it will be practically impossible to return to atmospheric conditions beneath the tipping point for catastrophic events (Schneider, 2009). The global commitment to sustainable development has thus far failed to challenge the established geopolitical systems and sources of power that globally preside over the carbon

energy-intensive growth that continues to fuel climate change (Stallworthy, 2009). People living in poorest countries are more vulnerable and will suffer earliest and most even though they have contributed least to the causes (Stern, 2006; Dixon, 2010).

Nationally and locally, climate change mitigation programs focus on reducing individual and household energy and transport use (Gilligan et al., 2010; including initiatives such as Days of Change, Travel Smart, and Living Smart). The value of this in terms of limiting greenhouse gas (GHG) emissions is constrained not by the will of the participating individuals but by the infrastructural limitations of the places they inhabit. Even if every individual made such changes in their personal lives, the collective impact would be worthwhile but insufficient to effect the necessary reductions in GHGs. With no apparent competent global will, individuals are feeling disempowered, helpless and hopeless (Climate Institute, 2011).

Yet all is by no means lost. When leaders and nations fail to agree, voluntary individual action can make a significant difference – in this case, producing rapid GHG reductions at no extra cost, without politically controversial local, national or global government regulation and without dependence on the will or actions of those seemingly more powerful (Goodland and Anhang, 2009; Gilligan et al., 2010; Goodland, 2010a, 2010b). Simply put, decreasing individual meat consumption in western countries has the power to arrest the seemingly inexorable march of climate change with all its tragic consequences and costs, to change the world as we might come to know it, to bring about an end to human, animal and planetary suffering and to create a compassionate and connected world. Meat consumption is one of the gravest threats to the long-term sustainability of humankind (Compassion in World Farming, 2004), and eating less meat is the most powerful and valuable change anyone can make to prevent further climate change (FAO, 2006; Goodland, 2010b). The aim of this paper is twofold: to analyse the impact increasing meat consumption has on the ecology and humans, and to argue for a new individual paradigm of empowerment that can stop destruction.

IGNORED TRUTHS ABOUT THE IMPACTS OF MEAT

Contributing to such a critical, urgent solution doesn't require a complete end to all meat consumption but rather a substantial decrease, particularly for the urban middle class. Any

individually decided action is the one that, through seeking better alternatives, maximises personal wellbeing and the overall wellbeing of the greatest number of people while ensuring human and interspecies justice and equality (Shaw, 1999). This, coupled with a belief in the intrinsic good of ordinary individuals, leads to an understanding that lack of awareness rather than lack of compassion or will, is responsible for any harmful or destructive action.

The approach we use to describe the current meat consumption and associated practices is a simple but powerful one – it is based on ethics as well as generalisation and extrapolation in order to put into perspective the consequences of exorbitant meat consumption. We draw on publically available data and estimates from developed countries and international organisations, to present the current situation and trends of livestock's impact. Unless one believes that humans are all individually motivated only by gluttony and greed, it defies logic that, rather than contributing to the creation of a world of self-sufficiency, equity, harmony, compassion and plenty, an aware individual will consciously choose complicity in the most socially and environmentally destructive habit of our time. However most individuals do not know the truth as it is often deliberately concealed through vested political and economic interests. The sections below shed some light on this and call for an individual empowerment process that through awareness and the vision of better, alternative futures, may reduce the ecological footprint of humanity including decarbonising the world.

The livestock-climate connection: In 2001, the Australian Greenhouse Office reported the Australian livestock subsector was the nation's largest source of agricultural GHG contributing over 13% of Australia's total national emissions (Hegarty, 2001). The FAO (2006) calculated global meat supply emissions to be 18% of total annual worldwide GHG emissions in 2006. Goodland and Anhang (2009) argued that, despite being recognised as the biggest contributor to global GHG emissions, the climate impact of the global livestock sector had been vastly underestimated and actually accounts for at least 51% of all annual, worldwide anthropogenic GHG emissions. Given these figures, replacing livestock products with alternative plant-based foods offers a more rapid impact on reducing GHG emissions and their atmospheric concentrations than any actions to replace fossil fuels with renewable

energy (Goodland and Anhang, 2009). Yet, despite the massive opportunity a reduction in meat consumption offers, it is largely ignored. A 25% reduction in global consumption of livestock products worldwide would yield a 12.5% reduction in global anthropogenic GHG emissions (Goodland, 2010a) – as much reduction as delegates failed to negotiate in 2009 in Copenhagen. As the West is responsible for significantly more meat consumption than people in the developing world, much of the onus and opportunity for personal reduction exists where the bulk of the CO_2 was created. For example an average Australian eats about 123 kg of meat a year (ChartsBin, n.d.) or about 337 g a day. According to DEFRA (n.d.), 1 kg of beef produces about 35 kg of CO_2e emissions. If every Australian gave up meat for just one day a week, each person would decrease their individual emissions by 613 kg of CO_2e per annum, the equivalent to driving 3066 km less a year in an average mid-size car.

Water use and pollution: The livestock sector is a key contributor to global water use and depletion and the largest sectoral source of water pollution (FAO, 2006). Livestock waste has also been implicated in massive fish kills and outbreaks of diseases. Soil compaction, resulting in reduced infiltration, degraded watercourse banks, drying up of floodplains and lowering water tables are also directly attributable to livestock farming practices (FAO, 2006). As more and more water is diverted to raising meat animals instead of producing crops for direct consumption, millions of wells are drying up (Monday, 1999). To produce I kg of feedlot beef requires about 100 000 l of water (Millstone and Lang, 2008). At a household level, Australians use 220 l of water per person per day (ABS, 2009). Hence 1 kg of beef uses 455 days and a year's beef supply (123 kg) uses about 153 years of individual water consumption in Australia.

Deforestation: Increasing meat demand is the biggest force in the expansion of agriculture and agriculture is the world's biggest cause of deforestation (Monday, 1999). Seventy per cent of previous Amazon forest is now cattle pasture and feed crops cover a large part of the remainder (FAO, 2006). Forests, whilst confined to countries, are essential for the survival of the global population.

Land use and degradation: The livestock sector is the single largest anthropogenic user of land. At least 26% of the world's ice-free surface is occupied by grazing, 33% of all arable land is dedicated to feed crop production and in all, livestock production accounts for 70% of all agricultural land use and use of 30% of the land surface of the planet (FAO, 2006). The ecological impacts of such land use are extremely costly and at current consumption levels, the human population is already at earth's carrying capacity. With predicted livestock and human population growth, it will not be possible to provide enough food to sustain humanity.

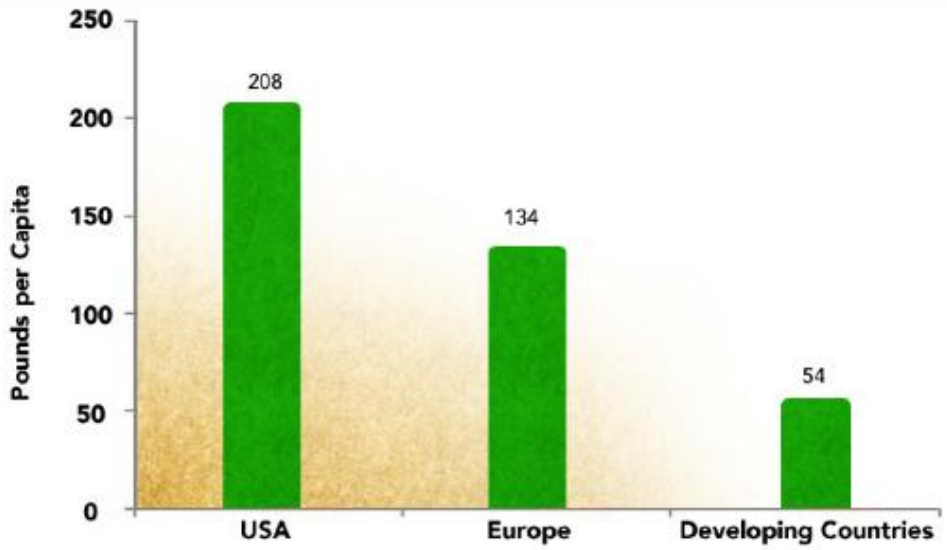
Biodiversity: Unprecedented threats to biodiversity are presently constant or increasing in intensity and species losses 500 times higher than ever before are resulting in decreases in food, fibre, medicines, fresh water, pollination of crops, filtration of pollutants, and protection from natural disasters (CBD, 2010). Thirty per cent of the earth's land surface now used by livestock was recently habitat for wildlife and as the major driver of deforestation, land degradation, pollution, climate change, overfishing, sedimentation of coastal areas and facilitation of invasion by alien species, the livestock sector is the leading player in the reduction of biodiversity. Resource conflicts with pastoralists further threaten species of wild predators and most of the world's threatened species are suffering habitat loss where livestock is a factor (FAO, 2006).

Diet and health: Globalisation, emulation, harmonisation of food standards, retailer consortium domination, USA subsidies, advertising and the belief that the American diet is the best has led to a rapid world-wide adoption of "western-style" diets (Campbell and Campbell, 2006). This global nutrition transition towards diets of more meat and diary, less complex carbohydrates and reduced fruit and vegetable intakes is further encouraged by rapid urbanisation. However, these increasingly dominating food trends result from tensions between the goals of trade and industry facilitation and the national and international protection of public health (Dixon et al., 2007). The meat industry has been able to wield considerable power and influence over government policies (Simon, n.d). Despite conclusive evidence of the harmful health implications of excessive meat consumption and the benefits

of a plant-based diet (Campbell and Campbell, 2006; Stone 2011) people continue to consume large amounts of meat. Obesity, hypertension, diabetes, heart disease, strokes, cancer, rheumatoid arthritis, multiple sclerosis, lupus, gallstones, atherosclerosis, verticulitis, osteoporosis, immune system disorders, allergies and asthma are just some of the diseases that annually main and kill millions of people as a direct result of western nutrition (Stone, 2011; Campbell and Campbell, 2011; Popkin, 2001 and 2009). Children have a 60% increased risk of developing leukaemia if they consume meat products such as ham, sausages and hamburgers (Appleby et al., 1999). In the US about 3 million pounds of antibiotics are annually given to people and about 24.6 million pounds are fed non-therapeutically to farmed animals (Safran Foer, 2009) resulting in drug resistance in humans.

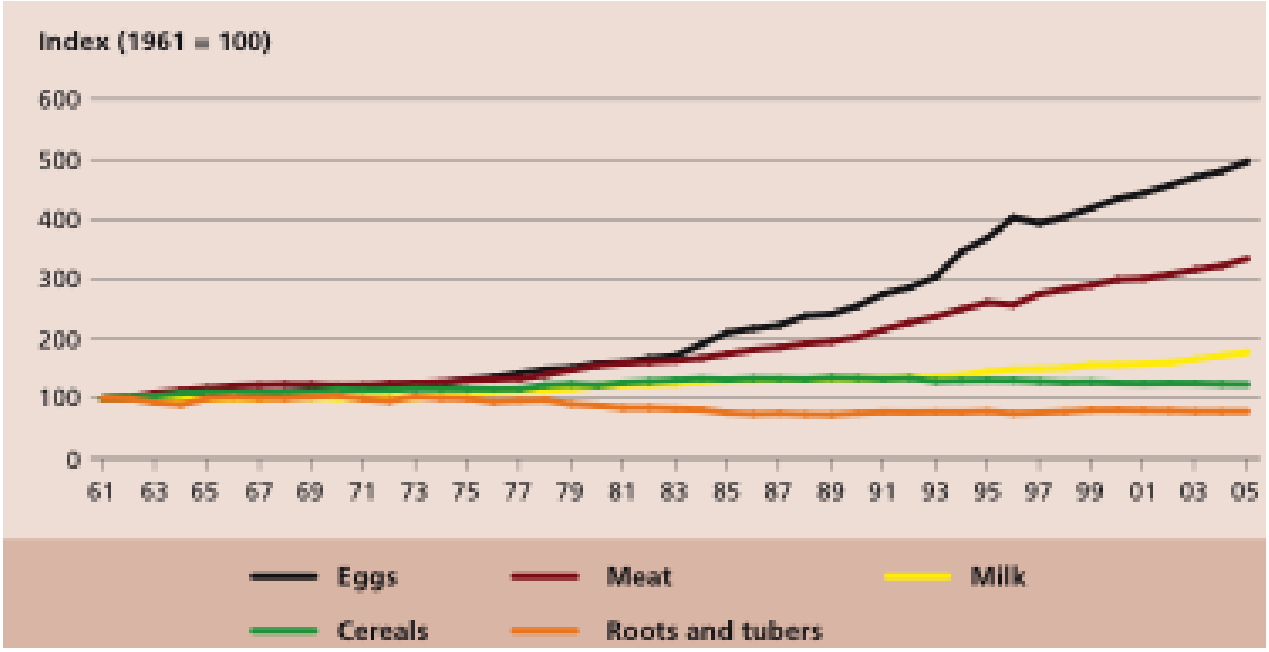
Ways of the west are not best: Throughout the developing world, people climbing out of poverty are shifting from a traditional diet of grains, vegetable pulses, roots and tubers to a western diet high in meat consumption (see Figures 2 and 3) resulting in non-communicable nutrition-related diseases overtaking communicable disease (Stamoulis et al., 2004).

Figure 2. Per capita meat production, 2009



Source: FAO 2009; * not including fish

Figure 3. Per capita consumption of major food source items, 1961–2005. (Source: FAO, 2009a.: Hamerschlag, 2011)



There is no point combating diseases of poverty in ways that cause diseases of affluence, such as obesity, cardio-vascular problems, cancer, type-2 diabetes and strokes (Hamerschlag, 2011). Developing countries urgently need to reaffirm their own traditional diets to forego the western experience of very expensive morbidity and mortality associated with meat-rich diets (Hamerschlag, 2011). Hopefully also the West will learn that traditional, non-western ways can sometimes be better.

Global inequality and hunger: Global hunger continues to rise (Sutcliffe, 2007) yet rich western countries continue to feed grains to animals that might instead feed people (Sere cited in Goodland, 2010b: 2). In 2008/2009 approximately 2.27 billion tonnes of cereals were produced globally (FAO, 2009), about one third of which was used to feed livestock (FAO, 2006) while nearly a billion humans suffer in hunger (FAO, 2009). By 2050 there will be another 3 billion people on the planet (US Census Bureau, 2011), so 4 billion more people to feedd. The average human needs 180 kg of grain per year to survive (Millstone and Lang, 2008). Thus if the grain currently used to feed livestock were reallocated to people, there

could be an immediate end to world hunger and food security into the foreseeable future without any additional requirements. Clearly livestock competes for crops and detracts from the total food supply.

Factory farming and slaughter: This is the hardest aspect of the livestock sector to describe as it moves away from the science of measured impacts requiring instead discussions about sentient creatures capable of experiencing terror, fear, loss, pain, playfulness and joy, being turned into faceless production units in the name of profit and large scale efficiencies. This industrialisation of life has resulted in an unimaginable scale of suffering and misery currently affecting 60 billion animals a year (10 animals for every person alive!). The food industry, which turns living animals into what it euphemistically calls animal and animal by-products, dwarfs all other ethical concerns (Coetzee, 2007). Any video on how meat is produced turns into a horror film but the business model of factory farming depends on consumers not seeing this. Moreover the industry significantly influences academic research, agricultural policy, government regulation and enforcement (Saffron Foer, 2009). Yet the abuse of animals is a crime of stupefying proportions (Coetzee, 1999) and if we have the courage to start acting from our hearts "there is no limit to the extent to which we can think ourselves into the being of another" (Coetzee, 1999: 120), recognise their misery and understand that there can be no moral justification for not counting any form of suffering equally with the suffering of other beings or species (Singer, 1990). Certainly as far as sustainability is concerned, compassion to the suffering of other sentient beings is better than indifference (Singer and Mason, 2006).

A shift in our meat preferences can dramatically change all of the above negative impacts.

WHAT IS NEEDED

In order for individuals to understand their personal power to prevent ongoing, increasing climate change, a shift from the old to a new paradigm is necessary. Table 1 depicts elements of this change and proposes a new ethics model of increasing vegetarianism to empower individuals to make a meaningful and significant, personal contribution to climate change mitigation.

Table 1. Old and new individual paradigm

Old individual paradigm	New individual paradigm
Meat is an important part of a healthy diet	Meat is not an essential part of a healthy diet and eating meat can be detrimental to health
Public funds should rightly be directed to encourage people to eat animal products and in so doing to continue to promote the livestock industry and those associated with it such as the big fast-food meat suppliers	Public funds must be directed to encourage people to eat more plant based protein sources and in so doing promote foods that have a lower environmental impact, are more efficient in resource use, healthier and more equitable
Don't challenge and question the food industry that tells us we need meat. It all makes good economic sense.	Challenge, question and stand up to the institutions and systems that tell us we need meat. It's time for good environmental and social sense to prevail, economic benefits will follow.
Choose not to see or know about the environmental, social, economic or animal welfare considerations of factory farming	Choose to be completely aware of the environmental, social, economic or animal welfare considerations of factory farming
Westernisation is best where nutrition is concerned	Many traditional eating habits are nutritionally better
Progress includes changes to the nutritional ways of the west	Progress does not necessarily require giving up things that have sustained human population in the past
Abating climate change is about national and global ways of living, being, doing and creating and as such we must follow our leaders	Abating climate change is about an individual way of living, being, doing and creating and as such, we must respond as aware, empowered and active individuals
There is a limit to the expansion and realisation of individual potential expressed by ordinary people and a limit to the possibility of a fuller, greater state of being individually or collectively	There is no limit to the expansion and realisation of individual potential expressed by ordinary people nor to achievement of a fuller, greater, individual and collective state of being
Successful outcomes are dependent on the will and direction of leaders	Successful outcomes can be achieved independently of the will and direction of leaders through the collective individual power of ordinary individuals
Think from the head	Think from the heart, think into the being of another, including human and non-human beings
Hopelessness and lack of awareness ensure continuation of current climate change trajectory with all its terrifying	The ability to envisage a new world or possible world – a better place where life interacts with itself and all around it in a

implications	completely different way. Through hope, awareness and compassion, a world yet to be born, frees the human spirit to its task and sets in motion a power sufficient to remake the future

The new ethics model suggested above focuses on the power and potential of the individual, without any government or policy intervention, to decarbonise cities, regions and the world through eating less meat. There are none-the-less a number of policy pathways that could be recommended in support including:

- One day a week free of meat: Prominent individuals, e.g. Nobel Peace Prize winner and chair of IPCC Dr Pachauri, have called for this to reduce anthropogenic climate change, improve human health and animal welfare. The city councils of Cape Town (South Africa), Sao Paulo (Brazil), Bremen (Germany), Mechelen, Ghent and Hasselt (Belgium) have officially endorsed one meat free day a week. Others can do the same.
- Nutritional recommendations: Government-based nutritional recommendations could encourage people to eat more plant based protein sources, less meat and in general, could promote foods that are healthier, have a lower environmental impact, are more efficient in resource use and are more equitable.
- Public health funds incentives: Vegetarians/vegans are significantly less likely to suffer from the numerous diseases associated with excessive meat consumption and are thus less likely to be a drain on healthcare systems. Accordingly, like car or household insurance bonuses or incentives geared towards attracting those less likely to make big claims, public health funds could offer a sliding scale of bonuses and incentives to vegetarian or vegan members. Whilst this might be difficult to police, it will send a powerful messages to all.
- Financial incentives for promotion of alternatives: Financial incentives (such as tax concessions, savings, superfund incentives etc.) could be given to industries and marketing companies promoting meat and dairy substitutes and plant-based alternatives. Personal tax and superfund incentives could also be provided to individuals choosing a more vegetarian/vegan diet (again this is difficult to police but not impossible).

- Education campaigns: Local and national councils could run campaigns similar to anti-cancer or anti-tobacco campaigns. Individual political representatives in appropriate constituencies (such as the outspoken City of Fremantle in Western Australia) could be supported by their political parties to show leadership by running education campaigns about the dangers of excessive meat consumption.
- Internalising the externalities: Local and national governments could insist on full cost pricing of livestock production. At the very least, meat should be taxed commensurate with its environmental and social production and consumption impacts and current subsidies to livestock production could be phased out.

Given the wide range of vested interests, many of the above policies will be met by a strong opposition. Individual politicians, industry and community leaders can make calls for a change; however the possibility for each individual to be part of this transformation is the most powerful shift in ethics.

CONCLUSION

It is through choice that the power of the individual comes into play. Every person can make a difference because we all eat as sons, daughters, moms, dads, families, communities, generations, nations and increasingly as a globe. Eating is a social act and when we lift our forks, we set ourselves in one relationship or another, to farmed animals, national economies, global markets, environments and ultimately to politics. We can't stop our eating from radiating influence and impact even if we wanted to (Safran Foer, 2009). The food choices we make directly or indirectly impact countless others around us, and in so doing, determine our individual and collective future. The question of eating animals resonates deeply within those around you. As Australian-American actress Portia De Rossi recently commented: "people feel more uncomfortable with a vegan at their dinner table than they do a lesbian. It's confronting. It's kind of suggesting that what someone else is doing is bad or wrong and it hits them on a more personal level" (cited in VegNews, 2011).

Whether these resonances are controversial, threatening or inspiring, they are always filled with meaning. Such meaning, when aired publically, releases unexpected forces into the

world (Safran Foer, 2009). Deciding to eat like everyone else adds another straw to the camel's back, an act which may not be a back breaker in itself but which will be repeated every day of our lives, and perhaps every day in the lives of our children and children's children. However it doesn't have to be this way. Even one day a week of different choices can make a significant difference and the best reason to know that there could be a better future is the fact that we know just how bad the future could be. We are each capable of changing the world and creating tremendous momentum: Ghandi – become the change you want to see in the world (unknown), Margaret Mead – never believe that a few caring people can't change the world; indeed, that's all who ever have (1928). If ordinary people are doing it on an increasing scale, vegetarian heads of state, legislators, business executives and global leaders and decision makers will quickly materialise (Goodland, 2010b).

Conversely those choosing to continue to eat excessive quantities of meat are accomplices in the maintenance of poverty, inequity, injustice, environmental destruction, the perpetuation of ongoing suffering and genocide of billions of sentient beings. Perhaps, one day such individuals will be judged or held accountable for wittingly participating in such crimes against humanity and the environment. Factory farming is only able to exist because of the relationships between industry, economics, politics and our insatiable demand for meat. Just as individual consumers have allowed for it to exist, by choosing to negate the power of vested interests, become informed, aware, compassionate, connected, engaged and influential change agents, we can weaken their existence. We can protect the planet, reclaim hope, facilitate the emergence of a world of kindness, equity and justice allowing the environmental to return to its natural functioning.

This requires an honest look, individually and collectively, at who we are, what we are doing and where this is taking us. Each of us needs to find the personal courage and strength to make the right choices for our own personal wellbeing and to take an individual stand, rally and unite with others against all forms of meat-related exploitation, devaluation and the devastation of humanity, animals and nature. And here-in, within the power of the individual, lies the greatest opportunity for decarbonising our cities, regions and planet.

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Case Study Area 2: The New Human Agenda

2.1. Raphaely, T., Marinova, D. (2010). The New Human Agenda: An Agenda for Sustainable Transformation. *Transformations 66-67(3-4), 375-391.*

Refereed journal article

The New Human Agenda: An Agenda for Sustainable Transformation

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The solution consists in winning from the megamachine, broader and broader spaces in which the 'logic of life' can unfold freely, and in making the system compatible – by its orientations, its techniques, the limits of the space it occupies and the restrictions and rules to which its functioning is subject – with that of the free unfolding of life.
(Gortz n.d. cited in Audouin 1996)

Abstract

The ways of the West are not necessarily the best for releasing human potential and capacity for poverty alleviation. This paper puts forward the New Human Agenda, built around the concepts of increased humanness, partnerships and bioregionalism, as an alternative sustainable transformation empowerment approach to traditional development interventions. Using the example of The Hunger Project, it argues that the applied process and strategies (which are locally conceived, dynamically transformative, flexible, connected, iterative, engaging, participatory and empowering) have the potential to deliver sustainable and long-term opportunities for poverty alleviation.

Keywords:
Development, poverty alleviation, self-reliance, sustainability, The Hunger Project

1. Introduction: Traditional Development and the New Human Agenda

One only has to turn on the local television or open a newspaper to witness the ongoing and increasing devastation of humanity happening in the world all around us. The circumstances and conditions experienced by people and communities living in poverty need urgent attention and improvement. They highlight the ongoing lack of success to date of top-down development interventions and solutions aimed at addressing the question of improving and increasing human wellbeing. After half a century of theories and practices claiming to bring about development, the poor remain poor, inequities persist and grow starker, and aspirations to a better future remain, for the most part, only aspirations (Matthews 2004:382). The *Human Development Report 2011* of the United Nations Development Program also talks about the need to "investigate a key finding of the 2010 report – the growing evidence of inequality and environmental threats" (UNDP 2011:n.p.). Many arguments illustrate that the very nature of development initiatives so far, and the imposition of values characterising development trends, discourses and systems, are responsible for the perpetuation and continuation of poverty. These modernist development approaches should be rejected both because of dismal results and more notably, because of their intrinsic core intentions, assumptions, worldview and mindset (Pieterse 2000). More strongly, Sachs (1992:3) argues that "it is not the failure of development which has to be feared, but its success". Yet despite the criticism levelled against it, development is still widely implemented as if it was unproblematic and it seems a world without the modernisation concept of development cannot exist (Cavalcanti 2007).

The failure of development must be recognised. However one chooses to understand poverty and development, it has become inescapably clear that Western attempts at poverty alleviation have not been successful. Internationally and locally, those seeking to implement sustainable development are becoming more aware that they may be exposing themselves to a significant risk of failure together with those they involve in the intervention within the development process.

Such awareness however doesn't negate the need to continue to work towards global emancipation, a universal morality of justice and an end to hunger – prerequisites for the

future of humanity (Schuurman 2000). As Bob Geldof points out that in this day and age to allow people to die of want in a world of surplus is not only intellectually absurd, but it is equally morally repulsive (Geldof 2004 cited in Wroe and Doney 2005). Clearly, it is ever more urgent to win from the current megamachine broader and broader spaces in which the 'logic of life' can unfold freely, and that such spaces, in terms of orientations, techniques and the restrictions and rules to which its functioning is subject, are compatible with the free unfolding of life (Gortz n.d. cited in Audouin 1996).

To this end, there are new paradigms, worldviews and discourses emerging, and organisations working within, or using parts of, these, proving that the alleviation of poverty, inequity and suffering is not only possible, but also capable of bringing about permanent change. This paper takes key components from these emerging discourses and suggests an alternative transformation approach to development which is locally conceived, dynamically transformative, flexible, connected, iterative, engaging, participatory and empowering. For the purposes here, this new paradigm is called the New Human Agenda. Transformations employing aspects of the New Human Agenda are authored by the people themselves, rather than by a distant organisation or government intervention, and call on all agencies to work with people and communities to empower them in ways that are in accordance with local ways of life. Such a paradigm believes in the creativity and power of people and sees them as partners in transformation – respecting them as the primary authors and actors of the work to end poverty, awakening them to a possibility for a better life and self-reliant actions. Interventions thus facilitate transformation through the release of human potential and capacity.

This paper proposes that traditional dictatorial development interventions and the ways of the West they impose and perpetuate are not the answer for releasing the human potential and capacity in impoverished communities to enable sustainable outcomes. The New Human Agenda is an *agenda* dealing directly with increasing sustainable human wellbeing through transformation that recognises the criticality of locally-driven, people-centred, empowerment interventions which understand impoverished communities and individuals as partners rather than beneficiaries, as the solution rather than the problem. There are

projects around the world illustrating that. Through application of interventions consistent with the New Human Agenda, there is a very real possibility of releasing the locked-up potential of the poor and particularly of women, and in so doing, increasing sustainable realisation of human potential in even the most remote communities.

Drawing on three concepts (increased humanness, partnerships and bioregionalism), the paper proposes key aspects for considering transformation interventions which are consistent with the New Human Agenda. The Hunger Project is then briefly described to illustrate a successful approach for facilitating an end to poverty.

2. History of Development

The ideas informing the development approaches and interventions employed by development agencies and organisations have not arisen in an institutional, social or political vacuum but rather have been assembled within a vast hierarchy of knowledge production and consumption sometime referred to as the "development industry" (Crush 1995). It is an industry implicated in the operation of networks of power and domination that seek to decide the way the world actually is and ought to be, views that have come to encompass the entire globe (Coetzee 1989). This development industry has been described as the apparatus that results in the mapping and production of impoverished communities and societies (Escobar 1995).

Some argue that the primary concern of development is an ongoing process of reinvention to legitimise the illegitimate and to manage the ravages of past policies legitimated in its name (Tapscott 1995). Under this view, lack of development is often simply seen as the failure to initiate the measures aimed at dislocating traditional cultures and fostering the entrepreneurial spirit (Coetzee and Graaff 1996). Manzo (cited in Crush 1995) states that the very existence of the term "development" required a dichotomy: white/black, developed/underdeveloped, civilised/uncivilised, European/native, underpinned by a parent/child metaphor, with the West as a model of achievement and indigenous populations as a childish derivative.

Although not always understood, it is non-the-less becoming increasingly clear that the imposition of values characterising previous development trends have not been successful. Approaches grounded in foundations such as: look at us, do what we do, then you will become what we are now (Coetzee 1989), have lost validity in the face of increasing poverty and widespread environmental destruction. The discourses and systems that have informed development interventions and assistance are increasingly being held responsible for the continuation of poverty (Coetzee and Graaff 1996). The poor remain poor, inequities persist and grow more desolate with an ever-widening gap between the standard of living of those in the developing and developed world, wide-spread environmental destruction continues as does broken promises, increased cultural homogenisation and westernisation, setbacks in human development and perpetuation of modernity as the only form of development (Amin 1990, Cavalcanti 2007, Matthews 2004, UNDP 2001). Also "the threat of these wrongs is larger than the sum of its parts", the threads that knit the list together are of paramount concern and represent the "most narrow and negative view of humanness" (Carini n.d. cited in Lasersohn 2005:150).

It's no surprise thus that the post-development movement declares development to be "a ruin in the intellectual landscape" with delusion, disappointment, failure and crime development's "steady companions" telling the common story that "it did not work" (Sachs 1992:1). Development is considered a "malignant myth", a "huge, irresponsible experiment that, in the experience of the world-majority, failed miserably" (Esteva 1985:78). Such extreme dissatisfaction with business-as-usual standard development rhetoric and practice, and disillusionment with alternative development approaches are keynotes of the post-development perspective (Pieterse 2000:175). Any development initiatives are flawed and so implementation or approach cannot be improved. Essentially, this group of theorists feel that the concept of development is obsolete, pronounce the demise of development and call for "alternatives to development" rather than alternative development (Matthews 2004:373)

Post-development's call for alternatives to development is crucial to the evolution of the development debate but no real such alternatives are offered in the literature (Peiterse

2000). While post-developmentism rejects the complete approach and body of knowledge associated with development, it does not reject the idea that it is both possible and necessary for society to undergo processes that will result in a better life for people, an unfolding of changes in the direction of reaching a higher state of being (Matthews 2004). Nor does it reject the idea that positive social change is both desirable and possible. The call for an end to development is not a call for a return to earlier ways of life or a rejection of the possibility or desirability of change in the direction of improving societies It is not a callous disregard of the desire of many who suffer in poverty and misery to see improvement in their situation. Rather, it is a plea that a new way of changing and being be constructed in the place of the 'ruin' (Sachs 1992) of traditional mainstream development. "People whose lives have often been traumatised by development changes do not refuse to accept change. Yet what they seek is of a quite different nature. They want change that would enable them to blossom 'like a flower from the bud' … that could leave them free to change the rules and the contents of change, according to their own culturally defined ethics and aspirations" (Rahnema and Bawtree 1997:385).

Yet this isn't happening. Even "within mainstream sustainable development discourse, there are no ideological conflicts with the dominant capitalist industrialising model, only debates about methods and priorities" (Adam 1995:90). Sustainable development thus may become just another call for meeting basic needs as determined by western value systems. Clearly historic paradigms continue to find expression, and are in fact inherent in and thus weaken, current sustainability discourse. Whilst understanding the reduction of poverty as vital, it continues to view the evolution of western societies as the blue-print or universal programme for improvement of all societies (Coetzee and Graaff 1996). With this understanding comes a growing awareness that in order to be truly sustainable, development projects, programmes, interventions and strategies, both locally or globally, must seek to "expand or realise the potentials of, to bring to a fuller, greater or better state" (Goodland 1995:9), the people sustainable development claims to be assisting. Without this awareness and resulting action, despite all its good intention, the concept of sustainability, with reference to ending poverty, is in danger of remaining a call for meeting basic needs, as determined by a Western value system, through economic development.

Recognition of the multiple fatal flaws of traditional dictatorial development discourse must result in the pursuit of alternative ways to alleviate, solve and eliminate the problems of hunger, suffering, disempowerment, deprivation, and inequity. So how might such a new paradigm be considered and applied? Three concepts addressing issues of increasing potentials and wellbeing may be combined and used to inform and improve interventions for increasing wellbeing – transitions that are likely to be sustainable.

3. New Concepts for an Alternative to Development

These three new concepts proposed as intrinsic to an approach that offers an alternative to development, and traditional concepts of development, are humanness, partnerships and bioregionalism. They are described below.

Increased humanness

The concept of "increased humanness" is crucial to the creation of sustainability. It argues that development should be more than merely striving for material improvements and in fact, does not necessarily imply a significant increase in the material welfare of individuals (Coetzee and Graaff 1996). In the same vein as Sirolli (1995), development should be allowed to reveal the potential and power that are already within local communities. Thus although development projects may aim to bring about material benefits, their primary contribution must be to increase the level of human wellbeing through increasing empowerment, social justice, comprehensive joint decision making, respect for local eco-systems and local social and cultural patterns and the advancement of people through their own endeavours, including freedom of expression and impression (Coetzee and Graff 1996). Essentially development requires "gently holding our humanity in our hands while fiercely defending it from attack", moving us to a "fuller and deeper human response that replenishes our energy and builds creativity" (Carini n.d. in Lasersohn 2005:148) and essentially acknowledging people's intrinsic power and potential and "letting this power out" (Blanchard et al. 1996). The most important implication within the concept of increased humanness is the understanding of progress, which situates the meaning and specific circumstances within which action takes place at the centre of the analysis. Progress

is not quantifiably measurable but is instead dependent on a continuous affirmation of meaning and creative interpretation.

Humanness, or the quality of being human, is directly linked to the influence people have on their choices in life. Table 1 summarises an analysis of the United Nations Development Programme's annual development reports and shows that the concept of expansion of people's freedoms to live their lives as they choose entered the organisation's development discourse only in 2009 (albeit still with a lack of recognition of human agency, collective action and process freedoms):

Table 1. Definitions of Development in UNDP Annual Development Reports

1990 A process of enlarging people's choices
1991 The real objective of development is to increase people's choices
1992 A process of enlarging people's choices
1993 Involves widening [people's] choices
1994 To create an environment in which all people can expand their capabilities…
1995/6/8 A process of enlarging people's choices
1997/9 The process of enlarging people's choices
2000 A process of enhancing human capabilities
2001 About expanding the choices people have to lead lives that they value
2002 About people, about expanding their choices to lead lives they value
2003 To improve people's lives by expanding their choices, freedom and dignity
2004 The process of widening choices for people to do and be what they value in life
2005 About building human capabilities—the range of things that people can do, and what they can be
2007/8 About expanding people's real choice and the substantive freedoms – the capabilities – that enable them to lead lives that they value
2009 The expansion of people's freedoms to live their lives as they choose

Source: Alkire 2010:8

Transformation interventions thus have to focus on increasing freedom from the "megamachine" through uncovering people's own definitions of human wellbeing and should no longer be a mechanism to improve material circumstances, but should rather focus on people's aspirations (Coetzee 1996). Increasing humanness fundamentally represents an immovable love and respect for personhood that cherishes imagination as much as justice (Lasersohn 2005) and an understanding that "what is dreamable ... frees the human spirit to its task and sets in motion a work with power sufficient to remake the future" (Kelley 2002). No transformation is possible without full participation and the opportunity for making choices by the people, focused on the aspirations and needs of the people, as defined by the people themselves. Participation and self-reliance, a breaking of the monopoly and domination of western ways and knowledge, the assumption that the beneficiaries of transformation will also have to be its contributors, are key components as is the idea that "human dignity is the true measure of human development" (*Asian Human Rights Commission & People's Vigilance Committee for Human Rights 2006:n.p.).*

Partnerships

Local Action 21, which grew out of the 2002 World Summit on Sustainable Development in Johannesburg as an extension of Rio's Local Agenda 21, calls local governments to accelerate the move to sustainability actions through partnerships (WSSD 2002). The formation of partnerships that draw in all stakeholders, and particularly the local community, is an essential way of establishing participation in the planning and decision making as well as building collective responsibility and a sense of ownership of development. Participation through partnerships can also potentially allow for historical and inequitable power relations to be redressed.

Unlike traditional models of development where a passive role is forced onto the people concerned with their whole life structure being determined by outside forces and not their free will, working through partnerships makes a great leap forward by integrating development for the people, of the people, with development *by* the people. Such participation is both "one of the ends as well as one of the means" of the concept of

partnerships (Asian Human Rights Commission & People's Vigilance Committee for Human Rights 2006:n.p.)

Bioregionalism

Bioregionalism sees communities as intrinsically linked to their natural environment and definable in terms of this relationship to the local environment (Audouin 1996). According to McGinnis (1999:2), "bioregionalism is not a new idea but can be traced to the aboriginal, primal and native inhabitants of the landscape" long before it entered the sustainability lexicon. It is a concept that helps development and the process of transformative change at two levels: firstly, as a conservation and sustainability strategy and secondly, as a political movement which calls for the devolution of power to the ecologically and culturally defined bioregions (McGinnis 1999:4). As the structure and identity of a particular community are defined in terms of its locally unique social, economic and ecological characteristics, maintaining the identity of the community as a whole and development within this paradigm focus on the maintenance, creation and enhancement of local resources. Positively to develop local knowledge is a political act that energises and gives focus to resolve. "When the prevailing culture is largely unchallenged and the language of that culture, however violent, goes mostly unchecked, there is great resource and advantage to be found by asserting other knowledge, speaking out about it, and by speaking in other tongues" (Carini n.d. cited in Lasersohn 2005:151). Only activities that support the natural foundation of life, improve its quality and enhance self-determination and the creative fulfilment of human potential are likely to grow. Bioregionalism calls for a participatory development strategy based on decentralised decision making grounded in the local realities of a specific place, relying on building local partnerships and using local resources and knowledge.

4. Sustainable Transformation

Understanding and integrating the people-centred approaches of *humanness*, *partnerships* and *bioregionalism* highlight that sustainable transformation is an approach that is a dynamically transformative, locally conceived, participatory, flexible, iterative, empowering and connected process involving planning, implementing, monitoring and reviewing aimed

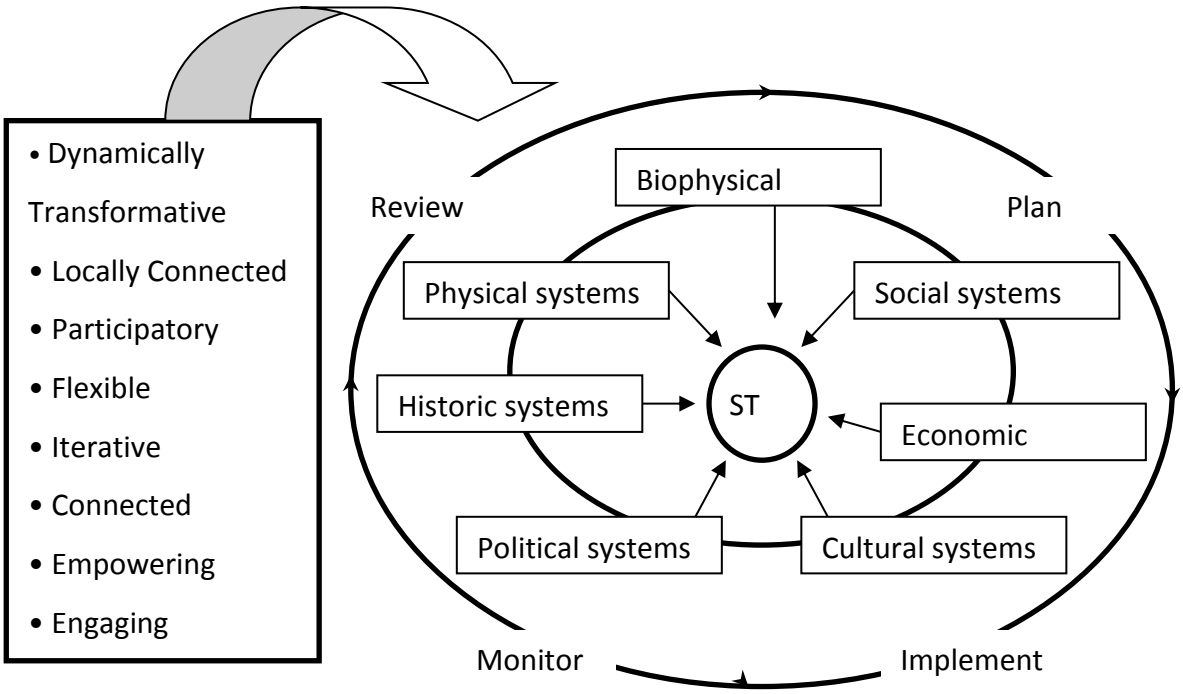
at increasing human potentials, to ensure the persistence of desired physical, biophysical, social, economic, historical, cultural and political systems (see Figure 1). Combining the key principles and components of this approach results in the following aspects of sustainable transformation:

- *Dynamically transformative* – transformation must address the aspirations and priorities of local people by uncovering their own definition of human wellbeing and the direction they themselves define as most desirable. This shift will transform people by liberating them from dominant discourses and worldviews, releasing new potential and discarding dependences.
- *Locally conceived* – the social unit of transformation should be defined in terms of cultural and/or ecological factors within the bioregion to enable situation-specific identification of local activities and resources that define the identity of a particular community. Transformation should rely primarily on local resources and knowledge.
- *Participatory* – transformation must promote and entrench community participation and the formation of meaningful, ongoing local-level partnerships, as opposed to mere consultation or top-down interventions.
- *Flexible* – transformation should not be limited solely to meeting basic needs and must not depend solely, if at all, on the market and its driving principles. It must be flexible and dynamic, defined, implemented and controlled by residents of a specific community and rooted in community values and institutions.
- *Iterative* – transformation should be viewed as a process that is not quantifiably measurable. Instead it should be measured through a continuous affirmation of meaning which requires a creative interpretation of growth and progress through increasing levels of human wellbeing, based on the community's desire to work towards a specific way of life and conception of reality.
- *Connected* – although arising as a local initiative, transformation must have strong links to the regional/national scale planning.
- *Empowering* – transformation must promote empowerment through local control and management with indicators of empowerment being determined by the community members themselves.

- *Engaging* – transformation must promote capacity building through the provision of skills training in order to ensure that self-reliance is promoted and the goal of human self-realisation is approached.

This is illustrated in Figure 1. Such a process of transformation should be at the basis of the new approach to development which can be more sustainable and which we describe as the currently most needed New Human Agenda

Figure 1. Achieving Sustainable Transformation (ST)



5. The New Human Agenda

The sustainable transformation approach within the context of the New Human Agenda is in a position to offer value for interventions intent on increasing human potentials and wellbeing and aimed at alleviating poverty, inequity and disempowerment. In so doing, it can make a significant contribution towards the increase of sustainability and empowerment, and the subsequent reduction of dependency, helplessness and hopelessness.

This approach is vastly different from traditional development which largely relies on passing foreign experiences into new environments. Table 2 summarises the main differences between such approach to development and the New Human Agenda.

Table 2. Summary of Differences between Traditional Development Paradigms and the New Human Agenda

Mainstream Approach	The New Human Agenda
Core Visions	
Alleviation and elimination of poverty, inequity and suffering – the consequences of underdevelopment - through economic growth and development	Alleviation and elimination of poverty, inequity and suffering – the consequences of development - through the expansion and realisation of human potentials resulting and a fuller, greater, better state of being
Increasing economic growth and development and participation in markets	Increasing human dignity and independence
Modernisation and worldwide adoption of Western culture and ways of being and doing	Through local imaginings, dreams and visions, a world yet to be born, frees the human spirit to its task and sets in motion a power sufficient to remake the future
Core Purpose	
The alleviation and elimination of global poverty through homogenisation, the dislocation of traditional cultures and fostering the entrepreneurial spirit: "look at us, do what we do, become what we are now"	The alleviation and elimination of global suffering through liberating the potential that lies within traditional ways of local communities – releasing locked-up human potential and capacity and in so doing, increasing sustainable realisation of human possibility and wellbeing
Global and local domination	Global and local liberation
Core Characteristics	
Interventionist, hegemonic, homogenous, ethnocentric, dominating, dependent, perpetuating	Supportive, revolutionary, heterogeneous, culturally relative, liberating, independent, transformational

Core Epistemological Assumptions	
Western society is the blue-print or universal programme for improvement of all societies and meeting of all basic needs through economic growth and development	Create broader and broader spaces in which the 'logic of life' can unfold freely, and make the system compatible (by its orientations, techniques, the space it occupies, its restrictions and rules) with the free unfolding of life (Gortz n.d. cited in Audouin 1996)
The way the world is and ought to be is objective, determined at a global level and part of a megamachine supported by networks of power and domination that include the development 'industry'	The way the world is and ought to be is subjective and must be determined at the local level in keeping with local aspirations and definitions of need fulfilment and in a way that releases people from the megamachine and its agents to allow the free unfolding of life
The West knows best and local knowledge is unlikely to be applicable or relevant in ending poverty	The West does not necessarily know best and external knowledge is not always applicable or relevant in increasing wellbeing
Assumes the global human population is a dichotomy: black/white, developed/underdeveloped, civilised/uncivilised, European/native, parent/child, industrious/lazy, independent/dependent. In each case, development requires that the latter becomes like the former	Assumes the global human population comprises multiple facets including diversity of culture, race, creed and consciousness representing unreleased power. Liberation of this multiplicity holds the potential to bring about the empowering transformations necessary to end poverty and suffering
One way of knowing and being – one way of developing and increasing wellbeing	Multiple ways of knowing and being - multiple ways of developing and increasing wellbeing
Assumes solutions can circulate globally and be applied to local places: "international best practices" are a technical entity that can be delivered unchanged as a development solution	No "best practice" solutions or broadly applicable approaches. Only locally conceived and specific transformation directions and solutions are valid and legitimate
Development agencies and their personnel understand the needs and aspirations of beneficiaries	Transformation partners understand their own needs and aspirations best and are the key change agents

best and are the experts and key change agents for a better future	for a better future
Development is an objective, universal solution separate from culture or context	Sustainable transition is a subjective, local solution specific to culture and context
Requires a change from traditional ways of life to ways that embrace modern, western values	Embraces traditional ways of life and embraces and strives to enhance local cultural values
Unlimited growth and ever increasing consumerism is possible and desirable	Limits to growth and consumerist society
Material and economic focus	People and ecological focus
Development alternatives maintains core traditional development assumptions but allow for some changes to eliminate or reduce the negative consequences of development	Alternatives to development – offer radically alternative visions of social life, wellbeing and freedom
I sell therefore I am	I am therefore I can be
Core Constraints	
Funding, access to knowledge, management efficiency and lazy, disinterested or underdeveloped people	Resignation, discrimination, inequity, lack of local leadership, lack of rights, domination, dependence and loss of hope
Primary resources	
Money (budgets) and the knowledge and expertise of consultants, programme managers and field workers	Local people and their creativity, knowledge, insights, mobilisation, organisation, vision and initiative
Core Method and Methodological Assumptions	
Development initiative and desired outcomes delivered to *beneficiaries*	Empowerment initiatives and desired outcomes conceived and produced by *participants*
Static duplication: Centrally managed delivery programmes are widely exported, duplicated, expanded, adopted and replicated, without compromise, across geographic and cultural boundaries	Dynamic transformation: Decentralised resources and decision making at local levels, acknowledges uniqueness of geographically and culturally distinguished communities and initiatives and facilitates autonomy and self-determination

Carefully targets beneficiaries by objective needs basis	Mobilises everyone as broadly as possible – builds spirit and momentum of accomplishment
Needs are determined and defined by external, distant development agencies oblivious to the relevance of local environmental, cultural, socio-political and other realities and impose the western view of development irrespective of local aspirations, definitions of human wellbeing, locally desired directions and outcomes (promotes dependence)	Emphasises the relevance of local environmental, cultural, socio-political and other realities and uncovers and supports local aspirations, definitions of human wellbeing, locally desired directions and outcomes (promotes independence)
Development agencies create the development vision and means of achieving it and provide this to beneficiaries	Participants create their development vision, commit to it and design the means of achieving it
Development action is authored by distant organisation or government intervention oblivious to, and disinterested in, local ways of life	Transformation action is authored by the people themselves in accordance with local ways of life – of the people, for the people, by the people
Imported activities, resources and solutions that ignore, or seek to eliminate, the cultural and/or ecological identity of a particular community.	Locally conceived: the social unit of development is defined in terms of cultural and/or ecological factors within the bioregion to enable situation-specific identification of local activities and resources that define the identity of a particular community
Focuses on one issue at a time	Multi-faceted approach tackles numerous causes and solutions simultaneously
Marginalises and ignores local views and perceptions of development.	Integrally incorporates local views and perceptions of development
Forces a passive role onto beneficiaries	Requires continual active role rooted in the free will of the people
Exclusionary: Programmes created, formulated, parcelled, exported and implemented by external agents requiring passive acceptance and adoption by beneficiaries negating any need for meaningful local-	Participatory: Programmes are created, formulated and implemented by local priorities and people and promote and entrench community participation and the formation of meaningful local-level partnerships

level partnerships	
Inflexible: Development is limited solely to meeting basic needs and is dependent on the market and its driving principals. It is inflexible, static, defined, implemented and controlled by external agents and as such is not rooted in, nor capable of being responsive to, local community realities, values and institutions	Flexible: Transformation is not limited solely to meeting basic needs and must not depend solely on the market and its driving principles. It must be flexible and dynamic, defined, implemented and controlled by residents of a specific community and rooted in community realities, values and institutions
Linear, non-adaptive, unable to recognise or respond to changing circumstances and growth in potential and possibilities	Iterative, adaptive and continually recognising changing circumstances and growth in potentials and possibilities
Development direction established, implemented top down, shaped by the powerful dictates of donor agencies: Hierarchical pressure from within the aid chain results in lack of local consultation and decision-making	Requires comprehensive consultation/joint decision-making from the grassroots up about realisation and direction of potentials
Rigidly committed to achieving goals set by donors removed from and culturally insensitive to community life	Flexible in meeting the needs that emerge locally
Hegemonic and monolithic discourse ignores agency	Discourse is legitimately transformed and/or resisted at the local level
Exclusive of those wishing to preserve a different cultural identity or economic reality	Inclusive of those wishing to preserve a different cultural identity or economic reality
Top-down: Development agencies control meanings and definitions of need and decide on and implement activities to meet these needs	Bottom-up: Local communities control meanings and definitions of need, and decide on and implement activities to meet these needs
Power dynamics : Distrust, lack of transparency, hierarchical relationships	Open relationships of trust and alternative ways to hierarchical relationships
Result	

Loss of local resources and knowledge and a dependence on external resources and knowledge (foreign "experts" know best what is really needed and important)	Enhancement of local resources and knowledge: The locals know best what is needed and what is important and are thus empowered and liberated from dependence
Disillusionment, delusion, disempowerment, dependence, failure, disappointment, hopelessness, inertia	Vision, liberation, empowerment, independence, success, hope, action
Measurement	
Quantifiable	Qualifiable
Development is quantifiably measured in terms of adherence to the plan which either fails or succeeds, does not take account of local or changing conditions and doesn't allow for course correction	Transformation is measured through continuous affirmation of meaning and a creative interpretation of growth and progress through increasing levels of human wellbeing and allows for course correction as local circumstances change at any point
Technocratic	Organic
Success is assessed against the values, visions and institutions of distant and political organisations and agencies	Success is assessed in accordance with community values, visions and institutions based on the community's desire to work towards a specific way of life
Focuses on economic growth, modernisation and increasing westernisation - measurement of development is the level of increasing participation in the market economy through the consumption of commodities provided for and distributed through the market	Focuses on wellbeing, dignity, empowerment and increasing desirable environmental, cultural and social potentials - Participation in the global market economy is not a determinant of wellbeing
Donors are in charge and hold implementers to account	Local people are in charge and accountable to themselves and their community
Funding is subject to fulfilment of the agenda of donors	Funding is free to use to achieve its own objective and is not constrained by the traditional chain of aid
Values of development are universal: Local values	Local values are precious and crucial to wellbeing and

must be westernised if development is to be deemed successful	meaningful transformation and must be maintained if empowerment is to be deemed successful
People	
Hungry people and communities are the problem	Hungry people and communities are the solution
Ignorant, unknowledgeable and lazy *beneficiaries* requiring development aid and assistance to meet their basic needs	Wise, creative and knowledgeable potential *partners* in transformation who are denied opportunity by the prevailing world order
Women are a disadvantaged, vulnerable group who must be especially targeted by development assistance	Women are key thinkers, creators who must have a voice in decision making and leadership
The world has one billion mouths to feed	The world has one billion hard working, courageous human beings whose creativity, power and potential must be unleashed
Continues to perpetuate mind sets of resignation, inferiority, neediness and dependency	Strives to overcome mind-sets of resignation, inferiority, neediness and dependency
Environment	
The environment is an economic resource to be exploited albeit now (since the birth of sustainable development discourse) within certain priorities (as defined and determined by Western values and priorities)	Is predicated on respect for, protection and improvement of, local eco-systems and environments in terms of local knowledge and values
Socio-Cultural	
Perpetuates cultural violence in the name of development by changing community values and behaviours, moving communities away from traditional ways of life to acquire a more entrepreneurial and productive attitude and to embrace modern values	Ensures the persistence of local cultural integrity and traditional values, and through bioregionalism, harnesses these for transformational empowerment
Economy	
Only western economic models are valid	There are a number of possible economic models

Politics	
Hegemonic and interventionist: centralised maintenance of the political status quo by the western politico-economic megamachine supported by the development "industry"	Liberating, revolutionary, radical and empowering: requires devolution of power to the ecologically and culturally defined bioregion and decentralisation and independence from the western politico-economic megamachine
Knowledge	
Western knowledge production formulated, parcelled and exported for adaptation to local circumstances produces new sites of power to control and regulate the receiving society	Decentralised knowledge production grounded in local realities and resources empowers and decreases external control and dependence
Blue-print approaches, interventions, solutions exported to do the job of development	Locally determined approaches, interventions and solutions support the natural foundation of life, improve its quality and enhance self-determination and the creative fulfilment of human potential
"Learning *from*" – beneficiaries learn things already known by those they are learning from	"Learning *with*" – collaborative learning jointly creates knowledge
Concerned with building on existing knowledge	Concerned with creating new knowledge
Knowledge and learning is a cumulative, linear process of "adding' new information to existing knowledge with no alternative spaces for expanding the boundaries of what is known	Knowledge is situated in systems of ongoing practice, is relational and mediated by artefacts, is always rooted in a context of interaction, is continually reproduced and negotiated, always dynamic and provisional, and thus always multiple with space for producing new knowledge from multiple ways of knowing and being
Development knowledge is an objective, universal solution that can be conceived unproblematically as separate from context and politics	Contests how development knowledge is conceived, created, communicated and how learning takes place
Unbridgeable divide between "western" and "indigenous" knowledge that precludes dialogue and	Difference between "western" and "indigenous" knowledge is a resource enabling agents to create

continues "oppression"	and shape new knowledge
Does not challenge underlying core values, and assumptions of modernity, westernisation and cultural, economic and social homogeneity	Continual challenges core values and assumptions underlying concept of progress, increasing wellbeing, development, transformation and empowerment
Exported western knowledge is capable of 'enlightening' the 'darkness of poverty' (World Bank 1999:154)	Situated, local, context specific information, associated with identity and belief becomes empowering knowledge capable of facilitating transformation when it is interpreted, legitimised and validated by local communities
"Poor' countries must draw on the knowledge of 'rich' countries in order to develop: "With communication costs plummeting … the stage appears to be set for a rapid narrowing of knowledge gaps and a surge in economic growth and well-being" (World Bank 1999:2)	Local knowledge is most relevant for transformational empowerment, externally imposed knowledge is unlikely to be applicable or relevant or to lead to a surge in economic growth or increase in wellbeing
Development knowledge is objective, universal, a technical entity without geography or interaction that can be linearly moved unchanged from place to place	No one knowledge but "an archipelago of situated knowledges" (Thrift 1998:303)

Adapted from Amin 1990; Audouin 1996; Barlett 2007, Bradley 2009; Carr 2008; Cavalcanti 2007; Coetzee 1989; Crush 1995; Escobar 1995; Esteva 1985; Gherardi 2000; Gherardi and Nicolini 2000; Holmes 2005; Jakimow 2008; Kabeer 1994; Kaotcha 2006; Lasersohn 2005; Matthews 2004; McFarlane 2006; McLennan 2007; Melamed and Scott 2011; Nonaka et al 2000; Pierterse 1998; Power 2006, Schuurman 2000; Sen 1999; Tapscott 1995; The Hunger Project 2006; Thrift 1998; Wilson 2007; World Bank 1999.

The case study of The Hunger Project presented in the following section illustrates an approach encapsulating most of the key considerations of the New Human Agenda.

6. The Hunger Project

A strategic, non-profit organisation and global movement established in 1977, The Hunger Project (THP) is committed to ending the world's poverty, including eliminating the conditions that perpetuate it. An end to hunger is defined in its vision as "a sustainable future for humanity; a future in which all people have the opportunity to live healthy and productive lives in harmony with nature" (The Hunger Project 2008: n.p.). This is not based on everyone achieving an environmentally unsustainable Western-type high-consumption lifestyle nor does it permit one-sixth of the human family to continue living in abject poverty. The Hunger Project is committed to transcending this polarity, to creating a future that rejects the inevitability of poverty and recognises the limitations of a consumerist society (http://www.thp.org). In more than 10,000 villages in 13 African, South Asian and Latin American countries, THP has empowered millions of local, rural people (14 million by 2004[27]), to create lasting, self-reliant improvements in health, education, nutrition, food production and family income, pioneering large-scale, low-cost strategies that have proven effective in meeting the eight Millennium Development Goals[28]. It works with people and organisations in nine developed partner countries who have commitment, integrity and dynamism and are able to mobilise people at the grassroots level for the cause of ending poverty.

Hungry people – the problem or the solution?

Conventional ways of thinking about poverty within traditional development discourse treat people as the problem. The cliché "the world has one billion mouths to feed"[29] is inaccurate and dangerous in that it leads to resignation. According to estimates by the UN Food and Agriculture Organisation and the World Food Programme (FAO and WFP 2010), 925 million people around the world are undernourished but less than 10% of them are hungry because of famine. The Hunger Project tackles chronic persistent hunger, which is not caused merely by food deficiency, but "occurs when people lack opportunity to earn enough income, to be

[27] www.thp.org/overview/index.html, accessed 19 May 2006.
[28] http://www.un.org/millenniumgoals/, accessed 25 April 2011.
[29] See for example http://millionsofmouths.com/info.html, accessed 25 April 2011.

educated and gain skills, to meet basic health needs and have a voice in the decisions that affect their community" (The Hunger Project 2011: n.p.).

The world does not have one billion mouths to feed – it has one billion hard-working, courageous human beings whose creativity and productivity must be unleashed (Holmes 2005). The Hunger Project operates on the principle that poverty and suffering persist when people lack, or are systematically denied, the opportunity to earn money, be educated, learn skills to meet basic needs and have a voice in decisions that affect their lives. Only by mobilising the energy, responsibility, creativity and resources of the partners in development can a society be created that is truly free from poverty. Given that society usually holds women responsible for family health, education and nutrition, THP's highest priority is the empowerment of women who are traditionally denied the means, information and freedom of action to fulfil these responsibilities.

Underlying all of THP's work is the approach that when individuals are given opportunities rather than obstacles, when they are seen as the solution not the problem, when they are recognised as the key change agents not beneficiaries, and when they are embraced as full citizens rather than relegated to second class status, then they get out of the poverty trap and build lives of self-reliance and dignity (Holmes 2005). The interview with the Malawi THP Country Director (see Box 1) stresses the importance of the sustainability concepts of humanness, partnerships and bioregionalism as outlined above (see Figure 1).

Box 1. Achieving Sustainable Development in Malawi (Kaotcha 2006)

Africa is failing to develop, failing to change, despite massive amounts of international aid. Surely it has become apparent that the hungry African is the person needed for hunger alleviation – it is time to look at the poor African differently: not as someone waiting for handouts but rather as someone capable of, and responsible for, feeding themselves. One cannot put the feeding of the hungry African into someone else's hands! Such handouts create a culture of dependence and disempowerment – we are born poor, we grew up poor, we will die poor.
People need to be empowered to see possibilities to develop a vision for themselves as self-reliant and independent. If we are to have sustainability in any form, we need participatory transformation: permanent change that becomes possible because people themselves have authored the transformation, not some distant organisation or government creating dependency.
Invest in the people themselves! Empower them! They are the resource! The campaign for ending hunger starts with the creativity of hungry people – respecting them as the primary authors and actors of the work to end hunger, awakening them to a possibility for a better life, and working to clear away the obstacles to the success of their self-reliant action.
This paradigm shift must entrench itself – we must release the locked-up potential of the poor and particularly of women – for when we release this potential, we will know an end to hunger. In order to release this potential, a people-centred, local, empowerment approach is required.

One of the failures of development has been the belief that the way to end poverty is to find a workable solution and replicate it. This fails because the source of the success is the human creativity that resulted in the solution, not the solution itself. What is important is to extend the process that has generated the solution, not to replicate the solution. Wherever hunger and poverty persist, human beings must be empowered to discover their own vision, express their own leadership, create their own solutions and work together to achieve their own success.

The Epicentre Strategy described in the section to follow sheds light into how these differences could be achieved on the ground.

The Epicentre Strategy

In much of rural Africa, there is no infrastructure – no schools, no health centres, no all-weather roads. What is usually not understood is that the lack of *physical* infrastructure

reflects a lack of *human* infrastructure — no village councils, no health and education committees (Burke 2006). Since 1991, THP has pioneered a strategy known as the Epicentre Strategy to empower rural Africans to meet all their basic needs on a sustainable basis. It is a unified, people-centred approach that has proven effective in Benin, Burkina Faso, Ethiopia, Ghana, Malawi, Mozambique, Senegal and Uganda where THP mobilises rural communities at 82 epicentres and 91 sub-epicentres to create their own schools, health centres, training, food security, literacy training and banking for more than three million people (The Hunger Project 2006). The Epicentre Strategy facilitates villages to create and run their own programs and become totally self-reliant (without needing further investment from the Hunger Project) after 5-6 years (Burke 2006).

The key elements of the Epicentre Strategy correspond to the three sustainability concepts and help facilitate a process of building a sustainable transition (as outlined in Figure 1). They are:

• *Overcoming the mind-set of resignation and dependency*: The experience of rural people has taught them that they are powerless to change things. The Hunger Project directly intervenes in this mind-set with a Vision, Commitment and Action Workshop (VCAW) in which villagers are empowered to overcome their resignation, recognise that they are the key change agents for a better future, create a vision for their village, commit to it, and design plans of action to achieve it based entirely on their own resources. It takes at least six months of successful self-reliant action before the village's sense of self-reliance is sufficiently strong to take the next step (Koacha 2006).

• *Train animators*: Villagers who demonstrate leadership potential and enthusiasm are invited to receive intensive one-day training to be animators — spark plugs to mobilise people in their villages, facilitate their development activities and lead campaigns. Out of a public workshop of 200 people, perhaps 20 may step forward to become animators. Animators meet each month to review progress and create new strategies (http://www.thp.org). More than 75,000 village-level volunteers – in equal numbers of men and women – have been trained and empowered to lead VCAW and facilitate communities to achieve their own self-reliant development (The Hunger Project 2006).

• *Build social infrastructure*: As the community begins to mobilise to meet its basic needs, it elects an epicentre committee, and subcommittees responsible for health, education, food security, employment generation and other village priorities. An absolute requirement is that there must be equal numbers of women and men on each epicentre committee (http://www.thp.org).

• *Build the physical infrastructure*: With local leadership in place, it is possible to mobilise the community to construct a building that will house its nursery school, health centre, food processing, food bank, adult literacy classes, other training, a meeting room and a rural bank. For most villagers, this is an achievement beyond the realm of what they could ever imagine — yet they do it themselves (Koacha 2006). The government, an individual or chief contributes land, including land for a community farm. Others contribute labour, learning to make bricks and construct the building (http://www.thp.org).

• *Create strong linkages with local government*: Local government officials are included at every stage of the process. As a village builds confidence, it also achieves a stronger voice and is more able to negotiate with local government to gain teachers, health workers, extension workers and pharmaceutical supplies.

• *Build in sustainability through self-reliance*: THP's experience has shown that traditional development projects never succeed in making the transition from donor dependency to sustainability. The Epicentre Strategy is different in that sustainability is established from the start. Epicentres generate sufficient funds to maintain their facilities from proceeds from the community farm, off-farm income-generating projects, interest payments to the bank, usage fees for using mechanised food-processing equipment, and rental of the main community hall for cultural and educational activities, weddings and other local celebrations (http://www.thp.org).

The New Human Agenda applied

The Hunger Project is a powerful example about what can be achieved working within the New Human Agenda for development. Table 3 summarises the key differences between this approach and the traditional more conventional attitudes to development.

Table 3. Comparison between The Hunger Project and the Conventional Development Paradigm

	Conventional paradigm	The Hunger Project's paradigm
Who are hungry people?	**Beneficiaries** whose basic needs must be met	**Principle authors and actors in development** – hard working, creative individuals who are denied opportunities
What must be done?	**Provide services** through government or charities	**Mobilise and empower** self-reliant action, and provide an **enabling environment** in which they can succeed
What's the primary resource for development?	**Money:** bigger budgets **Expertise:** consultants and program managers	**People:** their mobilisation, organisation and initiative
Who is in charge?	**Donors:** whoever provides the money and holds implementers to account	**Local people**, through local representatives whom they hold to account
What are the main constraints?	**Economic:** funding (largesse of the powerful); management efficiency	**Social conditions**: resignation, discrimination, lack of local leadership, lack of rights
What is the role of women?	**Vulnerable group** who must be especially targeted beneficiaries	**Key producers** who must have a voice in decision making
What about social and cultural issues?	**Immutable conditions** that must be compensated for	**Catalyse social transformation:** empower people to alter conditions
How should we focus our work?	**Carefully target** beneficiaries by objective needs basis	**Mobilise everyone** as broadly as possible – build spirit and momentum of accomplishment
What is the role of central government?	**Operate** centrally managed service delivery programmes	**Decentralise** resources and decision making to local level, build local capacity, set standards, protect rights
What is the role of local government?	**Implementing arm** of central programmes	**Autonomous** leadership directly accountable to people
What is the role of civil society?	**Implementing arm** of central programmes	**Catalyst** to mobilise people, protect their rights, empower people to keep government accountable
What is the focus of development?	Personnel and resources focus on **one** issue at a time	Communities apply a **multi-faceted approach** tackling numerous causes and solutions simultaneously
How is monitoring undertaken?	Outcomes reviewed periodically, typically once a year, to ensure adherence to the plan – doesn't take proper account of local or changing conditions and monitoring is so long-term it provides "too little too late" in terms of useful course correction	Well-designed and frequent communications so every action in the process is continuously infused with the strategic intent and with a sense of making progress towards it. Monitoring is iterative and continual recognising changing circumstances and growth in potentials and possibilities

Source: Adapted from http://www.thp.org

6. Conclusion

Whilst not always appropriate and applicable in its entirety, there are many components of The Hunger Project and its Epicentre Strategy that have value and applicability for empowering people and communities and facilitating a sustainable approach to poverty alleviation. It is the approach and the essence, rather than the details, that have broad-based, yet crucial local relevance. The Hunger Project's demonstrated paradigm and methodology for achieving human-centred sustainable development in communities in Africa, South Asia and Latin America, demonstrate a model worth exploring in terms of its value for bringing about a widespread end to poverty, dependence, hopelessness and disempowerment.

Application of the New Human Agenda for achieving sustainable transformations must be a locally based, community-driven, people-centred partnership that liberates people from the institutions and agencies, dictates and dependencies of the "megamachine" and results in ongoing and increasing wellbeing, through expansion of individual and community empowerment, to live life as they choose. If correctly applied, this approach perhaps offers the greatest opportunity of this generation, a vision for global transformation enabling us to take a much longer view into a future where our human family will have created and facilitated communities and institutions that ensure sustainability and an end to poverty and suffering for all present and future generations.

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The New Human Agenda: Partnerships for Human Bioregional Development

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The solution consists in winning from the megamachine, broader and broader spaces in which the 'logic of life' can unfold freely, and in making the system compatible – by its orientations, its techniques, the limits of the space it occupies and the restrictions and rules to which its functioning is subject – with that of the free unfolding of life. (Gortz cited in Audouin 1996)

Abstract

The ways of the West are not necessarily the best for releasing the human potential and capacity in Australian indigenous communities to enable sustainable outcomes. The paper puts forward the New Human Agenda built around the concepts of increased humanness, partnerships and bioregionalism, as an alternative approach. Using the example of The Hunger Project, it argues that the process and strategies applied there (which are locally conceived, dynamically transformative, flexible, connected, iterative, engaging, participatory and empowering) have the potential to deliver sustainability for regional and remote indigenous Australia.

The New Human Agenda

One only has to turn on the local television or open a newspaper to witness the devastation of humanity happening within Australia's borders. The circumstances and conditions experienced by people living in remote and rural indigenous communities in Australia need urgent attention and improvement. They highlight the failure to date of top-down development interventions and solutions aimed at addressing the question of improving and increasing human wellbeing. In fact, some arguments illustrate that the very nature of "development" interventions to date and the imposition of values characterising previous development trends, discourses and systems are responsible for the perpetuation and continuation of poverty. According to O'Donoghue (1997: 5), "Aboriginal people had been the subject of bureaucratic intervention for much of the period of white settlement… our experience of those policies, designed to 'protect' and then 'assimilate' us, was overwhelmingly negative". However one choses to understand poverty and development, it has become inescapably clear that Western attempts at poverty alleviation have not been successful. Internationally and locally, those seeking to implement sustainable development in remote rural indigenous communities are becoming more aware that they may be exposing themselves to a significant risk of failure together with those they involve in the intervention within the development process.

Yet there are new paradigms and discourses, and organisations working within these, that are proving sustainable development in remote or rural indigenous communities is not only possible, but also capable of bringing about permanent change. This transformation is authored by the people themselves, rather than by a distant organisation or government intervention, and operates within a paradigm that calls on all agencies of development to work with people and communities to empower them. Such a paradigm believes in the creativity of people, the partners in development – respecting them as the primary authors and actors of the work to end poverty, awakening them to a possibility for a better life and self-reliant actions. Interventions thus facilitate the release of human potential and capacity. This paper proposes that the ways of the West are not necessarily always the best for releasing the human potential and capacity in Australian indigenous communities to enable sustainable outcomes. The suggested alternative is the New Human Agenda – an *agenda*, dealing directly with sustainable human development. It recognises the criticality of locally-

driven, people-centred, empowerment interventions that understand rural indigenous communities and individuals as partners rather than beneficiaries, as the solution rather than the problem. There are projects around the world illustrating that, through application of interventions consistent with the New Human Agenda, there is a very real possibility of releasing the locked-up potential of the poor and particularly of women, and in so doing, increasing sustainable realisation of human potential in even the most remote indigenous communities. Drawing on three concepts (increased humanness, partnerships and bioregionalism), key aspects for considering development interventions and sustainability, consistent with the New Human Agenda, are proposed. The Hunger Project is then briefly described to illustrate a successful approach for facilitating sustainability in indigenous communities.

History of development

The ideas informing the development approaches and interventions employed by development agencies and organisations have not arisen in an institutional, social or political vacuum but rather have been assembled within a vast hierarchy of knowledge production and consumption sometime referred to as the "development industry" (Crush 1995). It is an industry implicated in the operation of networks of power and domination that seek to decide the way the world actually is and ought to be, views that have come to encompass the entire globe (Coetzee1989). This development industry has been described as the apparatus that results in the mapping and production of impoverished communities and societies (Escobar 1995).

Some argue that the primary concern of development is an ongoing process of reinvention to legitimise the illegitimate and to manage the ravages of past policies legitimated in its name (Tapscott 1995). Under this view, lack of development is often simply seen as the failure to initiate the measures aimed at dislocating "traditional" cultures and fostering the entrepreneurial spirit (Coetzee and Graaff 1996). Manzo (cited in Crush 1995) states that the very existence of the term "development" required a dichotomy: white/black, developed/underdeveloped, civilised/uncivilised, European/native, underpinned by a parent/child metaphor, with the West as a model of achievement and indigenous populations as a childish derivative. Australia has not remained immune to becoming a

participant in this discourse and its implications and remote, rural indigenous communities have locally born the brunt.

Although not always clearly understood, it is non-the-less becoming increasingly clear that the imposition of values characterising previous development trends have not been successful. Approaches grounded in foundations such as: look at us, do what we do, then you will become what we are now (Coetzee 1989) have lost validity in the face of increasing poverty and wide-spread environmental destruction and the discourses and systems that have informed development interventions and assistance are increasingly being held responsible for the continuation of poverty (Coetzee 1996). According to Dodson (1996: 3), "(p)olicy for and about Aboriginal and Torres Strait Islander peoples has consistently asserted the dominance of the mainstream discourse over the voices of Indigenous peoples".

Even "within mainstream sustainable development discourse, there are no ideological conflicts with the dominant capitalist industrialising model, only debates about methods and priorities" (Adam 1995: 90). Sustainable development thus can become just another call for meeting basic needs as determined by western value systems. Clearly then historic paradigms continue to find expression, and are in fact inherent in and thus weaken, current sustainability discourse which whilst understanding the reduction of poverty as vital, continue to view the evolution of western societies as the blue-print or universal programme for improvement of all societies (Coetzee 1996). With this understanding comes a growing awareness that in order to be truly sustainable, development projects, programmes, interventions and strategies, both locally or globally, must seek to "expand or realise the potentials of, to bring to a fuller, greater or better state", the people sustainable development claims to be assisting (Goodland 1995: 9). Without this awareness and resulting action, despite all its good intention, the concept of sustainability, with reference to remote indigenous communities in Australia, is in danger of remaining a call for meeting basic needs, as determined by a Western value system through economic development.

So how might the new development paradigm be considered and applied? Three development concepts addressing issues of increasing potentials and wellbeing may be combined and used to inform development and improve wellbeing interventions that are likely to be sustainable.

New development concepts

The three new development concepts are humanness, partnerships and bioregionalism.

Increased humanness

The concept of "increased humanness" is crucial to the creation of sustainability. It argues that development should be more than merely striving for material improvements and in fact, does not necessarily imply a significant increase in the material welfare of individuals (Coetzee 1996). Thus although development projects may aim to bring about material benefits, their primary contribution must be to increase the level of human wellbeing through increasing social justice, comprehensive consultation and joint decision making, respect for local eco-systems and local social and cultural patterns and the advancement of people through their own endeavours, including freedom of expression and impression (Coetzee 1996). The most important implication is the concept of progress, which places the meaning and specific circumstances within which action takes place at the centre of the analysis. Progress is not quantifiably measurable but is instead dependent on a continuous affirmation of meaning and creative interpretation.

Development interventions thus have to focus on uncovering people's own definitions of human wellbeing and should no longer be a mechanism to improve material circumstances, but should rather focus on people's aspirations (Coetzee 1996). No development is possible without participation and the opportunity for making choices by the people, focused on the aspirations and needs of the people, as defined by the people themselves. Participation and self-reliance, a breaking of the monopoly of knowledge, the assumption that the beneficiaries of development will also have to be its contributors, are key components.

Partnerships

Local Action 21, which grew out of the 2002 World Summit on Sustainable Development in Johannesburg as an extension of Rio's Local Agenda 21, calls local governments to accelerate the move to sustainability actions through partnerships (WSSD 2002). The formation of partnerships that draw in all stakeholders, and particularly the local community, is an essential way of establishing participation in the planning and decision making as well as building collective responsibility and a sense of ownership of

development. Participation through partnerships can also potentially allow for historical and inequitable power relations to be redressed.

Unlike traditional models of development where a passive role is forced onto the people concerned with their whole life structure being determined by outside forces and not their free will, working through partnerships makes a great leap forward by integrating development for the people, of the people, with development BY the people.

Bioregionalism

Bioregionalism sees communities as intrinsically linked to their natural environment and definable in terms of this relationship to the local environment (Audouin 1996). According to McGinnis (1999: 2), "bioregionalism is not a new idea but can be traced to the aboriginal, primal and native inhabitants of the landscape" long before it entered the sustainability lexicon. It is a concept that helps development and the process of transformative change at two levels: firstly, as a conservation and sustainability strategy and secondly, as a political movement which calls for the devolution of power to the ecologically and culturally defined bioregions (McGinnis 1999: 4). As the structure and identity of a particular community is defined in terms of its locally unique social, economic and ecological characteristics, maintaining the identity of the community as a whole and development within this paradigm focus on the maintenance, creation and enhancement of local resources. Only activities that support the natural foundation of life, improve its quality and enhance self-determination and the creative fulfilment of human potential are likely to grow. Bioregionalism calls for a participatory development strategy based on decentralised decision making grounded in the local realities of a specific place, relying on building local partnerships and using local resources and knowledge.

Sustainable development

Understanding and integrating the people-centred approaches of humanness, partnerships and bioregionalism highlight that sustainable development is an approach that is a dynamically transformative, locally conceived, participatory, flexible, iterative and connected process involving planning, implementing, monitoring and reviewing aimed at increasing human potentials, to ensure the persistence of desired physical, biophysical,

social, economic, historical, cultural and political systems (see Figure 1). Combining the key principles and components of this approach results in the following aspects of sustainable development:

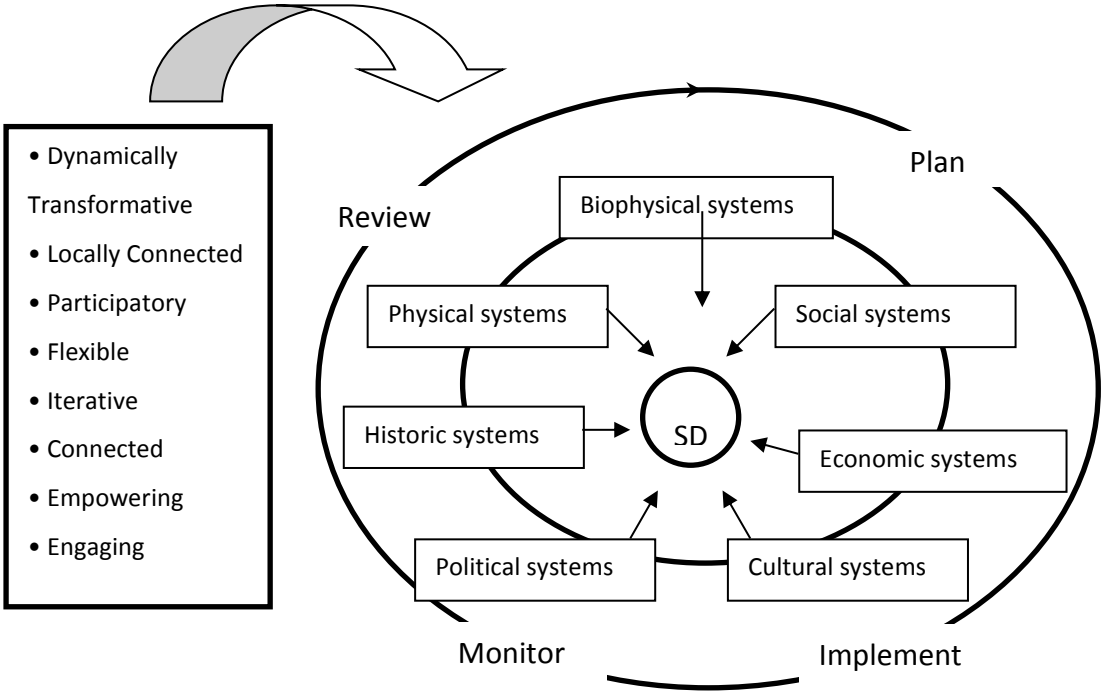
- *Dynamically transformative* – development must address the aspirations and priorities of local people by uncovering their own definition of human wellbeing and the direction they themselves define as most desirable. This shift will transform people releasing new potential and discarding dependences.
- *Locally conceived* – the social unit of development should be defined in terms of cultural and/or ecological factors within the bioregion to enable situation-specific identification of local activities and resources that define the identity of a particular community. Development should rely primarily on local resources and knowledge.
- *Participatory* – development must promote and entrench community participation and the formation of meaningful local-level partnerships – as apposed to mere consultation.
- *Flexible* – development should not be limited solely to meeting basic needs and must not depend solely on the market and its driving principles. It must be flexible and dynamic, defined, implemented and controlled by residents of a specific community and rooted in community values and institutions.
- *Iterative* – development should be viewed as a process that is not quantifiably measurable. Instead it should be measured through a continuous affirmation of meaning which requires a creative interpretation of growth and progress through increasing levels of human wellbeing, based on the community's desire to work towards a specific way of life and conception of reality.
- *Connected* – although arising as a local initiative, development must have strong links to the regional/national scale planning.
- *Empowering* – development must promote empowerment through local control and management with indicators of empowerment being determined by the community members themselves.
- *Engaging* – development must promote capacity building through the provision of skills training in order to ensure that self-reliance is promoted and the goal of human self-realisation is approached.

This approach within the context of the New Human Agenda may offer value for development interventions aimed at increasing the potentials and wellbeing of remote, and rural indigenous communities and in so doing make a significant contribution towards the increase of sustainability and empowerment, and the subsequent reduction of dependency, helplessness and hopelessness. The case study presented in the section to follow is an example of the application of this approach.

The Hunger Project

A strategic, non-profit organisation and global movement established in 1977, The Hunger Project (THP) is committed to ending the world's poverty, including eliminating the conditions that perpetuate it. An end to hunger is defined as "a sustainable future for humanity; a future in which all people have the opportunity to live healthy and productive lives in harmony with nature" (THP 2005a). This is not based on everyone achieving an environmentally unsustainable Western-style high-consumption lifestyle nor does it permit one-sixth of the human family to continue living in abject poverty. The Hunger Project is committed to transcending this polarity, to creating a future that rejects the inevitability of poverty and recognises the limitations of a consumerist society (http://www.thp.org). In more than 10,000 villages in 13 African, South Asian and Latin American countries, THP has empowered millions of local, rural people (14 million by 2004, www.thp.org/overview/index.html) to create lasting, self-reliant improvements in health, education, nutrition, food production and family income, pioneering large-scale, low-cost strategies that have proven effective in meeting the 8 Millennium Development Goals (http://www.un.org/millenniumgoals/).

Figure 1. Achieving Sustainable Development (SD)



Hungry people – the problem or the solution?

Conventional ways of thinking about poverty within traditional development discourse treat people as the problem. The cliché "the world has one billion mouths to feed" is inaccurate and dangerous in that it leads to resignation. The world does not have one billion mouths to feed – it has one billion hard-working, courageous human beings whose creativity and productivity must be unleashed (Holmes 2005). THP operates on the principle that poverty and suffering persist when people lack, or are systematically denied, the opportunity to earn money, be educated, learn skills to meet basic needs and have a voice in decisions that effect their lives. Only by mobilising the energy, responsibility, creativity and resources of the partners in development can a society be created that is truly free from poverty. Given that society usually holds women responsible for family health, education and nutrition, THP's highest priority is the empowerment of women who are traditionally denied the means, information and freedom of action to fulfil these responsibilities.

Underlying all of THP's work is the approach that when individuals are given opportunities rather than obstacles, when they are seen as the solution not the problem, when they are recognised as the key change agents not beneficiaries, and when they are embraced as full

citizens rather than relegated to second class status, then they get out of the poverty trap and build lives of self-reliance and dignity (Holmes 2005). The interview with Malawi THP Country Director (see Box 1) stresses the importance of the sustainability concepts of humanness, partnerships and bioregionalism as outlined above (see Figure 1).

One of the failures of development has been the belief that the way to end poverty is to find a workable solution and replicate it. This fails because the source of the success is the human creativity that resulted in the solution, not the solution itself. What is important is to extend the process that has generated the solution, not to replicate the solution. Wherever hunger and poverty persist, human beings must be empowered to discover their own vision, express their own leadership, create their own solutions and work together to achieve their own success.

Box 1. Achieving Sustainable Development in Malawi (Kaotcha 2006)

Africa is failing to develop, failing to change, despite massive amounts of international aid. Surely it has become apparent that the hungry African is the person needed for hunger alleviation – it is time to look at the poor African differently: not as someone waiting for handouts but rather as someone capable of, and responsible for, feeding themselves. One cannot put the feeding of the hungry African into someone else's hands! Such handouts create a culture of dependence and disempowerment – we are born poor, we grew up poor, we will die poor.

People need to be empowered to see possibilities to develop a vision for themselves as self-reliant and independent. If we are to have sustainability in any form, we need participatory transformation: permanent change that becomes possible because people themselves have authored the transformation, not some distant organisation or government creating dependency.

Invest in the people themselves! Empower them! They are the resource! The campaign for ending hunger starts with the creativity of hungry people – respecting them as the primary authors and actors of the work to end hunger, awakening them to a possibility for a better life, and working to clear away the obstacles to the success of their self-reliant action.

This paradigm shift must entrench itself – we must release the locked-up potential of the poor and particularly of women – for when we release this potential, we will know an end to hunger. In order to release this potential, a people-centred, local, empowerment approach is required.

Table 1 summarises the key differences between THP working within the New Human Agenda for development and the traditional more conventional approaches, and the Epicentre Strategy described below sheds light into how these differences can be achieved on the ground.

Table 1: Comparisons Between Development Paradigms

	Conventional paradigm	**THP's paradigm**
Who are hungry people?	**Beneficiaries** whose basic needs must be met	**Principle authors and actors in development** – hard working, creative individuals who are denied opportunities
What must be done?	**Provide services** through government or charities	**Mobilise and empower** self-reliant action, and provide an **enabling environment** in which they can succeed
What's the primary resource for development?	**Money:** bigger budgets **Expertise:** consultants and program managers	**People:** their mobilisation, organisation and initiative
Who is in charge?	**Donors:** whoever provides the money and holds implementers to account	**Local people**, through local representatives whom they hold to account
What are the main constraints?	**Economic:** funding (largesse of the powerful); management efficiency	**Social conditions**: resignation, discrimination, lack of local leadership, lack of rights
What is the role of women?	**Vulnerable group** who must be especially targeted beneficiaries	**Key producers** who must have a voice in decision making
What about social and cultural issues?	**Immutable conditions** that must be compensated for	**Catalyse social transformation:** empower people to alter conditions
How should we focus our work?	**Carefully target** beneficiaries by objective needs basis	**Mobilise everyone** as broadly as possible – build spirit and momentum of accomplishment
What is the role of central government?	**Operate** centrally managed service delivery programmes	**Decentralise** resources and decision making to local level, build local capacity, set standards, protect rights
What is the role of local government?	**Implementing arm** of central programmes	**Autonomous** leadership directly accountable to people
What is the role of civil society?	**Implementing arm** of central programmes	**Catalyst** to mobilise people, protect their rights, empower people to keep government accountable
What is the focus of development	Personnel and resources focus on **one** issue at a time	Communities apply a **multi-faceted approach** tackling numerous causes and solutions simultaneously
How is monitoring undertaken	Outcomes reviewed periodically, typically once a year, to ensure adherence to the plan – doesn't take proper account of local or changing conditions and monitoring is so long-term it provides "too little too late" in terms of useful course correction	Well-designed and frequent communications so every action in the process is continuously infused with the strategic intent and with a sense of making progress towards it. Monitoring is iterative and continual recognising changing circumstances and growth in potentials and possibilities

Source: Adapted from http://www.thp.org

The Epicentre Strategy

In much of rural Africa, there is no infrastructure – no schools, no health centres, no all-weather roads. What is usually not understood is that the lack of *physical* infrastructure reflects a lack of *human* infrastructure — no village councils, no health and education committees (Burke 2006). Since 1991, THP has pioneered a strategy known as the Epicentre Strategy to empower rural Africans to meet all their basic needs on a sustainable basis (http://www.thp.org/reports/family/2005/May/). It is a unified, people-centred approach that has proven effective in Benin, Burkina Faso, Ethiopia, Ghana, Malawi, Mozambique, Senegal and Uganda where THP mobilises rural communities at 82 epicentres and 91 sub-epicentres to create their own schools, health centres, training, food security, literacy training and banking for more than three million people (THP 2006). The Epicentre Strategy facilitates villages to become totally self-reliant after 5-6 years (Burke 2006).

The key elements of the Epicentre Strategy correspond to the three sustainability concepts and help facilitate a process of building a sustainable development (as outlined in Figure 1). They are:

• *Overcoming the mind-set of resignation and dependency*: The experience of rural people has taught them that they are powerless to change things (as is the case with many remote and rural disengaged indigenous communities both within Australia and globally). THP directly intervenes in this mind-set with a Vision, Commitment and Action Workshop (VCAW) in which villagers are empowered to overcome their resignation, recognise that they are the key change agents for a better future, create a vision for their village, commit to it, and design plans of action to achieve it based entirely on their own resources. It takes at least six months of successful self-reliant action before the village's sense of self-reliance is sufficiently strong to take the next step (Koacha 2006).

• *Train animators*: Villagers who demonstrate leadership potential and enthusiasm are invited to receive intensive one-day training to be animators — spark plugs to mobilise people in their villages, facilitate their development activities and lead campaigns. Out of a public workshop of 200 people, perhaps 20 may step forward to become animators. Animators meet each month to review progress and create new strategies (http://www.thp.org). More than 75,000 village-level volunteers – in equal numbers of men

and women – have been trained and empowered to lead VCAW and facilitate communities to achieve their own self-reliant development (THP 2006).

• *Build social infrastructure*: As the community begins to mobilise to meet its basic needs, it elects an epicentre committee, and subcommittees responsible for health, education, food security, employment generation and other village priorities. An absolute requirement is that there must be equal numbers of women and men on each epicentre committee (http://www.thp.org).

• *Build the physical infrastructure*: With local leadership in place, it is possible to mobilise the community to construct a building that will house its nursery school, health centre, food processing, food bank, adult literacy classes, other training, a meeting room and a rural bank. For most villagers, this is an achievement beyond the realm of what they could ever imagine — yet they do it themselves (Koacha 2006). The government, an individual or chief contributes land, including land for a community farm. Others contribute labour, learning to make bricks and construct the building (http://www.thp.org).

• *Create strong linkages with local government*: Local government officials are included at every stage of the process. As a village gains confidence, it also gains a stronger voice and is more able to negotiate with local government to gain teachers, health workers, extension workers and pharmaceutical supplies.

• *Build in sustainability through self-reliance*: THP's experience has shown that traditional development projects never succeed in making the transition from donor dependency to sustainability. The epicentre strategy is different in that sustainability is established from the start. Epicentres generate sufficient funds to maintain their facilities from proceeds from the community farm, off-farm income-generating projects, interest payments to the bank, usage fees for using mechanised food-processing equipment, and rental of the main community hall for cultural and educational activities, weddings and other local celebrations (http://www.thp.org).

Conclusion

Whilst not transferable in its entirety, there are many components of THP and its Epicentre Strategy that have value and applicability for facilitating sustainable indigenous communities in Australia. It is the approach and the essence, rather that the details, that

have broad-based, yet crucial local relevance. THP's demonstrated paradigm and methodology for achieving human-centred sustainable development and meeting the 8 Millennium Development Goals in remote indigenous communities in Africa, South Asia and Latin America, demonstrate a model worth exploring in terms of its value for sustainable remote indigenous communities in Australia. The New Human Agenda for achieving sustainability must be a locally based, community-driven, people-centred partnership, and is perhaps the greatest opportunity of this generation. It enables us to take a much longer view, into a future where our human family will have created the communities and institutions to ensure sustainability for all present and future generations.

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Case Study Area 2: The New Human Agenda

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The New Human Agenda: An Empowering Approach To Poverty Alleviation

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The solution consists in winning from the megamachine, broader and broader spaces in which the 'logic of life' can unfold freely, and in making the system compatible – by its orientations, its techniques, the limits of the space it occupies and the restrictions and rules to which its functioning is subject – with that of the free unfolding of life. (Gortz cited in Audouin 1996)

Abstract

The ways of the West are not necessarily the best for releasing human potential and capacity for poverty alleviation. This paper puts forward the New Human Agenda, built around the concepts of increased humanness, partnerships and bioregionalism, as an alternative approach to traditional interventions. Using the example of The Hunger Project, it argues that the applied process and strategies (which are locally conceived, dynamically transformative, flexible, connected, iterative, engaging, participatory and empowering) have the potential to deliver sustainable and long term opportunities for poverty alleviation.

The New Human Agenda

One only has to turn on the local television or open a newspaper to witness the ongoing and increasing devastation of humanity happening in the world all around us. The circumstances and conditions experienced by people living in poor countries and communities need urgent

attention and improvement. They highlight the failure to date of top-down development interventions and solutions aimed at addressing the question of improving and increasing human wellbeing. In fact some arguments illustrate that the very nature of "development" initiatives so far, and the imposition of values characterising previous development trends, discourses and systems, are responsible for the perpetuation and continuation of poverty. However one choses to understand poverty and development, it has become inescapably clear that Western attempts at poverty alleviation have not been successful (see for example, Kabeer 1994). Internationally and locally, those seeking to implement sustainable development are becoming more aware that they may be exposing themselves to a significant risk of failure together with those they involve in the intervention within the development process.

Yet there are new paradigms and discourses, and organisations working within these that, are proving poverty alleviation is not only possible, but also capable of bringing about permanent change. This transformation is authored by the people themselves, rather than by a distant organisation or government intervention, and operates within a paradigm that calls on all agencies of development to work with people and communities to empower them. Such a paradigm believes in the creativity of people and sees them as partners in development – respecting them as the primary authors and actors of the work to end poverty, awakening them to a possibility for a better life and self-reliant actions. Interventions thus facilitate the release of human potential and capacity.

This paper proposes that the ways of the West are not necessarily always the best for releasing the human potential and capacity in impoverished communities to enable sustainable outcomes. The suggested alternative is the New Human Agenda – an *agenda* dealing directly with sustainable human development. It recognises the criticality of locally-driven, people-centred, empowerment interventions that understand impoverished communities and individuals as partners rather than beneficiaries, as the solution rather than the problem. There are projects around the world illustrating that, through application of interventions consistent with the New Human Agenda, there is a very real possibility of releasing the locked-up potential of the poor and particularly of women, and in so doing, increasing sustainable realisation of human potential in even the most remote communities.

Drawing on three concepts (increased humanness, partnerships and bioregionalism), the paper proposes key aspects for considering development interventions and sustainability, which are consistent with the New Human Agenda. The Hunger Project is then briefly described to illustrate a successful approach for facilitating an end to poverty.

History of Development

The ideas informing the development approaches and interventions employed by development agencies and organisations have not arisen in an institutional, social or political vacuum but rather have been assembled within a vast hierarchy of knowledge production and consumption sometime referred to as the "development industry" (Crush 1995). It is an industry implicated in the operation of networks of power and domination that seek to decide the way the world actually is and ought to be, views that have come to encompass the entire globe (Coetzee 1989). This development industry has been described as the apparatus that results in the mapping and production of impoverished communities and societies (Escobar 1995).

Some argue that the primary concern of development is an ongoing process of reinvention to legitimise the illegitimate and to manage the ravages of past policies legitimated in its name (Tapscott 1995). Under this view, lack of development is often simply seen as the failure to initiate the measures aimed at dislocating "traditional" cultures and fostering the entrepreneurial spirit (Coetzee and Graaff 1996). Manzo (cited in Crush 1995) states that the very existence of the term "development" required a dichotomy: white/black, developed/underdeveloped, civilised/uncivilised, European/native, underpinned by a parent/child metaphor, with the West as a model of achievement and indigenous populations as a childish derivative.

Although not always clearly understood, it is non-the-less becoming increasingly clear that the imposition of values characterising previous development trends have not been successful. Approaches grounded in foundations such as: look at us, do what we do, then you will become what we are now (Coetzee 1989) have lost validity in the face of increasing poverty and widespread environmental destruction. The discourses and systems that have

informed development interventions and assistance are increasingly being held responsible for the continuation of poverty (Coetzee 1996). According to Dodson (1996: 3), in Australia,"(p)olicy for and about Aboriginal and Torres Strait Islander peoples has consistently asserted the dominance of the mainstream discourse over the voices of Indigenous peoples".

Even "within mainstream sustainable development discourse, there are no ideological conflicts with the dominant capitalist industrialising model, only debates about methods and priorities" (Adam 1995: 90). Sustainable development thus may become just another call for meeting basic needs as determined by western value systems. Clearly then historic paradigms continue to find expression, and are in fact inherent in and thus weaken, current sustainability discourse which whilst understanding the reduction of poverty as vital, continues to view the evolution of western societies as the blue-print or universal programme for improvement of all societies (Coetzee 1996). With this understanding comes a growing awareness that in order to be truly sustainable, development projects, programmes, interventions and strategies, both locally or globally, must seek to "expand or realise the potentials of, to bring to a fuller, greater or better state" (Goodland 1995: 9), the people sustainable development claims to be assisting. Without this awareness and resulting action, despite all its good intention, the concept of sustainability, with reference to ending poverty, is in danger of remaining a call for meeting basic needs, as determined by a Western value system, through economic development.

So how might the new development paradigm be considered and applied? Three development concepts addressing issues of increasing potentials and wellbeing may be combined and used to inform development and improve wellbeing interventions that are likely to be sustainable.

New Development Concepts

These three new development concepts are humanness, partnerships and bioregionalism and they are described below.

Increased humanness

The concept of "increased humanness" is crucial to the creation of sustainability. It argues that development should be more than merely striving for material improvements and in fact, does not necessarily imply a significant increase in the material welfare of individuals (Coetzee 1996). In the same vein as Sirolli (1995), development should allow to reveal the potential that is already within local communities. Thus although development projects may aim to bring about material benefits, their primary contribution must be to increase the level of human wellbeing through increasing social justice, comprehensive consultation and joint decision making, respect for local eco-systems and local social and cultural patterns and the advancement of people through their own endeavours, including freedom of expression and impression (Coetzee 1996). The most important implication is the concept of progress, which places the meaning and specific circumstances within which action takes place at the centre of the analysis. Progress is not quantifiably measurable but is instead dependent on a continuous affirmation of meaning and creative interpretation.

Development interventions thus have to focus on uncovering people's own definitions of human wellbeing and should no longer be a mechanism to improve material circumstances, but should rather focus on people's aspirations (Coetzee 1996). No development is possible without participation and the opportunity for making choices by the people, focused on the aspirations and needs of the people, as defined by the people themselves. Participation and self-reliance, a breaking of the monopoly of knowledge, the assumption that the beneficiaries of development will also have to be its contributors, are key components.

Partnerships

Local Action 21, which grew out of the 2002 World Summit on Sustainable Development in Johannesburg as an extension of Rio's Local Agenda 21, calls local governments to accelerate the move to sustainability actions through partnerships (WSSD 2002). The formation of partnerships that draw in all stakeholders, and particularly the local community, is an essential way of establishing participation in the planning and decision making as well as building collective responsibility and a sense of ownership of development. Participation through partnerships can also potentially allow for historical and inequitable power relations to be redressed.

Unlike traditional models of development where a passive role is forced onto the people concerned with their whole life structure being determined by outside forces and not their free will, working through partnerships makes a great leap forward by integrating development for the people, of the people, with development *by* the people.

Bioregionalism

Bioregionalism sees communities as intrinsically linked to their natural environment and definable in terms of this relationship to the local environment (Audouin 1996). According to McGinnis (1999: 2), "bioregionalism is not a new idea but can be traced to the aboriginal, primal and native inhabitants of the landscape" long before it entered the sustainability lexicon. It is a concept that helps development and the process of transformative change at two levels: firstly, as a conservation and sustainability strategy and secondly, as a political movement which calls for the devolution of power to the ecologically and culturally defined bioregions (McGinnis 1999: 4). As the structure and identity of a particular community is defined in terms of its locally unique social, economic and ecological characteristics, maintaining the identity of the community as a whole and development within this paradigm focus on the maintenance, creation and enhancement of local resources. Only activities that support the natural foundation of life, improve its quality and enhance self-determination and the creative fulfilment of human potential are likely to grow. Bioregionalism calls for a participatory development strategy based on decentralised decision making grounded in the local realities of a specific place, relying on building local partnerships and using local resources and knowledge.

Sustainable Development

Understanding and integrating the people-centred approaches of humanness, partnerships and bioregionalism highlight that sustainable development is an approach that is a dynamically transformative, locally conceived, participatory, flexible, iterative and connected process involving planning, implementing, monitoring and reviewing aimed at increasing human potentials, to ensure the persistence of desired physical, biophysical, social, economic, historical, cultural and political systems (see Figure 1). Combining the key principles and components of this approach results in the following aspects of sustainable development:

- *Dynamically transformative* – development must address the aspirations and priorities of local people by uncovering their own definition of human wellbeing and the direction they themselves define as most desirable. This shift will transform people releasing new potential and discarding dependences.
- *Locally conceived* – the social unit of development should be defined in terms of cultural and/or ecological factors within the bioregion to enable situation-specific identification of local activities and resources that define the identity of a particular community. Development should rely primarily on local resources and knowledge.
- *Participatory* – development must promote and entrench community participation and the formation of meaningful local-level partnerships – as apposed to mere consultation.
- *Flexible* – development should not be limited solely to meeting basic needs and must not depend solely on the market and its driving principles. It must be flexible and dynamic, defined, implemented and controlled by residents of a specific community and rooted in community values and institutions.
- *Iterative* – development should be viewed as a process that is not quantifiably measurable. Instead it should be measured through a continuous affirmation of meaning which requires a creative interpretation of growth and progress through increasing levels of human wellbeing, based on the community's desire to work towards a specific way of life and conception of reality.
- *Connected* – although arising as a local initiative, development must have strong links to the regional/national scale planning.
- *Empowering* – development must promote empowerment through local control and management with indicators of empowerment being determined by the community members themselves.
- *Engaging* – development must promote capacity building through the provision of skills training in order to ensure that self-reliance is promoted and the goal of human self-realisation is approached.

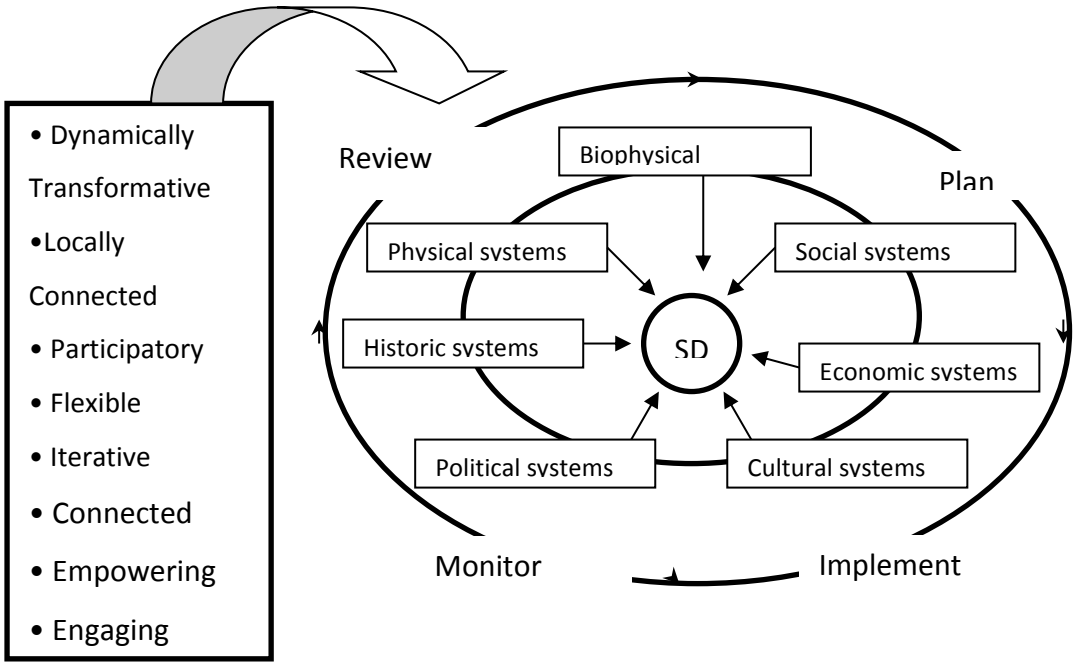
This approach within the context of the New Human Agenda may offer value for development interventions aimed at developing an approach to poverty alleviation that is intent on increasing human potentials and wellbeing and in so doing making a significant contribution towards the increase of sustainability and empowerment, and the subsequent

reduction of dependency, helplessness and hopelessness. The case study presented in the section to follow is an example of the application of this approach.

The Hunger Project

A strategic, non-profit organisation and global movement established in 1977, The Hunger Project (THP) is committed to ending the world's poverty, including eliminating the conditions that perpetuate it. An end to hunger is defined as "a sustainable future for humanity; a future in which all people have the opportunity to live healthy and productive lives in harmony with nature" (THP 2005a). This is not based on everyone achieving an environmentally unsustainable Western-style high-consumption lifestyle nor does it permit one-sixth of the human family to continue living in abject poverty. The Hunger Project is committed to transcending this polarity, to creating a future that rejects the inevitability of poverty and recognises the limitations of a consumerist society (http://www.thp.org). In more than 10,000 villages in 13 African, South Asian and Latin American countries, THP has empowered millions of local, rural people (14 million by 2004, www.thp.org/overview/index.html) to create lasting, self-reliant improvements in health, education, nutrition, food production and family income, pioneering large-scale, low-cost strategies that have proven effective in meeting the 8 Millennium Development Goals (http://www.un.org/millenniumgoals/).

Figure 1. Achieving Sustainable Development (SD)



Hungry people – the problem or the solution?

Conventional ways of thinking about poverty within traditional development discourse treat people as the problem. The cliché "the world has one billion mouths to feed" is inaccurate and dangerous in that it leads to resignation. The world does not have one billion mouths to feed – it has one billion hard-working, courageous human beings whose creativity and productivity must be unleashed (Holmes 2005). The Hunger Project operates on the principle that poverty and suffering persist when people lack, or are systematically denied, the opportunity to earn money, be educated, learn skills to meet basic needs and have a voice in decisions that affect their lives. Only by mobilising the energy, responsibility, creativity and resources of the partners in development can a society be created that is truly free from poverty. Given that society usually holds women responsible for family health, education and nutrition, THP's highest priority is the empowerment of women who are traditionally denied the means, information and freedom of action to fulfil these responsibilities.

Underlying all of THP's work is the approach that when individuals are given opportunities rather than obstacles, when they are seen as the solution not the problem, when they are recognised as the key change agents not beneficiaries, and when they are embraced as full citizens rather than relegated to second class status, then they get out of the poverty trap and build lives of self-reliance and dignity (Holmes 2005). The interview with Malawi THP Country Director (see Box 1) stresses the importance of the sustainability concepts of humanness, partnerships and bioregionalism as outlined above (see Figure 1).

One of the failures of development has been the belief that the way to end poverty is to find a workable solution and replicate it. This fails because the source of the success is the human creativity that resulted in the solution, not the solution itself. What is important is to extend the process that has generated the solution, not to replicate the solution. Wherever hunger and poverty persist, human beings must be empowered to discover their own vision, express their own leadership, create their own solutions and work together to achieve their own success.

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People need to be empowered to see possibilities to develop a vision for themselves as self-reliant and independent. If we are to have sustainability in any form, we need participatory transformation: permanent change that becomes possible because people themselves have authored the transformation, not some distant organisation or government creating dependency.
Invest in the people themselves! Empower them! They are the resource! The campaign for ending hunger starts with the creativity of hungry people – respecting them as the primary authors and actors of the work to end hunger, awakening them to a possibility for a better life, and working to clear away the obstacles to the success of their self-reliant action.
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What must be done?	Provide services through government or charities	Mobilise and empower self-reliant action, and provide an enabling environment in which they can succeed
What's the primary resource for development?	Money: bigger budgets Expertise: consultants and program managers	People: their mobilisation, organisation and initiative
Who is in charge?	Donors: whoever provides the money and holds implementers to account	Local people, through local representatives whom they hold to account
What are the main constraints?	Economic: funding (largesse of the powerful); management efficiency	Social conditions: resignation, discrimination, lack of local leadership, lack of rights
What is the role of women?	Vulnerable group who must be especially targeted beneficiaries	Key producers who must have a voice in decision making

What about social and cultural issues?	Immutable conditions that must be compensated for	Catalyse social transformation: empower people to alter conditions
How should we focus our work?	Carefully target beneficiaries by objective needs basis	Mobilise everyone as broadly as possible – build spirit and momentum of accomplishment
What is the role of central government?	Operate centrally managed service delivery programmes	Decentralise resources and decision making to local level, build local capacity, set standards, protect rights
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What is the role of civil society?	Implementing arm of central programmes	Catalyst to mobilise people, protect their rights, empower people to keep government accountable
What is the focus of development	Personnel and resources focus on one issue at a time	Communities apply a multi-faceted approach tackling numerous causes and solutions simultaneously
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The key elements of the Epicentre Strategy correspond to the three sustainability concepts and help facilitate a process of building a sustainable development (as outlined in Figure 1). They are:

• *Overcoming the mind-set of resignation and dependency*: The experience of rural people has taught them that they are powerless to change things (as is the case with many remote and rural disengaged indigenous communities both within Australia and globally). THP directly intervenes in this mind-set with a Vision, Commitment and Action Workshop (VCAW) in which villagers are empowered to overcome their resignation, recognise that they are the key change agents for a better future, create a vision for their village, commit to it, and design plans of action to achieve it based entirely on their own resources. It takes at least six months of successful self-reliant action before the village's sense of self-reliance is sufficiently strong to take the next step (Koacha 2006).

• *Train animators*: Villagers who demonstrate leadership potential and enthusiasm are invited to receive intensive one-day training to be animators — spark plugs to mobilise people in their villages, facilitate their development activities and lead campaigns. Out of a public workshop of 200 people, perhaps 20 may step forward to become animators. Animators meet each month to review progress and create new strategies (http://www.thp.org). More than 75,000 village-level volunteers – in equal numbers of men and women – have been trained and empowered to lead VCAW and facilitate communities to achieve their own self-reliant development (THP 2006).

• *Build social infrastructure*: As the community begins to mobilise to meet its basic needs, it elects an epicentre committee, and subcommittees responsible for health, education, food security, employment generation and other village priorities. An absolute requirement is that there must be equal numbers of women and men on each epicentre committee (http://www.thp.org).

• *Build the physical infrastructure*: With local leadership in place, it is possible to mobilise the community to construct a building that will house its nursery school, health centre, food processing, food bank, adult literacy classes, other training, a meeting room and a rural bank. For most villagers, this is an achievement beyond the realm of what they could ever imagine — yet they do it themselves (Koacha 2006). The government, an individual or chief contributes land, including land for a community farm. Others contribute labour, learning to make bricks and construct the building (http://www.thp.org).

• *Create strong linkages with local government*: Local government officials are included at every stage of the process. As a village gains confidence, it also gains a stronger voice and is more able to negotiate with local government to gain teachers, health workers, extension workers and pharmaceutical supplies.

• *Build in sustainability through self-reliance*: THP's experience has shown that traditional development projects never succeed in making the transition from donor dependency to sustainability. The epicentre strategy is different in that sustainability is established from the start. Epicentres generate sufficient funds to maintain their facilities from proceeds from the community farm, off-farm income-generating projects, interest payments to the bank, usage fees for using mechanised food-processing equipment, and rental of the main community hall for cultural and educational activities, weddings and other local celebrations (http://www.thp.org).

Conclusion

Whilst not always appropriate and applicable in its entirety, there are many components of THP and its Epicentre Strategy that have value and applicability for empowering people and communities and facilitating a sustainable approach to poverty alleviation. It is the approach and the essence, rather that the details, that have broad-based, yet crucial local relevance. The Hunger Prpject's demonstrated paradigm and methodology for achieving human-centred sustainable development and meeting the 8 Millennium Development Goals in communities in Africa, South Asia and Latin America, demonstrate a model worth exploring in terms of its value for bringing about a widespread end to poverty. The New Human Agenda for achieving sustainability must be a locally based, community-driven, people-centred partnership, and if correctly applied, perhaps offers the greatest opportunity of this generation, enabling us to take a much longer view, into a future where our human family will have created the communities and institutions to ensure sustainability and an end to poverty for all present and future generations.

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Case Study Area 3: Sustainable Humanistic Education

3.1 Raphaely, T., Marinova, D. (2013). Sustainability Humanistic Education within an Asian Context. In Marinova, D., Guo, X. (eds). *Sustainability Issues in Asia*, Edward Elgar, Cheltenham, United Kingdom (forthcoming).

Refereed book chapter

Sustainability Humanistic Education within an Asian Context

Talia Raphaely and Dora Marinova

Introduction

Educating people about sustainability is a highly complex task. Yet, as the planet moves from the life-supporting Holocene into the Anthropocene – the new geological epoch defined by humankind's massive impact on the planet (Kolbert, 2011), it is becoming increasingly critical. While primary and secondary education provides basic life skills, tertiary education plays an essential role in shaping society and this is where sustainability becomes a defining feature. Universities have a choice to maintain and perpetuate existing environmental and social trajectories or to contribute to a shift away from harmful practices. In the western world there are very few examples of proactive education that challenges and changes the dominant status quo. There are a number of reasons that explain this. Firstly, there is the academic challenge of understanding the interconnectedness and the compounded effects of human actions and behaviour that underpin unsustainability. Secondly, the existing intertwined global array of vested interests, practices, policies and institutions direct education towards ongoing maintenance and perpetuation of specific narrow economic outcomes. Thirdly, the neo-liberal models have ensured universities operate in a competitive funding environment which stifles transformative democracy, freedom of thought, academic integrity and autonomy and where social and environmental considerations are pushed to the background.

To date Asia has managed to avoid the shortcomings of the western model while retaining universities' social transformational role. This has contributed in large measures to the rapid rise of Asia, its emerging economic and social power and as global influence. The tertiary sector as a key component in the foundation of progress is a new phenomenon, yet one that is not specifically directed towards, or focused on better environmental outcomes. The result is that many sustainability challenges remain and in the light of ongoing rapid environmental deterioration, there is an increasing urgency that any economic improvement occurs within a more sustainable paradigm where environmental and human wellbeing are enhanced.

The aim of this chapter is to discuss a suite of selected progressive educational discourses, none of which has had sufficient impact to become mainstream within the tertiary sector because of this sector's resistance and neo-liberal compliance. However, each of these discourses has a valuable contribution to offer towards a new pedagogical approach that, undermines ongoing unsustainability and facilitates and enhances increasingly sustainable outcomes. In order to survive, the West's neo-liberal education model must serve, maintain and perpetuate the economic status quo that is the major source of many of the world's key problems. On the other hand, the Asian education model, which largely remains government funded and proactive, appears more conducive to recognising and adopting innovative opportunities. An Australian experience is put forward as a new pedagogical approach, termed sustainability humanistic education, which seems to have synergies with the Asian educational landscape. If incorporated into the existing Asian educational model, this approach could contribute to Asia, during the rise of the Asian Century, becoming the vanguard of a global sustainability transformation.

Framing education for sustainability

According to Sarabhai (2007: 1–2), education for sustainability "is a complicated exercise that builds on the knowledge base of several disciplines including Economics, Sociology, Environmental Sciences, Development Studies, and Education and Communication to name a few", and, "like all emerging bodies of knowledge, is accumulating learnings and evolving its own techniques and pedagogies". Its value and contribution have been recognised since the 1990s evidenced by its prominence in the global political arena.

At the 1992 United Nations' Earth Summit in Rio de Janeiro *Agenda 21* was adopted, marking a defining point in human history where social, environmental and economic imperatives came together. *Agenda 21* affirmed that education is linked to all areas of human endeavour at a time when we are "confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems" (UN, 1992: n.p.). This was further highlighted by UNESCO's Thessaloniki Declaration on education and public awareness for sustainability (UNESCO, 1997). The eight UN Millennium Development Goals agreed in 2000, aimed at ending poverty by 2015, also explicitly target sustainability and the need for education. The 2002 World Summit on Sustainable Development (WSSD) in Johannesburg (UN, 2002: 1) recognised that education could and should play a major role in the future realisation of a "vision of sustainability that links economic well-being with respect for cultural diversity, the Earth and its resources" (UNESCO, 2007: 6). Subsequently, the United Nations declared 2005–2014 as the Decade for Education for Sustainable Development (DESD) with the overall goal of integrating "values, activities and principles that are inherently linked to sustainable development into all forms of education and learning" in order to help "usher in a change in attitudes, behaviours and values to ensure a more sustainable future in social, environmental and economic terms" (UNESCO, 2005; UNESCO, 2007: 5).

Education for sustainability as espoused in the global policy directions is essentially a call to change the way we educate with the express purposes of ensuring a sustainable future. This is a globally relevant development project which different countries and stakeholders are interpreting in diverse ways. With this stated aim of changing the way students learn to think, value and act, education for sustainability has many similarities to earlier unconventional pedagogic and curriculum movements such as environmental education, peace education, population education and citizenship education (Little and Green, 2009). Whilst differing in many ways, these all share a commitment to changes in educational content and delivery. Further, education for sustainability must be locally relevant and culturally appropriate whilst simultaneously acknowledging that fulfilment of local needs can have international effects and consequences ("act locally, think globally"). Yet despite this recognition, the fact that we remain within the declared Decade for Education for

Sustainable Development and the increasing urgency for appropriate responses to the burgeoning environmental and human crises, Rio+20 in June 2012 did not speak of any positive outcomes or deliver any helpful directions.

The contemporary discourse about ecology versus economy marked by heated academic and policy debates remains defensive of the economy. Evidence originating from scholarly scientific research about the threats from increasing unsustainability has generally penetrated educational systems but seems to have reinforced the blind adherence to economic growth rather than changed the direction toward more a more sustainable global society. Even with the high expectations and imperatives for global sustainability actions, and particularly global sustainability education actions, the western tertiary educational system remains unchanged and supportive of "business as usual".

In these disquieting times where we are witnessing an alarming and often seemingly inevitable rate of deterioration of the planet (Pearce, 2010; IPCC, 2007; CBD, 2010) and people, the tertiary educational system should rise to the challenging task of changing the world. This demands innovation, creativity and unwavering commitment to transform the basics of society and the growing globalised economy as we are coming to know it.

Challenging the status quo

According to Kahn (2003: n.p.), "education remains a primary institution towards affecting social and ecological change for the better". Education for sustainability, and the concepts it endorses (such as diversity, climate change mitigation, intergenerational justice, environmental protection, social equity, responsibility, respect, interconnectedness), must facilitate the occurrence of a major transformation.

Despite numerous achievements (largely represented through longer life expectancies around the world), the sphere of education remains a highly polemic, politicized and contested field in terms of its functions within the western capitalist system. According to Spretnak (1999: 219-221), modernity has created a rigid framework constructed from materials (refer to first column of Table 2) designed to maintain the western economic and social status quo which perpetuates unsustainable and destructive behaviours and

reasonings, including ever-increasing consumption, anthropocentrism, mechanistic and rationalist worldview. This continues to underpin the status quo rather than transform society.

Mahbubani (2008) attributes this persistence to a "fundamental flaw in the West's strategic thinking", namely the assumption that it is "the source of the solutions to the world's key problems" (2008: 111). However, the converse is true, as for example in the case of climate change (Garnaut, 2008). The West together with its institutions, supported by academia, is the major source of such potentially existential problems, but is "understandably reluctant to accept that the era of its domination is ending and that the Asian century has come" (Mahbubani, 2008: 1). As a result, despite increasingly urgent calls for sustainability, the West has so far been resistant to change. Rather it is proving to be "the most powerful force preventing the emergence of a new wave of history" (Muhbubani, 2008: 1) – a wave which might hold the solution to the world's greatest environmental and social challenges.

Beck et al. (2003) call for this western modernity concept to be de-constructed into "reflexive modernity" because of the "critical mass of unintended side-effects… the host of consequences resulting from the boundary-shattering force of market expansion, legal universalism and technical revolution" (Beck et al., 2003: 2). The building blocks of modernity represent progress, development and the foundations of the modern educational system, all of which are also responsible for the current ecological, social and economic crises. Sustainability and sustainability education thus clearly require a vast *paradigm shift* away from western modernity.

Evans (2009) describes the current western educational system as a "shattered mirror". It provides a fragmented view of the world – each broken piece of glass reflects only a particular section of the picture but the mirror itself cannot present a realistic world. Moreover, it is always backward looking, reflecting what has already been created and not allowing for futuristic images, forecasts or dreams to be seen. Education for sustainability needs to transform and replace these prevalent practices and approaches.

The key to successful education for sustainability is to defy these dominant paradigms, cultural norms, politics, economics and educational practices and to equip students with new ways of doing, seeing, being and believing. Education should not prepare students to take their place in society; it must prepare students to create a new society! This is difficult, requiring a brave new worldview and charting an unproven direction. Intellectual and spiritual strength are needed to deal with all the obstacles in changing behaviours, value systems and actions. Such an approach is more suited to pro-active educational policies and directions rather than an education system reactive to market-driven needs.

If a sustainable future is to be achieved, we need a complete shift – a revolutionary process – underpinned by sustainability education. Its outcome will be graduates prepared to reject their role in maintaining the status quo and who are visionary agents of change. Education for sustainability requires an honest look at who we are and where we are going as teachers and learners. It needs to be "essentially transformative, constructivist, and participatory. It is also integral… in that seeks to incorporate as many insights and perspectives from as many disciplines as possible to understand events, experiences, and establish contexts…" (Medrick, 2005: 1).

It is wrong that the 18 percent of the world population that live in the West (US Census Bureau, 2012) enjoy so much global power. It is now the urgent time when the other 82 percent of the world population should begin to share this power and take a turn in determining the trajectory of world history. Asian countries are in a unique position to challenge the West's management of the global order. The Asian education model holds the promise and potential to produce graduates capable of leading the way to a more just and stable world order.

Educational discourses supporting sustainability

History shows shifts in educational trajectories and discourses. Although they were not specifically intended to inform education for sustainability, they can be used to guide and update pedagogical efforts in this area. The suite of progressive educational discourses discussed here has been carefully selected for its contribution to the development of the new sustainability humanistic education approach.

Humane education

Humane education begun around 1870 when societies were mandated with both child and animal protection, and the connection between animal cruelty and family violence was assumed. This link was disregarded when animal and child welfare organisations became separate entities. In the 1990s educators (e.g. Weil, 2004) returned to the roots of humane education by showing the interconnections between violence, exploitation and injustice encompassing both animal-related and environmental considerations. Qualities such as kindness, compassion, integrity, wisdom and honesty are among the most desired human attributes (Weil, 2004) and humane education aims to "provide students with knowledge, awareness, and information-gathering skills so that they are able to choose to live according to their list of best qualities to the greatest extent possible" (Weil, 2004: 6).

The interconnectedness between the human and the natural world "...inspires people to act with kindness and integrity and provides an antidote to the despair many feel in the face of entrenched and pervasive global problems. Humane educators cultivate an appreciation for the ways in which even the smallest decisions we make in our daily lives can have far-reaching consequences" (Humane Education for a Humane World, Institute for Humane Education, n.d. cited in Humes, 2008: 67). By focusing on values education and the relationships between human rights, animal protection and environmental preservation, humane education students are guided to examine their choices, find meaning to their life and work to improve the world around them by decreasing social and environmental suffering, oppression and destruction.

Despite its merits and currency, this approach remains on the fringe of practice and research because of its reactive attitude. It encourages awareness, compassion and care assuming that properly informed people understand the consequences of their decisions as consumers and citizens. Also, it does not address the economic complexities in achieving sustainability. Research shows humane educational graduates and educators finding themselves alienated from resource, finance and other stakeholders (Kahn and Humes, 2009). The relevance of this discourse to education for sustainability is in conceptualising virtues that guide human behaviour.

Environmental education

Environmental education, originating in the 1960s, has been widely espoused since the 1970s and is well represented in the global arena. It emphasises relationships between people and the physical environment in terms of preservation and management (Gaddotti, 2008). It stresses the importance of a healthy ecological ambiance for human life but concentrates on how to protect the natural environment. The 1990s witnessed the efforts of environmental educators to redefine their role in relation to sustainability by adopting an issue-based approach, stressing participation, action-orientated learning and values (Tilbury, 1995). It also aligned itself with concerns about the planet's future (Palmer, 1998). The overwhelming scientific evidence about climate change caused environmental education to expand its focus to include questioning people's lifestyles.

Nevertheless, it is considered by many to be an outdated approach that is too narrow in content coverage, conservationist ideas and direction to engender broad-based sustainability (Newman, 2006; Rennie, 2008). Most importantly, it separates the environment from the social, political and economic aspects of life and is contributing to barriers and conflicts between science and environmental advocacy, and industry and government endeavours for economic development. Critics say that increasing environmental knowledge needs to be supplemented by changing attitudes, emotions and beliefs (Pooley and O'Connor, 2000). Although there is strong support for environmental education, questions have been raised whether its proponents fully understand the personal and societal implications of 'limits to growth' and 'living in harmony with nature' (Dunlap and van Liere, 2008). This justified criticism does not diminish the contribution of environmental education to understanding relationships between people and nature, and it continues to inform the education for sustainability.

Ecopedagogy

Ecopedagogy grew from discussions at the Rio Earth Summit to formulate a mission for education that universally integrates an ecological ethic (Gutierrez and Prado, 1999 and Gadotti, 2000). Drawing from critical pedagogy (Freire, 1972), it encourages students to question dominating beliefs and practices to achieve a critical consciousness in a continuous

process of unlearning, learning and relearning – evaluation and reflection with a future-oriented ecological political vision (Kahn, 2010). Ecopedagogy embraces environmental education but also engages students in a philosophical reflection on the ends and purposes of knowledge by challenging them to develop concrete actions. It forges an appreciation for the collective potentials of being human.

As an educational discourse ecopedagogy critiques western education as hegemonic and reinforcing the problems causing the global sustainability crisis. It moves from an anthropocentric pedagogy to new practices of ecological humility, planetary awareness, planetary citizenship and a new ethical and social reference, namely planetary civilization (Gadotti, 2008). Further, it acknowledges human beings as continuingly in movement, "incomplete and unfinished", constantly shaping themselves, learning and interacting with others and the world (Freire, 2004). It is opposed to standard pedagogy that is centred in tradition, static and can be humiliating to the learner being evaluated. Contrastingly, it is democratic and solidary, engendering transformative energies, untapped life forces and other liberatory potentials to aid the reconstruction of society into a more peaceful, harmonious and beautiful world for all creatures.

Ecopedagogy is a critical problem-posing educational discourse that calls for a new morality, understanding, emotional responsiveness, global consciousness and care leading to actions for a more harmonious planetary experience. Despite its broadening to include the liberation of all species and wellbeing of the Earth, the primary focus remains ecological. Social inequality, poverty, peace, economic development and quality of life are acknowledged as critical sustainability concerns but are not directly tackled. Nevertheless, ecopedagogy offers a planetary reference point and emphasises human responsibilities.

Education for sustainable development

UNESCO's Decade of Education for Sustainable Development (DESD) has the goals to (Gadotti, 2008: 25):

- facilitate networks and bonds amongst sustainable development educators;
- improve the teaching and learning of sustainable development;

- help the achievement of the Millennium Development Goals by means of educating for sustainable development;
- offer countries new opportunities to adopt education for sustainability as part educational renewal.

Essentially the discourse of the DESD aims to make people aware of sustainable development and the importance of the planet's survival as it relates to people's own quest for a sustainable livelihood. It is integrative and interactive as well as, within the realm of definitions of development, emancipatory. The Decade calls for transformational action, planetary citizenship, multi-, inter- and transcultural and multi-, inter- and transdisciplinarity dialogue that promotes the end of poverty, illiteracy, political domination and economic exploitation (Gadotti, 2008). It "is not only about the content of education but equally about the process, the methodology, and the linkages it brings between subjects"(Sarabhai, 2009: 124).

The need for new roles for the teacher and student and the importance of partnerships and stakeholder participation, including industry are emphasised (e.g. Manteaw, 2008). A strong recognition is given to the emotional and spiritual sides of experiences (as educators and students) along with logical and rational thinking. Consequently the DESD calls for new methods and approaches in transforming the traditional classroom.

The educational discourse of the Decade is firmly based within the complexity of globalisation as intertwined political, social, cultural, economic and environmental processes (e.g. Spring, 2008) and it calls for a cooperative and solidary "planetisation" as distinct from the competitive aspects of the capitalist western framework of development (Gadotti, 2008). What is essential in this initiative is the emphasis on changing and transforming current trends and practices: "sustainable development does not look to maintain the status quo, on the contrary, it looks to acknowledge tendencies for and the implication of change" (UNESCO, 2005: 39). The DESD discourse is yet to be widely implemented.

Education for a culture of peace and sustainability

This form of education articulated comprehensively by Gadotti (2008) is based around principles and values promoting harmony in the human and natural world. It originated from Gandhi's philosophy "The more I have, the less I am" (Joshi, 1992: 53) which resents conflicts and material possessions but encourages peace and voluntary simplicity. Within the larger context of interconnectedness every action has a consequence and individuals are spiritually sensitised to the unifying bond of energy between all life forms (Saravanamuthu, 2006).

According to Wenden (2004), the environment is a shared territory and a common resource and conceptual themes include reflective thinking, tolerance, ethno-empathy (extended to species empathy), human rights (extended to include rights of other species) and conflict resolution (Bar-Tal and Rosen, 2009). According to Gadotti (2008), it includes educating for thinking globally, educating one's feelings, teaching our identity to the Earth as a vital human condition, educating for planetary awareness, educating for understanding and educating for voluntary simplicity and quietness.

Participatory education

The discourse of participatory education acknowledges the wealth of knowledge, experiences, ideas and skills that students bring with them in the classroom. It focuses on creating an environment where teachers and students are equal partners and contributors in the learning process (Francis and Carter, 2001). Characteristic for this type of education is that the participants determine the contents and time-scale of the learning process as well as its logistics (Rogers, 2005). It emphasises the development of skills, such as listening and reflection, group work, facilitation, use of body language, conflict management, asking question and challenging existing practices – skills that are required for the handling of any sustainability issue.

A relatively new direction in participatory education is its link to the concepts of participatory or deliberative democracy (Dryzek, 2000), which reflects the social disillusion with current democratic institutions, including educational, that encourage the maintenance of the status quo and continuation of current processes and practices (Hartz-

Karp and Carson, 2009; Yanken and Henry, 2008). It is facilitated by new communication technologies "linking human beings together, supplying media and means for participation that previously only the wealthy could experience" (Knight Abowitz and Harnish, 2006: 676). Participatory education thus requires students to partake in real-world problem solving and come up with practical solutions and examples of how sustainability may become a reality.

Humanistic education

This discourse brings to the fore the importance of social and inter-species justice and recreates education as a world-humanising endeavour – a global project involving students and scholars all over the world, encouraging and reviving civic courage, reason, democracy and justice, so that people everywhere feel empowered and fight for a better and more sustainable future (Grigorov, 2009). Humanistic education has developed in response to the recognition that many universities have become commercial enterprises viewing students as customers or consumers who will sell themselves on completion of their degree to the highest bidder (e.g. Porfilio and Yu, 2006). The corporatisation of the university world has equally infected research with private industry funding undermining the foundations of public trust that society traditionally has held (e.g. Washburn, 2005; Moriarty, 2008). Economic globalisation has provided "renewed focus on standards, accountability, testing, and teacher performance in a globally competitive world" (Dolby and Rahman, 2008: 697), reinforcing and spreading educational stereotypes.

Knowledge has become information to be passively consumed and students are exploitable human resources, requiring top-down management. As such they are subordinated, dehumanised, and robbed of the impulse to participate in the determination of their own situation (Grigorov, 2009). Evans (2009) also stresses that it avoids the matters of the heart and spirit that make people care for the prospects of future generations. Thus education now only reinforces the status quo and furthers the symptoms of the disease.

Humanistic education argues for restoring the role of universities as a "humanising force in society, where the value of people is always a priority" (Giroux, 2000: 47). It is inexcusable for education to follow a system in which people are just live resources. Calls have also emerged from within the teaching of economics "that our field [economics] has now to

reground itself in moral philosophy amid the deeper broader questions of human existence, meaning, and happiness, while mindful that humanity is a member of a larger community of multiple species and elements, necessary for our survival and health" (Mofid and Szeghi, 2010: 22).

The humanistic discourse argues that it is realistic and justified to ignite the revolution of education so that people can raise their voices in defence of the Earth and against the decay of humane and sustainable values (Best and Nocella, 2006; Grigorov, 2009). According to Gadotti (2008: 34): "We will only be able to revolutionize our way of existing on the planet through interference in present logics and these can only be transformed and overcome through the introduction of a new logic, one that seeks viable social, economic and political alternatives". Hence humanistic education aims to provide students and academics with the skills and rights not to sell or surrender to the megamachine but rather to learn to challenge and change both the status quo and those who perpetuate it (see Table 1). Education for sustainability should exist for humanity and the planet, not for commercial interests.

Table 1. Goals of Humanistic Education

* End global psychology of exploitation, acquiescence and anti-reasoning
* Create and develop a new eco-psychology of resistance and non-exploitation
· Empower students to govern and change their situation through collective action in the name of social justice, freedom, democracy, peace and sustainability
· Inspire students and give them impetus and courage to construct vigorous practices and theories, enthuse civic participation and participatory democracy
· Unify students, academics, teachers and people beyond any frontiers and any differences, and against all forms of exploitation, devaluation and the devastation of humanity and nature
· Empower students to take life seriously and to understand it as something sacred and significant and thus necessarily to be able to take responsibility for what is happening in the world around them
· Prevent businesses or enterprises from shaping students in order to ensure supply of employees
· Oppose students as products to be traded as employees deprived of unique creative experiences

Education and educational research has constantly been shaped by the historical context and global political, economic, social and cultural shifts (Dolby and Rahman, 2008). It is however the first time that education needs to respond to issues that challenge humanity's very nature and role on the planet. Humanistic education aims to facilitate a renewed breed of students – revolutionaries, who are driven to create an alternative world, with new

democratic institutions, appropriate technologies and a social system predicated on a democratic economy that will prevent further ecological and social deterioration. According to Holloway (2002), the new revolutionary way to change the world is through taking the initiative to do things differently. Viewed in this light, humanistic education holds great hope as a humanising cultural revolution.

Sustainability humanistic education

The above review of progressive educational approaches originating outside of the Asian continent reveals that there is agreement on the need for transformation but not on the concepts and methods of delivery. All described discourses have relevance but their application to date has not resulted in a paradigm shift. This is because none sufficiently challenges the existing systems of tertiary education which continue to protect universities as repositories and defenders of western cultural and economic hegemony and as engines for national economic growth (Johnstone, 1998). This hegemony needs to be challenged through the very institutions that have so far functioned to sustain it.

Thus sustainability humanistic education (Raphaely et al., 2010; Raphaely and Marinova, 2012) emerged as a way to encourage maximum opportunities for interaction between people for ending the indiscriminate and accelerated destruction, exploitation and devaluation of humanity and nature. It builds on the strengths of all the above progressive predecessors and adds four distinct features, namely: recognising, understanding and accepting the changing world; imagining and visualising better possible realities; developing purposeful creative solutions; and resolutely acting to implement these opportunities (See Figure 1).

• *Recognising, understanding and accepting the changing world* – the new ways of understanding the changing world is through user-inspired science (Clark, 2007) that looks for knowledge within, between and across all disciplines and understands the relationships, interconnectedness and new emerging properties informed by systems thinking. An important aspect of it is not to block but rather to encourage emotional responses and incorporating feelings in the teaching process is essential in dealing with the rapidly changing world.

• *Imagining and visualising better possible realities* – a central philosophy and resultant way of teaching, based on Berne's hypothesis described in the "science of acting" (Kogan, 2010), is that "one of the most important things in life is to understand reality and to keep changing our images to correspond to it, for it is our images which determine our actions and feelings" (Berne, 1969: 53 cited in Kogan, 2010: xiv). Knowledge has limitations, but imagination doesn't. Imagining a better possible world that holds promise and is full of hope empowers students to confront the status quo. The more emotionally and intellectually honest they are about reality, "the easier it will be for us to attain happiness and stay happy in an ever changing world" (Berne, 1969: 53 cited in Kogan, 2010: xiv). Such truthful optimism allows students to re-envisage themselves through imagination and belief and, in so doing, to better embrace their role as sustainability agents.

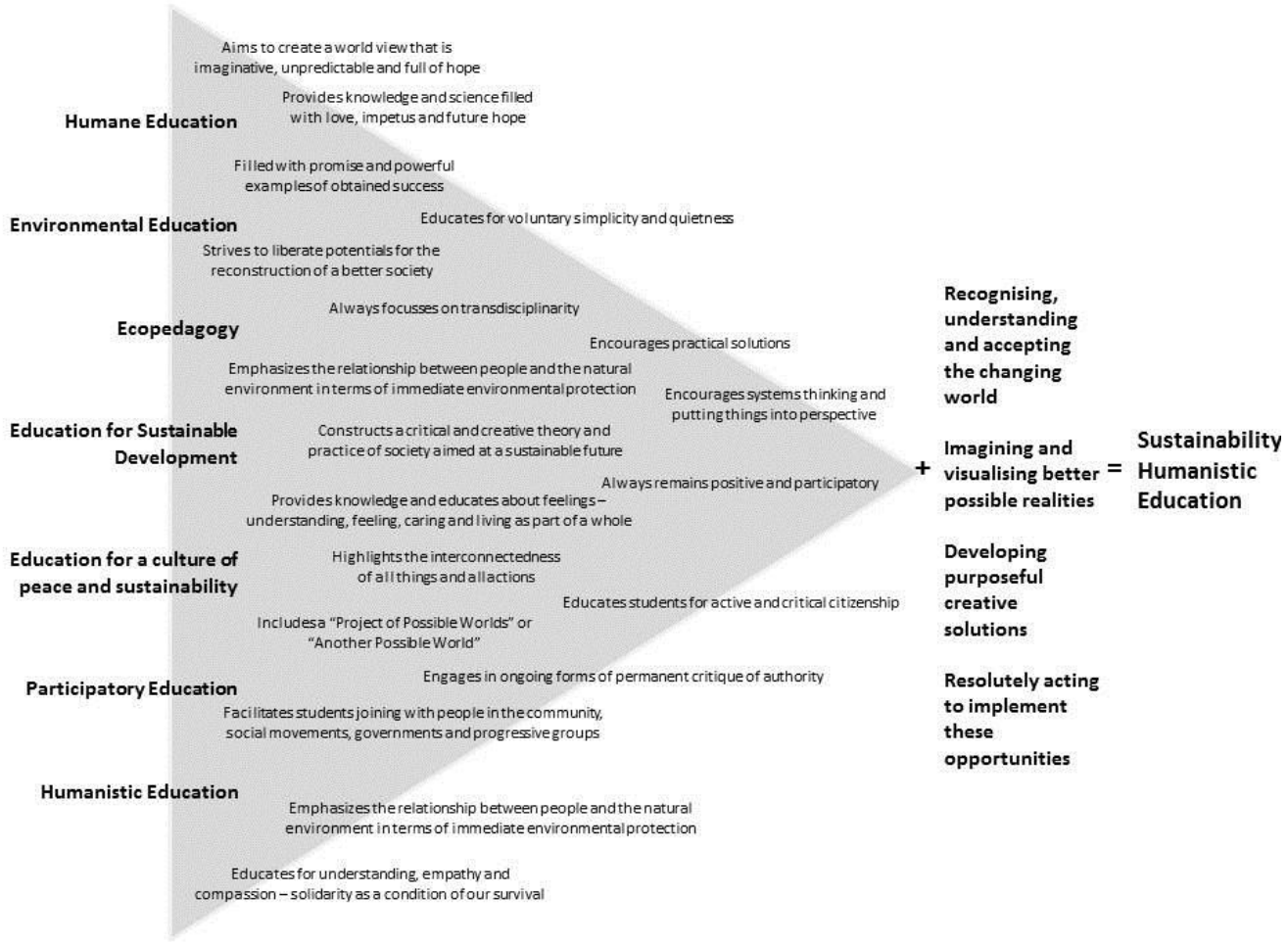
• *Developing purposeful creative solutions* – changing the world requires learners to understand that they are not purposeless pawns in a game of destruction but rather

purposeful agents in creating a more sustainable world. They need to learn to create opportunities and remain constantly positive and proactive in their search for practical solutions as they strive to liberate potentials for the reconstruction of a better society. Such purposeful problem-solving requires acknowledging that we live in a mixed reality where subjectivity, emotion and objective responses have equal relevance in creativity.

• *Resolutely acting to implement these opportunities* – through recognition, understanding, optimism and developing creative solutions students are able to become key proponents in the movement for change. Combined with awareness that humans are guardians, responsible for sustaining life on Earth, they are also empowered to help and be examples to others through all-inclusive active citizenship in harmony with nature.

The SHE approach is based on the traditions furthering democracy (Grigorov, 2009), but aims to ignite a mass groundswell towards an all-inclusive paradigm shift that will help the Earth's life-supporting attributes survive for future generations.

Figure 1: Summarising sustainability humanistic education



In addition to avoiding subjugation through the traditional examination-based assessment methodologies, it has a wide range of key concepts (see Table 2) which make it fundamentally different to any other modern educational trajectories since industrialisation.

Rather than logical education aimed at creating learners to fill an existing vocational niche, this approach is founded on imagination and belief working hand in hand with knowledge to encourage positive activism and advocacy for a sustainability revolution. Its core principles (as outlined in Table 2) are essentially sufficiency, adaptivism, the existence of mixed realities, down-to-earth approach, creativity, systems thinking, transdiscipinarity, outcome-based practicism, responsibility, value-based actions, embeddedness in nature, and proactive, all-inclusive, hope-filled integration of life and opening of the world. Educating through SHE is seen as the beginning of an uncharted and unknown professional journey which cannot be assessed through formal standardised conventional criteria of achieving expected levels of performance and competence (which universities describe as graduate attributes). The students are guided during their studies through SHE to personally discover and define what are the attributes that make their lives meaningful and purpose-filled.

Table 2. Sustainability Humanistic Education – concepts and differences with current education

	Modernity beliefs reflected in current education		Concepts in sustainability education		Sustainability Humanistic Education
Spretnak (1999)	Homo Economicus	The human is considered an ecnomic being	Homo Sustineo	The human is considered a being responsible for sustaining life on Earth	Constructs a critical and creative theory and practice of society aimed at a sustainable future
	Industrialism	Mass production allows to achieve satisfaction through consumption	Sufficiency	Understanding what really makes people happy	Educates for voluntary simplicity and quietness
	Objectivism	Rational independent reality	Mixed reality	Objectivity and subjectivity co-exist	Provides knowledge and science filled with love, impetus and future hope
	Progressivism	Linear progression up, constant growth	Adaptivism	Constant change and adjustment	Filled with promise and powerful examples of obtained success
	Rationalism	No place for emotions and spirituality	Down-to-earth	People's actions are based on knowledge but highly dependent on feelings	Provides knowledge and educates about feelings –understanding, feeling, caring and living as part of a whole
	Mechanistic worldview	Understanding of matter most important	Creativity	Not only cause and effect; there are creative unfoldings	Strives to liberate potentials for the reconstruction of a better society
	Reductionism	Understanding the whole if we understand its parts	Systems thinking	Understanding the relationships and new emerging properties	Encourages systems thinking and putting things into perspective
	Scientism	Natural sciences dominate	Multi-, inter- and transdisciplinarity	User-inspired science that looks for knowledge within, between and across all disciplines	Always focusses on transdisciplinarity
	Efficiency	Standardization, bureaucratization, hierarchies	Outcome-based practicism	Questioning of what we want to achieve	Encourages practical solutions
	Anthropocentric	Human species are most important	Responsible	Human species are guardians	Educates for understanding, empathy and compassion – solidarity as a condition of our survival
	Instrumental reason	Modes of thinking used rather than determining of values (eg economism)	Values dominated	Various instruments can be used but guided by values	Educates students for active and critical citizenship
	Human opposition to nature	Development?	Embeddidness in nature	Harmoneous and integrated development	Emphasizes the relationship between people and the natural environment in terms of immediate environmental protection
	Compartmentalization of life	Family, work, study, social life	Integration of life	Common attitudes and actions	Highlights the interconnectedness of all things and all actions
	Hypermasculine culture	Masculine traits (eg rationalism) more valued than feminine traits (eg empathy)	Balanced culture	Masculine and feminine traits co-exist in a synergistic way	Engages in ongoing forms of permanent critique of authority
	Shrinking of the world	The "sacred" human	Opening of the world	The "sacred" universe	The "sacred" interconnectedness
	Reactive	Reacts to the needs of the market	Proactive	Creates its own opportunities	Always remains positive and participatory
	Retrospective	Trying to understand the world based on past events	Prospective	Focussed on the future	Includes a "Project of Possible Worlds" or "Another Possible World"
	Exclusive	Designed for particular groups within society	All-inclusive	Should include everybody	Facilitates students joining with people in the community, social movements, governments and progressive groups
	Predictable	Designed for the business as usual, for the existing world, do what others have done in order to be successful	Hope-based	Aims at changing the world	Aims to create a world view that is imaginative, unpredictable and full of hope

Source: Raphaely et al. 2010, Raphaely and Marinova 2012

Sustainability humanistic education is learning about a way of being as much as it is about learning about a way of doing. It is education for survival and progress in a dangerous time,

for saving the Earth and all who live here, for participatory global democracy and ensuring universities are institutions for reason and sustainable science. Such education aims to ensure the sustainability revolution and the new culture of human responsibility and stewardship of the planet. In SHE, educators and students work together to redirect society to ecological care, to do away with the powers devastating the Earth and to transform the world so that life is preserved in all its vibrant dimensions. Grigorov (2009: 109) describes this as a place that we can now see coming over the horizon, "the horizon-line of human self-realisation through education, an education and science full of love, sanity, and future hope, attuned to our human situation and all of life".

Neither SHE, nor any of the other educational discourses supporting sustainability originated in Asia. However, the Asian education model has to date rejected the western neo-liberal hegemony managing to retain its unique pre-emptive approach, and so far evading the educational shortcomings of universities serving the existing status quo. Its tertiary sector is the driving force behind Asia's rise as a global economic and political power. As the continent becomes increasingly developed, will universities follow the western way of responding to existing market demands or will they be strong enough to preserve their unique transformative role in society and the world? This is discussed in more detail below together with the Asian Model's unique inherent opportunities and strengths.

The Asian model

East and Southeast Asia have the highest performing economies of the last several decades (St George, 2006) with education being used as a tool to short-circuit the process of rapid industrialisation. In countries such as Malaysia, Singapore, South Korea and Taiwan, deliberate government strategies and funding have intervened to steer higher education in a direction considered desirable for development (Singh, 1991). This has produced graduates in particular perceived areas of need and ensured tertiary education has played a crucial part in stimulating unparalleled economic growth driving it with the necessary skills (Ashton et al., 2002:5). This path is now being broadly emulated, with local variations and ranging results in places such as Thailand, Indonesia and Malaysia (Ashton et al., 2002). In these countries state intervention is circumventing the uncertainties and inefficiencies of the market economy and consequently underpinning rapid advances in economic growth.

Inspired by Japan's success in catching up with the West through focused and rapid expansion of quality higher education (Baker and Holsinger, 1996: 161) and successful achievement of economic parity, the "Asian Model" of education as a concept continues to offer support for a strong state intervention and direction to ensure that higher education institutions are working in a direction of economic growth (St George, 2006: 597).

In contrast, the western neo-liberal model for education, applied for example in the United States, United Kingdom, Canada, Australia and New Zealand, concentrates on reducing the role of government in higher education and creating a market for individual tertiary institutions to compete against each other (St George 2006: 599). This neo-liberal model calls for higher levels of competition amongst educational institutions, less government intervention, and, decentralisation of management away from the state. Another defining feature of the neo-liberal model is need for increased non-government sources of funding which are making tertiary education institutions even more susceptible and vulnerable to the influence and control of major industry funding bodies and less able to chart their own direction. Universities in the West are thus ever-increasingly being forced to better supply the needs of the labour market, to respond more efficiently to market forces and the needs of local, national and international industry players.

Within the Asian model, education has been successfully directed in advance of market forces thus maintaining a degree of self-determination, direction and influence on society. Conversely, the western neo-liberal model is constantly operating in response to market forces in order to maintain relevance and value and thus has little self-determination, direction and influence – a situation which is contrary to the concept of tertiary education as a vanguard and repository of innovation, creativity and positive, beneficial progress. The Asian model's ability to be responsive rather than reactive holds great promise for directing a more sustainable global future. Nevertheless, both models so far function within the global economic growth paradigm and the significant questions regarding the appropriate direction for post-industrial development remain unresolved. Further, the very desirability of unimpeded economic growth is in question and a new form of flexibility and innovation that explores alternatives to the dominant economic paradigm is required.

Rapid globalisation, marked by the sheer rapidity of change and the ever-growing power of multinational corporations, is a significant consideration that is increasingly steering and influencing the direction of tertiary education in Asia as well as the rest of the world. There are a number of competing accounts of how this process of globalisation may be theorised. The two most relevant here are:

- The inevitable and linear international extension and expansion of neo-liberal education policy agendas of the global powers that will inevitably lead to global economic and political convergence around the western model (Reich, 1991; Ohmae, 1996) and
- The so-called transformationalist perspective (Held et al., 1999; Little and Green, 2009) which views globalisation as a phenomenon radically changing the power relationships between the national and transnational levels effecting economic, political and cultural spheres in highly uneven and contradictory ways.

Both accounts continue perpetuating and maintaining unsustainability. Yet, the impacts of globalisation are not predetermined or inevitable. Its future course will not only depend on technology and economics but equally on the politics and choices made in different countries, including developing states and regions (Little and Green, 2009: 167). Optimists show that the less developed countries have a lot to gain from globalisation while pessimists remind that most countries in Latin America and Africa have gained little or suffered declines as a consequence (Little and Green, 2009). Stiglitz (2002: 20) takes neither view stating that globalisation is neither good nor bad "but in much of the world it has not brought comparable benefits. For many, it seems closer to an unmitigated disaster". Nations and individuals need not be passive participants lacking self-determination. Asia with its vast markets and consumers has the opportunity to direct rather than respond to globalisation. As such, it has the education model and human capacity to instigate the sustainability revolution. The way Asian governments and economies engage with the global market can potentially change the current western-driven unsustainable trajectory pulling the world along.

If convergence along the lines of the currently dominant neo-liberal market economy of the West is seen as desirable and inevitable, then the only viable and attractive path for

development is one that conforms to the neo-liberalism advocated in the Washington Consensus (Williamson, 1989) sometimes described as market fundamentalism. However, if, as does Sen (1991), one believes that there are manifestly divergent responses to globalisation across the world and there are a variety of possible successful models, then it is possible to defy adopting the model and agenda of neo-liberalism and to develop more locally preferred practices. In the case of a region as vast and powerful as Asia, this localised solutions have the potential to drive and lead global change. Asia, given its rejection to date of neo-liberal models of tertiary education, and its proactive rather than reactive model, is in a unique position to assume an influential and determining leadership role, through the agency of tertiary education, in the way it participates and thus directs globalisation.

The role of education in sustainable development is substantially changed by globalisation and its related processes and knowledge and skills are becoming more important for economic development as countries compete internationally in knowledge-based goods and services. Equally if not more importantly education and skills determine the degree to which knowledge and technologies can be transferred and absorbed and thus the capacity of a state to build up its indigenous industries and to compete in world markets with their goods and services (Amsden, 1992; Little and Green, 2009). Also hugely importantly, education plays an increasingly crucial role in mediating societal responses to the strains and contradictions thrown up by globalisation and to ensuring the social, environmental as well as economic benefits accrue from development and engagement with the global economy (Green, 1997; Carnoy and Castells, 2001). It also ensures favourable terms are negotiated for a country to engage with the global market's key institutions, including transnational corporations and international economic agencies such as the International Monetary Fund, the World Trade Organisation and the World Bank (Little and Green, 2009), avoiding dependence.

Japan and the East Asian tiger economies of Singapore, Taiwan, South Korea and Hong Kong highlight a distinctive regional pattern of growth with equality unmatched in any other region (Little and Green, 2009) with education supporting rapid economic growth through "encouraging foreign investment, enabling technology transfer, promoting productivity and progressively upgrading the skills base as required for each successive economic shift to

higher value-added areas of manufacturing and service industry" (Green and Little, 2009: 168). Interestingly enough, during this process, rather than education resulting in the subjugation of national identity to global identity and increasing western hegemony, education in these countries has had a positive role in promoting relatively cohesive national identities and in enhancing state capacity (Green, 2007). As such, these countries are uniquely poised to use education, not to repeat and perpetuate the human and environmental disasters of Western development, but to lead the way to a new kind of more sustainable development that enhances human and environmental wellbeing. This can mitigate the social and biophysical damage done to date by the unimpeded power and domination of western expansion.

Another example is China whose spectacular record of economic growth is directly linked to the country's national identity, political role in the world and the leverage in international relations afforded by its huge internal markets. China's expansion of tertiary education since 1978 to meet the rising demand for high-end manufacturing and service sector skills has been dramatic to a point where it is now challenging developed economies in knowledge-based production such as advanced software production (for example computer games), biotechnology (such as the development of new crops) (Little and Green 2009) and renewable energy (such as photovoltaics and wind turbines) (PEW, 2011).

Asia unlike Africa has largely been able to modify the rules of globalisation to their own advantage and in so doing, to engineer more favourable terms of engagement with the global economy. Tertiary education in Asia plays an important role in securing the most productive relationships between international, national and local resources, relationships that should maintain not subordinate local histories, contexts and aspirations. Staying on top of economic globalisation and ensuring amelioration of its perverse and unsustainable impacts, requires a pro-active, dynamic education system that widely engenders sustainability skills and values.

Rather than emulate or follow the ways of the West Asian universities should maintain their educational independence and unique social power. In order to drive global change away from the predicted bleak unsustainable trajectory, students and professionals need to be

able to continue creating new and alternative ways of being, doing and engaging with the global economy. This will position Asia to lead the way to a better more sustainable future for its countries and the world.

Pedagogies that affirm positive beliefs, new morality and visionary actions, such as the sustainability humanistic education, hold the hope for the future both for Asia and for the global community. The Asian model offers more synergies with such educational approaches and as such is uniquely positioned via its tertiary educational system to drive the direction the world needs to take.

Australian sustainability humanistic education

Because of its geographic proximity and natural resources, Australia is the western country closest to Asia but still very different politically, socially and economically. The SHE discourse which originated in Australia developed as a reaction to counter the western increasing neo-liberal domination and corporatisation of its university sector. However the pro-active Asian model offers unexpected synergies with the outcomes from SHE, which are empowered and liberated graduates who understand the unsustainability of the global status quo and its standard professional opportunities. Asia's economic, social and political power seems likely to become the primary influence driving the world's prospects. Through its tertiary education system, Asia is moving away from poverty and generating globally transformative innovation. So far Asian universities have empowered individuals to reform the continent's economies which are in rapid change from the old to the new, without wanting to maintain a status quo.

Three real life Australian case studies (names have been changed) showcase SHE graduates participating in the world not as subordinates to the global economic and political hegemony encouraged by the West, nor as corporate clones in safe, traditional jobs that continue to serve the interests of very few, but as courageous visionaries, advocates and leaders for sustainability (see Box 1 to 3). The Asian education model, which pro-actively directs its programs, students and graduates towards ongoing progress and development independent of the influence and domination of industry funders, could potentially employ SHE. What have been isolated examples of sustainability educational success in Australia through SHE's personal liberation from western hegemony, individual empowerment and creativity, can potentially become the norm for Asia leading the way to ignite and fan the flames of a global sustainability revolution.

Box 1: Implementing a vision for sustainable fast food

Case study 1: Sustainable fast food

Sonia, growing up in a family where nobody knew the taste of meat, has been a vegetarian all her life. She always believed it cruel and unnecessary to inflict pain on animals or to kill them for food when there are other, more humane, healthy and sustainable alternatives. While studying, Sonia also realised that vegetarian meals have a much lower carbon footprint, cause significantly less pollution, require less water and no grain feed. Shocked after learning about the inhumane methods of farming and the widespread violence against meat animals, she found herself unable to emotionally or intellectually reconcile how the developed world could justify the perpetuation of devastating animal, environmental and social harm and at the same time claiming to be negotiating climate change solutions and combatting obesity and health problems related to predominantly meat-based diets.

Through a confrontational and challenging personal emotional and intellectual learning process, Sonia became aware that a step towards a better world would be to encourage people to eat less meat. She developed her vision of creating a new category of sustainable fast food restaurants offering a global menu of inexpensive, nutritious, low-carbon, zero waste, low mileage and socially responsible tasty vegetarian meals. Acting on her dream and idea for contributing to a revolution, Sonia launched her vegetarian sustainable fast food restaurant chain becoming a global advocate and leader in a transition to a compassionate, ethical and more sustainable way of eating and living

Box 2: Advocating for more sustainable local housing

Case study 2: Greening Western Australian realty

The real estate industry had been providing Diane with a reliable income in Perth, Western Australia together with the satisfaction of making people happy when they sold or bought a home. Despite this, Diane always felt there was something missing. Through the Masters programme's sustainability humanistic education focus, Diane was supported through and emotional and intellectual journey that encouraged her to reflect on questions such as what makes a house a good home? How does choice of shelter affect the environment? What are the best domestic energy-saving technologies how can these used to maximum effect and benefit? How homes on the Earth's driest continent achieve greater water conservation without asking residents to commit to a significant lifestyle change?

While studying, Diane's vision of offering more sustainable housing was encouraged, developing her resolve to establish an on-line group site where these issues could be shared and discussed with a broader community. Through the inline group she became inspired to share her growing knowledge with other real estate agents to raise awareness about local sustainable housing considerations and opportunities. Today, Diane organises ongoing discussion forums and regular training workshops for industry leaders and has become a leader herself within the real estate sector and a recognised expert in energy auditing. She is one of the most prominent models for the industry and beyond, highlighting and advocating for more local sustainable housing possibilities and desirable changes.

Box 3: Offering children a better life

Case study 3: Sustainable homes for the needy

A retired lawyer, Fiona had worked in the corporate justice system all her life. Despite long hours and considerable efforts, she felt dissatisfied and personally unrewarded. She wanted a change, a more meaningful way of using her skills and abilities to leave a long-lasting legacy and improve people's lives. Being a corporate lawyer, she felt like a pawn serving the system and the interests of the organisation she represented which sometimes went against her personal values system. Fiona recognised this together with the fact that, given she was a product of the mainstream education system, she was also dispensable – just another person doing a job in which she could easily be replaced by another employee whose skills and experience were similar to hers. Fiona appreciated that there was nothing unique, individual or visionary in her work and that her role was a spoke in the larger wheel of status quo maintenance. Fiona felt the strong need to apply her education, experience and professional, competent and assertive character in a way that offered something meaningful to people she felt mattered more than the corporate system and its guardians. Through SHE she was afforded the opportunity to explore these critical questions about where she could meaningfully contribute towards sustained improvement and positive change in life?

While studying, Fiona found her courage and conviction to recognise and act on the love and care she still had for her birthplace South Africa. She volunteered in Khayelitsha (a sprawling shanty town with a population of around 2 million), Cape Town working with orphans, raising funds, building sustainable houses in the Indlovu eco-village and developing household agreements with their occupants. Fiona proved herself as a community leader for the new non-governmental organisation (NGO) whose main agenda is, through provision of housing, to offer the children of Indlovu a better life.

Fiona returned to her family in Australia but her legacy of changing the lives of those affected by HIV/AIDS and poverty, remains foundational in the work of the NGO.

Conclusion

According to Sarabhai (2009: 124–125), "(w)hen we need to make fundamental changes in the way we relate to our only planet, when the human race needs to come back from our all-powerful and human-centric illusion the industrial age gave us… education and not just technology has to be the main driver of change". This truth is often forgotten in the political, economic or technological races to influence the world.

Through sustainability humanistic education, students respond to and address some of the greatest challenges yet faced by humanity. This approach has delivered positive creative milestones on the revolutionary road of transforming homo economicus into homo sustineo. It offers a potentially powerful contribution to the creation of a new world of common sense, liberation and democracy in which nature is treasured and the wellbeing of present and future generations is safeguarded.

Asia is already a significant force steering the present and future direction of the planet and its people. Through its uniquely proactive, government-directed and supported tertiary education model, the continent has the opportunity to ensure, through its graduates, that it influences and facilitates the emergence of a new chapter in history. Asia, with its unprecedented growth, progress and innovation is capable, through its tertiary education processes and approaches, of offering a significant contribution, through suitably inspired and emboldened graduates, to a local and global sustainability revolution and the ultimate, ongoing achievement of a better world for all humanity and the planet.

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Case Study Area 3: Sustainable Humanistic Education

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Refereed journal article

Humanistic sustainability education for a better world

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Abstract

As an academic subject, sustainability is unique, and very different from most other disciplines. It not only requires transdisciplinarity but also urgency and immediate response to pressing needs for practical change. The application of its concepts, such as equity, diversity, locality and bioregionalism are universal, all-encompassing and broad-based. Flexibility and sophistication are essential in teaching, learning and application; the teachers and learners are both all the time and need to work jointly during the educational process. Different approaches, including eco-pedagogy, environmental education, UNESCO's education for sustainable development, participatory education and humane education, and their value are discussed in the paper before outlining humanistic sustainability education as the approach taken in teaching a Master course in Sustainability Studies at Curtin University. Despite being a postgraduate course, the participating students are at "entry level" in terms of sustainability, with no previous foundation in the area, but with their hearts in the right place. The paper presents case studies and makes the case for a sustainability revolution, the crucial need for leadership and the value of collective action.

Keywords Australia, transformative change, practical intervention, sustainable development, transdiciplinarity

Introduction

We now know of the alarming, at times seemingly inevitable, rate of deterioration of the planet and its resources. A cover story published in *New Scientist* (Pearce, 2010) outlines some shocking data. Out of nine fundamental ecological health indicators, we are currently exceeding three (i.e. rate of biodiversity loss, nitrogen fixation and climate change), very close to the limit for another three (i.e. stratospheric ozone depletion, ocean acidification and phosphorus cycle), within the acceptable limits for two (i.e. change in land use and water use) and without a proper understanding as to what are the boundaries and where we stand on the last two, namely chemical pollution and atmospheric ozone loading. The author is asking: "How much further can we push the planetary life-support systems that keep us safe?" (Pearce, 2010: 31). All countries are being affected in varying degrees. Bangladesh in particular is being threatened by rising sea levels likely to produce massive displacements of people (Gemenne, 2011).

We understand the implications of this ecological deterioration, for people and places everywhere, for plant and animal species and for nature in all its wonder. The IPCC (Intergovernmental Panel on Climate Change) and Millennium Ecological assessments (e.g. Australian Academy of Science, 2010; Corvalan et al., 2005; IPCC, 2007a, Read et al., 2002) have provided ample scientific evidence as to what is happening with the planet. According to the IPCC's 4th Assessment Report (IPCC, 2007b: 488), "(c)limatic changes in… Bangladesh would likely exacerbate present environmental conditions that give rise to land degradation, shortfalls in food production, rural poverty, and urban unrest".

Together with the widespread and increasing recognition of the planet's deterioration, comes an urgency to find a way of ensuring effective education for sustainability as an immediate response to bring about measurable, meaningful and practical change. Existing educational paradigms typically perpetuate a destructive, oppressive worldview. The world needs new ways of living and learning. Sustainability education and the concepts it endorses, must help such transformation to occur. According to Kahn (2003: n.p.), "...our moment is new – never before have the collected mass beings of the planet Earth been so thoroughly threatened with extinction as they are now and never before have so many of us raised this problem consciously and desperately together in the hopes of transforming

society ... education remains a primary institution towards affecting social and ecological change for the better".

This paper explores teaching sustainability. It is based on a 20-year experience in Australia, but draws on recent examples from Curtin University. After explaining why educating for sustainability is a challenging task, we outline some specific characteristics of this new approach and present a brief history about its development including humane education, environmental education, eco-pedagogy, UNESCO's Decade for Education for Sustainable Development (DESD), education for a culture of peace and sustainability, participatory education, humanistic education and the science of acting. The paper then examines case studies from teaching a Master course in Sustainability Studies at Curtin University and the lessons drawn from this experience. It concludes that the most prominent feature of education for sustainability is to empower students to challenge the current system and create a world that better represents their dreams for the future.

1. Challenges of sustainability education

Sustainability, and thus education for sustainability, is a new and unique field very different from most other disciplines. For example, what does it mean to be sustainable, or more sustainable? Is soon fast enough for meaningful changes? What are the sustainability priorities? What are the jobs and roles available or needing to be created?

Evans (2009) describes the current educational system as a "shattered mirror" that: firstly, provides a fragmented view of the world, i.e. each broken piece of glass reflects only a particular section of the picture but the mirror itself cannot present a realistic complete view of the world; and secondly, it is always backward looking, i.e. the mirror only reflects what has already been created and cannot allow for futuristic images, forecasts or dreams. These are exactly the practices and approaches that teaching sustainability needs to transform and replace. They include progressivism, objectivity, rationalism, reductionism, mechanistic view of the world, scientism, efficiency, anthropocentrism, instrumental reasoning, compartmentalisation of life, humans in opposition to nature and the shrinking of the world for the benefit of the human race (see Table 1).

Table 1. Comparison of current education and education for sustainability

Current Education (Spretnak, 1999)		**Education for Sustainability**	
Progressivism	Linear progression up, constant growth	Adaptivism	Constant change and adjustment
Objectivism	Rational independent reality	Mixed reality	Objectivity and subjectivity co-exist
Rationalism	No place for emotions and spirituality	Down-to-earth	People's actions are based on knowledge but highly dependent on feelings
Mechanistic worldview	Understanding of matter most important	Creativity	Not only case and effect: there are creative unfoldings
Reductionism	Understanding the whole if we understand its parts	Systems thinking	Understanding the relationships and new emerging properties
Scientism	Natural sciences dominate	Pragmatism	User-inspired
Efficiency	Standardisation, bureaucratisation, hierarchies	Outcome-based	Questioning of what we want to achieve
Anthropocentric	Human species are most important	Responsible	Human species are guardians
Instrumental reasoning	Modes of thinking used rather than determining of values (eg consumerism)	Values dominated	Various instruments can be used but guided by values
Human opposition to nature	Development?	Embedded in nature	Harmonious and integrated development
Compartmentalisation of life	Family, work, study, social life	Integration of life	Common attitudes and actions
Shrinkage of the world	The "sacred" human	Opening of the world	The "sacred" universe

Source: Raphaely et al. 2010

To complicate things further teaching sustainability also means unteaching unsustainability. This involves dealing with habits, attitudes, perceptions and behaviours within society that encourage reckless and irresponsible actions leading to ecological and social deterioration. More often than not, such practices are encouraged by what is perceived as economically rational decision-making. For example, increased productivity and efficient use of resources can result in encouragement to consume more and further resource depletion.

Unteaching unsustainability requires us to learn to question and challenge everything we do, the institutions and systems that reinforce life as we currently know it, to envisage a better world – a place where life interacts with itself and all around it in a completely different way.

Further this must occur against a background of vested interests (e.g. the fossil fuels lobby or chemical companies) and calls from skeptics who see sustainability as a conspiracy against world capitalism, another attempt at reviving the hippy movement or green fascism.

Evans (2009: 1) also stresses that the frame of the "shattered mirror", "the system of values and beliefs embodied in traditional institutions of higher education—is wooden

because it feeds the intellectual abilities but avoids matters of the heart and spirit that make people care for the prospects of future generations.

Sustainability covers a vast range of interrelated topics: Where to start? Where to finish? How to prioritise between climate change, consumption, production, energy, population, urbanisation, health, poverty, inequity, injustice, human and natural rights, politics, globilisation, ethics, waste, water, resource distribution, capitalism, suppression, world orders, domination, development and the developing?... These are examples from a lengthy list. It is easy to feel overwhelmed and pessimistic. Too much to do with too little… Is it all too late?... What good can I do? I am just one person… And the bad news keeps coming – lost species, weather calamities, oil spills, air pollution, drugs, obesity, poverty… Has humanity transformed itself into "homo economicus" (Spretnak, 1999)? Hope for the future is being replaced by fear of and for the future, and sustainability students and teachers have to work continuously within this space of negativity and lack of encouraging good news stories. The loss of faith in humanity hurts, and sustainability education requires an honest look at who we are and where we are going. This is a confrontational and challenging journey.

Sustainability and sustainability education require vast personal and collective paradigm shifts – completely new individual and global ways of being and doing... Yet because there are few examples illustrating how this new way of being and doing might look, feel or work – it can sometimes feel imaginary, illusive or impossible. Where do we find the strength and the leadership to fight against vast vested interests and a fundamentally lack of transparency? The application of almost all sustainability concepts, such as equity, diversity, locality and bioregionalism are universal, interconnected, all-encompassing and broad-based but where do we start in the classroom and in real life? Each topic we touch is directly and indirectly linked to a wide range of other related topics, making sustainability education a web of interconnections, in fact, as far as sustainability is concerned, everything is connected and constantly changing! Life-long learning, ongoing awareness, review, eclecticism and adaptation are continually required by students and teachers.

Sustainability education ultimately challenges how we relate to ourselves, each other and nature. The key is to defy all dominant paradigms, cultural norms, politics, economics, educational practices and equip students with new ways of doing, seeing, being and

believing. This education cannot prepare students to take their place in society; it must prepare students to create a new society!

According to Evans (2009: 4), "(h)igher education, if it is to play a role in developing sustainable ways of being human in the world, cannot continue its traditional functions in a society headed for global catastrophe. It cannot simply aim to help individuals achieve lucrative careers in a world where continued enslavement of nature and economic and cultural colonisation of peoples serve as the inputs for economic growth—and where that growth leaves in its wake widespread diminishment of the very natural and human resources and systems that support it". Sustainability education thus needs to be "essentially transformative, constructivist, and participatory. It is also integral… in that it seeks to incorporate as many insights and perspectives from as many disciplines as possible to understand events, experiences, and establish contexts…" (Medrick, 2005: 1). Its core principles encompass adaptivism, the existence of mixed realities, down-to-earth approach, creativity, systems thinking, practicism, outcome-based, responsibility, value-based, embedded in nature, and allow for integration of life and opening of the world (see Table 1).

2. Approaches to sustainability education

The last century has seen many educational efforts towards a better world. Some are briefly described below followed by our approach and case studies.

2.1 Humane education

Humane education emerged over a century ago when humane societies were mandated with both child and animal protection and the link between animal cruelty and family violence was assumed. However this link was disregarded when animal welfare and child welfare organisations became separate entities. In the 1990s some educators began returning to the roots of humane education by focusing on the interconnections between violence, exploitation and injustice and encompassing not only animal-human issues, but also environmental considerations. Humanisation requires compassion not just for one thing but for all things.

This interconnectedness "...inspires people to act with kindness and integrity and provides an antidote to the despair many feel in the face of entrenched and pervasive global

problems. Humane educators cultivate an appreciation for the ways in which even the smallest decisions we make in our daily lives can have far-reaching consequences (Humane Education for a Humane World, IHE publication, n.d. cited in Humes, 2008: 67).

2.2 Environmental education

Environmental education is a well-established subject (since the 1970s) emphasing the relationships between people and the physical environment in terms of how to preserve and appropriately manage natural resources (Gaddotti, 2008). Focusing on the protection of the natural environment, it stresses the importance of a healthy ecological ambiance for human life. This approach paved the way to understanding the relationships between people and nature and continues to inform the teaching of sustainability.

2.3 Eco-pedagogy

Eco-pedagogy began in a Latin American context growing out of discussions at the 1992 Earth Summit in Rio de Janeiro and aimed to formulate a mission for education that universally integrated an ecological ethic. It is an offshoot of critical pedagogy which encourages students to question and challenge domination and dominating beliefs and practice. Its purpose is a critical consciousness, a continuous process of unlearning, learning and relearning, evaluation and reflection with a future-oriented ecological political vision (Kahn, 2010). It has an appreciation for the collective potentials of being human.

Eco-pedagogy criticises other educational approaches as simply reinforcing our growing global sustainability crisis. It statedly moves from an anthropocentric pedagogy to a pedagogy based on planetary awareness, towards new practices of planetary citizenship and a new ethical and social reference, namely planetary civilisation (Gadotti, 2008). Further, it acknowledges human beings as creatures that are always in movement, as "incomplete and unfinished" beings constantly shaping themselves, learning and interacting with others and the world (Freire, 2004). It is opposed to the widespread pedagogy centred in tradition which is static and generates humiliation for learners when they are evaluated. Strongly influenced by the work of philosopher Paulo Freire, it is a democratic and solidary pedagogy that aspires to engender transformative energies, untapped life forces and other liberatory potentials capable of aiding others in the reconstruction of society on the way to a more peaceful, harmonious and beautiful world for all creatures great and small (Kahn, 2008).

2.4 UNESCO's decade of education for sustainable development

The United Nations Education, Scientific and Cultural Organisation (UNESCO) declared 2005-2014 as the Decade for Education for Sustainable Development (DESD) based on the Earth Charter's principles and values adopted at the 2002 World Summit in Johannesburg (UNESCO, 2005). It began coordination efforts to provide a humanistic foundation for all national systems of education.

The DESD aims to make people aware of sustainable development and the importance of the planet's survival as related to people's own quest for a sustainable livelihood. It is integrative and interactive and to a limited degree emancipatory. It calls for transformational action, planetary citizenship, multi-, inter- and transcultural and multi-, inter- and transdisciplinarity dialogue that promotes the end of poverty, illiteracy, political domination and economic exploitation (Gadotti, 2008). The Decade "is not only about the content of education but equally about the process, the methodology, and the linkages it brings between subjects" (Sarabhai, 2009: 124). It emphasises the need for new roles for the teacher and student, the importance of stakeholder participation, including industry (e.g. Manteaw, 2008) and recognition of the emotional and spiritual sides of our experiences along with the logical and rational thinking.

Consequently the Decade calls for new methods and approaches in the process of transformation of the traditional classroom. The aim is to provide a regional as well as a global map of progress towards sustainability (Tilbury, 2009).

2.5 Education for a culture of peace and sustainability

This form of education articulated well by Gadotti (2008) is based around principles and values promoting harmony in the human and natural world. It originated from Gandhi's philosophy "The more I have, the less I am" (Joshi, 1993: 53) which resents conflicts and material possessions but encourages peace and voluntary simplicity. According to Wenden (2004), the environment is a shared territory and a common resource for life which, similar to peace education, requires people to learn how to share, discuss, negotiate, live together and build together. Principles include (Gadotti, 2008):

- Educating for thinking globally and transforming both local and global levels of society;

- Educating one's feelings – to feel, to take care and to live every moment of our lives making sense of this existence; educate to be emotionally bound to the Earth;
- Educating for planetary awareness and recognition of our interdependence –we, the people of the Earth, are a single nation; solidarity as a condition of our human survival;
- Educating for understanding – education for human ethics and not for the market's instrumental ethics, for communication and how to better understand (not how to take advantage of0 each other;
- Educating for voluntary simplicity and quietness – guide our lives with new values: simplicity, quietness, serenity, listening, living together, sharing discoveries and building together.

The logic of sufficiency (Princen, 2005) endorsed by the education for a culture of peace and sustainability is not congruent with the concepts of efficiency and economic rationalism espoused by most educational practices. It does however fit with ecological and social rationality - essential concepts in sustainability education.

2.6 Participatory education

Participatory education acknowledges the wealth of knowledge, experiences, ideas and skills students bring to the classroom. It focuses on creating an environment where teachers and students are equal partners and contributors in the learning process (Francis and Carter, 2001). Characteristic of this type of education is that participants determine the contents and time-scale of the learning process as well as its logistics (Rogers, 2005). It emphasises the development of skills required for the handling of sustainability issues such as listening and reflection, group work, facilitation, use of body language, conflict management, asking question and challenging existing practices.

A relatively new direction in participatory education is its link to the concepts of participatory or deliberative democracy (Dryzek, 2000), which reflects the social disillusion with democracy and current institutions (including educational ones), that encourage the maintenance of the status quo and continuation of current processes and practices (Hartz-Karp and Carson, 2009; Yancken and Henry, 2008). Following the conceptual model of

Habermas (1989) about the transformation of the public sphere through rational-critical debate, this theoretical process has broadened to include education and the contribution students can make to hot or sensitive public debates.

Participatory education thus requires students to partake in real-world problem solving, present practical solutions and provide examples of how a transition towards sustainability can become a reality.

2.7 Humanistic education

Founded on the thoughts and principles of eco-pedagogy, this approach goes a step further to recreate education as a world-humanising project – a global project of students, scholars and people everywhere, a participatory human project encouraging civic courage that internationally revives reason and democracy so that people everywhere feel empowered and are fighting for a better and more sustainable future (Grigorov, 2009).

Humanistic education has developed in response to the recognition that many universities have become commercial enterprises viewing students as customers or consumers who sell themselves on completion of their degree to the highest bidder. Knowledge is not something to be passively consumed and students should not be dehumanised, robbed of the impulse to participate in the determination of their own human situation or viewed as exploitable human resources requiring top-down management similar to any other kind of resources (Grigorov, 2009). Hence humanistic education aims to provide students, scholars and teachers with the skills and rights not to sell or surrender to the system but rather to learn to challenge and change it, including those who perpetuate it.

To achieve its purpose humanistic education should facilitate students who are revolutionaries driven to create an alternative world, with new democratic institutions, appropriate technologies and a social system predicated on a democratic economy. In so doing it should also:

- End global psychology of exploitation, acquiescence and anti-reasoning;
- Create and develop a new eco-psychology of resistance and non-exploitation;
- Empower students to govern and change their situation by taking up collective action in the name of social justice, freedom, democracy, peace and sustainability;

- Inspire students and give them the impetus and courage to construct vigorous practices and theories, to inspire civic participation and to support participatory democracy;
- Unify students, scholars, teachers and people beyond any frontiers and differences, and against all forms of exploitation, devaluation and the devastation of humanity and nature;
- Empower students to take life seriously and to understand it as something sacred and significant and thus to be able to take responsibility for what is happening in the world around them.

Viewed in this light, humanistic education holds great hope and is ultimately a humanising cultural revolution.

2.8 The science of acting

Although primarily created as a method of teaching for life in the theatre, the so-called "science of acting" (Kogan, 2010) has key values that can inform sustainability education. It encourages students to re-envisage themselves through imagination and belief and, in so doing, to better embrace their role in sustainability. Others, witnessing students' actions, are able to see alternative life possibilities and compare this with how they think life is generally. This "voyeur" experience provides on-lookers with opportunities to ask questions of themselves and increase their self-awareness (Kogan, 2010). Aligning to a changing reality is crucial to attaining and maintaining happiness.

Core aspects useful to sustainability education include:

(1) Enabling learners to understand that they are not purposeless pawns in a world doomed for destruction and help them to envisage themselves instead as purposeful agents with a role in creating a more sustainable world;

(2) Students becoming advocates who provide a role model for others and a vision of a more sustainable society; and

(3) Empowering learners to be active rather than passive.

The present global sustainability reality is confrontational and at times feels hopeless. The science of acting gives hope, confidence and facilitates the attainment of a degree of happiness as constructive participants in an ever-changing world.

3. Our approach to sustainability education: Humanistic sustainability education

All of the above approaches have something valuable and relevant to contribute but none felt empowering enough for us. We believe sustainability education must be a call to revolution – passive and loving but a cultural revolution non-the-less. It thus feels justified to ignite the revolution of education so that people can raise their voices in defence of the Earth and against the decay of humane and sustainable values (Best and Nocella, 2006, Grigorov 2009). As such sustainability education should ensure maximum opportunities for interaction between all people for ending the indiscriminate, accelerated destruction, exploitation and devaluation of humanity and nature.

To this end we have taken key elements of humanistic education combined with others from the approaches described above and coined this Humanistic Sustainability Education. It is the way we work with our students and we focus on making sure we include the key factors described in Table 2.

Table 2: Humanistic sustainability education

1	Constructs a critical and creative theory and practice of society aimed at a sustainable future
2	Is filled with promise and powerful examples of obtained success
3	Provides knowledge and science filled with love, impetus and future hope
4	Always remains positive and participatory
5	Engages in ongoing forms of permanent critique of authority
6	Includes a "Project of possible Worlds" or "Another Possible World"
7	Facilitates students joining with people in the community, social movements, governments and progressive groups
8	Educates students for active and critical citizenship
9	Always focusses on transdisciplinarity
10	Strives to liberate potentials for the reconstruction of a better society
11	Highlights the interconnectedness of all things and all actions
12	Facilitates networking and bonds amongst students
13	Emphasises the relationship between people and the natural environment in terms of immediate environmental protection
14	Educates about feelings – feelings and caring and living as part of a whole
15	Educates for understanding, empathy and compassion – solidarity as a condition of our survival
16	Educates for voluntary simplicity and quietness

Source: Raphaely et al. 2010

Humanistic Sustainability Education is about a way of both being and doing. It is education for survival and progress in a dangerous time, for participatory democracy and ensuring universities are institutions for reason and sustainable science. We work together with our students to redirect society to ecological care, to do away with the powers devastating the Earth and to transform the world so that life is preserved in all its vibrant dimensions. Together we see a new world on the horizon, "of human self-realisation through education, an education and science full of love, sanity, and future hope, attuned to our human situation and all of life." (Grigorov 2009: 109).

Humanistic Sustainability Education enables students to actively participate in this revolution for survival and sanity, not as corporate clones in safe jobs that continue to serve the interests of few, but as courageous visionaries and leaders able to make the changes the world needs to survive.

Despite doom and gloom stories, students from our Master in Sustainability Studies courses 2008, 2009 and 2010 are demonstrating this approach has merit. Many have embarked on sustainability initiatives that are changing the world and shifting us all towards an alternative future of hope and possibility where the world is safe, society is just, and the wellbeing of nature and future generations is safeguarded. Most of these students were at "entry level" in terms of sustainability, with their hearts in the right place but with no previous foundation in the field. From all walks of life and with a wide range of life-experiences, they are using their visions, courage and knowledge to build a better world on a global level or local level.

Below are four examples from a long list (all names have been changed). Each student's story is one of personal growth and achievements. We as teachers are constantly learning and improving with the work of our students, but most importantly we are grateful to be part of positive change.

Case study 1: A global leader

Sonia is a life-long vegetarian from a family of vegetarians. She has always felt that, given the alternatives, killing animals is cruel and unnecessary and anguished about the inhumane methods of farming and the wide-spread violence against farm animals. She struggled to reconcile how the developed world could inflict such suffering whilst

simultaneously struggling to fight obesity and health problems directly related to overconsumption of a predominantly meat-based diet. During her Master in Sustainability Studies Sonja realised that vegetarian food has a significantly smaller ecological footprint than meat and thus encouraging people to eat less meat is crucial to increasing sustainability. Sonia developed a vision of creating a global chain of vegetarian fast food restaurants where people could easily access nutritious, delicious vegetarian meals. She explored this in detail in her Individual Sustainability Project, completing with exemplary results.

Sonia launched her global chain of vegetarian restaurants in 2010 in New York and London, becoming a world leader in the transition to a healthier, more compassionate and sustainable way.

Case study 2: A local leader

A charismatic, young, environmental engineer, Stephan knew much about ecological health and wellbeing. Often invited to share his passion for nature with school children and other young people it was difficult for him to understand why people were not doing the right thing. Was it due to lack of regulations, economic burdens or because they did not care?

Stephan started working with local government around the same time as he started his Master in Sustainability Studies and realised he was in a position to contribute towards change. While working with us, he convinced his organisation that they needed a sustainability officer and that there was a necessity for constant in-house communication between like-minded people. He established a range of strategies to facilitate training and decision-making with respect to sustainability, including a regular newsletter. Establishing himself as a local leader was a slow but rewarding process encouraged and supported by his teachers.

Case study 3: An industry leader

The real estate industry has been giving Diane a reliable income and the satisfaction of making people happy when they sold or bought a home. However, she found herself grappling with questions like what makes a house a good home, how is our choice of shelter

affecting the environment, what are the best technologies to save energy in the house, how can water be saved in homes on the Earth's driest continent?

Diane did not have any previous undergraduate degree but she had enough work-based knowledge and experience to be admitted into the Graduate Certificate in Sustainability and later to continue at a Master level. Through studying in a team of like-minded people trying to find answers to similar questions she was encouraged to start an on-line forum where sustainable housing issues could be discussed with the broader community and answers found.

Diane became an expert in energy auditing and a sustainability leader within the real estate industry, a role model signifying the changes that prospective buyers want in a new house. She is no longer just selling houses. She is now a leader in educating sellers and buyers about the type of living best for them as well as the planet.

Case study 4: A community leader

Fiona, a retired lawyer working with the corporate justice system all her life, felt dissatisfied and personally unrewarded for the long hours of service and considerable efforts invested in her job over the years.. Being a successful corporate lawyer served a system and the particular interests of the organisation she represented which sometimes went against her personal values system. She felt she was dispensable, easily replaced by another employee with similar skills and experience. She strongly understood that corporate memory retains smooth transactions and efficiency but does not remember individuals as beings with a vision, fighters for a better world or empathic colleagues who can make you laugh and give hope and encouragement. Fiona wanted a better way to apply herself as a professional, competent and assertive woman. She also wanted to do something for people she really cared about. She anguished how she could she leave her mark and contribute towards sustained improvement and positive change in life? She sought a more meaningful way of using her skills and abilities, something that would leave a long-lasting legacy and improve people's lives

Working with us, Fiona was able to look deep into her heart and find the love and care she still had for South Africa, her place of birth. She became a volunteer in Khayelitsha (a sprawling shanty town with a population of around 2 million), working with orphans, building houses in the Indlovu eco-village, raising funds and developing household

agreements for their occupants. Fiona proved herself as a community leader for the new NGO (non-governmental organisation) whose main agenda was to provide a better life for the children of Indlovu.

After spending half a year in South Africa, Fiona is now back in Australia but her legacy remains in the ongoing work of the NGO. Indlovu was the basis for her Master's in Sustainability Studies project which received the highest grade and changed the lives of Indlovu children affected by HIV/AIDS and poverty.

4. Lessons learned from humanistic sustainability education

Some thoughts on the application of our Humanistic Sustainability Education are presented in Table 3. They are summarised as lessons learned. The biggest lesson however is that there is constant hope and we are witnessing the start of the sustainability revolution through the actions of our thoughtful and highly committed students.

Table 3. Lessons learned from humanistic sustainability education

1	Flexibility and sophistication are equally required in teaching, learning and application
2	The teachers and learners are both all the time and need to work jointly during the education process
3	There is need for sustainability "psychology" or the ability to confirm and reaffirm the value of each and every contribution
4	Acknowledgement and recognition of the fear factor are important
5	The envisaging of future possible worlds is crucial
6	Whilst understanding of the problem is important, a solution orientation is required
7	A revolutionary or activist underpinning is essential – students are not being groomed to take their part in society but rather to find their own way and creativity to change society and the current dominant paradigms
8	The heart and the soul – feelings – must be taught and intimately considered throughout the learning and teaching process
9	The individual contribution is crucial but each individual must understand that it is the collective that counts because EVERYONE needs to live and think and be more sustainable
10	We must educate for breakthrough, for non-conformity, for yelling and for dreaming of other possible worlds
11	To make students feel empowered to challenge the system, it is important to know what each of us can do to save the planet and to understand how the responsibility and efforts of each person much be attached to the global struggle for sustainability. Changing "the system" is what matters and for this reason we must continue to make our small changes, which, if followed by millions of people, may promote the necessary big changes.

5. Conclusion

According to Sarabhai (2009: 124–125), "(w)hen we need to make fundamental changes in the way we relate to our only planet, when the human race needs to come back from our all powerful and human-centric illusion the industrial age gave us, and when we need to reconnect with nature and in humility learn how perfectly balanced and dynamically sustainable the natural world is, education and not just technology has to be the main driver of change". This truth is often forgotten in the political and technological races for fixing the world. We need an education approach that enables students and teachers alike to reflect on their actions and envisage and embark on the changes for a new, sustainable way of doing and being. Our case study illustrations provide positive signs of change, examples of how people can follow their dreams and, collectively and individually, create a better world. It is time for a world of common sense, liberation and democracy where everyone, in one form or another can partake and benefit, in which nature is treasured and the wellbeing of future generations is safeguarded. We believe sustainability education must be directed to this end and Humanistic Sustainability Education, drawing from the best that has come before, has offered us the most effective way of achieving this to date.

Acknowledgments

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Sustainability Education: What on Earth Are we Doing?
Authors' Final Version

Case Study Area 3: Sustainable Humanistic Education

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Refereed journal article

Sustainability education: what on earth are we doing?

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Abstract

The paper's title is reflective of the pressing necessity to make a strong stance about the need to examine the challenges in teaching sustainability. As an academic subject, sustainability is unique, and very different from most other disciplines for a range of reasons. It requires transdisciplinarity, urgency and immediate response to pressing needs for practical change; the application of its concepts, such as equity, diversity, locality and bioregionalism are universal all-encompassing and broad-based. Flexibility and sophistication are equally required in teaching, learning and application; the teachers and learners are both all the time and need to work jointly during the education process. Different approaches, such as eco-pedagogy, environmental education, UNESCO's education for sustainable development, participatory education and humane education, and their value are discussed before outlining humanistic sustainability education as the approach taken in teaching a Masters course in Sustainability Studies at Curtin University. Despite being a postgraduate course, the participating students are at "entry level" in terms sustainability, with no previous foundation in the discipline, but with their hearts in the right place. The paper presents case studies and describes the achievements of several of these students. It makes the case that even though there is a crucial need for leadership in the sustainability agenda, it is not the individual but the collective work that counts. It concludes that challenging the dominant paradigms, cultural norms and local, national and international politics required to mainstream sustainability, starts from examining "what on Earth I am doing".

Keywords Australia, case study, humanistic sustainability education, practical change, sustainable development, transdiciplinarity

Sustainability Education: What on Earth Are we Doing?
Authors' Final Version

УСТОЙЧИВО РАЗВИТИЕ: КАКВО ПО ДЯВОЛИТЕ ПРАВИМ?

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Резюме

Заглавието на доклада отразява необходимостта да се изрази силна позиция по отношение предизвикателствата, свързани с обучението по устойчиво развитие. То изисква трансдисциплинарност, спешност и неотложен отговор на нуждите за практическа промяна; приложението на неговите концепции (например за справедливост, разнообразие, локалност и биорегионализъм) е универсално, всеобхващащо и на широка основа. Съобразителност, гъвкавост, сложност и желание за усъвършенстване са качества необходими не само в процеса на преподаване и учене, но също и за приложението на знанията и уменията; учителите и учениците изпълняват едновременно тези две функции през целия учебен процес и трябва да работят съвместно. Докладът обсъжда различни възможни подходи, например екопедагогика, природно обучение, декадата на ЮНЕСКО за обучение по устойчиво развитие, обучение с участие и обучение в хуманност, както и тяхната полза. След това представя хуманистичното обучение за устойчиво развитие като подхода приет при преподаването на Магистърския курс по устойчивото развитие в Кортън университет. Този курс е на следдипломно ниво, но участвуващите студенти са на начално равнище по отношение на техните знания по устойчиво развитие; сърцата им обаче са на правилното място. Докладът представя постиженията на някои от тези студенти като отделни случаи и твърди, че независимо от потребността от лидери, по-важни за постигането на устойчиво развитие са не отделните индивиди, а работата в колектив. В заключение изказва становището, че промените в доминиращите парадигми, културни норми, местни, национални и междунардни политики започват с това всеки да преоцени "какво по дяволите правя аз".

Ключови думи: Австралия, изследване на случаи, практическа промяна, трансдисциплинарност, хуманистично обучение за устойчиво развитие

Introduction

"For the very first time the young are seeing history being made before it is censored by their elders… We are now at a point where we must educate our children in what no one knew yesterday, and prepare our schools for what no one knows yet…"

Margaret Mead (1928)

We all now know of the alarming, at times seemingly inevitable, rate of deterioration of the planet and its resources. A recent cover

story published in *New Scientist* (Pearce, 2010) outlines some shocking data. Out of nine fundamental ecological health indicators, we are currently exceeding three (i.e. rate of biodiversity loss, nitrogen fixation and climate change), very close to the limit for another three (i.e. stratospheric ozone depletion, ocean acidification and phosphorus cycle), within the acceptable limits for two (i.e. change in land use and water use) and without a proper understanding as to what are the boundaries and where we stand on the last two, namely chemical pollution and atmospheric ozone loading. The author is asking: "How much further can we push the planetary life-support systems that keep us safe?" (Pearce, 2010: 31). We all now know about the implications of this ecological deterioration, for people and places everywhere, for other plant and animal species and for nature in all its wonder. The IPCC (Intergovernmental Panel on Climate Change) and Millennium Ecological assessments (e.g. Corvalan et al., 2005; IPCC, 2007, Read et al., 2002) have provided ample scientific evidence as to what is happening with the planet. How are we, and the education we provide, responding to this? What on Earth are we doing to allow all these trends to continue?

Together with the widespread and increasing recognition of the planet's deterioration, comes an urgency to find a way of ensuring effective education for sustainability as an immediate response to pressing needs that brings about measurable, meaningful and practical change. Traditional educational paradigms (please refer to Table 1) typically reinforce a destructive and oppressive worldview and are weary and unable to cope with having to explain the moment we are living in or in answering our future needs. The world needs a new paradigm if it is to survive, a new way of being and doing and seeing. Sustainability education and the concepts it endorses (see also Table 1), must help for such a transformation to occur or cease to exist. It is dangerous to believe we are educating for change if we are being ineffective – particularly when that change may well be a matter of life or death. According to Kahn (2003: n.p.), "...our moment is new – never before have the collected mass beings of the planet Earth been so thoroughly threatened with extinction as they are now and never before have so many of us raised this problem consciously and desperately together in the hopes of transforming society towards a better... education remains a

primary institution towards affecting social and ecological change for the better".

This paper explores what it is to teach sustainability. It is based on a 20-year experience in Australia, but draws on very recent examples from Curtin University. After explaining why educating for sustainability is a challenging tasks, we outline some specific characteristics of this new approach and present a brief history as to what has lead to its development. It covers humane education, environmental education, eco-pedagogy, UNESCO's Decade for Education for Sustainable Development (EfSD), education for a culture of peace and sustainability, participatory education and humanistic education. The paper then examines case studies from teaching a Masters course in Sustainability Studies at Curtin University in 2008 and 2009 and the lessons drawn from this experience. It concludes that the most prominent feature of education for sustainability is to allow students to feel empowered to challenge the current system and create a world that better represents their dreams for the future.

1. Challenges of sustainability education

Sustainability, and thus education for sustainability, is a unique field, one that is very different from most other disciplines for a range of reasons that create a number of questions and challenges. It is a relatively new subject and much is still unknown in terms of documented or proven outcomes. Progress and new developments are constantly happening but so many basic issues remain. For example, how do you measure sustainability or teaching outcomes? What does it mean to be sustainable, or more sustainable? How soon is soon enough for any changes? What are the cumulative impacts and considerations, what are the priorities?

To make things even worse teaching sustainability also means unteaching unsustainability. Evans (2009) describes the current educational system as a "shattered mirror" that: firstly, provides a fragmented view of the world, i.e. each broken piece of glass reflects only a particular section of the picture but the mirror itself cannot present a realistic complete view of the world; and secondly, it is always backward looking, i.e. the mirror only reflects what has already been created and cannot allow for futuristic images, forecasts or dreams. These are exactly the practices and approaches that teaching sustainability needs to transform and replace. They include progressivism, objectivity, rationalism, reductionism, mechanistic view of

the world, scientism, efficiency, anthropocentrism, instrumental reasoning, compartmentalisation of life, humans in opposition to nature and the shrinking of the world for the benefit of the human race. (Please refer to Table 1 for clarification of these concepts.)

Unteaching unsustainability also involves dealing with habits, attitudes, perceptions and behaviours within society that encourage reckless and irresponsible actions leading to ecological and social deterioration. More often than not, such practices are encouraged by what is perceived as economically rational decision-making. For example, increased productivity and efficient use of resources can result in encouragement to consume more and further resource depletion.

Unteaching unsustainability requires us to learn to question and challenge everything we do, the institutions and systems that reinforce life as we currently know it. This requires envisioning a new world or a possible world – a better place where life interacts with itself and all around it in a completely different way. This is difficult and contrary to much traditional education as it requires a brave new worldview and charting an unproven direction. It also requires spiritual and intellectual strength to deal with all the obstacles.

Learning sustainability is a life-long journey. It is difficult to pin-point where it starts and where it ends. It is however happening against a background of vested interests, e.g. by the fossil fuels lobby or chemical companies, and calls from skeptics who see it as a conspiracy against world capitalism, another attempt at reviving the hippy movement or green fascism.

Evans (2009: 1) also stresses that the frame of the "shattered mirror", "the system of values and beliefs embodied in traditional institutions of higher education—is wooden because it feeds the intellectual abilities but avoids matters of the heart and spirit, and these are the ones that make people care for the prospects of future generations.

Table 1. Comparison of current education and education for sustainability

Current Education (Spretnak, 1999)		**Education for Sustainability**	
Progressivism	Linear progression up, constant growth	Adaptivism	Constant change and adjustment
Objectivism	Rational independent reality	Mixed reality	Objectivity and subjectivity co-exist
Rationalism	No place for emotions and spirituality	Down-to-earth	People's actions are based on knowledge but highly dependent on feelings
Mechanistic worldview	Understanding of matter most important	Creativity	Not only case and effect: there are creative unfoldings
Reductionism	Understanding the whole if we understand its parts	Systems thinking	Understanding the relationships and new emerging properties
Scientism	Natural sciences dominate	Pragmatism	User-inspired
Efficiency	Standardisation, bureaucratisation, hierarchies	Outcome-based	Questioning of what we want to achieve
Anthropocentric	Human species are most important	Responsible	Human species are guardians
Instrumental reasoning	Modes of thinking used rather than determining of values (eg consumerism)	Values dominated	Various instruments can be used but guided by values
Human opposition to nature	Development?	Embedded in nature	Harmonious and integrated development
Compartmentalisation of life	Family, work, study, social life	Integration of life	Common attitudes and actions
Shrinkage of the world	The "sacred" human	Opening of the world	The "sacred" universe

Even with the best intentions, sustainability covers a vast range of interrelated topics – where do you start? Where you finish? How to prioritise between climate change, consumption, production, energy, population, urbanisation, health, poverty, inequity, injustice, human and natural rights, politics, globilisation, ethics, waste, water, resource distribution, capitalism, suppression, world orders, domination, development and the developing?... These are all examples from a lengthy list. It is not difficult to start feeling overwhelmed and pessimistic. Too much to do with too little… Is it all too late?... What good can I do? I am just one person… And the bad news keeps coming – lost species, weather calamities, oil spills, air pollution, drugs, obesity, poverty… Has humanity transformed itself into "homo economicus" (Spretnak, 1999)? Hope for the future is being replaced by fear from, and for the future, and sustainability students and teachers have to work continuously within this space of negativity and lack of encouraging good news stories. The loss of faith in humanity hurts, and sustainability education requires an honest

look at who we are and where we are going. This is confrontational and not an easy journey.

Sustainability and sustainability education require vast personal and collective paradigm shifts – completely new individual and global ways of being and doing... Yet because there are very few examples illustrating how this new way of being and doing might look, feel or work – it can sometimes feel imaginary, illusive or impossible. Where do we find the strength and the leadership to fight against huge vested interests and a fundamentally lack of transparency? The application of almost all sustainability concepts, such as equity, diversity, locality and bioregionalism are universal, interconnected, all-encompassing and broad-based but where do we start in the classroom and in real life? Each topic we touch is directly and indirectly linked to a wide range of other related topics, making sustainability education a web of interconnections, in fact, as far as sustainability is concerned, everything is connected!

It is not only challenging to prioritise what should be taught in any given period of time that teachers and students are able to spend together, but also where do you start and where do you finish as a teacher or as a student? Life-long learning, awareness, review and adaptation are required in order to constantly remain relevant and up-to-date.

Sustainability education is unlike any other subject, discipline or group of subjects. It challenges how we relate to ourselves, each other and nature The key is to defy all dominant paradigms, cultural norms, politics, economics, educational practices and equip students with new ways of doing, seeing, being and believing. This education cannot prepare students to take their place in society; it must prepare students to create a new society!

Sustainability education is learning about a way of being as much as it is about learning about a way of doing. These go hand in hand in a delicate and passionate tango dance that the student and teacher must continually be sharing even when the tunes keep changing. How do we do this? This may seem a daunting task but it is essential if we are to ultimately survive on this beautiful planet Earth.

According to Evans (2009: 4), "(h)igher education, if it is to play a role in developing sustainable ways of being human in the world, cannot continue its traditional functions in a society headed for global catastrophe. It cannot simply aim to help individuals achieve

lucrative careers in a world where continued enslavement of nature and economic and cultural colonisation of peoples serve as the inputs for economic growth—and where that growth leaves in its wake widespread diminishment of the very natural and human resources and systems that support it". The change needs to be substantial and faster than what we have witnessed in the past with change of educational paradigms.

Sustainability education needs to be "essentially transformative, constructivist, and participatory. It is also integral… in that seeks to incorporate as many insights and perspectives from as many disciplines as possible to understand events, experiences, and establish contexts…" (Medrick, 2005: 1). The principles that need to be at its core relate to adaptivism, the existence of mixed realities, down-to-earth approach, creativity, systems thinking, practicism, outcome-based, responsibility, value-based, embedded in nature, and allow for integration of life and opening of the world. (Please refer to Table 1 for more explanation.)

The history of efforts along these lines dates back in time for more than a century now, with the emphasis shifting to what we now perceive as a humanistic education. This journey is briefly depicted first followed by the approach and case studies from Curtin University.

2. Approaches to sustainability education

The overview below follows the major historical trends informing the line of work we have adopted at Curtin University and the ideas that have been woven into our approach.

2.1 Humane education

Humane education emerged over a century ago when humane societies were mandated with both child and animal protection and the link between animal cruelty and family violence was assumed. However this link was disregarded when animal welfare and child welfare organisations became separate entities. In the 1990s some educators began returning to the roots of humane education by focusing on the interconnections between violence, exploitation and injustice and encompassing not only animal-related issues, but also environmental considerations.

This interconnectedness "...inspires people to act with kindness and integrity and provides an antidote to the despair many feel in the face of entrenched and pervasive global

problems. Humane educators cultivate an appreciation for the ways in which even the smallest decisions we make in our daily lives can have far-reaching consequences. By giving students the insight they need to make truly informed choices, humane education paves the way for them to live according to abiding values that can lend meaning to their own lives while improving the world at the same time" (Humane Education for a Humane World, IHE publication, n.d. cited in Humes, 2008: 67).

This approach has many merits but remains on the fringe of both practice and research. It does however have relevance to us and has thus been essential into our teaching conceptualisation.

2.2 Environmental education

Environmental education is an already well-established subject taught since the 1970s that emphasises the relationships between people and the physical environment in terms of how to preserve it and to appropriately manage resources (Gaddotti, 2008). It stresses the importance of a healthy ecological ambiance for human life but concentrates predominantly on how to protect the natural environment.

It is considered by many to be an outdated approach that is too narrow in terms of content coverage and direction in order to engender broad-based sustainability (Newman, 2006). Such an approach however paved the way to understanding the relationships between people and nature and continues to inform the teaching of sustainability.

2.3 Eco-pedagogy

Eco-pedagogy began in a Latin American context growing out of discussions at the first Earth Summit held in Rio de Janeiro in 1992 that aimed to formulate a mission for education that universally integrated an ecological ethic, and resulted in the Earth Charter ratified in 2000. It is an offshoot of critical pedagogy which encourages students to question and challenge domination and dominating beliefs and practice to achieve a critical consciousness in a continuous process of unlearning, learning and relearning, and evaluation and reflection with a future-oriented ecological political vision (Kahn, 2010). It has an appreciation for the collective potentials of being human.

Eco-pedagogy works at a meta-level, critiquing environmental education and education for sustainable development as hegemonic forms of educational that simply reinforce the problems creating our growing

global sustainability crisis. Eco-pedagogy statedly moves from an anthropocentric pedagogy to a pedagogy based on planetary awareness, towards new practices of planetary citizenship and a new ethical and social reference, namely planetary civilisation (Gadotti, 2008). Further, it acknowledges human beings as creatures that are always in movement, as "incomplete and unfinished" beings constantly shaping themselves, learning and interacting with others and the world (Freire, 2004). It is opposed to the traditional way of pedagogy which is centred in tradition, is static and generates humiliation for the learner when he or she is evaluated. Strongly influenced by the work of the philosopher Paulo Freire, it is a democratic and solidary pedagogy that aspires to engender transformative energies, untapped life forces and other liberatory potentials capable of aiding others in the reconstruction of society on the way to a more peaceful, harmonious and beautiful world for all creatures great and small. It is ultimately a total liberation pedagogy for sustaining life (Kahn, 2008: 11).

2.4 UNESCO's decade of education for sustainable development

The United Nations Education, Scientific and Cultural Organisation (UNESCO) declared 2005-2014 as the Decade for Education for Sustainable Development (DESD) based on the Earth Charter's principles and values adopted at the 2002 World Summit in Johannesburg (UNESCO, 2005) and begun coordination efforts to provide a humanistic foundation for all national systems of education highlighting. In essence the DESD's goals are (Gadotti, 2008: 25):

- to facilitate networks and bonds amongst activists who defend ESD;
- to improve ESD teaching and learning;
- to help countries to adopt the Millennium Goals by means of ESD;
- to offer countries new opportunities to adopt ESD in their efforts towards education renewal.

Essentially DESD aims to make people aware of sustainable development and the importance of the planet's survival as related to people's own quest for a sustainable livelihood. It is integrative and interactive and to a limited degree, within the realm of definitions of development, emancipatory. It calls for transformational action, planetary citizenship, multi-, inter- and transcultural and multi-, inter- and transdisciplinarity dialogue that promotes the end of poverty, illiteracy, political domination and economic exploitation (Gadotti, 2008). The Decade "is

not only about the content of education but equally about the process, the methodology, and the linkages it brings between subjects" (Sarabhai, 2009: 124). It emphasises the need for new roles for the teacher and student, the importance of stakeholder participation, including industry (e.g. Manteaw, 2008) and recognition of the emotional and spiritual sides of our experiences along with the logical and rational thinking. Consequently it calls for new methods and approaches in the process of transformation of the traditional classroom. The aim is to provide a regional as well as a global map of progress towards sustainability (Tilbury, 2009).

2.5 Education for a culture of peace and sustainability

This form of education articulated well by Gadotti (2008) is based around many principles and values that promote harmony in the human and natural world. It originated from Gandhi's philosophy "The more I have, the less I am" (Joshi, 1993: 53) which resents conflicts and material possessions but encourages peace and voluntary simplicity. According to Wenden (2004), the environment is a shared territory and a common resource for life which similar to peace education requires people to learn how to share, discuss, negotiate, live together and build together. Some of the principles are (Gadotti, 2008):

- Educating for thinking globally and transforming both local and global levels of society;
- Educating one's feelings – to feel, to take care and to live every moment of our lives making sense of this existence. We are part of a whole that is under construction;
- Teaching our identity to the Earth as a vital human condition – we must educate to be emotionally bound to the Earth;
- Educating for planetary awareness and recognition of our interdependence – no more passports, foreigners of Third and First worlds; we, the people of the Earth, are a single nation;
- Educating for understanding – education for human ethics and not for the market's instrumental ethics, for communication and how to better understand each other not how to take advantage of each other; understand solidarity as a condition of our human survival;
- Educating for voluntary simplicity and quietness – guide our lives with new values: simplicity, quietness, serenity, listening, living together, sharing discoveries and building together.

The logic of sufficiency (Princen, 2005) endorsed by the education for a culture of peace and sustainability is not congruent with the concepts of efficiency and economic rationalism espoused by most educational practices. It does however fit with ecological and social rationality which needs to feature in sustainability education and we have incorporated this into our approach.

2.6 Participatory education

Participatory education acknowledges the wealth of knowledge, experiences, ideas and skills that students bring with them in the classroom. It focuses on creating an environment where teachers and students are equal partners and contributors in the learning process (Francis and Carter, 2001). Characteristic for this type of education is that the participants determine the contents and time-scale of the learning process as well as it logistics (Rogers, 2005). It emphasises the development of skills, such as listening and reflection, group work, facilitation, use of body language, conflict management, asking question and challenging existing practices, that are required for the handling of any sustainability issue.

A relatively new direction in participatory education is its link to the concepts of participatory or deliberative democracy (Dryzek, 2000), which reflects the social disillusion with democracy and current institutions, including educational ones, that encourage the maintenance of the status quo and continuation of current processes and practices (Hartz-Karp and Carson, 2009; Yanken and Henry, 2008). Following the conceptual model of Habermas about the transformation of the public sphere through rational-critical debate (Habermas, 1989), this theoretical process has been broadened to include education and the contribution students can make to hot or sensitive public debates.

Participatory education thus requires students to partake into real-world problem solving, come up with practical solutions that work and provide examples of how a transition towards sustainability can become a reality. This is another valuable approach incorporated into teaching sustainability at Curtin University.

2.7 Humanistic education

This is the approach that theoretically has the biggest influence and best articulates the key considerations and intentions of our conceptualisation of teaching sustainabiity. It is founded on the thoughts and principles of

eco-pedagogy but goes a step further to recreate education as a world-humanising project – a global project of students, scholars and people everywhere, a participatory human project encouraging civic courage, that internationally revives reason and democracy, so that people everywhere feel empowered and are fighting for a better and more sustainable future (Grigorov, 2009).

Humanistic education has developed in response to the recognition that many universities have become commercial enterprises viewing students as customers or consumers who will sell themselves on completion of their degree to the highest bidder. Knowledge is something to be passively consumed to this end and students are viewed as exploitable human resources, requiring top-down management similar to any other kind of resources. As such they are dehumanised, lacking voice and robbed of the impulse to participate in the determination of their own human situation (Grigorov, 2009). Thus education now only furthers the symptoms of the disease.

We think that it is inexcusable for education to follow a system in which people are just live resources. A commodified human being, like a commodified cow or tree, is a dead human being. So it is realistic and justified to ignite the revolution of education so that people can raise their voices in defence of the Earth and against the decay of humane and sustainable values (Best and Nocella, 2006, Grigorov 2009)

Hence humanistic education aims to provide students, scholars and teachers with the skills and rights not to sell or surrender to the system but rather to learn to challenge and change it and those who perpetuate it. After all, sustainability education (and universities!) should exist for humanity and the planet, not for commercial interests! According to the humanistic approach, education must not:

- Permit businesses or enterprises to form students in the way they want to so that they can have better employees; or
- Create students as products who will be traded later into the system and deprived of the unique experience of a creative moment in life.

Humanistic education if it is to achieve its purpose should facilitate a renewed breed of students –revolutionaries, who are driven to create an alternative world, with new democratic institutions, appropriate technologies and a social system predicated on a democratic economy. It should also:

- End global psychology of exploitation, acquiescence and anti-reasoning;

- Create and develop a new eco-psychology of resistance and non-exploitation;
- Empower students to govern and change their situation by taking up collective action in the name of social justice, freedom, democracy, peace and sustainability;
- Inspire students and give them the impetus and courage to construct vigorous practices and theories, to inspire civic participation and to support participatory democracy;
- Unity students, scholars, teachers and people beyond any frontiers and any differences, and against all forms of exploitation, devaluation and the devastation of humanity and nature;
- Empower students to take life seriously and to understand it as something sacred and significant and thus necessarily to be able to take responsibility for what is happening in the world around them.

Viewed in this light, humanistic education is education for sustainability and it holds great hope as it is ultimately a humanising cultural revolution students can and should engage in. The case studies described in the next section illustrate the outcomes of this approach through four of our students.

3. Our approach to sustainability education: Humanistic sustainability education

The above review of progress made in sustainability education reveals that there is a clear agreement on the need but not the methods of delivery. All approaches have something valuable and relevant to contribute but none felt comprehensive enough for us. We believe sustainability education is a call to revolution, passive and loving but a cultural revolution non the less. As such it should ensure maximum opportunities for interaction between all people for ending the indiscriminate and accelerated destruction, exploitation and devaluation of humanity and nature. Like Grigorov (2009), we believe that the traditions furthering democracy are an essential consideration that must underpin all education for sustainability. This is important for a number of reasons, not least that there needs to be a mass groundswell towards bringing about an all-inclusive paradigm shift if the Earth and its resources are to survive for future generations.

We have taken the key elements of humanistic education and combined them

with others from the approaches described above and coined this Humanistic Sustainability Education. It is the way we work with our students and we focus on making sure we include the key factors described in Table 2.

Table 2. Humanistic sustainability education

1	Constructs a critical and creative theory and practice of society aimed at a sustainable future
2	Is filled with promise and powerful examples of obtained success
3	Provides knowledge and science filled with love, impetus and future hope
4	Always remains positive and participatory
5	Engages in ongoing forms of permanent critique of authority
6	Includes a "Project of possible Worlds" or "Another Possible World"
7	Facilitates students joining with people in the community, social movements, governments and progressive groups
8	Educates students for active and critical citizenship
9	Always focusses on transdisciplinarity
10	Strives to liberate potentials for the reconstruction of a better society
11	Highlights the interconnectedness of all things and all actions
12	Facilitates networking and bonds amongst students
13	Emphasises the relationship between people and the natural environment in terms of immediate environmental protection
14	Educates about feelings – feelings and caring and living as part of a whole
15	Educates for understanding, empathy and compassion – solidarity as a condition of our survival
16	Educates for voluntary simplicity and quietness

Humanistic Sustainability Education is learning about a way of being as much as it is about learning about a way of doing. It is education for survival and progress in a dangerous time, for saving the Earth and all who live here, for participatory democracy and ensuring universities are institutions for reason and sustainable science. Such education aims to ensure the sustainability revolution and the new culture of human responsibility and stewardship of the planet. We work together with our students to redirect society to ecological care, to do away with the powers devastating the Earth and to transform the world so that life is preserved in all its vibrant dimensions. Gregorov describes it as a place that we can now see coming over the horizon, "the horizon-line of human self-realisation through education, an education and science full of love, sanity, and future hope, attuned to our human situation and all of life." (2009: 109). We tend to agree. The passionate tango dance between the teacher and the student leads to a dance which includes the planet that both student and teacher need to embrace as it embraces us.

Humanistic Sustainability Education should enable students to participate in the revolution for survival and sanity, to participate in the world not as corporate clones, in safe jobs that continue to serve the interests of very few, but as courageous visionaries and leaders able to go forth and make the changes the world needs to survive.

And it's working! In the midst of so many doom and gloom stories, our students are leaving us and putting into practice true sustainability initiatives that are genuinely starting to change the world – and thus are shifting us all towards an alternative future, a future of hope and possibility where the world is safe, society is just, and in which nature and future generations and their wellbeing will be safeguarded.

Students from our Master in Sustainability Studies course in 2008 and 2009 have taken what we learnt together and have used this to start working toward changing the world. Our course participants, although Master's students, are at "entry level" in terms of sustainability, usually with no previous foundation in the field, but with their hearts in the right place. They come from all walks of life and with a wide range of life-experiences. They are taking their visions and courage and combining it with the knowledge we share with them are using this to build a better world, some on a more macro or global level and others on a more micro or local level.

Case study 1:A global leader

Sonia (not her real name) has been vegetarian all her life; in fact nobody in her family knows the taste of meat. She always thought that it is cruel to inflict pain in animals and that killing them is inhumane when there are other alternatives. While doing her Master in Sustainability Studies, she also realised that vegetarian meals have a much lower carbon footprint, cause significantly less pollution, require less water, no grain feed. Sonia also felt appalled while familiarising herself with the inhumane methods of farming and the widely spread violence against farm animals. She could not reconcile how the developed world could inflict such humongous problems and at the same time fight obesity and health problems directly related to overconsumption of a predominantly meat-based diet.

A step in the right sustainability direction was to encourage people to eat less meat. Sonia had the vision of creating a new type of restaurants where people can have inexpensive nutritious and most importantly tasty vegetarian meals. This became her Sustainability Studies Project which she completed brilliantly.

Sonia's global chain of vegetarian restaurants is about to be launched making her a global leader in a transition to a healthier and more sustainable way of living.

Case study 2:A local leader

A charismatic young environmental engineer, Stephan (not his real name) knew a lot about the ecological health of the physical environment. He was often invited to share his passion for nature with school children and other young people which he truly enjoyed. It was however difficult for him to understand why people were not doing the right thing. Was it because of the lack of regulations, was it because of the economic burden or was it because they did not care?

Stephan started working with a local authorities organisation and realised that he was now in a position to contribute towards a change. This is also when he started his Master in Sustainability Studies. While working with us, he was able to convince his organisation that they not only needed a sustainability officer but there was also a necessity for constant communication between like-minded people within the organisation. He established a range of strategies to facilitate training and decision-making with respect to sustainability, including a regular newsletter. Establishing himself as a local leader was a slow but a very rewarding process that he could go through encouraged and supported by his teachers.

Case study 3: An industry leader

The real estate industry has been giving Diane (not her real name) not just reliable income but also the satisfaction of making people happy when they sell or buy a home. Despite this, there has always been something missing. What makes a house a good home? How is our choice of shelter affecting the environment? What are the best technologies that save energy in the house and how can we use them? How can water be saved in the homes on the Earth's driest continent?

Despite the fact that Diane did not have any previous undergraduate degree, she had enough work-based knowledge and experience to be admitted into the graduate certificate and later continue at Master level. She was now working in a team of like-minded people who were trying to find answers to similar questions. Her passion for a more sustainable housing translated into the establishment of an on-line group site where the issues that were of interest to her could be aired out to the broader community and often find answers.

Diane became n leader within the real estate industry and an expert in energy auditing. Soon she was also a role model and started to signify the desired changes that prospective buyers would want in a new house. She was no longer just selling houses,

she was educating the sellers and the buyers as to what type of living was best for them as well as for the planet.

Case study 4: A community leader

A retired lawyer who has been working with the corporate justice system all her life, felt dissatisfied and personally unrewarded for the long hours of service and considerable efforts that she has put into her job throughout the years. She wanted a change towards a more meaningful way of using her skills and abilities, something that will leave a long-lasting legacy and will improve the people's lives. Being a corporate lawyer wasn't anything special as you serve the system and the particular interests of the organisation you represent which sometimes even go against your personal values system. You are just the person doing the job while you are there but as soon as you leave, you get easily replaced by another employee whose skills and experience are in many ways similar to yours. What the corporate memory retains are the smooth transactions or vice versa that you have been able to provide. It does not remember you as a person with a vision, as a fighter for a better world or as an empathic and sincere woman who can make you laugh as well as give you hope and encouragement.

Fiona (not her real name) wanted a better way to apply herself as a professional, competent and assertive woman. She also wanted to do something for the people she cared about. Who were they? Where the bloody hell could she leave her mark and contribute towards sustained improvement and positive change in life?

Working with us, Fiona was able to look deep into her heart and find the love and care she still had for South Africa where she was originally from. She decided to become a volunteer in Khayelitsha (a sprawling shanty town with a population of around 2 million), working with orphans, building houses in the Indlovu eco-village, raising funds and developing household agreements for their occupants. Fiona proved herself as a community leader for the new NGO (non-governmental organisation) whose main agenda was to provide a better life for the children of Indlovu.

After spending half a year in South Africa, Fiona is now back in Australia but her legacy remains with the work of the NGO. The Indlovu time was the basis for her Master's in Sustainability Studies project and not only did it receive the highest grade, it also changed the lives of those affected by HIV/AIDS and poverty.

These are only four examples from a long list. In fact, every student of ours has a story of personal growth and achievements to tell. We as teachers are constantly learning and improving with the work our students are doing, but most importantly we are proud to be part of a positive change.

4. Lessons learned from humanistic sustainability education

Some of our thoughts on the application of our Humanistic Sustainability Education are presented in Table 3. They are summarised as the lessons we have learned. The biggest lesson however is that of a constant hope and that to "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has" (Mead, 1928).

Table 3. Lessons learned from humanistic sustainability education

1	Flexibility and sophistication are equally required in teaching, learning and application
2	The teachers and learners are both all the time and need to work jointly during the education process
3	There is a need for sustainability "psychology" or the ability to confirm and reaffirm the value of each and every contribution
4	Acknowledgement and recognition of the fear factor are important
5	The envisaging of future possible worlds is crucial
6	Whilst understanding of the problem is important, a solution orientation is required
	A revolutionary or activist underpinning is essential. Students are not being groomed to take their part in society but rather to find their own way and creatively to change society and the current dominant paradigms
8	The heart and the sol feelings must be taught and intimately considered throughout the learning and teaching process
9	The individual contribution is crucial but every individual must understand that it is the collective that counts because EVERYONE needs to live and think and be more sustainable
10	We must educate for breakthrough, for non-conformity, for yelling and for dreaming of other possible worlds
11	To make students feel empowered to challenge the system, it is important to know what each of us can do to save the planet and to understand how the responsibility and efforts of each person must be attached to the global struggle for sustainability. Changing "the system" is what matters and for this reason we must continue to make small changes, whi, if followed by millions of people, may promote the necessary big changes

Conclusion

According to Sarabhai (2009: 124–125), "(w)hen we need to make fundamental changes in the way we relate to our only planet, when the human race needs to come back from our all powerful and human-centric illusion the industrial age gave us, and when we need to reconnect with nature and in humility learn how perfectly balanced and dynamically sustainable the natural world is, education and not just technology has to be the main driver of change". This truth is often forgotten in the political and technological races for fixing the world. However, the education we need is the one that allows both students and teachers to ask themselves: "What the bloody hell am I doing?!" and be able to not only reflect on their actions but also come with examples of the change for this new world.

The case studies described in this article are these positive signs of change. They are the examples as to how one little person can follow their dream and create a better world

in an exquisite fervent and fiery dance with the teacher. It is time for a new sustainable world of common sense, liberation and democracy in which everyone, in one form or another can partake and benefit, in which nature is treasured and the wellbeing of future generations is safeguarded. Sustainability education we believe, must be directed to this end. In order to achieve this, whether one is a teacher or a learner – or a practitioner in any other field in the world, sustainability and any related sustainability education must inevitably start with the question: What on Earth are we doing?

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Appendices

Appendix 1: Signed Statements from Co-authors (PGS??)

Appendix 2: Recipients of ExxonMobil funding and influence(PGS??)

Appendix 1: Signed Statements from Co-authors

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 60% to the paper/publication entitled:

Raphaely, T., Marinova, D., Crisp, G., Panayotov, J. (2012) "Flexitarianism: A User-based Dietary Choice for Improving Personal, Population and Planetary Wellbeing", *International Journal of User-Driven Healthcare* (forthcoming, acceptance date 22 October 2012)

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova Signature: *Date: 29 October 2012*

George Crisp Signature: *Date: 29 October 2012*

Jordan Panayotov Signature *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 80% to the paper/publication entitled:

Raphaely, T., Marinova, D. (2012) "Flexitarianism: A More Moral Dietary Option", *International Journal of Sustainable Society* (forthcoming, (forthcoming, proofs received 31 August 2012).

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 80% to the paper/publication entitled:

Raphaely, T., Marinova, D. (2011) Preventing further climate change: A call to individual action through a decrease in meat consumption, *MODSIM 2011 International Congress on Modelling and Simulation*, Modelling and Simulation Society of Australia and New Zealand, Perth, Australia, pp. 3066–3072

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 90% to the paper/publication entitled:

Raphaely, T., Marinova, D. (2010) "The New Human Agenda: An Alternative to Traditional Development", *Transformations*, Vol. 66-67, Issue 3-4, pp. 375-391

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 90% to the paper/publication entitled:

Raphaely, T., Marinova, D. (2009) The New Human Agenda: Partnerships for Human Bioregional Development, in Ho, G., Mathew, K., Anda, M. (eds) *Sustainability of Indigenous Communities in Australia*, Murdoch University, Perth, Western Australia, pp. 163–172

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 90% to the paper/publication entitled:

Raphaely, T., Marinova, D. (2006) The New Human Agenda: An Empowering Approach to Poverty Alleviation, *Global Poverty: Sustainable Solutions*, Perth, Western Australia, http://www.sustainability.murdoch.edu.au/ (date of access 27 February 2007)

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 90% to the paper/publication entitled:

Raphaely, T. Marinova, D. (2013) "Sustainability Humanistic Education within an Asian Context", in Marinova, D., Guo, X. (eds) *Sustainability Issues in Asia*, Edward Elgar, Cheltenham, UK (forthcoming)

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 80% to the paper/publication entitled:

Raphaely, T., Marinova, D. (2012) "Humanistic Sustainability Education for a Better World", *Rajshahi University Journal of Environmental Science*, Vol. 2 (forthcoming, acceptance date 15 March 2012)

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova *Signature:* *Date: 29 October 2012*

TO WHOM IT MAY CONCERN

I, Talia Raphaely, contributed 70% to the paper/publication entitled:

Raphaely, T., Marinova, D., Todorov, V. (2010) "Sustainability Education: What on Earth Are we Doing?", *Management and Sustainable Development*, Vol. 26, Issue 2, pp. 49–60

Signature of Candidate: *Date: 29 October 2012*

I, as a Co-Author, endorse that this level of contribution by the candidate indicated above is appropriate.

Dora Marinova Signature: *Date: 29 October 2012*

Vladislav Todorov Signature: *Date: 29 October 2012*

Appendix 2: Recipients of ExxonMobil funding and influence

Additional local, national and international recipients of ExxonMobile's capital and influence:

Atlantic Legal Foundation, Atlas Economic Research Foundation, Blue Ribbon Coalition, Capital Legal Foundation, Capital Research Center and Greenwatch, Public Interest Watch, Cato Institute, American Spectator Foundation, Center for Strategic and International Studies Center for the Defense of Free Enterprise, Center for the Study of Carbon Dioxide and Global Change, Committee for a Constructive Tomorrow, Chemical Education Foundation, Citizens for A Sound Economy and CSE Educational Foundation, Citizens for the Environment and CFE Action Fund, Clean Water Industry Coalition, Consumer Alert, Council for Solid Waste Solutions, Federalist Society for Law and Public Policy Studies, FREE - Foundation for Research on Economics and the Environment, Frontiers of Freedom Institute and Foundation, George C. Marshall Institute, George Mason University, Law and Economics Center, Global Climate Coalition, Great Plains Legal Foundation, Harvard Center for Risk Analysis, Heartland Institute, Koch Industries, Heritage Foundation, Hoover Institution on War, Revolution and Peace, Stanford University, Hudson Institute, Independent Institute, Institute for the Study of Earth and Man, International Republican Institute, Manhattan Institute for Policy Research, Media Institute, Mountain States Legal Foundation, National Center for Policy Analysis, National Environmental Policy Institute, National Legal Center for the Public Interest, National Wetlands Coalition, National Center for Public Policy Research, Pacific Legal Foundation, Pacific Research Institute for Public Policy, Property and Environment Research Center, Reason Foundation, Reason Public Policy Institute, Science and Environmental Policy Project, Southeastern Legal Foundation, Center for American and International Law, Texas Public Policy Foundation, Washington Legal Foundation, American Coal Foundation, Government, and Public Policy, Center for the New West, National Wilderness Institute, American Enterprise Institute-Brookings Joint Center for Regulatory Studies, Center for Policy Research, Landmark Legal Foundation, Stanford University, Environmental Conservation Organization, National Policy Forum, Statistical Assessment Service (STATS), World Climate Report, Independent Commission on Environmental Education, American Policy Center, Greening Earth Society, Americans for Tax Reform, Association of Concerned Taxpayers, Center for Security Policy, Cooler Heads Coalition, Defenders of Property Rights, Junkscience.com, Seniors Coalition, 60/Sixty Plus Association, Small Business Survival Committee, Institute for Biospheric Research, Center for Environmental Education Research, National Council for Environmental Balance, Institute for Regulatory Science, International Policy Network, Alliance for Climate Strategies, George Mason University, Media Research Center, Congress of Racial Equality, Tech Central Science Foundation, National Black Chamber of Commerce, Free Enterprise Action Institute, Institute for Energy Research, International Council for Capital Formation, Africa Fighting Malaria, United for Jobs, Illinois Policy Institute, Earthwatch Institute, Institute of Humane Studies, George Mason University, The Locke Institute, Virginia Institute for Public Policy, American Friends of the Institute for Economic Affairs, Communications Institute, Free Enterprise Education Institute, Lindenwood University, National Association of Neighborhoods, University of Oklahoma Foundation, Institute for Senior Studies, Western Fuels, National Mining Association, Peabody Energy, European Enterprise Institute, Climate Research Journal, Cornwall Alliance for the Stewardship of Creation, World Affairs Councils of America, New Zealand Climate Science Coalition, International Climate Science Coalition, Centre for the New Europe, Science and Public Policy Institute, Institute for Public Affairs, Oregon Institute of Science and Medicine, Affordable Power Alliance, Smithsonian Astrophysical Observatory, Doctors for Disaster Preparedness, Business Civic Leadership Center, Committee For Economic Development, The Tax Foundation, Wyoming Heritage Foundation, Institute For Liberty, Consumers Alliance for Global Prosperity, Initiative for Public Policy Analysis, Australian Climate Science Coalition, American Energy Freedom Center, Global Warming Policy Foundation, U.S. Department of Energy, Americans for Prosperity, American Coalition for Clean Coal Electricity, American Coalition for Clean Coal Electricity, American Electric Power, U.S. Chamber of Commerce, Philanthropy Roundtable, Donors Trust, Charles Koch Institute (which trains professionals on the importance of economic freedom and how it increases

wellbeing for the overwhelming majority of people (Charles Koch Institute 2012) , State Policy Network, Charles G Koch Charitable Foundation, and, the Knowledge and Progress Fund.