

**Pokrant, B and P Reeves (2003): ' Work and labour in the Bangladesh brackish-water shrimp export sector '. *South Asia: Journal of South Asian Studies*, New Series, Vol. XXVI, No. 3 (December). Special Issue: pp.359-389.**

### **Abstract**

This paper<sup>1</sup> argues that discussions about the applicability of labour and environmental policies, standards and codes of conduct in Bangladesh must be based upon an understanding of the diverse local environmental, economic and social conditions under which people work and sustain their livelihoods. In the case of the shrimp export sector, such understanding is limited as no comprehensive study of the sector as whole and the role of labour and environmental issues within it has been carried out. The paper goes some way to filling this gap in our knowledge by drawing on the authors' continuing research on the shrimp export industry in Southeast Bangladesh and other sources to describe the different forms of work and labour in the industry's various sub-sectors, paying particular attention to processing plants, shrimp farms, wild fry collection and hatcheries. It shows the great diversity in work and environmental conditions in the sector, illustrates the relationship between work, labour and environment in the fry collecting sub-sector and makes recommendations for further research.

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<sup>1</sup> The paper arises out of an on-going three year Australia Research Council-funded project (project no: A00105797) entitled: Globalising production and local impacts: business strategies, labour organisation and local environments in the Bangladesh brackish-water shrimp export sector. The authors wish to thank the ARC, the Bangladesh Institute of Development Studies (BIDS) and Bangladesh Centre for Advanced Studies (BCAS) for their financial and logistical support. An earlier version of this paper was presented at a workshop entitled: *Globalisation, trade liberalisation and economic growth in Asia: should labour and environmental standards be part of the equation? The case of Bangladesh*, University of New England, Armidale, NSW, Australia, October 3-5, 2002

## Introduction

In recent years there has been growing scholarly and public policy interest in the development of Bangladeshi export-oriented industries such as garments, seafood and leather. Most attention has been paid to the garment sector with less interest shown in seafood and leather. This paper will review and assess what we know about work and labour in the Bangladesh brackish water shrimp export industry<sup>2</sup>, drawing on the authors' own on-going research in Cox's Bazar District in Southeast Bangladesh and on published and unpublished secondary sources.

The paper is divided into the following sections. Part one provides a brief introduction to the Bangladesh shrimp export sector, paying particular attention to the various sub-sectors that make it up. Part two turns to the organisation of work and labour in selected sub-sectors, namely, shrimp farms, shrimp fry collection, shrimp depots, hatcheries and shrimp processing plants<sup>3</sup>. Part three looks at the fry collecting sub-sector of the industry to illustrate the complex and often contradictory relationship between labour and environmental issues and outlines a research program and a set of key research issues on work and labour in the sector.

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<sup>2</sup> Hereafter referred to as the shrimp export sector. Brackish water shrimp farming is concentrated in the intertidal coastal zones. The main species caught is locally known as *bagda chingri* (*Penaeus monodon* or Black Tiger Shrimp) which accounts for sixty five percent of total culture production. The remaining thirty five percent is made up of *golda chingri* (*Macrobrachium rosenbergii* or Giant Fresh water Prawn), accounting for twenty percent, and other *bagda* shrimp species, accounting for fifteen percent. See Fourth Fisheries Project, Shrimp and Coastal Aquaculture Component, Department of Fisheries, *The Dynamics and Diversity of the Shrimp Farming in Bangladesh Shrimp Sector*. Technical Review, Draft Final Report. (Dhaka, July 2001).

<sup>3</sup> Not dealt with here are the many ancillary industries that supply the sector with shrimp cartons and packages, metal ware, plastic containers, buildings, transport vehicles and feed.

## Part One

### Bangladesh shrimp export sector

Bangladesh's coastal brackish water shrimp export sector has grown over the past thirty years in response to expanded rich country demand for high quality and hygienically produced shrimp, declining open-water seafood sources and Bangladesh government and private capital support for the development of an aquaculture seafood sector.

In 1999-2000, the Bangladesh seafood sector earned US\$ 356 million (US\$ 322.5 million from frozen shrimp alone), the highest on record, and accounted for 6.28 percent of total export earnings.<sup>4</sup> Seafood, mainly shrimp, is the second largest export earner after garments. While important to the domestic economy, Bangladesh shrimp exports account for less than three percent of total world processed seafood production and exports (in volume and value).

The Bangladesh shrimp sector lies at the extraction, production and processing end of an extended global value chain<sup>5</sup> dominated by restaurants, supermarkets, seafood companies and buying agencies located in Europe, North America and Japan. It is highly vulnerable to product competition from other exporter nations such as Thailand, India and Vietnam, to growing demands from overseas buyers for assured quality, prompt delivery and competitive prices, to domestic and international NGOs pursuing human rights, fair trade and environmental

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<sup>4</sup> Figures provided by the Bangladesh Frozen Food Exporters Association, Dhaka, October 2000.

<sup>5</sup> A value chain refers to:

...the full range of activities which are required to bring a product or service from conception, through the different phases of production...delivery to final consumers, and final disposal after use.

See Raphael Kaplinsky and Mike Morris, *A handbook for value chain research*. (Sussex, Institute for Development Studies, 2000), p4.

conservation agendas and to global, regional and state-based governance agencies seeking to regulate production and exchange processes along the value chain.

In response to buyer and consumer demands for higher valued products, the leading processing plants are shifting away from high volume/low value block frozen shrimp and upgrading their technologies, staff skill levels and processing procedures to allow more specialised production of value-added products, which is having a knock-on effect in the sector as a whole.

At present there is limited vertical integration in the sector but this has increased since the mid-1990s. Processors, who are the main interface between domestic shrimp suppliers and external markets, have been reluctant to incorporate shrimp cultivation into their operations, preferring to leave what they consider to be the environmentally, politically and economically risky business of shrimp cultivation to tens of thousands of shrimp farmers. Instead, they purchase shrimp directly and through advance payment arrangements (*dadon*) from independent shrimp farmers using company agents, independent suppliers, shrimp depot owners or parties and commission agents (*arotdars*). Shrimp farmers, in turn, obtain shrimp fry and other inputs from wild fry collectors, hatcheries, feed mills and feed supply traders. Since the mid-1990s,<sup>6</sup> international buyers located mainly in Europe and the USA and global and regional governance agencies such as the WTO and the European

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<sup>6</sup> In 1997 the European Union imposed a ban on the export of cultured shrimp from Bangladesh and other developing country producers to European markets because of quality concerns. This set in motion a major technical and organisational overhaul of the processing sector. Plants were required to upgrade according to HACCP and other standards. HACCP, or Hazard Analysis Critical Control Point, refers to:

....a preventative system of hazard control rather than one of reaction or point inspection to decrease a hazard. Food processors can use HACCP to identify hazards, establish controls and monitor the controls in the case of harmful microorganisms or chemical and/or physical contaminants in food. HACCP is based on seven principles: (1) conduct hazard analysis and identify preventative measures; (2) identify critical control points (CCP); (3) establish critical

Union have required processors to improve their production processes and to take over some downstream activities such as shrimp washing and deheading previously carried out by rural shrimp depots which provided employment to children and women<sup>7</sup>.

New quality, social and environmental regulations and programmes are slowly being extended to suppliers, shrimp farmers, hatcheries and wild fry collectors.

There are two recent examples of these developments. First is the proposal by the Bangladesh government in its recently formulated Shrimp Action Plan and in conjunction with an international quality control agency to introduce a Seal of Quality which is to guarantee that shrimp are free from antibiotics, chemicals and growth hormones and produced in work environments that respect the human rights of workers<sup>8</sup>. Second, in May 2003 a Bangladesh Shrimp Foundation was established to work with the shrimp industry to improve its economic, social and environmental performance<sup>9</sup>. What the concern for human rights and improved labour standards will mean in practice remains to be seen because, in contrast with

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limits; (4) monitor each CCP; (5) establish corrective action to be undertaken when a critical limit deviation occurs; (6) establish a record keeping system; (7) establish verification procedures. See James Cato and Carlos Lima dos Santos, 'Costs to Upgrade the Bangladesh Frozen Shrimp Processing Sector to Adequate Technical and Sanitary Standards and to Maintain a HACCP Program'. Paper delivered at the conference on The Economics of HACCP: New Studies of Costs and Benefits, June 15-16, 1998, Washington DC, p8.

<sup>7</sup> For example, in 1997 the European Union imposed a ban on export of shrimp from Bangladesh and other developing country producers to European markets because of quality concerns. This set in motion a major technical and organisational overhaul of the processing sector.

<sup>8</sup> Policy and research documents of the Bangladesh Shrimp Action Plan can be found at the website of the Network of Aquaculture Centres in Asia-Pacific [<http://www.enaca.org/index.htm>, accessed 1 May 2003].

<sup>9</sup> The foundations mission statement is as follows:

The Shrimp Foundation is an independent, non-profit making body directed by the major stakeholders involved or affected by the Bangladesh shrimp industry. The Shrimp Foundation addresses the key threats facing the sustainable and equitable development of shrimp industry through research and development, environmental and social advancement projects in shrimp producing areas, education and dialogue.

Personal communication from the ATDP-II Shrimp Seal of Quality program, May 24 2003.

the garments sector, government and international agencies have shown more interest in changing the quality and environment regulatory environment of shrimp production than they have in regulating conditions of work. However, as will be discussed later, quality and environmental concerns are bringing to public attention working conditions in the sector.

## **Part Two**

### **Work and labour in the Bangladesh shrimp sector<sup>10</sup>**

There is a growing body of literature on the Bangladesh shrimp sector<sup>11</sup> but few studies focus on labour as a topic in its own right. The most studied categories are wild shrimp fry collectors, who make up the bulk of the shrimp labour force, and, to a lesser extent, shrimp farm workers<sup>12</sup>. Useful descriptive studies have been done on child fry collectors,<sup>13</sup> shrimp marketing at the local level,<sup>14</sup> changing

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<sup>10</sup> We define work as any activity that creates, adds to, transforms or destroys value of any physical object, process or service. Labour organisation is the set of socially organised activities within which the activity of work gets done. All humans have labour power or the capacity to work. The ways in which that capacity is realised defines different forms of labour organisation which, in turn, help define the character of different economic systems (extraction, production, exchange and consumption). For a detailed discussion, see Chris and Charles Tilly, *Work under capitalism*, (Boulder, Col: Westview Press, 1998).

<sup>11</sup> For a review of the literature on the Bangladesh shrimp sector, see Bangladesh Centre for Advanced Studies, *The coastal shrimp sector in Bangladesh: review of the literature with annotated bibliography*. Prepared by Bob Pokrant for the Bangladesh Centre for Advanced Studies and the UK Department for International Development as part of the World Bank-funded Fourth Fisheries Project. (Dhaka: BCAS, 2001).

<sup>12</sup> These studies are funded by the Government of Bangladesh (GoB), international donor agencies and NGOs and are not generally available in the public domain.

<sup>13</sup> Abul Hasnat Golam Quddus, Mohammed Bin Kashem, Shariful Alam, Khandaker Mainuddin and Dwijen Mallick, *Fry Collectors' Livelihood Study*, (Dhaka: BCAS, Feasibility Study for the Shrimp Component of the Fourth Fisheries Project (FFP), The Department of Fisheries, Government of the People's Republic of Bangladesh & The Department for International Development (DFID), UK, Aug 2001); E Delap and R Lugg, *Not small fry: children's work in Bangladesh's shrimp industry*. (Dhaka: Save the Children UK and Uttara, 2000); UBINIG, *The state of shrimp fry collectors: Social, economic and organizational possibilities*, (Dhaka: UBINIG, 1987).

<sup>14</sup> Joao Guimaraes, 'Shrimp culture and market incorporation: A study of shrimp culture in paddy fields in Southwest Bangladesh'. *Development and Change*, 20, 1989: 653-682.

labour requirements in shrimp and rice farming<sup>15</sup> and the impact of shrimp farming on the landless and women<sup>16</sup>. There are a few, mainly unpublished, studies of processing plant workers and none of hatchery workers, principal shrimp suppliers, shrimp fry traders and transport workers.

Most research is on the southwest region of Bangladesh where eighty percent of shrimp farms are located. Our own work focuses on the understudied southeast region, which has twenty five percent of shrimp farms, twenty percent of shrimp fry collectors, about twenty five percent of processing plants and practically all hatcheries. The next section outlines the main features of work and labour in the sector, drawing largely on our own work in the southeast region.

### **Size, diversity and spatial distribution of the shrimp labour force**

The direct labour force employed in the brackish water shrimp sector<sup>17</sup> is over five hundred thousand<sup>18</sup> of which more than ninety percent are fry collectors and shrimp farm workers. The remainder is made up of processing plant and hatchery workers, labour contractors to these plants and hatcheries, shrimp and shrimp fry

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<sup>15</sup> Anjan Kumar Datta, *Land and labour relations in Southwest Bangladesh* (The Hague, Netherlands: Institute for Social Studies, 1998).

<sup>16</sup> Sanea Ito, 'From Rice to Prawn: Economic Transformation and Agrarian Structure in Rural Bangladesh', *Journal of Peasant Studies*, Vol. 29, No. 2, (January 2002), pp.47-70; Md Maniruzzaman, *Intrusion of commercial shrimp farming in three rice-growing villages of Southern Bangladesh: its effects on poverty, environment and selected aspects of culture*, (Unpublished PhD thesis, University of the Philippines, Diliman, Quezon City, 1998).

<sup>17</sup> Included here are managerial employees as well as skilled and unskilled workers working directly or indirectly under managerial control.

<sup>18</sup> Estimates vary from a low of 308,000 to over 500,000. Both estimates come from the same Fourth Fisheries Project source. See BCAS, *The Costs And Benefits Of Bagda Shrimp Farming In Bangladesh An Economic, Financial And Livelihoods Assessment*, Dhaka: BCAS for Fourth Fisheries Project, August 2001; Department of Fisheries and Fourth Fisheries Project, *Management options for the shrimp fry fishery: A regional stakeholder workshop in Cox's Bazar*, Aug., 2002. The figure is higher if freshwater shrimp and fish farmers are included. For example, one recent estimate puts the total work force in brackish-water and freshwater shrimp farming at over 600,000. *ibid.* See also M Karim: 'Strategies for increased production of shrimp on a sustainable basis'. Paper presented at the workshop held at the BFFEA Frozen Food Fair, Sonargaon Hotel, July, 1999, p7.

traders and commission agents, transport workers, small numbers of trawler workers supplying hatcheries with brood stock and feed mill workers.

As in the garments sector, shrimp workers are supplied through segmented labour markets<sup>19</sup> differentiated by region, locality, gender, class, age, training and education. However, unlike garments, the shrimp sector has a larger number of sub-sectors with their own specific demand structures for workers who work within a variety of spatial, organisational, environmental and production settings. Thus, processing plant and hatchery workers work and sometimes live within enclosed factory environments in urban areas, fry collectors operate as family and individual units and are scattered across the rural areas of forty sub-districts under twelve coastal districts with major concentrations in Khulna, Barisal and Cox's Bazar, shrimp farm workers live in villages often close to the over thirty thousand shrimp farms of Satkhira, Khulna, Bagerhat and Cox's Bazar Districts and trawler workers fish off-shore in the Bay of Bengal for fish and for shrimp brood stock to supply to hatcheries. Labour movement between sub-sectors occurs most commonly between fry collecting, fry trading and shrimp farm labouring. Shrimp and shrimp fry traders and transport workers connect these nodes of fry collection, shrimp cultivation and processing through extensive lateral and vertical rural and urban trading networks.

City-based processing plants, hatcheries and larger shrimp farms employ a small core of permanent middle and senior managers and technicians, supervisory and non-supervisory workers and a small maintenance work force. The majority of the

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<sup>19</sup> Labour markets are those sets of institutions by which formally free workers offer their labour power or capacity to work to employers who are also formally free to hire, place and fire workers. Segmented labour markets are markets governed by local customs and practices, which restrict



labour force consists of daily, monthly and seasonal workers employed on unwritten contracts and who depend upon off-season and other types of work to maintain their livelihoods. Fry collectors operate nominally as self-employed family and individual working groups who sell fry rather than their labour to shrimp farmers and to shrimp fry traders.

For most shrimp workers, work is seasonal, irregular and insufficient to support a family. In addition, many shrimp workers and their families, particularly in rural areas, are subject to other risks and uncertainties<sup>20</sup> such as natural disasters which can destroy their asset base, the collapse of shrimp stocks from disease and changes in household life cycle situations caused by illness, a high ratio of dependents and male desertion.

Official regulation of wages and working conditions on shrimp farms and in fry collecting areas is virtually absent. In processing plants and hatcheries, inspections of labour and working conditions is at best irregular, at worst non-existent and usually restricted to permanent staff. Contract workers are unregulated in law and subordinate to contractors hired by the plants.

We shall now look in more detail at the spatial, organisational, environmental and production settings within which the shrimp sector labour force is found.

### **Processing plant workers**

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access to work through various non-market mechanisms. See Chris Tilly and Charles Tilly, *Work under capitalism* (Boulder, Col: Westview Press, 1998) p.24.

<sup>20</sup> Risk and uncertainty define what Islam refers to as livelihood vulnerability, that is, when households ‘...are unable to cope with and respond to risks, stresses and shocks’. See S Aminul Islam, ‘The causes of vulnerability in rural livelihoods’. In Kazi Ali Toufique and Cate Turton (eds): *Hands not Land: How livelihoods are changing in rural Bangladesh*. (Dhaka: Bangladesh Institute of Development Studies and the Department for International Development, 2002), p. 131.

Compared with the Bangladesh garment sector, scholarly, public policy and NGO<sup>21</sup> interest in shrimp processing plant workers has been minimal<sup>22</sup>. Several thousand male and female permanent and contract workers are employed in over one hundred and twenty Bangladeshi-owned, medium- to small-size capitalist-run plants in Khulna, Chittagong and Cox's Bazar. Financed from domestic bank loans and other domestic sources of capital,<sup>23</sup> fewer than sixty of these plants are functional, less than twenty are operating successfully and all are working far below their capacity<sup>24</sup>. Plants vary in size and degree of organisational complexity. Smaller plants consist of a core of owners and a small managerial staff responsible for marketing, accounts, plant management and quality control. In larger plants the owners and chief executive officers do not work at the plant but in their own company headquarters in Khulna, Dhaka and Chittagong. Day-to-day running is in the hands of senior and middle management. The larger plants are the most technologically sophisticated and most technology is imported, requiring maintenance staff, who may be employed locally or from overseas<sup>25</sup>.

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<sup>21</sup> Recently the Bangladesh Garment Workers Protection Alliance (BGWPA) was formed and consists of twenty-four organizations (NGOs, trade unions and garment workers organizations) to help workers protect their rights during the current crisis in the ready made garments sector. No such organisation or alliance exists to protect workers in the shrimp sector. Personal communication with Nari Uddug Kendra (NUK), a lead organisation for the new alliance, January 2003.

<sup>22</sup> See BCAS, *The Costs And Benefits Of Bagda Shrimp Farming In Bangladesh: An economic, financial and livelihoods assessment*. (Dhaka: Fourth Fisheries Project, 2001); Kazi Ali Toufique, 'Sandwiched between "us" and "them": dilemmas and contradictions in the shrimp-processing export sector of Bangladesh in the globalisation process', *South Asia*, Vol. XXIV, No.1, (June 2001), pp.185-199

<sup>23</sup> The entry in 2000 of the British Bangladeshi-owned Seamark company into the processing sector may represent the beginnings of a new transnational corporatisation of the industry as it integrates processing, re-processing and marketing across two countries within one firm structure.

<sup>24</sup> Amin Ullah, Secretary of the BFFEA, October 2000.

<sup>25</sup> Processing plant capital equipment includes ice plants, blast, plate and spiral freezers, generators, and ultra-violet ray machines. In hatcheries, there are UP filters, air blowers, pumps, boilers and submersible gate bulbs.

These plants contain the largest physical concentrations of workers in the shrimp sector with plants varying in size from less than one hundred to over five hundred workers working in physically enclosed factory-type conditions.<sup>26</sup>

All plants rely on male and female contract labour which is recruited through labour contractors who also directly and indirectly supervise them on the job. In four Chittagong processing plants studied by the authors in 2002-3, over ten contractors, often working through sub-contractors and male and female employees in the plants, recruited workers from Chittagong City and from villages and other locations in the region. Of two hundred and forty male and female workers interviewed in these plants, forty percent were recruited directly through these contractors, twenty eight percent through relatives and fifteen percent through friends or work mates. In many cases, friends, work mates and relatives acted on behalf of contractors.

Over eighty five percent of workers interviewed come from outside Chittagong City, mainly from Chittagong Division, particularly the rural parts of Cox's Bazar District, including centres of shrimp farming such as Chakoria. Men show a more diverse regional and national spread with over half from outside Chittagong Division.

Workers live on-site in dormitories provided by the plant or labour contractors, in city accommodation provided by contractors or rent private accommodation on the open market. Dormitory living is especially important for women workers for whom personal security while going to and from work, especially at night, is a

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<sup>26</sup> Factories are defined in the 1965 Factories Act as premises including their precincts with ten or more workers working or having worked one day in the past twelve months in manufacturing with or without power. *Factories Act, 1965 (No. 4 of 1965)*, Government of Bangladesh.

central concern. Where contractors arrange off-plant accommodation, it is often close to the plant or if not, they may provide help with transport.

Plant recruitment partly reflects the home origins of plant owners. In two plants studied, male and female workers were recruited through contractors and directly from the plant owner's home areas in Mymensingh and in Cox's Bazar. One plant manager stated that such a recruitment strategy helped to ensure staff loyalty and reduce the potential for conflict in the plant. In addition, several contractors interviewed recruited from their own home villages and when recruiting women they sometimes paid the women's parents and promised to act as guardians for them.

For the less skilled work, the use of contractors saves employers both recruitment and supervisory costs. Where more care and attention in handling is required, as in deveining, plant quality control managers are more likely to be involved.

The bulk of the contract labour force has limited education. Just over a quarter were illiterate, thirty seven percent had up to five years primary and over one quarter had between five and ten years secondary. Women had less education than men with nearly half illiterate and without any formal secular education, just over one third up to five years primary schooling and eighteen percent between five and ten years. The average age of all workers was 24.2 with women workers at 21.5 years and male workers at just under thirty years. This varied from plant to plant. In two plants studied, the average age of women was less than twenty while in the two other plants the average age was twenty six.

Fifty three percent of all workers were unmarried, forty three percent married and only four percent separated, widowed or divorced. Just under a half of women

were unmarried compared with fifty six percent of men. The majority of the unmarried have never been married with a small number widowed, divorced or separated.

For over seventy three percent of the workers, this was their first job. For sixty two percent of women, this was their first job compared with sixty six percent for men.

Of the remainder, most have previously had one job only, usually in garments or another processing plant in Chittagong followed by petty trading and rickshaw pulling or van driving. The majority of both male and female workers have been employed for periods varying from one month to three years. There is a core of workers have been employed for more than five years in their current work some of whom work with labour contractors to supervise and recruit new workers.

Women are paid thirty to fifty percent less than men. In the four plants, the average monthly wage for women is 1,328 taka (AUS\$45)<sup>27</sup> while for men it is 2,492 taka (AUS\$86). This is partly explained by the channelling of women into the less attractive 'female' jobs such as washing, deheading, panning and shell removing. Also, wages vary within gender categories with several young women acting as helpers to more experienced women.

Managers in the four plants studied said they employ women as contract workers because they work harder than men, do not complain or argue as much and are more used to working with fish in their homes. They preferred to hire younger, unmarried female workers as they are thought to work harder than other women and need to spend less time with husbands and family. However, two managers stated they take on inexperienced young women as those with more experience try

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<sup>27</sup> Rate of exchange at the time of fieldwork was 29 taka to AUS\$1.

to get work in garments where wages and work conditions are thought to be better.

Two contractors also commented that women are often looking for better jobs outside processing and that this puts pressure on them as guardians.

Men are able to monopolise grading and more skilled jobs as grading often involves interaction with shrimp suppliers at the factory gate, which excludes women. The application of domestic patriarchal norms to the sexual division of labour in plants is partly legitimated by male workers who say women are more suited to working directly with shrimp as it is more like domestic work. However, this has not always been so as many shrimp jobs in the past were done by men which have now been taken up by women and been downgraded as male work.

Opportunities for mobility within plants are limited for both men and women. In the case of men, some have managed to become supervisors or labour contractors.

However, crossing the line from supervisor to production or quality control manager is practically impossible without formal education and training. All senior managerial and technical positions in processing plants are occupied by men who increasingly require technical or other training to occupy such positions.

The ratio of women to men goes up the further down the plant occupational ladder one goes. For example, in one of the larger processing plants in Chittagong studied, total employment consists of some fifty executive and supervisory positions all filled by men. There are eighty permanent workers below the supervisory level of which only twelve are women and over sixty are men.

The few permanent female workers and some of the long-serving contract workers have more experience, are given some extra money and facilities and are used to

supervise other female contract workers who are paid between a third and a half that of their permanent counterparts and of male contract workers.

Generally, leave entitlements and other benefits are provided to permanent workers who are employed directly by the plant but are unavailable to contract workers. As one manager put it: no work, no pay. Contract workers do not have written contracts and any entitlements such as leave, festival allowances and refreshments while working have to be negotiated with the contractors. Overtime is common during peak periods with both male and female workers working two twelve hour shifts at a time or even twenty four hours at a stretch. These do not attract penalty rates although contractors usually supply food and refreshments.

Processing work is done in cold conditions and both male and female workers are subject to colds, coughs, chest pains, aches and other ailments associated with working in low temperatures. Some contractors help workers with medicine or a visit to a doctor but such practices vary from plant to plant. Visits by doctors to plants are irregular or non-existent. Some plants provide both men and women with communal dormitory accommodation with a regular water supply, sanitation, and electricity. Conditions vary in these dormitories and overcrowding is common with workers sleeping in rotation according to the shift system. Conditions in male dormitories are worse than those for women.

In other plants accommodation is found privately in the surrounding communities or arranged by contractors who deduct rent from the wages paid.

Training provisions to workers vary by status. All workers are instructed in personal hygiene and other kinds of training. In one plant studied, employee training consisted of two to three days instruction for permanent males in the icing

department; ten to fifteen days training for contract females in peeling, deveining and deheading; and one to two months training for contract females in panning and cleaning. More specialised training requiring extended courses is given to permanent quality control and other staff only, all of whom are male and in middle managerial positions. Contract workers are given minimal HACCP training. Managers state such training is more useful to permanent staff than contract workers as the latter come and go.

Process workers learn about the availability of shrimp work through relatives, friends, neighbours and contractors who may visit the women's home villages in search of workers. Discussions with women workers show that they take up shrimp work for a variety of reasons. These include the opportunity to earn their own incomes, to assist their families when husbands became unemployed or when flooding and other natural catastrophes affect their home areas and the general lack of work in rural areas. Some see such work as a means of dealing with desertion and other marital problems by becoming financially independent and secure.

However, few women in our study were in this situation.

For many, shrimp work is regarded as better paid than other types of work in the rural areas or the urban informal economy, although some women aspire to jobs such as in garment production where they believe conditions of work and earnings are superior. Women spend their incomes on food and rent, on children's education and savings. Many single women regularly send money to other family members in rural areas.

Socially, women workers see shrimp work as giving them more opportunity to choose for themselves but at a social cost. For example, several unmarried women



interviewed thought that working in the public sphere might reduce their chances of finding a husband in their villages of origin. However, married women saw themselves as making an important contribution to their family incomes in Chittagong. A few thought the stigma of public work was declining and that having one's own income could be a positive asset in terms of finding a marriage partner.

For contract workers, wage rates and conditions of work are set between plant owners and labour contractors. We found no evidence of formal sector intra-plant or industry-wide union activity in the plants studied. Unions are either absent or consist of company-organised welfare committees. Plant officials in the four plants stated there had never been strikes by workers; these officials considered that unions were corrupt and not welcome in the plants. Government legislation makes it difficult to establish an official union and to take strike action once established. Bangladesh has ratified the ILO convention related to the core labour standards of freedom of association, collective bargaining, removal of child labour and forced labour and non-discrimination and the right to strike is recognised in the Constitution. However, this right is not recognised specifically in law. Before a union can be registered, thirty percent of workers in an enterprise have to be members; three quarters of union members must agree to a strike before it can go ahead; no trade union action can be taken before registration; and the government can ban any strike if it is considered a threat to national interest.<sup>28</sup> In one plant studied there were worker welfare clubs but these were confined to permanent workers. The plant has two such clubs which are saving associations but may

occasionally discuss work conditions and wages with the management. In another plant studied, a middle manager in quality control told us that any attempt by even middle managers to take grievances to senior management would most likely result in instant dismissal.

While more work remains to be done on workers' views on worker organisations and collective action, the lack of union organisation within and across plants can be explained by the following. So far there has been no interest shown by larger Bangladeshi unions in the processing sector<sup>29</sup>. Functioning plants are few, with relatively small workforces most of whom are employed seasonally. Women workers, in particular, have shown little interest in such unions as they are usually male-dominated, linked to political parties and pursue agendas with little relevance to the day-to-day working lives of women. The relatively recent origins of the shrimp industry means we are dealing with the first generation of factory workers, most of whom have no previous experience in such work. Getting a job in processing is considered an improvement over village work and women in particular, who continue to be stigmatised for working in the public sphere, are keen to hold on to them. Kabeer's comment on women garment workers is relevant here:

A belief in the right to work, let alone in rights at work, does not exist yet and is likely to evolve very gradually<sup>30</sup>

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<sup>28</sup> See International Confederation of Free Trade Unions, *Bangladesh Annual survey of violations of trade union rights* (2002). [<http://www.icftu.org/>. Accessed 10 Oct. 2002]

<sup>29</sup> The formal sector has about 5 million workers of which about 1.8 million belong to over 5,000 unions. The total Bangladesh work force is approximately 58 million. *Ibid.*

<sup>30</sup> Naila Kabeer, 'Globalisation, labour standards and women's rights: tensions and possibilities'. Paper presented at a conference on 'Global Tensions' at Cornell University, (March, 2001), p.18.

The high degree of plant failure makes continuity of employment unlikely, something that militates against the ability of workers to establish bargaining mechanisms. Most plant workers have little if any contact with senior management in the plants and in the case of contract workers all pay and work conditions are negotiated with and through labour contractors. All labour contractors are men and they negotiate with processors to supply a certain number of workers for which the contractor is paid. Contractors pay contracted labour on an hourly basis and pressure on contract workers increases during busy times with some working for twenty four hours at a stretch.

Any complaints that contract workers have are directed at contractors who to some degree shield the plant management from criticism. Thus, a source of complaint from contract workers is that contractors do not pay them their full wage but keep portions back. Contractors argue that such a practice helps to ensure that workers will stay at the plant and not look for work elsewhere, which suggests that workers do have some flexibility in job choice in an otherwise tight labour market. The failure of contractors to pay the full wage can also be a result of the failure of the plant to pay contractors on time.

The seasonal nature of the work reduces workers' long term involvement in any particular plant which affects their capacity to organise. Contract workers are separated from the better-off permanent workers who are paid directly by the company, are paid more and have better conditions of work. Finally, in a high labour surplus economy within a patriarchal society, women workers in particular fear losing their jobs.

At present the use of contract labour is not covered in existing labour laws and there is a need for action to register contractors, to ensure contract wage rates are in line with permanent wage rates for the same kind of work, and for contractors to provide adequate working and other conditions.<sup>31</sup> More generally, local NGOs such as the Bangladesh Garment Workers Protection Alliance (BGWPA) should extend their work into the shrimp processing plant sector.

### **Shrimp farming and shrimp farm workers**

Processing plants are supplied by 37,397<sup>32</sup> leased-in or owner-operated brackish water shrimp farms. The average size of farms in Bangladesh is 4.5 hectares which cover some one hundred and seventy thousand hectares and are run on capitalist and/or petty commodity production lines<sup>33</sup>. Shrimp farms are diverse in organisation, size, tenure arrangements, methods of operation and labour needs. In Chakoria sub-district (*upazila*) in Southeast Bangladesh,<sup>34</sup> which has 1262 shrimp farms with an average size of 11.2 hectares, there are four main types of shrimp farm ownership which operate under different management systems. First is government (*khas*) land of ten to eleven acres leased out to private entrepreneurs who then illegally sub-lease to others. Second is what is called locally *zamindar* land or larger landholdings belonging to and controlled by the descendents of former landlords (*zamindars*), richer peasants (*jotedars*) and other pre-1950 land

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<sup>31</sup> For further discussion of steps needed to regulate contract work, see A.R. Chowdhury Repon, Mesbah Uddin Ahmed, Syed Sultan Uddin Ahmed and Md. Anowar Hossain, *Report on Contract Labour in Bangladesh*, (Dhaka: Bangladesh Institute of Labour Studies, 2000).

<sup>32</sup> Department of Fisheries, 'Shrimp Aquaculture In Bangladesh: A Vision For The Future'. Government of the Peoples' Republic of Bangladesh, Oct. 2002. These figures are considered more reliable than earlier ones due to better methods of counting and reporting.

<sup>33</sup> See table one in appendix for Department of Fisheries survey of Bangladesh shrimp farms.

<sup>34</sup> The next section is based on field work carried out in 2001 and 2002 in Chakoria sub-district. Wage and other rates of pay refer to the 2001 season. Space does not permit a detailed discussion of shrimp farming in Southwest Bangladesh. See table two for the authors' count of shrimp farms in ten unions of the sub-district.

lords. This blends into the third category of private land, which belongs to small individual owner households who are not descendants of former *zamindars* and their dependents. Finally, a small proportion of shrimp land is *somobaye* or co-operative land. The largest cooperative land group is the Badarkhali Cooperative Society (*Badarkhali Somobaye Krishi o Upanibesh Somiti*), founded in 1929 by landless labourers and marginal farmers and still owned by their families and descendants.

The most common form of management of private<sup>35</sup> shrimp farms, covering about eighty percent of all farms in Chakoria, is a form of joint venture (*Jautho malikana*) where the farm is leased in from local farmers and managed by a group of entrepreneurs or shareholders and decisions are made jointly by the partners. Partners are involved in management with partnerships ranging from two to five persons. The remaining twenty percent of farms are managed under two systems. There are those in which a single entrepreneur or individual leases and manages the farm himself (*bekti malikana*) and co-operative management (*gono ghona*) where land is leased in and managed by a body of many entrepreneurs farming under a formal or informal cooperative arrangement. About ninety five percent of zamindari and private land is leased out to tenant operators, mainly by closed auctioning. Landowners themselves operate only about five percent of shrimp land. Shrimp farming in Chakoria rotates with salt production and some rice farming and in the more saline areas only shrimp are farmed. This contrasts with southwest Bangladesh where a rotation between rice farming and shrimp farming is most common.

Shrimp based communities show inequalities in the ownership land and non-land assets. The better-off, who own over two hectares of land,<sup>36</sup> are usually shrimp farmers, crop farmers, businessmen and service workers. These occupations generate high incomes compared with others. The main forms of work available to the large number of poor and very poor landless labourers and marginal farmers are shrimp farm labour, shrimp fry collecting, fishing, salt working, petty shrimp fry and other trading, transport, rice farm labouring and sharecropping, rickshaw pulling, snail deshelling, wood collecting and other small-scale artisanal and petty commodity activities<sup>37</sup>.

Over the last two centuries Chakoria has seen many changes in its rural landscape, but these changes have accelerated with the shift to shrimp farming since the late 1970s. Much of the expansion of shrimp farms has been into the now destroyed mangrove forests or Chakoria Sundarban which has several effects on the availability of work and access to common property resources. Several traditional occupations have declined, which has had a more severe impact on landless

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<sup>35</sup> The discussion following relates to privately owned shrimp farms. Work on public land (*khas*) shrimp farms is currently underway.

<sup>36</sup> All rural communities in Bangladesh are stratified with varying levels and types of economic, social and political capital. Our own 100 percent census of Darbesh Kata village in Chakoria stratified village households, using land ownership as a main indicator of wealth, along the following lines. Landless and marginal farmers with less than 0.2 hectares, small farmers with 0.2 to one hectares, medium farmers with one to two hectares, rich farmers with two to four hectares, and very rich farmers owning over four hectares. The last two categories of rich and very rich correspond to BCAS's moderately rich, rich and very rich categories below. The Bangladesh Centre for Advanced Studies work on Southwest Bangladesh, used land and non-land asset ownership, diversity of income sources and political capital to describe village inequality. Moderately rich were defined as villagers who own two to three hectares of land, have multiple sources of income including agriculture, shrimp farming, business, service and own cattle and other assets such as trees, TVs, radios and the like. Richer households own four to seven hectares of land, use the land wholly or in part for shrimp farming, engage in other services and business, live in good housing with various assets, have bank savings, are well educated and employ poor people on their shrimp farms. The richest households with over seven hectares of land, have large shrimp farms, engage in business and other services, usually have residences in the shrimp farm area and also in the main cities. See *Village Level Participatory Census, annex 8*, (Dhaka: BCAS, 2001).

<sup>37</sup> Chakoria field notes, February 2002.

workers and marginal farmers than the wealthier landowners and business people who have become the main shrimp farmers, money lenders and employers of labour in the area. Among the occupations that have declined are wood and honey collecting, creek and river fishing, cattle grazing and rice farm sharecropping. The decline in water buffalo and other livestock, once depended on by rich and poor, is due to a lack of fodder as grazing lands were converted to shrimp farms and as water salinity levels increased. Also, the use of power tillers instead of draft animals has resulted in a decline in the use of cattle. As fodder becomes scarce, this pressures farmers further to use tractors or power tillers. Rearing cattle is now seen as time consuming, expensive and too labour intensive.

The enclosure of common property resources that accompanied the destruction of the mangrove forests deprived many of access to fish, fodder, building materials and plant vegetation and increased their reliance on earning cash and the market economy, forced some to migrate, and pushed some in-shore fishers into deep sea fishing. However, this decline has been partly compensated for by a growth in fry collecting, shrimp and shrimp fry trading, shrimp depot handling, transport work, salt production, and shrimp farm labouring.

Workers on shrimp farms are recruited for various activities such as construction and maintenance of dykes and embankments, clearing and levelling of land, carrying and releasing of shrimp fry, guarding the farm, harvesting, transporting and marketing of shrimp and fish. All such work is seasonal or semi-permanent and most workers earn a living through a range of shrimp and non-shrimp activities. In Chakoria the bulk of the work force is male, although in Khulna some women and children are employed in dyke and embankment construction and pond

preparation.<sup>38</sup> Workers are paid daily, by the piece, monthly or through commission harvesting. Larger farms are more bureaucratically organized with a small group of permanent managers and workers and large numbers of daily, monthly and seasonal contract workers drawn from local and regional labour markets. Medium-sized and small farms do not require the same management staff and often employ family labour.

In Chakoria, our survey of 958 shrimp farms revealed that total employment on these farms was approximately 5,394 with over eighty percent employing six or less permanent workers. Monthly pay rates varied from a low of 1,000 to 1,500 taka (AUS\$34.5 to AUS\$51.5) for casual and daily-paid workers to between 7,000 and 10,000 taka (AUS \$240 to AUS\$345) for senior administrative and accounting staff. Supervisors earned around 3000 taka (AUS\$100). Guards were recruited on a monthly basis with salaries varying from 1000 to 2000 taka (AUS\$35 to \$70 per month) with or without food and shelter.

Daily paid workers were engaged mainly for routine maintenance and casual work. Wage rates varied from 60 to 70 taka per day (AUS\$2 to \$2.50) going up to 80 or 100 taka per day depending on seasonal demand and supply. For salt work, the seasonal complement to shrimp work, wages went up to 100 taka per day. For the bulk of the work force, there were no written contracts of employment.

A detailed 2001 survey of one hundred farm managers, permanent and casual workers on twelve farms of varying size and ownership type in five Unions within

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<sup>38</sup> Sadeka Halim, Dwijen Mallick, Olena Reza, Syeda Rizwana Hasan, Sugra Arasta Kabir, *Women and Children Study*, Feasibility Study for the Shrimp Component of the Fourth Fisheries Project (FFP), Bangladesh Centre for Advanced Studies, (July 2001).



Chakoria revealed the following. All workers were born in the local area, live there now with very few having lived for less than ten years in their current residence. Most of the fathers of the workers were farmers, day labourers or fishers. Apart from the few managers in the sample, over eighty percent were either illiterate or with less than five years primary education. About seventy five percent worked as farm labourers, day labourers or fishers and just over a third saw shrimp work as their main source of income. Nearly seventy five percent had worked in shrimp work for over six years, some as long as twenty one years or more. Most got their jobs simply by turning up at a farm, being called by a shrimp farmer, being told by a family member about a job, or through a *majhi*.

Nearly half of the contract workers moved around from shrimp farm to shrimp farm for work. Unlike in rice farming, workers were not hired as sharecroppers as this reduced the farmer's ability to control pilfering or underestimation of yields. Some farmers commented that on larger farms during the peak season it was common for workers to be checked before leaving work to see if they had hidden shrimp in their clothing.

In addition to their daily and monthly pay, on several farms workers were able to earn extra income through a form of share harvesting of left-over fish. After the harvest of most of the commercially valuable shrimp and fish, some fish and small shrimp usually remain in the deeper parts of the farm. Harvesting of these was done in two ways. In some cases, share fishers were engaged from outside to catch the leftover fish using their hands or cast nets or by de-watering the deeper parts of the farm. Fifty percent of such catch was given away to the fishers and the owner retained fifty percent. A variant of this was harvester trading under which the

harvesters, who may include permanent workers and guards, acted as both wage workers and petty traders. The owner of the farm kept the harvested shrimp and prawn and the harvesters were paid by the kilogramme caught. Where fin fish were also harvested, the owner sold the catch to the fishers at a price below market price. Thus, the harvester received a piece rate on shrimp and prawn caught and a supply of fin fish to market.

Shrimp farms also hired casual workers for dyke and embankment construction which is done on a piece rate or work contract basis. Work teams were assembled by labour contractors called *majhi* who negotiated and arranged payment.

The piece-rate system involved workers being paid by the cubic metre excavated which required three to four man-days of work. These dike and embankment workers often go from farm to farm searching for work.

Both permanent and casual workers are recruited in several ways. These include hiring at the local market place, direct recruitment and the use of labour contractors. Labour is recruited from local markets or *hats* where workers gather to obtain work for a few days. A market leaseholder (*ijaradar*) collects a toll of one to two taka per labourer. Workers also go directly to potential employers (*malik*) for work by visiting the farm or being introduced through another worker.

Employers or a member of their more permanent staff sometimes contact workers in their homes in the neighbourhood.

Most farm workers come from Chakoria sub-district and a few from the adjoining sub-districts of Moheshkhali and Kutubdia. Several local shrimp farmers interviewed said they prefer to use poor and landless labour of their own villages

over 'outsiders' because of a felt 'responsibility to help own people.' This extends to assisting poor relatives before non-relatives.

A workforce entirely dependent for its income upon shrimp farm labouring work does not exist in Chakoria and southeast region. Rather, landless workers and marginal farmers divide their time between various income-generating activities and many consider shrimp work as their second occupation after salt working.

In addition, the households they belong to often contain members who sell their labour as agricultural and salt workers, as petty traders and as van and rickshaw pullers.

This fragmentation of work effort across many thousands of shrimp farms, the seasonal nature of work, the close personal and familial ties between many shrimp workers and their employers, especially on smaller farms, and their dependence on a range of income-generating activities occupations militates against the development of a region-wide collective shrimp worker identity. Interviews with workers revealed no recent evidence of broad-based union organisation directed to improving conditions of pay and work on the farms. More common forms of organisation are local saving associations among workers, which help to defray household and other expenses. Some local NGOs provide support for educational, credit and training programmes but these are directed at the rural population in general rather than shrimp farm workers.

Local resistance to shrimp farming has been sporadic and not specifically focused on low wages or poor working conditions. Rather it has been aimed at 'outsider' control of public (*khas*) land for shrimp farming and manipulation of shrimp fry prices by traders (Sharecropper Society: *Bargachasi Samity*), opposition to loss of

common property resources and attempts by the landless to gain access to public shrimp farming land (Spade Soldiers: *Kudal Bahini*) and opposition to the use of 'outside' labour on shrimp farms.<sup>39</sup> Currently, the Sharecroppers' Society and the Spade Soldiers are inoperative. While there is still local resentment at the power of *khas* land leaseholders, the leader of the Sharecroppers' Society told us he had gone back to sub-leasing several shrimp plots from a first hand lease owner. *Kudal Bahini* was formed by landless labourers in Badarkhali to secure *khas* shrimp land and at its height in the mid-1990s had more than five hundred members. Most were also members of the Badarkhali Cooperative Society and part of their grievance was that the Forest Department had allocated *khas* land to six members of the society. However, *khas* land holders in the region are well organized and well connected politically and were able to stop the movement. The Bangladesh shrimp sector has been subject for several years to an international NGO campaign aimed at the environmental, social and economic costs of shrimp farming and at promoting alternatives to shrimp farming. However, it has had little impact at the grass roots level in the southeast compared with the southwest. Most NGOs working in the Bangladesh shrimp sector support shrimp farming, are funded by international donor agencies and see the sector's problems as one of better environmental and economic management. The most radical NGO in the area is UBINIG which has focused its efforts on mangrove restoration and the promotion of alternative farming systems rather than mobilizing shrimp workers to seek better

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<sup>39</sup> Karin Gregow, *When the trees are gone. Social and environmental costs of converting mangroves into shrimp fields*, unpublished report for UBINIG, Dhaka, 1997; K Uddin and H Morishita, 'Socio-economic impact of mangrove destruction in Chakaria Sundarbans, Bangladesh'. Unpublished manuscript, n.d.

pay and work conditions. This issue will be taken up further in our discussion of fry collecting to which we now turn.

### **Wild fry collectors**

Shrimp farms are supplied with shrimp fry from over four hundred thousand wild shrimp fry collectors and forty eight hatcheries. Wild fry collectors, who constitute the single largest category of labour in the sector, are the foragers of the industry and are drawn largely from the ranks of landless workers and marginal farmers. Their work consists of standing in rivers, canals, ponds and the ocean for periods of up to five hours where they catch minute shrimp fry to sell directly to shrimp farmers or, more commonly, through advance-giving fry traders (*dadondars*) and commission agents (*arotdars*). Fry collectors work individually or in groups, often family based. They are dispersed widely across rural Bangladesh and live in settled village communities, in make-shift camps and in squatter settlements on the edge of towns and villages.

Fry collecting dates from the early 1980s when shrimp farming expanded rapidly across the coastal zone and until recently fry collectors supplied one hundred percent of fry to Bangladesh's shrimp farms. Their future existence is now under threat as a consequence of the Bangladeshi state's decision to ban the activity.

In the 1980s their numbers were conservatively estimated at one hundred and sixty thousand<sup>40</sup>, which have since grown to over four hundred thousand<sup>41</sup>. Early studies largely carried out in the 1980s provide valuable information on working conditions, health of workers, organisation of production, trade and exchange,

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<sup>40</sup> Larsson estimated that in 1985 in Satkhira some 20,000 to 25,000 people collected shrimp fry during the peak season from February to March. UBINIG estimated fry collectors at 40,000 in CCB and 120,000 in KSB (1986 figures). References in footnote 39.

<sup>41</sup> *Management options for the shrimp fry fishery: A regional stakeholder workshop in Cox's Bazar*

environmental impacts of fry collection and ways to improve conditions of fry collectors and protect the environment.<sup>42</sup> More recent research, including our own, has extended this earlier work looking at child labour, policy approaches to fry collecting and the place of fry collecting in the shrimp supply chain.

Of all types of shrimp work, fry collecting is considered the least desirable and the most stigmatised in the broader rural community, despite its central importance in maintaining the whole shrimp sector. This is especially so for women in Southeast Bangladesh where conservative Islamic norms consider female work outside the home as shameful. Divorced or widowed women, Muslim refugees from Burma and other marginalised people also work as fry collectors, which reinforces its already low social status.

In Southeast Bangladesh it is officially estimated that there are over 60,000 fry collectors with over seventy five percent in Cox's Bazar District.<sup>43</sup> This is an underestimate as our own survey of ten unions in Chakoria, one of the seven sub-districts, revealed over thirteen thousand fry collectors living in some 6,578 households. In 2002, we studied one 'fry collector' village of 435 households in Mognama union in Chakoria where 374 of the households were involved in wild fry collecting. These fry collecting households owned less than ten percent of all

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11 Aug, 2002. Department of Fisheries, Government of Bangladesh.

<sup>42</sup> K Larsson, *Shrimp seed collection in Satkhira District, Bangladesh*, (Rome: FAO Bay of Bengal Programme, 1986); P, Funegaard, 'Shrimp seed any to sell? Come to Satkhira, Bangladesh.' *Bay of Bengal News*, 22, ( Madras: Bay of Bengal Programme, 1986); S M Hysmi, T Hossain and P Das, 'Health hazards of children in shrimp fry collection'. In M Younus and S Hysmi (eds): *Abstracts of Poverty Research*, ( Dhaka: Grameen Trust, 1998); UBINIG, *The state of shrimp fry collectors: Social, economic and organizational possibilities*, (Dhaka: UBINIG, 1986); A Rahman, M A Islam, I Roy, L Azad, and K S Islam, *Shrimp culture and environment in the coastal region*, (Dhaka: Bangladesh Institute of Development Studies, 1995).

<sup>43</sup> In Cox's Bazar District, which contains most of the fry collectors in Chittagong Division, fry collectors live and work in the following Upazilas: Cox's Bazar, Teknaf, Ukhia, Ramu, Chokaria, MoheshKhali, Kutubdia. Our survey was done in ten unions of Chakoria upazila in 2002.

agricultural and salt land in the village. Most households owned only their homestead land and some vegetable gardens with a few owning plots of agricultural or salt bed land of less than 0.4 of a hectare each.

Besides fry collecting, most fry collectors worked as seasonal salt and farm labourers, dike and embankment workers, shrimp harvesters, petty traders and rickshaw pullers. Some fished and a few migrated to Chittagong to work in the ship wrecking yards. The majority considered fry collecting their second most important source of income after salt, although this probably varies from place to place. The peak season is from May to October when they catch fry, work as agricultural and shrimp farm labourers, and construct dikes. From November to April they work as salt workers, agricultural labourers, petty traders and rickshaw pullers. September to November is a lean period when little work is available locally.

Fry collectors worked individually and in groups with two to three persons per group. Men's work consisted of searching, netting and potting of fry shrimp. Male and female children also worked individually or in family groups. Their tasks included pulling nets, taking water in storage pots, searching for and potting shrimp fry and carrying the catching nets and fry pots to the embankment or onto a boat. Unlike in Southwest Bangladesh, in Chokoria few women caught fry. Those that did usually worked in groups close to their homesteads where they searched for fry and separated shrimp fry from other species and placed them in pots on the canal side/embankment.

Sometimes several households collectively caught fry by hiring a boat and dividing the catch into shares. Informants said that in the past they could catch collectively

five hundred fry a day but that today catches have gone down to two to three hundred a day in the peak season. For example, in 2002, the peak fry price was 70 taka for one hundred fry. Collectively five fry catchers catching 200 hundred fry could earn 140 taka per day during the high season. Divided five ways each catcher earned 28 taka a day, much lower than salt and shrimp farm work and insufficient to feed a family. To compensate for low individual low earnings, most fry collectors studied pooled family incomes from collecting and other sources and some divided their time between fry catching and van and rickshaw pullers and day labouring.

Before shrimp farming was introduced, many of the adult fry collectors and their parents worked as sharecroppers and agricultural day labourers on *khas* and zamindari land, tended vegetable gardens and fished in the many canals and creeks in the area. Several fry collectors stated that in the past they were able to supply most of their own household needs whereas today they must purchase most of what they need. They also noted that the 1991 cyclone killed close to half of the population, destroyed houses and livestock and had taken years from which to recover.

For the majority, fry collecting has become an economic necessity as there are few other types of work available locally. Both adults and children regarded fry collecting as unhealthy as they stood in cold water for up to four or five hours at a time and there are risks of drowning, capture by tigers (in the Khulna Sundarban), skin infections and other ailments. Neither adults nor children thought that collecting fry was enjoyable for children; rather it was something they had to do. Some local NGOs encouraged the children to attend primary school but they



reached no more than ten percent of fry collecting households. One local primary school teacher said that it was very common for children from poor families to disappear from class for long periods because they had to work.

Until recently some of the local women in this and other villages had worked in local shrimp depots deheading shrimp but that work has been phased out and incorporated into processing plants as part of the move to raise quality standards.

While our own study did not examine the question, recent work<sup>44</sup> in Southwest Bangladesh compared fry collecting with former depot work and showed that while depot work was better paid, fry collecting was more congenial as it was organised along family lines, less regimented and hierarchical and more flexible.

Also, while both women and female children acquired some skills and sense of independence from both types of work, depot work was more dangerous for a young girl's honour and compromised her reputation and marriageability.

In our village study, child fry collectors considered shrimp work more difficult than salt work, agricultural labour and domestic work. Eighty percent regarded their own involvement as necessary for family survival, supplying some forty five percent of family income. Children were encouraged and some even forced to catch fry and to work in salt beds where male children contributed about thirty percent of family labour from this source. Children's salt work includes pulling the *gora*, a roller made of wood, and carrying salt.

Fifty to eighty percent of fry collector children attended irregularly one of the five local Madrassas (religious schools) and the local primary school. Many children

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<sup>44</sup> E Delap and R Lugg, *Not small fry: children's work in Bangladesh's shrimp industry*, (Dhaka: Save the Children UK and Uttara, 2000).

recognised the importance of schooling but they did not consider themselves educationally deprived and did not look down on fry collecting. While some parents interviewed felt guilty that they had to send children to work rather than school, they also thought it important that children earned an income as a duty to the family and as a means of fulfilling family obligations.

Fry collectors are at the base of local supply chains dominated by fry traders and commission agents. Nominally, they are independent self-employed as they sell a product rather than their labour. In our survey they sold most fry for cash direct rather using the advance system but this varies across the country. However, several fry collectors took advance payments from traders to buy nets and to meet household needs. Shrimp fry traders, some of whom may also be fry collectors, sell both directly to shrimp farmers and to a wider market through larger commission agents.

Until recently, most wild fry were sold locally or transported, often over long distances, by pick-up and truck. The hatchery production of cheaper fry and the use of air transport to ship fry from the southeast to the southwest of the country has resulted in overproduction, increased competition for wild fry collectors and begun to threaten their livelihood. This has been compounded by the state's banning of wild fry collecting to protect biodiversity and the interests of hatchery producers. Before dealing with this in more detail, we complete our survey of types of shrimp work by looking at the shrimp hatchery sub-sector.

### **Shrimp hatchery workers**

There are forty eight commercially-run and Bangladeshi-owned hatcheries<sup>45</sup>, mainly in Cox's Bazar, which employ a small permanent work force of managers, technicians and skilled workers supplemented by day labourers who pack and transport fry to shrimp farms across the country. Virtually nothing is known about these workers. There are two main reasons for this. First, the growth of private hatcheries is quite recent, mainly since 1998. Second, hatcheries employ only a small core of permanent workers and most of these are adult males and have not attracted the same interest from shrimp sector critics as have fry collectors.

Permanent workers supervise the raising of fry while daily-paid workers pack and transport fry to all parts of the coastal zone. These workers, many from outside the district, are recruited through contractors who negotiate with a team leader (*majhi*) the daily rate of pay. They move from hatchery to hatchery in search of work.

Lorries are used in both the lean and peak seasons but in recent years their use has declined as fry are increasingly shipped by plane.

In one Cox's Bazar hatchery studied by the authors during the lean season in 2002<sup>46</sup>, thirty permanent workers were paid an average of 3000 taka per month, including food. Thirty casual workers were paid 120 taka per day, without food, for a few days at a time. These men, mainly young with some in their early teens, worked in groups bagging fry in water-filled plastic bags and packing them in trucks. However, during the peak season, most of the fry from the hatchery is

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<sup>45</sup> *Management options for the shrimp fry fishery: A regional stakeholder workshop in Cox's Bazar*. A workshop hosted by the Department of Fisheries and funded through Fourth Fisheries Project by the Department for International Development as part of the Shrimp Action Plan, (Cox's Bazar, August 2001), pp. 13-14.

<sup>46</sup> Field notes, Cox's Bazar, March 2002.

flown to the southwest which has reduced their opportunities for work. The technical staff was headed by Thai and Indian technicians working at different times of the year and paid by commission on every shrimp fry sold.

No women are employed in the shrimp hatcheries. Male workers in one hatchery gave several religious, culturalist and pragmatic reasons for why women were not employed. These included the greater religious conservatism of the area, the belief that women were unclean and harmful to the production and survival of fry, that workers had to move from hatchery to hatchery and that women had difficulty working as quickly as men or working inside the large holding tanks as their clothes inhibited movement.

While hatcheries are largely owned and run by men, one hatchery studied was owned by a woman whose daughter worked in the plant as a quality control officer. The owner gave similar reasons for why women were not employed in hatcheries but added that it did not apply to her as she was married to a military officer, was locally born and had many business interests in Cox's Bazar and in Dhaka. Her daughter said she enjoyed the work and would continue with until she married. Like other shrimp workers, casual labourers in hatcheries also take on other work such as crewing on large mechanised fishing boats called trawlers in the Bay of Bengal. As trawler hands they are paid in various ways, including sharing catch values. Under this system, workers and boat owners split proceeds from catch on a 50:50 basis. Owners provide food to workers while at sea and also advance some money to the workers' families when their male kin are at sea. Each worker can earn about 2500 taka (AUS\$80) during a two week trip.

Casual workers also engage in small-scale fry trading, buying fry from collectors and selling to the shrimp farm owners or to the larger fry traders and commission agents in Cox's Bazar and other centres.

Some collect wood from local forests. During the day they go to the nearby hills to cut trees for home consumption and to sell fuel wood in the market. This is a risky job as woodcutting is illegal. However, if caught by the forest guards, they offer bribes (*gush*) of 40 to 50 taka and then take fake entry passes.

Some casual workers also work as rickshaw pullers and general petty traders, selling betel leaves, betel nuts, coconut, fish and vegetables. They buy goods from local villages and sell in the rural markets and towns.

The demand for casual day labour and terrestrial transport workers has declined because of the introduction of an air cargo service between Cox's Bazar and Southwest Bangladesh. As one labour contractor who employs six sub-contractors and supplies fourteen hatcheries in the area recounted, before the advent of the air cargo system, the hatcheries used tin packs for sending fry to Khulna and Satkhira. Some 700 to 1200 fry were packed in each tin pack and forty labourers were required to pack ten lakh fry. After the introduction of air transport, eight thousand fry could be packed in one container (called a cocksheet) and only four workers were required to pack 10 lakh fry. Before the introduction of air transport in 1999, he supplied three to four hundred labourers a day to local hatcheries but now (2002) supplies only fifty workers for night shifts and ten to twenty for day shifts. Lorry transport demand has also declined which has reduced employment opportunities in that sector. This has forced hatchery and transport workers to look for other kinds of work.

Summarising this section, at the apex of the shrimp export sector are processing plants consisting of a core of permanent managerial, technical, supervisory and skilled workers on relatively secure contracts supported by a large pool of male and female seasonal workers employed by labour contractors on unwritten contracts. Compared with permanent workers, those on contract are generally lower paid with women paid less than men, lack secure employment contracts, risk long periods of unemployment, are generally denied employment benefits relating to overtime and health care enjoyed by permanent staff, and are denied the right, or find it difficult, to organise collective bargaining arrangements with employers.

In shrimp farms, shrimp farm workers are employed by thousands of largely small to medium-sized shrimp farms under a variety of informally negotiated contractual arrangements. For the majority, employment is at best seasonal and at worst daily-paid which requires workers to seek work elsewhere during the lean season. There are no formal provisions for unemployment insurance, health care and overtime, although for more permanent senior staff on the small number of large shrimp farms, some assistance with health costs and other needs may be provided through informal arrangements between worker and employer. Fry collectors are officially considered independent self-employed workers and are not covered by any labour legislation. The small labour force in the hatchery sub-sector is made up predominantly male day labourers employed to pack and transport shrimp fry.

Wages paid, incomes earned and conditions of work vary by sub-sector, age, gender, experience and skill and are generally determined by the hirers of labour. Workers play little or no role in determining the conditions under which they work,

state labour laws apply to some workers and not others and are easily avoided by employers.

### **Labour and environmental standards in the Bangladesh shrimp sector: the case of fry collectors**

The first part of the paper provided an outline of some of the main characteristics of the work force employed in the Bangladesh shrimp export sector. It shows that the sector consists of several functionally distinct, spatially differentiated and hierarchically arranged sub-sectors each with its own particular labour needs, labour markets, methods of work and production and environmental characteristics. The conditions of work in these sub-sectors are the product of the interaction of locally-based business and labour practices with wider territorial and trans-territorial investment, trading and sub-contracting networks<sup>47</sup> which extend from the extraction of wild fry to the tables of consumers in Europe, North America and Japan. These networks go beyond that of specific inter-firm relations to include the cross-border and domestic institutional and environmental contexts within which production and trade take place. In addition to those directly working in the sector, other stakeholders include regional and state regulatory agencies within Bangladesh, consumer country regulatory bodies and global governance agencies which manage world trade, labour standards and environmental conditions and transnational and local civil society NGOs pursuing fair trade, environmental and social justice agendas.

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<sup>47</sup> Jeffrey Henderson, Peter Dicken, Martin Hess, Neil Coe and Henry Wai-Chung Yeung, 'Global production networks and the analysis of economic development', in *Review of International Political Economy*, Vol. 9, No. 3, (August 2002), pp. 436-64.

To illustrate the interaction between ‘local’ and ‘global’ networks and how they shape the present and future status of workers in the sector, we shall examine the situation of fry collectors about whom we have most information.

Since the mid-1990s fry collectors have increasingly been defined by government, sections of business, international donor agencies, some NGOs and various local communities such as open-capture fishers as obstacles to the future sustainable development of the sector and they have called for the restructuring, restriction and prohibition of their activities. In 2000, the Government of Bangladesh banned wild fry collection on the grounds that it was a threat to marine biodiversity and to the development of an eco-tourism industry focused on the Khulna Sundarban and also the southeast region. The government was also responding to pressures from the politically well-placed hatchery owners who saw wild fry collectors as a threat to their control of the fry supply sector and who criticised fry collectors as despoilers of nature, exploiters of child labour and only part-time workers who could easily make the transition to new work. Fry collecting was also subject to criticism by some international environmental and social justice NGOs who, although more supportive than hatchery owners of the plight of fry collectors, wished to protect the biodiversity values of the Sundarban mangrove forests of the southwest and to prevent the use of child labour. Local fishers lamented the decline in coastal fish catches which they blamed partly on fry collectors who they defined as non-traditional fishers and therefore less worthy of protection.

Support for fry collectors came from shrimp farmers who considered wild fry to be stronger and more resistant to disease than hatchery fry and wild fry traders who saw a loss of income if a ban were successful.



Prior to the ban, official government policy towards fry collectors had been to improve fry collecting methods to reduce their negative impact on aquatic biodiversity. This policy had little success as it reached only a tiny proportion of collectors.<sup>48</sup> Since the ban, international donor agencies such as the FAO and the World Bank through the Fourth Fisheries Project and the Government of Bangladesh have sought to devise strategies to accommodate these criticisms by supporting a long term shift away from wild fry collection as the main source of fry for shrimp farms.

The state-supported expansion of private hatcheries has placed extra pressure on fry collectors who have lost work, been forced to accept lower prices for their fry, to take more risks in collecting fry and intensified over-exploitation of wild fry stocks.

The government ban prompted a well-organised protest by collectors in the southeast, which was organised by wild fry traders and commission agents and supported by elements of the local opposition parties. The protest was understandable given that it is estimated that an effective ban would result in a forty percent drop in the number of people obtaining an income from fry collecting and a redistribution of income from the sector in favour of the more skilled and wealthy<sup>49</sup>. The ban has also subjected fry collectors to harassment and extortion in areas where they catch fry.

In the light of these developments, state policy, through the Shrimp Action Plan, has shifted towards phasing in the ban alongside the development of a long term

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<sup>48</sup> Training has been carried out through the Department of Fisheries, FAO, Caritas and the Bangladesh Fish Research Institute but has reached less than 5000 collectors.

alternative livelihoods strategy<sup>50</sup> to create new employment opportunities in rural areas and retraining for such opportunities. This strategy involves the promotion of shrimp fry nurseries, shrimp fry trading, making fishing traps and gears, operating fish feed mills, shrimp de-heading for processing, crab fattening, mat making, bee keeping, tree planting, horticulture and tailoring and knitting.

Measures to assist fry collectors during the transition include the Food for Work and Food for Education programmes to ensure fry collectors receive enough to eat while providing their children with better access to schooling<sup>51</sup>. These programmes are to be complemented by NGOs providing credit, education and training and awareness campaigns to alert fry collectors to the availability of programmes and their rights in them.

To date no concrete measures have been taken to introduce new livelihood strategies and, given the large numbers involved and the political, logistical and other problems of providing such alternatives, it will several years before any results of the new approach will be seen.

In the meantime, as our own work and that of others shows, wild fry collection continues unabated. In our village study, neither adult nor child fry collectors supported the ban because it would deprive them of income, force them to look elsewhere for work or migrate. Also, with the prospect of losing their jobs, fry

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<sup>49</sup> Bangladesh Centre For Advanced Studies, *The Costs and Benefits of Bagda Shrimp Farming in Bangladesh: An Economic, Financial and Livelihoods Assessment*, (Dhaka: Fourth Fisheries Project, August 2001).

<sup>50</sup> See the Government of Bangladesh Department of Fisheries and the UK Department for International Development Shrimp Action Plan policy papers, Dhaka, 2002.

<sup>51</sup> Timothy R. Frankenberger, 'A Livelihood Analysis of Shrimp Fry Collectors in Bangladesh: Future Prospects in Relation to a Wild Fry Collection Ban,' Draft report August, 2002, Tango International for Department for International Development, Dhaka.

collectors are unlikely to be motivated to protect aquatic biodiversity through using more environmentally friendly fry catching methods.

The plight of fry collectors illustrates the importance of seeing work, livelihoods and environment as mutually constitutive rather than as separate spheres of reality. A policy designed to protect something called the environment from destruction sets up a false dichotomy between human activity and a world unsullied by human contact. A reason for this is the artificial separation of the 'natural' from the 'social' which in much South Asian scholarship on rural society, has resulted in the academic construction of the two ontologically separate worlds of the agrarian and the environmental.<sup>52</sup> Instead, what needs to be recognised is categories such as 'labour,' 'work', 'environment' and 'biodiversity' are social and political constructions that only have analytical and policy significance within particular discursive and institutional contexts. Thus, in the case of fry collectors, those seeking protection of biodiversity derive their authority from new global and national discourses of resource management that seek to protect the environment in the name of humankind and the nation<sup>53</sup>. Fry collectors are seen to stand in the way of realising this grand design.

The situation of fry collectors also illustrates the selective nature of discourses of biodiversity and managerial best practice by singling out fry collectors as a key cause of the decline of aquatic biodiversity in Bangladesh. However, declining biodiversity has many causes, often going back decades, which include the

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<sup>52</sup> See Arun Agrawal and K. Sivaramakrishnan (eds), *Agrarian Environments: Resources, Representations, and Rule in India*, (Durham and London: Duke University Press, 2000) for an extended discussion of this distinction.

<sup>53</sup> Arturo Escobar, 'Whose Knowledge, Whose Nature? Biodiversity, Conservation, and the Political Ecology of Social Movements' in the *Journal of Political Ecology*, Vol. 5, (1998), pp.53-82.

destruction of mangrove forests for the construction of shrimp farms, rice farming, grazing, salt making, firewood and building materials; the uncontrolled taking of wild shrimp brood stock from the Bay of Bengal to supply shrimp spawn to the hatcheries; and the destruction of the shrimp breeding grounds due to unregulated trawling.

Finally, the example suggests that policies towards fry collectors and, by extension, other workers in the sector should be based on what workers themselves regard as their core problems rather than being determined by international and national agencies<sup>54</sup>. In the case of fry collectors, the state ban was imposed without any consultation and in the subsequent discussions to phase out fry collecting, fry collectors' interests are in danger of being submerged by the voices of other more powerful interests. It has been suggested that in the absence of fry collectors' own organisations to protect their interests, NGOs might play such a role as a sort of substitute for conventional unions. This suggestion has some value in that NGOs are increasingly important in promoting labour, environmental and human rights among vulnerable communities around the world, including Bangladesh.

In rural Bangladesh, NGO activity takes two forms. The majority of NGOs such as CARE, Caritas, BRAC, and Grameen Bank work with the international donor agencies and the Bangladesh Government to promote better environmental, social and economic management of shrimp farms. Their main focus is the improvement of shrimp farmer performance, financial and technical assistance to farmers, gender-based programmes aimed at raising women's awareness of, and

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<sup>54</sup> For a more detailed examination of this issue in cross-national perspective, see Rhys Jenkins, Ruth Pearson and Gill Seyfang, *Corporate Responsibility and Labour Rights*, (London: Earthscan Publications, 2002).

participation in, work opportunities in the non-domestic sphere, and assistance to fry collectors to improve their economic standing and protect the natural resources upon which they depend. Thus, their work is not focused on fry collectors and they are not solely concerned with conventional union issues of the right to collective bargaining, freedom of association.

A minority of more radical NGOs such as *Nijera Kori* and UBINIG do not share the reformist objectives of mainstream NGOs, instead working with the landless and marginal farmers in shrimp areas to raise their consciousness about the environmental, economic and social impacts of shrimp farming, to present alternative models of development practice, to gain control over public land and to represent their views at international and national fora<sup>55</sup>. Their approach can be characterised as a defence of what Escobar calls biodemocracy against bioimperialism. These NGOs see the problem of biodiversity as having Northern roots rather than being caused by the actions of fry collectors and other local actors in the South<sup>56</sup>. They believe that the best way to improve the working and living conditions of shrimp workers, including fry collectors, is to move away from industrialised shrimp farming to more environmentally benign forms of farming based on organic farming methods, double-rice cropping, minimum or no use of artificial chemical and biological inputs, community control of resources and a de-commodified exchange system which is local and regional in spread.

*Nijera Kori* has had modest success in sustaining an anti-industrial shrimp position through raising the consciousness and organising skills of pockets of small and

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<sup>55</sup> *Nijera Kori* is the sole Bangladesh member of the Industrial Shrimp Action Network, an umbrella organisation representing environmental and community organizations from fourteen countries to support and encourage sustainable, responsible shrimp farming.

marginal farmers and the landless to defend small areas of land against shrimp farming. However, this has led to some of its supporters seeking to use those skills to engage in shrimp production rather than abandon it.<sup>57</sup>

UBINIG has set up several farming schemes across the country promoting alternative farming systems, including encouraging shrimp farmers and workers to switch to such systems.

The activities of both radical and mainstream NGOs suggests we should treat with caution the idea that they replace conventional union organisation as a means of representing workers' interests. Both mainstream and radical NGOs are run by NGO professionals from outside the areas of operation in conjunction with local peoples. Mainstream NGOs in particular, are not independent of the agencies that fund them, operate on behalf of several sector stakeholders and so cannot act solely in workers' interests. Also, as we have suggested in the case of *Nijera Kori*, the interests of the leaders do not necessarily coincide with those they seek to represent. However, within these constraints NGOs can both assist fry collectors to seek alternative livelihoods and also assist them to form associations to give them a voice in decision-making circles<sup>58</sup>.

### **Future research**

The study of work and labour in the Bangladesh shrimp sector is a relatively new field compared with work done in other areas of the Bangladesh economy such as

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<sup>56</sup> Arturo Escobar, 'Whose Knowledge, Whose Nature? Biodiversity, Conservation, and the Political Ecology of Social Movements' in the *Journal of Political Ecology*, Vol. 5, (1998), p.59.

<sup>57</sup> Anwara Begum and Nurul Alam, *Social aspects of coastal shrimp aquaculture in Bangladesh: Bangladesh Case study 1*, (Dhaka: Caritas (for NACA), 2000).; Kazi Ali Toufique and Zulfiqar Ali, *Community Responses To Environmental Degradation Due To Shrimp Culture In The Coastal Region In Bangladesh*, (Dhaka: Bangladesh Institute of Development Studies, March 2002).

farming and garment production. Thus, there is a need for more detailed empirical studies of the business practices of owners and managers and their labour forces employed at all levels of the industry, particularly processing plant workers, hatchery workers, traders and their employees and other ancillary industries. More theoretically informed research is required on labour relations at all levels of the industry, focusing on the organisation of the labour process and types of production regimes; the nature of the employment contracts workers enter into; methods of recruitment and sources of labour supply; managerial strategies of labour use and control; and the organisation of internal and external markets for labour.

Future studies need to move out of the workplace into the local communities in which workers live. For example, we know little of the relationship between workplace activity and community and the home life of processing plant or shrimp farm workers. Workers are members of households within neighbourhoods in villages and towns so there needs to be parallel work on household survival strategies which may help us to understand the choices workers in different sub-sectors have in order to maintain and improve their living standards. As we have shown, many workers adopt multiple employment strategies out of necessity as shrimp work is largely seasonal. Intra-household and inter-household exchanges may be central mechanisms by which the more vulnerable categories of labour can survive.

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<sup>58</sup> Timothy R. Frankenberger, 'A Livelihood Analysis of Shrimp Fry Collectors in Bangladesh: Future Prospects in Relation to a Wild Fry Collection Ban,' Draft report August, 2002, Tango International for Department for International Development, Dhaka.

As both women and men take up more commoditised work relations based on wage employment, new identities of worker may develop. Research is needed to understand the circumstances under which a worker identity dominates a person's sense of who they are and where they stand in society. At present, there are tensions between gendered and worker identities as women take up more jobs within the sphere of public patriarchy. We need to know more about when and how particular identities are activated, how women and men see their roles as workers, whether these roles take on more generalised meaning as workers move back and forth between workplace and home, village and town, and region and region. More research is required on the mobilisation of shrimp sector labour to seek better conditions of work. Practically nothing is known of either formal or informal worker collective action in the sector. Government restrictions on organising labour are tight in Bangladesh and violation of workers' rights is heavily criticised by bodies such as the ICFTU<sup>59</sup>. So far, conventional unions have shown little or no interest in the sector and research on garments shows that women are reluctant to join unions as they are usually male-dominated and paternalistic and do not address the day-to-day needs of women.

However, recent work on female garment workers<sup>60</sup> show that women will join unions (and other organisations) if those unions help women get paid on time, protect their health and safety at work and outside, help them balance home and

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<sup>60</sup> P Dannecker, 'Collective action, organisation building, and leadership: women workers in the garment sector of Bangladesh'. *Gender and Development*, Vol. 8, No. 3, (November 2000), pp.31-9; Naila Kabeer, *Bangladeshi Women Workers and Labour Market Decisions: The Power to Choose*, (Dhaka: UP Press, 2001); Marilyn Rock, 'The Rise of the Bangladesh Independent Garment-Workers' Union (BIGU)', in Jane Hutchison and Andrew Brown (eds): *Organising Labour in Globalising Asia*, (London and New York: Routledge, 2001); Rehman Sobhan and Nasreen



work requirements and provide women with a greater sense of control and respect.

Similar conclusions can be drawn from our own limited work on women processing plant workers.

Finally, most research on the shrimp sector has taken a largely Bangladesh-focused approach and has not linked itself to broader debates in the literature on how labour at the local level is affected by the impact of global value chains, production networks and governance agencies on employment, work and wage condition and gender relations. These global processes have the power to set and to enforce the conditions, including those of labour, under which trading and production activities take place. A key area of interest relates to process (labour, environment, preparation) regulation<sup>61</sup> in which developed country buyers and governments are playing greater roles. To date, foreign buyers and overseas governments have been most concerned about the safety, quality, reliability and reputation of shrimp suppliers but they are under pressure to pay greater attention to labour standards and human rights issues. While these buyers and government are setting the standards, process regulation within Bangladesh is largely managed by the Bangladesh government and processing plants.

The main point of contact between the global shrimp market and the Bangladesh shrimp sector is the processing plant. Processing plants are largely independent firms linked to buyers through a combination of arm's length market relations and quasi-hierarchy. Technological and organisational upgrading is becoming a

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Khundker (eds), *Globalisation and Gender: Changing Patterns of Women's Employment in Bangladesh*, (Dhaka: UP Press, 2001).

<sup>61</sup> The other aspect is product regulation concerned with physical features and design of the product.

competitive necessity for processors and relatively few obtain the national and international certification required to continue exporting.

Such pressures to ensure higher shrimp quality and safety are working their way along the local supply chains, as our fry collector example illustrates. Hatchery production, itself a move by local business to ensure a continuous and standardised supply of virus-free fry for shrimp farms, is leading to intensified competition with wild fry collectors whose future is now uncertain.

In processing plants, workers are subject to various forms of managerial control which emphasise product quality and increased productivity and which can lead to a greater intensification of work at one level and increasing levels of unemployment at another. For example, the removal of shrimp deheading from rural depots and its integration into processing plants removed one source of income for rural women and placed it in the hands of urban-based women and men employed in those plants.

The Bangladesh shrimp sector is under great pressure to raise the levels of productivity of the shrimp farm sector which are among the lowest in the world. If Bangladesh processors and hatchery owners move towards semi-intensive forms of shrimp production and greater forward and backward linkages with shrimp farmers in order to raise output and ensure greater quality control over production, it will result in more capital-intensive production, further shedding of less skilled workers, the employment of more skilled labour and a recomposition of the labour force. Under such circumstances, workers may find that concerns over improving wages and working conditions are overshadowed by the need to preserve their already limited employment opportunities.

## Appendices

Table 1: Sub-District (Upazila) wise brackish water shrimp farm numbers, farm area and estimated production in 1999-2000: Bangladesh

Khulna	No. of farms	Area (ha)	Av. Farm size (ha)	Estimated Production kg/ha
Paikgacha	1026	15146	14.76	200
Dacop	1223	10339	8.45	192
Koira	495	4672	9.43	210
Dumuria	515	3699	7.18	175
Batiaghata	640	3783	5.91	225
Rupsha	57	179	3.27	165
Digholia	0	0	0	0
Phultala	0	0	0	0
Terokhada	0	0	0	0
<b>Total</b>	<b>3956</b>	<b>37818</b>	<b>9.56</b>	<b>199</b>
<b>Bagerhat</b>				
Mongla	779	9750	12.52	197
Rampal	1050	18000	17.14	200
Sadar	370	5060	13.68	172
Fakirhat	55	109	1.98	175
Kachua	35	405	11.57	200
Morrelgong	750	7290	9.72	160
Sarankhola	10	155	15.50	125
Chitolmari	20	8	0.40	192
Mollahat	0	0	0	0
<b>Total</b>	<b>3069</b>	<b>40777</b>	<b>13.29</b>	<b>188</b>
<b>Satkhira</b>				
Shyamnagar	2230	10405	4.67	150
Ashasuni	1125	7850	6.98	200
Devhata	849	8132	9.58	150
Kaligong	1421	5734	4.04	157
Sadar	194	2296	11.84	161
Tala	190	2490	13.11	106
Kolaroa	0	0	0	0
<b>Total</b>	<b>6009</b>	<b>36907</b>	<b>6.14</b>	<b>159</b>
<b>Cox's Bazar</b>				
Sadar	236	3435	14.56	272
Chakoria	1148	12553	10.93	290
Moheshkhali	309	9664	31.28	133
Ramu	22	63	2.86	77
Ukhia	105	1012	9.64	105
Teknaf	344	2275	6.61	132
Kutbdia	20	130	6.50	140
<b>Total</b>	<b>2184</b>	<b>29132</b>	<b>13.34</b>	<b>215</b>

Source: District Fisheries Offices of Khulna, Bagerhat, Satkhira and Cox's Bazar. Khulna, Bagerhat and Satkhira figures underestimate total number of farms due to undercounting of smaller plots.

**Table 2: Union wise number of shrimp farms owned by the residents of ten unions, farm area, number of partners and number of employees: Chakoria Upazila, 2001**

<b>Union</b>	<b>Number of farms owned by residents</b>	<b>Farms Area(Acre)</b>	<b>Number of partner</b>	<b>Number of employee</b>
<b>Chiringa</b>	313	7812	720	1118
<b>Saharbil</b>	225	5720	556	748
<b>Dula Hazara</b>	100	4089	950	494
<b>Magnama</b>	81	3289	638	665
<b>Paschim Boro Bahula</b>	70	5025	746	587
<b>Khunta Khali</b>	50	5120	203	1027
<b>Bahula Manik Char</b>	40	983	228	168
<b>Badar khali</b>	26	2118	204	320
<b>Raja Khali</b>	34	1842	202	193
<b>Pekua</b>	19	279	87	74
<b>Total</b>	<b>958</b>	<b>36277</b>	<b>4534</b>	<b>5394</b>

**Note: Average farm size is 36 acres or 14.4 hectares compared with 11.5 hectares in the Fourth Fisheries Project count of 2001. Number of farms is lower as the authors' survey covered only ten of Chakoria's seventeen unions.**

