Lessons learnt from an evaluation of an unexploded ordnance removal program in Lao PDR

The purpose of this article is to describe lessons learnt when the first author, an 'outsider', was undertaking a theory-based, mixed-methods evaluation of an unexploded ordnance (UXO) clearance program in Lao People's Democratic Republic (PDR). The lessons learnt comprised: 1) issues related to using a theory-based mixed-methods evaluation design; 2) contextualising languages, meaning and translation; and 3) cultural interpretation of ethical issues. Finally, it is proposed that reflexivity is an essential quality that evaluators need to develop in order to manage such challenges.

Introduction

Undertaking impact evaluations of social programs can be challenging, given the multifaceted nature of such activity and the broader sociocultural milieu in which some programs are implemented. This challenge can be made even more complicated when the evaluator is an 'outsider' (Hennink 2008). With this in mind, this article describes lessons learnt when a mixed-methods impact evaluation of an unexploded ordnance (UXO) clearance program in Laos was undertaken. What is presented is based on the first author's experience as an 'outsider' and discussions with the local co-workers who were 'insiders' undertaking this evaluation.

The evaluation was influenced by theory-driven approaches to evaluation (for example, Chen 1997). More specifically, it was informed by 'Realist Evaluation' (Pawson & Tilley 1997), with the objective being to address: *Who benefits from UXO clearance? In what ways? And in what contexts?*

The evaluators also wished to address the lessons that can be learnt from:

- implementing a mixed-methods evaluation design

- issues that are associated with language and translation

- challenges that are associated with cultural interpretations of ethical issues.

Finally, the article examines reflexivity as a way to manage these challenges. Reflexivity builds on the concept of reflection. It includes reflecting upon, for example, the researcher's values, epistemological assumptions, experiences, interests, beliefs, political commitments and social identities that might have informed the evaluation design and findings (Koch & Harrington 1998).

Before proceeding to lessons learnt and in order to contextualise the discussion, the article begins by providing a brief overview of theory-based

Jo Durham

B-K Tan

Jo Durham (top) is a PhD candidate in International Health at the Centre for International Health, Curtin University, Perth. Email: <durhamjo@yahoo.com>

B-K Tan (bottom) is a Senior Lecturer at the Centre for International Health and the Director of the Go Global program, Faculty of Health Sciences, Curtin University, Perth. Email: <bk.tan@curtin.edu.au>

This article was written towards completion of a PhD in International Health by Jo Durham at Curtin University, Perth. Dr B-K Tan is Jo Durham's PhD supervisor.

evaluations as well about the use of mixed-methods research. This is followed by a brief description of the evaluation context, methods and findings.

Theory-based evaluations

Theory-based evaluations aim to address the complexity of programs and challenges in identifying longer-term outcomes and impacts. From this perspective, programs are perceived as being 'theories incarnate' with evaluation a process of theory testing (Pawson & Tilley 1997). The aim is to make underlying causal assumptions between inputs, outputs and impacts explicit. Having articulated program theory (often diagrammatically), the evaluation then follows each program step to see if the assumed sequence of events happens (Weiss 1998). Two different types of program theory have been identified: one is implementation theory, the other is cause and effect. Together these form the program's 'Theory of Change' (Weiss 1998).

Realist Evaluation is another form of theory-based evaluation. Devised by Pawson and Tilley (1997), the emphasis here is not only on cause and effect, but also on the role of individual agency and context. The aim is to understand not only what happened, but also how and in which contexts (Kazi 2003; Pawson & Tilley 1997). From this, it is proposed that transferable, causal pathways can be identified and tested in different programs. Thus Realist Evaluation is essentially comparative and cumulative with repeated evaluations allowing further testing of emerging theories. Implicit in theory-based evaluation is the idea that change occurs over time and is an iterative process. Realistic Evaluation takes this into account explicitly by recognising the importance of context and how a person's reaction to a program or program resource shapes results (Kazi 2003; Pawson & Tilley 1997).

Mixed methods in evaluation

The often cross-disciplinary and practical nature of evaluation has led to a broad acceptance of mixed-methods evaluation designs to provide both intensive and extensive data (Green & Caracelli 1993). Intensive data is typically derived from the use of qualitative methods and drawn from a small number of cases. Such intensive research tries to identify causal explanations, but these cannot be generalised (Kazi 2003). Meanwhile, extensive research tends to be large-scale and quantitative, thereby providing descriptive, representative generalisations. However, it tends to lack explanatory depth.

Theory-driven evaluation advocates recognise the value of mixed-method designs, arguing that the evaluation question should drive design rather than paradigmatic concerns (Chen 1997; Pawson & Tilley 1997). Realist evaluators are also methodologically pluralistic, often employing a wide range of methods to answer the research question. While there can be intrinsic tensions in such methodological mixing, Chen argues that the inherent characteristics of theory-driven approaches to evaluation can help to minimise these.

The evaluation context

The evaluation that this article reports on was of a component of a mine action program implemented by the international non-government organisation Mines Advisory Group (MAG) in Lao PDR. Mine action describes program and activities that attempt to address problems faced by people as a result of explosive remnant of war (ERW) contamination [United Nations Mine Action Service (UNMAS) 2003]. There are five major components of the program:

- ERW clearance and survey
- stockpile destruction
- mine risk education
- survivor and victim assistance
- advocacy (United Nations Mine Action Service (UNMAS) 2003).

The evaluation discussed here focused on the first component (ERW clearance and survey).

The setting was Lao PDR, one of the poorest countries in the world and, per capita, the most heavily bombed (Handicap International Belgium 1997). Between 1964 and 1973, at least two million tons of ordnance were dropped during aerial bombing, much of which was cluster submunitions. Of this, an estimated 30 per cent is estimated to have failed to have functioned as intended, leaving Lao PDR severely UXO polluted even today—almost 40 years since cessation of hostilities (National Regulatory Authority for UXO/Mine Action Sector in Lao PDR (NRA) 2010). Most of those affected are the rural poor who are primarily subsistence rice farmers, often with little choice but to farm UXO-polluted land and, thus, place themselves at high risk of injury on a daily basis (Handicap International Belgium 1997).

MAG has been working in Lao PDR since the early 1990s, primarily supporting the national clearing agency, UXO Lao. Since 2004, however, MAG extended its activities, establishing its own operational base in two provinces. This evaluation took place in one of those provinces: Khammouane in central Lao PDR. Organised along similar operational principles to other UXO clearance programs, and guided by international and national standards, the underlying assumption is that UXO contamination blocks access to livelihood assets. It is assumed that once decontaminated, these assets will be put to productive use, thereby contributing to improved livelihoods.

Evaluation design

At the beginning of the evaluation, two reference groups were established. One was an international group of mine action professionals who provided feedback on the overall evaluation design. The second consisted of 16 people from the study area. This group provided feedback on the design, process and language. In addition, two local co-researchers/translators were recruited and worked with the international evaluator (first author of this article) throughout the evaluation process.

The major part of the evaluation design comprised sequential mixed methods (Creswell & Plano Clark 2007).

Part One was qualitative, based on individual and focus groups with the local population. Purposive sampling (Patton 2002) was used with data collection continuing until data saturation had been achieved, that is, no new data was forthcoming. As a result, a total of 18 focus groups (nine male and nine female) and 16 individual interviews (held with 11 males and five females) were conducted. These interviews were held in the respondents' preferred language and were facilitated by the first author with the assistance of two local co-researchers or 'cultural brokers' (Hennink 2008).

Data from the qualitative component were analysed to identify who benefited from UXO clearance, in what ways and in what contexts. The data was first analysed and coded in Lao with the co-researcher, using flow charts and matrices. This was followed by a subsequent round of more in-depth analysis by the first author using transcripts translated into English. The analysis was also informed by a 'livelihood approach'. The latter is based on the premise that livelihoods of the rural poor are dependent on access to five assets: human, environment, social, finance, and physical (Ashley & Carney 1999).

Data from the qualitative component were also used to develop a self-report instrument for Part Two. This included asking respondents to assess their own changes in livelihood assets. The instrument was tested and retested rigorously using psychometric tests before being administered to 415 people. Analysis of the resultant data provided extensive data and an ensuing analysis helped to test the extent to which the qualitative findings could be extrapolated to the broader community.

Findings

Analysis of the qualitative data suggested that by providing access to one resource (UXO decontaminated land), households were able to use this asset to build other livelihood assets. For example, safe farming land returned to a household enabled the family to use the land in a more effective manner and increase food production for its own consumption or sale. Households reported that this, in turn, increased their pride and feeling of overall satisfaction. More effective land use can also give people more time to undertake other tasks, which may include, for example, selling labour.

The qualitative data also highlighted various contextual factors that mediate benefits. These are:

- access to livelihood assets such as finance, labour and equipment
- access to markets, for example to sell surplus products or labour
- livelihood shocks, such as flood or drought
- institutional processes, such as the process of identifying and prioritising areas for ERW clearance
- type of land use
- whether the new resources were owned by an individual household or the community.

Individual interactions with the new resource were also shaped by context. In addition, also identified were: a person's confidence in the reclaimed land being safe; perceived need and benefits from using it; and a willingness to take livelihood risks (such as changing cropping patterns).

Meanwhile, the quantitative data analysis helped to confirm that UXO decontamination impacted on different livelihood assets. Using the chi-square test for independence, with a probability of <0.05 being a reason for rejecting the null hypothesis, statistically significant associations between level of poverty, market access and post-clearance land use and reported positive changes in livelihood assets were also identified. In developing the quantitative instrument, personal factors mentioned above, however, proved harder to quantify and were not included in this analysis.

Lessons learnt

Having provided a brief overview of associated evaluation and methodological literature that informed this evaluation, as well as a summary of the evaluation approach and findings, the final section deals with the three main lessons learnt, namely in relation to: using a theory-based, mixed-method evaluation design; language and translation; and ethical issues.

Using a theory-based mixed-methods evaluation design

The mixed-method evaluation design, informed by Realist Evaluation perspectives, helped address the evaluation questions: *Who benefits from UXO clearance? In what ways? And in what contexts?*

The approach aided the evaluator to identify not only direct outcomes, but also to understand how these direct outcomes can be used to achieve other livelihood effects. Further, it highlighted that, while documenting outcomes is important, it is insufficient on its own. Understanding the context is also essential (Kazi 2003; Pawson & Tilley 1997). For example, even when programs are implemented in basically the same manner, outcomes may vary depending on the context. Thus, understanding

context is a key part of interpreting data and outcomes. Personal characteristics and how these interact with the program and the context also seem to be important, but were only identified tentatively during this study. Consequently, more work is needed to understand the role of individual characteristics and agency in such programs. This would allow for a better appreciation of enabling mechanisms and the context in which they might be triggered (Kazi 2003).

Chen (1997) has argued that a theory-based framework can minimise the potential conflicts when using mixed methods. Nevertheless, an ongoing challenge for the evaluator was reconciling the tensions involved in combining methods. Explaining these tensions, however, was not always easy, with the solution often perceived as a technical issue with a technical 'fix', whereas in fact, for the evaluator it was related more to the inherently different assumptions that underlie qualitative and quantitative methods. Both approaches are essentially underpinned by different epistemologies and thus have a different view of the phenomenon under study (Sale, Lohfeld & Brazil 2002). While methods can be combined, it is also important to recognise and confront these differences explicitly.

Language and translation

Language is crucial during the evaluation process and even more so in cross-cultural settings where the evaluator is an 'outsider'. In mixed-methods evaluation, given the epistemological differences discussed above, the role and nature of language can also be viewed from different stances. In quantitative studies, for example, language is considered to be essentially neutral with the aim of writing items that will reduce bias (Hennink 2008). In cross-cultural research where items are translated, this also includes a focus on semantic equivalence. The purpose of language from this perspective, however, is to capture responses, but language itself is not of interest in the construction of meaning. Conversely, in qualitative work, language is crucial in the creation of meaning. Indeed for the qualitative evaluator, it is the negotiation of meaning expressed through language that is central to developing understanding. These different approaches result in language being used in different ways with different implications for the evaluator.

In this evaluation, the role of translators during the qualitative research was crucial. Not only did they facilitate the interview process and translate transcripts into English, they were also active participants in the process of creative meaning. This was challenging, requiring negotiation of meaning between not only the translator and the respondent but also between co-researcher/translator and evaluator. Thus, translation meant not only a translation of words but also of the contextual information needed to construct meaning. During the interview process, this was often difficult and time-consuming as the translators/co-researchers actively sought words to convey meaning in English to the international evaluator. Often the more subtle meaning only emerged later during discussions and joint analysis of the transcripts.

Meanwhile, when developing the quantitative instrument, it was often difficult to obtain consensus about which words to use, so that the same questions could be asked of all respondents. This involved the evaluator and co-workers moving back and forth between the qualitative data and the local reference group with an ongoing process of translation until consensus was reached. The final questionnaire was then translated back into English (Eremenco, Cella & Arnold 2005).

A key lesson in the translation process was the need to view translators as essential collaborators and negotiators of meaning. In this sense, they also make a vital intellectual contribution in understanding findings. Despite this, translators/co-researchers are often not acknowledged explicitly in the evaluation process (Hennink 2008). Furthermore, despite their centrality, unless they (or the lead evaluator) are bilingual, the dominance of English in the academic literature means they can be excluded from the process of writing up evaluation findings. Translation is also time-consuming and expensive and should be budgeted for. Ideally, this should include budgeting for translation of publications.

Another lesson related to language, especially when developing the quantitative instrument, was the value of the local reference group, who together with the evaluators and co-researchers, returned numerous times to talk about and check meaning.

Ethical issues

Informed consent by means of a signed form is generally required for ethics approval (Hoeyer, Dahlager & Lynöe 2005). In this evaluation context, however, this was challenging, as participants were often unable to write their name. Further, signing (by signature or thumbprint) an informed consent form can be perceived as removing anonymity. It also places the evaluators potentially as 'officials', which can act as a type of bias. In addition, to gain university ethics approval, a requirement was that participants were provided with contact details of the university as a point of contact if there were any concerns. In the context of a largely illiterate and rural population, this did not provide participants with the protection intended.

To manage such issues, consent details, including participant rights, were read to respondents in their preferred language. Participants were asked to give consent either by a thumbprint or signature according to their preference. They were also informed of a more culturally appropriate contact to whom they could address any concerns. Nevertheless, it is

not possible for the evaluator to guarantee that respondents understood the consent process completely or their right to say 'No'. A key lesson, therefore, is that informed consent and methods of obtaining consent are themselves culturally bound and are not universal. Thus, evaluators and ethics committees need to understand the sociopolitical and cultural contexts in which they work with a degree of flexibility. The co-researchers were also essential for ensuring that the process of accessing participants was culturally appropriate and consistent with accepted norms (Liamputtong 2008).

Conclusion

In conclusion, this article has briefly outlined a mixed-methods evaluation undertaken in the setting of Lao PDR. Many of the challenges related to world view, ontological perspectives, culture and language. These can all affect the credibility of the findings if not explicitly taken into account and incorporated into the final evaluation product. It is important, therefore, that evaluators are able to recognise the contribution of their beliefs and background to the research process (Hennink 2008).

Further, given the centrality of cultural brokers in cross-cultural research, it is also important that their presence in the research process is recognised. In cross-cultural evaluation, evaluators and their co-workers need to be able to articulate and recognise how their personal characteristics and ontological perspectives influence the evaluation process (Hennink 2008). The challenge, therefore, is for the evaluators and their co-researchers, who are often from different cultural backgrounds, to engage in collaborative dialogue that can make explicit underlying beliefs and values that inform practice. Such interaction will not only help to develop reflexivity but will also enhance the credibility of cross-cultural evaluation.

Acknowledgements

References

Ashley, C & Carney, D 1999, *Sustainable livelihoods: lessons from early experience,* Department for International Development, London.

Chen, H 1997, 'Applying mixed methods under the framework of theory-driven evaluations', in JC Green & VJ Caracelli (eds), *Advances in mixed-method evaluation—the challenges and benefits of integrating diverse paradigms: New directions for evaluation,* 74, Jossey Bass, San Francisco.

Creswell, JW & Plano Clark, VL 2007, *Designing and conducting mixed method research,* Sage, Thousand Oaks, California.

Eremenco, SL, Cella, D & Arnold, BJ 2005, 'A comprehensive method of the translation and cross-cultural validation of health status questionnaires', *Evaluation and the Health Professions,* vol. 28, no. 2, pp. 212–232.

Greene, JC & Caracelli, VJ 1993, 'Data analysis strategies for mixed method evaluation design', *Educational Evaluation and Policy Analysis,* vol. 15, no. 2, pp. 195–207.

Handicap International Belgium 1997, *Living with UXO: final report on the national survey on the socio-economic impact of UXO in the Lao PDR,* Handicap International for the Ministry of Labour and Social Welfare Lao National UXO Programme, Vientiane.

Hennink, M 2008, 'Language and communication in cross-cultural qualitative research', in P Liamputtong (ed.), *Doing cross-cultural research: ethical and methodological perspectives,* Springer, Dordrecht, The Netherlands.

Hoeyer, K, Dahlager, L & Lynöe, N, 2005, 'Conflicting notions of research ethics: the mutually challenging traditions of social scientists and medical researchers', *Social Science and Medicine,* vol. 61, no. 8, pp. 1741–1749.

Kazi, M 2003, *Realist evaluation in practice health and social work,* Sage, London.

Koch, T & Harrington, A 1998, 'Reconceptualizing rigour: the case for reflexivity', *The Journal of Advanced Nursing,* vol. 28, no. 4, pp. 882–890.

Liamputtong, P 2008, 'Doing research in a cross-cultural context: methodological and ethical challenges', in P Liamputtong (ed.), *Doing cross-cultural research: ethical and methodological perspectives,* Springer, Dordrecht, The Netherlands.

National Regulatory Authority for UXO/Mine Action Sector in Lao PDR (NRA) 2010, *The unexploded ordnance (UXO) problem and operational programs in the Lao PDR—official figures,* NRA, Vientiane.

Patton, MQ 2002, *Qualitative research and evaluation methods,* 3rd edn, Sage, Thousand Oaks, California.

Pawson, R & Tilley, N 1997, *Realistic evaluation,* Sage, London.

Sale, JE & Lohfeld, LH & Brazil, K 2002, 'Revisiting the quantitative–qualitative debate: implications for mixed methods research', *Quality and Quantity,* vol. 36, no. 1, pp. 43–53.

United Nations Mine Action Service (UNMAS) 2003, *International Mine Action Standards, 04.10: Glossary of mine action terms, definitions and abbreviations,* 2nd edn, UNMAS, New York, viewed 20 July 2008, <http://www.mineactionstandards.org/imas.htm>.

Weiss, CH 1998, *Evaluation: methods for studying programs and policies,* 2nd edn, Prentice Hall, Upper Saddle River, New Jersey.