

A fault analysis for health impact assessment: procurement, competence, expectations, and jurisdictions

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This paper describes and analyses failures in the health impact assessment process of five different major international projects owned by various multinational consortia. The objective is to improve the process. The paper examines how the consortia approached the issue of procurement of consultancy services, and the competence with which consultancy companies offering such services respond. It looks at issues of jurisdiction over management and content and the ethics and expectations of baseline studies. Finally, it offers solutions to some of the challenges described.

Keywords: health, competence, procurement, jurisdiction, ethics, climate change, cumulative, terms of reference

WHEN NEW ENGINEERING processes fail, a fault analysis is performed to identify possible modes of failure and ensure that the failure is not repeated. That fault analysis inspires the title of this paper. Each step in the impact assessment process is subject to many possible modes of failure and some of these have been observed on recent major international oil and gas projects.

The projects were located in Venezuela, Mexico, Nigeria, Iran, and China. While describing these failures, anonymity is maintained about the projects to ensure the opportunity for future observations and continuing engagement. The overall thesis is that the institutions that have espoused a policy of health impact assessment (HIA) are genuinely seeking to

get it right. They are hindered by factors such as a lack of competent staff to procure, implement or appraise a quality-assured process and outcome, and lack of regulation.

HIA of projects, strategies and policies is now endorsed by several significant policy decisions. One of the most recent and weighty of these is the new standard of the International Finance Corporation, which is backed by the Equator Principles Financial Institutions (Equator Principles, 2003; International Finance Corporation, 2006). They are committed only to finance projects that meet social, environmental and health standards. There are also declarations by multinational corporations to require HIA of new projects, for instance, Shell, Chevron and BP (Chevron, 2005; Shell International, 1997; BP Exploration and Production, unpublished). In addition, there are healthy public policy statements by national and local governments, and the Treaty of Amsterdam (European Commission, 1999). The challenge is to translate such high-level commitments into practical actions.

The setting is five separate large projects in different developing countries for which an integrated environmental, social and health impact assessment (ESHIA) is required by the project proponents. The

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project proponents invite bids from lead contractors, which are international environmental consultancy companies. These companies usually do not have competent HIA practitioners on their staff, although this is slowly changing. The lead contractors usually subcontract the HIA to external staff, some of whom will be nationals of the countries in which the project will take place (local staff).

Local staff are used wherever possible for several reasons. They have knowledge of their own country, culture and language. The project will be more sustainable if knowledge is transferred from the international to the local level and vice versa. Local staff are cheaper. Building local capacity is good future investment. It improves the reputation of the company and ensures their licence to operate. However, local staff with competence in HIA are often scarce, or non-existent.

Procurement

One of the early critical points in the assessment process is during procurement: choosing an appropriate contractor to carry out the ESHIA. For example, Box 1 illustrates a bidding process where the contractor with the weakest HIA skills (C) won the bid.

The strengths of company C were that it had a strong environmental and social team with demonstrable experience of environmental impact assessment (EIA) at both local and international level. The weakness was that it had no knowledge and experience of HIA and so was unable even to estimate the number and qualifications of local staff required. The single local staff member was a medical specialist with interest and experience in environmental issues, but with little English and no knowledge and experience of HIA. The consequences were as follows.

- Local consultant only used for baseline studies.
- All writing done by non-health specialists.
- Inadequate literature review and gap analysis.
- Report over-budget and delayed, because multiple rewrites were required.
- Lots of vague and generic statements.
- Lost opportunity to negotiate health mitigation and gain.

The choice of contractor was a false economy from the point of view of the project proponent and a loss of income from the point of view of the contractor.

Competence

Remedial training

The basic minimum level of competence required to lead an HIA is: having experience of participating in three HIAs; a health-related background; and completion of a certified four- to five-day training course

Box 1. Procurement example

Five international companies were invited to bid for an ESHIA. The bidding companies will be referred to as A–E, to preserve anonymity. As part of the selection process, the bids were ranked, by the author, according to their apparent competence to carry out the HIA component. The rank scores are indicated in Table 1. The criteria used were:

- Number and quality of local staff with training in a health-related subject.
- Number and quality of international staff with HIA competence and training in a health-related subject.
- Description of proposed method.

The quality of the staff was judged by reference to their attached CV and particular attention was paid to any knowledge and experience of impact assessment, health or HIA. Two of the international contracting companies proposed to use the same local staff on their bids and this is indicated by an asterisk.

The contractors obtained high scores largely on the basis of the number and quality of the staff that they proposed on the bid. There was some variation in the quality of the method described, but not much and it was difficult to distinguish between real experience and text book copying. The number of staff proposed was appropriate for the size and complexity of the project, in my opinion. However, a proposal with a large number of staff is more expensive than a proposal without.

There was a considerable variation in my final scores, with three companies judged to have sufficient competence (B,E,A) and two companies judged to have insufficient competence (D,C). These scores are necessarily subjective. My scores were added to independent scores assigned by an environmental and a social specialist. There was no replication of the scoring process. The combined scores apparently indicated that all five companies were competent. The five companies were then forwarded to the procurement department that chose the cheapest. Consequently, company C won the bid.

Table 1. Ranking of five consultancy companies bidding for an ESHIA

Contractor	Rank for local staff	Rank for international staff	RANK for method	Overall rank
B	2.5*	2.5	4	5
E	1.5	2.5	5	4
A	2.5*	1.5	5	4
D		1	3	1
C	1		4	1

in HIA. This basic minimum is not available in many countries, including those explored in this paper. Therefore, the project proponents planned remedial training in three of these countries. This consisted of an in-country course, backed up by mentoring, for the consultants recruited. Box 2 highlights some pitfalls with this approach.

One mode of failure will be referred to as the ‘figurehead mode’: the staff named on the bid by the lead contractor to undertake the HIA are simply figureheads and there is no actual intention that they will participate. The bid is deceptive. In country X,

Box 2. Failure of remedial training**Country Description**

- X The HIA subcontractor who was named on the bid was a professor and a national authority on government health policy, but with no experience of HIA. The course was intended to remedy this deficiency by providing him and his staff with training. Although he was invited, the professor did not attend the course. Instead he sent one of his research assistants. She was a postgraduate student of community health with no prior experience of HIA. The professor played no further role in the proceedings.
- After the course, the student was invited to obtain additional mentoring by email from the trainer. However, the student was told by the contractor that all communication with the mentor should be indirect, so that the process could be properly managed. Consequently, the mentoring scheme failed and further observation of the assessment was limited. Unrelated events halted the project before a draft impact assessment report was produced.
- Y The bid identified a senior public health professor as the lead for the HIA. The professor had no experience of HIA. The course was attended by the EIA team, the professor and a junior research assistant.
- Before the training course, the author made a very rapid visit to the project area and a number of key informants were interviewed. The visit was accompanied by the EIA team and the junior research assistant, but not the professor. The team made copious notes. After the training course, the author offered a distance mentoring service at no cost to the contractor. The contractor sent a series of drafts of the report, each of which had to be corrected extensively.
- It became clear that the contractor did not expect to do any additional fieldwork themselves beyond what had been accomplished by accompanying the author. The professor played no further role in the assessment. The report was written by the EIA team who had no knowledge about health issues. They had requested the local health departments to undertake surveys and supply data to them and this had produced no response.
- Z The contract was awarded on the understanding that the three health specialists who were named on the bid would attend the course. They arrived late and only attended the first day. Two junior members of the contractor's team did attend but had no health background.

the rival contractors had difficulty finding suitable figureheads for their bids. For example, one of them named a haematologist — a medical speciality that has no relationship to HIA.

In country Y, there was little experience of HIA, and certainly no regulations. Two local contractors were identified and asked to bid. One potential contractor had considerable experience of EIA but no health experience. The other potential contractor was a local university public health department with no experience of impact assessment.

The bids reflected these deficiencies, and the two potential contractors were asked to combine resources. A new bid was submitted that identified a senior public health professor as the 'figurehead' for the HIA. The subsequent process is described in Box 2. The final report was of mediocre quality and the local health stakeholders expressed their disappointment. In addition, the project managers had no idea about the objective or content of the HIA that they had commissioned. They assumed that it was about occupational health and the suitability of local medical services to provide medical care to the workforce.

Country Z did have a history of HIA so the local contractors were able to claim some experience. However, the quality of previous HIAs had generally been poor and the method and scope proposed by the contractor was weak. The mode of failure is best described as 'disorderly', as the HIA team did not prioritise getting themselves to the training course at the right time and on the right days. It is possible that this was because the project manager did not attach sufficient importance to having a competent contractor. For example, the project manager asked if one of the contractors could miss a day of the training.

It also seemed that the project manager might be receiving mixed messages from the consortia's management board. For example, one board member said that indigenous villagers should not be allowed to stand in the way of progress. At another meeting, he proudly explained how his own Surrey village had prevented a mobile phone mast from being erected.

Competence in baseline studies

One of the projects was in a region that was known for its commercial sex industry and drug trafficking. As Box 3 indicates, the local health subcontractor had no experience of HIA, but was an expert in a number of related fields. She was commissioned to write the Health Baseline Study report.

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Prior to a baseline survey, an impact assessment requires a literature search, a scoping workshop and a gap analysis; good quality secondary health data sources are sparse in developing countries, but there are always a few; a costly field survey is usually needed to obtain primary data

Box 3. Competence in health baseline studies

The local health subcontractor was an experienced social worker with a Masters degree in public health, who was undertaking a PhD in epidemiology. She had worked in many health promotion initiatives associated with family planning, HIV awareness and immunisation. She had a number of publications to her name, mainly in the field of women's health, HIV and other sexually transmitted infections. Her background was very relevant and should have contributed insights.

She had no training or experience of HIA and was managed by an environmental consultancy company that also had no obvious competence in HIA. The baseline study included an extensive social survey of community perceptions of the project. It also included a description of the national health system, its private and public components, and the general nature of primary, secondary and tertiary facilities.

Table 2. Issues raised in scoping report and response in health baseline study

Scoping concern	Information supplied in health baseline study to address this concern
Compensation for direct impact/local fisheries/land titling/lack of standards for compensation	None
Adequacy of medical facilities (additional overload)	Describes existing services but with little critical detail: does not address possible overload associated with project
Communicable diseases	Not specifically addressed
Alcohol and drug abuse	Very small survey of alcohol consumption, no data on drug abuse or control measures
Prostitution	No information
Drug trafficking/cartels	No information
Health and safety during construction (public and workers)	No data on local worker injury rates, no data on social perceptions
Road safety	No detail, other than road traffic accident rate

sources are sparse in developing countries, but there are always a few. For example, there may be published studies of the ecology of local malaria vectors. A costly field survey is usually needed to obtain primary data.

The scoping workshop provides an opportunity for the community and key informants to identify potential health concerns. Such a workshop had been held and a report was available. The key concerns, and the responses, are listed in Table 2 in Box 3. The gap analysis provides a basis for prioritising what data will be collected, based on the literature survey and scoping workshop.

In this example, there was no gap analysis. The baseline report made no reference to the stakeholder

scoping report and failed to address many of the scoping concerns. It was particularly noticeable that little reference was made to sexually transmitted infections even though the subcontractor appeared to have special experience of this field. A possible reason for this oversight is the direction given to the subcontractor by the lead contractor, so this mode of failure may be referred to as 'misdirection'.

The remedial action required, at the proponent's cost, was an additional survey of the commercial sex industry and the local specialist non-governmental organisations (NGOs). Detailed recommendations were made for managing commercial sex during the construction period. These included clauses to be inserted in the construction contract to ensure that the

Box 4. Country Z, study prioritisation

The project was located in a rural greenfield site in a tropical developing country. The rural community lived at subsistence level in simple housing made of palm fronds, eating cassava, coconuts and fish. The country contained extensive gender and socio-economic inequality. The domestic water supply was from open ponds and shallow wells. This was a setting associated with communicable diseases such as diarrhoea, malaria, tuberculosis and sexually transmitted infections. The professional middle classes lived in cities and urban settings associated with non-communicable diseases such as circulatory diseases, obesity and diabetes.

The local health specialists proposed to undertake a baseline health survey that prioritised the incidence of circulatory diseases in the rural community: a clear study imbalance. Their justification for the survey did not include a literature review. They proposed to take blood samples from a selection of the community and analyse these to establish the prevalence of certain medical conditions. None of the usual ethical safeguards were employed.

There was also imbalance between the health and environmental components of the ESHIA. For example, a special noise sub-study was carried out to establish baseline noise levels as part of the EIA. However, the dominant sounds in the village were the surf and the wind. The noise sub-study used sophisticated electronic monitoring equipment to establish noise levels at different times of day and in different localities. By contrast, malaria was probably a leading cause of child morbidity and mortality. Diagnosis and treatment of malaria cases would have been cheap and simple, but was not undertaken.

construction company would provide condoms and peer-to-peer education throughout the construction phase. Other recommendations included a social investment programme targeted at vulnerable women.

Competence in study prioritisation

The next example, Box 4, illustrates additional challenges in country Z. This mode of failure will be referred to as 'study prioritisation'. The imbalances included focus on inappropriate medical conditions and over-emphasis on minor environmental issues. For example, malaria was clearly far more important than either circulatory disorders or noise. There were probably four species of malaria vectors and an assessment was needed of how distribution and abundance could be affected by construction.

The emphasis on noise was probably driven by the wholesale adoption of EIA from urbanised industrialised countries. In urban settings, noise levels are frequently excessive and control is crucial. In rural greenfield sites in developing countries this is not the case. The emphasis on urban non-communicable diseases probably reflected a private research interest of the health consultants, rather than a project priority.

Competence in bio-ethics

Box 4 also illustrates a challenge of poor ethical practice during the baseline health survey. Medical surveys are supposed to conform to certain well-known ethical criteria (World Medical Association, 1964). These include: free prior informed consent; maintenance of confidentiality; provision of treatment; prior definition of how the data will be used; and approval by an external ethics committee. None of these was used. In addition, the data were not segregated by locality or socio-economic status.

For example, in country Z, where malaria was a primary cause of childhood morbidity and mortality, there was no local malaria data. A survey could have been undertaken to remedy this. An ethical protocol would include offering free treatment to all cases of clinical malaria identified.

Expectations

The creation of stakeholder expectations is a real challenge for large infrastructure projects. When a poor rural community learns that a major international infrastructure project is coming to their locality they naturally develop high expectations. These include an end to poverty, plenty of work, excellent medical facilities and good schools. While much of this is unrealistic, it is reasonable for them to suppose that they will experience some improvements. The project proponent will argue that the general provision of medical services and schools is the responsibility of government, and the budget for this should be obtained from taxes that the project

will pay. Such an argument is reasonable but unrealistic within corrupt, dictatorial regimes.

On the other hand, the principles of sustainability are not served by creating local communities that are entirely dependent on projects; nor can infrastructure projects take over the responsibility of government and provide general services. The proponent is strictly only responsible for the change in health status that is attributable to the project. It is not responsible for the general poor health status of the community. However, many big projects will have a social investment budget as part of their general corporate social responsibilities.

In the Box 4 example, treatment of identified medical conditions was specifically prohibited by the project proponent on the grounds that it would create expectations in the community that free medical treatment would always be provided by the project. If it did not continue to be provided, the community would feel aggrieved.

Improved health is brought about by investments in services other than medical, such as domestic water supply and job opportunities. There will usually be disagreement between a public health professional, who will seek changes to these determinants of health, and the local community, which expects more medical services; as do the local physicians and nurses.

Summary of competence in the reporting hierarchy

There are competency issues at various levels within the reporting hierarchy. These range from the lending institution, through the project proponent, to the consultancy services and are summarised in Table 3.

HIA is now a requirement of most international lending banks but there are few countries that have HIA legislation and regulation. That is the case in the countries where the projects described are

Table 3. Summary of strengths and weaknesses for undertaking HIA in the project reporting hierarchy

Reporting hierarchy	Strength in HIA	Weakness in HIA
International lending banks	Condition of borrowing	Appraisal and monitoring, competence
National government	Legislative and regulatory system	No legislation or regulation
Project Proponent	Management system	Procurement, competence, consistency
Lead contractor	Management system	Knowledge and experience
HIA subcontractor, international	Competence	Knowledge of country, experience of project sector
HIA subcontractor, national	Health background, country experience	Knowledge and experience of HIA and project sector

located. The responsible department is the Ministry of Health, and that had little or no knowledge or experience of HIA.

The project proponent may, or may not, have an internal requirement for HIA. As described, some multinational oil and gas companies do have such a requirement. They have effective management systems to implement the requirement, but significant weaknesses in applying their requirements consistently and in procuring a competent service.

The procurement contract is normally awarded to a major environmental consultancy company (the lead contractor). The staff generally do not have the competence or capacity to undertake HIA. Some have started to build this capacity. The normal response will be to subcontract. Unfortunately, the lead contractor may not know how to procure the service of a competent subcontractor.

There is a global shortage of competent HIA practitioners. Good development principles indicate that, whenever possible, the subcontractor should be a national. As it will usually not be possible to find a competent person at national level, an international specialist in HIA will also be required. This person should be able to transfer knowledge and skills to the national subcontractor. As international HIA specialists are not abundant, experience of the country and project sector may not be available.

Finally, the various players are the product of a global educational system. That system does not currently provide a wide range of training courses in HIA, or a certification process to demonstrate competence.

Jurisdiction

Jurisdiction is one of the many institutional determinants of health (Birley *et al*, 1997). Two examples illustrate the jurisdictional challenge: EIA dominance and industrial zones.

The first example concerns EIA dominance. Integrated impact assessment, or ESHIA, is usually under the control of environmental specialists who are familiar with EIA. The environmental component of the assessment is their priority because it is required

by legislation. HIA is usually not required by legislation and the Ministry of Health is usually not a statutory consultee. Environmental specialists often believe that EIA already takes full account of health and that specific health expertise is unnecessary in order to deliver a competent impact assessment. They do not wish to share the scarce resources available for the assessment equitably with social and health specialists. The environmental specialists have jurisdiction, but not competence in health issues.

The second example concerns major international infrastructure projects that are located in industrial zones within the host country. The projects have jurisdiction over their own plans but not over neighbouring projects or over the zone plan. Such zones concentrate a number of industrial activities, each of which may involve ground transportation; construction/operating/maintenance workforces; port facilities; and emissions to air and water. There are associated cumulative impacts. While the impacts of each individual project may be below an acceptable threshold, there is a risk that the cumulative impacts of several projects, each owned by different companies, will exceed that threshold.

Box 5 illustrates a jurisdiction challenge between consortia and national government and concerns involuntary resettlement. There is a popular belief that multinational corporations control national governments (Yergin, 1991). However, the current reality is that national governments negotiate for a majority stake in the ownership of large projects that exploit their mineral wealth. Further, there is competition among multinationals for the licence to exploit that wealth.

The multinationals in these examples had insufficient control over certain aspects of their own plans, such as resettlement. Under these circumstances, an impact assessment can only document compliance failure and argue diplomatically for changes such as in resettlement standards.

The duty for managing the cumulative impacts of several separate projects lies with the authority responsible for the zone and this is owned by national government. However, the national governments had not established regulations or legislation for integrated impact assessment.

Box 5. Jurisdiction in industrial zones

Two of the projects described above were sited in designated industrial zones that were greenfield sites in sparsely inhabited localities. Each was a joint venture between consortia of multinational corporations and government-owned companies. The local occupants were villagers living at, or near, subsistence level. The inhabitants were to be involuntarily resettled. In both cases, the zone was simply an area on a map containing no land-use plans, no existing infrastructure and no functioning operating company. The intention was to use the project as the first step towards the development of the zone. This would minimise the cost of development, while creating the necessary conditions to attract other developers.

In both cases, the national government undertook to resettle the local inhabitants and provide an empty site for the development. The multinational consortia agreed subject to the condition that the resettlement would be undertaken to the international standards defined by the World Bank (World Bank, 2001). However, there was no evidence that the government either understood, or accepted, the international standards. As the government had taken responsibility for resettlement, it prohibited the impact assessment from referring to it. The impact assessments took place in the knowledge that one of the primary impacts — involuntary resettlement — was to be excluded from the analysis. The multinational consortia responsible for the development simply had no jurisdiction over the resettlement plans of the national government.

Box 5 illustrates a local cumulative impact associated with industrial zones, but cumulative impacts can also be national and global. The jurisdiction of the project proponent over local cumulative impacts is already limited. The larger-scale cumulative impacts provide even less opportunity for influence or jurisdiction. This is particularly noticeable in the oil and gas sector.

At the national scale, one example of cumulative impacts is referred to as 'Dutch disease', 'the curse of oil', or 'the paradox of plenty'. The national economy may become increasingly dependent on the single commodity, leading to inflation, economic stagnation, loss of services, corruption and reductions in health status (Gylfason, 2001; Stevens, 2003). On the other hand, the increase in national wealth (as measured by GNP per capita) can lead to general improvements in population health, since poverty is a primary determinant of health.

At the global level, the cumulative impact in carbon dioxide and other greenhouse gas concentrations is causing a rise in global temperature with non-linear positive feedback, creating a significant risk of climatic, economic and social collapse (IPCC, 2001; Stern, 2006). This has major health consequences. The main outputs of an oil and gas project are the fossil fuels that store carbon. The fossil fuels are purchased by the market and are then no longer under control of the project. The global, cumulative impact is the combined responsibility of the oil and gas companies and society as a whole. Neither party can act without the other, and neither appears to have jurisdiction.

Solutions

The solutions to some of the challenges presented lie in better management of procurement and increased global capacity for HIA. Additional components include training courses, improved terms of reference and more active monitoring by civil society.

Remedial training

One possible solution to the lack of local competence is to hold an in-country training course at the initiation

The solutions to some of the challenges presented lie in better management of procurement and increased global capacity for health impact assessment: additional components include training courses, improved terms of reference and more active monitoring by civil society

stage of the project, as described above. In addition to training the local health subcontractors, the course should be made available to other stakeholders. These include representatives from the ministries of environment and health, local government officers, academics, local health staff, knowledgeable lay persons, members of the project team, environmental and social specialists on the local staff and various international staff.

This practice not only ensures transfer of knowledge about HIA, but also contributes to local understanding of the objectives and limitations of the HIA. Local understanding generates advocates for impact assessment, access to sources of data that might otherwise have been withheld, expectations about future projects and goodwill. The training course represents an investment provided to the contractors by the project proponent. Careful management is required to ensure that all the named staff attend the training and actively participate in the work, and that 'figureheads' are identified.

Terms of reference

The terms of reference (ToR), or scope of work, for an impact assessment is the document that specifies what services the contractor is expected to provide. It is used by the proponent during procurement, by the contractor during bid preparation, and by the proponent during the independent critical appraisal of the completed impact assessment report. As the contractor should provide all the services that are described in the ToR, it is a crucial document. It informs the budget calculations, timing and outcome.

Some of the characteristics of a good ToR have been described in training courses on HIA (Bos *et al.*, 2003). However, there is no general agreement of what constitutes a good ToR for an integrated environmental, social and health impact assessment. Within the procurement institution, such as a multinational corporation, the normal procedure appears to be to copy and paste text into a new ToR from an existing ToR. This is a pragmatic strategy, but it is likely to reproduce existing deficiencies.

To remedy this, a working group has been established within the International Association for Impact Assessment (IAIA). A draft generic ToR has been prepared and is under discussion. It is currently 49 pages long and specifies 22 separate baseline studies. Table 4 illustrates one element of the generic ToR.

Table 4. Idealised distribution of resources in a generic ToR

	Environmental (%)	Social (%)	Health (%)	Total (%)
Management				
Baseline studies				30–40
Analysis				
Recommendations				
Total	30–35	20–25	20–25	

The available resources for the impact assessment need to be distributed among the environmental, social and health components. The exact distribution will depend on the project. In cases where there is an affected human community, a more or less equal distribution is appropriate. The environmental component may still get a slightly larger share, because of national regulatory requirements.

Many impact assessment reports give the impression that less than 5% of the total resources were devoted to the health component, an unacceptable imbalance. The total budget need not be increased but simply redistributed. Savings accrue because of the significant overlap between environmental, social and health components.

The resources must also be distributed among the various project activities. The most important of these are the baseline studies, analysis and development of recommendations. There is a tendency to devote too many resources to the baseline studies and not leave enough for analysis and recommendations. We suggest that no more than 30–40% of resources should be spent on baseline studies.

There are a number of other cells in Table 4. It is probably not realistic to assign ideal percentages to all of them.

Terms of reference have to be very detailed to ensure that the contractor provides what the procurer requires. For example, the ToR should require the HIA staff named by the contractor to attend the whole of any remedial HIA training course, to use any mentoring that is provided, and to do the number of staff hours of work that they have been allocated without delegating to juniors. No amount of detail is likely to succeed unless the procurer, contractor and subcontractor are competent.

Monitoring

Institutions require an independent process of appraisal and monitoring to ensure the quality of their impact assessments. The ultimate assurance is provided by civil society. For example, the International Finance Corporation and the Equator Principles Financial Institutions, mentioned in the introduction, have created a demand for environmental, social and health impact assessment.

Yet these institutions do not have in-house systems to ensure their own compliance. In the case of HIA, they may not even have systems to identify appropriate external appraisers. They currently seem to rely on an NGO called Bank Track to provide monitoring (Bank Track, 2006; Newton, 2006). It is based on a network of 200 NGOs that have jointly agreed to the Collevocchio Declaration on financial institutions and sustainability. There are a number of other web sites with a similar function (for instance, Mines and Communities, 2006).

However, the majority of NGOs focus on environmental and social issues. They are not health specialists and so accurate comment about health

impacts is limited. A small number of non-health sector projects benefit from a scholarly and scientific record of their impacts (for instance, San Sebastián and Hurtig, 2005). The majority of projects do not.

The health community websites generally focus on projects that lie within the health sector (for instance, Global Health Watch, 2006). At present, these sites do not tend to have HIA sections. There is a community-owned HIA Internet resource based on Wikipedia technology (Vohra, 2006). This contains a “comments and critique” section where anyone can record observations of the health impacts of any project.

Conclusion

The objective of cataloguing these challenges is to identify faults that must be rectified for HIA to function effectively. Ideally, the specific observations recorded here should be formulated as general rules that are applicable across projects and sectors. One general rule seems to be that, under certain commercial conditions, consultancy companies derive their profit from *not* providing the service that has been contracted. The commercial conditions include: extreme scarcity of competence; uninformed procurement processes; the lack of national or international regulation; and the lack of an authoritative quality assurance process. As long as procurement departments are prepared to award contracts to contractors that do not have appropriate competence, there is no incentive for those contractors to acquire competence. Procurement departments, too, need an awareness of HIA.

Such failures may appear to benefit project proponents, for they relieve them of the duty of investing in mitigation, reduce project delays and permit them to claim compliance with the letter, but not the spirit, of their policies and agreements. However, impact assessment is undertaken because it is good for business. It provides licence to operate, reputation support and the avoidance of costly mistakes. It is not good business to do it badly.

All the members of the multinational consortia involved in the above projects had corporate social responsibility statements. The statements bind them to responsible behaviour and affect their reputation, risk profile, share price and profitability. More significantly, these failures undermine the management of safeguard and mitigation measures. Vulnerable communities are exposed to risk. They risk having their lives disrupted, and their health threatened, by large projects from which they derive little direct benefit. The voluntary risks of consortia and their shareholders are not matched by the involuntary risks of a project-affected community.

Regulation is the role of governments. This is well-established for EIA through the Ministry of Environment. There is a parallel need to establish legislative requirements for HIA through the Ministry of Health.

The jurisdictional challenges associated with cumulative impacts are more complex. They require national, international and global regulation. While some small steps have been taken, it is clear that they are inadequate.

Despite the emphasis placed on modes of failure in this paper, there is much room for optimism. A number of multinational corporations are attempting to produce good HIAs. For example, we have provided staff training and/or advice for four oil companies. Multinationals have published examples of HIAs on the Internet. Some of the best international environmental consultancy companies are establishing competent HIA units. The financial institutions

have adopted a standard. The Internet is providing civil society with a new way of engaging with multinational corporations, governments and the multilateral organisations.

The World Health Organisation is assisting governments to develop new regulations (WHO, 2006). For example, Thailand has adopted a new National Health Act (Government of Thailand, 2007). There are an increasing number of HIA training courses and graduates of those courses. Finally, HIA has become a standard topic in conferences, such as the annual International HIA Conference and the IAIA (IAIA, 2006; Institute of Public Health in Ireland, 2007).

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