Contributing Paper

Social Impact Assessment

Frank Vanclay
Center for Rural Social Research, Charles Stuart University, Australia

Prepared for Thematic Review V.2:
Environmental and Social Assessment for large dams

For further information see http://www.dams.org/

Contributing Paper

Social Impact Assessment

Frank Vanclay
Center for Rural Social Research, Charles Stuart University, Australia

Prepared for Thematic Review V.2:
Environmental and Social Assessment for large dams

For further information see http://www.dams.org/

Disclaimer

This is a working paper of the World Commission on Dams - the report published herein was prepared for the Commission as part of its information gathering activity. The views, conclusions, and recommendations are not intended to represent the views of the Commission. The Commission's views, conclusions, and recommendations will be set forth in the Commission's own report.

World Commission on Dams
5th Floor, Hycastle House
58 Loop Street
PO Box 16002
Vlaeberg, Cape Town
8018, SOUTH AFRICA
Telephone: +27 21 426 4000
Fax: +27 21 426 0036
Email: info@dams.org
http://www.dams.org

CONTENTS

1. Introduction

This briefing paper on social impact assessment (SIA) has been prepared for the World Commission on Dams. The objectives of this paper are to:

- Assess the way SIA has been used (in decision making processes) in the past – specifically what it captured and what it missed; and what were the principles, procedure and method of SIA;
- Consider how social impact assessment of large dams could be improved;
- Highlight best practice recommendations and general principles of social impact assessment that are relevant for large dams.

This paper does not intend to be exhaustive or definitive. It is also not necessarily referring to any dam or dams in particular (although various dams may be mentioned as examples). It presents general issues that need to be considered in social impact assessment of large dams.

While impact assessment applied to a dam represents another application of the methodology, and therefore the objective of improving the impact assessment process and procedure in relation to dams is enhanced through general improvement of the methodology, there is so much other literature addressing improvement of SIA (and impact assessment generally) (see Burdge & Vanclay, 1995; Vanclay, 1999a), that it is more appropriate in this paper to concentrate on the application of SIA to dams rather than to discuss general issues about SIA. Nevertheless, because from a SIA perspective dams are not particularly different than many other developments that affect local peoples, some generalities will be given.

2. A quick overview of Social Impact Assessment

2.1 What is social impact assessment

Social Impact Assessment (SIA) is the process of assessing and managing the impacts of a project, plan, program or policy on people (Vanclay, 1999a). Although SIA is narrowly defined with the National Environmental Policy Act of the USA (see Interorganizational Committee, 1994), and this limited understanding of SIA does pervade other national legislation, most SIA professionals consider SIA to be more than a methodology, and that it is philosophy about development and democracy. As such, it considers pathologies of development (i.e. impacts), goals of development (such as poverty alleviation), and processes of development (e.g. participation, capacity building) (after Goodland, 1999). There is no reason why SIA, as a disciplinary entity rather than as a methodology, could not be involved in assisting communities to determine their development priorities (c/f Goodland, 1999).

Although there has been some debate over the precise meanings of terms such as Social Impact Assessment, Social Analysis, Social Assessment, Social Appraisal, and even Social Soundness Analysis, most of the debate about these terms has been within the World Bank (see discussion in Goodland, 1999), and has had little bearing on the SIA discipline. Amongst the international professional community interested in SIA, although there is not a generally agreed definition, there is widespread agreement about the concept in principle. I will define that concept as:

> "Social impact assessment is the process of analysing (predicting, evaluating and reflecting) ***and managing*** the intended and unintended consequences on the human environment of interventions (policies, plans, programs, projects and other social activities) and social change processes so as to create a more sustainable biophysical and human environment" (Vanclay, 1999b).

The important features of this definition are that:
(1) SIA is understood to include adaptive management of impacts, projects and policies (as well as prediction, mitigation and monitoring) and therefore needs to be involved (at least considered) in the planning of the project or policy from inception;
(2) the SIA process can be applied to a wide range of interventions, and undertaken at the behest of a wide range of actors, and not just within a regulatory framework;
(3) it is implicit that social and biophysical impacts (and the human and biophysical environments) are interconnected; and finally,
(4) the overall purpose of all impact assessment is to bring about a more sustainable world, and that issues of social sustainability and ecological sustainability need to be considered in partnership.

SIA is also understood to be an umbrella or overarching framework that embodies all human impacts including aesthetic impacts (landscape analysis), archaeological (heritage) impacts, community impacts, cultural impacts, demographic impacts, development impacts, economic and fiscal impacts, gender assessment, health impacts, indigenous rights, infrastructural impacts, institutional impacts, political impacts (human rights, governance, democratisation etc), poverty assessment, psychological impacts, resource issues (access and ownership of resources), tourism impacts, and other impacts on societies (Vanclay, 1999b).

A convenient way of thinking about social impacts is as changes to one or more of the following:
- people's way of life – how they live, work, play and interact with one another on a day-to-day basis;
- their culture – shared beliefs, customs, values and language or dialect;
- their community – its cohesion, stability, character, services and facilities;

- their environment – the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources;
- their health and wellbeing – where health is defined as "a complete state of mental, physical and social wellbeing, not merely the absence of disease or infirmity", and is applied to individuals and to the society in which they live; and finally,
- their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children (Vanclay et al, 2000 – based on an idea from Audrey Armour).

2.2 Social Impacts and Social Processes

One confusion in the SIA literature relates to the lack of distinction between social changes processes that are caused by projects such as dams, and social impacts that are actually experienced. In this conceptualisation, an impact must be an experience (either real or perceived) of an individual, family or household, or a community or society. Resettlement (relocation of a community), for example, is not a social impact, but causes social impacts such as anxiety and stress, uncertainty, disruption to daily living, potential change to family structure, as well as impacts such as homeliness. Similarly, an (even rapidly) increasing (or decreasing) population, the presence of seasonal workers, and/or weekend residents, are not impacts in themself, but they cause other impacts, such as breakdown of the social fabric of the community, cause existing residents to experience changed perceptions about their community, and may stress the community physical infrastructure. Alcohol or other drug use are not social impacts, but are processes, which, depending on the context of their use, may cause social impacts such as family violence and economic hardship. All of the variables must be understood in their sociological context, and, of course, in their local cultural context. Homeliness, for example, does not mean the physical quality of the house, but the social relationships among the occupants of the building, and between them and the building. It is a subjective concept relating to the meaning and experience people attach to the place where they live and build their home (Vanclay, 1999a).

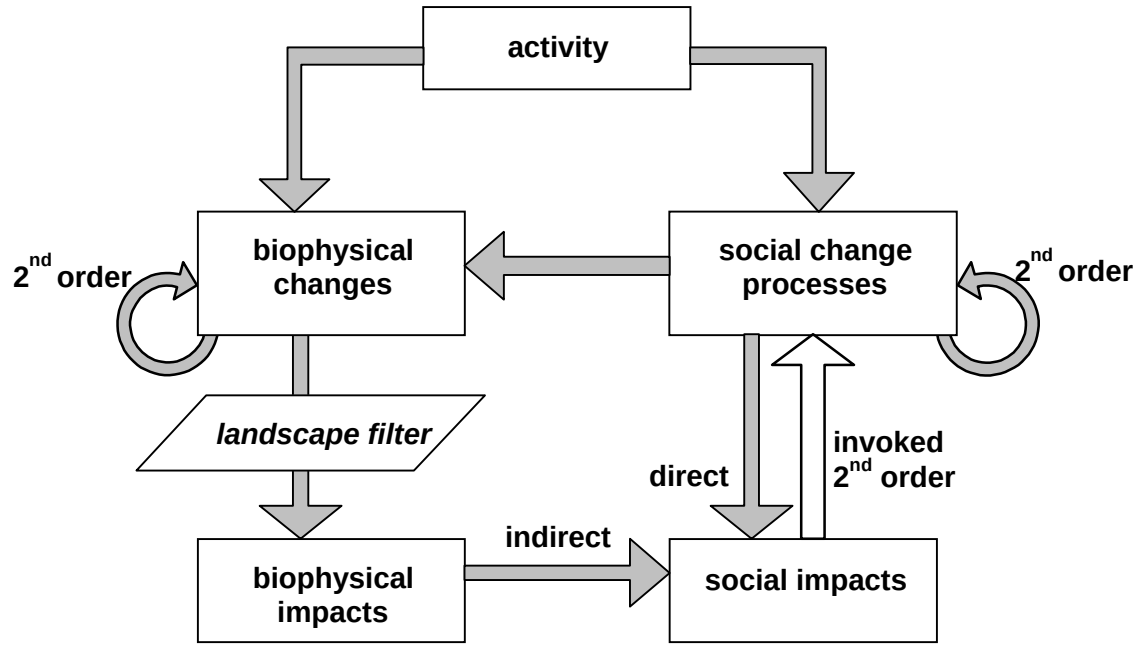
Because many of the SIA writers have confused issues of social change processes and social impacts, partly because demographic processes such as changes in the size and/or composition of the population are more easily measured than the experienced impact, it is worthwhile presenting here a list of potential social change processes, and a full list of social impacts.

The list of social change processes is incomplete, because the potential number of social change processes is potentially infinite, and the processes vary widely according to the activity being planned. The list of impacts, however, is arguably definitive, although some disagreement may exist about the precise wording and categorisation of impacts. In this scheme, impacts are classified according to the level of experience of impact – that is, whether they are experience at an individual or household level, or whether they are experienced by the community or society as a whole. Of course, impacts on society as whole may translate into impacts that affect individuals as individuals.

The list is not intended to be used as a checklist, but is provided to display the full range of potential social impacts, and to assist people not familiar with SIA to become aware of the full extent of SIA.

It is important to appreciate that some impacts make be caused directly by an activity, while other impacts may be caused indirectly. And the experience of an impact can then cause other processes to take places which then cause second order impacts. Because of people's dependency on the biophysical environment, changes to the biophysical environment can create social impacts, and social processes which are the direct result of a project, or the result of the experience of a social impact, can also cause changes to the biophysical environment (see Figure 1).

Figure 1: Interconnection of biophysical and social impact



Source: Slootweg, van Schooten & Vanclay (1999)

2.3 A partial list of Social Processes

Demographic Processes	**Institutional Processes**
Increase in population size (in-migration) Decrease in population size (out-migration) Presence of newcomers (perceived or real cultural differences) Presence of (temporary) construction workers Presence of seasonal residents Presence of weekenders Presence of tourists (involuntary) resettlement rural to urban migration urban to rural migration	globalisation (the incorporation of the local into the global) – loss of autonomy of decision making at the local level land tenure changes institutionalisation and bureaucratisation **Political Processes** democratisation totalitarianisation concentration of power to an (urban) elite loss of grass roots political autonomy
Economic processes	**Socio-Cultural Processes**
Conversion of economic activities Conversion of landuse Diversification of economic activities Increase in food production Decrease in food production Impoverishment Inflation Fluctuation in currency Increase in economic activity Decrease in economic activity job creation job loss concentration of economic activity (dependency of singular economic activity) globalisation (the incorporation of the local into the global) – global market-oriented production tourism	globalisation (the incorporation of the local into the global) – loss of cultural identification; macdonaldization, coca-cola development; cultural hegemony emancipation and empowerment (the process of facilitating the integration of disadvantaged groups in civil society) marginalisation and exclusion (the process of creating marginal groups in society, which as a result are denied access to services) segregation (the process of creation of social difference within a community)
Geographical Processes	**Other Processes**
Urban sprawl (expansion of urban areas into rural areas) Urbanisation (growth of villages into cities) Increased transportation and rural accessibility Physical splintering (such as caused by major roads)	Prostitution excessive alcohol and drug use gambling risk taking behaviour resentment opposition noise making pollution (air and water) dust making litter traffic vandalism and graffiti activism

Source: Vanclay et al, 2000.

2.4 A definitive list of social impacts

Individual and Household Level	Community and Institutional Level
1. death, death of family member	1. death of people in the community
2. arrest, imprisonment, detention, torture, intimidation, or other abuse of human rights inflicted on an individual	2. violation of human rights, freedom of speech
3. reduced availability of food and adequate nutrition	3. reduced adequacy of physical infrastructure (water supply, sewerage, services and utilities)
4. reduced control over fertility (loss of availability of contraception, and gender dis-empowerment to make decisions about birth control)	4. reduced adequacy of community social infrastructure, health welfare education libraries etc
5. reduced level of health and fertility (ability to conceive)	5. reduced adequacy of housing in the community
6. reduced mental health, increased stress, anxiety, alienation, apathy, depression	6. increased workload on institutions, local government, regulatory bodies
7. uncertainty about impacts, development possibilities, about own life as a result of social change	7. diminished cultural integrity (continuation of local culture, tradition, rites)
8. loss of aspirations about the future for self or children	8. loss of rights over, and access to, resources
9. reduced actual personal safety, increased hazard exposure	9. destruction of, or other negative influences on, heritage and other sites of archaeological, cultural, or historical significance
10. experience of stigmatisation and deviance labelling	10. loss of local language or dialect
11. reduction in perceived quality of life, subjective well-being, self esteem, self image	11. profanisation of culture
12. reduction in standard of living, level of affluence	12. increased inequity (economic, social, cultural)
13. worsening of economic situation, level of income, property values	13. increased concern about social justice issues in relation to minority or indigenous groups
14. decreased autonomy, independence, security of livelihood	14. worsening gender relations in the community
15. change in status or type of employment, or becoming unemployed	15. decreased economic prosperity
16. decrease in occupational opportunities, potential diversity, flexibility in employment	16. increased dependency, reduced autonomy, reduced diversity, decreased viability of the community
17. moral outrage, blasphemy, religious affront, violation of sacred sites	17. increased unemployment level in the community
18. upsetness (objection/opposition) to project, NIMBY	18. loss of other options (opportunity cost)
19. dissatisfaction due to failure of a project to achieve heightened expectations	19. increased actual crime
20. annoyance (dust, noise, strangers, more people)	20. increased actual violence
21. disruption to daily living, way of life (having to do things differently)	21. increased social tensions, conflict or serious divisions within the community
22. reduction in environmental amenity value	22. increased corruption, decreased credibility or integrity of government
23. reduced perception of communityness, community cohesion, integration	23. decreased level of community participation in decision making, loss of empowerment
24. loss of community identification, connection to place (do I belong here?)	24. impact on the social values about heritage and biodiversity
25. changed attitude towards local community, level of satisfaction with the neighbourhood	
26. disruption to social networks	
27. alteration in family structure, family stability, divorce	
28. increased family violence	
29. deteriorating gender relations within the household	
30. changed cultural values	
31. worsening perceptions about personal health and safety, risk, fear of crime	
32. reduced leisure opportunities	
33. reduced quality of housing	
34. reduced feeling of homeliness	
35. increased density and crowding	
36. reduced aesthetic quality, outlook, visual impacts	

37. increased workload, amount of work needed to be undertaken to survive/live reasonably	Source: Vanclay, 1999a (updated)

3. The Lifecycle of a Dam Project

3.1 Stages in the Lifecyle of Projects

There are four stages in the lifecycle of any project that always need to be considered to gain a full awareness of all impacts. Each of the four phases has its unique impacts relating to the nature of the activities associated with the project at that stage. The impacts vary according to local conditions, and also according to the planning of mitigation to reduce impacts. The four phases are: Planning, Construction, Operation, and Decommissioning (Interorganizational Committee, 1994; Burdge & Vanclay, 1995). In thinking about dams, recognition of these four phases is important to consider the full range of impacts.

3.2 Original Conceptualisation and Planning

The original conceptualisation and planning of dams causes one set of impacts, typically fear and uncertainty amongst the potentially affected publics. An important additional impact is speculation which may lead to a wide range of other processes and activities. People may move to the affected area or buy up land that may be inundated in order to benefit from potential compensation. People may move to the area in search of work, or to establish a business (such as to service the construction workforce) even long before construction has started. Conversely, people wishing to sell land or houses may find it difficult and/or may suffer a reduced return because interest in their property may have diminished because of fears about the project. Speculation, and the negative impacts from speculation, are fuelled by inadequate information, and especially in situations where corruption exists and certain people are able to access information and thereby capitalise on that information. Such corruption extends to cronyism where officials illegally disclose (leak) information to their friends and relatives so that they reap benefits from rezoning and compensation etc.

3.3 Construction

Construction of large dams can take up to ten years, and sometimes more. Some of the worst impacts occur during the construction phase, and this is also the time when the majority of associated activities happen – when relocation of peoples occur and so on. Construction of the dam implies a wide array of related activities including the construction of access and other roads, electricity transmission corridors, water pipes for city water supply, and irrigation channels; the operation of quarries to supply rock fill for the dam wall and associated works; the use of explosives and heavy transport. There may be an influx of workers, as well as construction of a service centre to house these workers. Many of these activities cause dust, noise, and create hazard. All of these operations need to be considered and not just the dam wall.

In addition to the impacts associated with construction of the dam and associated works, a dam has upstream and downstream impacts. River flow is reduced, and there will be many biophysical changes upstream and downstream as a result of the dam. These changes will have considerable biophysical and social impacts. The social impacts may be direct or indirect. A direct social impact might be that the boatmen who ferried passengers across the river are now unemployed because the reduced width of the river meant that people can cross by other means. An indirect impact might be that that the

reduced flow and/or increased turbidity has changed fish breeding habitats and there are no longer fish to catch, severely affecting people who depended on fishing. Another indirect social impact might be that the reduced flooding of downstream floodplains has led to major ecological and hydrological changes which have caused salinisation of the downstream plains. This salinisation has then reduced agricultural productivity, or has necessitated a change in crop type, which has had economic and/or cultural changes.

Changes in river flows can have ecological health impacts, especially for vectored environmental diseases, and especially in tropical countries. While it is the philosophy of this document that health impacts are social impacts, a qualified health impact assessment expert is needed to thoroughly examine the health impacts that are likely to occur as a result of these changes.

For irrigation projects, agricultural land must be redeployed. This may involve appropriation of the land from existing owners or users of the land (such as indigenous peoples). Irrigated agriculture is usually for cash crops for export rather than subsistence crops, and consequently that whole range of flow-on effects occur which relate to the change in the nature of agricultural production.

There are three categories of people who are potentially displaced in a dam project and who potentially require resettlement: (1) people whose houses are submerged; (2) people whose agricultural lands are submerged and therefore have lost their livelihoods; and (3) people whose lands are appropriated for agricultural development (whether or not they had legal control over the land). People who are displaced must go somewhere. Whether they are relocated by an agency (involuntary resettlement) or whether they leave the area to be inundated by themselves, inevitably they wind up as newcomers somewhere else, where they in turn cause social and biophysical impacts on the host community. In some respects, the host community of relocated people are also inundated, especially in situations where many thousands of people are relocated.

Some social impacts relate directly to the construction process. The experience of noise and dust are obvious, but more serious may be the increased risk of injury from the frequency of heavy transport hauling rockfill to the dam construction site. The use of explosives presents a certain degree of risk to people in the near vicinity.

Other social impacts relate to the interaction of locals with the construction workforce. The construction phase of a dam involves far more workers than the operation maintenance stage, and because appropriate infrastructure and management procedures are often not in place, the impacts at this time can be extreme. Construction workers tend to be separated from families, work long hours at hard work, and consequently develop a subculture which manifests itself in behaviours that are often disapproved of by the local community, especially the long term residents of small communities. These perceived antisocial behaviours can be exacerbated by being in conjunction with the large quantities of alcohol, and occasionally other drugs, that these workers tend to consume. Demand for, and establishment of, prostitution services to cater for workers can cause social and health impacts.

Long term residents may experience increases in price for housing and local services, and community infrastructure may become over-stretched in order to cope with the influx of workers. There could be increased uncertainty about the future, and a change in residents' feelings about their community. These impacts may lead to resentment and friction between established residents and the incoming workers and other newcomers who are attracted because of the dam.

While it is impossible to mitigate all social impacts during the construction phase, much can be done to reduce impacts during this phase. Adequate information and community participation in planning can reduce much of the fear and uncertainty associated with the dam. Construction practices can be managed to reduce impacts. Consideration can be given as to whether it is better to separate or to integrate workers and the local community. A general rule of thumb is to maximise the use of local labour. For long term projects, and where there is little cultural difference between incoming workers

and the local community, workers should be fully integrated into the existing community. For short term construction, and/or where there are large cultural differences between workers and the local community, the workers should be kept separate. Special effort must be made to provide the services that workers demand/expect, such as prostitution and alcohol, at the construction camp, so that workers do not seek these services in nearby villages, which inevitably will provide those services because of the economic differential between workers and locals.

3.4 Operation and Maintenance

The operation and maintenance stage of a dam occurs after all construction is complete, and the construction workforce has left. Although there may have been profound change to the community, and there may exist some remaining maintenance staff, it is a time when communities return to a period of 'normalisation'. With appropriate planning and the implementation of mitigation and monitoring procedures, negative social impacts during this time can be minimised and benefits maximised. With large dams, because the construction phase can be for so long, it is important to prepare communities for life after construction. For example, the economic impact of large number of construction staff with relatively high disposable incomes (and the associated economic multiplier and associated social impacts) will no longer occur.

3.5 Decommissioning and Closure

Although the concern of the World Commission on Dams may be more with the implementation and operation of new dams, it is important to realise that the social impacts associated with decommissioning of a dam may be substantially reduced by planning early on. Most dam decommissioning is temporary, and occurs when large scale maintenance or strengthening is required, or when accumulated silt needs to be removed. In some countries, e.g. the United States, some smaller dams are being removed altogether where there is no longer a reason for their existence. It would seem unlikely that this will happen to the current generation of large dams.

In social impact terms, a form of social impacts similar to those experienced with decommissioning can also occur when a dam project that was scheduled to go ahead and that has been expected for some time is cancelled. Impacts here are associated with the speculation that took place, and indicate the care the must occur during the planning phase (Burdge & Vanclay, 1995).

4. Key Issues in the SIA of Dams

The overwhelmingly key issue in the SIA of large dams, is the issue of resettlement of people who need to be relocated because of inundation of their houses. Related to this is the issue of people who have lost agricultural land, and the issue of the relationship between resettled people and the host community where they are relocated. Robert Goodland recognises that "Most of the [World] Bank's 'problem projects' are so-called precisely because they have massive and unsuccessful resettlement" (Goodland, 1999, 7-8). Although the World Bank has Resettlement Guidelines, it is not clear to what extent they have been fully implemented, and there are few examples of truly successful dam developments.

The second key issue relates to the failure to appreciate the truly social and cultural nature of many social impacts. Western engineers have been pre-occupied with material well-being that the physical standard of living of people, putting this ahead of people's concerns about their obligation to their departed ancestors, or their attachment to a particular house (in which they and their parents may have been born). Improving the standard of living of people often accelerates the social processes that lead to social impacts because they are often facilitated by that standard of living. Improved transportation and roads hastens community disintegration, through increased contact with the outside world, which in turn, through the mixed blessings of globalisation may lead to loss of local language or dialect, changed cultural norms, loss of skills in local art and music forms.

The third key issue is related to the second, but refers to the special vulnerability of certain groups or communities. Dams in remote areas may affect indigenous peoples or people of certain ethnic minorities. Relocation of such people may have greater psychological and social impact on these people than on other people in the society. Increased contact with outsiders may also have devastating influences on the integrity of their culture and traditional practices. With identification of the existence of such groups and careful planning, impacts can be minimised. Strategies of cooperative social development, or complete isolation and separation, should be established through negotiation at a very early stage.

The final key issue worth mentioning is the integration of the biophysical and social environments. In developing countries, especially, people are inherently interconnected to the physical environment. Changes in water quality or river flow regimes can have considerable social impacts. All biophysical impacts are ultimately experienced as social impacts. Because dam construction is manipulating the physical environment, the potential for harm is considerable. In tropical countries, the presence of many water-associated vector organisms for disease is considerable, and considerable health impacts of dam developments are inevitable.

5. Identification of Stakeholders

One of the failings of many impact assessments is inadequate participation of all stakeholders. Sometimes that arises from a failure to consider the full range of potentially interested and affected parties. Failure to include all stakeholders can lead to poor scoping of impacts. Below is a checklist of potential stakeholders for most large dam projects:

- Residents who will be displaced;
- People from the host communities where displaced persons will be relocated;
- Nearby communities as well as upstream and downstream residents (including indigenous peoples) whose livelihoods may be threatened/affected as a result of the dam;
- People who will be affected by the irrigation channels, roads, transmission line corridors and by other associated works;
- Construction workers and their families;
- People in communities near where construction workers will be located;
- Non resident Indigenous peoples who may have spiritual attachment to the land/river and/or native title to land near to the construction site;
- Local, national and international conservationists who may be interested in the ecological values that may be threatened by the dam.

In addition to these stakeholders who all might be potentially negatively affected by the project, there is the developer and associated contractors, regulatory agencies, local regional and national government, funding or development agencies, as well as the people who stand to benefit from flood control, irrigation water, urban water supply, and/or electricity generation. Some recreation opportunities may also exist on the lake created by the dam (usually these opportunities are only available to rich people).

6. Some Recommendations for Dam Projects

The following recommendations were developed in a series of workshops facilitated by Frank Vanclay as part of the process of developing International Guidelines and Principles for Social Impact Assessment.

6.1 Principles that relate to the consideration of ALL social impacts

- Always consider the gendered nature of impacts.
- Appreciate the existence of spiritual worldviews and the potential existence of sacred places.
- Consider the quality of life (social wellbeing) of people and not their standard of living.
- Always consider the second order impacts, and the upstream and downstream impacts.
- Consider impact equity – the differential distribution of impacts. Make sure that the same people do not experience all of the impacts.

6.2 Principles relating to the integration of social and biophysical environment

- Appreciate that all impacts are social impacts and that people experience the physical environment in human terms.
- Always extrapolate from changes in the biophysical environment to their human implications.
- Appreciate seasonality and the implications of this for people and their activities.

6.3 Participation principles

- Utilise local knowledge in siting decisions for dams, quarries, service towns etc.
- Be prepared to negotiate with the local community over issues that might cause impacts.
- Pay attention to local power relations and social structures, and respect lines of authority. Go through the appropriate gatekeepers in the community.
- Give careful consideration to local cultural sensitivities and protocols.
- Ensure that sufficient time and resources are available for participation, and ensure that participation is actively encouraged primarily by changing the manner of participation to suit the specific circumstances and the cultural context. This may require different participation strategies and different media.
- Provide multiple opportunities for local people to express their concerns and to interact with project design so that participation processes do not just become venting exercises where residents express their anger.
- Be as open and transparent as possible.
- Don’t renege on agreements.
- Have dispute management and mediation processes in place.
- Realise the importance of true public participation and the consequences that might arise from a lack of participation.
- Recognise the existence of diversity within communities, and involve the diverse publics as soon as possible.
- Develop processes that lead to social inclusion and reject processes that lead to social exclusion.

- Maximise the involvement of local people in: (a) assessment processes; (b) project design; (c) project implementation; and (d) operation, monitoring and evaluation of the project.
- Use local language in communication with local people.
- Consider the vulnerability of certain groups.
- Identify and involve marginalised peoples.
- Identify under-representation by people who are potentially affected and either seek to change participation processes so that they will not be under-represented or ensure that their interests are considered.

6.4 Impact management and minimisation principles

- Promote active impact management and the ability of SIA to assist in mitigation.
- Avoid relocation/resettlement if at all possible.
- Provide training programs to allow locals to take on jobs rather than importing outsiders.
- If newcomer workers are culturally similar to the local community, integrate them into the community, whereas if they are culturally different, keep them separate.
- Encourage ownership of decision making and outcomes by all parties, and maximise commitment by all to the agreement.
- Monitor the workforce (especially the construction workforce) to ensure compliance to agreed standards of work practice, noise, operating hours etc.
- Avoid compensation payments in cash.
- Ensure that people are not made worse off.

6.5 Community development principles

- Consider the needs of vulnerable, at risk, groups and/or ethnic minorities and/or indigenous peoples.
- Focus on poverty reduction and always seek to improve the position of the worst off members in society.
- Recognise and preserve the existence of social diversity.
- Maintain community integrity and viability.
- Develop enhancement programs that stimulate a range of activities in the community and encourage diversity of economic, cultural and social activity even if it requires cross-subsidisation from other activities.
- Develop mechanisms for capacity development and use project planning as an opportunity to foster civil society.
- Avoid development of a dependency syndrome or hand-out mentality among affected groups by providing compensation in a form that ensures that meaningful activity is undertaken – do not provide compensation in the form of cash payments.
- Plan for the bust that follows the boom, or life for the community in the future after the proposed/current project ceases.

6.5 Institutional and procedural principles

- Recognise that SIA should be a process of navigation rather than prediction.

- Develop adaptive management processes.
- Use appropriately qualified social scientists as necessary depending on the issues.
- Ensure that there is 'arms length' independence between the proponent and the SIA and other impact assessment consultants.
- Ensure appropriate evaluation of consultants' reports.
- Ensure the adequacy of time and resources for thorough impact assessment.
- Ensure transparency of process, method, and decision making.
- Start Impact Assessment processes early and integrate with project design processes.
- Define what constitutes a significant change for each impact in terms of the local context.

6.6 Data integrity principles

- Consider/validate the legitimacy of official data by cross checking with community and/or NGO and/or local authorities.
- Consider the role of local knowledge in the project;
- Respect the intellectual property rights of local people.
- Focus on the things that really count, and not those that are just easy to count.
- Apply the Precautionary Principle to social issues as well as technical issues.
- Conduct further studies when uncertainty exists/remains.

7. Conclusion

Branch and Ross (1997) consider that there are only ever three issues to consider: they ask is a project equitable?, is it sustainable? and is it acceptable to the community at large? Perhaps these questions can be used to guide any decision. Determining the answers, of course, is not necessarily straight forward.

The equitability requirement is addressed if the dam improves the position of the worst-off members of society, and if resettled people are better off after relocation. However, if the purpose of the dam is to generate energy to be used by an urban elite either to bask in electronic consumer goods (air-conditioning etc), or to undertake economic activities that lead to an increasing wealth differential in the society, it would be difficult to conclude that the equity criterion was satisfied.

Is a dam contributing to sustainability? Hydroelectricity might not contribute to global warming by manner of its production, but the construction of dams and power stations requires considerable energy investment, usually of fossil fuels before production of even one kilowatt. It make take many years of production for a power station to get a positive energy balance, and before cost recovery occurs. What about the drowned valleys which may have included rare or endangered species? Finally, how sustainable are the activities that the energy is being produced for. Perhaps their production of greenhouse gasses makes the global warming that might have been produced by coal trivial. And for irrigation projects, how sustainable is the agriculture that usually requires many other forms of artificial inputs? And how sustainable is the hydrological basis on which the irrigated agriculture occur. Does cash cropping increase food security of a nation, or decrease food security by increasing risks associated with monocultures and dependency on inputs? While some dams may contribute to economic growth in a nation, does such economic growth increase human and social capital, or does it go to further economic indebtedness by elite consumption of imported goods. While most of these questions can not be answered definitively, they do question the sustainability of large dams.

Finally, are large dams acceptable to the general public? Usually not to the people who need to be relocated. If the wider public knew about the impacts experienced by the affected communities, would they regard that as acceptable? Perhaps in some cases, but probably not when thousands of people need to be relocated. Certainly it is clear that according to this requirement, social impacts need to be mitigated, and affected people need to get a better deal.

References

Branch, K. & Ross, H. 1997. "The Evolution of Social Impact Assessment: Conceptual Models and Scope", paper presented to the annual meeting of the International Association for Impact Assessment, New Orleans.

Burdge, R. & Vanclay, F. 1995. "Social impact assessment", in Vanclay, F. & Bronstein, D. (eds) Environmental and Social Impact Assessment, Chichester: Wiley.

Goodland, R. 1999. "Social and environmental assessment to promote sustainability", paper presented to the annual meeting of the International Association for Impact Assessment, New Orleans. Informal draft available from Environment Department, the World Bank.

[US] Interorganizational Committee on Guidelines and Principles for Social Impact Assessment 1994. "Guidelines and Principles for Social Impact Assessment", Impact Assessment, Vol 12(2): 107-152.

Slootweg, R., van Schooten, M. & Vanclay, F. 1999. "Function evaluation as a framework for integrating of social and environmental impact assessment", paper presented at the meeting of the International Association of Impact Assessment, Glasgow, and to be published in Becker, H., Vanclay, F., & Wolf, C. (eds) Conceptual and Methodological Advances in Social Impact Assessment, in preparation.

Vanclay, F. 1999a. "Social impact assessment", in Petts, J. (ed) International Handbook of Environmental Impact Assessment (Vol 1), Oxford: Blackwell Science.

Vanclay, F. 1999b. "Summary of workshop on International Guidelines and Principles for Social Impact Assessment", report to the closing session of the meeting of the International Association of Impact Assessment, Glasgow.

Vanclay, F., van Schooten, M., & Slootweg, R. 2000. 'Social impact assessment' in Briffet, C. & Obbard, J. (eds) Environmental Assessment in East Asia, Singapore: Institute of South East Asian Studies (in press).