

# Dealing with Conflict and Risk

## 1. Introduction

Conflict and risk are inherent aspects of social processes in water resources development. As such they require an explicit consideration in any program of water resources development where governance is an issue.

While recognising the dynamic nature of social systems and the nature of conflict as an inherent and natural component of social processes, the literature on water conflict does not move beyond prescriptive solutions involving more effective consultation and participation (van der Lee 2002). The relationship between water and conflict is commonly framed in two opposing ways. The first illustrates that competing demands over water in situations of scarcity constitute potential for violent conflict or 'water wars' (Gleick 1993; Homer-Dixon 1999). The second argues that it induces multiple parties to cooperate in resolving or avoiding conflict (Wolf 1998; Yoffe and Wolf 1999; Uitto and Duda 2002; Wallace, Acreman et al. 2003). Little attention is given to the view that naturally occurring tension and non-violent conflict can contribute to and motivate evolutionary regulatory change (Butler and Rothstein 1991) by, for example, communicating discontent with water management practices or underlining inequalities of access and participation. Furthermore, the way in which communication occurs and the way in which conflict is dealt with differs between different politico-cultural systems yet this is given little attention within the literature and in the practice of institutional development and development aid. In this paper, the focus is on non-violent conflict as the prevalent form of conflict over water in the Asia-Pacific region.

All human activity involves some degree of risk. Yet, risk consideration and assessment remains a challenge within many water resource development projects. Partly this is because risks are non-material, temporal aspects of project developments, subject to measurement and other conceptual difficulties. This contrasts with the relatively straightforward nature of material costs and impacts of projects which are readily grasped by project developers, politicians and decision makers, and affected peoples. Furthermore, the increasingly unpredictable and uncertain nature of modern risks associated with human control over our environment and water resources has grown beyond the capacity of regulatory authorities to control them in space and time. Gandy (1999: 61) argues that "our social institutions, and in particular the regulatory institutions of the modern state, are ill-suited to handle this unprecedented proliferation of environmental risks". The integrated nature of catchments as complex ecosystems requires a multidisciplinary understanding of risk, and ability to deal with multiple levels of uncertainty.

Industry practice often confines the definition of risk to the risk to the developer in terms of invested capital and expected returns based on project costs and benefits. These voluntary risk takers have the capacity to define the risks they wish to take and explicitly define its boundaries and acceptability. However, the World Commission on Dams (WCD) global review of large dams, as one example of large scale water resources development, found that a far larger group have risks imposed upon them involuntarily (and unknowingly) and managed by others (World Commission on Dams 2000). Typically, they have no say in water policy or energy policy. The risks they face directly affect individual well being, livelihoods, and quality of life. A more systematic identification and mediation of risks has become an increasingly important task in managing water resources yet is often not well implemented. Inadequate consideration of risk continues to occur in both the identification and mediation processes which are subject to both epistemological and political problems.

In this paper, we consider the multiple dimensions of water conflict before considering how non-violent conflict contributes to and motivate evolutionary regulatory change. Different institutional approaches to dealing with conflict are outlined and a number of case studies suggest that different approaches are

preferred in different political-cultural contexts. Finally the paper considers a number of issues in the way risk is dealt with in water resources development focusing on areas which are not often considered in mainstream developments. These include the way in which water related risks are perceived, experienced, and mediated.

## **2. Conflict in water resources development**

Conflict over water has multiple causes, occurs at different scales, between different interests, and manifests itself in different ways.

The causes of conflict can include: Data conflict - data on water volumes or quality may be disputed between different agencies/actors; Interest conflict - competing interests may cause conflict over incompatible uses of water; Structural conflict - policies and regulations may be contradictory, or agencies may have overlapping responsibilities; Value conflict - different actors or agencies may value water differently, eg. use value versus economic or conservation value.

Conflict can arise along a number of axes, for example: upstream versus downstream users of water; urban versus rural users of water; water for agriculture versus water for industry. Conflict can arise at and between different scales: village, district, state/province, country. Conflict manifests itself in violent and non-violent forms. The more pervasive 'everyday' forms of conflict in the Asia Pacific Region are non-violent forms that can range from subtle tensions to overt confrontations. Examples of how subtle tensions are manifested include non-cooperation and foot-dragging. Confrontations that are more overt include public protests, damage to offending property/structures, and so on.

Identifying the dimensions of non-violent conflict or tensions over water serves a useful purpose in that they are important indicators that existing governance may be sub-optimal, contradictory, or inequitable. Protests are important forms of communication. Identifying water tension can open up opportunities for dialogue and negotiation (BothEnds 2000; Biswas, Varis et al. 2005).

### *Conflict as a driver of change*

Many recent reforms in the governance of water and of river basins have occurred as an outcome of conflict. In Australia, longstanding conflicts between environmentalists and farmers in the Murray-Darling provide the historical backdrop to the Landcare movement and to multi-stakeholder forums for managing water in its basin context. Over an even longer period, competing demands of States have served as the basis for institutional development of the Murray-Darling Basin water management framework. Conflicting visions of catchment management (for example more and less participatory models) have shaped institutional approaches in NSW. In the Asia-Pacific region, conflict from transboundary basin level in the Mekong to more localised river basin and sub-catchment conflicts over water between competing users have triggered more inclusive experiments in water governance (Miller and Hirsch 2002; Miller and Hirsch 2003). There has been a shift from more centralised management toward multi-stakeholder approaches.

The role of conflict in effecting non-violent change or subtly shaping water management systems is not addressed in much of the literature. Conflict is commonly constructed as a negative phenomenon with the corollary that 'conflict prevention' and 'conflict resolution' are preferred to engagement with conflict. There is little sense in the water literature that (non-violent) conflict may also be creative and constitutive of institutional innovation. Institutional developments which take on conflict as a constructive aspect of water development may result in better governance systems.

### *Managing water conflict*

Although recognising the dynamic nature of social systems and the nature of conflict as an inherent and natural component of social processes, the literature on water conflict does not move far beyond prescriptive solutions involving more effective consultation and participation (van der Lee 2002). Little attention is given

to the view that naturally occurring tension can contribute to and motivate evolutionary regulatory change (Butler and Rothstein 1991) by, for example, communicating discontent with water management practices or underlining inequalities of access, governance or participation.

Conflict resolution is often prescribed through the utilisation of one or a combination of the following approaches:

- Technical - modelling of water flows/quality, setting water use rules;
- Legal - stipulating rights in law and regulation, allowing conflicts to be dealt with in courts of law;
- Political - multi-stakeholder forums/committees, co-management, participation and negotiation.

However, literature dealing with these different approaches makes little reference to their effectiveness in different social, cultural and political contexts. For example, legal approaches are discounted or ignored in international river basins such as the Mekong (Lerner 2002) because of perceived threats to national sovereignty. In cultural contexts such as those found in the countries of Mekong River Basin, non-adversarial cultures may lead to avoidance of political approaches to conflict management, or where these are utilised, unequal power relations result in inequitable outcomes (Hirsch and Wyatt 2004) (see text Box 1). While there are contextual limits as to how conflict can be dealt with within certain national and trans-boundary contexts, development assistance needs to take care not to reinforce inherently weak and inequitable national politico/cultural/institutional means of dealing with conflict, as can be the case when development assistance attempts to intervene in conflicts involving the national interest.

**Text Box 1: Yali Hydropower Dam and the Sesan River Basin**

The 720 MW Yali Falls Dam was the first of a number of planned hydropower dams to be built in the Vietnamese section of the Sesan River, one of the Mekong River Basin's major tributaries, which rises in the Central Highlands of Vietnam and flows through two Cambodian Provinces before its confluence with the Mekong River. Construction of the dam began in November 1993 and commissioning was completed in December 2001. The development of new electricity generation capacity is a national priority in power short Vietnam.

Remarkably, no assessment of the cross-border impacts of the dam was carried out. As a result, the livelihood and personal security of approximately 50,000 indigenous peoples in Cambodia have been impacted. Major reported losses include those to property, livestock and human lives from flooding and unexpected surges of water. Continuing impacts include the loss of river banks which are important for seasonal crops, a degraded riverine fishery, and poor water quality.

While the response from the Cambodian Government from the outset has been ambivalent, local and international NGOs have supported local communities with the establishment of a community based network called the Sesan Protection Network (SPN) to negotiate a satisfactory outcome. The initiatives of the SPN have included but are not limited to:

- a call for support to resolve conflict from all levels of government, MRC and multilateral and bi-lateral development assistance agencies;
- documentation of impacts in the absence of official studies;
- a legal analysis of breaches to international environmental and human rights law;
- engaging in dialogue with the Mekong River Commission and the Cambodian National Mekong Council.

More recent initiatives include proposals consisting of neutral assistance from British Columbia Hydro, Canada's hydropower utility, to develop operational rules for restoration of natural flows (presently, Yali operates as a peaking power unit in the dry season causing diurnal fluctuations in water level and flows) and a framework for an arbitration council. These proposals have yet to be picked up by either of the governments or development assistance agencies which SPN has been in lobbying including donors to the MRC and Vietnam such as the World Bank, AusAID, SIDA.

The official response of the two governments has been the establishment of bi-lateral negotiations in 2001 under the resolutions of the MRC's 1995 Constitution. Here the MRC acts as a facilitator rather than an arbitrator. In response to calls for assistance from the SPN, the MRC Secretariat has consistently advised SPN to work through its national government and not through the MRC. Hence negotiations have proceeded without a neutral arbitrator. Since first meeting in July 2001, the two governments have met 3 times. In each meeting, minor concessions such as the establishment of water release warning system and ToRs for a proposal to carry out hydrodynamic modelling of the Sesan and a cross border impact assessment were made by the Vietnamese. To date, some four years after that first meeting, the warning system remains ineffective, and the EIA has still not been completed.

From the outset, government negotiators on both sides have favoured technical means to resolving the dispute, placing their hopes on the proposed hydrodynamic modelling and EIA. At the same time, both sides have ignored the legal studies carried out for SPN by a human rights lawyer which has outlined breaches of international environmental and human rights law. After initially promising a response when the report was first submitted to the MRC Secretariat and the Cambodian Government in November 2002, both parties

have failed to respond to formal requests SPN. While responsible Cambodian agencies, in particular the CNMC, have consulted with SPN and its supporting NGO partners on an ad-hoc basis, SPN to date has not been offered a place at the negotiating table between Cambodia and Vietnam. Minutes of the meetings make it readily apparent that Cambodian negotiators have lacked the necessary skills and capacity to represent SPN's demands with Vietnamese negotiators skirting Cambodian concerns or refusing to acknowledge certain impacts because of the lack of scientific studies and evidence – they have dismissed SPN's own impact studies as anecdotal evidence. For example, SPN demands for a restoration of natural flows have not made their way into the negotiations, with the Vietnamese portraying an increase in dry season flows and moderation of wet season flows as a benefit for the communities. Furthermore, support from higher levels of government has not been forthcoming due to Cambodia's weak negotiating position vis-à-vis its political debt to Vietnam. The Cambodian Government response has been limited to low level negotiators without any decision making power. Following initial outspoken and high profile statements in support of community demands by the Ratanakiri Provincial Governor, these became muted following promises from the Vietnamese that the Province would benefit from the hydropower developments through the construction of transmission lines with Vietnamese aid into the two impacted Cambodian Provinces.

The cultural and educational preference for technical (scientific) approaches means that non-violent conflict has not been dealt with effectively in the region. Within the Mekong Region, water resource managers are taught almost exclusively by engineers whose courses in Integrated Water Resources Management (IWRM) focus on the application of large-scale hydrological models to river basins. A more progressive approach to IWRM recognises that while modelling is important, it is primarily a decision-support (not decision-making) tool. While modelling can predict the hydrological consequences of river basin developments, it is rarely able to answer the more important 'so what' questions that follow which include the ecological and livelihood consequences of hydrological change (Campbell 2005). As a result, in the Mekong significant conflicts over a range of water resource developments remain unaddressed by governments leaving disaffected communities and civil society groups with little say and growing discontent. Trans-boundary conflict remains especially problematic with unequal negotiating capacity, geo-political debt, and the use of aid as a bargaining tool intervening, leaving many such conflicts unresolved (see text Box 1).

In the developing world, the late-1990s saw the beginning of a shift from centralised technical approaches toward more decentralised politically or multi-stakeholder oriented approaches to dealing with conflict, for example, the World Commission on Dams and the establishment of River Basin Organisations (Biswas, Varis et al. 2005). Yet their implementation has been contested over definitions of participation and representation that stop well short of empowerment, and the continuing dominance of centralised state interests (see Text Boxes 1 and 2). This is leading to increasing cynicism within some sections of civil society and lower levels of government. In the Australian context, effective community involvement and conflict management has only come around through the explicit recognition and indeed official support for the empowerment of communities and other stakeholders to participate in decision making processes (Blackmore 1995).

**Text Box 2: *Cuu Long River Basin Organisation and the National Water Resources Council***

The establishment of the Cuu Long River Basin Organisation is being supported through the AusAID funded Australia-Vietnam Water Resource Management Assistance Program (VWRMAP). One component of the VWRMAP is to assist the Vietnamese government with the implementation of Decree 162, December 2003, on the establishment of a number of RBOs. During 2004, a Secretariat for the Cuu Long RBO was established within the Southern Institute for Water Resources Planning (SIWRP), a predominantly technical planning agency of the Ministry of Agriculture and Rural Development (MARD) whose primary role is to develop master plans for water infrastructure development, in particular irrigation and flood control infrastructure, and to carry out hydrological and water quality monitoring. Historically, because of its sectoral location within the Ministry for Agriculture, it has had a limited role in developing surface and groundwater for household and commercial water supplies – water supply is the domain of the Department of Construction responsible for water treatment plants and piping systems.

SIWRP personnel are dominated by hydrological engineers, modellers and water planners. While the RBO Secretariat is aware that its role should partly facilitate stakeholder processes to solve inter-provincial disputes over conflicting water use (an idea that has been imported through the Australian consultants overseeing the VWRMAP), it admits that it does not have the resources or expertise to carry out the task. Participants at a November 2004 review workshop revealed the need to solve inter-provincial disputes over water use such as a present dispute between Bac Lieu and Soc Trang Province, two coastal Cuu Long Delta Provinces. In this particular dispute, one Province wishes to access brackish coastal water from a shared inter-provincial water course for shrimp farming. However, salinity control dikes controlled by the neighbouring province, designed to support irrigated rice, have restricted access causing economic loss. Here, the SIWRP based RBO Secretariat has suggested two technical approaches. The first is a land use zoning approach which would restrict the type of water resources that were made available in a particular area. The second would be a modelling approach that would optimise the operations of water control infrastructure to allocate the required water quality according to seasonal factors. Yet, provincial representatives have also called for the RBO role to include the convening of a negotiating forum to which the RBO has not been able to respond.

This bias towards technical solutions and lack of attention or interest for governance solutions such as a negotiating platform may also be partly due to existing regulations that reflect bureaucratic cultures which defers to centralised authority when inter-agency conflicts arise. By regulation, the RBOs operate under the peak national water agency, the National Water Resources Council (NWRC).

Established under Prime Ministerial Decree No. 67/2000/QĐ-TTg in 2000 and with legal status under the Water Resources Law of 1998, part of NWRC's function under Article 2 of its statutes is to provide advice to the government (highest authority is the Prime Minister) on the 'resolution of conflicts regarding water resources between ministries and branches, between ministries & provinces, and cities directly under central control.' The permanent membership of the NWRC is as follows:

- Chairman of the National Water Resources Council: Vice Prime Minister;
- Standing member: Minister of Natural Resources and Environment;
- Other permanent members: Vice Ministers of the Ministry of Natural Resources and Environment; Ministry of Agriculture and Rural Development; Ministry of Fisheries; Ministry of Science and Technology; Ministry of Planning and Investment; Ministry of Finance; Ministry of National Defence; Ministry of Construction, Ministry of Transportation; Ministry of Industry; Ministry of Public Health; the Chairman of NWRC Office; and four specialists working in water sector.

While representatives from local agencies involved in a particular dispute are brought in on a non-permanent basis, ultimate authority to deal with conflict rests with central agency. In effect, the Council acts as the apex regulatory body which ensures implementation and adherence to central government policy. Vietnam's non-pluralistic political system leads to narrow centralised representation which does not support an explicitly independent regulator or broader representation which could involve mass organisations, academics, and chambers of commerce for instance.

Combined with technical approaches, political approaches are now gaining favour in contemporary river basin management in recognition of the multiple stakeholder interests and values involved (World Commission on Dams 2000; Wallace, Acreman et al. 2003; Biswas, Varis et al. 2005). Yet contemporary political approaches often suffer from institutional monopolisation of process. For example, river basins are often managed by a single river basin authority with indeterminate means for community or civil society involvement. Furthermore, the literature gives little regard to the process by which such authorities are set-up and whether these authorities are indeed legitimate in the eyes of river basin constituents (see text Box 2).

### **3. Dealing with water risks**

Risk is an inherent part of the human condition. Risks are expressed in our financial and economic decisions, in social and political life, and in our natural environments. Risks exist and arise in the consideration of and implementation of development assistance. Hence, most contemporary development assistance projects undergo some sort of risk assessment today.

#### *Limitations of the positivist approach to risk management*

The dominant formal process of identifying and dealing with risk is generally a positivist approach. Statistical models calculate frequency, probability and magnitude from historical records of events such as one in hundred year floods. However positivist approaches to risk assessment in water resources development are rarely able to comprehensively assess all risks. Quite often historical data (eg. river hydrology) is incomplete or not available to quantify risks. Such a context is one often found in developing countries. In these situations, subjective risk assessments replace or complement the dominant positivist approach to risk assessment (see for example, Hewitt 1983).

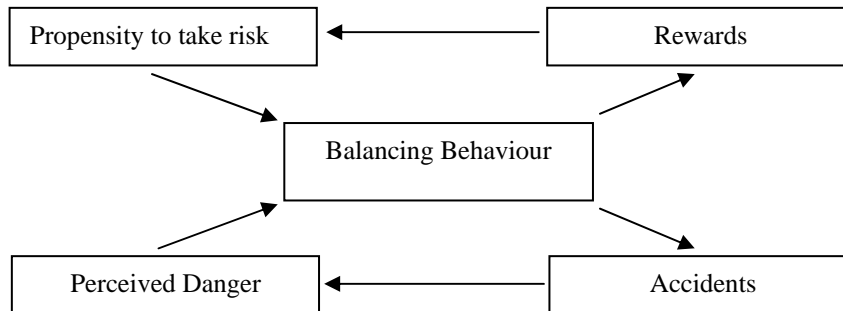
#### *The subjective dimension of risk management*

A number of issues related to assessment processes deserve some attention here. First, much of the critical literature on subjective risk suggests that epistemology plays a central role in the way risk is perceived and hence identified (Sjoberg 1987; Adams 1995; Lash 1999). We expect that different actors such as project affected peoples who are from an indigenous ethnic minority group might perceive risks differently to professional experts working to assess the risks of a project through formal risk assessment tools. In this sense, risks are constructed according to our cultural predispositions or the way we see the world around us.

Secondly, risk knowledge and behaviour is an experiential phenomenon. That is risk perception and risk taking behaviour is reflexively developed through agency experiences in the form of accidents (or costs) and

rewards (providing benefit). The experience of an accident leads to the perception of danger. This perception then modifies the agency's behaviour whereby risk avoidance behaviour results. A rewarding experience from taking a risk leads to an increased propensity to take risk. Adams (1995) uses the analogy of a risk thermostat to describe the dynamic risk adjusting behaviour of the model. This adjusting behaviour implies that all agents have the ability to live with some level of risk because they constantly evaluate the benefits-costs equation. In the absence of negative experiences, the thermostat is normally set to maximise rewards. This suggests that inexperience is a situation of risk blindness.

**Figure 2.1.** Experiential model of risk (Adams, 1995)



The development of water resources involving large-scale infrastructure such as dikes and dams often involve actors with varying levels of experience with such developments. Local communities may never have heard of or seen a technology being proposed and are therefore unable to effectively participate in the assessment or decision making process. On the other hand, professionals who have never experienced village life may not fully comprehend the complex risk management strategies that local communities have adopted and developed over generations.

The recognition of the experiential nature of risk can lead to better participatory approaches such as study tours of similar developments or to exchange experiences with other communities (see Text Box 3). However, particularly in controversial water resource developments such as hydropower dams, care should be taken so that experiential processes are not subject to political manipulation. Study tour design should balance participants' experience, exposing participants to both the positive and negative aspects of a development. Pressure to gain acceptance over controversial developments can sometimes lead project developers to present only positive aspects in experiential methodologies.

**Text Box 3: Water resource and livelihood development in Long Hoa Commune, Vietnam**

Long Hoa Commune is located in a coastal area of Tra Vinh Province, Vietnam. The commune is subject to seasonal changes in water salinity. There is brackish water for half a year (February to June) and fresh water for the other half year (July to January). The Commune's use of water resources is made more difficult because there is little planned water infrastructure and farmers access water from natural water courses.

Prior to 1998 the farmers were predominantly rice farmers. At about this time Provincial and District Agriculture extension officers began to promote and provide training for farmers to intensively farm mono-cultured tiger shrimp in order to take advantage of the island's access to saline water for half a year. Farmers eagerly took on the new crop because prices were much higher than rice and a boom followed. Within 3 years, crop failures increased in frequency for various reasons, including poor water quality, high stocking densities, and poor pond management which concerned the District and Commune level governments and farmers. In 2003, the People's Committee reported that 50% of the season's shrimp crop had failed, and by early 2005, the failure rate had grown to 70%.

Farmers reported that they did not know there would be such failures. Nobody, including the Department of Agriculture, had informed them of such potential problems.

With funds from an NGO, Oxfam America, a project was established to attempt to restore livelihood security within the commune. A study tour to review Thailand's 20 year boom-bust experience with mono-cultured intensive shrimp farming was arranged for the farmers' association representative, commune level government leaders, and district level agricultural leaders. This study tour exposed

the Vietnamese participants to the considerable risks of an intensive approach including increasing likelihood of crop failures as waste and sediment build-up renders ponds unusable, and increasing household debt and social disintegration of families and whole communities. Instead, Thai farmers reported greater security from less intensive, organically grown tiger shrimp.

On their return, the Commune and District officials reported that they would no longer promote and support intensive mono-cultured tiger shrimp in the commune and District. Instead, the alternative organic approach is being pursued. The experience enabled local officials and farmers' representatives to better articulate the risks of an intensive approach to fellow farmers.

A weakness of the experiential model of risk is that it does not tell us anything about how risks are constructed socially as opposed to culturally. It is also politically blind because it tells us nothing about how we deal with risks politically. As Irwin (cited in Adams, 1995:198) observes, "(d)ecisions about risk are essentially decisions about social priorities and values by which our societies wish to be guided." Thus politics and governance are central to the consideration of risks and hence effective participatory approaches to risk assessment and mediation is essential (see Text Box 4).

**Text Box 4: North Vam Nao Water Control Project, Vietnam**

The North Vam Nao Water Control Project is a A\$37.9 million project supported by AusAID (A\$19.5 million contribution). Located on North Vam Nao Island (Phu Tan and Tan Chau Districts), An Giang Province, the project's overarching objective is to assist the An Giang Provincial government to establish and operate an effective water management system in Vam Nao which is socially and environmentally sustainable and benefits the local economy by assisting in the alleviation of poverty.

The project has five components:

1. Project management
2. Institutional development
3. Project planning
4. Engineering design and construction management
5. Economic and social benefits through Integrated Water Management Plan implementation

The project also consists of an Environment and Social Management Fund (ESMF) that is assisting with poverty alleviation, environment improvement and improved land use planning and practices. The ESMF program has 3 themes, including (i) the environment, focusing on sanitation and clean water, (ii) social management, and (iii) rural development.

The project began in December 2001 and is scheduled to be completed by September 2006. At the core of the project is the completion of a large ring dyke and water control infrastructure around North Vam Nao Island which would keep agricultural land productive year round by keeping seasonal flood waters out. This would enable the Province to meet a national policy to intensify rice production by growing three rice crops per year. Without the completion of the water control infrastructure, the two districts are only able to grow two rice crops per year.

During the project EIA and risk assessment, specialist professional consultants identified a number of key risks. These included:

- potential loss of the wild capture fishery though the consultants observed that the fishery was already degraded through over-fishing and illegal fishing practices and therefore not such a great loss;
- potential decline in soil fertility and agricultural production through the loss of seasonal floods.

In both cases, despite the poverty alleviation objectives of the project, the poor face greater risks to their livelihoods. Poor and landless households are the largest users of the wild capture fishery and stand to lose the most from the development. Fertility maintenance through seasonal flooding benefit poorer farmers who do not have the capital to invest in higher cost inputs (chemical fertilisers) to maintain fertility.

Throughout project planning, a participatory approach was taken in order to achieve understanding and consensus on the costs, benefits and trade-offs of the project. Numerous consultative workshops were carried out with provincial and local government participants and farmers during project preparations. Participants were asked to explicitly consider the priorities and objectives for the project. They were asked to consider the potential risk to the wild capture fishery and potential decline in soil fertility, and to weigh this against the benefits to be gained from an intensification of rice production and improved transport from combined dyke and road developments.

The results of the consultative workshops were reported in the EIA. Overwhelmingly, it appeared that the 'community' chose rice intensification (3 rice crops) over potential losses. Disaggregated stakeholder views and priorities were not presented in the EIA. However, according to Vietnamese consultants that were present at some of the workshops, the views presented represented viewpoints from provincial government representatives present at the workshops. In their presence, it was difficult to hear differences of opinion from community participants.

While it appeared that there was consensus that the potential risks were of little importance, as the project began its implementation phase, these concerns surfaced with greater concern being expressed over the need to mitigate the potential risks and losses during a number of planning workshops carried out at the District government level in late 2004. To their credit, AusAID and the managing contractor have picked up on these concerns over key potential risks and begun to address them in a more concerted way.

The North Vam Nao development demonstrates that risk mediation has a political dimension. Decisions driven by Provincial authorities to trade-off the risks of losing the wild capture fishery and reduced soil fertility for an extended rice cropping season redistributed existing risk allocations, with a greater burden falling on the poor and landless. The different weights given by different levels of government to the benefits and risks of the project reflect the different distances between these levels of government and community concerns, with Provincial governments being much further removed. In the Vietnamese context, district and commune level governments are often much more in touch with community concerns and realities while Provincial authorities are extensions of central government policies, in this case the drive to intensify rice production through triple cropping. The profitability of triple cropping has been dropping rapidly over the last 5 to 8 years as rice prices have fallen while the cost of inputs have risen drastically. Rice prices declined by 30% in the late-1990s going into 2000. At the same time, the cost of fertiliser has doubled. The result is that in many areas of the Mekong Delta, farmers are turning away from triple cropping because it is no longer profitable and turning to alternative crops, organic approaches, and/or integrating aquaculture production.

In the mediation of risk two important issues arise. First the choice of technology and its material construction creates new risks peculiar of the chosen technology. The choice between alternative technologies – facilitated by an assessment of alternatives - is an important aspect of risk management and mitigation. Secondly, risks are manufactured by the presumed agency of scientific and technical experts who assume the roles of producers, analysts, mediators and profiteers from risk definitions. This suggests that the expert mediation of risk, including the assessment of alternatives, plays an important role in its construction, distribution, and redistribution, that is in explaining why certain risks are identified and others are not, and where and who these risks are allocated to (Adams 1995; Adam, Beck et al. 2000). Attempts to control or confine risks can lead to a broadening of the uncertainties when lay society perceptions of risk are excluded from the expert's positivist definitions and assessments of risk, and mitigation solutions. These can lead to costly post-facto interventions (see Text Box 4).

#### **4. Conclusions and implications for development assistance**

Political-cultural contexts play an important role in determining how conflict is perceived and dealt with. While there are contextual limits as to how conflict can be dealt with within certain national and trans-boundary contexts, development assistance needs to take care not to reinforce inherently weak and inequitable national politico/cultural/institutional means of dealing with conflict as can be the case when development assistance attempts to intervene in conflicts involving the national interest.

- In the Vietnamese case, it should not be assumed that all levels of government represent the same interests. Better societal representation in countries with weak civil societies like Vietnam can be achieved by being inclusive of lower levels of government below the Provincial level.
- Lower levels of government often have closer links to communities and are better informed of community aspirations and concerns. They should come within the scope of development assistance for design and capacity building catchment management programs. They could also be considered as the basic building blocks upon which to build up catchment management capacity.
- Development assistance needs to pay careful attention to the structural placement of RBO Secretariats.
- Placement of RBOs within technical agencies will colour their capacity or willingness to act when dealing with conflict, with the RBO resorting to technical means that may not be appropriate.
- If ideal agency placement is not possible, an assessment of the agency's skill base could identify necessary capacity building to deal with social processes.
- Development assistance needs to pay greater attention to institutional legitimacy when setting up new institutional structures that deal with conflict.
- Trans-boundary water conflict resolution mechanisms need to recognise and consider the context of unequal state power in their design. Less powerful actors can be marginalised in such negotiating forums.
- Independent arbitration mechanisms should be considered within the underpinning governing constitutions for basin management.

Developing water resources entails numerous forms of risks. Recognising the epistemological and experiential nature of risk is essential in governing water resources development. Poor consideration of these aspects of risk often marginalises local communities without experience of technologies being proposed. Recognising the mediation role that experts play is also important if we are to achieve an understanding of the way in which certain risks are or are not considered in water resources development.

- Better development assistance can be achieved by considering the issue of risk-blindness in risk assessments and management. No experience is a case of 'risk blindness'. Stakeholders are risk blind when there is no experience with either the technology or its scale.
- Experiential learning or exposure methodologies are not new, but they are rarely utilised in risk management. There is scope for better and greater use of such methodologies in order to achieve better outcomes with regards risk management and mitigation.
- Risk perception, acceptance and prioritisation differ between different stakeholders who are placed in different structural contexts.
- Development assistance needs to recognise that risk mediation has a political dimension.
- Countries such as Vietnam have difficult political contexts within which to validate consensus or to reveal involuntary risk takers. In such contexts, better use of lower levels of government who are more representative of community views should be utilised through their involvement in participatory assessments.

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