



Water Allocation Planning and Management in Vietnam

A BEST PRACTICES CASE STUDY: VIETNAM

SUMMARY

Throughout 2005, The United States – Asia Environmental Partnership (US-AEP) worked in partnership with the Department of Water Resources Management (DWRM) to develop policies and build capacities in Integrated Water Resources Management. It is an area where Vietnam has identified a variety of reforms involving new approaches and requiring new skills. One critical need revolves around the management of water allocation: providing water to meet basic livelihood needs, for socio-economic development in urban and industrial areas, for agriculture, hydropower, and for the environment. Integrated rather than sector-based planning and management is required to meet the growing needs for water. Successful transition to an integrated approach will be essential if Vietnam is to meet its goals for sustainable economic development and poverty alleviation.



This initiative aimed to equip the Department of Water Resources Management (DWRM) with a detailed understanding of the general approaches used around the world in allocating water to different users, efficiently and fairly, while at the same time ensuring the long term environmental sustainability of the river basin system.

The results of the project included developing and piloting a framework, step-by-step process, and local sub-basin

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case study for water allocation planning. Participatory planning, economic tools, a framework and process for environmental flows assessment were utilized. The initiative also improved coordination among Ministries involved in water resources by encouraging stakeholder consultation processes to identify the critical issues in water allocation in Vietnam.

One of the key outcomes of the project was the signing of a bilateral cooperative agreement for future collaboration between the governments of Vietnam and South Africa across many key institutional, technical, and regulatory aspects of integrated water resources management.

More generally, the initiative improved the capability and knowledge of key staff in the Department of Water Resources (DWRM) and provincial level stakeholders. It built awareness of the important role of the Department of Water Resources in developing an integrated approach to water resource management and how this is planned to be rolled out at the river basin scale.

Key Dates

April 2005:	Workshop on environmental flow management
June - July 2005:	Jointly funded study exchange to South Africa
July - August 2005:	Ministerial level consultation process
August 2005:	Workshop on water allocation planning and management
August – October 2005:	Sub-basin case study

SITUATION BEFORE THE INITIATIVE BEGAN

Like many of its South East Asian neighbors, water resource management in Vietnam is in a state of flux. Until recently water management has been characterized by a sector specific approach aimed at maximizing the use of water for agricultural production, rural development and food security. However, rapid industrialization and urbanization associated with the transition to a more market-oriented socialist economy has transformed the face of society, and at the same time resulted in a new set of challenges for water resources and their management. Common issues throughout Vietnam include dry season conflicts over water, water quality degradation (particularly in the river basins surrounding Hanoi and Ho Chi Minh City), worsening affects of seawater intrusion, the ever-present effects of floods and severe storms, and the threat posed by the impacts of global climate change.

ESTABLISHMENT OF PRIORITIES

US-AEP worked with the Department of Water Resources Management (DWRM) throughout 2005 to explore and define procedures that could be used at the river basin or sub-basin scale to support sustainable water allocation decisions.

Initially the process aimed to provide a more environmentally sustainable basis for decisions regarding the long-term management of water flows by reviewing and analyzing international examples of environmental flow assessment methodologies and assessing their suitability for Vietnam. At a cross Ministerial workshop to present and discuss the results of the study a number of messages from the

participants of the workshop reinforced the fact that human needs, demands, and values drive water allocation in Vietnam. Consequently, the process developed specifically addresses the inclusion of water for living as a key downstream flow requirement.

Following from the environmental flows component and the study tour to South Africa, it was decided to focus future work on the process for overarching decisions about water allocation and management recognizing the needs of all users including the environment. In Vietnam, some of these needs include: water for living, agriculture, hydropower generation, in-stream fisheries, aquaculture production, transportation, urban supply, tourism and recreation, environmental values, cultural and heritage values, and flood protection.

The key priorities selected to address these issues included efforts to:

- Undertake a national level consultation process with key Ministries to identify current and future needs for water, issues and suitable approaches;
- Hold an inter-Ministerial workshop to present and discuss key aspects of water allocation planning and management; and,
- Undertake a sub-basin scale case study to trial a framework for water allocation planning based on participatory planning and economic techniques in order to assess the trade-offs associated with alternative allocations for various uses.

MOBILIZATION OF RESOURCES

Since the goal of the activities was to build capacity within the Department of Water Resources Management (DWRM) and its staff, all activities and resources were mobilized in close collaboration with the DWRM, with strong leadership and involvement provided by Dr. Nguyen Thai Lai, the Director General of the Department. US-AEP provided overall coordination and management of the activities and leveraged resources from the Ecology and Environment Institute of Vietnam (a local NGO), local water resources experts, international consultants and volunteers, and the pro-bono services of URS Sustainable Development, a company specializing in natural resource management in developing countries.

It was also possible to organize and fund a study exchange to South Africa by combining US-AEP resources with the Danish International Development Agency (DANIDA) and the Asian Development Bank's National Coordination for Water Resources Management Project (TA3528 – VIE). The activity amounted to \$110,000 USD, including cost contributions from DWRM.

PROCESS

Environmental flows assessment

The study on environmental flows management developed a framework that could be applied to environmental flows management in Vietnam. The framework was based on a review of international approaches and an assessment of Vietnam's needs and capacities. The approach developed took

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account of the specific context of different rivers and situations, recognizing that resources are limited and needs vary depending on whether a new major structure is to be developed on an unregulated river or a river with existing hydraulic structures. The workshop presentation of the study results indicated that management of downstream water flows and availability is largely driven by socio-economic rather than environmental needs.

Study exchange to South Africa

The aim of the exchange was to provide an opportunity for Vietnam government officials to learn from the practical experiences that South Africa has gained in putting arrangements in place to achieve integrated water resource management. South Africa has undertaken a number of major water reform initiatives in recent years.

All of the issues South Africa is dealing with are of direct relevance to Vietnam. South Africa has developed from a position similar to that which Vietnam now faces. Many of the solutions for both countries will be the same – but South Africa is more advanced in the timing of its reform programs. It has moved to the implementation stage of many of its initiatives. This means that Vietnam could learn a lot from South Africa about the processes of reform and implementation experiences. The exchange included more than a week of solid discussions, presentations, and field-based learning on a diverse range of topics related to water resource management. A total of 16 delegates across a number of national and provincial government departments attended the exchange.

At the end of the exchange, each of the delegates was asked to comment on the things that had impressed them. Some of these comments included:

- South Africa presents a very strong model in many ways. But turning the theory of the approach into practice will be where Vietnam can get the maximum benefit.
- The level of public participation at all levels is impressive – but Vietnam should learn from the South African experience so that consultation can be effective and not slow down the implementation process.
- The focus on environmental health is a strong direction and vision.
- South Africa is serious about sustainable development and is good at incorporating environmental protection into development.
- There may be a need to provide greater levels of protection to the poor and disadvantaged.
- The use of water initiatives to create job opportunities is impressive.
- There is obviously a very good planning system – it is understood at all levels and is well thought out. It spans from the strategic level to implementation.

Inter-Ministry national consultation process

A national level consultation process occurred in July and August 2005 to demonstrate the DWRM's commitment to developing a more coordinated approach to water resource management. The process was based on the premise that understanding the needs of national level stakeholders is a critical first step in constructing the vision for a more integrated approach to water resource management.

The purpose of the interviews was to obtain stakeholder perceptions regarding a range of national issues relating to sustainable water allocation including:

- current and future demands for water;
- impacts of current and expected future patterns of use;
- the priorities for water allocation;
- the important needs of their sector that would affect how a water allocation could be defined; and,
- developing effective processes for water allocation in the Vietnamese context.

Cross sector analysis of the results indicated that water demand is expected to increase most dramatically in sectors that are more strongly linked with Vietnam's goals in relation to development and industrialization. Thus, urban demand, hydro-electricity demand, and industrial demand along with tourism are likely to grow strongly. Aquaculture is a major growth industry in rural Vietnam and the sector's water use is expected to significantly increase over the next 10 to 15 years. Many stakeholders expected that irrigated agriculture would reduce in demand or not grow substantially as Vietnam focuses more strongly on industrialization. However, in terms of actual quantities of water, it is still likely that agriculture will increase the most.

There were many overlapping needs identified and many similar responses. Most of the stakeholders identified water quantity and quality as their two major requirements in regards to water. However, the process identified a number of needs for water that had not been previously considered in great detail. For example, river based transportation, an important economic use of water, requires increases in the depth of flow in the dry season and velocity control in the wet season.

Stakeholders generally reinforced the government's policy of 'water for living' as the first priority for water allocation in times of shortage. Many stakeholders stated that irrigated agriculture, especially rice, should be given lowest priority. Others felt that a more situation specific assessment of priorities is required based on specific local needs.

Stakeholders discussed the importance of establishing water allocation planning processes in an integrated manner across all sectors to address competing needs. They were generally very supportive of the DWRM and the Ministry of Natural Resources and Environment's role in national coordination of this process and they stressed the importance of developing clear objectives and measurable criteria that maximized the overall economic, social and environmental benefits of the nation's water resources.

The participatory nature of the process demonstrated the benefits of a collaborative and consultative approach to water resource management in developing mutual understanding in what is a challenging yet critical task if Vietnam is to achieve its goals for sustainable economic development and poverty reduction.

Inter-Ministry workshop on the key principles of water allocation planning and management

A two day workshop of senior officials from the Ministry of Environment and Natural Resources (MONRE) and from several ministries with an interest in water was held to openly discuss the key

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issues associated with water allocation in Vietnam. It was also an opportunity to present the findings of the national level consultation process and cross sector analysis.

The workshop presented the objectives and results of the national level ministerial interviews and highlighted international best practices and concepts supporting efficient, sustainable and equitable water allocation using case studies and examples from Vietnam and abroad. The success of the workshop was evident in the discussion within and the workshop sessions and more informally throughout the two days. It provided an excellent opportunity for the DWRM to build relationships with other sector based authorities in hydropower (Electricity Vietnam), fisheries, tourism and others.

Sub-basin case study

The case study in the Nhue Day sub-river basin involved detailed discussions with approximately 25 provincial level government departments across the six provinces in the sub-basin. This included representatives from the departments of natural resources and environment, agriculture and rural development, health, construction (for urban water use), industry, and fisheries. Current and future demand estimates were provided and any issues associated with water allocation were identified. The consultation process also provided an opportunity to build understanding and awareness of river basin management and water allocation in particular. For many of the authorities, such as health, it was the first time they had assessed their water demand across the province.

The participatory planning and economic framework developed for the project includes a step-by-step process and detailed guidelines on how the process can be completed as well as discussion of some of the key aspects. The data from the Nhue Day was then used to demonstrate and illustrate this process further. The case study concluded with a set of recommendations for further work both in the Nhue Day sub-basin and for national level policy development and capacity building.

The process highlighted that water allocation planning is a multidisciplinary task requiring water resource, environmental science, economics and other technical skills. Developing these multi-disciplinary teams that can effectively implement a water allocation planning process is a key challenge for the future.

There is a great level of interest in further developing and using hydro-economic modeling of water resources in Vietnam to assist in efficient, sustainable and equitable management. The Department's staff is now aware of the process, its benefits, limitations and resource requirements. The process also demonstrated the benefits of using consultation in the planning and decision making process.

RESULTS ACHIEVED

As the activities were largely focused on capacity building to enable Vietnam to improve its management of water resources, it is difficult to measure their impact in the short-term. These are long-term investments in the human resources and social capital within Vietnam's water resources management professionals.

The Environmental Flows workshop and study exchange to South Africa resulted in MoNRE acknowledging that Vietnam could face grim environmental, economic and social impacts. Therefore, Vietnam needs to work out how to reach consensus on the balance between water development and maintaining the continued values of healthy and productive water resources systems.

At the National Environment and River Flows Workshop in April 2005, Vietnamese officials examined environmental flows concepts and considered how they might be applied to the Vietnamese context. Dr. Nguyen Cong Thanh, Vice Minister of the Ministry of Natural Resources and the Environment stated that "The health of our rivers and aquifers is vital to the Vietnamese ... our prosperity, our environment, our communities, and our future depend on it." Dr. Nguyen Thai Lai, the Director General of the DWRM, stated that water for the environment and public consultation will be incorporated into River Basin Plans which include water allocation rules and the water protection plan

In the longer term, the work undertaken is expected to contribute to:

- Better co-ordination and integration between sectors and institutions from a local to a provincial and national level in the sustainable and efficient management and use of water resources;
- The development of effective provincial and national laws, policies, decrees, and guidelines relating to water allocation planning;
- Improved institutional and human resource capacity at the national and provincial level;
- Changes to local or national decision-making processes and the development of coordinated river basin organisations;
- Changes in people's attitudes and behavior in relation to the use and protection of water resources; and,
- Improvement in people's living standards and contribution to national goals of sustainable economic development and poverty reduction.

However, the program resulted in a range of positive experiences for those involved and some key changes directly attributable to the activities, for example:

- The DWRM has embraced consultation as an effective means to share ideas, obtain information, and build awareness and support for their vision and plan for water resource management in Vietnam.
- The key principles of water allocation across competing uses, including the planning life cycle, are now well understood within DWRM.
- The project activities built a basic understanding of what is meant by the economic value of water and the basic tools available for assessment. Economics, and particularly the economics of natural resources and the environment, is a very new topic in Vietnam, especially in relation to water.

Following on from the initiative, further work is being developed:

- Further pilot water allocation planning projects are being actively encouraged in Vietnam by the DWRM in key river basins where they are currently active, and existing projects have been requested to consider water allocation in future phases.

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- A bilateral cooperative agreement on water resources management has been signed between the Government of South Africa and the Government of Vietnam, which will help support the following efforts:
 - Water allocation reform
 - Resource directed measures with a focus on (1) establishing a long term management framework; (2) taking immediate action to establish holding positions where water sources are highly stressed; and (3) protecting community benefits from water.
 - Legal and institutional arrangements
 - Water service provision, with a focus on institutional arrangements and legal instruments to protect business viability, the resource, the environment, and customers.
 - International relations
 - Education and research

LESSONS LEARNED

Effective capacity building requires trust and understanding. This takes time and effort to work together on activities and learning together. Besides providing a better learning environment, building trust also leads to more open discussion and debate. This concept was applied at many levels in the program, both between international and local resources and among the DWRM and other national and provincial level authorities. The importance and benefits of stakeholder consultation should never be underestimated as the process is as important as the end outcome.

Effective water resources management covers many skills and disciplines. Even in the English language, communication of ideas and linking these disciplines together is a difficult. Everyone thinks differently. But building consensus and the ‘big picture’ is a critical task in ensuring the best processes are followed and the best possible decisions are made. Adding a cross cultural layer to this means that communication is critical. A lot of lessons were learnt throughout the process relating to effective communication. We ensured that all translations of reports, papers, and presentations were thoroughly reviewed and used the services of proficient translators who thoroughly understood the subject area. We worked with translators prior to presentations to ensure that they had a good understanding of all the complex concepts being delivered and built the skills of several staff in the DWRM in these areas.

There has been a great deal of on-going interest in the activities of the program and there is a great deal of momentum in water allocation as a high priority issue for the DWRM. The DWRM is now driving the agenda on water allocation with donors, NGOs and within government.

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