Establishing river basin organisations in Vietnam: Red River, Dong Nai River and Lower Mekong Delta

P. Taylor* and G. Wright**

*Natural Resources Secretariat, Department of Land and Water Conservation, 13–23 Bridge Street, Sydney 2000, Australia
**Global Studio, 6/49 Mountain Road, Austinmor, NSW 2515, Australia

Abstract River basin management is receiving considerable attention at present. Part of the debate, now occurring worldwide, concerns the nature of the organisations that are required to manage river basins successfully, and whether special-purpose river basin organisations (RBOs) are always necessary and in what circumstance they are likely to (i) add to the management of the water resources and (ii) be successful. The development of river basin management requires a number of important elements to be developed to a point where the river basin can be managed successfully. These include the relevant laws, the public and non-government institutions, the technical capabilities of the people, the understanding and motivation of people, and the technical capacity and systems, including information.

A river basin organisation (or RBO) is taken to mean a special-purpose organisation charged with some part of the management of the water resources of a particular river basin. Generally speaking, such organisations are responsible for various functions related to the supply, distribution, protection and allocation of water, and their boundaries follow the watershed of the river in question. However, the same functions can be carried out by various organisations, which are not configured on the geographical boundaries of a river basin.

This paper outlines recent work on river basin organisation in Vietnam, and makes some comparisons with the situation in Australia.

Keywords Water management; river basin management; water institutions; water law; South-East Asia

Vietnam's water resources

Vietnam is experiencing rapid change, which is greatly impacting the use of its natural resources – particularly land and water. In the latter half of the 1980s, the Government introduced a range of economic reforms that began to shift the country from a centralised system towards a market-based economy. If, as intended by the Government, over the next few decades Vietnam moves from a predominantly agricultural base to one which is more urbanised and industrialised, the result, combined with population growth, is expected to place enormous pressures on the country's water resources. The signs of this pressure are already becoming visible in some areas, for instance with severe industrial pollution of rivers.

Vietnam experiences wet and dry seasons. Although surface water is abundant in the wet season – in fact, floods have always been a major problem in Vietnam – it is becoming increasingly scarce in the dry season in some areas. Water allocation is on the point of becoming a serious issue for the Dong Nai river basin, although a lesser issue elsewhere. Some water management issues identified for the major river basins are: (i) dry season water shortages: both surface water and groundwater (used extensively in parts of the country for domestic supply, but threatened by recent expansion of high-value cropping and sinking of wells); (ii) industrial and domestic wastewater pollution as well as pollution from agricultural chemicals (mainly in rice-growing areas); (iii) threats to protected ecosystems from water development (such as dam construction in the Dong Nai river basin) or pollution; deforestation, which is a problem almost everywhere; (iv) inadequately controlled river bed and bank excavations; (v) lack of urban stormwater drainage; (vi)
saltwater intrusion in the deltas of the Red River, the Mekong Delta and the lower reaches of the Dong Nai river; nutrient and algal growth in reservoirs: (vii) flood inundation in all the major regions of the country.

Institutional difficulties include (viii) the lack of “whole of basin” water planning and management; (ix) uncoordinated responsibilities among agencies, including lack of coordination of reservoir operation, or inadequate consideration of the effects of such operation; (x) inadequate funding for (a) investment in infrastructure, (b) research and technical capacity, and (c) management activity; (xi) lack of information and lack of coordination, consistency and access to information such as is needed for planning and managing at the river basin level; (xii) lack of suitable models and decision support systems.

The legal basis: the law on water resources
Work commenced on the drafting of law on water resources after the change in policy of the Government of Vietnam in 1989 and the following years, which resulted in the opening up of the country. The World Bank provided assistance for a number of years on the drafting of water law, with input from legal experts. Numerous drafts were developed until in April 1998 a legal draft was put to the National Assembly of Vietnam, the body which gives approval of legislation. This law is now approved and is known as the Law on Water Resources. It has comprehensive heads of power but little detail. It cannot be implemented without further decrees, regulations and decisions which state precisely how its heads of power are applied.

The Law contains a number of general administrative and organisational provisions which include identifying the Ministry of Agriculture and Rural Development (MARD) as the administrator of the water law and responsible for water resources management. The Law also introduces a national water resources council, composed of high-level officials, and of river basin organisations. In Article 64, management of river basin planning, the Law gives river basin organisations the roles of: managing river basin planning and coordinating for that purpose, including proposing solutions to disputes on water. The type of organisation is one which does not exercise powers, but may provide advice. The precise wording of the provisions on river basin organisation were considered to be critically important. Within the bureaucracy and among associated experts in Vietnam, there have been arguments as to the meaning of the words in the Law, and these arguments have hinged on the degree of autonomy that any river basin organisation is permitted to have under the Law.

The institutional setting
The organisation of river basin management in Vietnam is a purely public sector issue. The private sector is very little developed at this point in time. Government organisations predominate. The administration in Vietnam consists of national ministries, departments and other agencies, which report to the central government. However, Vietnam has devolved many functions to provincial peoples’ committees which are the regional authorities. The provincial authorities have a counterpart structure which mimics the national agencies. Thus, the central ministry is MARD and each province has a Department of Agriculture and Rural Development. In theory, the ministry has some oversight of provincial departments. In practice, the ministry has few resources to coordinate with and guide the provincial departments.

MARD is responsible for both irrigation development and the comprehensive management of the water resources. The focus on irrigation within MARD leads to a potential conflict of interest between irrigation interests and State water resources management responsibilities which should encompass all forms of water use and development. This con-
flict and some of its implications have been pointed out by various advisors from outside the country and is perceived by other national agencies. In fact, there have been arguments between MARD and organisations such as Electricity of Vietnam, which is a hydro-power operator, over the role MARD sees for itself in controlling the water uses of other agencies.

There is a scarcity of suitable coordinating bodies in Vietnam which could provide a model for river basin coordination. The only water sector coordination body is the national committee dealing with flood control and disaster relief, normally active only in emergencies.

There is no formal national policy on water resources management in Vietnam, apart from the Law on Water Resources. However, the government of Vietnam has strong positions on various aspects of water resources management and related issues. In particular there is a strong commitment to increased rice-growing, poverty reduction, reforestation and some commitment to the devolution of the management of irrigation schemes.

River basin organisation in Vietnam

The MARD has placed river basins in three categories, based on the relationship between the river basins and provincial areas. The first category is the major basin which covers the territory of several provinces. The three largest basins fall into this category. The administrative policy is for special river basin organisations to be established for these three basins, and donor organisations have been identified to support all three. The second type of basin is one which falls into the territory of two provinces. These are expected to be coordinated by the two provinces in each case, and some assistance is being negotiated for this purpose. The third category is those rivers whose basins lie within a single province. They are expected to be managed entirely by provincial authorities.

The three major river basins in Vietnam are the Red River, which is shared with the People’s Republic of China, the Dong Nai River, mainly within Vietnam, and the Lower Mekong Delta, shared at the delta level with Cambodia and as a basin with several countries. These three basins have been identified by the Government of Vietnam and by international donor organisations as ones that will benefit from work on river basin organisation. Interestingly, the implementation decree for the Law on Water Resources names the Red River and the Mekong Delta as basins where RBOs will be established, but does not list the Dong Nai river basin. Nevertheless, the Government of Vietnam has entered into an agreement for assistance to work on river basin management in the Dong Nai river basin. That assistance is to be provided by the Asian Development Bank as part of a water resources management “cluster” of projects to commence in the year 2000 or 2001.

The situation as of the first half of the year 2000 is that river basin organisations are being developed or there is in-principle agreement for their development as follows for the three major river basins.

• The Red River Basin: The Asian Development Bank (ADB) started a project in 1998, which is to be completed by the end of 2000, to design a river basin organisation. The general features of the RBO, its functions and structure have been agreed at the level of officials, and formal approvals are being sought.

• The Dong Nai Basin: the government of Vietnam and the ADB signed a memorandum agreeing to a cluster of assistance projects which includes the development of a river basin organisation for the Dong Nai river basin: interestingly this basin was not listed in the general decree on implementation of the water law.

• The Mekong Delta: the Australian government has developed an aide-memoire, which proposes assistance for the development of a coordination mechanism for water resources management in the Mekong Delta, and which would form the basis for, or accompany, an RBO. This assistance was initially part of a World Bank loan for
infrastructure development, as the World Bank was concerned that an appropriate water management mechanism should be in place.

Apart from international promotion of river basin coordination, there is at least one example of a local initiative to develop such coordination at the provincial level. A number of provincial peoples’ committees on the Cau River, a tributary of the Red River, formed a committee to develop solutions to the problem of industrial pollution of that River. The committee drew up proposals for funding, but was unable to act further without external financing.

The Red River basin

Around 50% of the basin – the upstream half – is located in China. The basin covers most of the northern part of Vietnam, in which Hanoi, the national capital, is located and is dominated by the tropical, monsoon climate and is subject to climatic disturbances such as typhoons, tropical depressions and storms. The Delta of the Red River lies along the north coast of Vietnam, and is characterised by numerous interlacing tributaries and effluent streams. It covers 11 provinces. The hydrology of this area is influenced at the same time by downstream flow and tidal movement, making for a complex set of interactions. The Basin has an extensive water control infrastructure for water supply, irrigation, drainage, flood control and hydropower. Although water allocation issues are not as critical as in some other basins, there are widespread and serious water resources management issues in the Basin.

Red River Basin Organisation program

Starting early in 1998, an assistance project between the government of Vietnam and the Asian Development Bank has been developing a model for the Red River Basin Organisation (RRBO) as it has been called. The work was done from Hanoi and through the Basin. The process was as follows.

1. Set up a steering committee of officials representing the water sector and its stakeholders: the steering committee was headed by a vice-minister and met several times over the life of the project. The steering committee was to review the proposals made by the project and when agreed on the model it was expected that
2. Set up a working group: the working group had similar membership to the steering committee, but at a lower level. It met to consider more detailed aspects of the RBO design and its deliberations were
3. The first phase required the development of a policy statement which outlined the major features of the RBO. This was drafted by the end of 1998 and then considered by the government. The policy statement was commented on by all the relevant ministries and organisations.
4. The second phase started mid 1999 and continued into 2000. Based on the policy statement adopted by the government, more detailed design of the RBO was developed through workshops and the working group and steering committee.

The project is now at the stage where a model RBO has been developed, through a consultative mechanism with the agencies of the government of Vietnam. However, for implementation, which is scheduled for the start of 2001, the approval of the Minister for Agriculture and Rural Development of the decision which sets out the details of the RBO is needed. After that, the organisation can be established. It is expected to be located in Hanoi under the control of the Ministry of Agriculture and Rural Development.

Issues in developing the RBO model

At the early stages, the focus of the project was to set the scene. This involved discussion of the need for coordination and the types of river basin organisation that might be possible. It
was clear that the RBO contemplated for the Red River had to be a coordinating agency which could not adopt any state management power or function. If it did, this would conflict with the powers of the MARD and other agencies. Thus, a central issue became: what the RBO was permitted to do without infringing on the existing system of powers and institutions. The idea that the RBO should provide much needed coordination was accepted widely, but the problem remained in what way the RBO should accomplish its functions and precisely what they should be.

The main protagonists in the design of the RBO were, apart from the MARD:
- the Ministry of Energy which manages two hydropower dams (the 2 major dams in the basin) and is proposing a third and larger one;
- the Ministry of Construction, which supplies water and provides sanitation (where this is provided) to urban and industrial water users;
- the Ministries of Environment, Fisheries, of Transportation and Communication (navigation);
- the General Department of Hydrometeorology (climate and river flow information),
- the Ministry of Industry (geology and industrial water use and discharge);
- the 25 Provincial Peoples’ Committees and their departments.

This list is confined to government institutions and does not include non-government agencies, community groups or the private sector. Apart from representatives from government agencies, academic experts with knowledge of the water sector have been involved in the RBO program, but no other types of participant.

The concept of integrated water resources management is based on an expectation that interested groups and organisations will coordinate and participate directly as far as possible. In Vietnam such participation is shaped and limited by the formal system of organisation from national down to commune level. There are few non-government groups which could easily participate in a consultative role. Non-governments organisations (NGOs) do exist, but would not be considered eligible to take a formal role in an RBO.

The Red River arrangements include provincial representatives, although this was agreed at the level of the water leader, meaning the director or vice-director of the department of agriculture and rural development in the province (either the director or the vice-director will have some background in water issues). The key decision-makers for provinces are chairmen and vice-chairmen of peoples’ committees. The participation of water leaders will not automatically ensure that (i) the provincial peoples’ committee member responsible for water is informed or participates in the matters being discussed by the RBO, or (ii) that the provincial peoples’ committee is supportive and involved in the RBO’s proposals. Because attention has necessarily been focused on national agencies until now, the participation of the provinces in the RRBO is not yet adequately addressed. Unless they are persuaded to participate actively, the effectiveness of the RRBO will be limited.

What the RBO will do
In order to avoid infringing upon the powers and functions of existing organisations, the RRBO is to be limited to two broad responsibilities, which are: (i) water management planning for the river basin and (ii) the coordination of water resources information. Even these functions gave rise to debate as to whether they would cut across other legitimate functions. It was recognised from the start that the RBO would only have an advisory role. Even that advisory role, however, needed to be curtailed, in order to obtain the acceptance of the Ministry of Agriculture and Rural Development. One irony is that the RBO was not to undertake activities which the Ministry is not yet undertaking, but which (i) are now recognised as needed, and (ii) the Ministry does not have the capacity to do at present. Water allocation is one such function.
Water resources planning. Vietnam has been developing river basin plans, which comprise a list of priorities for development projects and funding requests. Such plans have been drafted in the MARD, by the Institute for Water Resources Planning. The type of planning required for the Red River, however, needs to consider a broader range of issues. A comprehensive plan for the whole of the Red River Basin which deals with all the important water resources issues would take quite some time to develop. The Red River Basin Plan would therefore be a policy statement which provides guidelines for the management of the water resources of the Basin.

Water resources information. The second function of the RRBO is the coordination of water resources information for the Red River basin. A start has been made by developing a basin profile for the Red River basin. The RRBO is expected to develop a data-base for water resources and related information. This role is not expected to be seriously challenged, and preparatory work is already making available information in the form of a data directory (meta-data base), which identifies the location, type and quality of existing information. Ultimately an RBO is the ideal organisation for developing and managing flow models for the basin.

Conflict resolution. The Law on Water Resources gives a role in conflict resolution to river basin organisations. The same is given to the National Water Resources Council. How they will do this is left open and is probably not clear in the minds of the Vietnamese at this time. Both the Council and RBOs are advisory, so any conflict resolution must involve debating and agreeing a solution which is then put to the authorities responsible for acting on it. Presumably agencies involved in the conflict will be represented in the debate. The RBO could perform a useful function in conflict resolution by obtaining an agreement among interested parties, which would then be ratified “up the line”, either with endorsement of the National Council or directly to the Government or a number of ministers. If such conflicts involved provinces or inter-provincial rivalry, the RBO might perform a useful function where they come to agreement and the respective peoples’ committees adopted the proposed solution. This role will only be effective if the RRBO is seen as credible by the most senior officials in the relevant ministries and provinces.

Structure of the RRBO
The structure of the RRBO was designed to give effect to the functions described above. Its structure is in two parts: (i) a representative body in the nature of a round table, which is to consider the issues for the Basin and make recommendations for the plan, and (ii) a technical secretariat or support unit. A distinction was made between these two “parts” of the RBO, because of the need to promote the independence and comprehensiveness of the representative body. That is, the group which meets to consider the matters for the Basin is not a part of the Ministry which is administratively responsible for the RBO. This concept of independence was very difficult to be accepted within the hierarchical structure of government in Vietnam, and it remains to be seen how active such a body can be in the future.

The RBO “Commission”. Various terms were used to describe the body which would form the core of the RBO. Such terms as commission and board were used at different times. The Commission is a round-table body made up of representatives of organisations and provinces in the Basin. It could contain some experts who are not representing a water user sector or an interested group such as fishermen. This body is intended to be headed by a senior official – a vice-minister – who will be from the MARD.

If the RRBO works as planned, the Commission will first identify the issues that need to
be tackled, and arrive at an order of priority for matters to be investigated and reported on. These may well be areas of actual or potential conflict, such as the operation of dams for hydro-power and irrigation versus some downstream impacted groups such as fishing or, in the Red River delta, the reduction of freshwater flow which causes in-river salinity to increase and the river to drop below the level where water can be readily diverted for irrigation. The Commission would report on potential solutions, but to do so will require information to be compiled, and in some case new investigations or models, to enable the parties to come to agreement. This is the basic model for coordination and participation.

The technical secretariat. A distinction was made between the Commission and the technical secretariat because, under the model that the Vietnamese were prepared to adopt, the secretariat had to be a unit of the Ministry of Agriculture and Rural Development. In this way, the idea was that the secretariat would provide expert support to the Commission, but the Commission would be seen as an entity which was not fully under the control of the Ministry.

Despite the technical group having to be administered by the MARD, advice was given that to limit its personnel and working to staff from that Ministry would be likely to jeopardise the effectiveness of the RRBO as a whole, for at least two reasons. Firstly, the Ministry has staff with expertise in limited fields in the water sector (irrigation development, small-scale rural water supply and flood control) and would be incapable of investigating and reporting on issues such as fisheries, navigation or even at this initial stage, water quality. According to the Law on Water Resources, the MARD will administer the wastewater control system, not the Ministry of Science, Technology and Environment, but MARD in the year 2000 had virtually no expertise in water quality-related fields. The assumption is that this capability will be developed in time.) Secondly, the absence of staff from other fields and agencies would be likely to cause the other water sector interests to be sceptical of the quality and neutrality of material developed by the secretariat.

The proposal for the structure of the RRBO is shown in Figure 1.

Comparisons with Australia
The river basin situation in Australia is best illustrated in the Murray-Darling Basin. The Murray-Darling Basin Ministerial Council and Commission are the best developed institutions in Australia at the river basin level although other catchment-based arrangements
exist elsewhere and within States. A comparison with the situation in the Murray-Darling Basin shows the following:

General legal basis
The laws in the State jurisdictions in Australia arose at the end of the 19th century, when riparian rights began to be legislated away. Since then, comprehensive licensing and permit schemes have governed the right to take water and use it. The concept of water rights is well developed. In Vietnam, a water rights concept for the individual or the enterprise hardly exists, although it is in the Law on Water Resources.

Basin legal basis
The Murray-Darling Basin Agreement arose from an agreement for the River Murray, first to allow navigation and then to construct joint works and share the water. From this basis, the agreement was later extended to such matters as provision of information, joint studies, flow and water quality monitoring and eventually the development of common policy on land, water and environment, in the present agreement. Subsidiary agreements have been developed on salinity and drainage and water abstraction. The operation of joint water supply works (dams and weirs) remains part of the Agreement. In Vietnam, the functions are commencing with planning for the management of water resources and a legal basis is only now being developed.

Understanding of Integrated Water Resources Management
The Australian understanding of IWRM has increased and broadened significantly in the past 15 years. There is now a general awareness among the public that water resources need to be managed carefully and protected. Additionally, relevant government agencies are keenly aware. In Vietnam, the awareness of such issues in any depth is limited to people who have had contact with international bodies and experts. Others, for instance in some provinces, have an understanding that water quality and water availability are problematic and may become worse, but are not well positioned to know how to tackle the problems.

Policy development
Work on policy for the sustainable use and protection of water resources in Australia is advancing rapidly at government levels, and for instance in the Murray-Darling Basin. The COAG agreements have introduced a policy direction which has led to other initiatives in related directions. By contrast, in Vietnam, water sector policy is driven by agricultural and industrial development policy and poverty reduction. Flood protection is also a major focus, because of the severity of the problems. Sustainable water use and water quality, except where serious health problems are occurring, seems a lesser issue at present.

Coordination and conflict management
The Murray-Darling Basin Initiative shows an example of the way in which the conflicting roles of States (which have the water resources management jurisdiction) and the basin organisation (which has a coordinating function) have been managed. A modus-vivendi has been reached, where the participants in the Initiative agree to give the Commission and its office a role to some extent of honest broker, but the overstepping of that role remains a sensitive issue. No models of this type exist for the water sector in Vietnam and coordination outside official lines of reporting is either completely informal and behind the scenes or it does not take place.
Resources and financing
Australian States have longstanding agencies with well-developed natural resource management functions. In addition, the Murray-Darling Basin Commission has a dedicated office, without which it would be impossible to make progress on joint issues. In Vietnam, not only is there minimal function and experience in the management aspects of water resources, but it is not clear what resources can be dedicated to the task of river basin management. Australia has been developing funding sources for water resources management, firstly through water fees and charges, and secondly through other mechanisms, such as catchment levies. Vietnam has almost no visible sources of finance for water resources management, including river basin management activities, outside traditional funding which is devoted, in the water sector, mainly to infrastructure. For the moment, any advances have to rely on external sources, such as donor funds.

Technical capacity
The general technical capability in Vietnam is below that in Australia, partly because of lack of funds for equipment and training, and to some extent because of isolation in the past. For instance, hydrologic modelling is hardly used, except for reservoir operation in Vietnam, whereas it underpins river operation and water quantity-quality assessment in Australia. The same applies to water resources information.

Conclusion
Establishing effective river basin organisations, meaning formal institutions, is a long-term task. Even within a country with uniform institutional arrangements, a model may need to be modified to reflect the nature of water management challenges, types of water use, and types of activity and groups affected in different basins. To a considerable extent the nature of organisation naturally revolves around the scale and types of hydraulic works in the basin. However, a critical issue is whether the agencies responsible for managing water resources should also organise management at the river basin level or whether special institutions are needed, and if so, how their roles and those of other agencies and authorities are married together. The recent experience of Vietnam illustrates some of the specific challenges and issues, particularly when contrasted with the history of river basin development in Australia.

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