

Waibel, Gabi

Working Paper

State management in transition: Understanding water resources management in Vietnam

ZEF Working Paper Series, No. 55

Provided in Cooperation with:

Zentrum für Entwicklungsforschung / Center for Development Research (ZEF), University of Bonn

Suggested Citation: Waibel, Gabi (2010) : State management in transition: Understanding water resources management in Vietnam, ZEF Working Paper Series, No. 55, University of Bonn, Center for Development Research (ZEF), Bonn

This Version is available at:

<https://hdl.handle.net/10419/88390>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

ZEF

Working
Paper
Series

55

Center for Development
Research

Department of
Political and
Cultural Change



Project


universität**bonn**



Zentrum für Entwicklungsforschung
Center for Development Research

Bonn 2010

Gabi Waibel

State Management in Transition:

Understanding Water Resources
Management in Vietnam

ISSN 1864-6638

ZEF Working Paper Series, ISSN

1864-6638

Department of Political and Cultural Change

Center for Development Research, University of Bonn

Editors: H.-D. Evers, Solvay Gerke, Peter P. Mollinga, Conrad Schetter

Authors' address

Gabi Waibel

Center for Development Research (ZEF), University of Bonn,

Walter-Flex-Str. 3

53113 Bonn, Germany

Tel: 0049 228 / 73-6707

E-mail: gwaibel@uni-bonn.de

www.zef.de

State Management in Transition:

Understanding Water Resources Management in Vietnam

Gabi Waibel

List of Figures and Tables	ii
Abbreviations	iii
Abstract	v
1. Introduction	1
1.1. Challenges of water resources management	2
1.2. Who are the players?	3
2. Managing water in Vietnam: a historical brief	5
3. State management, reforms and the water sector	9
3.1. The One Party State	10
3.2. The State Apparatus	12
3.2.1. Power Divisions	12
3.2.2. Decentralization	14
3.2.3. Administrative boundaries and scales	16
3.2.4. Portfolio Design	18
3.2.5. Human resources	20
3.3. Constitution and legal framework	23
4. Water resources management agencies of the State	25
4.1. Coordinating agencies	25
4.2. Ministries and related agencies	28
4.2.1. Key Ministries: MARD and MONRE	28
4.2.2. Other ministries with water management functions	31
4.3. National Mekong Committee and the MRC	33
4.4. River Basin Organisations	34
5. Facing the challenges of WRM in Vietnam	37
6. References	40
Annex	45
Annex 1: Organization of the State Apparatus	45
Annex 2: Organizational Structure of MONRE	46
Annex 3: Organizational Structure of MARD	47
Annex 4: Organizational Structure of the Department of Water Resources Management, MONRE	48

List of Figures and Tables

Figure 1: Players in the Water Sector	3
Figure 2: Political System at the District and Commune Level	11
Figure 3: Organisation of the Vietnamese Political System Based on the Revised 1992 Constitution	12
Figure 4: Key planning documents	14
Figure 5: Vietnam – Mekong Delta Provinces – Administrative Reform of Can Tho City, 2004	17
Figure 6: Structure of Ministries	19
Figure 7: State Management on Water Sector at National Level	29
Figure 8: Budget of MARD and MONRE in 2006 - 2008	30
Figure 9: Delivery of State Responsibilities for Water Resources Management	32
Figure 10: Urban Flood Management in HCMC	39
Table 1: Increase of number of Provinces / Cities	16
Table 2: Educational level of staff of the Department of National Resources & Environment (MONRE)	23

Abbreviations

ADB	Asian Development Bank
AUSAID	Australian Government's Overseas Aid
CCFSC	Central Committee for Flood and Storm Control
CERWASS	Centre for Rural Clean Water Supply and Sanitation
CG	Consultant Group
CPV	Communist Party of Vietnam
DANIDA	Danish International Development Agency
DARD	Department of Agriculture and Rural Development
DHA	Department of Humanitarian Affairs
DONRE	Department of Natural Resources and Environment
DOST	Department of Science and Technology
DOSTE	Department of Science, Technology and Environment (now changed to DOST)
DPI	Department of Planning and Investment
DWRM	Department of Water Resources Management (under MONRE)
ECAFE	UN Commission for Asia and the Far East
FIPI	Southern Institute of Forestry Inventory and Planning
GoV	Government of Vietnam
IDMC	Irrigation and Drainage Management Company
IESD	Institute of Energy and Sustainable Development
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
IWRM	Integrated Water Resources Management
IWRP	Institute for Water Resources Planning
IWRR	Institute of Water Resources Research
LEP	Law on Environmental Protection
LWR	Law on Water Resources
MARD	Ministry of Agriculture and Rural Development
MDG	Millennium Development Goal
MWR	Ministry of Water Resources (dissolved)
MOFI	Ministry of Fisheries (merged into MARD in 2007)
MOHA	Ministry of Home Affairs
MOI	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology (formerly MOSTE)
MRC	Mekong River Commission

NA	National Assembly (of the Socialist Republic of Vietnam)
NARBO	Network of Asian River Basin Organizations
NCSD	National Council for Sustainable Development
NDM-P	Natural Disaster Mitigation Partnership
NEDECO	Netherlands Engineering Consultants
NGO	Non-Governmental Organization
NTPI / NTPII	National Target Plan (I and II)
NWRC	National Water Resources Council
ODA	Official Development Assistance
PAR	Public Administration Reform
PDR	People Democratic Republic Laos
PIM	Participatory Irrigation Management
RBO	River Basin Organization
RRBO	Red River Basin Organization
RWSS	Rural Water Supply and Sanitation strategy
SIDA	Swedish International Development Cooperation Agency
SIWRP	Southern Institute of Water Resources Planning
SOE	State of Environment
Sub-NIAPP	Sub-Institute of Agriculture Planning and Protection
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
VASS	Vietnamese Academy of Social Sciences
VAST	Vietnamese Academy of Science and Technology
VEPA	Vietnam Environment Protection Agency
VND	Vietnamese Dong
VNMC	Vietnam National Mekong Committee
VNWP	Vietnam Water Partnership
VUFO	Vietnam Union of Friendship Organisations
WATSAN	Water and Sanitation
WB	World Bank
WRD	Water Resources Development
WRM	Water Resources Management
WUA	Water User Association
UN/DESA	United Nations Department of Economic and Social Affairs

Abstract

For many years, water resources management in Vietnam was concentrated on activities ensuring the available freshwater for agricultural production, including flood control. With the increase of water demands and the emergence of new water usages since the late 1980s, this has subsequently changed. During the past two decades, and within the context of a broad economic transition process, the water sector has undergone a series of reforms, including various attempts to integrate environmental concerns; however, many challenges in water resources management still prevail to date.

This paper starts with a brief overview on the historical development of water resources management in Northern and Southern Vietnam, in order to identify the roots of the current system. It then focuses on state management institutions in the water sector, mapping out the administrative apparatus and legal framework in order to understand how state management in the water sector is organised and practically works. Accordingly, national policies as well as its implementation in practices are examined.

The paper concludes on the existing challenges for water resources management and indicates that the nation's overall pro economic growth aspirations still dominate over environmental concerns. Moreover, the political and administrative systems lack provisions for integrated, sustainable and long-term planning. A centralist top-down approach still prevails; whereas locally diverse problems require local solutions.

Keywords:

Water resources management, state management in Vietnam, administrative reforms, water policy

1. Introduction

During the past 25 years, Vietnam has changed tremendously. The economic liberalisation combined with a heavy boost of agriculture production triggered growth and change processes in many ways. This development, which depended extensively on the exploitation of natural resources, in particular water, resulted in an irresistible increase in water demand and manifold changes in water use. In the 1990s, the first conflicts over water arose and the government introduced, for the first time in the country's history, the function of water resources management into its national water policy framework¹ (Biltonen et al 2009:3-5).

In the following decade, water resources management has become subject to numerous reforms, attracted increasing ODA investment and stimulated academic research and writing. In all these endeavours, a strong focus on water policies, notably the legal framework and water institutions can be observed. However, the impact of water sector reforms seems to be limited to date and the here presented paper aims to understand the reasons.

The following considerations served as guidelines for approaching the topic:

- Contemporary water resources management in Vietnam is deeply rooted in a history of agricultural emphasis and water engineering approach but becomes increasingly complex. There are overlaps with many other sectors and policy domains.
- The whole country of Vietnam is characterized by a continuous and rapid transition process, encompassing many (but not all) spheres of politics and life; water resources management policies and practices are bound to this context.
- Many of the government reforms are interrelated and a single sector approach risks to overlook important structures, power relations, resistance to and driving forces for change.
- The policy framework is just a framework, because "In Vietnam, the informal rule is more important than the formal one ... and ... what is on paper is different to reality" (Bach Tan Sinh, oral communication, Bonn 31.03.2009). Which factors are then shaping the implementation or lack of implementation of policies?
- A comprehensive overview on the political system and how it operates in the water sector is still missing and there seems to be a general lack of understanding how government actually works.

The paper addresses these different dimensions and is structured as follows: Following a short introduction on the key challenges and main players of the water sector (chapter 1), a short narrative on the historical evolution of water resources management in Vietnam will be provided (chapter 2). Chapter 3 will then highlight the crucial components of Vietnam's political regime and administrative composition, which are extremely relevant for decision-making and policy implementation, also in the water sector. Reference is also made to the major policy reform processes, including legal reforms and how these impact on water resources management. Another chapter (Chapter 4) is then dedicated to provide an overview and critically reflect on state agencies having a mandate in water resources management, at the national, regional, local and transboundary level. In the final part, conclusions are drawn in view of identifying key challenges of water resources management in Vietnam today.

Methodological comment

The paper draws on a large set of literature and documents. This includes academic writings, research papers from a number of international research collaboration projects, official government documents and development agencies' reports. Though the number of available resources has considerably increased during the past two decades, their accessibility is still restricted. First of all, a number of national documents are only available in Vietnamese and online resources are still limited. Furthermore, development agencies have different knowledge management practices and many consultancy reports are not made public. A whole set of local reports have been collected as part of the WISDOM Project's²

¹ The function was assigned to one department of the (by then existing) Ministry of Water Resources, in 1994.

² The paper has been written in the framework of the WISDOM Project (Water Related Information System for the Sustainable Development of the Mekong Delta, Vietnam) and contributes to a set of research activities on the

field research, basically in Can Tho City, but also beyond. These reports have often been claimed to be confidential which limits the possibilities of citation and publication.

Furthermore, several field trips were undertaken during the period of 2007 – 2009. The paper also includes data and critical reflections of ZEF researchers, namely Simon Benedikter, Judith Ehlert, Huu Pham Cong and Nadine Reis, as well as Matthias Garschagen (UNU-EHS). Valuable insights were also gained from the intensive collaboration and discussions held with project partners, in particular Huynh Thi Ngoc Tuyet (Southern Institute for Sustainable Development), Tran Thanh Be and Dang Kieu Nhan (Mekong Delta Development Research Institute, Can Tho University).

1.1. Challenges of water resources management

Vietnam has several water resources, but 70% originate from its river basins (Moller Hansen and Do Hong Phan 2005:221). The river network consists of 2360 rivers (of more than 10 km length) including eight large basins with a catchment area of more than 10,000 km². Two thirds of Vietnam's water resources originate from catchments in riparian countries with the Mekong and the Red rivers being the most important international rivers. Groundwater resources are still abundant but vary regionally. There are about 3600 reservoirs of various sizes and several major natural lakes. 400 mineral and thermal water sources have been identified, out of which 287 sources have been exploited so far. Lastly, Vietnam has a long coastline of 3260 km (WB 2003).

Water considerably benefits the national economy and the population. It is of primary importance for food and health and contributes as a major resource for economic activities. The main water usages in the country are:

- Agriculture, forestry and fisheries
- Domestic water use
- Industry and navigation
- Tourism and environment
- Energy production

Water demands in Vietnam are changing. During the past two decades there have been important developments, both in terms of intensification and expansion, in the agricultural production, fishery and aquaculture sector. At the same time, urbanisation, industrialisation, tourism development and population growth resulted in more water usage and increased pressure on water demand. The availability of water as well as water allocation are dependent on various parameters, such as locality (rural / urban and regional), infrastructure development, funding and institutional framework (water rights, management, policies and others). At the domestic level, access to water highly varies according to income and the locality of residence (Reis and Mollinga 2009:8f.). In the major cities such as Hanoi and Ho Chi Minh City, where the official and clandestine abstraction has reached critical levels, authorities have produced warnings of an increasing risk of water shortage.

Following a projection of the ADB (2008:25), there will be further increase of domestic and industrial water demands, but the predominant water use will remain for irrigation and aquaculture production (currently estimated at 93%, but may fall to 86% by 2020). Recently, a drastic expansion of hydropower generation in the riparian countries as well as in Vietnam itself can also be observed (Middleton, Garcia and Foran 2009). This will definitely impact the availability of water in the affected river basins and downstream communities. For the case of the Mekong Delta, Molle, Moran and Floch (2009:2) even argue that hydropower development constitutes one of the three key drivers of what they call "waterscape transformation".

Despite the increasing pressure on water resources, the deterioration of water quality has become an important issue in national and local water management. Most of the water usage also lead to water pollution, either by uncontrolled discharge of wastewater and / or the utilisation of pesticides and other substances applied in agriculture, fishery and aquaculture production. Another contributor of pollution

organisational and institutional set-up of the water sector in Vietnam. Information on the project design, its objectives, partner organisations and results can be accessed at: <http://www.wisdom.caf.dlr.de>

might be the water transport sector (navigation, construction and maintenance of ports, etc). Considering the fact that some major rivers of Vietnam are international, a number of sources of water pollution are presumably located across the borders.

Apart from that, other environmental issues are to be considered. Due to the high fluctuation of rainfalls, seasonal water shortages occur in some parts of the country. Another problematic area is flood management; it is however important to note that different types of floods with a variety of risk exist. The vulnerability to natural disasters may also increase, due to rising sea levels as a result of the global climate change. The coastal zones particularly suffer from erosion, sedimentation and overfishing³. Finally, salinity intrusion (up to 60 km inland), especially in the Mekong River Delta, constitutes a major problem

1.2. Who are the players?

Following the Vietnamese government's policy, state management agencies are assigned to play the major role in the management of the country's water resources. Besides, there is increasingly room for other agencies and actors to operate in and influence the water sector. This room is to a certain extent created by the state policy of "socialisation", referring to the delegation of state agencies' work to private and non-governmental organisations⁴ and also to other dynamics lying outside of the government's sphere. The various players can be grouped into six categories, which are portrayed in the following chart and briefly described below:

Figure 1: Players in the Water Sector



'State Management' refers to all activities and tasks taking place under the guidance of the state. The state itself takes part either directly (implementing pre-decided tasks with its agencies) or indirectly (delegating the implementation phase to lower echelon agents, including private companies). The state's activities can be roughly discerned in its two dimensions, namely the national and sub-national level. The latter is geographically defined and encompasses the following: provinces/cities, districts (rural and

³ Following a study of CZMC, cit. in WB (2003:24).
⁴ According to the new Law on the Governmental Organisation, promulgated in 2001 (Fforde and Associates Pty Ltd 2003:13).

urban districts)/ towns and communes (in districts) /wards (in cities). The decentralised state apparatus will be further explained below.

As Vietnam is a socialist one party state, de facto power is wielded predominately by the Communist Party of Vietnam. The influence of this party covers all aspects of daily life of the Vietnamese, including but not limited to the water sector. In a very real sense the Communist Party is inseparable from the different State Agencies as in most cases the decisions are made within the party framework and are then at a later stage formally sanctioned by the different state agents. More often than not, high ranking civil servants also hold Party positions. Corresponding to the structure of State Management, the Communist Party of Vietnam is organised along similar lines, i.e. a national and sub-national level.

In Vietnam today, a public and a private economic sector co-exist. With regard to water related businesses there are national level and provincial level state owned companies, private enterprises, service providers and cooperatives, which are also profit-oriented. In this segment are big companies such as the Hydropower Corporation and the Irrigation and Drainage Management Companies (IDMC), hydraulic engineering companies, hydraulic construction companies, and water supply and sewage companies. Other areas of water-related business operation include maintenance and repair services, production (fishery, aquaculture etc), trading (pump sellers etc), consulting and education & training services. While in the past, private sector participation in water resources management has been very limited (AUSAID 2003:26), its role is changing. This is further investigated in empirical research in the Mekong Delta and first results are presented in a separate publication (Evers and Benedikter 2009).

With regard to research and education, a whole range of national and regional organisations exist. Many of these are directly affiliated with Ministries and charged with tasks such as water resources planning, data generation and research. Besides, the Vietnamese Academy of Science and Technology (VAST), which directly reports to the Prime Minister, is also involved in public policy formulation. The Vietnamese Academy of Social Sciences (VASS) (divided in 18 institutes) in contrast, primarily conducts research. Further, research is also undertaken by universities, though their main task is capacity building. Moreover, state agencies at both the national and local levels hold funds for research and collect data in their respective fields of responsibility. With the new Law on Science and Technology released in 2000, science and technology organisations in Vietnam were for the first time "granted autonomy in the development of ideas and research topics" (Blanc 2004:158). This is a strong indicator for a potential transformation process of the sector. For the Mekong Delta, including Ho Chi Minh City as the regional centre for knowledge generation, more than 200 relevant research organisations have been identified (Evers and Bauer 2009).

In both the state management and research sectors a whole range of international cooperation projects can be found. Donor agencies, which are increasingly present in Vietnam, bring financial support but also concepts from a global water discourse into the national sector development process. Their expert's contribution to the drafting of new laws and policies is considerable. These will be briefly outlined below. A more in-depth analysis of donor's involvement will be published in the work of Reis (referring to the case of rural water supply; forthcoming 2010), and Bauer will critically investigate the impact of donors on the knowledge production in Vietnam (forthcoming 2010). Finally, international NGOs also have a stake in the water sector. While they also assist government agencies in the implementation of their plans and programs, partnerships with and the promotion of civil society organisations play a predominant role in their scope of activities.

There is no clear definition of civil society in Vietnam and the concept of civil society is also "not widely recognized by the authorities yet" (Norlund 2007:68). The state generally promotes group-building processes and community participation through its mass organisations, but not necessarily beyond. However, in the past 20 years, both, new opportunities and space for local organisations emerged. With relation to the water sector, these include NGOs operating as consultancies and / or project implementers, often in partnership with international organisations, as well as so-called grassroots organisations established within the framework of development projects. A popular example for this is the emergence of water and sanitation groups (WATSAN) (Wyatt and Tuyet 2008). Apart from these, a whole range of community based organisations, involved in water related activities (irrigation, fishery, etc.) exist. Nguyen Xuan Tiep (2008:298) for instance lists the following: water user organisations, water user associations, water user groups and water delivery groups (in addition to cooperatives and water

management boards), which are all regulated by different legal provisions. Moreover, non-registered groups and associations of people, handling local water issues, can be found (Kerkvliet 2003:8). During the past two decades, many of the related policies have changed and empirical studies are needed to assess the current and shifting role of local organisations in water resources management⁵.

2. Managing water in Vietnam: a historical brief

Prior to the formation of the modern state, water management in Vietnam (with the exception of the Red River Delta, see below) was under local responsibility and basically consisted of the adaptation to natural water regimes. In the Mekong Delta for instance, villages were organised along waterways (Porter 1993:3). Rivers and canals linked the hinterland to the sea and offered opportunities for the transportation of goods and people. As early as the 18th century, existing waterways were widened and the first canals were dug in order to transport troops (Biggs 2004:43f.). During the French colonial occupation (19th C. -1945) canal construction continued, though merely as a strategic instrument for extending military control. Moreover, the colonial regime laid the ground for a centralised and technology dominated water resources management approach, by gradually interfering existing landscape and production systems. Drawing on the example of the Mekong Delta, Biggs, Miller, Hoanh and Molle (2009:204ff.) argued that the introduction of steam-powered dredging machines in the 19th century marked the beginning of a technology-based transformation process, subsuming local farmers' interests under those of political authorities. With the same rationale, dyke building and irrigation development started in the 1930s, complemented by the construction of first closed-dyke systems in the aftermath of a particularly high flood in 1937. Thereafter, irrigation schemes were gradually promoted and hydraulic construction works developed into a lucrative business.

In the Red River Delta in contrast, water control activities date back to the 13th Century and irrigation also started several centuries before the colonial troops arrived (Fontenelle 2001:5f.). By the end of the 19th Century, a complete range of dykes has been built, though flood protection was still insufficient and irregular water shortages occurred. During all this time, water management was under village responsibility and regulated by customary law. Under the French rule, irrigation was intensified but agricultural output remained low. During the 1940s, the region faced a disastrous period of starvation (ibid).

The following decades were dominated by the Indochina wars⁶, resulting in Vietnam's independence (1954), the division of the nation and subsequent reunification struggles. These upheavals produced all kind of casualties, led to a general set back of the country (including its water resources development) and resulted in distinctive development paths of Southern and Northern Vietnam. In the 1950s, the communist regime in the North set up a new political system and embarked on a number of reforms, among which the Land Reform was the biggest and most ambitious civil political project. Though the project finally failed (Moise 1976), one of its effects was that water management got closely linked to the promotion of agricultural production and collectivization. All fields were collectivized and specialized brigades were in charge of the cooperative's irrigation management (mobilization of labour, maintenance and repair, water allocation). The extension of irrigation works became a priority of government investment and the responsibility for water management was shifted back and forth between the Ministry of Transport and the Ministry of Agriculture. In 1958, a separate Ministry of Water Management was finally founded. Shortly after that, in 1961, the 'Committee for Red River Water Resource Management and Exploitation' was established, the first of its kind in Vietnam. Throughout the following years, water control was centrally managed and first attempts to decentralize state management functions in hydraulic management failed at the end of the 1970s (Fontenelle 2001:5-11).

⁵ A currently ongoing study (in collaboration with the MDI) on water related organisations at the commune level investigates the history, the profile and scope of activities of local water management organisations as well as their linkages with other actors (as described above) (Waibel and Benedikter forthcoming).

⁶ The first Indochina war started in 1947 and lasted until 1954, when the French Colonial Regime has been defeated and the Democratic Republic of Vietnam was created. The Second Indochina War encompasses the American invasion in the second half of the 1950s and ended in 1975.

In the South, institutional development was more complicated. In the 1950s, official development cooperation began and large scale projects, such as the Mekong Delta Development Program were implemented. Focussing on agriculture and rural development, interventions adopted new technologies and concepts, such as river basin development and the “Dutch-dike strategy”⁷ (Biggs, Miller, Hoanh and Molle 2009:208f.). The pressure on land and water management however increased with the high inflow of refugees from the North (Crozier 1955, Osborne 1980) and during several years of American bombing attacks, the agricultural production almost broke down (Fall 1958, Paige 1970). Peasants were forced to flee into the cities and many lost their lives.

After the country's reunification in 1975, one of the most pressing national concerns was to get the agriculture in the south running again. Moreover, the Mekong Delta's high potential for rice production was considered a key factor for achieving food security for the whole nation – a top priority of the post-war socialist government. In institutional terms, this priority has materialised in the formation of the Ministry of Food (1981) and the Ministry of Food Industry (1987), respectively. In addition, the Ministry of Agriculture still existed.⁸ Attempts to follow the collectivisation model of Northern Vietnam were however not successful⁹ and the most important intervention consisted of the vast extension of dykes and canal construction works throughout the region. All major investments were dedicated to freshwater availability through salinity and flood control, with the unilateral purpose to increase rice production.

Doi Moi (renovation) and the formal introduction of the market economy in the mid 1980s marked a historical break, also in the country's natural resources management (see chapter 3). First of all, property rights were reorganised, and water was, for the first time, perceived as an economic good; the pricing of water (and other natural resources) as well as full-cost recovery practices were introduced (Miller 2006:203). Second, the de-collectivization and other liberation policies not only helped to boost agricultural production growth, but also led to changes in local irrigation management¹⁰. Diversification was allowed and the government's “all-rice-strategy” was gradually changed (Biggs, Miller, Hoanh and Molle 2009:211); in particular, aquaculture production, as well as fruit tree, vegetable and coffee cultivation began to rise. Third, economic growth and foreign funds made large scale investments in the agricultural sector possible, and infrastructure development was on the rise again. In this context, flood control played a prominent role and efforts to minimise salinisation in coastal areas were enhanced.

Vietnam also gradually resumed its collaboration with multi- and bilateral donors, which were practically suspended in the second half of the 70s. Thereafter, the presence of NGOs in the country also significantly expanded¹¹ and the transfer of external funds, global development concepts and foreign expertise continuously increased¹². With regard to water, first post-war donor investments were

⁷ The strategy consists of the construction of encircling dikes aiming at the protection of settlements, flood control and the prevention of seawater intrusion and was widely implemented, in particular in the Mekong Delta.

⁸ This organisational set up reflects a general trend from the mid-50s to the mid-80s to increase the total number of ministries, many of them emerging from specialized departments. The creation of the Ministry of Fisheries and the Ministry of Forestry during the same period of time, are two other prominent examples. With Doi Moi, the government tried to downsize the number of state management agencies again; for instance, the Ministry of Agriculture and the Ministries of Food and Food Industry were merged in 1987. Other consolidations followed.

⁹ According to Porter (1993:46), despite collectivization efforts of the government, only 25% of farm households in the South had joined “some form of collective organization” by 1985. Following a tax policy reform, the percentage dramatically increased to 92% within two years, but “the vast majority of cooperatives existed in name only”.

¹⁰ In the North for instance, responsibilities were not clear any more, service delivery deteriorated and conflicts arose (Egan et al 1994:11).

¹¹ From 1975 – 1990, international NGOs were not allowed in Vietnam, though funds could be transferred.

¹² UNDP was one of the very few cooperation partners operating in Vietnam as early as 1977. Other major multilateral donors, namely the World Bank and ADB officially resumed their activities in Vietnam in 1993 and 1992 respectively and thereafter became major players in the development of the country's water resources management. Throughout the years, other significant investments were made by the governments of Australia, France and the Netherlands, DANIDA (Denmark) and SIDA (Sweden), while UNICEF played a dominant role in the water supply and sanitation sub-sector. The official development assistance (ODA) has grown steadily and is today equivalent to 16% of the total investment in Vietnam (World Bank 2008:102f). This also includes contributions of international NGOs, which increased from 30 Million US \$ in 1993 to 253 Million US \$ in 2007 (representative of VUFO, Interview 27.03.2008). Some subsectors are largely dependent on external funding, for instance 85% of all investments in water supply and sanitation during the past 10 years has been from ODA (ADB 2008:8).

undertaken in the development of water supply and sanitation as well as in the mitigation of water disasters (WB et al 1996:2, FN 1). Besides, hydraulic construction constituted the core activity, building on the principles of flood protection and irrigation extension for food security. Moreover, a huge series of studies were commissioned; the first river basin master plans were developed; and the drafting of a water law was initiated.

In the mid-90s, water management functions were reorganised: In 1995, the by-then-still-existing Ministry of Water Management was dissolved and, together with the Ministry of Forestry, merged into the Ministry of Agriculture and Rural Development (MARD). From there on, MARD held the key water resources management functions for almost a decade and its scope of responsibilities continuously broadened. While irrigation, flood and disaster management remained the predominant areas of policy making, the "Integrated Natural Disaster Management Policy" adopted in 1994¹³ provided the guiding principles for a number of water-related policy interventions. Infrastructure development in form of huge dyke and embankment systems was intensified and closely linked to economic growth targets (Nikula 2008:34). Moreover, water control was still perceived as a merely technical problem and, in response to that, civil engineering approaches were continuously favoured.

Other areas of responsibility, such as urban water supply and sanitation, waste management or water quality control were still spread among several other ministries (Ministry of Construction, Ministry of Science, Technology and Environment and others). A high level of fragmentation also existed with regard to policy implementation.¹⁴ Such institutional divisions and weaknesses were (and still are) addressed by many donor's and consultancy reports and, over time, developed into an important field of policy advice and project-based intervention¹⁵.

The first water resources sector review, accomplished in 1996, actually addressed the technical problems of both water quantity and quality and highlighted the main institutional challenges for sustainable water resources management in the country (WB et al 1996:1). These were as follows:

- "... the public agencies that plan and manage water resources are having difficulty responding to their changed role in a market economy...", and
- "... the existing Water Law and regulations no longer provide an adequate legal and regulatory basis ...".

The review concluded that the country needed an integrated management approach, which should be developed in form of a national water resources framework plan. The plan should be based on existing basin and sub-basin plans and aim at integrating different needs, goals and practices throughout the water sector. The main subsectors identified were: agricultural water control, water supply and waste management, flood management, hydropower and multi-purpose reservoirs (WB et al 1996:18ff., 44). The report acknowledged an overall increase in water demand (generated by a rapid economic and population growth, urbanisation and the expansion of industries), and a need for shifting the focus of water management towards industrial and domestic water supply. In addition, it became clear that hydropower projects would require a considerable growing share of all water sector investments, since Vietnam's demand for electricity supply steadily increased¹⁶.

All these considerations show that water resources management has become more complex. Specific and new challenges are continuously emerging from a rapidly changing environment. Meanwhile, economic, social, environmental and political needs have to be integrated under a common framework. A first

¹³ The plan was adopted by the Ministry of Water Resources in 1994 and updated in 1995.

¹⁴ This is illustrated by the following example: In the early 90s, in the city of Hanoi, more than nine agencies had a written mandate for water quality monitoring and while these mandates were partly overlapping, no agency had been assigned with the overall coordination and harmonisation of activities (WB et al 1996:38f., 48).

¹⁵ As Moller Hansen and Do Hong Phan (2005:244) observed, donor assistance in the water sector is still mostly provided in the form of projects; rivalries and overlaps are common.

¹⁶ During the first half of the 1990s, public investments in water resources projects covered three areas, only; these were a) urban water supply, b) irrigation, drainage and flood control and c) hydropower, with b) and c) accounting for equal shares. Proposed hydropower investments for the period of 1996-2001 accounted for almost half of all water sector funds, despite planned investments in new activities, such as urban drainage or rural water supply (WB et al 1996:64).

national framework for addressing these challenges was constructed by the Law on Water Resources, promulgated in 1998. According to the law, water should be the property of all people and universally managed by the state (Art. 1). With regard to state management, provisions for a revision of organisational structures and institutions were made.

Prior to the water law, a first Law on Environmental Protection became effective in 1993, aiming at reconciling economic growth targets with environmental sustainability.¹⁷ Here, water was defined as a vulnerable resource and the need for protection of both, water resources and the water environment were addressed. Furthermore, the deterioration of water quality and resulting problems appeared on the political agenda, in particular with regard to urban agglomerations. In the coming years, linkages between water and environmental policies were stressed and in 2002, a new Ministry of Natural Resources and Environment (MONRE)¹⁸ was established in order to combine the two (Government Decree 91/2002/ND-CP). The main intention of the establishment of MONRE with regard to the water sector was to separate water resources management functions from the responsibility of public service delivery, which would remain with MARD. By the way, this division represented a long standing recommendation of donor agencies.

MONRE was assigned to take the leading responsibility in the management of land, water and the environment, comprising (among others) the following tasks:

- Planning, policy and strategy development
- Water resources assessment
- Water allocation
- Regulatory management of surface water, groundwater and water quality
- Water Resources Information Management

Following the founding of MONRE, water resources management tasks and functions were subsequently transferred from MARD to MONRE (GoV et al 2003). The transition process triggered confusion and conflict (Bach Tan Sinh 2008), because considerable ambiguity regarding the ministries' new mandates remained and certain changes did not happen without contestation. It was only in 2007 that revised legal documents brought the needed clarification of the two ministries' respective tasks and responsibilities¹⁹. During these years, the potential of water resources management was hardly developed, newly created institutions risked to remain ineffective and policies were not enforced. The resistance and ongoing power struggles indicate that certain costs and benefits are at stake when institutional water sector arrangements are changed. Besides, water sector reforms are still ongoing, though many of the institutional changes can be attributed to other national reform processes, as will be shown below.

On 17 August 2004, the Prime Minister signed the Decision No. 153/2004/QĐ-TTg issuing the Strategic Orientation for Sustainable Development in Vietnam. The paper defines 3 priority areas for sustainable

¹⁷ The growing concern can presumably be attributed to the global rise of environmental debates in the 1980s, emanating from an increasing awareness about the degradation and vulnerability of natural resources all over the world. Various approaches about how to tackle the problems were developed and applied in bi- and multilateral partnerships. In Vietnam, the Ministry of Science, Technology and Environment (MOSTE) was selected to implement the first Law on Environmental Protection. Among other important measures, MOSTE formed a new, subordinate agency (Vietnam Environment Protection Agency VEPA), which should evaluate the ecological feasibility of planned projects.

¹⁸ The new ministry was basically comprised of departments that were taken from other Ministries: These were the Vietnam Environment Protection Agency and the General Department of Meteorology and Hydrology which were moved from the Ministry of Science and Technology (MOST, formerly MOSTE), the Department of Geology and Minerals which was transferred from the Ministry of Industry (MOI), and the Division of Water Resources Management, which was taken from the Ministry of Agriculture and Rural Development (MARD) (Miller, Nguyen Viet Thinh et al. 1999).

¹⁹ This has to be seen in the context of the Public Administration Reform, which led to the promulgation of Decree 178/2007/ND-CP (03.12.2007), providing guidelines to standardize the functions, tasks, powers and organizational structure of all ministries and their departments. Following these new guidelines, a series of decrees to identify functions, tasks, powers and organization structures of a number of ministries were approved, including those of MARD and MONRE.

development, which are a) economic, b) social and c) environmental. Within this framework, MONRE, in 2006, issued the "National Water Resources Strategy towards the year 2020"²⁰, which complemented the current water law. The policy paper is the first one which sets out "guiding principles, objectives, missions and implementation measures regarding the protection, exploitation, use and development of water resources, as well as the prevention, and mitigation of adverse impact caused by water" (MONRE 2006:9)²¹. It therefore aims at providing an overarching framework for all water related policies and implementation plans, which co-exist in Vietnam today. The new strategy paper confirms the Integrated Water Resources Management (IWRM) approach²² and the river basin as the planning unit. It further states that water resources exploitation and use must be controlled and emphasizes that the deterioration of water quality, sinking groundwater levels and seasonal occurrence of droughts are important challenges. In line with these conceptions, a new water sector review was conducted (ADB 2008). The implementation of the recommendations has already started (see chapter 4).

3. State management, reforms and the water sector

The political system and its current reformation constitute the wider context for water resources management development in Vietnam. In the late 1970s and 1980s, a process of economic transition was started in the country²³. Subsequently, the 1986 Party Congress declared Doi Moi (renovation), which officially marked the beginning of a broad reform process. Following the liberalisation of the economy, the government embarked on the revision of its socialist structures and agencies, an extensive administrative and legal reform, the advancement of international integration and a series of sector-specific renovations. However, despite these encompassing changes, the Party and central authorities have stuck to their ideology and perception of "centralised democracy"²⁴ and therefore demarcated clear boundaries for policy transformation.

Although other actors and driving forces shape local and national politics, too specific attention is given to formal structures, including hierarchies, rules and regulations. In fact, writings on water (and other) issues in Vietnam usually extensively refer to official government documents, namely the legal framework. These legal documents provide organisational and institutional set ups, and specify all kind of regulations and sanctions. The system is however far from being static because amendments are continuously made. Furthermore, deficiencies persist and there are notable time gaps between the promulgation of a new legislation and its implementation. Finally, the aspect of law enforcement and real life implications of the legal framework deserves critical attention. Taking account of all these limitations, it is still necessary to understand the main characteristics of the political system and current national reform programs (albeit still in transition), because the institutional framework for water governance as well as policy recommendations and donor interventions are constructed on these grounds.

²⁰ Decision 81/2006/QĐ-TTg, promulgated by the Prime Minister on 14.04.2006

²¹ In 1999, MARD prepared a first "Water Resources Development Policy of Vietnam" which however has never been approved by the Government (AUSAID 2003:11).

²² The first National IWRM workshop in Vietnam was organised in 2001 and the concept has been promoted in Vietnam during the past 10 years. IWRM is defined as "a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" (Global Water Partnership 2000).

²³ There are different versions and interpretations on what came first and who initiated the transformation. Some scholars argue that it was the end of Western and Chinese aid in the late 1970s that pushed people to market their products. Official reforms then rather formalised and confirmed what has started well before (Beresford 2006). That the 6th Party Congress of 1986 constituted a milestone in Vietnamese history is however not contested.

²⁴ Centralised democracy is a unique concept of Vietnam's rulers, which "allows the central authorities to direct the flow of democratic rights to citizens" (Minh Nhut Duong 2004:3). Prof. Dr. Nguyen Phu Trong, Politburo member and National Assembly Chairman, recently confirmed that the ideological underpinning of the Party did not really change since its inception (speech delivered at the Ho Chi Minh National Political and Administrative Academy seminar "The Communist Party of Vietnam - 80 Years of Building and Development", 26/01/2010, Hanoi. http://www.nhandan.com.vn/english/news/030210/domestic_p.htm (03/02/2010)

For this reason, the review of the public administration, initiated in the mid 1990s deserves particular attention. In 2001, the Public Administration Reform (PAR) was approved by the government; it is currently continued under the Public Administrative Master Programme 2001-10. The main components of the reform are as follows: organisational reform of public administration, institutional reform (legal reform and public finance reform) and revision of human resources management (staff development and salary reform). The key objectives are to reduce unnecessary bureaucracy and corruption, improve the efficiency and increase transparency of operation of state agencies (Buhmann 2007:241). One important dimension of the PAR is the decentralisation of state responsibilities to the local government (UNDP 2003:15). Among the organisational reforms, the revision of roles, functions and organisational structures of state agencies has been an important element.

In the following sub-chapters, the constitutional framework of the one-party-state, the state management structure and its administrative and legal systems are shortly commented on. Eventually, special reference is made to the water sector, but chapter 4 will elaborate on the latter in more detail.

3.1. The One Party State

The Communist Party of Vietnam (CPV) is, next to the National Assembly, the major policy driving force of Vietnam. Party Congresses set out the goals and guiding principles for the country's development and the Party's directives pave the way for state policy and other institutional changes. Prior to Doi Moi, the Party had the monopoly of power but with the 1992 Constitution, the Party and state functions have been separated: the Party is supposed to concentrate on setting socioeconomic objectives²⁵, while the government should enact and implement the party line (Gillespie 2007:150). The new Constitution also made the Party subject to the rule of law and for the first time, non-party members could stand for elections for the National Assembly²⁶.

The Party maintains its own apparatus and is run along democratic centralist lines. The supreme leading body is the Politburo²⁷ (Political Bureau) headed by the Secretary-General. Its eight-person Secretariat oversees day-to-day policy implementation.

Membership in the party represents approximately 3 percent of the total population but Party members are to be found at all societal levels and within most official structures. From the early 1950s, "Party cells were established in every imaginable social group in the country, and the party hierarchy soon paralleled and penetrated all other organizational hierarchies" (Marr 2004:47). At the national and provincial level Party Committees are established and below the district, Commune Party Committees (rural) and Ward Party Cells (urban) exist. Finally, Party Cells are set up in each enterprise with more than 5 workers as well as in each administrative unit. This dense network of cells and branches leads to an overall public presence of the Party and even "brings the party-state into every home" (Koh 2006:7).

Efforts to discourage membership in overlapping party and state positions were made in the aftermath of the legal reform process, though to date most of senior government officials, including the heads of provincial People's Committees, are party members (Anh Luu 2006). The consequences of this overall representation of the Party for state management and sector reforms have not really been explored yet (McCarthy 2004). And while the above described structures are official and publicly well known, many operations and mechanisms are kept in the dark. Moreover, the standardized structure and a top-down line of command do not prevent the party from internal controversies, as diverse interests between local party systems and / or the Central Committee and its branches apparently exist (Dixon 2004:16, 21). Moreover, the one-party state's political legitimacy has been continuously challenged since the country's

²⁵ Following Article 41 of the Charter of the Communist Party of Vietnam, "the Party leads the State by its political statements, its strategy, by ideological activities and through staff management."

²⁶ The state executive, the army and the National Assembly emerged as new but important political actors (Vasavakul 2001), with the National Assembly constituting the new centre of power.

²⁷ The present 14-member Politburo was elected at the Tenth Party Congress in April 2006. Since 1976, the National Congress is to be held every five years. The Congress is comprised of 1,176 delegates who elect the Central Committee (160 members). It is then the Central Committee who elects the Politburo.

reunification (Abuza 2001), though state forces try to hinder public debates on the issue; recent events still confirm the Party's irreconcilable position on this crucial matter (Thayer 2009).

Beyond that, the Fatherland Front, an umbrella organisation of more than 40 so-called mass organisations, is closely linked to the Party. Mass organisations are established, financed and guided by the state, but they are not formal administrative subdivisions and agencies of the government (Wischermann and Nguyen 2003:223). As part of the Doi Moi reforms, in 1989, mass organisations were granted more independence in management and finance and have been entitled to engage in service delivery and other activities, which were formerly strictly under state control (Joint Donor Report 2009:3;169). Nevertheless, mass organisations still mobilize their members, disseminate information and implement national and local programmes on behalf of the government. For instance, the Fatherland Front is assigned to disseminate knowledge on the Law on Water Resources. The most important organisations with regard to water issues are the Farmer's Union and the Women's Union, whose membership rates are extraordinarily high. Mass organisations are attractive (and sometimes the only potential) partners of community development projects and also play a (not yet well known) role in the field of local water management.

The following chart (Figure 2) provides an excerpt of the Party's organisational structure at the lower administrative levels of Vietnam's state organisation:

Figure 2: Political System at the District and Commune Level

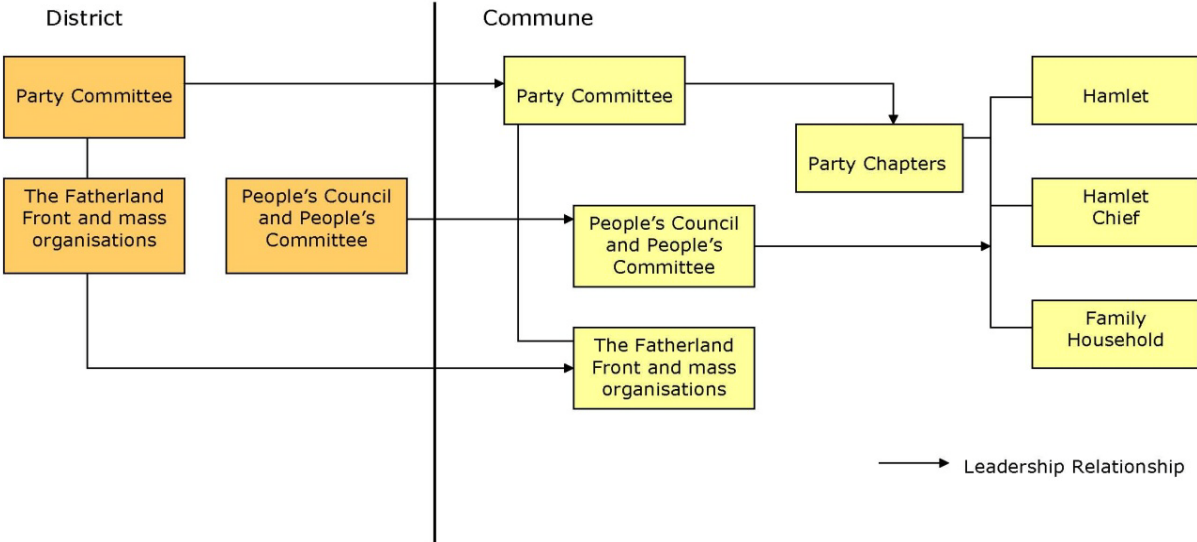


Figure based on: Pforde and Associates Pty Ltd (2003:61)

Considering that the Party provides guidelines for all national policies, it is worthwhile to have a look at the 'Central Committee Strategy for Socio-Economic Development 2001 – 2010'. With regard to water, the strategy outlines the following goals (CPV 2001:10-13):

- Increase efficiency of land, water and forest resources utilization
- Develop fishery and aquaculture production, processing and marketing
- Complete the dyke and water conservancy systems (protection from salinization, flood control, irrigation and drainage)
- Ensure sufficient and clean water supply to urban areas and industrial parks and to more than 90% of the rural inhabitants.

The strategy paper includes various concerns for environmental protection, sustainability and preservation of natural resources. In addition to these general guidelines, a regional approach to water resources development is outlined. This includes the development of hydropower projects and protection against flash floods in the northern and mountainous regions of the country (CPV 2001:16f). Regarding the Mekong Delta, the Party aims at strengthening the region's agricultural productivity, husbandry and aquaculture but also wants to promote industry and services. The road and the river transport networks

should be developed, and flood control and counter-salinization abilities should be fortified (CPV 2001:17f).

The various objectives represent a conventional approach to water resources management with economic growth and modernization as top priorities. Technical interventions and water control are still at the forefront, although domestic water supply is also given some attention. However, it will be crucial to assess monitoring results and in particular the allocation of funds of the respective government agencies, being in charge of the implementation of these and other policies.

3.2. The State Apparatus

Various scholars argue that Vietnam’s political system is characterized by a significant degree of fragmentation of political power (Vasavakul; Koh in: VASS and UNDP 2007:75) and that there are strong driving forces, other than the state (Kerkvliet 2003; Beresford 2006). Locally diverse patterns of authority and social organisation and a (historically rooted) varying degree of proximity to central state and party agents are certainly factors which shape existing power relations in Vietnam today. Nevertheless, the central state prohibits and effectively sanctions activities which seem to challenge the state power and / or the one-party-system itself (Gainsborough 2004:48). All these aspects cumulate in a picture which seems to be controversial at a first glance (Koh 2007:218) and empirical research is needed to assess and analyse local manifestations of power relations. Furthermore, state management functions and structures are defined to a certain extent only, and room is left for adopting a varying mode of operation.

3.2.1. Power Divisions

According to the 1992 Constitution, the state apparatus of Vietnam consists of legislative, executive and judicial authorities. The executive is comprised of the Government, Ministries and Ministerial-level agencies and their decentralized representative bodies (see Annex 1). The legislative is represented by the National Assembly, its Standing Committee and local level organs, while the judiciary is comprised of a complex court system, security forces and other related agencies. The following chart (Figure 3) illustrates the constitutional division of powers:

Figure 3: Organisation of the Vietnamese Political System
Based on the Revised 1992 Constitution

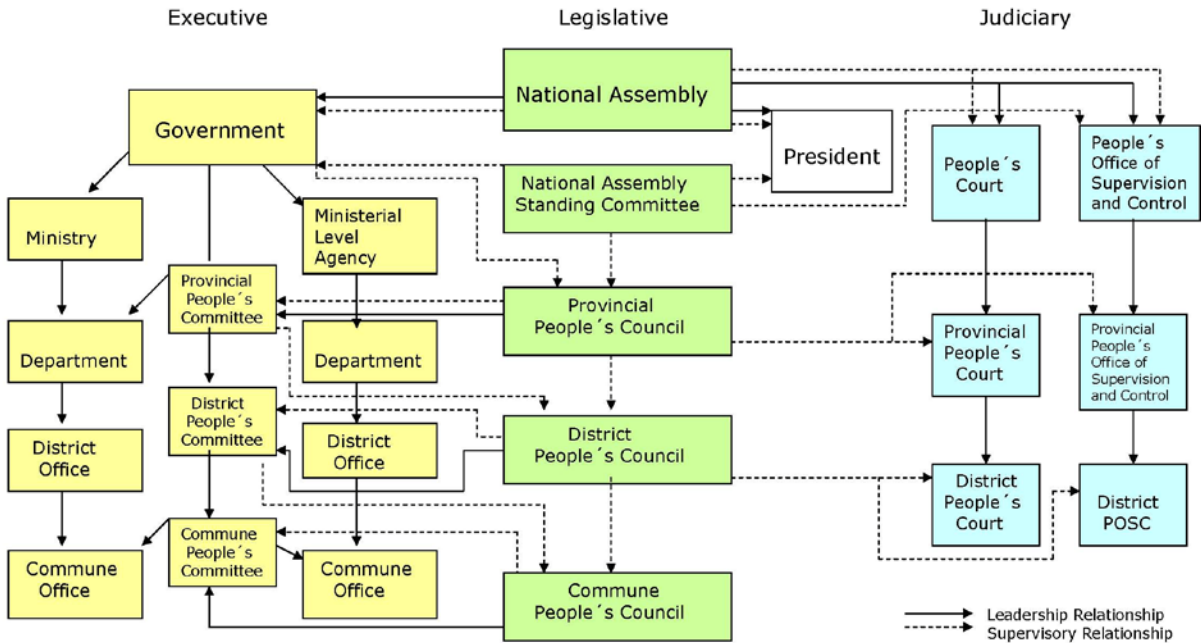


Figure based on: Pforde and Associates Pty Ltd (2003:58).

While this division is a product of Doi Moi reforms, the division of the state administration into four vertical levels, namely the center, the province, the district and the commune, dates back to colonial times (Marr 2004:41)²⁸. People's Councils represent the National Assembly at the various local levels; and People's Committees²⁹ fulfil the respective state management functions. All these organs are subject to a vertical structure of authority: People's Committees at the district level for instance are under the supervision of the People's Committee at the provincial level and all People's Committees receive instructions from and are bound to the regulations set by the central government. According to their statutory mandate, People's Committees are in charge of policy making and the supervision of its implementation, with the exemption of taxation and personnel; these two domains are partly kept under the central ministry's management (Geppert 2002).

In general, all sector-specific policies and plans should be consistent with and support national goals and policies ratified by the Government. The National Assembly, as the highest policy level, approves national plans, the State budget and major investment projects. With regard to its relevance for the water sector, the following national policy frameworks need to be considered:

- Ten Year Socio-Economic Development Strategy
- Five-Year Socio-Economic Development Plan (National Assembly)³⁰
- Politburo's Directive 36/CP-TW

Moreover, the current planning system of Vietnam consists of various types of plans, operating at the national, the provincial/ city and the district level. This applies to most of the plans, including the general socio-economic as well as sector plans (developed by ministries and their respective departments). In addition, planning is done for different time spans: master plans cover a period of 15-20 years, development plans are drafted for 10 and 5 years and each of these plans may be detailed in the form of annual plans. The following figure (Figure 3) shows the most important planning documents of the Vietnamese government:

²⁸ This dates back to a decree issued in November 1945 but which is still valid today. In contrast, no legal document on decentralisation itself has been issued to date (Fforde and Associates Pty Ltd 2003:16). The above stated structure has rather been outlined in a diverse set of documents, notably those describing the functions of local government institutions.

²⁹ The members of the People's Council are elected; the size of membership varies between 15 and 25 for the commune level, between 45 and 75 for the Province and can reach up to 85 for the major cities of Hanoi and Ho Chi Minh City. People's Councils however only meet twice a year and often lack the capacity to carry out their multiple functions as assigned by the legal framework (UN/DESA 2004:8). The People's Committee is nominated by the People's Council, though the chairperson must be approved by the higher-level People's Committee; furthermore, the Prime Minister has the power to remove the appointed head, if necessary (Fforde and Associates Pty Ltd 2003:11f.). The People's Council has the overall authority over the People's Committee at the same level. Membership in the People's Committee is limited and depends on the population size of the constituency (max. 13 people); however, membership in People's Committees and People's Councils is often overlapping (UN/DESA 2004:8).

³⁰ The Five-Year Socio-Economic Development Plans are prepared at all levels of state management and constitute "the main pillar of Vietnam's strategic planning architecture" (ADB 2008:11). The preparation is coordinated by the Ministry of Planning and Investment and its corresponding local government agencies.

Figure 4: Key planning documents



Source: GoV (2002)

Planning is still characterized by a top-down and single sector approach and “is viewed as a process of implementing the planned investment of state resources” (Nguyen and Kammeier 2002:377)³¹. Most of the plans focus on production targets and are rather optimistic with regard to the availability of resources for the plan’s implementation (ADB 2008:11). Different agencies follow different planning procedures and inter-agency collaboration is poor. Therefore, inconsistencies in different planning documents are widespread.

The national Five-Year Socio-Economic Development Plan 2006-2010 aims at maintaining a GDP growth rate of 8% with the overall objective to become a middle-income country. Economic growth is targeted in various sectors, including agriculture, forestry, fishery, industry and construction. All these targets lead to a greater pressure on water resources. Other water-related objectives are to provide clean water and sanitation for 95% of the urban and 75% of the rural population and improve environmental standards. Waste treatment and wastewater treatment systems should be established in urban areas (40%) and industrial zones (70%) and 100% of medical waste should be treated (ADB 2008: Appendix A). Obviously, these goals are ambitious.

3.2.2. Decentralization

During the past two decades, a series of decentralization initiatives have been undertaken by the Vietnamese government, though “as yet there is no overarching ‘decentralization vision’” (Fritzen 2006:9). While a number of advancements have been made with regard to administrative and fiscal decentralisation, the political dimension has been rather neglected. Notably People’s Councils have gained new powers over public finance and investment and important policy fields such as land use management. In addition, the various decentralisation programs and activities of the government produced distinct results. As the Vietnam Development Report 2010 (Joint Donor Report 2009:v;27) points out, “much of the devolved power has gone to the provinces”, and despite good intentions, to a lesser extent to district and commune governments. Spending powers, in particular, are still and mostly kept at provincial level. Fritzen (2006:6) therefore describes the system as being “‘centralized’ at the provincial level”.

The Development report further argues that the empowerment of provincial governments led to a form of local “self-governance” and that local administrations need to be put under the control of the central state (again), if uniformity and consistency in the translation of national policies should be achieved (Joint Donor Report 2009:ii). In fact, conflicting priorities between national and local agencies per se exist and a deficient legal framework leaves room for a local interpretation and adaptation of centrally

³¹ Beresford (2006:2005) reveals that by 1986 official statistics only provided data on the planned economic sector while other activities were ignored. What has not been planned did not exist.

promulgated policies and documents. And while the national policy frameworks mostly fail to take local conditions into account (Taylor 2004:246f), local government agents tend to pursue their own interests (Fforde and Associates Pty Ltd 2003:24). As a result, local governments do not operate in a uniformed way and the performance of state bureaucracies varies accordingly.

Similar to People's Councils' and People's Committees' decentralized structures, ministries and ministerial-level agencies have their corresponding local institutions, too. These line agencies exist in forms of departments at the provincial level, in forms of offices in the district administration and in forms of sections at commune level. In principle, national policies set an overall framework providing directions for investment and interventions; respective local government agencies are supposed to base their plans and activities on these outlines. National strategies and plans are usually developed and communicated in a top-down approach but the central state's capacity to control their implementation is limited. Therefore, as Gainsborough (2004:48) resumes, the central state "is weak in a technical sense" and experiences difficulties to get institutions work towards a common goal. Koh (2001: 536), who critically investigates the huge bureaucratic state apparatus comes to the same conclusion and adds: The machinery is incompetent and often responds more to local or personal interests than to what the party-state says or law dictates.

The number of line agencies decreases with each level of operation, meaning that not every ministry (currently there are 18) has a corresponding unit at a lower level of administration. Following the Vietnam Administrative Organization Yearbook of 2009 (MOHA 2009), the various provinces and cities have a varying number of departments and other sub-agencies. Sub-agencies may include colleges, media institutions and others but also management boards of larger projects, which are by definition non-permanent agencies. At district level, the number of offices is generally less than 10, which shows that tasks and responsibilities are reduced and reorganised. In fact, People's Committees of cities and provinces can set up, merge and dissolve their administrative units according to their specific needs (Fforde and Associates Pty Ltd 2003:13); local government structures therefore take different formats.

While provincial agents are full time bureaucrats, cadres at the district level normally originate from the district itself and rarely attempt to leave for a civil service career in a higher level of public administration. At the commune level, officials remain in their home communities and often assume local state management tasks only in addition to their farming activities. As Sikor (2004:180ff.) points out in his case study on the implementation of the land reform in the Red River Delta, local cadres "looked away" from local practices and "accommodated villagers' demands", which clearly differed from the national legislation and policy directives. Thus, local government institutions are both, part of the state management system and bound to local interests and conditions.

With regard to water resources management, various functions have been decentralised during the past two decades: Provincial and district authorities are for example responsible for service provision and infrastructure maintenance, notably the repair of canals and dykes (since 1986) (Biggs, Miller, Hoanh and Molle 2009:207). According to budgeting and spending regulations of the government, the decentralisation is however limited, because decision-making power over FDI projects exceeding an investment capital of US \$ 5 million remains with the central government agencies (Fforde and Associates Pty Ltd 2003:20) and all projects with an area of intervention beyond 150 ha are handled by the corresponding national ministry. Considering such practices and drawing on the example of taxation policies, Will (2008:9;13) even argues that the central government shows a clear tendency of re-centralisation. Nevertheless, provincial authorities increasingly appear as partners and beneficiaries of development projects and state funds, though within a clearly restricted financial framework.

Projects crossing several provinces also fall under the jurisdiction of line ministries (Molle and Hoanh 2008:21f).³² Provincial leaders therefore have little to say (and learn) in regional planning and integration. This constitutes a real challenge for environmental management and IWRM, based on principles and scales breaching administrative boundaries.

³² Molle and Hoanh (2008:21f.) give the example of the Bac Nam Ha polder; the Bac Nam Ha Irrigation Company comes under the direct jurisdiction of MARD.

Another important element of decentralisation reforms has been the promulgation of the Grassroots Democracy Decree³³ in 1998, which is considered a major step to promote community participation and local government's accountability. The decree stimulated a considerable amount of (often ODA funded) community based interventions, but to date, results are (unsurprisingly) disappointing. In this context, Fritzen (2006:18) argues that state management agents "face weak incentives to transfer decision-making power to the grassroots".

Nevertheless, community based policies, such as the Community Based Disaster Prevention, Response and Mitigation Program, which is currently being implemented, draw on the Grassroots Democracy Decree. They are further rooted in the experience of the 1999 disastrous flooding, when the government realised the need to strengthen community involvement in water, and particularly flood management. Following the 1999 critical situation, a new "living with floods" discourse emerged, acknowledging that seasonal floods are not always a disaster but rather part of people's everyday life (CCFSC 2001:17). The new strategy somehow decentralises flood management but practically relieves the state from its overall control responsibility. Moreover, it claims a sense of self-protection from the people, which certain segments of the population cannot fulfil (Beckmann et al 2002:6). Lebel and Sinh (2007:40) critically note that "[...] authorities may make nostalgic appeal to the "living with" discourse as an excuse for inaction or when protection efforts fail". Besides, the reframed flood control discourse barely entails changes in state management top-down practices.

3.2.3. Administrative boundaries and scales

Another interesting dimension of Vietnam's reform process is concerned with the rearrangement of administrative units. After 1975, when the administrative system of the North was more or less adopted in the South, a significant number of new provinces and cities (administrative unit equivalent to a province) have been created. Large and highly populated provinces (with more than 1 million inhabitants) were restructured into several smaller provinces; and, step by step, the following result has been achieved:

Table 1: Increase of number of Provinces / Cities

	1978	1990	2000	2009
No of provinces	38	46	57	61
No of cities	3	3	4	5

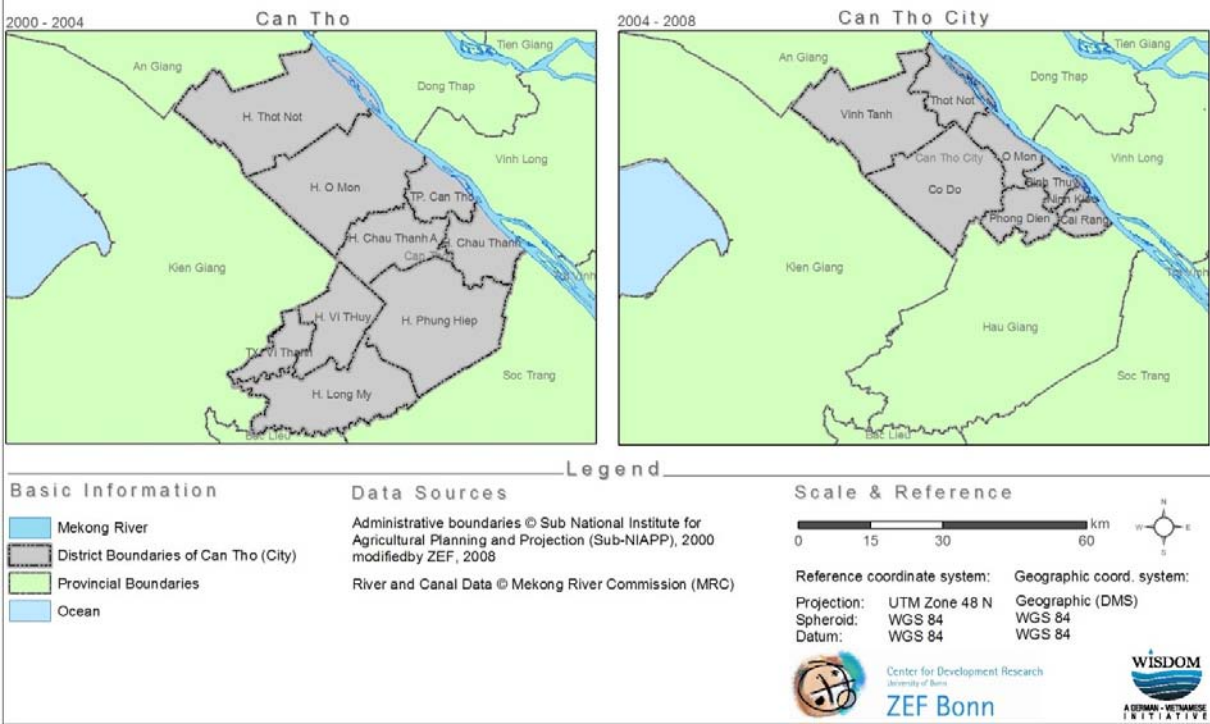
(Sources: Kerkvliet 2004:5, updated with data from Government of Vietnam 2009)

Today, there is still a constant readjustment of administrative units. Referring to existing legal provisions, provinces can get the administrative status of a city, rural districts are transformed into urban districts and commune boundaries are shifted. Each of these changes involves a shift in decision-making, a change of planning units and most likely movements of staff and infrastructure. Additionally, new local government agencies have to be set up when provinces and / or districts are split. It can be assumed that such changes do not happen without contestation, since resource allocation patterns and power structures are equally affected. From a historical perspective, these processes also reinforce bureaucratisation and lead to a significant increase in state management personnel, as pointed out by Evers and Benedikter (2009) in their study on the evolution of water bureaucracies in Vietnam.

In the following, an example of the rearrangements of administrative boundaries of Can Tho City is given (Figure 5):

³³ Decree 29/1998/ND-CP, later amended by Decree 79/2003/ND-CP (July 2003).

Figure 5: Vietnam – Mekong Delta Provinces – Administrative Reform of Can Tho City, 2004



In late 2004 the province of Can Tho (map on the left) was divided into two separate entities, namely Can Tho City and Hau Giang Province (map on the right)³⁴. For the southern part, Hau Giang, the organizational division into districts was practically maintained, with a few adjustments made along the new provincial boundary. The districts of Can Tho City however were modified: new districts were established and old boundaries shifted. Out of the eight new districts of Can Tho City, four were classified as rural (Thot Not, Vinh Than, Co Do and Phong Dien), the others as urban (Cai Rang, Binh Thuy, Ninh Kieu and O Mon)³⁵. This distinction has several practical impacts, e.g. water supply in urban districts is privatized, while rural water supply is managed by the state³⁶.

In 2009, another administrative reform was implemented: the district of Thot Not became urban and the district of Co Do was equally affected by the creation of an additional new district, Thoi Lai Town. Another district, Phong Dien, will undergo a transition in 2010. All together, a high frequency of change can be observed.

Institutional changes are often difficult and lengthy processes and it may take some time before the respective 'new' agencies reach a level of satisfactory performance (according to the expected standards). In addition to that, most of the reforms will have an immediate negative effect on existing planning processes, because respective administration's databases cannot easily be adjusted to the new

³⁴ This increased the total number of provinces in the Mekong Delta from 12 to 13. Besides, Hau Giang constitutes a good example for a continuous shift and redefinition of administrative boundaries: Before 1992, the Province of Hau Giang was comprised of parts of Can Tho City, Soc Trang and Hau Giang.

³⁵ Following the Government Decree on the Administrative Units of the Province and the District (15/2007/NĐ-CP) the main criteria of distinction between rural and urban districts are: population density, total number of residents and territorial expansion. An urban district in the delta for instance should accommodate at least 50.000 to up to 80.000 residents. In addition to these, other quantitative and qualitative criteria are being applied for a rural district to become urban. Several authorities, including the Ministry of Home Affairs are involved in the process. However, as Garschagen (oral communication 2009) observed in Can Tho City, formal criteria are not rigorously applied and administrative reforms in local government constituencies are shaped by a number of different factors.

³⁶ The Center for Rural Clean Water Supply and Sanitation (CERWASS), an agency under MARD and / or its provincial department (DARD) is in charge of this task.

planning units and existing plans may lose their validity.³⁷ Moreover, monitoring becomes a particularly difficult task and local transformation processes can hardly be traced, because statistically comparable data sets are not available (Vormoor 2010, forthcoming).

Finally, the transfer of responsibilities from one local administration to another may lead to new challenges, too, as the following example shows: One officer of a district Office for Economy in Can Tho reported (Interview 24.03.2009) that since 2008 his unit has been in charge of issuing licences for water use of up to 20.000 m³ per day. Previously, all licences were issued at DONRE in the provincial capital, because the district was classified as rural. For urban districts, this task is delegated to the district administration. However, the new office did not receive any of the provincial former records and therefore the staff in charge does not know how many companies already held licences in the district and how much water is extracted based on these licences. Monitoring and evaluation as well as decision-making therefore become a difficult task.

3.2.4. Portfolio Design

In addition to the vertical line of authority (national ministry → provincial department → district office → communal section) explained above, a horizontal dimension of power relations applies to all local agencies. Provincial and local departments for instance have a dual reporting responsibility to both, the local People's Committee and, the respective central line ministry (UN/DESA 2004:12), which can lead to practical problems in the application of both command systems.

Another interesting aspect of state management in Vietnam is the institutional structure of the various portfolios. As outlined in the historical review, ministries were continuously founded, merged and dissolved, depending on both, policy objectives and the size of the government (tendencies of increasing and downsizing the number of central agencies both occurred) at a given point in time. To date, ministries in Vietnam are composed of three types of agencies, which are: state management agencies, non-business agencies (generally translated as institutes) and business agencies. Out of these, only state management agencies hold a certain degree of state power (Molle and Hoanh 2008:32).

State management functions are implemented by administrative and professional departments and include policy making, advisory functions, the organisation and monitoring of the implementation of laws and policies and administrative and other tasks, such as international cooperation. Responsibilities, tasks and functions of each ministry are defined by individual decrees.

Apart from that, ministries provide public services, assume educational functions for their employees and set up and control business agencies (corporations). The latter include state-owned enterprises, companies, publishing houses and others. Furthermore, ministries set up, (partially) fund and control national research institutes, which have the status of ministerial 'non-business agencies'. The following figure shows the basic structure and administrative units of a Vietnamese ministry:

³⁷ Just to give an example: Population growth in Can Tho City can be resorted to a time-series of 5 years, only (2004-2008), since it is not possible to compare the net population of Can Tho (in 2000: 1.836.200 citizens) with that of Can Tho City (in 2007: 1.154.900 citizens).

Figure 6: Structure of Ministries³⁸



Looking at the complexity of the structure and mandate of ministries, it clearly appears that policy making, policy implementation and business interests are closely interwoven. One example, drawn from the dyke management activities of MARD in the 1990s, illustrates the practical implications (WB et al 1996:32): "MARD's Department of Dyke Management plans and manages flood control facilities. Their Vietnamese Hydraulic Investigation and Design Company (non-business agency) assesses and designs the planned intervention, while the ministry's construction companies are charged with the implementation of the projects."

Despite privatization and other reform activities, similar interconnections still exist to date although they are not necessarily easy to detect; incidentally, business agencies do not appear on the official organizational charts provided by ministries.³⁹ Gainsborough (2003:42f.) shows that business development is often linked to local party and government institutions and that "personal relations and clientelist networks" are important in Vietnam. Benedikter, who is currently investigating on such practices, reports (oral communication 22.03.2010): "Interestingly and despite the introduction of market-based biddings, the system continues to operate in its old manner. In the hydraulic construction sector of the Mekong Delta, always the same companies are contracted to design and carry out the construction works of large-scale schemes funded by the Central Government."

The role of the private sector in water resources management has steadily been increasing, since water control services were partly privatized in 1984 (Fontenelle 2001:5-11). Over the years, both, the privatization of governmental tasks and opportunities for private investments were on the rise. Consequently, the 'National Water Resources Strategy Towards the Year 2020' (MONRE 2006)

³⁸ Decree 178/2007/ND-CP, defining the functions, tasks and organizational structures of ministries and ministerial-level agencies, defines the various organisational units as follows:

Departments (vu) have an advisory function towards the minister and perform closely related tasks. ... (They) have no seal of their own ... (Article 16).

A Bureau (cuc) (often also called Department) is a state management unit that does not necessarily cover all regions with its activities but has more liberties in its task than a department. Thus it has its own office, sections and attached non-business organizations, like newspapers or information centres, as well as its own seal and bank account. A Bureau may issue documents related to its line of work, yet not legal documents (Article 19).

General Departments (tong cuc) are large units, often themselves comprised of Departments, having an office, an inspectorate and non-business organizations. The tasks of general departments are more complex and stronger centralized than those of ordinary departments. They have their own accounts and seal and may issue documents except legal documents (Article 20).

State-run non-business organizations have no direct state management functions although they assist the ministry in its state management tasks. Their main area of activities is the provision of public services, wherein they can operate autonomously. They have their own seal and accounts (Article 21).

³⁹ As Gainsborough clarifies (2003:16): "Companies as described being 'private' often have state institutions among their shareholders while 'state' companies can in fact be found to be operating rather 'privately'".

encourages the mobilisation and development of private sector financial and human resources for the following⁴⁰:

- Investments in the protection and sustainable development of water resources and the mitigation of adverse impacts caused by water
- Formation of a water service market and a market for the transfer and exchange of water resources licences
- Development of multi-sector water economic industries
- Formation of service organisations in the field of water-related consultancy, science and technology and water supply.

Some of the related changes in the political economy have attracted considerable attention of Vietnam scholars (Gainsborough 2003, Fforde 2007), but the consequence of the strong linkages explained below on research agendas and knowledge production has remained unstudied. In fact, scientific water-related knowledge is mainly generated by universities and research institutes of the state, and increasingly in collaboration with international research and / or development projects (Evers and Bauer 2009).

Recent reforms however indicated that the government tries to give the ministries a stronger focus on their main tasks by removing educational institutes from the ministries' jurisdiction. In the case of MONRE for example, the scientific institutes for Mining, Mapping and Hydrometeorology were placed under the jurisdiction of the Prime Minister and the schools for higher education in natural resources and environment were placed under the jurisdiction of the Ministry of Education and Training (MOET) (Prime Minister's decree 767 of June 23, 2008). The placement of the research institute under the Prime Minister's jurisdiction can also be interpreted as a move to ensure the independence of research and evaluation, but a large number of institutes still remain under the authority and are dependent on the specific interests of one particular ministry.

Another critical area of concern is the weak level of coordination among ministries and sectors. The government itself recognises that they need to overcome the sector-specific approaches and interest manifestations of the respective agencies as well as their persisting "strong mentality of formal achievements" (GoV 2006, quoted in: Joint donor report 2006:12).⁴¹ These interest manifestations are reinforced by the pooling of economic and political interests and constitute a major challenge for multi-sector approaches, such as integrated water resources management (IWRM). In IWRM, various sectors and scales are supposed to be integrated, both vertically and horizontally. For instance, provincial governments need to collaboratively tackle water issues at a basin scale, while within a same province (or district or commune) line agencies have to harmonise their actions with regard to water quality management or environmental protection. The same requirements are valid for policy and law making at all administrative levels. Indeed, the harmonisation of sector-specific policies, legal frameworks and inter-agency collaboration across sectors and administrative boundaries with regard to their implementation still constitutes one of the major challenges of water resources management in Vietnam today.

3.2.5. Human resources

The successful implementation of policy reforms also depends on the adequate staff capacity, in terms of both, numbers and competences of the respective responsible agencies. This is considered a significant challenge and the low level of qualification is a topic of frequent complaint in Vietnam. Considerable gaps exist at the higher (tertiary) educational level and newly emerging tasks and operations require specific technical and / or managerial skills, which are not well developed yet. These gaps are to a certain extent characteristic for a developing country with a predominantly rural population; but they are also

⁴⁰ Despite these sector-bound policy objectives, Prime Minister Nguyen Tan Dung recently stated that Vietnamese State-owned enterprises need to continue to play the leading role in the country's socioeconomic growth (Xinhua General News Service, 10/03/2010).

⁴¹ This aspect has also often been mentioned in Southern Vietnam, as the following quote illustrates: "Ministries are mainly interested in getting their interests served. They don't care how these decisions will impact on other people or organisations." (Informal conversation with civil servant in Can Tho, March 2009).

resulted from the specific socio-political context of a centralist planning economy, walling-off capitalist, western ideologies, products and lifestyles. In fact, physical movements, critical thinking and individualisation have been controlled for many years and certain areas of education merely did not exist. All these restrictions impinged on human capacity development. Nevertheless, it is also important to note that Vietnam has a comparatively high literacy (97%) and primary school enrolment rate and formal educational achievements are particularly highly valued and aspired in Vietnamese society.

Previously, staff recruitment and human resource development systems were integral parts of the central planning state. Decisions about staff recruitment were taken by the Minister or respective head of organisation or, for the local level, by the Chairman of the People's Committee. Recruitment procedures were not open and transparent but rather based on friendship, family ties, and student and alumni networks and alike.

The system itself discouraged staff mobility. Once employed by the state, a public servant remained with the same organisation or enterprise until retirement (McCarty 2001:38ff.). Capacity building was generally (and often still is) organised in forms of short and long-term training courses, offered by national institutes, often belonging to a ministry⁴². Most of the courses are compulsory and related to promotion, to which the principle of seniority is generally applied. The new Law on Cadres and Civil Servants aims at changing these patterns and introduces a system where rewards are based on individual performance. Its implementation however delays (Joint Donor Report 2009:iii-iv).

Staff reduction in the public service constitutes one of the objectives of the Public Administration Reform (Ives 2000:5). In a review, the government acknowledged that the public service had problems of both, chronic understaffing of competent staff and overstaffing of non-performing staff (Government Steering Committee, Review of PAR, cit. in: UN/DESA 2004:13). The overall assessment concluded that the system was too clumsy and that new regulations were needed. One area of special concern was the low level of staff salaries which led to problems of low performance levels and corruption. Though the importance of adjusting staff salaries to the real living costs has been acknowledged for some time now, the issue has not been solved yet.⁴³ The review also noted that the complex system of allowances and other forms of additional payments further complicates the situation⁴⁴ and Painter (2005:277) argues that it "undermined central discipline and control". Despite these concerns, the Joint Donor Report (2009:iii) concludes that state salaries "may even be higher" than in the private sector, because the system leaves room for various ways of appropriation. Beyond that, certain state management positions offer a whole range of opportunities for tapping external, additional revenues; other, low-level positions may however not (or at least to a lesser extent).

In the past ten years, important components of human resources development have been subject to decentralisation, including the following (Joint Donor Report 2009:160)⁴⁵:

- Staff recruitment
- Decision-making on remuneration, salary grades and allowances for staff
- Monitoring & evaluation and responsibility for staff performance

Therefore, salary systems are supposedly non-uniform and practices with regard to these components may differ across the country.

Independent from the financial aspect, it used to be attractive to enter the public service because of its job guarantee. During the past 20 years this has, however, significantly changed. Following important economic reforms and the (partly) privatisation of state owned enterprises, the number of state

⁴² With regard to the quality and efficiency of training programs, a number of deficiencies have been revealed: Most of the curricula are too theoretical, the content is not always relevant and therefore the impact of capacity building is limited (Government Steering Committee, Review of PAR, cit. in: UN/DESA 2004:15).

⁴³ A new Law on Public Officials and Civil Servants will come into effect on January 2010.

⁴⁴ If all kind of meetings require the distribution of "envelops" to participants, meetings can only be organised if the necessary funds are available. On the other hand, meetings will be organised because of the envelop-system.

⁴⁵ The changes came in several steps between 1998 and 2009. A district government still needs the authorization of the respective provincial authority to take its own decisions in the field of human resources management (ibd.).

employees first fell from 3.8 million in 1989 to 2.9 million in 1993 (Beresford 2004:78)⁴⁶. In the second half of the 1990s, on the contrary, there was a considerable increase in civil service staff⁴⁷, in particular with growing numbers in the party, state management and the construction sector (Gainsborough 2004:45) (see also chapter 3.5). In addition, the opening up of the labor market led to a significant "brain drain" from the public to the private sector. This development aggravates the public service's problems to meet its human resources demands.

The following article (Agence France Presse 17.09.2009) draws on the example of the People's Committee of Hanoi and nicely illustrates human resources management challenges of a public administration:

Hanoi seeking best and brightest for civil service

The capital of communist Vietnam wants all its top managers to hold doctorate degrees within 10 years under a draft decree aimed at dramatically boosting the city's talent pool, a report said Thursday. All managers from the city's Communist Party Committee - the highest civic body - must hold PhDs by 2020, Le Anh Sac, an expert with Hanoi's Department of Internal Affairs, said in an interview with VietnamNet online news service.

Among the city's 7,500-member pool of civil servants only 56 currently have doctorates, he was quoted as saying. (...) Sac admitted that few talented people want to join the city administration, which pays an average monthly salary of about three million dong (167 dollars). Private-sector jobs pay far higher.

Concerns about the unsatisfying performance of the higher management level in some critical cases recently led to the introduction of new human resources development instruments, such as staff rotation (change of office and locality for a period of 3 years); in addition, new promotion channels have been created for younger staff (Koh 2004:50f.). Despite these and many other efforts demonstrated by national and local government agencies, human resources management remains a huge challenge.

Apart from the already mentioned issues, new tasks and responsibilities within the public administration created the demand for competencies which are not necessarily available. This includes knowledge and skills in specific and new areas of operation, such as IWRM, policy making or quality management (Moller Hansen and Do Hong Phan 2005:228). With regard to the education needs of the water sector, more than 1000 students graduate from the Water Resources University (Hanoi and Ho Chi Minh City) every year. Other universities and colleges, specialized in hydro-meteorology, agriculture, fishery and the like also exist (Evers and Bauer 2009). Most of these courses and curricula do have a technical, engineering focus; the so-called soft and management skills are basically neglected.

A representative of MONRE for instance explained the staff situation of the newly established Department of Water Resources Management as follows: There are approximately 100 staff members out of which most has been transferred from other ministries. In addition, young graduates without any work experience and low qualification profiles (B.A. level) have been recruited. Most of the staff has a technical background in water engineering or hydrology, but skills in environmental planning and policy making are more than scarce (Interview Hanoi 28.8.2008). Given the current situation, the department urgently needs capacity building. Similar deficiencies have been assessed by MONRE's Department of Natural Resources and Environment (MONRE 2007:15).

⁴⁶ This paragraph is limited to the topic of human resources in the public service. Beyond that the labour market has significantly changed during the past twenty years and a large number of labourers lost their jobs. Many Vietnamese turned to the informal sector or had to suffer from unemployment (Beresford 2006:209). Beyond that, in both, the private and the public sector, relationship building, family ties and the preservation of lucrative contacts seem to be crucial for career development. Finally, as McCarty (2001:40) observed, bribery has gained importance in getting access to profitable positions.

⁴⁷ As Ives (2000:1f.) point out, the contingent of civil servants in Vietnam comprises judges, military and security employees, executive level officials, elected officials and people working in administrative agencies. In 2000, only 1/6 of all civil servants were working in the central state administrative agencies. Employees in the health and education sectors constituted the main bulk of civil service personnel.

The example provided by MONRE also demonstrates that staff is simply moved from one organisation to another, when respective tasks have been shifted. This may also be at some costs, since rivalries between agencies are not unusual and networks, communication and the willingness to cooperate are highly personalized. During the past decades, similar institutional rearrangements have been common and the water sector has been highly affected by these changes.

Finally, the growing number of international cooperation projects also requires additional human resources which contribute to capacity gaps. A good command of English (crucial for international cooperation) is one of the skills which need to be built in both, the public and the private sector. Capacity building therefore constitutes an important component of many donor but also national interventions. These capacity building activities are, more often than not, based on short-term plans and project requirements; a comprehensive human resource development strategy however is often missing.

Moreover, as a report of MONRE (2007:14) reveals, beneficiaries of national training and staff development programs are concentrated in the central, provincial and district agencies while the commune level is being neglected. This reinforces the significant differences in knowledge and skills at the national and/or metropolitan level compared with provincial and district or lower levels, as data from 2007 nicely illustrates (MONRE 2007:13ff.):

Table 2: Educational level of staff of the Department of National Resources & Environment (MONRE)

Highest Educational level of staff	State Administration Total	Department of National Resources and Environment / MONRE (total)	Department of National Resources and Environment / MONRE: Provinces and Districts
PhD	10%	1,96%	0,07%
MA / MSC	22,1%	3,3 %	1,29%
BA/BSC or lower	67,9%	94,74%	98,64

In turn, gaps in knowledge and education at the commune or district levels provide “good” arguments for higher level authorities to not delegate competencies to their subordinate administrations.

3.3. Constitution and legal framework

Following Doi Moi, the Vietnamese government initiated the development of a new legal system and in 1992 the country got a new constitution. Thereafter, the National Assembly and its Standing Committee adopted more than 100 new laws, not mentioning the multiple secondary legislations released afterwards. In fact, within 15 years more laws and regulations were promulgated than during the preceding 40 years (UNDP 2003:9). These legal reforms touched important policy areas, such as the fiscal system, the bank and trading sectors, land and property rights, and others and were intended to adapt the legislative framework to the new political and economic requirements and practices. Further adjustments were needed when Vietnam had to harmonize its laws with international standards, pursuing further economic integration and membership in multilateral organisations, e.g. the World Trade Organisation.

Beyond that, the government aimed at transforming the legal system itself. The by-then-existing socialist legality (formally adopted in 1960) was rooted in the ‘rule by law’ principle, meaning “that law is not above the state but rather emanates from the state”, vesting the Party and the government with powers to choose not to follow state laws. “Legality thus facilitated, but never constrained, state power” (Gillespie 2007:143). New legal concepts and institutions were set up in order to promote the ‘rule of law’⁴⁸ principle.⁴⁹

⁴⁸ There is no universally accepted definition of each of these terms. However, “rule by law” is “mainly concerned with legality, that is procedure, and less (...) with the autonomous power of the law. The rule of law (...) respects the

Despite important moves in the legal reform process, a number of constraints remain:

- Many laws are slowly developed, long consultation procedures are the norm and law implementation is tedious and lengthy.⁵⁰
- Politically sensitive issues are delayed and/or not tackled.
- Many legal documents, especially laws, remain vague and require further regulations (secondary legislation) clarifying the implementation of the law.
- Primary and secondary legislations are developed and passed by different national and local government agencies, resulting in both, overlaps and gaps of legal provisions (Buhmann 2007:240) and uneven application of current laws and regulations (Quinn 2002:224). This leads to a system of legal pluralism, though officially not recognized (Nguyen 2010a).
- Though a formal hierarchy of legal instruments and administrative bodies exists, it can be difficult to identify the correct level of authority. Frequently shifting responsibilities further complicate the situation.
- Since it is difficult to assess the current state of regulation, the dynamic of legal reform processes generate knowledge problems (Quinn 2002:224).
- Many provisions are just not implemented (Beresford 2006:213).
- Law enforcement does often not take place: "The law has not entered into daily life" (UNDP 2003:10).

All these shortcomings also apply to the water sector, whose legal framework has been widely changed in the aftermath of Doi Moi reforms. Today, the Law on Water Resources from 1998 contradicts with other laws and single secondary legislations even contradict the existing framework. A recently conducted overview of the legal framework of the water sector, based on the analysis of more than 300 relevant documents, detects the most critical issues and recommends a revision of the law (Nguyen 2010a). The comprehensive study, which is the first of its kind, not only shows how the Law on Water Resources interrelates with other laws regulating the sector (e.g. the Land Law, The Law on Dykes, the Law on Waterways and so on) but also reveals contradictions with other legal instruments defined by the new legal system. It outlines the key provisions for state management agencies charged with water resources management, the guiding principles for water resources protection and exploitation as well as the existing system of sanctions and law enforcement provisions. Furthermore, an overview on international laws and conventions, signed by the government of Vietnam and applying to the water sector, is provided. A case study on the legal framework of water quality management and its implication in Can Tho City further demonstrates the lack of coordination of national and local government provisions and how this prevents an effective control and management of water resources at a provincial scale (Nguyen 2010b).

The need for developing a new water law has also been recognized by the government for some time now and MONRE has been charged with the drafting and consultation process. In the meantime, the current law still constitutes the framework of reference. In the following, the key elements of the Law on Water Resources (1998) are briefly summarised:

According to the Law on Water resources of 1998, water should be the property of all people and universally managed by the state (Art. 1). Therefore state management agencies assume all responsibilities with regard to water resources management. The law provides the framework for the

rights and interests of natural and legal persons, provides for remedies, and uses law for these purposes" (Buhmann 2007:238).

⁴⁹ The basic components of the new system include a legal framework, law and treaty making processes, law making and law implementation institutions, basic and postgraduate legal education and professional training, legal information and dissemination systems (UNDP 2003:9).

⁵⁰ Certain mechanisms are put in place ensuring that negotiations take place and mutual consent is reached in national policy and legal matters. For example, an inter-ministerial committee has been formed to work on the draft of the first water law; the drafting process began under the Ministry of Water Resources, later moved to MARD and took more than 10 years before it was finally submitted to the National Assembly. The law went through 19 draft versions (Biltonen et al 2009:2). After the adoption of a law, its promulgation is another formal requirement, which – in the case of the water law for instance, took 19 months. Only thereafter, implementation could be started.

organisational and institutional structure, including the establishment of new agencies, such as the National Water Resources Council and River Basin Organisations (see chapter 4.1 and 4.4).

In the law, water is understood as an economic good and should therefore be managed as such. The primary planning and management unit is the river basin. Further, provisions are made for the protection of water resources and a regulation of access to water, but no formal system of property rights for water exists. With regard to water use, priority is given to water exploitation and utilisation for domestic consumption (Art. 22):

“Organizations and individuals have the right to exploit and use water resource for purposes of living, agricultural, forestry and industrial production, mining, electricity generating, water transport, aquaculture, sea fishery, salt making, sport, recreation, tourism, medicine, health rehabilitation, scientific research and other purposes as prescribed by this Law and other provisions of law”.

The law also opts for a licensing system for water use and the introduction of wastewater discharge permits. Both, water extraction and water pollution should be controlled. Water resources management therefore has to be framed in the wider context of environmental protection policy, as outlined in the revision of the Law on Environmental Protection (2005) and the first Law on Biological Diversity (2008). How these various provisions have been put into practice is outlined in chapter 4.

Due to a specialisation of policy areas within the water sector, a tailored and detailed legislation for a number of these sub-sectors has been requested during the past two decades. Law-making processes are therefore closely interconnected with policy-making (also in a technical sense). The new Implementation Plan of the National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020 (CCFSC 2009:6) for instance claims that “an only law for natural disaster prevention, response and mitigation to be applied nationwide” should be developed and promulgated by 2013 (underlined by Waibel). This is just one example, illustrating the increasingly complex set of legal provisions, resulting from a diverse range of interests, donor involvements and state management restructuring processes. It is therefore not surprising that the Joint Donor Report (2009:x) concludes: “The key challenge for legal reform is to ensure that the legal framework is internally consistent, implementable and is well understood by the public and by those who enforce it”. The currently revised Law on Water Resources must therefore encompass all these aspects by providing a general framework for each of the water sub-sectors and offer guidelines for subsequent secondary legislations at both, the national and the local government levels. Provisions for interagency collaboration also deem necessary.

4. Water resources management agencies of the State

Since state management agencies assume all responsibilities with regard to water resources management in Vietnam, the following chapter aims at providing an overview on the current organisational and institutional structures and respective change processes. A number of new agencies have been set up in recent years and the government undertook a whole range of efforts to adjust its competences to the requirements of a holistic water resources management approach. These efforts include the creation of coordinating agencies, the rearrangement and separation of water management tasks and responsibilities and the establishment of river basin organisations. Vietnam’s participation in the Mekong River Commission covers most of the transboundary dimensions of national water resources management and is therefore briefly explained in a separate sub-chapter.

4.1. Coordinating agencies

As demonstrated below, the Vietnamese state apparatus is hierarchically structured and state management responsibilities are divided into ministerial and ministerial-level portfolios. Inter-agency and cross-sectoral coordination is poor and only few organisations have been set up in order to improve upon that. In addition, regional coordination is needed, in particular when environmental issues are at stake. So far, few mechanisms exist to enhance cross-border cooperation between provinces and,

according to the recently published Vietnam Development Report (Joint Donor Report 2009:27), local governments even “have less incentive to coordinate their activities” than they had before decentralisation reforms. This is remarkable because it clearly demonstrates that achievements in certain policy fields can produce new challenges and even a backlash in others.

With regard to the water sector, one of the first domains in which inter-agency coordination was institutionalised was flood protection. As early as 1946, a National Committee for Dyke Protection has been established, and local level committees followed two years later (Bach Tan Sinh et al. 2008). Based on these committees and successor organisations, the Central Committee for Flood and Storm Control (CCFSC) was formed in the early 90s (WB et al 1996:31)⁵¹. The CCFSC is responsible for issuing warnings and emergency response during floods and storms, supervises the preparation and implementation of respective plans and submits reports on disaster situations to the government. In addition to this, a National Council for Search and Rescue was set up in 2002.

The CCFSC operates under the authority of MARD's Department for Dyke Management, Flood and Storm Control. Moreover, local Committees for Flood and Storm Control (CFSC) have been set up at provincial and district levels; within the villages, security teams have been formed. The committees are headed by the vice chairman of the respective People's Committee who coordinates the activities and plans for a whole province. Meetings are held seasonally and/or if the need arises. Members of the CFSC represent various departments of the local government as well as other organisations involved in prevention, disaster risk reduction and disaster management, such as the Red Cross (member organisation of the Fatherland Front) and others. To date, these committees are somehow unique in their mandate and format.

Following these innovations, donor agencies and NGOs⁵² continuously promoted the establishment of coordinating institutions, namely in two respects: National organisations should improve upon inter-agency coordination at different scales of intervention, while other institutions should be created to facilitate international cooperation and ensure that individual projects are in line with national strategies and action plans (MWR, UNDP and DHA 1995:7).

This led to the establishment of Technical Advisory Groups, platforms and committees, and the flourishing development of an international consultation meeting and reporting culture. The yearly production and submission of a Joint Donor Report to the Vietnam Consultative Group Meeting is just one out of many examples.

One of the first, joint networks set up in the water sector was the Natural Disaster Mitigation Partnership (NDM-P)⁵³, established in 2001. Various other groupings followed, out of which some created specialised information platforms. These (often online-based) tools serve as an interface between the Vietnamese government, donors and NGOs, although the need for information and knowledge sharing of members largely differs. Foreign development agents more or less rely on such sources, because they provide information “on what's going on” in the respective sector and include translation services (translation of Vietnamese official documents into English). Vietnamese government officials in contrast generally have access to different sources of information (many of them being personalised), but also experience a lack of comprehensive overview on activities and data availability in the dispersed agencies and sub-sectors. It can nevertheless be assumed that international forums are created and shaped by ODA interests and that they hardly function once the external support has been retrieved (oral communication, international NGO representative, Hanoi, 2009). Despite these limitations, such networks and instruments explore the potentials for facilitating dialogue and cooperation among separate entities and scales of intervention.

⁵¹ Flood and disaster management was also the priority area of donor engagement after bi- and multilateral development cooperation has been resumed in the early 90s. The CCFSC and the National Committee for the International Decade for Disaster Risk Reduction, which has been set up shortly after the Central Committee have been crucial aspects of the jointly developed Disaster Risk Reduction action plan, launched in 1993.

⁵² NGOs also set up their own structures, such as the NGO Forum, working groups and an information centre.

⁵³ The NDM-P is an association made up of Government, Donors and NGOs, set up in June 2001 by the Consultant Group (CG) of donors to the Government of Vietnam. The partnership is working for Central Vietnam to support the GOV strategy for disaster mitigation. A Secretariat was set up in May 2002 in Hanoi.

A similar initiative was the establishment of the Vietnam Water Partnership (VNWP), a national structure of the Global Water Partnership, in 2002. The standing office of the VNWP is located at the Institute of Water Resources Research (which is under the authority of MARD) in Hanoi, with the institute's director as VNWP's chair. The main activities are in the field of IWRM. It has 43 partners (6 state management agencies, 19 technical research and academic institutions, 14 professional associations and NGOs, 2 business agencies and 5 media agencies). The network is an interesting attempt to join agencies from various sectors, the government, academia and non-governmental organisations.

Furthermore, donors raised a number of concerns with regard to vertical and horizontal planning and cooperation within the state management system. The water resources sector review of 1996 for instance opted for the establishment of a national water resources commission or board as well as basin committees (WB et al 1996:52f.). These recommendations have been translated into the Law on Water Resources, which made statutory provisions for the establishment of new institutions and specified that water resources management should follow river basin plans. With these and other provisions, the Law aimed at "ensuring harmony between the interests of the whole country and those of regions and sectors, between modern science and technology and the traditional experience of the people" (LWR, Chapter 1, Article 5).

Shortly after the promulgation of the law in 1999, the government embarked on a series of reforms and established the National Water Resources Council (NWRC) at the central state level in 2000 (Decision 67/2000/QĐ-TTg). The NWRC has 18 members⁵⁴ (Article 4) and its mandate is "to advise the government on important matters regarding water resources, including policies and strategies, zoning plans for major river basins, and projects to protect and use water"⁵⁵. In addition, the council has been assigned a mediatory role in solving conflicts between ministries and decentralised government structures, as well as the preparation (but not issuance) of government decrees, related to water management. The council has a solely advisory, but no executive role.

The NWRC was established as an inter-ministerial body with representatives from 10 line ministries and a standing office at MARD's Department of Water Resources and Hydraulic Works Management with initially only 3 staff. After its establishment, the council was supported by ADB and AUSAID but did not function as anticipated: MARD's "lack of interest was manifest" (Molle and Hoanh 2008:16) and for more than a year, not a single meeting took place (AUSAID 2003:67). The situation slightly changed after the secretariat had moved to MONRE in 2003 but in 2007 again, no meeting was arranged and in the following year the council met only once (Grothe 2009:63). Nevertheless, donors continued to promote the institution and the last water sector review project (2006-2008) officially took place under the office of the NWRC. The review overtly recommends strengthening the NWRC by addressing, among others, the following issues (ADB 2008:37):

- Legal recognition of the NWRC under the Law on Water Resources
- Revision of administrative arrangements of the council
- Clarification of the relationship between the NWRC and the National Council for Sustainable Development (NCSD)⁵⁶
- Development of mechanisms to improve cooperation among agencies at various levels
- Establishment of a stakeholder advisory group to the council

⁵⁴ The members are: Vice Prime Minister (Chairman), Minister of MARD (standing member), vice ministers of the following Ministries: MARD; Ministry of Fisheries; Ministry of Science, Technology and Environment; Ministry of Planning and Investment; Ministry of Finance; Ministry of National Defence; Ministry of Construction, Ministry of Transportation and Communication; Ministry of Industry; Ministry of Public Health; General Department of Hydro-meteorology; the Chairman of the NWRC Office and 4 specialists working in the water sector. The permanent members have slightly changed with the move of the office to MONRE.

⁵⁵ <http://www.dtinews.vn/news/environment/vietnam-seeks-international-cooperation-to-preserve-scarce-water.html> (20.01.2010)

⁵⁶ The NCSD was founded in 2005. The Council was set up by the Ministry of Planning and Investment and has a mandate to coordinate monitoring and evaluation on environment and development. Though the Council is chaired by a Deputy Prime Minister, "it appears to have inadequate powers and resources to be taken seriously and it rarely meets" (Bass et al 2010:43).

Under the current conditions, the NWRC seems to be rather inefficient. The suggested reforms are however reduced to the council itself and do not address necessary changes within other involved agencies. If cooperation within the water sector should be improved, a few formal rearrangements and prescriptions will definitely not be sufficient and advisory bodies can easily be ignored. The decision-making powers, though dispersed, lie somewhere else. In addition, conflicting issues between the central and local governments are not directly addressed, though non-permanent members representing central and local agencies may be invited by the chairman to attend Council meetings⁵⁷. In fact, mechanisms to enhance regional integration of policies and measures are urgently needed. These challenges cannot be solved by institutions set up and operating in the capital of Hanoi, only.

4.2. Ministries and related agencies

4.2.1. Key Ministries: MARD and MONRE

To date, MONRE is given the main responsibility for the management of water, other natural resources and the environment in Vietnam. When MONRE was established in 2002 (Government Decree 91/2002/ND-CP) a number of functions were removed from other ministries to be integrated in MONRE's new portfolio, and in particular MARD was highly affected. The main intention of the establishment of MONRE was to separate water resources management functions from the responsibility of public service delivery. A comprehensive report of 60 pages, published in 2003, outlined the transition process, including the transfer of 12 ODA projects (Joint Task Force 2003). According to the report, the Department of Water Resources Management of MONRE would take the leading responsibilities in planning, policy and strategy development of water resources (see Annex 4). This should include a review of legal documents, the development of a national water resources strategy and corporate plans, the setting of targets and the definition of objectives of water sector reforms and projects. Furthermore, MONRE was assigned with the tasks of water resources assessment and the allocation and regulatory management for surface water, groundwater and water quality. These functions are clearly those of a management agency.

Although the establishment of MONRE was regulated by a government decree in 2002, a decree on the revised responsibilities of MARD was still missing when the transition process started (Joint Task Force 2003:4). MARD was supposed to keep its functions with regard to rural development and public service delivery in the water sector, but several gaps and unclarities remained. For instance, the important point of infrastructural planning (and effective decision-making power in that matter), which was not specified, turned out to be a crucial issue in the following, long-lasting inter-ministerial conflict⁵⁸.

Various scholars argue that the founding of MONRE "has been seen as a needless complication of the situation", because under MARD water resources management functions was concentrated within one ministry (Moller Hansen and Do Hong Phan 2005). The separation of these functions "thus serves the institutional division of the use of water resources and their sustainable development and protection" (Bach Tan Sinh 2008) and practically appears as a set back of the IWRM process.

When MONRE issued the nation's first 'National Water Resources Strategy towards the year 2020' in 2006, MARD published its own 'Strategy for sustainable national water resources development and management'. The paper was not in line with MONRE's policy. At that stage, the Prime Minister interfered, called both parties for a meeting and assigned the respective institutions to clarify the roles of both ministries (Molle and Hoanh 2008:14). In 2007, secondary legislations on the roles, tasks and

⁵⁷ If this has been done is not known to the author.

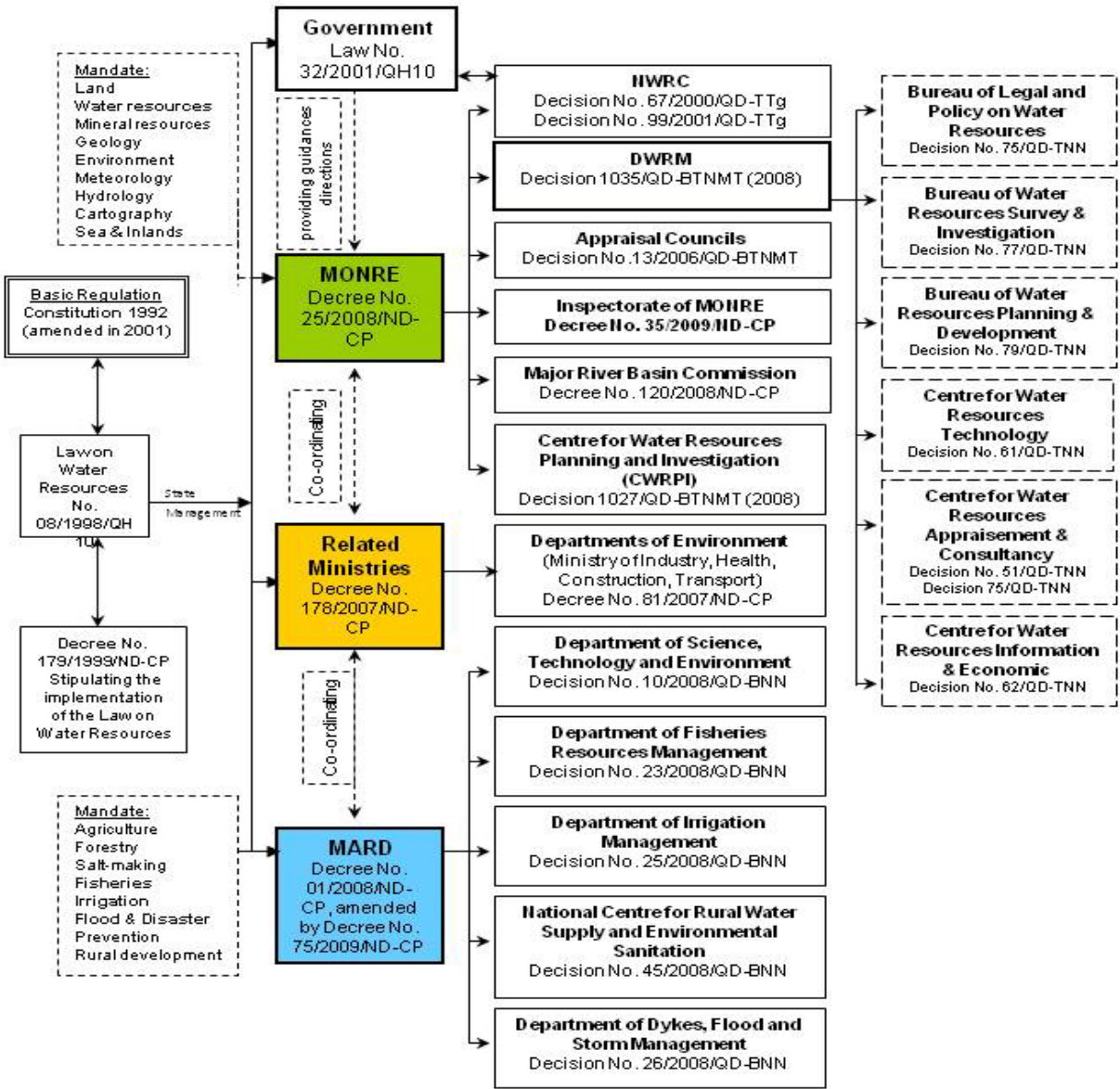
⁵⁸ "It is thus the struggle for conserving both, autonomy in planning and the current procedures of financial decision-making that is at the core of inter-ministerial fighting. This is not an uncommon situation as illustrated in the case of Thailand. Experience in other countries also shows that with the decline of irrigation and drainage works and dam construction and the concomitant rise of environmental issues, investments in both studies and infrastructure tend to shift towards environmental studies and treatment stations, with a corresponding shift in money flows within the administration. This shift, from MARD to MONRE, does not occur without frictions and provides a good background for explaining the present situation" (Molle and Hoanh 2008:30).

functions for both, MARD and MONRE, were finally promulgated (for the respective key functions see Annexe 2 and 3). Following these new documents, MONRE's number of functions considerably increased, but not all functions were taken from MARD. Among the new responsibilities of MONRE, environmental protection (including climate change) can be considered as key and with regard to water, the building and management of a water resources observation network represents a new and huge challenge.

The transition process is still ongoing. In early 2008, the Vietnam National Mekong Committee (VNMC) (see chapter 4.3) and its standing office were moved from MARD to the Department for Water Resources Management (DWRM) of MONRE. While the National Water Resources Council's (NWRC) standing office is also hosted by MONRE (since 2003), River Basin Organizations (RBOs) established under MARD and the Central Committee for Flood and Storm Control (CCFSC) remain under MARD's supervision.

The key water management functions and main departments of MONRE and MARD are summarised in the following chart (Figure 7) (Nguyen 2010a:57):

Figure 7: State Management on Water Sector at National Level



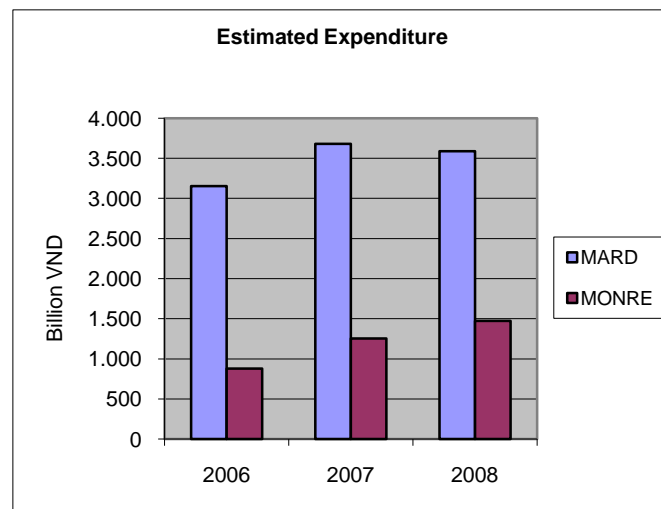
While MONRE's main functions are environmental protection and water resources management, MARD's central concern is still focused on structural issues, such as flood control and mitigation, and water supply, mainly for production purposes and rural water supply. MARD basically remains engineering-

oriented and agricultural production and hydraulic works constitute its core businesses⁵⁹. Moreover, in 2007, the Ministry of Fisheries was merged into MARD.

As pointed out above, the various struggles between MARD and MONRE basically focussed on decision-making power and access and control over resources. The latter includes the allocation of funds for the ministry itself, but first and foremost funds for implementing projects and construction work.

The following chart (Figure 8) shows that from 2006 - 2008 MARD received a much higher share but it was the budget of MONRE which rose steadily:

Figure 8: Budget of MARD and MONRE in 2006 - 2008



Data Source: Government of Vietnam (2009)

Over the same 3 year period, MARD had a steady influx of foreign capital of more than 800 Billion VND per year, an amount which represents MONRE's total expenditure in 2006.⁶⁰ As Bass et al (2010:43) observe, MONRE and MARD are still "... stressing ... the need for their own separate 'sector' environmental strategies and budgets". The ideal of the two Ministries working towards the same goals and objectives by joining resources and competences seems to be far away from current practices.

Another important area of concern has been the mandate for planning. Both Ministries operate their own planning agencies. With regard to water, these are: the 'Institute of Strategy and Policy on natural resources and environment' (ISPONRE) under MONRE and the Institute for Water Resources Planning (IWRP) with its sub institute in Ho Chi Minh City (SIWRP), under MARD. Before ISPONRE was established in 2006, the Institute for Water Resources Planning (IWRP) /MARD had the main responsibility for all planning activities related to regional water resources development, river basin management and flood control. Only small scale plans have been delegated to local institutions and specialized plans, such as hydropower development plans, were left with other Ministries who had the mandate to work on these. With the establishment of ISPONRE, a number of research and planning activities have been reorganised and specific tasks were formulated; one of those is the development of a master plan on natural resources management and environmental protection (ADB 2008:71). Moreover, planning institutes are being (partly) privatized and became subject to market mechanisms. Attracting new businesses, securing employment and increasing one's competitiveness are new challenges for "old" leaders (interview, planning institute senior staff, Ho Chi Minh City 26.09.2008).

⁵⁹ State owned enterprises of MARD comprise husbandry and various farming products as well as construction and material supply for irrigation. (MARD (2009): <http://xttmnew.agroviet.gov.vn/TestE/load/tn-spec-nodate-detail.asp?tn=tn&id=16824> and Internal Support Group of MARD (2007): Organizational Structure of MARD. URL: www.isgmard.org.vn/images/To%20chuc%20Bo-e.jpg, retrieved on [13.01.2009])

⁶⁰ Both, MARD and MONRE spent the biggest share (approximately 2/3) of their budget on capital investment. On the second place of recurrent expenditure ranged environmental protection (MONRE) and science and technology (MARD). The third item was education and training (MARD) and science and technology (MONRE).

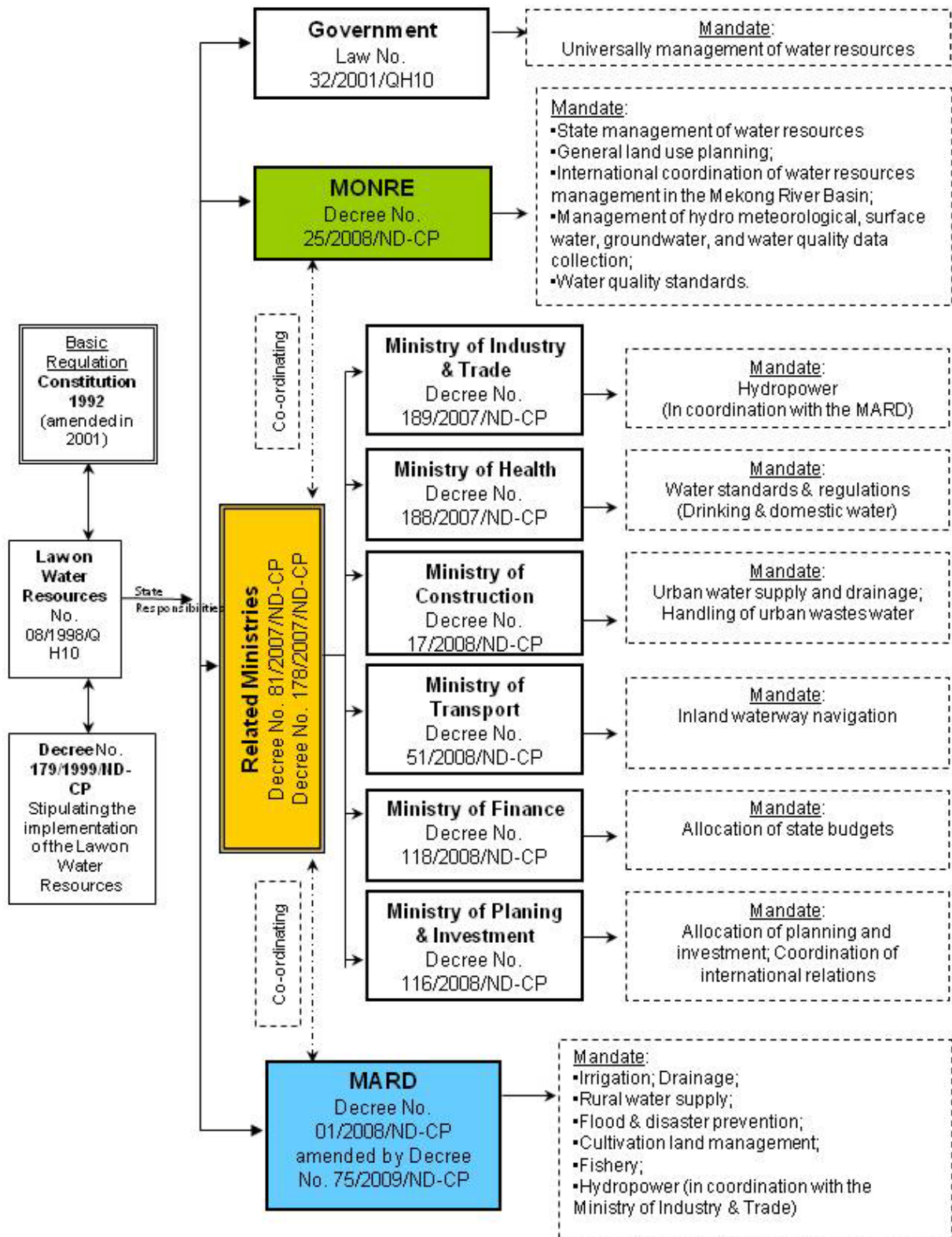
4.2.2. Other ministries with water management functions

Although MARD and MONRE hold the main water resources management functions in Vietnam, the water sector is far more complex and covers the following:

- Agriculture
- Biotechnology
- Coast and Seawater
- Environmental Protection
- Fisheries and Aquaculture
- Flood Management and Dykes
- Forestry
- Hydrology
- Hydrometeorology
- Hydropower
- Irrigation and Drainage
- Roads and Bridges
- Salinity
- Water Quality
- Water Resource Management
- Water Supply and Sanitation
- Waterways and Water Transportation

These functions are spread among several Ministries, as the chart (Figure 9) below illustrates.

Figure 9: Delivery of State Responsibilities for Water Resources Management



Source: Nguyen (2010a:62)

Although certain functions are clearly assigned with a specific agency, an unclear division of responsibilities remains with others. Prominent examples are 'inland waterways', for which three Ministries are in charge (Nguyen 2010b:75f.) and water quality, which falls under the responsibility of MONRE, MARD, the MOC (as far as wastewater is concerned) and to some extent the Ministry of Health,

respectively. Despite many reforms, overlapping responsibilities of state agencies still constitute a problem.

In addition to that, the Ministry of Planning and Investment, the Ministry of Finance and the Ministry of National Defence have an indirect connection with the water sector, which is acknowledged by the fact that these ministries also delegate members to the National Water Resources Council (NWRC). It can therefore be concluded that almost half of all Vietnamese state management agencies (currently there are 22) in the central government are involved in water resources management policies and implementation. Moreover, the Ministry of Information and the Ministry of Education are assigned to disseminate water-related information to the public.

4.3. National Mekong Committee and the MRC

To date, there is only one international river basin organisation in Vietnam, though several river basins span over national boundaries. The National Mekong Committee of the Mekong River Commission is therefore still unique and its background and present scope of activities will be shortly outlined in the following.

In the late 1940s and the following decade, ECAFE (UN Commission for Asia and the Far East) and the government of the United States both commissioned a first set of studies on the Mekong river basin. These activities led to the establishment of the Mekong Committee in 1957, comprising four member states, namely Laos, Cambodia, Thailand and South Vietnam⁶¹. Despite some efforts and external assistance, cooperation among the countries remained little and the building of large dams gained priority over other projects of river basin development. In the 1960s, a more holistic approach was provided by Gilbert White (1963), whose study (which was commissioned by the Ford Foundation) explored the social, economic and environmental context of the Mekong basin and provided the ground for the first Indicative Basin Plan (approved in 1970).

Five years later, the Committee signed the "Joint Declaration of Principles for Utilization of the Water of the Lower Mekong Basin", by then the most important legal accomplishment of the Committee (Thomas 1996:96). In the following decade, regional conflicts more or less disrupted transboundary cooperation, which had then to be restored. Global players such as the ADB and UN agencies facilitated the process and in 1995, the Kingdoms of Cambodia and Thailand, the Lao People's Democratic Republic and the Socialist Republic of Vietnam signed the Agreement on the Cooperation for Sustainable Development of the Mekong River Basin. The guiding principles of the agreement were sovereign equality, territorial integrity and environmental protection of the basin's natural resources. Mutual consent on the freedom of navigation was also reached, aiming at promoting regional cooperation (MWR, UNDP and DHA 1995:8).

Another element of the agreement concerned the creation of the Mekong River Commission (MRC)⁶², whose major tasks have been defined as follows (Gupta 2005:227):

- Basin-wide planning
- Environmental protection
- Facilitation of equitable water use
- Navigation

To date, efforts to win China and Myanmar as members failed, but a dialogue mechanism could be established (Cogels 2005:1). With this limited participation, a basin-wide water resources management is not feasible. Nevertheless, the MRC made some achievements in adopting an integrative strategic

⁶¹ Prior to this, three other commissions have been set up in the Mekong Delta, the first one in 1924. The second and third one had consultative power, only and were basically concerned with navigation (Ti Le-Huu and Lien Nguyen-Duc 2008:27f.).

⁶² The MRC consists of three permanent bodies, which are (Ti Le-Huu and Lien Nguyen-Duc 2008:35):

- The Ministerial Council (policy development)
- The Joint Committee (implementation of policies and decisions)
- The Secretariat (technical advice and administrative services with more than 100 staff).

planning approach and by overcoming the project-by-project type of intervention (Gupta 2005:225). In 1987, the first Indicative Basin Plan was revised; the new plan proposed 27 projects out of which 3 were international and 24 national. A recent evaluation revealed that only one of these projects has been completed (Ti Le-Huu and Lien Nguyen-Duc 2008:42). The implementation of single projects should, however, not be the main indicator for success, since the most difficult task is to ensure stability in the regional cooperation, continue trust building, and improve cooperation and link basin development to the complexity of other development issues in the region⁶³. Such efforts take time.

The so-called 'Mekong Spirit' has attracted 19 multilateral and 26 bilateral donors (Ti Le-Huu and Lien Nguyen-Duc 2008:50). They basically facilitate most of the above described efforts, and fund both, projects and large programs in the region. In 2004, the Commission adopted the IWRM principles for its future work, which is also a top item on the donor's agenda. Finally, capacity building, the development of a knowledge base and basin-wide environmental monitoring are priority areas for external support.

Despite these efforts of collaboration with the MRC, donors also foster regional development through other activities. In particular, the Greater Mekong Sub-Region program, launched by the ADB in 1992, subsequently attracted an important number of multi- and bilateral donors and led to huge investments in infrastructure development and market integration. According to Molle, Foran and Floch (2009:11) the predominantly economic focus of the program leads to an "apparent contradiction", since environmental and sustainability concerns are neglected, despite the donors' discourse in the context of IWRM related policies.

Each of the member countries also runs a National Mekong Committee. In the case of Vietnam, the Committee was established in 1995 and its function was defined as follows⁶⁴:

"Assisting the Prime Minister in guiding and managing all cooperation activities with the MRC as well as in submitting to the Prime Minister policy recommendations for cooperation with the MRC for the development, utilization and protection of the water and related resources in the Mekong basin as a whole and in particular the Mekong Delta and Central Highlands".

The chairman of the national commission is of Ministerial ranking; for many years, this position was held by the Minister of MARD but was then transferred to the Minister of MONRE. In April 2008, the VNMC secretariat consequently also moved to MONRE; the office reports directly to the Prime Minister. There are three Vice-Chairmen, one each from the Ministry of Foreign Affairs, Ministry of Agriculture and Rural Development, Ministry of Planning and Investment. Committee members include representatives of five concerned national agencies and the People's Committees of four provinces in the Mekong Delta and one province in the Central Highlands.

The Second National Strategy and Action Plan for Disaster Mitigation and Management in Vietnam 2001-2020 also refers to the regional water disaster mitigation and management strategy endorsed by the Mekong River Commission, which "will be followed to give a balanced whole of river basin focus to water disaster mitigation and management in cooperation with the riparian countries of the Mekong River Basin" (CCFSC 2001:18).

4.4. River Basin Organisations

According to the Law on Water resources (1998) the primary planning and management unit for water is the river basin. This approach refers to a concept which emerged during the 19th Century in Europe and

⁶³ In its current strategic work plan (2006 – 2010), the MRC outlines the following goals:

- To promote and support coordinated, sustainable, and pro-poor development;
- To enhance effective regional cooperation;
- To strengthen basin-wide environmental monitoring and impact assessment;
- To strengthen the Integrated Water Resources Management capacity and knowledge base of the MRC bodies, National Mekong Committees, Line Agencies, and other stakeholders.

Source: <http://www.mrcmekong.org/> (25/05/2009)

⁶⁴ Government's Decision No.860 of 30 December 1995

was later on used as a framework for basin-wide development planning and large-scale interventions (Molle 2008:1). At a global level, the concept has been highly promoted since the 1970s, and led, among others, to the development of the Integrated Water Resources Management (IWRM) approach. When the Law on Water Resources was promulgated in Vietnam, no institution had the mandate to implement this directive but the law made the provisions for a non-business agency under MARD to fulfil the task of river basin planning (Article 64).⁶⁵ Subsequently, a legal document for the establishment of River Basin Organisations was produced.

Prior to that, delta-wide master planning had already been carried out in Vietnam since the late 1960s (Biggs, Miller, Hoanh and Molle 2009:207). In the South and stimulated by the Mekong Committee, various water resource studies and proposals were designed by Sogreah (France) and by the Resource Development Company of the United States and the Netherlands (1974) respectively. During the early 1990s, the UNDP and the Netherlands prepared the NEDECO plan for the Vietnamese part of the Mekong Delta, which is considered the first multipurpose master plan of a national river basin in the country (CCFSC 2001:44). The NEDECO main document consists of a comprised plan, based on the results of more than 50 scientific consultancy reports, covering a whole range of aspects of water use and water management. Strongly committed to national development targets, various scenarios were calculated and assessed (NEDECO 1993), and the finally presented results still constitute the basis of water resources management planning in the Mekong Delta today.

Donor investments into river basin planning thereafter continued and subsequently expanded. A first evaluation (water sector review) in 1996 produced the following picture (WB et al 1996:45f.): River basin master plans for the national segments of the Mekong Delta (1993) and the Red River Delta⁶⁶ (1995) were completed and three more were in preparation. All existing plans had been prepared by different ministries and inconsistencies with other plans, effecting water allocation and use, were detected⁶⁷. With regard to water resources management at a sub-basin or basin-scale, no formal agreements among provinces existed (WB et al 1996:43).

With the development of the new legal framework, recommendations of the review to promote river basin planning and management were put into practice and in 2001 functions and roles of River Basin Organisations were finally clarified. According to them, the RBOs main task was to enable a unified management of the catchment areas, across the administrative borders dividing them. The functions of RBOs were however, limited to an advisory and coordinating role, which entails that they practically did not fulfil any state management functions (Taylor and Wright, 2001).

In 2001, the first RBOs were set up: one in the Red River Delta and two in Ho Chi Minh City, namely the Office of the Dong Nai River Basin and the Office of the Cuu Long River Basin (Mekong Delta). These three basins cover more than three provinces each and were selected as pilots as they represent the major large basins of the country. Three years later, MARD established a Standing Office for River Basin Organisations as a coordinating unit within its Department of Water Resources in Hanoi and four additional offices to operate at a basin level. In the initial phase, the creation, funding and capacity building of the new agencies were highly dependent on donors⁶⁸ and national investments were reduced to a minimum. Furthermore, "...Vietnamese officials would (rather) refer to agencies or boards, seen as better reflecting their Vietnamese translations" (Molle and Hoanh 2008:16, FN 18) and remained critical whether this institution could fit their administrative and decision-making structures and culture. Molle and Hoanh (2008:2) therefore argue that the concept of RBO in Vietnam "...has been quite disconnected from the existing institutional framework". Another constraining factor regarding the operation of RBOs lies in the legal framework itself, since legal provisions concerning regional management have not been developed in Vietnam yet (Scott and Truong Thi Kim Chuyen 2004:98).

⁶⁵ "The Law does however not provide for the establishment of river basin organizations, as various donors stated in their documents" (Molle and Hoanh 2008:23, FN 28).

⁶⁶ Binnie and Partners, UNDP and World Bank, (1995), Red River Delta Master plan (Vol. 1 – 3)

⁶⁷ E.g. the national energy plan (prepared by Electricity of Vietnam).

⁶⁸ While the ADB was engaged in the Red River and the Dong Nai Basin Development, the Australian government assisted the Mekong Basin. DANIDA and other bilateral cooperation agencies also played an important role.

Apart from these conceptual and other related difficulties, RBOs constituted the pawn in the struggle for water resources management control in the country (Bach Tan Sinh, 2008 oral communication). One of the contested issues was the question of scale: "For MoNRE the river basin scale became crucial for grounding its legitimacy and finding its roles among pre-existing layers of the administration, while for MARD, RBOs became a site where power over financial resources and political power might potentially be relocated at its expense" (Molle and Hoanh 2008:2;10f). Molle and Hoanh (2008:29) further argue:

"Since RBOs are largely promoted by foreign partners and thus likely to be associated with the future delivery of loans and projects, they may also "attract" more investments, which make their control even more desirable. In other words RBOs' legitimacy as "registration chambers" for projects – rubber-stamped with the seal of IWRM – can be attractive for the departments traditionally involved in structural interventions (and perhaps for investment banks alike)".

The first 'National Water Resources Strategy towards the Year 2020' confirms that "Integrated river basin management is an important part of water resources management", and suggests that river basin plans should be established for all regions (MONRE 2006:33, 44). Though this can be considered an important step, river basin organisations are not mentioned in the paper.

A few years after their establishment, the responsibility for RBOs is being shifted step by step from MARD to MONRE, in order to concentrate all competencies for strategic planning in the water sector in one central agency⁶⁹. In 2006, MONRE officially got in charge of preparing River Basin plans and in 2008, drafted a new decree on river basin management⁷⁰. This decree was urgently needed because river basin management was omitted in two decrees issued in 2008, revising and clarifying MARD's and MONRE's functions, tasks, and responsibilities⁷¹.

Each RBO is made up of a Council and a secretariat. The Council is composed of representatives from both, the provinces and national-level Ministries and is supposed to meet twice a year. The secretariat represents the operational unit but is practically understaffed. The RBOs of the Dong Nai and the Cuu Long river basins for instance have five staff each and a budget which clearly limits the office's activities to mainly administrative tasks (interview RBO officer 13.04.2008)⁷².

As generally stated, RBOs have never been working effectively. In addition to the already mentioned constraints, the challenge of coordinating national and provincial interests and concerns appears to be a crucial point. Prior to the establishment of RBOs the only coordinating, cross-province mechanisms were those within MARD but "... any major issues affecting more than one province ... (was) ... usually handled by separate discussion with each province" (AUSAID 2003:68). From a local perspective, Provincial People's Committees were reluctant to support the establishment and operation of RBOs, because their existence would entail a potential transfer of decision-making powers from the provinces to an inter-provincial body (CRDE and IESD, 2006). Since out of all 15 river basins in Vietnam, a vast majority covers more than two or more provinces, the question of inter-provincial coordination remains a critical concern.

The experience made in the Red River Basin Organization illustrates the practical implications of this dilemma. Molle and Hoanh (2008:2) report from their case study that basin wide participation was found both difficult and unnecessary. With the establishment of sub-basin organisations at provincial level (with offices within DARD), the scope of activity of the Red River Basin Organization has been limited and its function was redefined as one of supporting Sub-Basin Organisations.

Despite all these obstacles and challenges, international support for RBO development seems to be unbroken. In 2008, ADB and other donors initiated a new Network of Asian River Basin Organizations (NARBO) where

⁶⁹ Consequently, representatives from each DONRE (of those provinces being part of a river basin) became members in the respective river basin organisation's board.

⁷⁰ Decree 120/2008/ND-CP by the Government of Vietnam.

⁷¹ Decrees 01/2008/ND-CP of January 03, 2008 and 28/2008/ND-CP of March 04, 2008

⁷² The CUU Long RBO – Budget Proposal 2008 for instance includes the following items: Administration (8 Mio), Transport to Hanoi (5 Mio), Data collection from the provinces (0,9 Mio), Update of database (24,5 Mio), Cooperation with other organisations / responding to requests (9,7 Mio), Annual meeting. Total: 225.040.200 Dong.

Vietnam is represented with several departments of MARD and MONRE and also RBOs. Moreover, transboundary coordination is promoted and donors recently agreed to support and fund the setting up of a Sesan River Basin Organization between Cambodia and Vietnam, which would be the first of its kind⁷³.

In Vietnam, the SIWRP (a research institute under the authority of MARD and the host of two RBOs) submitted a draft Master Plan for the Dong Nai River Basin in September 2008, which is the first plan developed by one of the large RBOs initiated in 2001⁷⁴. This can be considered as a major achievement, though planning processes and outcomes definitely deserve critical attention (Huu Pham Cong et al 2009). In addition to that, environmental protection master plans have been developed and approved by the government in the past four years. These plans are drafted by new river basin organisations, established within the framework and subsequent secondary legislations of the Law on Environmental Protection (2003). These organisations are called Environmental Protection Committees and deal with environmental management at a basin scale. They are set up under the authority of MONRE, are independent from RBOs established under MARD and report directly to the Prime Minister (Grothe 2009:53ff.). Such parallel structures potentially increase institutional fragmentation rather than help to reconcile sector specific and diverse local interests. It would be interesting to investigate the level of cooperation between these basin organisations (and between them and local governments) as well as the processes of harmonisation (if any) of water resources management and environmental protection plans and interventions.

As at now, River basin organisations do definitely do not meet the demand for water resources management and institutional rearrangements therefore deem necessary. In view of the existing challenges, the Vietnam Water Partnership recommends to vest RBOs with power and therefore increase both their authority and efficiency (Grothe 2009:85), but this also seems to be rather difficult to achieve. Probably, a whole set of mechanisms needs to be put in place in order to enable and promote regional coordination, cooperation and control over water resources.

5. Facing the challenges of WRM in Vietnam

The provided overview on state management organisations and institutions shaping water resources management in Vietnam revealed a number of challenges, which can be summarised as follows:

(1) First of all, there seems to be a continuous struggle over new relative priorities of state politics (Beresford 2006:213) though the economic growth narrative is still in the forefront. Environmental objectives appear to be in conflict with the government's vision of developing into a middle-income country and "...provincial and district leaders perceive their performance to be judged principally on the basis of economic growth and conflict avoidance" (Bass et al 2010:44). Thus, the integration of environmental concerns and the implementation of related policies are relegated behind other priorities and enforcement is generally lacking. Moreover, "the hurry to capitalize on development opportunities" even increases the risk of unsustainable resource development (Lenneart 2009), as the examples of water pollution and hydropower development⁷⁵ clearly demonstrated. To date, government agencies tend to compromise on water quality management and the corresponding legal framework is still deficient (Nguyen 2010b).

⁷³ 2nd regional workshop on integrated water resources management of Mekong River Basin in Vientiane, Lao PDR on March 17th, 2009.

⁷⁴ "River basin framework plans deal with the assessment of supply and demand, trends and projections, water quantity and quality, offer strategies and practical solutions (structural and otherwise), regulations and objectives for aquifer use, environmental flows, flood control, protection of water-related environments. MoNRE is to lead the appraisal of river basin plans, seek comments from NWRC, and submit final appraisals to the Prime Minister" (Molle and Hoanh 2008:12).

⁷⁵ In cooperation with the state-owned Electricity of Vietnam, a power sector reform was initiated and the Vietnam's Hydropower Master Plan 2001-2020 has been prepared. A series of hydropower dams have been built, mostly depending on multi- and bilateral funding sources. Because of their huge negative impacts, both on the environment and the affected people, hydropower projects are highly contested and generated social unrest, in particular where large resettlement programs have been implemented (Middleton, Garcia and Foran 2009).

(2) Secondly, a legacy of centralist planning with a highly bureaucratic and top-down approach still prevails⁷⁶. This includes the setting of (mostly quantifiable) targets and the identification and budgeting for investment programs, namely in the field of hydraulic construction. As Bass et al (2010:48) critically comment: "In essence, government planners play the role of investment planners, rather than analysts or policy advisers on fundamental development problems". Molle and Hoanh (2008:29) further argue that in water resources management the "Gordian knot lies with planning" and thereby also explain the main issue of conflict between MARD and MONRE: "In continuing planning, and subsequent construction activities ... resides the assurance of sustained budgets. Sustained budgets, especially in a context where both design and construction works are increasingly outsourced, open the way for people with decision-making power to benefit from investment flows. With structural investments constituting 64% of the MARD's budget, the stakes are high since realignment of decisional power necessarily entails a redistribution of benefits". The predominant rationale of planning and investment and ongoing power struggles in the water sector represent a continuum of former water policies (Moller Hansen and Do Hong Phan 2005:234). The new integrative approach is hardly taken into consideration and management, monitoring and long-term environmental planning are not among the priorities.

(3) Despite decentralisation efforts, national policies are adopted at the central level and disseminated to local governments. Therefore, the development of national blueprints are still common and risk failing. With regard to water in particular, hydrological conditions, flooding characteristics, emerging water related problems and historical, political and cultural frameworks vary across the country. Concepts of water resources management for the Red River Delta therefore need to differ from those of the Mekong Delta (just to give an example); and within river basins, water management also requires to be locally tailored.

(4) The coordination and collaboration between agencies at national level as well as between national and sub national levels and across provincial boundaries is still very weak and remains, according to Moller Hansen and Do Hong Phan (2005:225ff.) the main challenge of water resources management. This aspect has been extensively discussed throughout the paper and has become very clear in the sub-chapter on river basin organisations. Responsibilities within the water sector are still fragmented and partly overlapping and the impact of newly established national coordination agencies has been marginal. Sector-specific approaches and competing interests prevail and potential incentives for improved cooperation are too low. The implementation of IWRM principles therefore remains very difficult.

(5) There seems to be an overemphasis on the composition, gaps and reform needs of the legal framework in government and donor reports. As was pointed out earlier, existing problems in the field of water resources management are, more often than not, attributed to a deficient legal framework. Although guiding regulations are needed and a deficient legal framework might cause difficulties in implementation (Nguyen 2010b:57), the paper showed that current practices in water resources management often do not correspond to the provisions of government documents and that local interpretations and adjustments are common. And while the implementation of the legal framework differs, law enforcement seems to be even more difficult to achieve. Therefore, empirical research is needed in order to understand the diversity of local practices of state management agencies (and other influential players) and identify the determining factors shaping them. Similarly, research is needed on case studies analysing the successful implementation and / or lack of implementation of government policies and their respective driving forces.

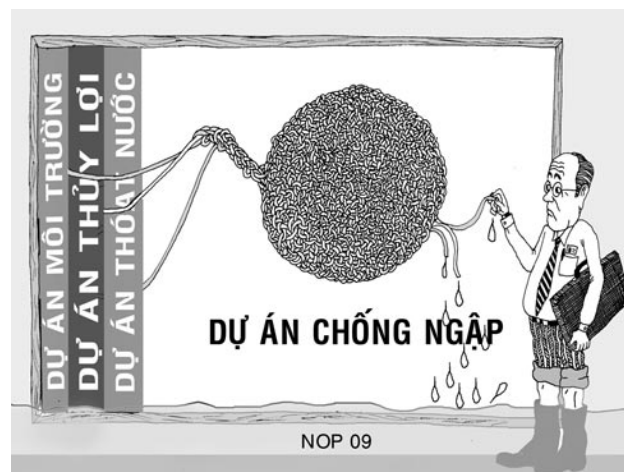
(6) With regard to other institutional reforms, the same critical concerns apply, since there is a clear "gap between the formal mandate of newly established institutions and the way these operate in practice"

⁷⁶ With the endorsement of the first 5-Year-Socio-Economic-Plan in 1960, central planning has started in Northern Vietnam and was equally applied in the South after reunification in 1975. Prior to Doi Moi, "planning constituted the focal point of all government activities" (Thai Thi Ngoc Du 2001:1). Thereafter, new policy and legal frameworks for planning processes have been developed and the improvement of planning (namely the development of strategic planning at provincial level and the introduction of long-term planning) has been identified as one of the 14 key policy priority areas under the current Socio-Economic Development Plan (2006 – 2010) (Joint donor report 2006:7, 137). Regional planning however "remains a little confused" because there is no explanation of what regional planning means (Atkinson 2007).

(Molle and Hoanh 2008:35). Many of the new water resources management concepts, such as IWRM are borrowed from the global water discourse and travelled with donors, NGOs and consultancies into contemporary Vietnam. Considering the country's specific history and political system, the appropriateness of some of these concepts must nevertheless be questioned, as Molle and Hoanh (2008:24) nicely point out: "Management regimes require bureaucratic configurations, legal frameworks and governance patterns that are consistent with these regimes. Pushing for a particular regime when these conditions are not met may just be wishful thinking with little chance of success". Therefore, certain donor pushed reform processes do not materialise as anticipated, despite considerable funding and capacity building.

(7) Finally, water resources management becomes more and more complex: Water demands and the pressure on water resources are continuously increasing, the number of water users is rising and more and more players are involved in the sector. Some of the new challenges demand new competencies and the development of appropriate technical innovations; at the same time, good water governance appears to be crucial, because water allocation, water use and water quality management require clear guidelines and usage principles as well as effective control and enforcement measures. Currently, state agencies seem to be overwhelmed by these challenges, as the following cartoon illustrates (tuoi tre Newspaper 03.07.2009):

Figure 10: Urban Flood Management in HCMC



(Du an chong ngap: flood protection project; Du an thuy loi: water engineering project; Du an moi truong: environment project; Du an thoat nuoc: waste water disposal project).

6. References

- Asian Development Bank (ADB) (2004) Viet Nam Country Paper.
http://www.adb.org/Water/NWSAB/2004/Viet_Nam_Country_Paper.pdf
- Asian Development Bank (ADB) (2008). Water Sector Review. Status Report - Consultation Document, ADB TA 4903 - VIE. Manila. http://www.vnwatersectorreview.com/files/Issues_and_Options_Report-Full.pdf (12/03/2010)
- Asian Development Bank (ADB) (2008). Vietnam Water Sector Review. Surface Water. http://www.vnwatersectorreview.com/files/Surface_water_EN.pdf
- Asian Development Bank (ADB) (2010) ADB TA 4903-VIE Water Sector Review Project. Issues and Options Working Paper.
http://www.vnwatersectorreview.com/files/Issues_and_Options_Report-Full.pdf (12/03/2010)
- AUSAID (2003a). Water Resources Management Assistance Project. Component 3. Management Study No 3: Inter-Institutional Sharing and Processing of Water Quality Data. Canberra.
- AUSAID (2003b). Water Resources Management Assistance Project. Management Study No 5: Water Protection Through Integrated Waste Management. Canberra.
- Bach Tan Sinh (2008). Institutional Issues in Relation to Sustainable Development and IWRM in Vietnam. STRIVER Mid-Term Review Meeting 22-25 Jan 2008. Hanoi.
- Bach Tan Sinh, Nguyen Van Le and Vu Canh Toan (2008). Review of institutional framework on flood prevention and control at national level in Vietnam. Presentation hold at Workshop on 'Local Community institutions to cope with flood situation of the Mekong Region'. Can Tho.
- Bass, Steve, Annandale, David, Phan Van Binh, Tran Phuong Dong, Hoang Anh Nam, Le Thi Kien Oanh, Parsons, Mike, Nguyen Van Phuc and Vu Van Trieu (2010). Integrating Environment and Development in Viet Nam. Achievements, Challenges and Next Steps, by IIED in association with the Viet Nam/UNDP Poverty Environment Programme.
- Beckmann, Marlin, Le Van An and Le Quang Bao (2002). Living with Floods - Coping and Adaptation Strategies of Households and Local Institutions in Central Vietnam. Stockholm, Stockholm Environment Institute SEI: 65.
- Beresford, Melanie (2004). Lessons from the Asian Crisis for the Sustainability of Vietnamese Economic Development. In: M. Beresford and A. Tran Ngoc, Reaching for the Dream. Challenges of Sustainable Development in Vietnam. Copenhagen, NIAS Press: 51-94.
- Beresford, Melanie (2006). Vietnam: The Transition from Central Planning. In: G. Rodan, K. Hewison and R. Robinson, The Political Economy of South-East Asia. Oxford / New York, Oxford University Press: 197-220.
- Biggs, David (2004). Between the Rivers and the Tides: A Hydraulic History of the Mekong Delta 1820-1975, PhD. Department of History. Washington, University of Washington.
- Biggs, David, Miller, Fiona, Chu Thai Hoanh and François Molle (2009). The Delta Machine: Water Management in the Vietnamese Mekong Delta in Historical and Contemporary Perspectives. In: F. Molle, T. Foran and M. Käkönen, Contested Waterscapes in the Mekong Region. Hydropower, Livelihoods and Governance. London, Earthscan: 203-221.
- Biltonen, Eric, Do Hong Phan and Vu Tien Luc (2009). Vietnam: Law on Water Resources and Related Legislation for Implementation of IWRM, GWP ToolBox IWRM, Case Study No. 112, GWP.
<http://www.gwptoolbox.org/images/stories/cases/en/cs%20112%20vietnam.pdf>
- Binnie and Partners, UNDP and World Bank (1995). Red River Delta Masterplan (Vol. 1-3)
- Blanc, Marie-Eve (2004). An Emerging Civil Society? Local Associations Working on HIV/AIDS. In: D. McCargo, Rethinking Vietnam. London, Routledge Curzon: 153-164.
- Buhmann, Karin (2007). Building Blocks for the Rule of Law? Legal Reforms and Public Administration in Vietnam. In: S. Balme and M. Sidel, Vietnam's New Order. International Perspectives on the State and Reform in Vietnam. New York, Palgrave Macmillan: 237-253.
- Central Committee for Flood and Storm Control (CCFSC) (2001). Second National Strategy and Action Plan for Disaster Mitigation and Management in Vietnam 2001 to 2020. Hanoi, Ministry of Agriculture and Rural Development.
- Cogels, Olivier (2005). The Mekong Programme - Regional Cooperation Programme for Sustainable Development of Water and Related Resources in the Mekong Basin, Mekong River Commission.
- Crozier, Brian (1955). "The Diem Regime in Southern Vietnam." In: Far Eastern Survey 24(4): 49-56.

- Dixon, Chris (2004). State Party and Political Change in Vietnam. In: D. McCargo, Rethinking Vietnam. London, Routledge Curzon: 15-26.
- Dan Tri International (DTI News) <http://www.dtinews.vn/news/environment/vietnam-seeks-international-cooperation-to-preserve-scarce-water.html> (20.01.2010)
- Evers, Hans-Dieter and Tatjana Bauer (2009). Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta. ZEF Working Paper No. 48. Center for Development Research. University of Bonn, Bonn.
- Evers, Hans-Dieter and Simon Benedikter (2009). "Hydraulic Bureaucracy in a Modern Hydraulic Society – Strategic Group Formation in the Mekong Delta." Water Alternatives 2(3): 416-439.
- Evers, Hans-Dieter and Simon Benedikter (2009). Strategic Group Formation in the Mekong Delta - The Development of a Modern Hydraulic Society. ZEF Working Paper No.35. Center for Development Research. University of Bonn, Bonn.
- Fall, Bernard B. (1958). "South Vietnam's Internal Problems." In: Pacific Affairs 31(3): 241-260.
- Fforde, Adam and Associates Pty Ltd (2003). Decentralisation In Vietnam - Working Effectively At Provincial And Local Government Level - A Comparative Analysis Of Long An And Quang Ngay Provinces, Australian Agency Of International Development.
- Fforde, Adam (2005). Civil Society, the State and the Business Sector - Protagonists of Democratization Prozesses? Insights from Vietnam. In: Heinrich Böll Foundation, Towards Good Society. Civil Society Actors, the State, and the Business Class in Southeast Asia – Facilitators of or Impediments to a Strong, Democratic, and Fair Society? Berlin, Heinrich Böll Foundation: 173-192.
- Fontenelle, Jean-Philippe (2001). Vietnam Red River Delta Irrigation Management. Incomplete Recognition of Local Institutional Innovations, GRET. Coopérer Aujourd'hui No. 27. Paris.
- Fritzen, Scott, A. (2006). Probing System Limits: Decentralisation and Local Political Accountability in Vietnam. The Asia Pacific Journal of Public Administration 28(1): 1-23.
- Gainsborough, Martin (2003). Changing Political Economy of Vietnam. The Case of Ho Chi Minh City. RoutledgeCurzon, London.
- Gainsborough, Martin (2004) "Key Issues in the Political Economy of Post-Doi Moi Vietnam". In: D. McCargo, Rethinking Vietnam. London, Routledge Curzon.
- Geppert, Meike, Nguyen The Dang and Gertrud Buchenrieder (2002). Participatory Agricultural Research and Decentralisation in Vietnam. Chiang Mai, University of Hohenheim/ Thai Nguyen University.
- Gerke, Solvay and Judith Ehlert (2009). Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam. ZEF Working Paper No. 50. Center for Development Research. University of Bonn, Bonn.
- Gillespie, John (2007). Understanding Legality in Vietnam. In: S. Balme and M. Sidel, Vietnam's New Order. International Perspectives on the State and Reform in Vietnam. New York, Palgrave Macmillan: 137-161.
- Government of Vietnam (2009a): Dự toán chi ngân sách Trung ương của từng Bộ, cơ quan trung ương năm 2008 (Estimated Central Budget of Ministries and Central Agencies in 2008) Hanoi: Government of Vietnam. URL: http://www.chinhphu.vn/portal/page?_pageid=33,203246&_dad=portal&_schema=PORTAL&item_id=8421304&thth_details=1 (Last accessed: 6.05.2009).
- Government of Vietnam (2009b): Phụ lục 07/CKTC-NSNN Dự toán chi ngân sách TW của từng Bộ, cơ quan TW. Hanoi: Government of Vietnam. URL: http://www.chinhphu.vn/portal/page?_pageid=33,203246&_dad=portal&_schema=PORTAL&item_id=263829&hth_details=1 (Last accessed: 6.05.2009).
- Government of Vietnam (2009c): Dự toán chi ngân sách Trung ương của từng Bộ, cơ quan trung ương năm 2007 (Estimated Central Budget of Ministries and Central Agencies in 2007) Hanoi: Government of Vietnam. URL: http://www.chinhphu.vn/portal/page?_pageid=33,203246&_dad=portal&_schema=PORTAL&item_id=3168620&thth_details=1 (Last accessed: 6.05.2009).
- Grothe, Steffen (2009). Integrated Water Resources Management and Institutional Change in Vietnam and Poland - A Comparative Analysis with Special Consideration of the River Basin Level. PhD. Ernst-Moritz-Arndt-Universität Greifswald.
- <https://opac.ub.uni-Greifswald.de/DB=1.1/CMD?ACT=SRCHA&IKT=1016&SRT=YOP&TRM=grothe>
- Gupta, Ashim Das (2005). Challenges and Opportunities for Integrated Water Resources Management in Mekong River Basin. Symposium on the Role of Water Sciences in Transboundary River Basin Management.
- Ives, Denis (2000). Viet Nam - Public Sector Management. The Australian Government's Overseas Aid Program (AusAID), Australian Agency for International Development: 1-15.

- Joint Donor Report (2010). Vietnam Development Report 2010. Modern Institutions. World Bank. Hanoi, Vietnam Development Information Center.
- Kerkvliet, Benedict J. Tria, Koh, David W.H. and Russell Hiang-Khng Heng (Eds.) (2003). Getting Organized in Vietnam. Moving in and around the Socialist State. Vietnam Update Series. Singapore, Institute of Southeast Asian Studies.
- Kerkvliet, Benedict J. Tria (2004). Surveying Local Government and Authority in Contemporary Vietnam. In: K. Benedict L. Tria and D. G. Marr, Beyond Hanoi. Local Government in Vietnam. Nordic Institute of Asian Studies: 1-27.
- Koh, David (2004). Vietnam's Recent Political Developments. In: P. Taylor (Ed.), Social Inequality in Vietnam and the Challenges to Reform. Singapore, Institute of Southeast Asian Studies: 41-62.
- Koh, David (2006). Politics at Ward Level in Ha Noi. In: Heinrich Böll Foundation, Active Citizens Under Political Wraps: Experiences from Myanmar/Burma and Vietnam. Chiang Mai, Heinrich-Böll-Stiftung: 55-73.
- Lebel, Luis and Bach Tan Sinh (2007). Politics of Floods and Disasters. In: L. Lebel, J. Dore, R. Daniel and Y. S. Koma, Democratizing Water Governance in the Mekong Region. Chiang Mai, Mekong Press: 37-54.
- Lennaerts, Ton (2009). Mekong Water Resources Development: Emerging Trends and Plans. 2nd Regional Stakeholder Forum. Mekong River Commission. Chiang Rai: 1-16.
- Luu Anh (2006). Vietnam Legal Research. Hanoi.
- Marr, David G. (2004). A Brief History of Local Government in Vietnam. In: B. J. T. Kerkvliet and D. G. Marr (Eds.), Beyond Hanoi. Local Government in Vietnam. Singapore, Institute of Southeast Asian Studies: 28-53.
- McCarty, Adam (2001) Government Institutions and Incentive Structures in Vietnam. In: Public Sector Challenges and Government Reforms in South East Asia. Conference Proceedings 12.03.2001. Jakarta, Research Institute for Asia and the Pacific, University of Sydney: 26-62.
- Mekong River Commission (MRC) (2009) Strategic Work Plan. <http://www.mrcmekong.org/> (25/05/2009)
- Middleton, Carl, Garcia, Jelson and Tira Foran (2009). Old and New Hydropower Players in the Mekong Region: Agendas and Strategies. In: F. Molle, T. Foran and M. Käkönen (Eds.), Contested Waterscapes in the Mekong Region. Hydropower, Livelihood and Governance. London, Earthscan: 23 - 54.
- Miller, Fiona, Nguyen Viet Thinh and Do Thi Minh Duc (1999). Resource Management in the Vietnamese Mekong Basin. A. R. Centre. Perth, Murdoch University.
- Miller, Fiona (2003). Society-Water Relations in the Mekong Delta: A Political Ecology of Risk. PhD. University of Sydney.
- Miller, Fiona (2006). Risks, Responses, and Rights: Gender Dimensions of Water Excess and Water Scarcity in the Mekong Delta, Vietnam. In: K. Lahiri-Dutt, Fluid Bonds: Views on Gender and Water. Kolkata, Stree: 202-226.
- Minh Nhut Duong (2004). Grassroots Democracy in Vietnamese Communes. Canberra, The Centre for Democratic Institutions, Research School of Social Sciences, The Australian National University.
- Ministry of Natural Resources and Environment (MONRE) (2002). On Immediate Tasks for the Implementation of Decree 91/2002/ND-CP. 01/2002/CT-BTNMT.
- Ministry Of Natural Resources And Environment (MONRE) (2006). National Water Resources Strategy - Towards The Year 2020. Hanoi, Culture-Information Publishing House.
- Ministry Of Natural Resources And Environment (MONRE) (2007). Chiến lược khung Phát triển Nguồn nhân lực Ngành Tài nguyên và Môi trường Giai đoạn 2007- 2010 (Strategic plan on the Development of Human Resources in the Natural Resource and Environmental Department 2007-2010). Hanoi.
- Ministry of Water Resources of the Socialist Republic of Vietnam (MWR), United Nations Development Programme (UNDP), et al. (1995). First Update of the Strategy and Action Plan for Mitigating Water Disasters in Viet Nam. Hanoi.
- MOHA -Institute for State Organizational Sciences (2009). Tổ chức Hành chính Việt Nam 2009 (Administrative Organization Vietnam 2009). Hanoi, Statistical Publishing House.
- Moise, Edwin E. (1976). "Land Reform and Land Reform Errors in North Vietnam." Pacific Affairs 49(1): 70-92.
- Molle, François (2006). Planning and Managing Water Resources at the River-basin Level: Emergence and Evolution of a Concept. IWMI Comprehensive Assessment Research Report. Colombo, International Water Management Institute.
- Molle, François and Chu Thai Hoanh (2008). Implementing Integrated River Basin Management: Lessons from the Red River Basin, Vietnam. M-Power Working Paper, IDR, M-Power and IWMI.

- Molle, François, Foran, Tira and Philippe Floch (2009). Introduction: Changing Waterscapes in the Mekong Region - Historical Background and Context. In: F. Molle, T. Foran and M. Käkönen (Eds.), Contested Waterscapes in the Mekong Region. Hydropower, Livelihood and Governance. London, Earthscan: 1-19.
- Moller Hansen, Jan and Do Hong Phan (2005). Integrated Water Resources Management in Vietnam: Present Status and Future Challenges. In: A. K. Biswas, O. Varis and C. Tortajada (Eds.), Integrated water resources management in South and South-East Asia. New Delhi, Oxford University Press: 219-249.
- National Assembly of the Socialist Republic Vietnam (1998). Law on Water Resources. 08/1998/QH10.
- Nguyen Quang and Hans Detlef Kammeier (2002). "Changes in the political economy of Vietnam and their impacts on the built environment of Hanoi." Cities 19(6): 373-388.
- Nguyen Thi Phuong Loan (2010a). Legal Framework of the Water Sector in Vietnam. ZEF Working Paper No. 52. Center for Development Research. University of Bonn, Bonn.
- Nguyen Thi Phuong Loan (2010b). Problems of Law Enforcement in Vietnam: The Case of Wastewater Management in Can Tho City. ZEF Working Paper No. 53. Center for Development Research. University of Bonn, Bonn.
- Nguyen Xuan Tiep (2008). Nông dân Tham Gia Quản Lý Công Trình Thủy Lợi (Participatory Irrigation Management and Emerging Issues). N. X. Tiep. Nhà Xuá Bản Nông Nghiệp, Hanoi.
- Nikula, Jussi (2008). Is Harm and Destruction all that Floods Bring? In: M. Kummu, M. Keskinen and O. Varis, Modern Myths of the Mekong. A Critical Review of Water and Development Concepts, Principles and Policies. Helsinki University of Technology: 27-39.
- Norlund, Irene (2007). Filling the Gap: The Emerging Civil Society in Viet Nam, UNDP.
- Osborne, Milton (1980). "The Indochinese Refugees: Cause and Effects." International Affairs (Royal Institute of International Affairs) 56(1): 37-53.
- Paige, Jeffrey M. (1970). "Inequality and Insurgency in Vietnam: A Re-Analysis." World Politics 23(1): 24-37.
- Painter, Martin (2005). Public Administration Reform in Vietnam: Foreign Transplants or Local Hybrids? In: Asian Socialism & Legal Change. The Dynamics of Vietnamese and Chinese Reform. Asia Pacific Press. Canberra: 267-287.
- Pham Cong Huu, Ehlers, Eckart and Saravanan V. Subramanian (2009). Dyke System Planning: Theory and Practice in Can Tho City, Vietnam. ZEF Working Paper No. 47. Center for Development Research. University of Bonn, Bonn.
- Quinn, Brian J. M. (2002). "Legal Reform and Its Context in Vietnam." Columbia Journal of Asian Law 15(2): 221-291.
- Reis, Nadine and Peter P. Mollinga (2009). Microcredit for Rural Water Supply and Sanitation in the Mekong Delta. Policy Implementation between the Needs for Clean Water and 'Beautiful Latrines'. ZEF Working Paper No. 49. Center for Development Research. University of Bonn, Bonn.
- Rogers, Peter and Alan W. Hall (2003). Effective Water Governance. Global Water Partnership. Sweden. 7.
- Scott, Stefanie and Truong Thi Kim Chuyen (2004). Behind the Numbers: Social Mobility, Regional Disparities, and New Trajectories of Development in Rural Vietnam. In: P. Taylor (Ed.), Social Inequality in Vietnam and the Challenges to Reform. Singapore, Institute of Southeast Asian Studies: 90-122.
- Sikor, Thomas (2004). Local Government in the Exercise of State Power: The Politics of Land Allocation in Black Thai Villages. In: B. J. T. Kerkvliet and D. G. Marr, Beyond Hanoi. Local Government in Vietnam. Singapore, Institute of Southeast Asian Studies: 167-196.
- Socialist Republic of Vietnam Web Portal:
http://www.chinhphu.vn/portal/page?_pageid=598,36587364&_dad=portal&_schema=PORTAL (Deprived on 17.11.09)
- Stacey, David (1999). "Water Users Organisations." Agricultural Water Management 40: 83-87.
- Taylor, Philip (2004). Redressing Disadvantage or Re-arranging Inequality? Development Interventions and Local Responses in the Mekong Delta. In: P. Taylor (Ed.), Social Inequality in Vietnam and the Challenges to Reform. Singapore, Institute of Southeast Asian Studies: 236-269.
- Thayer, Carlyle A. (2009). "Political Legitimacy of Vietnam's One Party-State: Challenges and Responses." Journal of Current Southeast Asian Affairs 4: 71-94.
- The Communist Party of Vietnam and Central Committee (2001). Strategy for Socio-Economic Development 2001-2010.
- Thomas, Caroline (1996). Water: A Focus for Cooperation or Contention in a Conflict Prone Region? The Example of the Lower Mekong Basin. In: G. Bächler and K. R. Spillmann, Kriegsursache Umweltzerstörung - Environmental Degradation as a Cause of War. Chur / Zürich, Verlag Rüegger. 3.

- Ti Le-Huu and Lien Nguyen Duc (2008). Mekong Case Study, UNESCO.
- Truong Thi Quynh Trang (2005). Water Resources Management in Vietnam. Hanoi.
- United Nations Development Programme (UNDP) (2001). Modernizing Governance in Vietnam. UNDP, Hanoi.
- United Nations Development Programme (UNDP) and Viet Nam Environment Protection Agency (2003). Compendium of Environmental Projects in Vietnam 2003: 148.
- United Nations Public Administration Programme, Division for Public Administration and Development Management (DPADM), et al. (2004). "Socialist Republic of Vietnam - Public Administration Country Profile." Retrieved 06.10.2009, from <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN023247.pdf>.
- Vasavakul, Thaveeporn (2001). Vietnam: Doi Moi Difficulties. In: J. Funston, Government and Politics in Southeast Asia. Singapore, Institute of Southeast Asian Studies: 372-410.
- Vasavakul, Thaveeporn and David Koh (2007). In: Vietnam Academy of Social Sciences (VASS) and United Nations Development Programme (2007). Proceedings from the Fourth High Level Roundtable Meeting on 20 Year Review of Doi Moi, Hanoi.
- Joint Donor Report to the Vietnam Consultative Group Meeting (2006). Vietnam Development Report 2006. Business. Hanoi, December 6-7, 2005.
- Vormoor, Klaus (2010 forthcoming). Water Engineering, Agricultural Development and Socio-Economic Trends in the Mekong Delta, Vietnam. ZEF Working Paper. Center for Development Research. University of Bonn, Bonn.
- White, Gilbert F. (1963). "Contributions of Geographical Analysis to River Basin Development." The Geographical Journal 129(4): 412-432.
- Will, Gerhard (2008). "Vietnam heute: Begrenzte Reformen, ausufernde Probleme." Aus Politik und Zeitgeschichte 2008(27): 6-14.
- Wischermann, Jörg and Nguyen Quang Vinh (2003). The Relationship Between Civic and Governmental Organizations in Vietnam: Selected Findings. In: B. J. T. Kerkvliet, D. W. H. Koh and R. H.-K. Heng, Getting Organized in Vietnam. Moving in and around the Socialist State. Singapore, Institute of Southeast Asian Studies: 185-233.
- World Bank (WB), Asian Development Bank (ADB), et al., (Eds.) (1996). Vietnam Water Resources Sector Review. Selected Working Papers. Vietnam Water Resources Sector Review. Hanoi.
- World Bank (WB) (2003). Vietnam Environment Monitor 2003. Water.
- Wyatt, A. B. and Huynh Thi Ngoc Tuyet (2008). Participatory Community Development Projekt in An Giang and Soc Trang Provinces.

Annex

Annex 1: Organization of the State Apparatus

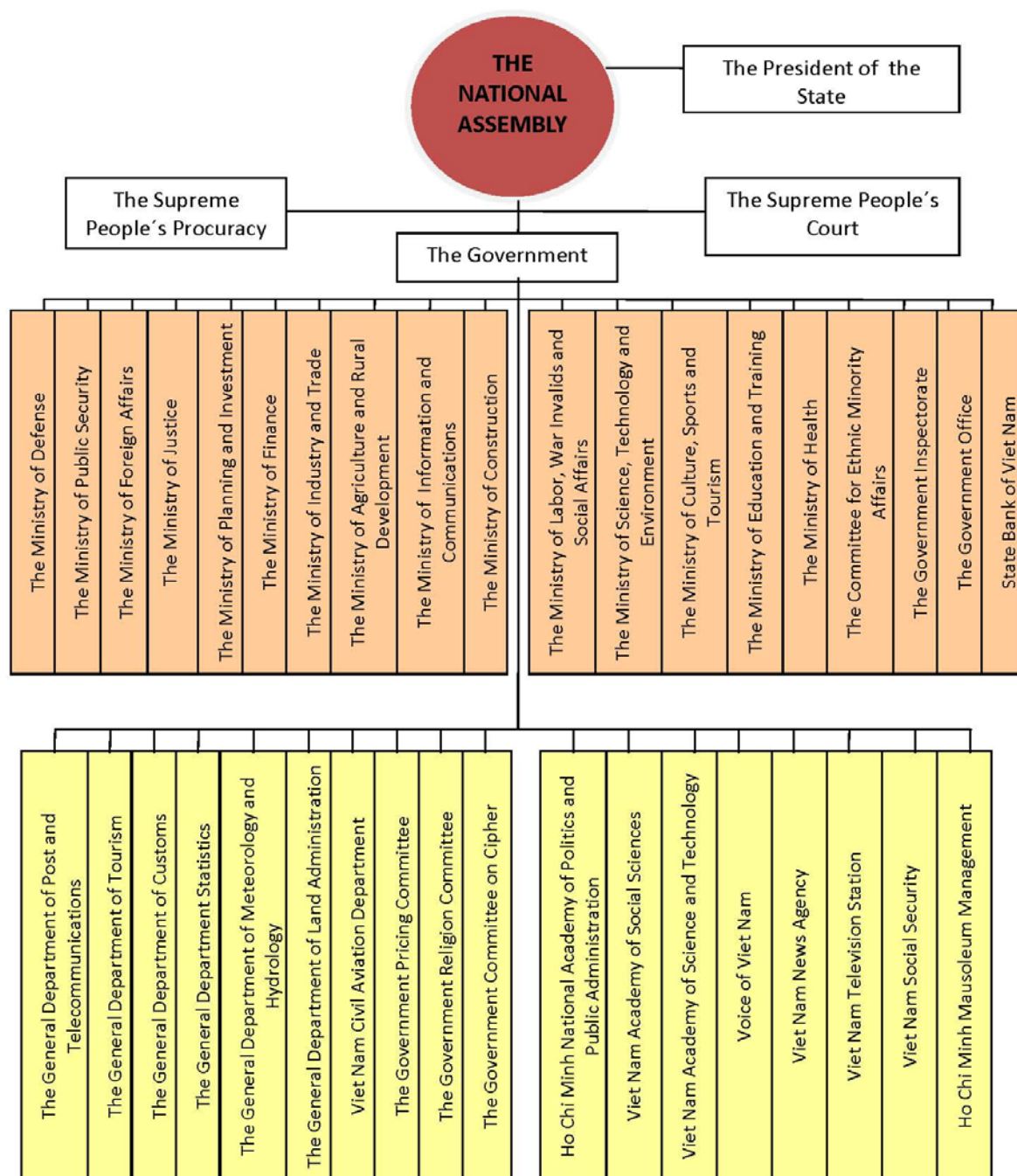
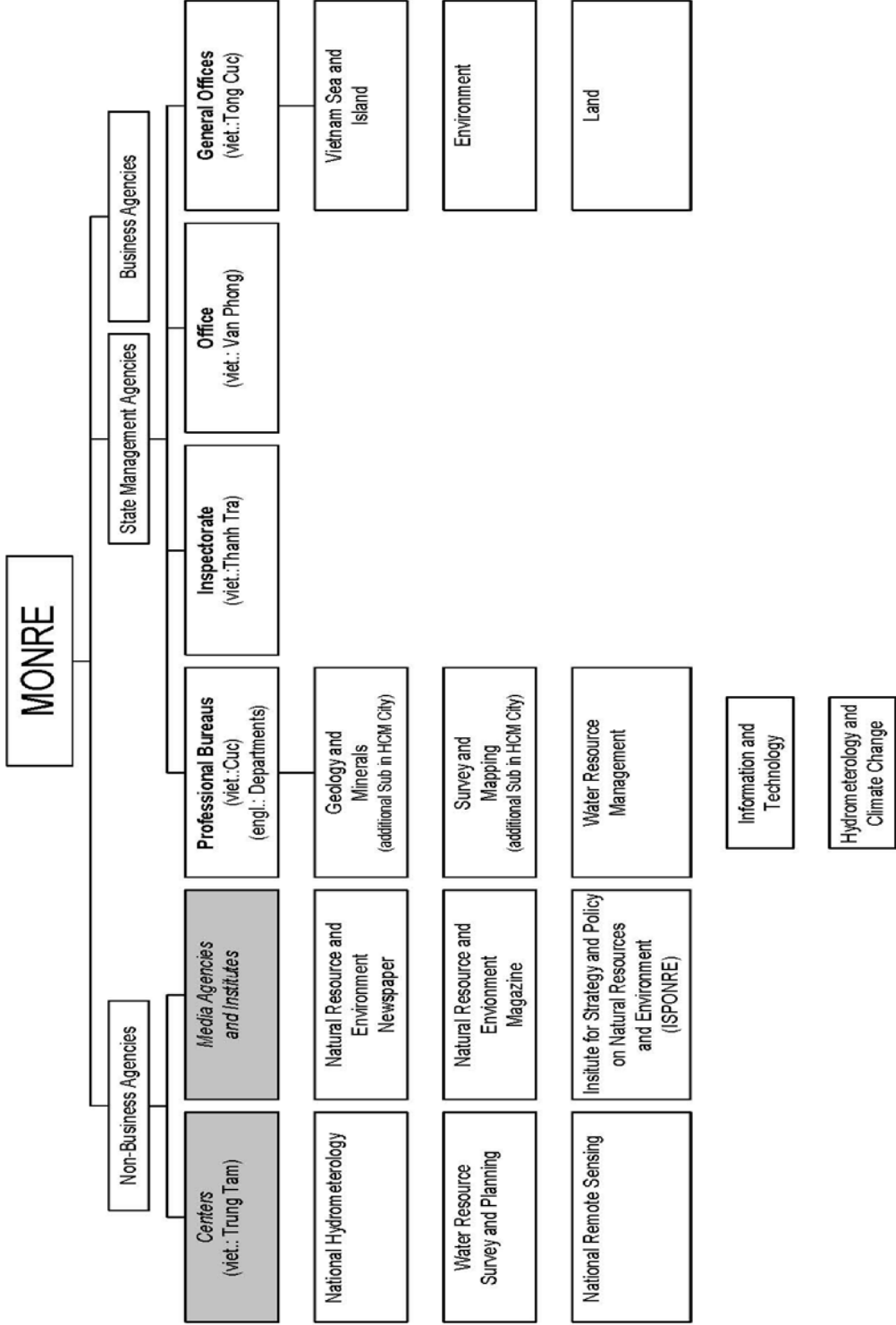
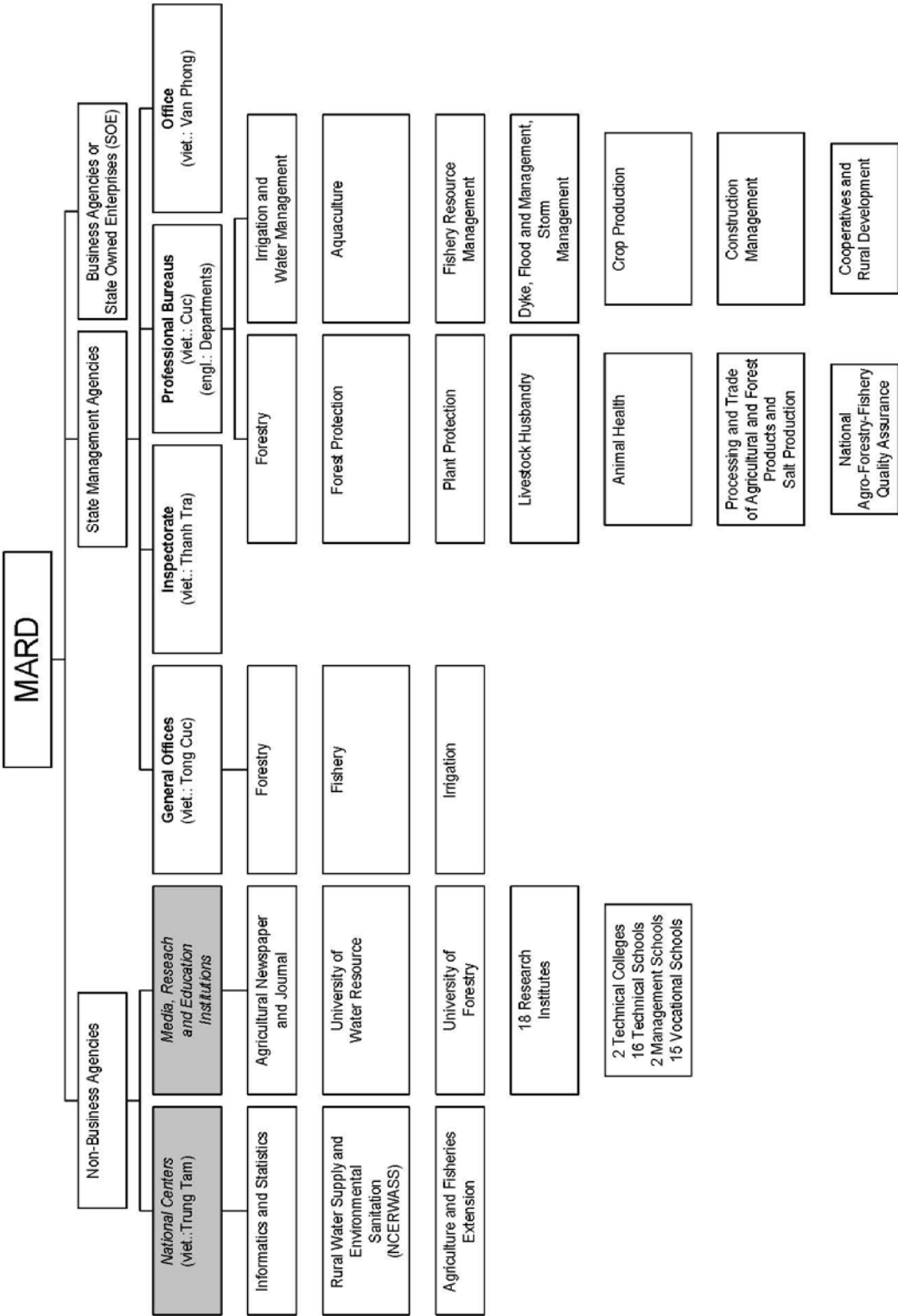


Figure based on: UNDP Report Modernizing Governance 2003:8
 Updated with data from: http://www.chinhphu.vn/portal/page?_pageid=598,36587364&_dad=portal&_schema=PORTAL

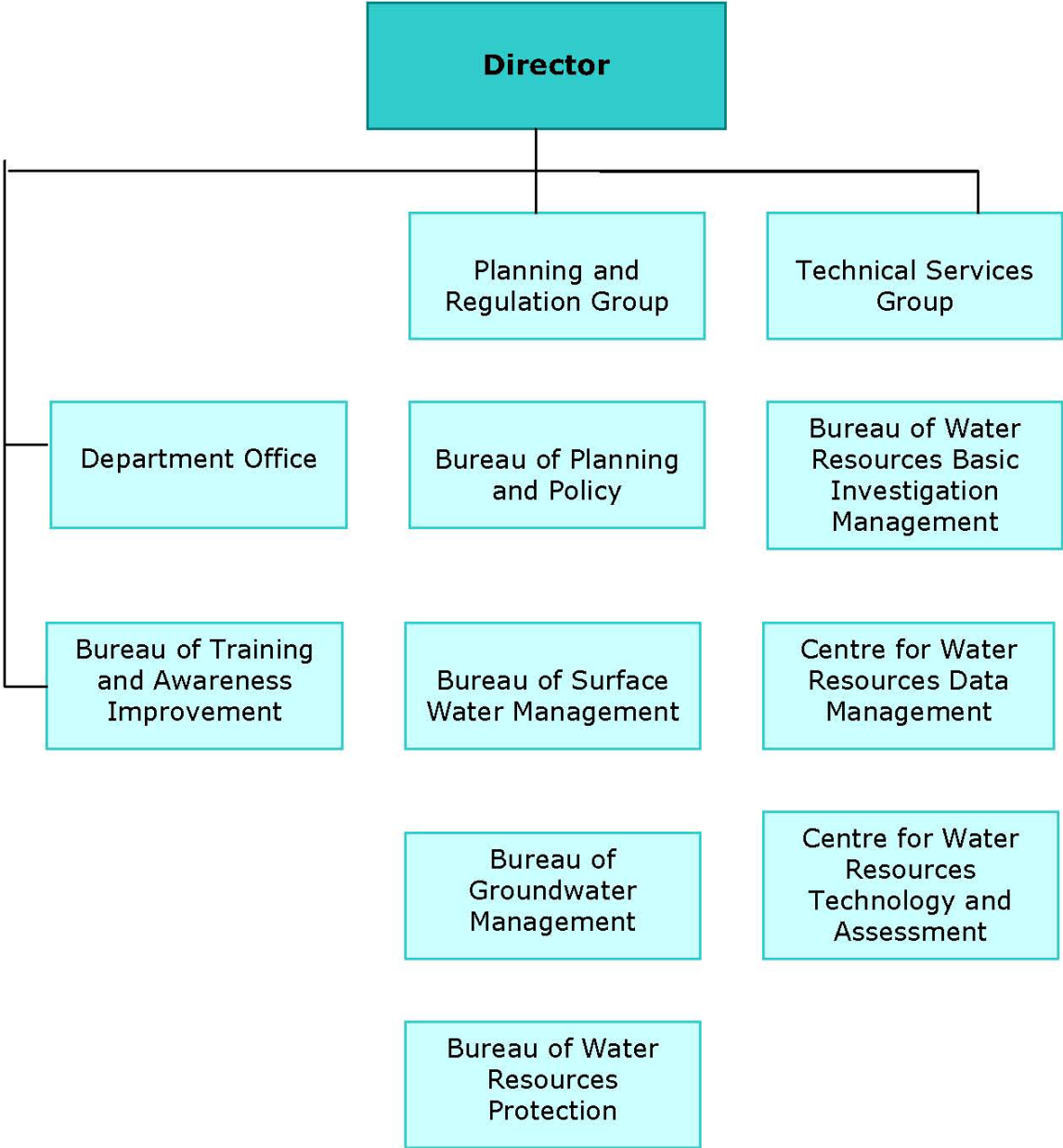
Annex 2: Organizational Structure of MONRE



Annex 3: Organizational Structure of MARD



Annex 4: Organizational Structure of the Department of Water Resources Management, MONRE



Source: http://www.adb.org/Water/NWSAB/2004/Viet_Nam_Country_Paper.pdf

- 1 Evers, Hans-Dieter and Solvay Gerke (2005). Closing the Digital Divide: Southeast Asia's Path Towards a Knowledge Society.
- 2 Bhuiyan, Shajahan and Hans-Dieter Evers (2005). Social Capital and Sustainable Development: Theories and Concepts.
- 3 Schetter, Conrad (2005). Ethnicity and the Political Reconstruction of Afghanistan.
- 4 Kassahun, Samson (2005). Social Capital and Community Efficacy. In Poor Localities of Addis Ababa Ethiopia.
- 5 Fuest, Veronika (2005). Policies, Practices and Outcomes of Demand-oriented Community Water Supply in Ghana: The National Community Water and Sanitation Programme 1994 – 2004.
- 6 Menkhoff, Thomas and Hans-Dieter Evers (2005). Strategic Groups in a Knowledge Society: Knowledge Elites as Drivers of Biotechnology Development in Singapore.
- 7 Mollinga, Peter P. (2005). The Water Resources Policy Process in India: Centralisation, Polarisation and New Demands on Governance.
- 8 Evers, Hans-Dieter (2005). Wissen ist Macht: Experten als Strategische Gruppe.
- 8a Evers, Hans-Dieter and Solvay Gerke (2005). Knowledge is Power: Experts as Strategic Group.
- 9 Fuest, Veronika (2005). Partnerschaft, Patronage oder Paternalismus? Eine empirische Analyse der Praxis universitärer Forschungskoooperation mit Entwicklungsländern.
- 10 Laube, Wolfram (2005). Promise and Perils of Water Reform: Perspectives from Northern Ghana.
- 11 Mollinga, Peter P. (2004). Sleeping with the Enemy: Dichotomies and Polarisation in Indian Policy Debates on the Environmental and Social Effects of Irrigation.
- 12 Wall, Caleb (2006). Knowledge for Development: Local and External Knowledge in Development Research.
- 13 Laube, Wolfram and Eva Youkhana (2006). Cultural, Socio-Economic and Political Constraints for Virtual Water Trade: Perspectives from the Volta Basin, West Africa.
- 14 Hornidge, Anna-Katharina (2006). Singapore: The Knowledge-Hub in the Straits of Malacca.
- 15 Evers, Hans-Dieter and Caleb Wall (2006). Knowledge Loss: Managing Local Knowledge in Rural Uzbekistan.
- 16 Youkhana, Eva, Lautze, J. and B. Barry (2006). Changing Interfaces in Volta Basin Water Management: Customary, National and Transboundary.
- 17 Evers, Hans-Dieter and Solvay Gerke (2006). The Strategic Importance of the Straits of Malacca for World Trade and Regional Development.
- 18 Hornidge, Anna-Katharina (2006). Defining Knowledge in Germany and Singapore: Do the Country-Specific Definitions of Knowledge Converge?
- 19 Mollinga, Peter M. (2007). Water Policy – Water Politics: Social Engineering and Strategic Action in Water Sector Reform.
- 20 Evers, Hans-Dieter and Anna-Katharina Hornidge (2007). Knowledge Hubs Along the Straits of Malacca.
- 21 Sultana, Nayeem (2007). Trans-National Identities, Modes of Networking and Integration in a Multi-Cultural Society. A Study of Migrant Bangladeshis in Peninsular Malaysia.
- 22 Yalcin, Resul and Peter M. Mollinga (2007). Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration: The Creation of a New Bureaucracy.
- 23 Menkhoff, T., Loh, P. H. M., Chua, S. B., Evers, H.-D. and Chay Yue Wah (2007). Riau Vegetables for Singapore Consumers: A Collaborative Knowledge-Transfer Project Across the Straits of Malacca.
- 24 Evers, Hans-Dieter and Solvay Gerke (2007). Social and Cultural Dimensions of Market Expansion.
- 25 Obeng, G. Y., Evers, H.-D., Akuffo, F. O., Braimah, I. and A. Brew-Hammond (2007). Solar PV Rural Electrification and Energy-Poverty Assessment in Ghana: A Principal Component Analysis.
- 26 Eguavoen, Irit; E. Youkhana (2008). Small Towns Face Big Challenge. The Management of Piped Systems after the Water Sector Reform in Ghana.
- 27 Evers, Hans-Dieter (2008). Knowledge Hubs and Knowledge Clusters: Designing a Knowledge Architecture for Development
- 28 Ampomah, Ben Y., Adjei, B. and E. Youkhana (2008). The Transboundary Water Resources Management Regime of the Volta Basin.
- 29 Saravanan.V.S.; McDonald, Geoffrey T. and Peter P. Mollinga (2008). Critical Review of Integrated Water Resources Management: Moving Beyond Polarised Discourse.
- 30 Laube, Wolfram; Awo, Martha and Benjamin Schraven (2008). Erratic Rains and Erratic Markets: Environmental change, economic globalisation and the expansion of shallow groundwater irrigation in West Africa.
- 31 Mollinga, Peter P. (2008). For a Political Sociology of Water Resources Management.
- 32 Hauck, Jennifer; Youkhana, Eva (2008). Histories of water and fisheries management in Northern Ghana.
- 33 Mollinga, Peter P. (2008). The Rational Organisation of Dissent. Boundary concepts, boundary objects and boundary settings in the interdisciplinary study of natural resources management.
- 34 Evers, Hans-Dieter; Gerke, Solvay (2009). Strategic Group Analysis.
- 35 Evers, Hans-Dieter; Benedikter, Simon (2009). Strategic Group Formation in the Mekong Delta - The Development of a Modern Hydraulic Society.
- 36 Obeng, George Yaw; Evers, Hans-Dieter (2009). Solar PV Rural Electrification and Energy-Poverty: A Review and Conceptual Framework With Reference to Ghana.
- 37 Scholtes, Fabian (2009). Analysing and explaining power in a capability perspective.
- 38 Eguavoen, Irit (2009). The Acquisition of Water Storage Facilities in the Abay River Basin, Ethiopia.
- 39 Hornidge, Anna-Katharina; Mehmood Ul Hassan; Mollinga, Peter P. (2009). 'Follow the Innovation' – A joint experimentation and learning approach to transdisciplinary innovation research.
- 40 Scholtes, Fabian (2009). How does moral knowledge matter in development practice, and how can it be researched?
- 41 Laube, Wolfram (2009). Creative Bureaucracy: Balancing power in irrigation administration in northern Ghana.
- 42 Laube, Wolfram (2009). Changing the Course of History? Implementing water reforms in Ghana and South Africa.

- 43 Scholtes, Fabian (2009). Status quo and prospects of smallholders in the Brazilian sugarcane and ethanol sector: Lessons for development and poverty reduction.
- 44 Evers, Hans-Dieter, Genschick, Sven, Schraven, Benjamin (2009). Constructing Epistemic Landscapes: Methods of GIS-Based Mapping.
- 45 Saravanan V.S. (2009). Integration of Policies in Framing Water Management Problem: Analysing Policy Processes using a Bayesian Network.
- 46 Saravanan V.S. (2009). Dancing to the Tune of Democracy: Agents Negotiating Power to Decentralise Water Management.
- 47 Huu, Pham Cong, Rhlers, Eckart, Saravanan, V. Subramanian (2009). Dyke System Planing: Theory and Practice in Can Tho City, Vietnam.
- 48 Evers, Hans-Dieter, Bauer, Tatjana (2009). Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta.
- 49 Reis, Nadine; Mollinga, Peter P. (2009). Microcredit for Rural Water Supply and Sanitation in the Mekong Delta. Policy implementation between the needs for clean water and 'beautiful latrines'.
- 50 Gerke, Solvay; Ehlert, Judith (2009). Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam
- 51 Schraven, Benjamin; Eguavoen, Irit; Manske, Günther (2009). Doctoral degrees for capacity development: Results from a survey among African BiGS-DR alumni.
- 52 Nguyen, Loan (2010). Legal Framework of the Water Sector in Vietnam.
- 53 Nguyen, Loan (2010). Problems of Law Enforcement in Vietnam. The Case of Wastewater Management in Can Tho City.
- 54 Oberkircher, Lisa et al. (2010). Rethinking Water Management in Khorezm, Uzbekistan. Concepts and Recommendations.
- 55 Waibel, Gabi (2010). State Management in Transition: Understanding Water Resources Management in Vietnam.
- 56 Saravanan V.S., Mollinga, Peter P. (2010). Water Pollution and Human Health. Transdisciplinary Research on Risk Governance in a Complex Society.
- 57 Vormoor, Klaus (2010). Water Engineering, Agricultural Development and Socio-Economic Trends in the Mekong Delta, Vietnam.
- 58 Hornidge, Anna-Katharina, Kurfürst, Sandra (2010). Envisioning the Future, Conceptualising Public Space. Hanoi and Singapore Negotiating Spaces for Negotiation.
- 59 Mollinga, Peter P. (2010). Transdisciplinary Method for Water Pollution and Human Health Research.
- 60 Youkhana, Eva (2010). Gender and the development of handicraft production in rural Yucatán/Mexico.
- 61 Naz, Farhat, Saravanan V. Subramanian (2010). Water Management across Space and Time in India.
- 62 Evers, Hans-Dieter, Nordin, Ramli, Nienkemoer, Pamela (2010). Knowledge Cluster Formation in Peninsular Malaysia: The Emergence of an Epistemic Landscape.
- 63 Mehmood Ul Hassan, Hornidge, Anna-Katharina (2010). 'Follow the Innovation' – The second year of a joint experimentation and learning approach to transdisciplinary research in Uzbekistan.
- 64 Mollinga, Peter P. (2010). Boundary concepts for interdisciplinary analysis of irrigation water management in South Asia.
- 65 Noelle-Karimi, Christine (2006). Village Institutions in the Perception of National and International Actors in Afghanistan. (Amu Darya Project Working Paper No. 1)
- 66 Kuzmits, Bernd (2006). Cross-bordering Water Management in Central Asia. (Amu Darya Project Working Paper No. 2)
- 67 Schetter, Conrad, Glassner, Rainer, Karokhail, Masood (2006). Understanding Local Violence. Security Arrangements in Kandahar, Kunduz and Paktia. (Amu Darya Project Working Paper No. 3)
- 68 Shah, Usman (2007). Livelihoods in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin. (Amu Darya Project Working Paper No. 4)
- 69 ter Steege, Bernie (2007). Infrastructure and Water Distribution in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin. (Amu Darya Project Working Paper No. 5)
- 70 Mielke, Katja (2007). On The Concept of 'Village' in Northeastern Afghanistan. Explorations from Kunduz Province. (Amu Darya Project Working Paper No. 6)
- 71 Mielke, Katja, Glassner, Rainer, Schetter, Conrad, Yarash, Nasratullah (2007). Local Governance in Warsaj and Farkhar Districts. (Amu Darya Project Working Paper No. 7)
- 72 Meininghaus, Esther (2007). Legal Pluralism in Afghanistan. (Amu Darya Project Working Paper No. 8)
- 73 Yarash, Nasratullah, Smith, Paul, Mielke, Katja (2010). The fuel economy of mountain villages in Ishkamish and Burka (Northeast Afghanistan). Rural subsistence and urban marketing patterns. (Amu Darya Project Working Paper No. 9)
- 74 Oberkircher, Lisa (2011). 'Stay – We Will Serve You Plov!'. Puzzles and pitfalls of water research in rural Uzbekistan.
- 75 Shtaltovna, Anastasiya, Hornidge, Anna-Katharina, Mollinga, Peter P. (2011). The Reinvention of Agricultural Service Organisations in Uzbekistan – a Machine-Tractor Park in the Khorezm Region.
- 76 Stellmacher, Till, Grote, Ulrike (2011). Forest Coffee Certification in Ethiopia: Economic Boon or Ecological Bane?

ZEF Development Studies

edited by Solvay Gerke and Hans-Dieter Evers

Center for Development Research (ZEF),
University of Bonn

Shahjahan H. Bhuiyan

Benefits of Social Capital. Urban Solid Waste Management in Bangladesh

Vol. 1, 2005, 288 p., 19.90 EUR, br. ISBN 3-8258-8382-5

Veronika Fuest

Demand-oriented Community Water Supply in Ghana. Policies, Practices and Outcomes

Vol. 2, 2006, 160 p., 19.90 EUR, br. ISBN 3-8258-9669-2

Anna-Katharina Hornidge

Knowledge Society. Vision and Social Construction of Reality in Germany and Singapore

Vol. 3, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Wolfram Laube

Changing Natural Resource Regimes in Northern Ghana. Actors, Structures and Institutions

Vol. 4, 2007, 392 p., 34.90 EUR, br. ISBN 978-3-8258-0641-5

Lirong Liu

Wirtschaftliche Freiheit und Wachstum. Eine internationale vergleichende Studie

Vol. 5, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Phuc Xuan To

Forest Property in the Vietnamese Uplands. An Ethnography of Forest Relations in Three Dao Villages

Vol. 6, 2007, 296 p., 29.90 EUR, br. ISBN 978-3-8258-0773-3

Caleb R.L. Wall, Peter P. Mollinga (Eds.)

Fieldwork in Difficult Environments. Methodology as Boundary Work in Development Research

Vol. 7, 2008, 192 p., 19.90 EUR, br. ISBN 978-3-8258-1383-3

Solvay Gerke, Hans-Dieter Evers, Anna-K. Hornidge (Eds.)

The Straits of Malacca. Knowledge and Diversity

Vol. 8, 2008, 240 p., 29.90 EUR, br. ISBN 978-3-8258-1383-3

Caleb Wall

Argorods of Western Uzbekistan. Knowledge Control and Agriculture in Khorezm

Vol. 9, 2008, 384 p., 29.90 EUR, br. ISBN 978-3-8258-1426-7

Irit Eguavoen

The Political Ecology of Household Water in Northern Ghana

Vol. 10, 2008, 328 p., 34.90 EUR, br. ISBN 978-3-8258-1613-1

Charlotte van der Schaaf

Institutional Change and Irrigation Management in Burkina Faso. Flowing Structures and Concrete Struggles

Vol. 11, 2009, 344 p., 34.90 EUR, br. ISBN 978-3-8258-1624-7

Nayeem Sultana

The Bangladeshi Diaspora in Peninsular Malaysia. Organizational Structure, Survival Strategies and Networks

Vol. 12, 2009, 368 p., 34.90 EUR, br. ISBN 978-3-8258-1629-2

Peter P. Mollinga, Anjali Bhat, Saravanan V.S. (Eds.)

When Policy Meets Reality. Political Dynamics and the Practice of Integration in Water Resources Management Reform

Vol. 13, 216 p., 29.90 EUR, br., ISBN 978-3-643-10672-8

Irit Eguavoen, Wolfram Laube (Eds.)

Negotiating Local Governance. Natural Resources Management at the Interface of Communities and the State

Vol. 14, 248 p., 29.90 EUR, br., ISBN 978-3-643-10673-5

William Tsuma

Gold Mining in Ghana. Actors, Alliances and Power

Vol. 15, 2010, 256 p., 29.90 EUR, br., ISBN 978-3-643-10811-1

Thim Ly

Planning the Lower Mekong Basin: Social Intervention in the Se San River

Vol. 16, 2010, 240 p., 29.90 EUR, br., ISBN 978-3-643-10834-0