

National Capacity Building (WATERSPS)

1.1 Implementation of Law on Water Resources

GEUS Final Report 2002; December 2002
104.Vie.814-5

Alex Sonnenborg, Per Rasmussen & Jens Stockmarr

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Government of Vietnam
MARD – DWRHWM

Government of Denmark
Danida

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Preparation

Action	Name	Signature	Date
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Approved	Lars Skov Andersen	<i>LSA</i>	5 th January 2003
	Le Duc Nam		

Table of Contents

Table of Contents	ii
List of Annexes	ii
1 Main outputs, activities and tasks of GEUS' five inputs March – December 2002	1
2 Recommendations	7

List of Annexes

Annex 1	TOR for input by GEUS, February 2002
Annex 2	Addendum to TOR for GEUS, September 2002
Annex 3	Draft Decision on 'Registration and licensing of groundwater exploration and groundwater abstraction, and licensing (authorisation) of drilling companies
Annex 4	Status of the legislative framework on groundwater issues
Annex 5	Drafting Policy and Strategy on Groundwater Management and Development
Annex 6	Financial aspects of institution building in ground water management based on fees and charges

1 Main outputs, activities and inputs

1.1 Inputs and activities

In the period from March 2002 to December 2002 GEUS provided 5 inputs according to the Terms of Reference for "Technical Assistance to Implementation of Law on Water Resources - Registration and Licensing of Ground Water Use" (Annex 1 and Annex 2).

The inputs were provided by Alex Sonnenborg, Jens Stockmarr and Per Rasmussen as shown in the table below (input in days):

		Denmark Preparation	Abroad Weekday	Abroad Weekend	Denmark Finalising	Travel Time
Input 1	Alex Sonnenborg	1	14	2	-	2
	Per Rasmussen	1	14	2	-	2
Input 2	Per Rasmussen	1	15	-	-	2
	Jens Stockmarr	1	20	2	-	2
Input 3	Per Rasmussen	1	25	-	-	1
Input 4	Alex Sonnenborg	3	16	-	-	2
Input 5	Jens Stockmarr	1	14	1	1	2
Final report	Alex Sonnenborg				1	
	Per Rasmussen				1	
Total		9	118	7	3	13

The achievements, conclusions and recommendations of each input are described in detail in five visit reports:

- National Capacity Building (WATERSPS) - 1.1 Implementation of Law on Groundwater Resources. **GEUS Visit Report No. 1 - March 2002.**
- National Capacity Building (WATERSPS) - 1.1 Implementation of Law on Groundwater Resources. **GEUS Visit Report No. 2 - May 2002.**
- National Capacity Building (WATERSPS) - 1.1 Implementation of Law on Groundwater Resources. **GEUS Visit Report No. 3 - July 2002.**
- National Capacity Building (WATERSPS) - 1.1 Implementation of Law on Groundwater Resources. **GEUS Visit Report No. 4 - December 2002.**
- National Capacity Building (WATERSPS) - 1.1 Implementation of Law on Groundwater Resources. **GEUS Visit Report No. 5 - December 2002.**

Table 1 Summary of activities carried out by GEUS during the five inputs in Vietnam

Input 1	<ul style="list-style-type: none"> • Prepare draft "Decision on Registration and Licensing of Groundwater" (The Decision), • Prepare draft "Decision on Licensing (authorisation) of Drilling Companies (The Decision), • Prepare database and management information system on groundwater abstractions for operation within DWRHWM and selected provinces, • Work plan for National Specialists and MARD Staff for the period up to visit 2.
Input 2	<ul style="list-style-type: none"> • Revised structure and content of the draft Decision based on sound principles for legal drafting, • Technical comments and suggestions for improvement of the application forms associated with the draft Decision, • Two key Danish legal documents translated into English and into Vietnamese, • Outlines of guidelines supporting the implementation of the draft Decision, • Outline of drilling guideline was prepared in co-ordinated with Component 2. Rural Water Supply and Sanitation, • Work plan for National Specialists and MARD Staff for the period up to visit 3.
Input 3	<ul style="list-style-type: none"> • Preparation of final draft Decision on 'Registration and licensing of groundwater exploration and groundwater abstraction, and licensing (authorisation) of drilling companies'. • Drafting of three guidelines supporting the implementation of the Decision. • Preparation of database and GIS system on groundwater abstraction, including training course material. • Selection and interviews of candidates for positions as National Database-GIS Specialist, and as National Legal Specialist. Terms were prepared for the two positions. • Work plan for National Specialists and MARD Staff for the period up to visit 4.
Input 4	<ul style="list-style-type: none"> • Description of the tasks and duties for staff dealing with registration and licensing at national and provincial level, • Final QA of the draft Decision, • Introduction to Groundwater Policy and Strategy (Workshop, Ha Long), • Draft Policy and Strategy Paper on Groundwater management, • Workshop on Groundwater Policy and Strategy and Water Resources Economics, • Presentation of International examples on water policy and strategy, • Status of the legislative framework on groundwater issues, • Donor Co-ordination on Water Policy and Strategy.
Input 5	<ul style="list-style-type: none"> • Use of fees and charges in Denmark • Strategic proposal on how to introduce fees and charges in water resources management in Vietnam. • Presentations at an inter-ministerial workshop with MARD, MOI and MNRE staff on groundwater policy and strategy in Vietnam and the associated planning for utilisation and protection of the groundwater resources policy and strategy. • Preparation of note on groundwater policy and strategy • Preparation of note on financial aspects of institutional building.

1.2 Outputs

In order to respond to progress and changes in demands from Department of Water Resources and Hydraulic Works Management (DWRHWM) the Terms of Reference for assistance provided by GEUS, were subject to minor changes in September 2002 (Annex 1 and 2).

The final list of outputs from the revised TOR (Annex 2) is shown in the table below, together with the status of completion of each output. The main changes in TOR were the reduction in scope of activity 5 and the addition of activity 9 and 10. The table is followed by comments to the individual outputs, and a summary of the main outputs of GEUS' technical assistance. Outputs 1 – 6 were completed in 2002. Output 7 –10 were initiated in 2002, and are recommended completed in 2003 as described in "Addendum to TOR" (Annex 2).

Table 2 Outputs produced by GEUS in 2002

No.	Output	Main references
1.	Prepare Draft Decision on Registration and Licensing of Ground Water Abstractions	Final Report – Annex 3 Visit Report 2 – Annex 1 Visit Report 3 – Annex 2 Visit Report 3 – Annex 12
2.	Prepare Draft Decision on Licensing (Authorisation) of Drilling Companies	Final Report – Annex 3 Visit Report 2 – Annex 1 Visit Report 3 – Annex 2 Visit Report 3 – Annex 12
3.	Prepare Materials for Regional Workshops on the Draft Decision	Visit Report 1 – Annex 7
4.	Prepare Database and Management Information System on Ground Water Abstractions operating within DWRHWM and selected Provinces	Visit Report 3 – Annex 5 Visit Report 3 – Annex 6
5.	Prepare (and Conduct) Training Course on Registration and Licensing	Visit Report 3 – Annex 7
6.	Prepare Guidelines on Registration and Licensing	Visit Report 3 – Annex 3 Visit Report 3 – Annex 4
7.	Prepare Action Plan for Nationwide Implementation	Visit Report 3 – Annex 12
8.	Revise Decision and prepare Workshops for its Dissemination	Visit Report 4 – Annex 3
9.	Prepare Draft National Policy, Strategy and Action Plan for Groundwater Management in Vietnam	Final Report – Annex 5 Visit Report 4 – Annex 5 Visit Report 5 – Annex 5 Visit Report 5 – Annex 6 Visit Report 5 – Annex 7
10.	Prepare Draft Government Decision / Inter-ministerial Circular on Ground Water Management in Vietnam	Final Report – Annex 4 Final Report – Annex 6

Output 1 and 2

Though it was strongly recommended by GEUS and the CTA to prepare two separate decisions, DWRHWM has preferred to prepare a combined “Draft Decision on Registration and Licensing of Groundwater Exploration and Groundwater Abstraction, and Licensing (Authorisation) of Drilling Companies”. The preparation of the draft decision has been based on experiences of actual international groundwater management practices, including the concept of IWRM (Integrated Water Resources Management) and sound legal principles.

In addition to the Decision on permits and licensing, the first draft of a “Decision on Groundwater Protection” has been reviewed.

Output 3

The Draft Decision was presented and discussed with among others representatives from provinces and different national agencies at three workshops:

- Hanoi, 15 March;
- Phan Rang in Ninh Thuan Province, 28-29 May; and
- Da Nang, 22-23 July.

The workshops in Phan Rang and Da Nang were the first regional and nationwide consultations with provinces on implementation of Law on Water Resources.

Output 4

A database for registration and licensing of groundwater abstraction and licensing drilling companies was developed based on an existing database developed by the Danida supported Srepok Water Action Plan in Dak Lak. Application forms, management reports, and GIS themes were developed.

Output 5

An outline for training courses in the administration of registration and licensing of groundwater abstraction for selected provinces was prepared, but not conducted by GEUS due to changes in demand from DWRHWM and the prolonged discussions and work on the draft Decision. Instead the course was given in Hanoi 12-14 December 2002, by staff of the Groundwater Bureau, national specialists and the CTA. Six provinces, Thai Nguyen, Ninh Binh, Da Nang, Dak Lak, Binh Duong and Tien Giang, representing different regions and groundwater regimes in Vietnam, participated in the course, which was the first hands-on training of provincial staff in implementation of water resources management in accordance with the Law on Water Resources.

Output 6

Three draft guidelines related to the draft decision were prepared. Also the outline of a drilling guideline was prepared in co-operation with international consultants supporting WATERSPS Component 2. Rural Water Supply and Sanitation.

Output 7

A description of the tasks, duties and responsibilities for authorities and staff dealing with registration and licensing at state and provincial level was prepared. On basis of

these descriptions the subcomponent has supported the Groundwater Bureau recruiting newly graduated students as trainees in the positions of:

- Groundwater Resources Planner for resources assessment and planning;
- Hydrogeologist for administration of abstraction permits;
- Drilling Engineer for administration of licensing of drilling companies; and
- Database and GIS Manager for technical support.

The recruitment will alleviate the most urgent staff shortages in the Bureau and enable a better participation of Bureau staff in the subcomponent. The employment as trainees with limited financial support from the subcomponent increases the probability that the Groundwater Bureau will be able to retain the staff when Danida support ends.

Output 8

A final quality assurance of the draft decision was completed, including a three-day workshop in Ha Long, 24-26 September, with staff from DWRHWM preparing for dissemination of the draft decision.

Output 9

In order to raise awareness on the role and scope of policies and strategies in groundwater management two thematic papers were prepared on:

- “The Role of Policy in the Implementation of Groundwater Management in Vietnam”; and
- “Policy and Strategy for Groundwater Management and Development”.

Both papers were presented at an inter-ministerial workshop in Hanoi 13th November.

Output 10

In preparation of the inter-ministerial decision on groundwater management, a thematic paper was prepared on “Financial aspects of institution building in groundwater management based on fees and charges”, including the the roles and responsibilities for groundwater management at different levels of government. The paper was presented at the inter-ministerial workshop in Hanoi 13th November.

In summary the main outputs of GEUS's Technical Assistance to MARD DWRHWM in 2002 have been:

- Draft Decision on 'Registration and licensing of groundwater exploration and groundwater abstraction, and licensing (authorisation) of drilling companies' (Annex 3);
- Draft Guideline on implementation and administration of 'The Regulation on issuance of permits for groundwater exploration and

groundwater abstraction, and license for practising groundwater drilling’;

- Draft Guideline on application for groundwater exploration and abstraction permit;
- Draft Guideline on application for drilling licence;
- Report on “Groundwater Resources and Exploitation in Vietnam”;
- Recommendation on model provinces for test and implementation of the draft Decision, and of the database and management information system on groundwater abstraction;
- Content and design of database, management reports and GIS themes for administration of groundwater abstraction, including outline for training course;
- Proposal for implementation of Decision on licensing of groundwater abstraction and drilling;
- Status of the legislative framework on groundwater issues (Annex 4);
- Draft Policy and Strategy on Groundwater Management (Annex 5), including international examples on water policy and strategy;
- Outline of Groundwater-related Policy in the Law on Water Resources;
- Policy Issues in Implementing the Law on Water Resources of Vietnam; and Groundwater Management.
- Note on the financial part of institutional building in Vietnam based on fees and charges (Annex 6).

2 Conclusions and recommendations

2.1 Summary of findings

During preparation of the draft Decision on Permits and Licensing it was recognised that the Decision would be inadequate to regulate the management and utilisation of ground water resources in Vietnam, and that it ought to be supplemented by an inter-ministerial decision to guide the overall management of groundwater resources and with three other Decisions on Groundwater Planning and Management, Groundwater Protection and Groundwater Monitoring, respectively. Together with a necessary formulated and transparent policy and strategy for the utilisation, protection and management of the groundwater resources these decisions and their related guidelines will make up the administrative basis for a proper future groundwater management and implementation of LWR.

One of the major challenges will be to address the principle of management of lowest appropriate level and to handle the fact that both the Ministry and the provincial level will undertake elements of Groundwater Management within the same catchments.

Another major challenge will be to construct and implement a financial system with full cost recovery from fees and charges for water supply and for maintenance of a sufficient water management unit(s) responsible for utilisation and protection of the water resources.

A third major challenge will be to introduce and implement transparent procedures for resolution of disputes arising in connection with management of the Groundwater resources. According to LWR, Art. 62, the State authorised agency that issues licenses is responsible for resolving disputes, but this subject is dealt with only briefly in the final version of the Draft Decision on Registration and Licensing

The difficulties in implementing the LWR are especially related to missing or weakly developed connected set of decisions and by-laws with policies and strategies clearly explaining how the superior policy stated in LWR should be realised. Other difficulties are connected to intra-ministerial co-ordination and sharing of knowledge, low capacity for strategic planning and scattered knowledge of the water cycle. In approaching Integrated Water Resources Management the pre-existing institutions should be assisted and challenged to adopt the new concept in addition to the existing traditional values and behaviour.

These findings are in accordance with the ADB-report: "Draft National Sector Profile, Part 1, May 2002, Office of the National Water Resources Council, TA 3528-VIE, subproject 1, National Co-ordination for Water Resources Management."

The establishment of the new Ministry of Natural Resources in November 2002 may in the future overcome some of the difficulties mentioned.

Financial aspects

The legislative framework for the water sector in Vietnam enables a range of fees, charges and taxes on the use of water for different purposes as well as a natural resources tax on water. The structure of the fees, charges and taxes in several cases reflect the social and economic value that water has to the users, and in many localities the tariffs for domestic water are progressive in order to cross-subsidise the poorest segment of the population and encourage water savings. However, the water fees have not yet reached a level that enables full cost recovery, thus placing a heavy burden on central and provincial governments to subsidise the water sector and putting the long-term sustainability of government and donor investment at risk. Furthermore, it is not clear to which extent the revenue from fees, charges and taxes is returned to the sector or included in the general government revenue.

As a first step towards full cost recovery it could be expected that the Government in the future may wish to introduce a water resource charge or other type of charge to cover the increasing costs of water resources management of both national and provincial level. It could be a vision to levy the water resources charge on the amount of abstracted water. This will encourage the water supply companies to reduce water losses and all other users to reduce their water consumption.

Responsibilities and obligations of the authorities

It is an internationally accepted principle that water should be managed at the lowest appropriate level. In Vietnam the most appropriate level for implementing the majority of decisions related to water resources management is the provincial level, whereas water services are best provided at lower administrative levels and with user participation. The Government policy on decentralisation should also be applied in water resources management with responsibilities and functions gradually being decentralised to lower levels in steps with proven competence.

The system of water management is expected to cover five levels. The lowest level is the household and on-farm management of water, which closely depends on the second level, where the water supply companies and irrigation associations have the responsibility to deliver water in adequate quantity and quality at an affordable price. The mid-level is the provinces, which is the authority responsible for the sustainable use of the natural resources. The upper level is the Ministry responsible for legislation and co-operation between provinces, on the sustainable use of the natural resources and for public information on the state of the natural resources. The top level is Government which is responsible for policy, strategy and international cooperation.

Groundwater protection

A major task in the future will be the implementation of measures to protect the groundwater resource against depletion and pollution. This will require mapping to identify areas where groundwater is recharged, and perhaps adjustments of the land use in these areas to ensure that the recharge is maintained or even increased compared with the present rate. It will also involve mapping of pollution sources, restrictions on the future location of potentially polluting industries and remediation of polluted sites.

Future protection of groundwater should be carried out with the following purposes:

- Promote sustainable water use based on long-term protection.
- Prevent further deterioration of the water resources.
- Progressive reduction of discharges and emissions, which may pollute the water resources.

The duality in the administrative responsibility as reflected in the divided tasks on licensing on groundwater abstractions between state and provincial level makes a challenge for a uniform future groundwater protection. The tasks and responsibilities for the respective administrative levels must be considered carefully in the coming Decisions to ensure uniform water management.

Water monitoring

Provinces or River Basin Organisations should have the principal responsibility for implementation of groundwater monitoring programs with quantitative and qualitative measures. Monitoring should be developed into a tool that leads to actions whenever monitoring results are outside acceptable limits.

Data Management

All relevant data on water resource management and (ground-) water monitoring should be reported regularly to a common database system at national level. This subject is addressed in details in the AusAID-report: "Viet Nam Australia Water Resources Management Assistance Project, Component 2 – National Framework for Water Resources Information", Final report, August 2002. It is expected that the development of management of groundwater data will be in accordance with the recommendations in this report.

Planning

According to LWR, Art. 61, licensing must be based on plans for protection, development and use of the water resources. Groundwater Planning should be based on a characterisation of the groundwater bodies and their interactions with the surface water system. The characterisation should be made on an appropriate scale and be reviewed periodically. The characterisation should include both the hydrogeological conditions and the quantitative and qualitative status of the water resources as well as effects from human activities and the economics of groundwater. Developing the scientific basis needed for regulation of the water resources should be the objective of the characterisation.

Planning is a continuous ongoing process that must be based on the current knowledge of the day. Planning for groundwater utilisation and protection will over the years gradually improve the technical skills of the administrative staff involved, and the plans will gradually strengthen the basis for issuing permits for groundwater abstraction, provided effective monitoring programs are established and proper data management is conducted.

Again the distribution of the responsibility among State level and Provincial level must be addressed to ensure that only one authority is responsible for the water resources planning. In accordance with the GoV policy on decentralisation this level should be the provinces, which are in a position to ensure public consultation.

Promotion and awareness rising

Publication of the Groundwater Plans and the associated characterisation of the water resources will support the transparency of the water policy and support other sectors to take responsibility for water protection.

2.2 Action plan for completion of the legislative framework for Groundwater Management

In order to complete the legislative framework on Groundwater Management in Vietnam the following overall working plan is proposed:

January – March 2003:

- Start a working group on groundwater policy and strategy to be completed in December 2003.
- Clarify conditions for fees and charges.
- Complete Draft National Policy, Strategy and Action Plan for Groundwater Management in Vietnam.
- Prepare Decision on Groundwater Protection.

April – June 2003:

- Prepare Decision on Groundwater Planning and Management.
- Study tour to Denmark on Groundwater Management and Planning.
- Complete Decision on Groundwater Management and Planning.
- Complete Decision on Groundwater Protection.
- Prepare Decision on Monitoring.

October – December 2003:

- Complete legislative framework on Groundwater Management.

All year:

- Training of selected provinces in Groundwater Management; and
- Enhance central, provincial and public consultation on groundwater legislation.

Annex 1 TOR for input by GEUS, February 2002

Danida Ref. No. 104.Vie.814-5
21 February 2002

Terms of Reference for Technical Assistance to Implementation of Law on Water Resources Registration and Licensing of Ground Water Use

1. Introduction

The Law on Water Resources (LWR), which provides for innovative and far reaching reforms in the way the water resources of Viet Nam are managed, was passed by the National Assembly in May 1998 and came into force in January 1999. Support to Implementation of Law on Water Resources, which is Subcomponent 1.1 of the Water Sector Program, was initiated in January 2001 and provides technical assistance to preparation of key legislative documents, within a program that also comprises institutional and human resources development, organisational strengthening and awareness raising on the new approach to management of water resources.

The LWR sets the framework for introduction of Integrated Water Resources Management in Vietnam, and delegates the task of water resources management to the Ministry of Agriculture and Rural Development (MARD), where the Department of Water Resources and Hydraulic Works Management (DWRHWM) is responsible for drafting of legislative documents to implement LWR.

LWR specifies 8 state management functions to be undertaken by MARD DWRHWM:

1. Establish policies, strategies and overall planning
2. Issue and organise implementation of legislation
3. Manage basic surveys, information and data Registration and licensing of water use
5. Water disaster management and mitigation
6. Inspection, control and conflict resolution
7. International relations
8. Institution development, capacity building and awareness rising.

DWRHWM has eight bureaus of which four have major responsibilities in water resources management:

- Legislation and Inspection
- River Basin Planning and Management
- Ground Water Planning and Management
- Environment and Water Quality Management

Since the LWR came into force the principal actions taken have been formation of a National Water Resources Council (NRWC) as advisory body to the Government, and establishing the legal basis for River Basin Organisations for the major rivers of Vietnam.

These TOR describe Technical Assistance that will assist DWRHWM to prepare legislation on registration and licensing of water use, and to test the registration and licensing procedures in cooperation with selected provinces.

2. WaterSPS

At the request of the Government of the Socialist Republic of Vietnam, the Government of Denmark in May 2000 agreed to provide grant assistance to the implementation of Water Sector Program Support in Vietnam (WaterSPS), including Support to Implementation of the Law on Water Resources, and in December 2000 the Government Agreement on the WaterSPS was signed.

The development objective of the WaterSPS is:

"Improved living conditions for the people in Vietnam by better access to water and improved water-related services, particularly for the poor or otherwise disadvantaged groups of society".

The WaterSPS has 4 main components:

- National Capacity Building in Water Resources Management and Service Delivery;
- Rural Water Supply and Sanitation;
- Water Resource Management at River Basin and Provincial Level, and
- Urban Water Supply and Sanitation.

Component 1, which will assist the GOV to develop the national framework for the water sector, has the objective:

"An enabling legislative and institutional frame work for sustainable use of water resources and water delivery system with capable staff for its administration and enforcement at central and provincial levels",

The Support to Implementation of the Law on Water Resources is 1 of 4 sub-components under Component 1, and has the objective:

Assist MARD in implementing an enabling legislative and institutional framework for water resources management, based on the LWR, at national level, and at provincial levels within the geographic focus areas supported by the WaterSPS.

In the initial planning phase 6 outputs were defined:

- Output 1: Assist in a strategic planning and restructuring of DWRHWM to effectively implement appropriate state water management functions.
- Output 2: Assist DWRHWM to establish registration and licensing procedures for water users.
- Output 3: Assist DWRHWM in establishing capacity for basin water resources planning.
- Output 4: Assist DWRHWM to develop technical systems for cost recovery and financing water resources management and hydraulic works.
- Output 5: Assist DWRHWM to develop the human resource capacity to carry out appropriate water resource management roles.
- Output 6: Assist DWRHWM in developing and executing education, awareness and public consultation on the LWR.

The proposed Technical Assistance concerns Output 2, which will comprise registration and licensing of:

- 1. Ground water abstractions;
- 2. Surface water abstractions;
- 3. Wastewater discharges; and
- 4. Other uses of water.

The proposed TA will also provide inputs to Outputs 5 and 6 within the fields of registration and licensing.

For each type of water use the legislative process will comprise:

- a. Drafting of enabling legislation
- b. Assessment of institutional requirements
- c. Mobilisation of model provinces for testing of legislation
- d. Design of registration and licensing system
- e. Training of trainers and staff of model provinces
- f. Testing in model provinces
- g. Formulation of guidelines based on lessons learnt and best practices
- h. Action Plans for Nationwide Implementation
- i. Revision of legislation
- j. Nationwide dissemination of legislation

The proposed Technical Assistance will assist DWRHWM to develop legislation, procedures and systems for registration and licensing of ground water abstractions and setting up of a working group to replicate the registration of ground water use to other sectors.

The target for 2002 is to develop the organisation and procedures to carry out the registration of ground water uses and users at central, river basin and provincial levels. The activities will be carried out in close cooperation and coordination with provinces

which have expressed a demand for licensing of ground water use or can serve as models, including provinces supported under WaterSPS Component 3: Support to Water Resources Management in the Srepok and Ca river basins.

3. The Technical Assistance

3.1 Objective

The objective of the TA is:

“MARD DWRHWM assisted to develop the legislative and administrative framework for sound management of ground water resources for sustainable social and economic development”

The immediate object of the TA is:

“MARD DWRHWM assisted to develop, test and introduce decisions and guidelines on the organisation and procedures for registration and licensing of ground water use at central, river basin and provincial levels”

3.2 Outputs, Activities and Tasks

The Consultants will assist DWRHWM to produce a registration and licensing system for ground water abstractions as part of output 2 of the subcomponent (See Appendix 1 for description of Output 2). The work will comprise assistance to DWRHWM in the following activities:

- 1. Prepare Draft Decision on Registration and Licensing of Ground Water Abstractions**
- 2. Prepare Draft Decision on Licensing (Authorisation) of Drilling Companies**
- 3. Prepare Materials for Regional Workshops for Introduction of the Draft Decision (Special Session during Workshops for Dissemination of Law on Water Resources)**
- 4. Prepare Database and Management Information System on Ground Water Abstractions operating within DWRHWM and selected Provinces**
- 5. Prepare and Conduct Training Course in Registration and Licensing**
- 6. Prepare Guidelines on Registration and Licensing**
- 7. Prepare Action Plan for Nationwide Implementation**
- 8. Revise Decision and prepare Workshops for its Dissemination**

The scope of work, activities, tasks and assumptions related to the activities are summarised in the table below.

No.	Activities and Tasks	Assumptions
1	Prepare Draft Decision on Registration and Licensing of Ground Water Abstractions	DWRHWM makes adequate staff available for full-time work with the consultants, estimated as follows: <ul style="list-style-type: none"> • 1 staff from Bureau of Legislation and Inspection • 1 staff from Bureau of River Basin Planning and Management • 2 staff from Bureau of Ground Water Management
1.1	Review of existing Vietnamese legal documents	DWRHWM makes relevant legal documents available
1.2	Case studies on international practices	
1.3	Identify legal documents to be produced and their content	
1.4	Formulate criteria for registration and licensing	
1.5	Formulate procedures	
1.6	Prepare draft registration and licensing forms	
1.7	Assess institutional, human resources and financial requirements of licensing	
1.8	Prepare draft decision	
2	Prepare Draft Decision on Licensing (Authorisation) of Drilling Companies	DWRHWM makes adequate staff available for working with the consultants
2.1	Review of existing Vietnamese legal documents	DWRHWM makes relevant legal documents available
2.2	Case studies on international practices	
2.3	Check for conflicts with Law on Enterprises and Law on State Owned Enterprises	
2.4	Formulate criteria for licensing	
2.5	Formulate procedures for administration of licensing	
2.6	Prepare application forms	
2.7	Assess institutional, human resources and financial requirements of licensing	
2.8	Prepare draft decision	
3	Prepare Materials for Regional Workshops for Information and Consultation on Draft Decision	Donor support for workshops on North and South of Vietnam available
3.1	Prepare workshop materials	

No.	Activities and Tasks	Assumptions
3.2	Conduct special sessions on registration and licensing at 3 regional workshops on LWR in North, Central and South of Vietnam	
4	Develop GIS based Registration System for Ground Water Abstractions established within DWRHWM and DARD of selected provinces	Draft Decision finalised, approved and issued by MARD. 6 provinces willing to participate in testing of registration and licensing, each making 2-3 staff available on full-time basis DWRHWM makes adequate staff available for full-time work with the consultant (as above) and for monitoring of work at provincial level
4.1	Set-up prototype Database and GIS for registration	
4.2	Prepare draft guideline on registration	
4.3	Prepare kick-off workshop for model provinces	
4.4	Conduct kick-off workshop (1) for model provinces	
4.6	Install registration system at DWRHWM and in provinces	
4.7	Monitor registration process within DWRHWM and in provinces	
4.8	Conduct workshop (2) to consolidate lessons learnt during registration process	
4.9	Prepare draft guideline on licensing	
4.10	Test licensing in model provinces	
4.11	Monitor licensing process within DWRHWM and in provinces	
4.12	Conduct workshop (3) to consolidate lessons learn during licensing process	
5	Prepare and Conduct Training course in registration and licensing	
5.1	Identify institution to provide short-training courses on registration and licensing of ground water abstractions	
5.2	Develop curriculum for short-term training course	
5.3	Develop training modules and materials: <ul style="list-style-type: none"> • Geographical Information System • Management Information System • Registration procedures and forms • Licensing procedures and forms 	

No.	Activities and Tasks	Assumptions
5.4	Test training course for DWRHWM and provincial staff of model provinces	
5.5	Evaluate and revise training course	
6	<i>Prepare Guidelines on Registration and Licensing</i>	
6.1	Evaluate criteria for registration and licensing	
6.2	Revise guideline on registration and licensing	
7	<i>Prepare Action Plan for Nationwide Registration and Licensing</i>	
7.1	Assess the status of ground water resources, current use and future demand (Prepare TOR for contracting of national consultants)	
7.2	Identify priority areas and provinces for registration and licensing of ground water abstraction	
7.3	Prepare Action Plan for registration and licensing of ground water abstractions	
8	<i>Prepare and Disseminate Revised Decision</i>	
8.1	Revise decisions	
8.2	Conduct regional workshops for dissemination of information on revised decisions and national action plan	

3.3 Inputs

3.3.1 Inputs by Danida

International Technical Assistance within a framework of maximum 10 person months distributed on the following specialists:

- Ground Water Management Specialist
- Geohydrologist
- Legal Specialist
- GIS and Database Manager

National Technical Assistance:

- | | |
|---------------------------|-----------------|
| • Ground Water Specialist | 8 person months |
| • Legal Specialist | 4 person months |
| • GIS Specialist | 4 person months |

Workshop and training costs:

- 2 regional workshops in Central Vietnam (Da Nang)
- 3 consultation / training workshops (North, Central and South of Vietnam)
- 2 round trips to provinces
- 1 training course

Travel, accommodation and per diem during work in Vietnam (International Staff) and during supervision and monitoring of work in provinces (National Consultants and Staff).

Translation costs (All legal documents and consultant's reports will be prepared in English and Vietnamese)

Computer equipment and software:

- | | |
|-----------------------------|--------|
| • Computer and printers | 8 sets |
| • Database and GIS software | 8 sets |

3.3.2 Inputs by GOV

National Staff (estimate):

- | | |
|--------------------------------|------------------|
| • DWRHWM 40 person months | |
| • DARD, 6 provinces of 2 staff | 72 person months |

Meeting room in MARD

Workspace for Government staff in DWRHWM and participating provinces

Costs of provincial staff for fieldwork for registration and licensing in provinces

3.4 Assumptions and Risks

MARD will provide competent and trainable staff

MARD will approve and issue decisions

Provinces are willing to participate in testing of registration and licensing

4. Implementation Arrangements

International TA will be contracted and administered by MoFA Danida in accordance with KR-rules. National TA will be contracted by the SMU and together with operating costs funded under the decentralised budget.

GEUS, Geological Survey of Denmark and Greenland will provide the international TA under supervision of the Subcomponent Management Unit. Consultants will be mobilised according to demand. Each input will be subject to short detailed TOR specifying objective, outputs and work program.

The Subcomponent Management Unit under a separate contract will contract national Technical Assistance Technical Assistance.

In case the training course on registration and licensing is outsourced, the Subcomponent Management Unit under a separate contract will contract the training provider.

A team of four consultants will provide the International Technical Assistance:

- Mr. Alex Sonnenborg, Ground Water Management Specialist,
- Mr. Jens Stockmarr, Legal and Ground Water Specialist,
- Mr. Per Rasmussen, Geohydrology Specialist and GIS and Database Manager,
- Mr. Per Nyegaard, GIS and Database Specialist.

- Dr. Jens Chr. Refsgaard will act as home based QA support.

National consultants will be recruited by advertising in the open market and nomination by DWRHWM.

5. Timing and reporting

The International Technical Assistance will be provided during 2002 as follows:

		2002												
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Draft Decree on Registration and Licensing													
2	Draft Decree on Licensing of Drilling Companies													
3	Regional Workshops													
4	Database and Management Information System													
5	Training Course in Registration and Licensing													
6	Guidelines on Registration and Licensing													
7	Action Plan for Nationwide Implementation													
8	Revised Decree and Workshops for its Dissemination													

6. References

1. Water Sector Institutional Assessment Study. MARD & Danida, February 1999.
2. SPS Document for Water Sector Program Support, Vietnam. Danida, April 2000.
3. Component 1 Document: Support to Capacity Building in Water Resources Management at National Level. Danida, April 2000.
4. WaterSPS Sub-component 1.1 Inception Report. Initial Planning. PEM Consult, August 2001.

5. National Water Resources Council. MARD and ADB TA-2871. February and March 2000.
6. Licensing of Surface Water Extraction. MARD and ADB TA-2871. April 2000.
7. Water Resources Management Policy. Danida, 2000.
8. Water Supply and Sanitation Policy. Danida, 2000.
9. Report on a Mission to Vietnam. M. Solanes, Global Water Partnership, January 2002.

lh,TSA.2 21/2/02.

Annex 2 Addendum to TOR for GEUS, September 2002

Danida Ref. No. 104.Vie.814-5
19 September 2002

**Addendum to Terms of Reference
for
Technical Assistance
to
Implementation of Law on Water Resources
Registration and Licensing of Ground Water Use
provided by
GEUS, Geological Survey of Denmark and Greenland**

1 Introduction

In order to respond to progress and changes in demand from Department of Water Resources and Hydraulic Works Management the Management of Subcomponent 1.1 Support to Law on Water Resources wishes to modify the Terms of Reference for assistance provided by GEUS, Geological Survey of Denmark.

2 The Technical Assistance

2.1 Objective

The objective of the TA remains:

“MARD DWRHWM assisted to develop the legislative and administrative framework for sound management of ground water resources for sustainable social and economic development”

The immediate objective of the TA:

“MARD DWRHWM assisted to develop, test and introduce decisions and guidelines on the organisation and procedures for registration and licensing of ground water use at central, river basin and provincial levels”

is supplemented with a second immediate objective:

“MARD DWRHWM assisted to formulate policy, strategy, action plan and Government decree on groundwater management in Vietnam”

2.2 Outputs, Activities and Tasks

The original outputs, activities and tasks remain, but activity 5 is reduced in scope and two additional activities included as number 9 and 10 below:

1. *Prepare Draft Decision on Registration and Licensing of Ground Water Abstractions*
2. *Prepare Draft Decision on Licensing (Authorisation) of Drilling Companies*
3. *Prepare Materials for Regional Workshops for Introduction of the Draft Decision (Special Session during Workshops for Dissemination of Law on Water Resources)*
4. *Prepare Database and Management Information System on Ground Water Abstractions operating within DWRHWM and selected Provinces*
5. *Prepare ~~and Conduct~~ Training Course in Registration and Licensing*
6. *Prepare Guidelines on Registration and Licensing*
7. *Prepare Action Plan for Nationwide Implementation*
8. *Revise Decision and prepare Workshops for its Dissemination*
9. ***Prepare Draft National Policy, Strategy and Action Plan for Groundwater Management in Vietnam***
10. ***Prepare Draft Government Decision / Interministerial Circular on Ground Water Management in Vietnam***

Activities 1 – 6 are at this stage considered completed by the Consultant. Activity 7 –10 will be initiated under the existing contract for 2002, and completed under an addendum to contract for 2003.

The scope of work, activities, tasks and assumptions related to activity number 9 and 10 are summarised in the table below.

No.	Activities and Tasks	Assumptions
9	<i>Prepare Draft National Policy, Strategy and Action Plan for Groundwater Management in Vietnam</i>	Working group of senior staff of DWRHWM available for consultations in accordance with weekly plans prepared by the consultants. Two DWRHWM staff assigned for full-time work with the consultants, as follows: <ul style="list-style-type: none"> • 1 staff from BGWM • 1 staff from BIL
9.1	Review relevant material on water resources policy in Vietnam, such as: <ul style="list-style-type: none"> • National Water Resources Profile prepared under ADB TA-3528, • Surface water allocation paper prepared under ADB TA-2871 	

No.	Activities and Tasks	Assumptions
9.2	Present Danish policies, strategies and action plans for ground water management at 1-day workshop for DWRHWM staff	
9.3	Lead working group in preparation of draft policy document on ground water management	
9.4	Lead working group in preparation of draft strategy document on ground water management	
9.5	Lead working group in preparation of draft action plan on ground water management	
9.6	Present draft policy, strategy and action plan to policy working group under National Water Resources Council	
9.7	Revise draft policy, strategy and action plan	
10	<i>Prepare Draft Government Decision / Interministerial Circular on Ground Water Management in Vietnam</i>	DWRHWM makes adequate staff available for working with the consultants
10.1	Review similar level decisions prepared by MARD	
10.2	Structure decision in close cooperation with DWRHWM Bureau of Ground Water Management and Bureau of Legislation	
10.3	Supervise national staff and consultants preparing draft decision	
10.4	Review and quality assure draft decision	
10.5	Participate in 2 day national workshop on ground water management	

2.3 Inputs

Inputs will be provided under the existing contract between Danida and GEUS. The contract will be amended to enable reallocation of inputs between GEUS staff assigned under the contract (See 3. Implementation Arrangements).

3. Implementation Arrangements

Inputs for activities 9 and 10 will be provided by:

- Mr. Alex Sonnenborg, Ground Water Management Specialist,
- Mr. Jens Stockmarr, Legal and Ground Water Specialist,

In order to provide the said inputs time the corresponding time will be reallocated from:

- Mr. Per Rasmussen, Geohydrology Specialist and GIS and Database Manager,
- Mr. Per Nyegaard, GIS and Database Specialist.

The inputs will be provided during 2 visits to Vietnam, each of three weeks duration. The first input will take place in September – October, the second upon request of DWRHWM.

The inputs will require reallocation of approximately 35 working days in Vietnam.

In addition 5 working days in Vietnam will be reallocated for ad-hoc assistance from home office.

Hanoi, 19th September 2002

Le Duc Nam
National Project Director

Lars Skov Andersen
CTA

Annex 3 Draft Decision on 'Registration and licensing of groundwater exploration and groundwater abstraction, and licensing (authorisation) of drilling companies

DRAFT

DECISION OF THE MINISTER OF AGRICULTURE AND RURAL DEVELOPMENT

On the promulgation of "the Regulation on issuance of permits for groundwater exploration and groundwater abstraction, and licence for practising groundwater drilling"

THE MINISTER OF AGRICULTURE AND RURAL DEVELOPMENT

- Pursuant to the Law on Water Resources No 08/1998/QH10 promulgated on 01 January 1999 and Decree No 179/1999/ND-CP dated 30 December 1999 of the Government stipulating the implementation of the Law on Water Resources.
- Pursuant to Decree No 73/CP dated 01 November 1995 of the Government stipulating functions, duties, power and organisational structure of the MARD;
- Pursuant to Decision No 354/TTg dated 28 May 1996 of the Prime Minister stipulating functions, duties, power and organisational structure of the Department of Water Resources and Hydraulic Works Management under the MARD;
- On the proposal of the Director General of the Department of Water Resources and Hydraulic Works Management,

DECIDES

Article 1: To promulgate in attachment with this Decision "**the Regulation on issuance of permits for groundwater exploration and groundwater abstraction, and licences for practising groundwater drilling**" to be applied uniformly throughout the country.

Article 2: This Decision shall replace Decision No 357 NN/QLN/QD dated 13 March 1997 and has an effect after 15 days since the signing date. Previous regulations on issuance of groundwater exploration and abstraction permits inconsistent with the Regulation promulgated with this Decision shall be repealed.

Article 3: The Head of MARD's Administrative Office, the Director of MARD's Department of Water Resources and Hydraulic Works, People's committee of provinces and cities directly under the central authority, organisations and individuals engaged in groundwater exploration, abstraction and practising groundwater drilling shall have the responsibility to implement this Decision.

Destinations:

- *Office of the Government*
- *Vice Ministers,*
- *MOI, MOC, MOSTE, MPI, MOF,*
- *Government's Clean Water Committee*
- *PC of provinces and cities under central authority*
- *DOSTE 's of provinces and cities under central authority*
- *DWRHWM-MARD*
- *Legal Department – MARD*
- *CERWASS – MARD*
- *Official gazette, retained at MARD Office*

**MINISTER OF AGRICULTURE
AND RURAL DEVELOPMENT**

Le Huy Ngo

**MINISTRY OF AGRICULTURE
AND RURAL DEVELOPMENT**

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

Hanoi, 04 of October 2002

DRAFT

Regulation on issuance of PERMITS for groundwater exploration and groundwater ABSTRACTION, and licence for practising groundwater drilling
(Promulgated in attachment with Decision NoQD/BNN-QLN dated . . . of . . . 2002 of the Minister of Agriculture and Rural Development)

CHAPTER I

General provisions

Article 1. Objectives of the Regulation:

- Sustainable planning, management and use of the groundwater resource;
- Priority to domestic water supply to all inhabitants;
- Protection of the groundwater resource;
- Quality control of the groundwater resource;
- Management of practising groundwater drilling.

Article 2- Subjects to the Regulation

This regulation deals with the conditions to be granted with permits, procedure and issuance of permits for groundwater exploration and groundwater abstraction, and licence for practising groundwater drilling (excluded mineral and thermal water) over the whole country.

Organisations and individuals, hereafter called holders, are allowed to do groundwater exploration, abstraction and/or practising groundwater drilling only if they have gained the permits and maintain all the necessary required conditions during the whole permit duration.

Article 3 - Definitions

For the purpose of this Regulation, the following terms shall have the respective meanings scribed to them as follows:

1. The "State Water Management Agency belonging to the MARD" is the Department of Water Resources and Hydraulic Works Management (DWRHWM) under the MARD.
2. The "Local Water Management Agencies belonging to the Provincial People's Committees (PC) are the Departments of Agriculture and Rural Development (DARD) or Departments of Agriculture and Forestry under the provincial PC.
3. The "Local Water Management Agencies belonging to the DARD or Department of Agriculture and Forestry" are the Branch Department of Water Resources and Hydraulic Works Management (BDWRHWM), or Branch Department of Water Resources Management and Flooding-Storm Prevention and Protection (BDWRM&FTPP), or Branch Department of Water Resources Management,

Flooding-Storm Prevention-Protection and Rural Water Supply
(BDWRMFTPP&RWS).

4. "Groundwater" is natural water, which occurs and flows in the underground and may emerge on the land surface as springs and in wetlands and river and lake bottom.
5. "Groundwater abstraction rate" is the amount of groundwater that is abstracted from a groundwater abstraction facility per unit of time, in m³/day.
6. "Groundwater abstraction facility" is one or several drilled wells, dug wells, intake galleries, caves, or springs in a specified land area delivering water to the same waterworks of one owner.
7. "Well-field" is a group of bored wells located within a certain area delivering water to the same waterworks of one owner.
8. "Groundwater abstraction area" is an area where groundwater abstraction facilities are located, including the area where the groundwater level is lowered due to the pumping of the groundwater from the abstraction facility.
9. "Groundwater investigator or exploiter applicant" is an individual, organisation or company being applying for a groundwater exploration, abstraction permit.
10. "Groundwater investigator or exploiter" is an individual, organisation or company being legal holder of a groundwater exploration or abstraction permit.
11. "Groundwater drilling company" or "constructor of groundwater exploration or abstraction facilities" is an individual or organisation authorised by the State or the Provincial People's Committee to practice groundwater exploration or construction of groundwater abstraction facilities.
12. Size of groundwater abstraction facilities is classified as follows:
 - + Large scale groundwater abstraction: facility capacity is more than 5,000 m³/day;
 - + Medium scale groundwater abstraction: facility capacity is within 1,000 - 5,000 m³/day;
 - + Small scale groundwater abstraction: facility capacity is less than 1,000 m³/day.
13. "Groundwater exploration" is the utilisation of different geological methods for evaluation and determination of water resources' quantity and quality and environmental impact caused by the groundwater abstraction in a given area serving the design of groundwater abstraction facility with a specified capacity.
14. "Combined exploration-abstraction" is such groundwater exploration in which some of the investigation wells are constructed as production wells and they will be developed for production.
15. "Exploration abstraction" is groundwater exploration in which the construction of planned abstraction wells of the future abstraction facility and testing abstraction from those wells are carried the wells.
16. "Groundwater monitoring" is regularly repeated data collection on groundwater level, abstraction, quality, etc. and their prediction both in time and space through the monitoring facilities such as wells, springs, water caves etc.
17. "Special areas" are such areas where the socio-economic development has high groundwater requirement. The groundwater abstraction may be higher than the permissible level and may cause groundwater degradation or other negative phenomena such excessive land subsidence, salt intrusion etc.

18. "Simple hydrogeological condition area" is an area, which has all of the following conditions:
 - Simple geological structure, the number of aquifers is not more than two, the bedding is horizontal or monotone deeping, the depths of the tops and bottoms and lithological compositions, permeabilities are relatively homogeneous and clear boundary conditions.
 - The recharge sources, the abstraction resources forming components and the interaction between the aquifers are easy to be quantitatively determined, the water quality is satisfactory for the use purpose and little changes in space and time.
19. "Complicated hydrogeological condition area" is an area, which has not been satisfied with the conditions given in clause 18.
20. "Groundwater well drilling" is hand drilling, handicraft drilling or mechanical drilling for the purpose of prospecting, exploration, and abstraction of groundwater, dewatering of mines, construction works, construction of groundwater monitoring networks and groundwater artificial recharge.
21. Hand drilling is drilling carried out by hand in soft porous rocks with diameter less than 60 mm.
22. Handicraft drilling is drilling carried out by rudimentary machine with diameter up to 110 mm.
23. Machine drilling is drilling by an industrially produced drilling machine for construction of all types of hydrogeological wells serving different hydrogeological purposes such as groundwater prospecting, exploration or abstraction etc. The drilling depth and diameter depend upon the machine's technical specifications: the depth may be up to 500m or greater, the diameter may be up to 500mm or larger.

Article 4 - Subjects to permitting groundwater exploration or abstraction and drilling practicing licensing

1. Subjects to permitting or licensing:
 - a. Anyone who implement groundwater exploration, groundwater abstraction for any purpose in relation to groundwater, any case, except for those specified in this Article, clause 2, must have permit.
 - b. The groundwater dewatering required during the construction or excavation of construction materials must also be applied for permit. Groundwater abstracted in such cases must be used for socio-economic needs or for recharge of groundwater or surface water, but the water quality must meet the corresponding requirements.
 - c. Anyone who drill groundwater wells must have licence.
 - d. Owners of groundwater abstraction facilities that wish to expand the facilities to larger abstraction or change the using purpose must apply to the permitting agency for amendment of content of the permit.
 - e. Holders of groundwater drilling licenses who wish to change the activity territory, change the drilling types or expand the license's duration must apply to the competent permitting agency.
2. Subjects that do not need a permit of groundwater abstraction:

- a. Families that have or want to establish a small scale groundwater abstraction within one household for the purpose of domestic use, garden, forestry, aquaculture production, small industry and handicraft and other purposes but without carrying on business shall, with exception for point b, not apply for a permit, but if the abstraction is based on a drilled well the family must be registered as mentioned in clause 3 of Article 4.
 - b. The owners of groundwater abstraction system does not need applying for reconstruction of the abstraction facilities if such works do not change the content of the permit. However they are requested to report such reconstruction to the permitting agency not later than one month from the work's completion.
 - c. The Provincial PC may specify the size of family small scale drilling and abstraction for each of the above purposes according to the guidance of the MARD.
3. All groundwater exploiters under the category to apply for permit who still have no permit shall undergo the application procedure according to the Regulation within one year after the Decision on the promulgation of this Regulation comes into effect. If any exploiter fails to apply for permit he shall be deemed to exploit in illegal condition and shall be treated as mentioned in Law on administrative sanction or suspended from groundwater abstraction.
 4. Solutions to permits or licenses granted prior to the effective dated of the Decision: Those who in the priority period of issuance date of this regulation are holders of permits for groundwater exploration or abstraction, or license on groundwater drilling shall continue to use this permit/license and it is not in conflict with this regulation up to valid days. After the final date of the permit/license, those who wish to operate shall apply for a new permit/license.

Article 5 - Authority and responsibility for registering and permitting groundwater exploration or abstraction, and licensing groundwater drilling

1. Application document assessment:
 - a. For applications, which according to this Decision is under the jurisdiction of the MARD, the State Water Management Agency shall have the responsibility to receive application documents, check and appraise them to submit a draft permit or licence to the MARD's Minister for proposed issuance.
 - b. For applications, which according to this Decision is under the jurisdiction of the Provincial PC, the Local Water Management Agencies shall have the responsibility to receive application documents, check and appraise them to submit a draft permit or licence to the chairmen of the Provincial PC for proposed issuance.
2. The authority for permitting and revoking for groundwater exploration and abstraction is defined at the Clause 5, Article 9 of the Decree No. 179/1999/ND-CP dated 30/12/1999 of Government for implement Law on Water Resources as follows:
 - a. The MARD has authority to:
 - Regulate, issue and revoke groundwater abstraction permits for Governmental approved waterworks and centralised groundwater abstraction facilities with abstraction of 1,000 m³/day or more.

- Issue or withdraw the groundwater drilling licences in competence within the whole country.
 - Carry out management and observation of the permitting and licensing made by the provincial PC.
 - Lead the Provincial PC having the above areas to stipulate specifically the abstraction levels used for classifying the permit issuance in special area.
- b. The Provincial PC has authority to:
- Issue, extent, amend and revoke groundwater exploration and groundwater abstraction permits for small scale groundwater abstraction facilities with abstraction less than 1,000 m³/day.
 - Issue or withdraw permits or licences in competence within the provinces themselves.

Article 6 – Rights and responsibilities of groundwater exploration, abstraction and drilling licensing agencies

1. Receiving, assessing and managing the application documents. Informing the applicants to submit insufficient documents if the application documents are not sufficient. Guiding the organisations and individuals who are involving on the groundwater exploration, abstraction and drilling to follow the application procedure regulated in this Regulation.
2. Issuing new permits, amending the contents and expanding the duration of the existing permits of groundwater exploration, abstraction and drilling. Informing the applicants the reasons for not issuing the permits.
3. Receiving the licensing fee and using part of the fee the works on consideration and appraisal of the permits, saving the application documents, inspection and treatment of violations. The utilisation of the fee is in accordance with the existing regulations by the Ministry of Finance.
3. Inspecting the utilisation of the permits and the implementation conditions specified in the groundwater exploration, abstraction and drilling permits.
4. Warning the permit holders, suspending or withdrawing the groundwater exploration, abstraction and drilling permits in case if the permit holders have violated the requirements.
5. Requesting the competent agencies to treat the violations in regarding with this Regulation.

CHAPTER II

Permits for groundwater exploration and abstraction

Article 7 – Groundwater exploration stage specification

Combined groundwater exploration and abstraction is allowed to be carried out in the following cases:

- The groundwater target abstraction is less than 100m³/day.
- The groundwater target abstraction is from 100m³/day to 2,000m³/day and simple hydrogeological conditions.

– The groundwater target abstraction is from 2,000m³/day to 15,000m³/day and the hydrogeological condition of the area has been thoroughly investigated in such level that the aquifer thickness, lithological composition, aquifer parameters, recharging conditions and boundary conditions have been determined, what is equivalent to the hydrogeological map of scale 1/25,000.

In case the groundwater target abstraction is greater than 15,000 m³/day the exploration and construction of the abstraction facility shall always be in separate stages on exploration and construction of abstraction wells, respectively. The construction of the planned abstraction wells in the exploration abstraction stage is permitted to be carried out only after the report on the exploration has been approved by the competent authority .

Hereafter all the exploration types shall called "exploration" or will be written in full text if it is required.

Article 8 - Principles for permitting groundwater exploration

The permitting of groundwater exploration shall based on the following principles:

- Water demand of the applicant;
- Existing results of the basic hydrogeological investigation and existing identification of the exploration object;
- Exploration areas shall correspond to the plan of groundwater abstraction, development and protection in these areas;
- Existing results of the former groundwater exploration projects of competent management authority level;
- Assessment of the project results made by the competent management agency.

Article 9 - Principles for permitting groundwater abstraction

The issuance of groundwater abstraction permit must be based on the following principles:

- Good quality groundwater should be supplied in the first priority for drinking and domestic purposes, for food and pharmaceutical product processing, only the remaining part shall be supplied for other purposes.
- The amount of groundwater to be exploited in an area shall not exceed the sustainable exploitable reserve of that area, at the same time the abstraction shall conform to the annual groundwater abstraction plan and the general groundwater abstraction plan of the area.
- Groundwater abstraction in areas where the groundwater abstraction has exceeded the specified rate without artificial recharge shall be strictly permitted.

Article 10 - Documents required for permitting groundwater exploration

Application documents for groundwater exploration permits comprise of:

1. Application for groundwater exploration permit (Annex 1a,b,c).
2. Groundwater exploration proposal (Annex ... guiding the proposal making).
3. Official letter of the respective PC agreeing and allowing the use of land for exploration and construction of wells in the area within its administrative territory.
4. Written agreement from the MARD or Provincial PC on the construction of water supply facilities (based on groundwater).

5. Other related legal documents concerning ground-water exploration and abstraction proposal.

Article 11 - Documents required for permitting groundwater abstraction

Application documents for groundwater exploration permits or combined exploration and construction of abstraction wells permit content:

1. Application for groundwater abstraction permits (Annex 2).
2. Groundwater abstraction project proposal.
3. Report on combined groundwater exploration and exploration-abstraction or exploration-abstraction, which has already been approved.
4. Groundwater abstraction facilities location plan at 1: 25,000 scale.
5. Results of analysis and evaluation of groundwater quality by Department of Health or competent health agency or laboratory certified by a competent agency as meeting the requirement for practising analyses.
6. Notarised copy of land use right certificate for the land where the wells are located. If the land where the wells are located is not under the land use right of the exploiter, there must be agreement in writing on land use right between the exploiter and the legal land user certified by the local PC.
7. Other related documents serving as the basis for issuing permit, e.g. legal document concerning the waterworks investment and accepted document by the local authority concerning the building of groundwater abstraction facility etc.

Article 12 - Application procedures for groundwater exploration and abstraction

1. Application submission: Anyone who wishes to carry out groundwater exploration or abstraction has the right to submit complete required documents as mentioned in Article 10 and 11 to the Local Water Management Agency.
2. Demand for additional documents: In the case the applicant's documents are not complete as required, or do not obey procedure, the competent agencies may require the applicant to complete documents before examination and approval. The demand for additional document requirements shall be announced to the applicant at once or at the latest 15 days after receiving applicant's documents. The requirements for additional documents must clearly indicate the data and information and deadline date to be submitted for completeness of application.
3. Application sorting: competent agencies shall sort the applications and make solution under their authority. The applications for exploration, abstraction permit with the target of 1000m³/day or more shall be forwarded to BWRMHW-MARD within one week counted from the date of receiving the full set of application documents.
4. Appraisal of application documents: After receiving the application for groundwater exploration, abstraction, the State or Local Water Management Agency, according to the jurisdiction allocated to them, shall have the responsibility to examine the application, check the site situation, evaluate the size of groundwater resource in conjunction with other potential applications, appraise or organise the appraisal of the application documents and prepare the permit proposal. The final draft permit of the exploration, abstraction or decision to refuse permit is then sent to the MARD or the Chairman of the Provincial PC for approval and issuance.

5. Public announcement:
 - a. The announcement about the issued exploration works must be sent by the licensing authority to the local PC who shall inform the local people for acknowledgment before the works began.
 - b. The application for an abstraction permit to near-by exploiters shall be executed by the permitting authority with a deadline of no less than 21 days to comment on the application.
6. Deadline of appraisal: Within two months from the date of receiving in full the groundwater exploration application documents, the Water Management Agency shall have the responsibility to examine, appraise and prepare the documents to submit to the competent authority for decision. In the case if it is necessary to extend the term it might be decided by the Agency, but it shall not exceed three months. If the documents are not acceptable, the issuance agency shall reply in writing, explaining clearly the reasons to the applicant.

Article 13 - Rights and obligations of the holder of an exploration permit

1. The rights:

- a) The holder has the right to carry out exploration work exactly in accordance with the approved proposal.
- b) The holder has the right to apply for amendment of the permit's content and for extension.
- c) The holder has the right to complain to the court about organisations or individuals who are obstructing the approved exploration works.
- d) The holder has the right to transfer the exploration results to the other parties.
- e) The holder has the right to have the financial compensation for the actual lose due to revoking the permit before the expiry date in case of national defence security, common national and public profit in accordance with the existing law.
- f) The holder has the right to transfer the exploration results to the other parties.

2. The obligations:

- a) To follow the regulations on protection of groundwater resources, technical specifications and other related laws;
- b) The explorer shall have the responsibility to co-operate, assist and provide truly the information on the results of the exploration when the Water Management Agency inspects the status of the exploration.
- c) When the exploration has been completed, the explorer shall have the responsibility to submit the report on the results of exploration to the Water Management Agency for appraisal and approval of the results according to the existing corresponding regulation. The report and data must be kept in the National archive system in accordance with the law.
- d) Receiving the permit the holder must pay a groundwater exploration permit fee and other administrative fees in accordance with the law.

Article 14 - Rights and obligations of the holder of an abstraction permit

1. The rights:

- a) The holder has the right to carry out groundwater abstraction according to the permit.
- b) The holder has the right to apply for amendment of the permit's content and for extension.

- c) The holder has the right to complain to the court about organisations or individuals who are obstructing or interfering with the approved abstraction.
- d) The holder has the right to have financial compensation for the loss due to the revoking the permit before the expiry date in case of national defence security, common national and public profit in accordance with the existing law.
- e) The holder has the right to transfer the abstraction permit together with the abstraction facility.

2. The obligations:

- a) To follow all regulations stipulated in the permit and regulations on protection, abstraction and rational utilisation of the groundwater resources;
- b) To install flow meter, piezometer for water level measurement, carry out water quality analysis and annual report on the amount of water exploited, on the water level, and the water quality to the corresponding water resources management agency.
- c) The groundwater exploiter with the capacity equal to 5,000m³/day or more must construct groundwater monitoring wells and carry out the groundwater monitoring;
- d) The exploiter shall have the responsibility provide truly and completely the related information on the status of groundwater abstraction when the Water Management Agency inspects the status of the abstraction;
- e) ®. The exploiter shall have the responsibility to report in time to the Water Management Agency when a major change in water quantity, quality and related environment is discovered.
- f) To adjust the abstraction pumping rate according to the requirement of the Water Management Agency when the groundwater is severely degraded and during the drought seasons.
- g) To pay groundwater abstraction permit fee and other financial duties.
- h) To compensate for damages due to groundwater abstraction.
- i) To report to the licensing agency about the stopping groundwater abstraction at least 30 days after the date of complete stopping abstraction.

Article 15 - Duration of permits

1. The maximum duration of permits for exploration is 36 months. The Water Management Agencies decide concrete permit duration in accordance with the conditions of the area for each exploration proposal.
2. The maximum duration of abstraction permit is 15 years. The Water Management Agencies decide specific duration of permit in accordance with the conditions of the area for each abstraction proposal.

Article 16 - Amendment and extension of the groundwater exploration permits

1. Amendment to a permit:
 - The proposed work quantity or exploration method is not found to be due to relatively great difference between the actual geological

conditions and the expected conditions, the land conditions do not allow to carry out some works so that new locations must be used.

- In case if the work quantity and exploration methods are to be changed more than 10% of that have been approved, the permit holder has to apply for such amendment. The requesting letter must state the work volume and methods to be amended. The amended works and methods are to be carried out only after the written agreement has been issued by the licensing agency.
2. Extension of the permit: In the case that the exploration time shall be extended, the explorer shall apply to extend duration of permit before the expiry of the existing permit. Explanation letter for the reason of extension must be supplied. The maximum extension time is 6 months.
 3. Other changes of content of the permit, except mentioned in clause 1 of this Article, the explorer shall apply for new permit.

Article 17 – Amendment and time extension of the abstraction permit

1. Amendment of the groundwater abstraction permits:

a. The MARD, provincial PC in accordance with its competence may decide to lower or limit the groundwater abstraction rate of a groundwater exploiter's permit when one of the following circumstances occurs:

- For natural reasons (excessive droughts) the groundwater resource become insufficient to meet the normal water supply of the area.
- The groundwater abstraction is excessive, causing land subsidence or serious pollution of groundwater resource.
- The total amount of groundwater water abstracted for the public demand increases without any other supplementary water sources or other measures.

b. The exploiter shall apply to amend the permit when he/she wishes to change the permit's contents.

c. When the pumping rate is increased not more than 10% of the permitted discharge and within the levels to be issued by the same competent agency. If the new pumping rate to be applied for is more than 10% of that has been granted initially, a new permit needs to be applied for.

d. If the new pumping rate is to be decreased not more than 10% of that has been granted, no application is required, however the permit holder has to report to the licensing agency.

2. Time extension: The groundwater exploiter must apply for the permit extension three months before the permit's deadline if he/she wishes to continue the abstraction. The maximum extension time is ten years.

Article 18 - Withdrawal of groundwater exploration and abstraction permits

Revoking procedure may be initiated for groundwater exploration or abstraction permits in the following circumstances:

1. The permits have been issued by incompetent agency.
2. Those who implement the groundwater abstraction seriously violate the defined contents of the permit.
3. The holder of the permit is disbanded, transferred or announced to go insolvent.

4. The exploration permit holder has not been doing any work in 1 year without proper reason.
5. The groundwater abstraction is found to have unforeseeable negative impact on the land and water environment, such as land subsidence, saline intrusion, pollution, etc.
6. When Juridical authorities consider that revoking the permit is necessary for national defence, security or the national or public benefit.

CHAPTER III

Licensing for groundwater drilling practising

Article 19 - Conditions for applicants for licences

1. Those who are practising groundwater well drilling must have sufficient technical capability comprising technical personnel and equipment ensuring good implementation of the registered works. The professional capacity requirements for key technical staff are stipulated as follows:

– For hand drilling and handicraft drilling (rudimentary drilling machine) the main person with technical responsibility shall have the minimum qualification as a secondary geological school graduate, with at least one year of working experience, or highly qualified technical worker equivalent the grade 3/7 and with at least 3 years of working experience in this field, capable to design and supervise the construction of drilled wells, understanding technical matter, structure of water well and protection of groundwater.

– For groundwater prospecting, exploration and abstraction mechanical drilling, the Project Manager of the company shall have the minimum qualification as a senior engineer in geological fields capable of preparing exploration proposals and design abstraction well systems, supervise the implementation of exploration and abstraction drilling works, write exploration reports, evaluate groundwater reserves and have good understanding of the regional hydrogeology and groundwater protection.

The Manager of groundwater exploration and abstraction construction projects of medium and large scales shall be nominated in writing decision by the competent Head of the unit.

Equipment for drilling implementation shall ensure specifications according to the existing regulations.

Article 20 - Documents required for licensing groundwater drilling practising

The documents to apply for drilling licence shall comprise:

1. Application for the registration of drilling practice (Annex 4).
2. Statement of the staff and equipment of the unit (Annex 5).
3. Establishment business license of the drilling unit signed by the competent authority
4. Degree certificates (notarised photocopies) on professional education and training and curriculum vitae of the Director and key technical staff.

Article 21- Application procedure for licensing groundwater drilling

1. The application receiving agency shall receive, register and sort the applications and consider and appraise such applications under its authority. Within a week counted from the date of receiving full applications, applications for more than one province shall be forwarded to the MARD.
2. The Water Management Agency has the responsibility to examine and appraise the application documents and submit them to the MARD'S Minister or to the Chairman of the Provincial PC, respectively, for proposed approval and issue the drilling licence.
3. Appraisal deadline: If the application documents are complete and appropriate, not later than 30 days from the date of receiving the application documents the Water Management Agency shall submit to the proposed permit to the MARD or to Provincial PC for approval and issue.

Article 22 - Rights and obligations of the holder of a licence

1. To carry out groundwater drilling in accordance with the license.
2. The holder of the groundwater drilling license has the following obligations:
 - a) To obey all regulations on groundwater and environment protection during the works;
 - b) Not to carry out exploration and groundwater abstraction drilling for projects and facilities not yet covered by exploration or abstraction permit;
 - c) To send annual report on the drilling in accordance with a given form to the relevant Water Management Agency;
 - d) To pay groundwater drilling licence fee and other administrative fee in accordance with the law.

Article 23 - Duration, amendment and time extension of groundwater drilling licenses

1. Maximum duration of a licence is three years.
2. The holder of a groundwater drilling license who wishes to change the permitted drilling area, drilling types, must submit application documents to the competent licensing agency
3. The holder of groundwater drilling license must apply for the permit extension one month before the licence's deadline if he/she wishes to continue the groundwater drilling practise. The maximal extension time is three years.

Article 24 - Withdrawal of groundwater drilling licenses

The drilling licenses of the organisations or individuals may be withdrawn in the following circumstances:

1. The holder of the groundwater drilling licence seriously violates the defined contents of the licence or recent regulations on development and protection of groundwater resources and environment.
2. Licence is not juridicially valid;
3. The holder of the groundwater drilling licence is disbanded, transferred or announced to go insolvent.

CHAPTER IV

Data base and periodical report

Article 25 - Management database of the permits and license

1. All the application materials for groundwater exploration and abstraction permits and drilling licenses must be stored at competent water resources management agency.
2. All the groundwater exploration and abstraction permits and drilling licences must be entered at the registration book or database at the local water resources management agency.
3. The following regulations are required for ensuring the common government management of permits and licenses:
 - a) All groundwater exploration and abstraction permits and drilling licenses issued by the chairmen of pPC must be informed to DWRHWM-MARD.
 - b) All groundwater exploration and abstraction permits and drilling licenses issued by the MARD's minister must be informed to DARD/BWRHWM-pPC.
 - c) All the application materials for groundwater exploration and abstraction permits and drilling licenses must be stored in the national database.

Article 26 - Supply of periodical report, information

1. The holder of a permit to explore for groundwater, abstract groundwater or practice groundwater drilling shall submit annual report on status of exploration, abstraction or groundwater drilling to the competent permitting/licensing agency.
2. The local water resources management agencies under the DARD send the groundwater exploration, abstraction and drilling annual report to the local water resources management agencies under the Provincial PC.
3. The local water resources management agencies under the Provincial PC send the groundwater exploration, abstraction and drilling annual report to the State Water Management Agency under the MARD.
4. The data and reports on the groundwater exploration, abstraction and drilling and groundwater planning shall stored at common database for all relevant organisations and individuals be able to access.

CHAPTER V

Control, inspection and settlement of violations

Article 27 - Control and inspection

1. The licensing agencies have the responsibilities on the control and inspection of the utilisation of permits. In the case if individual violates the agencies shall make violation minutes and treat the violation in accordance with the competence or request competent authorisations settle up the violation according to legal regulation.
2. The MARD controls and inspects the implementation of this regulation over the whole country, makes the resolutions to the practical cases, amends this regulation in case of necessity.

3. Provincial PC controls and inspects the implementation of this regulation over the its administrative areas, makes the resolutions to the practical cases and proposes the MARD to amend this regulation in case of necessity.

Article 28 - Violations and settlement of the violations

1. Violations:

- a) Activities not in accordance with the specifications given in the permits and licenses.
- b) The working and operation conditions are not satisfying the specifications given in the permits and licenses.
- c) Still operation while a decision on the closing, dismissing or going insolvent has already been made by the competent agencies.

2. In accordance with the violation magnitudes, the organizations or individuals may have the following treatments: warning, stopping the operation, withdrawal of the permits or licenses. All of those shall be reported to competent agencies to be considered and decided.

3. Competent groundwater exploration, abstraction and drilling licensing officers, who have violated this regulation or other existing relevant regulations, shall be punished in accordance with the violation levels, and pay the compensation in case of causing damage in accordance with the law.

CHAPTER VI

Implementation organisation

Article 29 - Licensing authorisation

1. The BWRHWM-MARD is the state competent agency in the licensing groundwater exploration, abstraction and drilling, extending, amending and withdrawing the permits and licenses that have been issued by MARD.
2. The DARD is the local competent agency in the licensing groundwater exploration, abstraction and drilling, extending, amending and withdrawing the permits and licenses that have been issued by the provincial PC.
3. The local water resources management agencies under the provincial PC have a duty to send annual reports on the groundwater exploration, abstraction and drilling licensing to the MARD before the 30th of November,
4. Provincial PC can based on this regulation design detail local regulations that, however, must not be in contradiction to this regulation.

Minister of MARD

L^a huy Ngä

Annex 4 Status of the legislative framework on groundwater issues

Note on the status of the legislative framework on groundwater issues in implementing Law on Water Resources, Vietnam.

1. Status on Implementing Law on Water Resources.

Vietnam's modern Law on Water Resources has been in force since 1998. The Water Program Sector support from DANIDA is focused on 4 main components dealing with:

1. Capacity Building at National level
2. Rural Water Supply and Sanitation
3. Water Resources Management
4. Urban Water Supply and Sanitation

Implementation of Law on Water Resources is sub-component 1.1 under component 1, Capacity building at National level.

As a start the endeavours have been focused on the legal framework concerning groundwater issues and the experiences from establishing this framework shall subsequently be used for establishing of the corresponding legal framework concerning surface water.

Up to now the efforts have been concentrated on preliminary work including discussions on the necessary databases and application forms and drafting Decision on "Regulation on issuance of permits for groundwater exploration and groundwater abstraction, and license for practicing groundwater drilling" and its associated guidelines as one of the elements in the legal framework of Decisions to be established. The inputs from GEUS on this issue up to now is reported in GEUS visit reports 1-4, 2002.

At the workshop on Ground Water Licensing (Da Nang, July 2002) the following legal framework on groundwater issues was discussed:

1. Inter-ministerial Ordinance / Decree on Groundwater Management and Utilization.
2. Ministerial Decision on Groundwater Planning and Management
3. Ministerial Decision on Groundwater Regulation
4. Ministerial Decision on Groundwater Protection
5. Ministerial Decision on Groundwater Monitoring
6. Ministerial Decision on Groundwater Drilling.

As mentioned MARD / DWRHWM has decided to merge no. 3 and no. 6 in one Decision, which now has been drafted.

2. Decision on “Regulation on issuance of permits for groundwater exploration and groundwater abstraction, and license for practicing groundwater drilling”.

From MARD / DWRHWM the following papers in form of decision and associated guidelines dealing with exploration, abstraction and drilling are now available:

1. Draft Decision of the Ministry of Agriculture and Rural Development on the promulgation of “ the Regulation on issuance of permits for groundwater exploration and groundwater abstraction, and license for practicing groundwater drilling” (latest draft: 2nd October 2002)
2. Guideline on application for groundwater exploration and abstraction permit (Guideline 1 on groundwater exploration and groundwater abstraction)
3. Draft: Guideline on application for drilling license.
4. Draft: Guideline on authority for registration and appraisal of permit and license applications and approvals.

During GEUS visit 4 final quality assurance and recommendations on the draft Decision were produced and discussed with the staff from MARD DWRHWM at a workshop (Ha Long, September 2002).

The principal recommendation arising from the quality assurance by the CTA and international consultant is for a separation of the draft decision into two separate decisions, one on permits regulating the groundwater abstraction and one on licensing of drilling companies. The combination in one decision of the state administration of natural resources and of the regulation of commercial companies conflicts with international practice and the overall legislative framework that has been agreed.

3. Draft Decision on Groundwater Protection.

During GEUS visit 4 the following preliminary draft on “Groundwater Protection Regulation” was forwarded by MARD DWRHWM:

From a preliminary assessment of this document it seems to contain considerations both on protection of groundwater resources against unacceptable pressures and impacts from different socio-economical activities on the land surface above the groundwater resources, and on protecting groundwater resources from technical faults and omissions during the drilling and testing of wells.

In accordance with internal practice it is **recommended**:

- The elaborate and enlarge the considerations about groundwater protection in connection to socio-economical activities mentioned and precautionary measures to be taken, which make up the reasonable and far-sighted basis of the draft Decision on “Groundwater Protection”.
- To transfer and elaborate the elements on protecting the groundwater resource from irregularities in the drilling operation to relevant guidelines drafted for “Decision on regulation of issuance of permits for groundwater exploration and groundwater abstraction, and license for practicing groundwater drilling “.

The socio-economical activities and the precautionary considerations mentioned are:

- Prohibition against location of groundwater abstraction facilities supplying domestic water close to the contamination (or ?) salinization sources, close to protective dikes, rail-ways, large bridges, high buildings.

- Observation of the sanitary and radio-activity specifications in groundwater testing.
- Establishment of sanitary protection zones in groundwater abstraction fields.
- Considerations on monitoring of groundwater and monitoring of the environmental changes connected to groundwater abstraction and reporting of observations.
- Actions to be taken in case of drought, mining of the groundwater resource or negative effect on environment
- Precautionary considerations for wells threatened by flooding.
- Groundwater protection by licensing of discharge of wastewater to aquifers and licensing of spreading wastewater in recharge areas or protection zones for groundwater abstraction.
- Sealing of sewage canals on permeable ground and prohibition of seepage toilets in the suburban areas or near to groundwater abstraction wells.
- Regulations and inspection of the effects or impacts on the environment and the groundwater resource from the pressure from socio-economic activities such as mineral exploration works, mining, construction, soil improvement and waste disposal.
- Assessment of the environmental impact from construction works having effect on the groundwater.
- Handling of wastewater and waste containing toxic matters, disease-causing bacteria from populated areas, hospitals, slaughter houses, industrial areas, chemical industries, and sites polluted with oil and gas or radio-nuclear materials (Currently licensing by the Ministry of Resources and Environment).
- Measures to be taken in excavation and foundation against protection of aquifers.
- Allowance to use short-listed chemical fertilizers and pesticides. In special areas such as abstraction areas without protecting top-layer or areas up-stream groundwater recharge areas the Water Resource Management agency can tighten the rules or prohibit the use of fertilizers and pesticides.
- Establishing of groundwater monitoring for recording the changes or impacts on the groundwater.
- DARD as responsible for Groundwater Resource Management and Protection. Including evaluation of the sustainability of the abstraction rates, determination of areas for protection, leadership for establishing of groundwater monitoring systems and annual reporting and dissemination of the results.
- DOC as responsible for establishment of a monitoring system and annual reporting on ground subsidence caused by groundwater abstraction.

Annex 5 Drafting Policy and Strategy on Groundwater Management and Development

Summary

1. Compared with international experiences the absence in the legislative framework of an formulated and transparent policy or strategy on ground water resources is obvious. The policy / strategy should be based upon LWR and its implementing Decree and promulgated as a **Government Ordinance / Decree on Ground Water Management and Development** and a associated guideline on how to implement the strategy. This is strongly recommended in order to establish the strategical link from the policy stated in LWR and the implementing Decree to the actions regulated by the Decisions. The strategy will state how ground water policy will be carried out and the nearly final Decision on licensing and the other three decisions mentioned will state how the strategy will be transformed into concrete actions. Emphasizing ground water shall not be seen as contradictory to Integrated Water Resource Management as defined by Global Water Partner Partnership, but should be understood as supplement to the Vietnamese tradition for focusing on surface water.
2. It is also highly recommended to accompany each Decision with a time-schedules containing **action plan for its implementation** and obligations for reporting by the involved agencies.
3. The **strategy** associated with the groundwater policies must address the characterization of ground water bodies including the hydrogeological conditions and qualitative and quantitative status of the ground water resources to develop a scientific knowledge based regulation of the ground water resource. The strategy also must address how the knowledge on groundwater and hydrogeology from different ministries and institutions is being used in an co-ordinated way for the benefit of the society. In the characterization also terms of pollution and economics of ground water must be included. The groundwater policy and strategy could advantageously be incorporated in the Draft National Water Sector Profile. Especially knowledge and use of Part 2 of The National Water Profile containing an “Water Atlas” will be important for Integrated Water Resource Management in Vietnam. The “Water Atlas” is expected to make up a valuable basis for management of the water resource and should be further detailed in the future by the water Management Agency.
4. Promotion of the characterization of the ground water bodies will support the transparency of the water policy and enhance other sectors to take responsibility for water protection.

5. Policy and strategy - formulated in accordance with LWR and promulgated as a Government Ordinance / Decree on Ground Water Management and a guideline - must be supported by several other fundamental building stones addressing different elements such as future Decisions on Ground Water Planning and Management, Ground Water Protection and Ground Water Monitoring. All three with associated guidelines specifying the technical details and considerations behind the decision to assure transparency to users and to the public.
6. Concerning **databases** an overall strategy for inter-ministerial access to the relevant databases must be addressed and the obligation of the custodians of the databases must be addressed in Decision on Groundwater Planning and Management. This issue is to be coordinated with the Viet Nam Australia Water Resources Management Assistance Project. Component 2- National Framework for Water Resources Information.

1. Recommendations for establishing a visible superior groundwater policy and strategy.

In approaching Integrated Water Management one of the main challenges for the Water Sector in Vietnam as everywhere will be to handle the institutional changes from the existing traditional fragmented water resource management to a more holistic and integrated concept. This issue is clearly addressed in the Law on Water Resources and is reflected in the construction of the National Water Resources Council. Also the establishment of River Basin Organizations reflects this development. One of the major challenges is to assure that the pre-existing institutions are assisted and challenged to adopt the new concept in addition to the existing traditional values and behaviour.

- Compared with international experiences the absence of a formulated and transparent policy / strategy on groundwater resources in the legislative framework so far completed is obvious. This should be based upon LWR and its implementing Decree and could be promulgated as an Inter ministerial Ordinance / Decree on Groundwater Management and an associated guideline on how to implement this strategy.
- The Strategy is recommended in order to establish the necessary strategically link from the overall policy stated in LWR and its implementing Decree to the actions and measures regulated by the different Decisions.
- The Strategy shall state how groundwater policy will be carried out and the three future Decisions and the nearly final Decision on Licensing on Groundwater exploration, abstraction and drilling will state how the strategy will be transformed into concrete regulations and actions.
- It is also highly recommended to accompany each Decision with a guideline containing a clear action plan for its implementation and obligations, time-schedules and reporting for the involved agencies.

Emphasizing ground water as mentioned shall not be seen as contradictory to Integrated Water Resource Management as defined by Global Water Partner Partnership, but should be seen as supplementary to the Vietnamese tradition for focusing on surface water. Add to this that the regulation on surface water

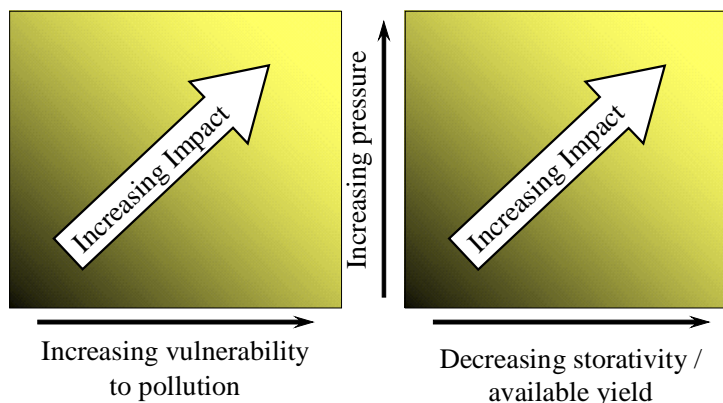
subsequently will be formulated on the basis of the experience from the groundwater issues.

In the case of groundwater the challenges are dealt with in a tight demand-driven dialogue between DANIDA and MARD – DWRHWM. Up to now a final draft on Decision on licensing groundwater exploration, abstraction and drilling is ready for delivery with associated drafted guidelines and MARD – DWRHWM has recently produced the first preliminary draft of the Decision on Groundwater Protection.

- For groundwater case it is recommended that the concept of Integrated Water Resource Management is used in the discussion with MARD – DWRHWM and representatives of relevant Ministries as a frame for the formulation of the Inter Ministerial Ordinance / Decree on Groundwater Management addressing the policy and strategy levels.
- Simultaneously with the discussions and formulation of the Ordinance / Decree the work on the remaining Decisions on monitoring, planning and management and protection should be prepared in MARD- DWRHWM but in clearly agreement and tightly connected to the context and the settings from the Ordinance / Decree on Groundwater Management.
- Especially a clear and distinct definition on the contents in the remaining Decisions and a cross check to ensure that all elements addressed in Law on Water Resources and the coming Ordinance / Decree on Groundwater Management are properly handled in relevant Decision.
- Especially for the Decision on Groundwater Protection and the Decision on Groundwater Planning and Management the attention on inter-ministerial consultations will be important for a successful output.

The Strategy associated to the Groundwater Policy must address :

- The characterization of ground water bodies including the hydrogeological conditions and qualitative and quantitative status of the ground water resources to develop a scientific knowledge based regulation of the use and protection of the ground water resource to assure a balanced and sustainable use of groundwater.
- The strategy also shall address how the knowledge on groundwater and hydrogeology from different ministries and institutions can be used in an coordinated way for the benefit of the society.
- In the characterization also effects from human activities expressed as demand, pollution and impacts and economics of ground water must be included.
- The groundwater policy and strategy could advantageously be incorporated in the National Water Sector Profile. Especially knowledge and use of Part 2 of The National Water Profile containing a “ Water Atlas” will be important for Integrated Water Resource Management in Vietnam. The “ Water Atlas” is expected to make up a valuable basis for management of the water resource and should be further detailed in the future by the water management agency.



- Promotion of the characterization of the ground water bodies will support the transparency of the water policy and support other sectors to take responsibility for water protection.
- Policy and strategy - formulated in accordance with LWR and promulgated as an Ordinance / Decree on Ground Water Management and an associated guideline for its implementation - must be supported by several other fundamental elements such as the planned three future Decisions on Groundwater Planning and Management, Groundwater Protection and Groundwater Monitoring. All three with associated guidelines specifying the technical details and underlying thoughts and considerations to assure transparency to users and to the public.

2. The connection from policy to strategy to action

The Policy statements used worldwide on water resources, including groundwater, in general include following elements of intention:

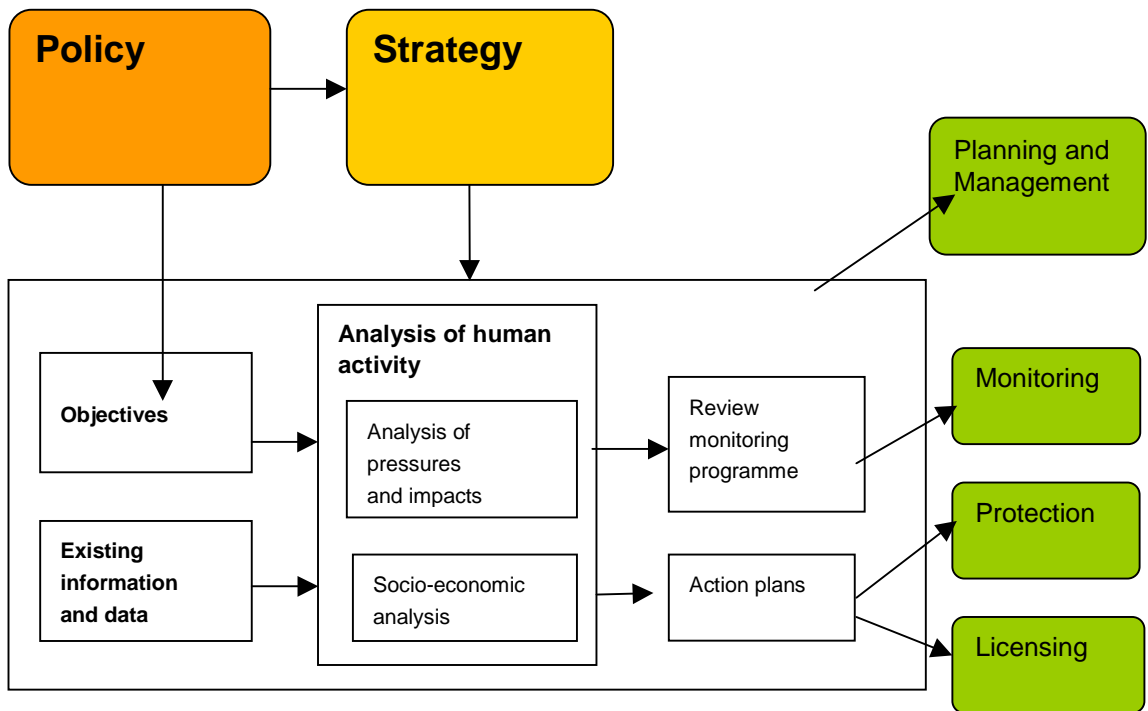
1. Promote sustainable water use based on long term-term protection of available water resources;
2. Prevent further deterioration of the water resource and protect the status of aquatic and terrestrial ecosystems;
3. Progressive reduction of discharges and emissions, that may pollute water sources;
4. Ensure a progressive reduction in pollution of groundwater and prevent its further pollution; and
5. Contribute to mitigating the effects of floods and droughts.

To implement the policy for the Water Resources and to fulfill the intentions stated in the policy it is necessary to formulate a strategy on Groundwater Management, where the principles and some superior considerations on the institutional and technical set-ups are prepared and expressed. The discussions necessary to bridge from policy to expressed strategy will be important for the involved MARD staff to assure a high degree of consensus and for ensuring connection from policy to the actions to be stated in the decisions. An expressed and transparent strategy on groundwater will also support the modern concept of participatory approach and will serve as a

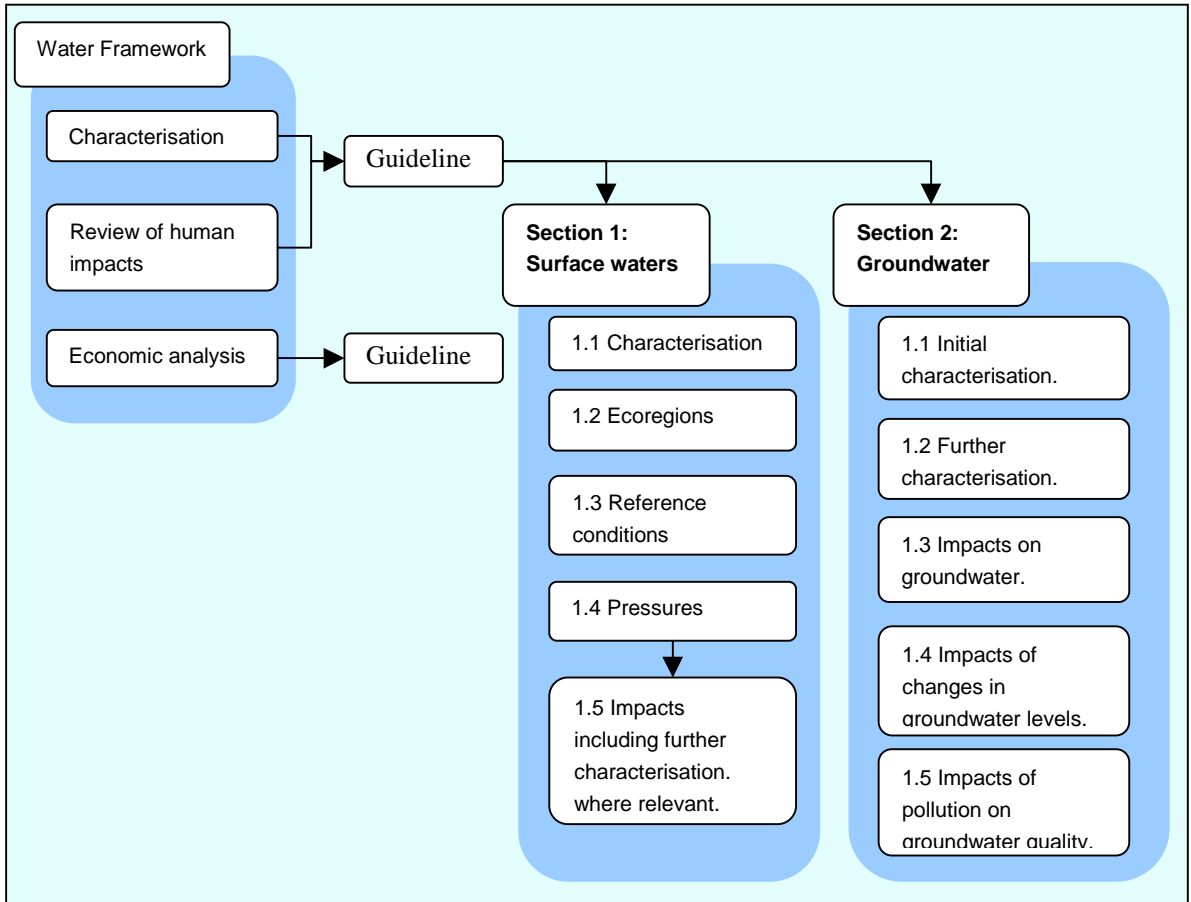
combined overall guide for the regulations and measures to be taken in the subordinate decisions.

- Characterization of the water resources on an appropriate scale including spatial scale and time scale is a decisive condition for conducting groundwater management. The characterization should be reviewed periodically.
- Identifying demands on the groundwater resources and the pollution load is part of the groundwater management.
- Assessment of loads and impacts from the identified pressures from use and pollution is part of the groundwater management. The Groundwater Management Agency must protect the water rights and investments of license holders and the economical benefits for the Society by assuring a sustainable use and protection of the groundwater resources to maintain the defined objectives for water quality and quantity.
- Monitoring contributes to groundwater management with information on the development in quality or quantity of the water resources as a response to the natural conditions and the actual abstractions and pollution of the waterbody in question, and the regulations and measures done (or not done) by the Groundwater Management Agency. On the basis of the results from the monitoring programs the Groundwater Management Agency can undertake the necessary actions to protect the license holder and the environment. These measures are progressively incorporated in the revised plans for groundwater utilization and protection for the area in question. Drafts for revised plans are to be discussed with license holders and the public to achieve acceptance and participation.
- Groundwater protection is a measure with many activities driven by the Groundwater Management Agency and conducted in transparent cooperation with the stakeholders. It includes awareness raising and involvement of other branches important as contributors to the water demand or pollution with unacceptable impacts on the groundwater resource. Groundwater protection is an important tool for defending the rights of license holders to water in sufficient amount and of appropriate quality.
- To conduct groundwater protection the Groundwater Management Agency will need a characterization of the groundwater resources as the basis for protection of the water rights and investments of license holders and for a sustainable development of the water resources.
- To follow the development of the groundwater resource both on spatial scale and time scale the Groundwater Management Agency depends on the input from systematic and reliable monitoring programs. It is not possible to manage groundwater without monitoring data.
- The Groundwater Management Agency must frequently make new investigations and surveys on the geology and hydrology in the area to establish and improve a conceptual understanding of the physical conditions and the amount and flow of water in the area.

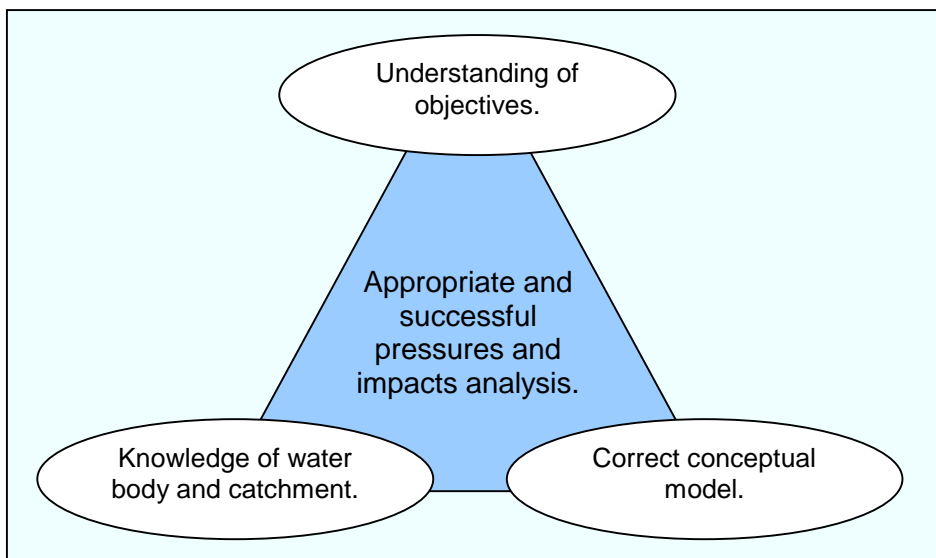
- Estimates on the available amount of water is evidently a decisive issue for the Groundwater Management Agency.
- Licensing of groundwater exploration, abstraction and drilling are some of the regulating tools that the Groundwater Management Agency can use as one of the measures to enforce the superior strategy and policy.



Groundwater Management: – Analysis of pressures and impacts
(Figure partly from EU water framework directive)



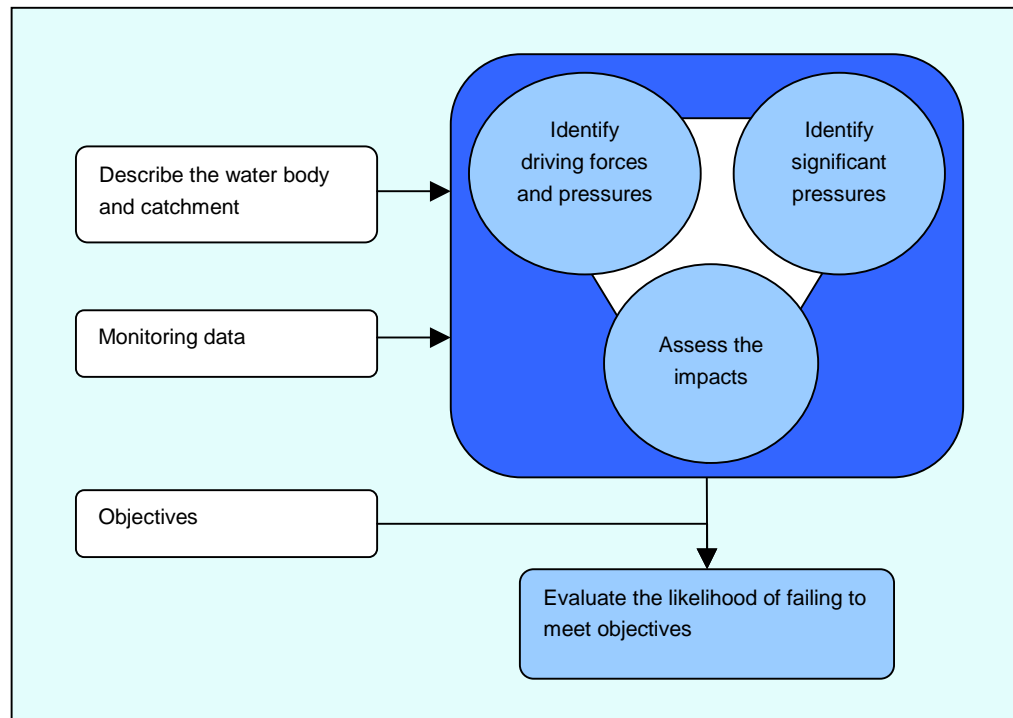
Characterisation - a strategic tool in Groundwater Management (EU Water Framework Directive).



Guidance for analysis of Pressures and Impacts (EU Water Framework Directive).

Good Groundwater Management is based on:

- Understanding the objectives to obtain the water policy.
- Good knowledge of waterbodies and catchments.
- Drawing up a correct conceptual model.
- Appropriate and successful pressures and impacts analysis.



3. Recommendations concerning Information Management

One of the basic keys to Integrated Water Resources Management is good access to adequate, accurate and reliable data as the basis for formulation of characteristics of the water resources. Access to qualified data collections is essential for understanding of the waterbody and catchment in question.

Concerning databases an overall strategy for inter-ministerial access to the relevant databases must be established and the obligation of the custodians of the databases must be addressed in coming by-laws to Law on Water Resources such as the proposed Ordinance / Decree on Groundwater Management and Development.

It is strongly recommend that this issue should be clearly connected to the Viet Nam Australia Water Resources Management Assistance Project. Component 2 - National Framework for Water Resources Information.

4. Basic principles for Groundwater Policy and Strategy

Supporting the Law of Water Resources the 4 Dublin principles could make up the foundation for Integrated Water Resource Management:

- Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
- Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels.
- Women play a central part in the provision, management and safeguarding of water.
- Water has an economic value in all its competing uses and should be recognized as an economic good.

Principle 1 - Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment

This principle recalls the need for a holistic approach to management, recognizing all the characteristics of the hydrological cycle and its interaction with other natural resources and ecosystems. The statement also recognizes that water is required for many different purposes, functions and services.

The hydrological cycle yields a fixed amount of water per time period. This overall quantity cannot be altered significantly by human actions. Freshwater may be regarded as a natural capital asset, which needs to be managed actively in order to ensure that the desired services it provides can be sustained.

Human beings can clearly affect the productivity of the water resources. They can reduce the availability and quality of water by actions, such as mining of groundwater, polluting surface- and groundwater and changing land use.

Holistic management not only involves the management of natural systems; it also necessitates coordination between the range of human activities which create the demands for water use, determine land use and generate water-borne waste products.

Principle 2 - Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels.

Water is a subject in which everyone is a stakeholder. Real participation only takes place when stakeholders are part of the decision-making process.

Participation requires that stakeholders at all levels of the social structure have an impact on decisions at different levels of water management.

A participatory approach is the only means for achieving long-lasting consensus and common agreement on the use and protection of water resources.

Governments at national, provincial and local levels all have the responsibility for making participation possible.

The principle encourages management at the lowest appropriate level, meaning that for each activity or decision on water resources and their development there will be a lowest appropriate level.

Identification and empowerment of the lowest appropriate level can be used to pursue an appropriate balance between a top-down and a bottom-up approach to Integrated Water Resource Management.

Principle 3 - Women play a central part in the provision, management and safeguarding of water.

It is widely acknowledged that women play a key role in the collection and safeguarding of water for domestic and in many cases agricultural use, but that they have a much less influential role than men in management, problem analysis and in the decision making process related to water resources.

The principle encourages a pro-active approach to involve women better in water management by preferential policies on the representation of women and women's organisations in all agencies that manage water, e.g. from the National Water Resources Council to the management boards and staff of irrigation associations and water supply companies in both rural and urban areas.

Principle 4 - Water has an economic value in all its competing uses and should be recognized as a social¹ and economic good

The principle advocates that allocation of water should be based on a social and economic analysis to identify the optimal use for society, and on a financial analysis to ensure that the associated development costs are financially viable.

Many past failures in water resources management can be attributed to the fact that water has been considered as a free social good. This has led to use of water and investments in water development for purposes in which the added value of water is low or the use not sustainable in the long term. In many cases such development has pre-empted later development of water resources for more valuable uses or made this development unnecessarily costly due to the redundancy of previous investment.

The recovery of full cost should be the goal for all water use, including the costs of government administration and the investment, operation, maintenance and management of infrastructure.

1 The social dimension of the value of water was added to the Dublin principles at the World Summit in Rio de Janeiro in 1992.

Annex 6 Financial aspects of institution building in groundwater management based on fees and charges

The background for this note is the Vietnamese policy on decentralisation and the following Vietnamese legal and draft legal material:

- Ordinance number 38/2001/PL-UBTVQH10) on 'Fees and charges'
- Ordinance number No. 32/2001/PL-UBTVQH10 on 'Utilisation and protection of hydraulic works'
- Draft Regulation on permits and licensing

1. Water management and water services in Denmark

State Management

In Denmark the responsibility for management of natural resources is almost totally delegated to the provinces. Denmark has 15 provinces and the capital Copenhagen. Danish provinces are on average half the size of Vietnamese provinces. Danish provinces have their own budget based on personal income tax (85%), property tax (10%), Government support (4%) and fees and interests (1%).

Figure 1 shows that the main provincial responsibilities are health, social welfare and education (90%). Planning and management of water and environment is included in the administrative expenses (5%), while direct expenses for services such as maintenance of rivers and protected areas are included in the budget for Urban development and Environment (0.7%). The low direct expenses are a result of public services such as water supply and sanitation being delegated to Public Service Enterprises subject to full cost recovery.

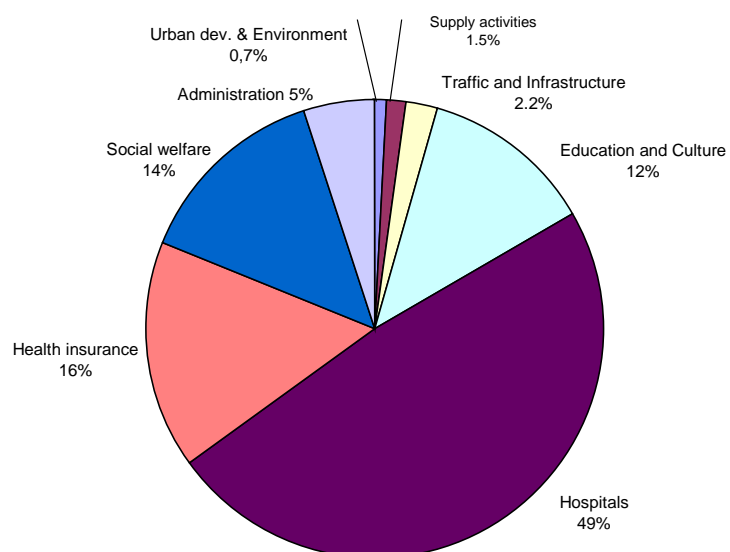


Figure 1 Distribution of annual expenditure by Danish provinces.

Water Service Delivery

The total water abstraction in Denmark is estimated at 650 Mm³/year corresponding to 130 m³/person/year. The majority of the abstraction, about 400 Mm³/year, is groundwater, which is used for public water supply, while irrigation, aquaculture and industrial enterprises with own water supply use both surface and groundwater (Figure 2). In addition to the registered abstraction it is estimated that 20 Mm³/year is abstracted for domestic use in rural area without public water supply. The mean drinking water consumption in Denmark is less than 50 m³/person/year.

During the past 10 years the mean domestic consumption has decreased by 33%, mainly driven by increased water and energy (heating) taxes and water saving campaigns, which have encouraged the development and application of water saving technologies. At the same time the industrial enterprises have been encouraged and assisted to recycle water, especially through increasing wastewater discharge fees and energy taxes, but also by projects for introduction of cleaner technology with support from government. Water for irrigation is almost free of charge, hence the consumption mainly depends on climate which in 1992, 1996 and 1997 was very dry during the growing season.

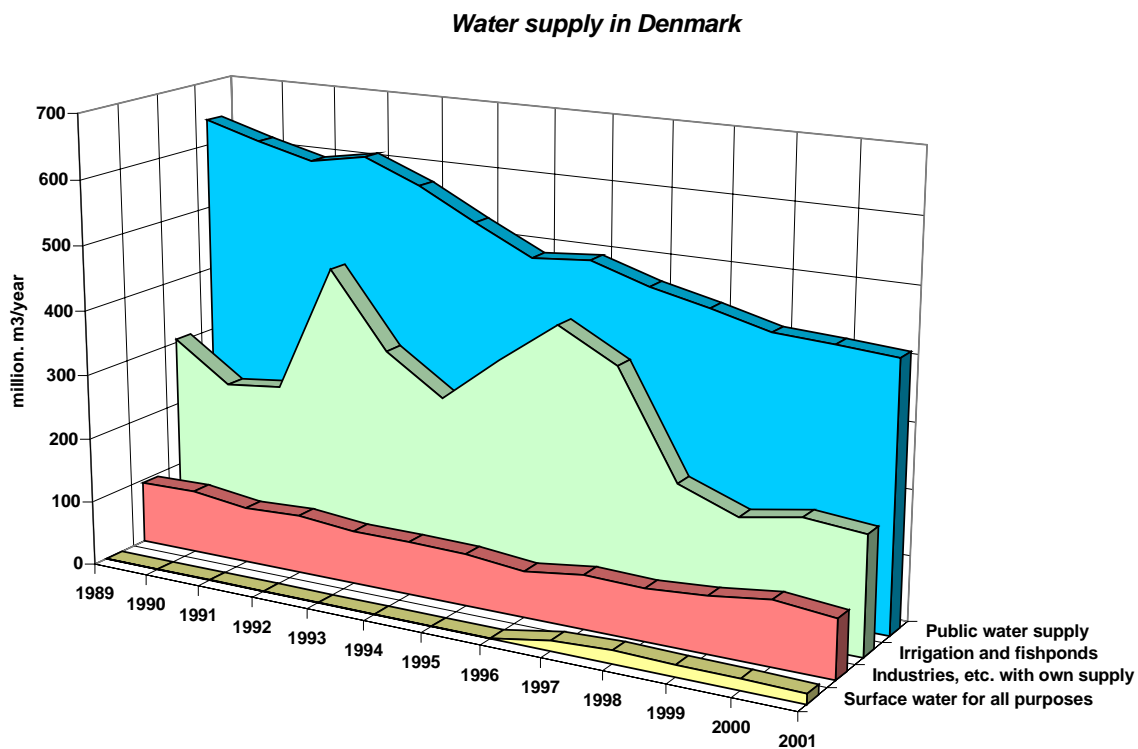


Figure 2 Water consumption in Denmark.

Domestic water supply

The domestic water supply in Denmark is 100% based on groundwater, with two exceptions, one surface water plant to cover the peak consumption in the area of the capital Copenhagen and a tank system on a tiny rocky island. An average Danish

family today uses less than 150 m³ water per year or 135 litres per person per day approximately. The number is a little higher in rural areas and a little less in cities.

Domestic water is supplied by some 3,300 water companies, of which approximately 400 are owned and managed by municipalities, while about 2,900 are owned, operated and managed by partnerships of water users. The municipal water supply companies are generally large companies responsible for urban domestic and industrial supply, while the partnership companies typically cover minor communities in the rural areas and summer resorts, but some towns also have partnership water companies.

In addition some 100,000 households, or 6% of the total population, mainly in the rural areas, have their own private water supply, often from shallow wells or dug wells. However also this water must comply with the legal standards for drinking water quality.

Organisation of Water Supply Companies

The supply of domestic water is considered a social obligation and activity, therefore water supply companies are not allowed to generate profit or pay dividends to their owners. On the other hand water supply companies are required to operate on a full cost recovery basis without government subsidies of any kind, so in the short and medium term they are allowed to generate and keep profit for future investments.

Municipal water supply companies operate as departments under the municipal governments. They operate as public service enterprises under the leadership of a director who has complete administrative and financial autonomy. They are, however, regulated by Municipal Utilities Committee, appointed by the Municipal Government. The committee will consider and approve the annual report, accounts, plans, budgets and water tariffs as well as any major investments.

Partnership water supply companies originally developed from the Danish cooperative movement and have retained many of the principles of cooperatives. They are associations of water users, who must pay an admission fee to become members of the partnership.

The membership entitles the members:

- to a share in the assets of the partnership company;
- to participate in and vote at the Annual General Meeting; and
- to connect to the distribution network of the water company.

At the Annual General Meeting the members will elect (one member – one vote irrespective of water consumption) a Management Board that will run the company and an auditor who will audit the annual accounts before submission to the Annual General Meeting for consideration. The Annual General Meeting will also consider and approve the annual report, annual plan, annual budget and the water tariff for the next year.

Partnership water companies are very popular among the Danish population, owing to the direct participation in the management of the company. Furthermore, partnership companies in many cases can supply water at lower cost than municipal water companies because they are allowed/obliged to maintain the membership fee in bank accounts and use the interest to subsidise the operation cost.

Water Abstraction Permits

To drill a well the landowner, water supply or company needs a permit from the regional authority. To abstract water the well owner, needs a permit describing the maximum amount of water to be abstracted and a series of conditions. Permits are free of charge.

2. Water Fees and Charges in Denmark

Water fees and charges in Denmark comprise:

- Connection fees:
 - Distribution system connection fee
 - Household connection costs
- Water supply fee
- Water Resources Tax
- Catchment Management Fee
- Wastewater discharge fee
- VAT

The connection fee is a one-time fee, while the remaining fees are based on the consumption. In total the consumption fees in Copenhagen amount to 5 Euro per m³ compared with 0.15 Euro per m³ for Hanoi, which for a typical family corresponds to 600 and 15 Euro per year, respectively.

Table 1 Comparison of water fees in Denmark and Vietnam for a family connected to public water supply and wastewater service. Shot in the dark calculation.

Type of fee	Denmark (Copenhagen)	Vietnam (Hanoi)
Costs per m ³	Euro	Euro
• Water supply fee	0.50	0.13
• Catchment management fee	0.10	
• Waste water discharge fee	2.50	0.013
• Water tax	0.60	
• VAT	0.80	0.006
Total	4.50	0.15
Annual Costs:		
• Typical consumption per year	135 m ³	100 m ³
• Typical annual cost of water, Euro	600	15
• Typical annual cost of water, VND	9 million	0.25 million

Connection fees

Each water supply company is allocated a specific geographic area that it is responsible to supply with water. Within this area the company must build a distribution system that can supply water to all users, who wish to be connected to the system and are willing to pay for the connection.

There is no regulation of the connection fee, except that in the long term it must cover the costs of extension of the distribution system to cover the supply area, and that it must be the same irrespective of the location of the user within the supply area. Users who live far from the water treatment plant therefore pay the same connection fee as users close to the water treatment plant, and are in effect cross-subsidised by the users living close to the water treatment plant. In partnership water companies the connection fee is included in the membership fee, which also comprises a share in the assets of the water company.

In return for the connection fee the water company is obliged to extend the distribution system to the boundary of the property and install a stop-valve. Connection inside the property, including a water meter, is the responsibility of the household, which may hire and pay any authorised contractor to construct this part of the household connection.

Water supply fee

Drinking water consumption from a water supply company is normally paid on basis of the volume of water that is consumed according to the water meter. There is no basic fee and the fee per m³ is the same irrespective of consumption. In contrast to Vietnam there is no special tariff for the basic needs of water because poor people are subsidised in other ways. Thus the water supply fee does not provide any incentive to save water except the generally high cost of water. However in some cases water for industrial use is delivered at a lower tariff.

The average water supply fee is typically 0.5 Euro per m³.

The water supply fee is paid for to the water company and must cover the full costs of investment, operation, maintenance and management, including construction and maintenance of wells, transmission pipes, water treatment plants, water supply network, etc. The water itself is public domain and as such free of charge.

Catchment management fee

The catchment management fee was introduced in 2000 to assist local authorities and water supply companies in better management of groundwater quality and quantity. The fee is unique in the World, because it is paid by the consumers in order to protect their groundwater sources from depletion and pollution, and not by the polluters. Thus it breaks with the widely accepted "Polluter Pays Principle" and instead introduces a new "Beneficiary Pays Principle".

The fee is based on the total permitted abstraction. This had dual objectives, firstly to make the water supply companies and other water consumers apply for realistic abstraction permits, thus enabling a more efficient use of the water resources, secondly to give the regional and local authorities the possibility to take active part in the management and protection of groundwater resources in areas of special interest for drinking water abstraction.

The catchment management fee is to be paid by all water users. However industrial users and farmers (irrigation wells) pay a reduced fee, based on the consideration that they do not demand groundwater of the high quality required for domestic use.

The catchment management fee is approximately 0,1 EUR, but varies from province to province depending on the need for protection of the groundwater resource.

Wastewater discharge fee

The wastewater discharge fee is based on the consumption of drinking water and all properties connected to a public sewer system must pay the wastewater discharge fee. Households, especially in the rural area, with private septic tank or cesspool do not pay the wastewater discharge fee. Industrial enterprises may pay a reduced wastewater discharge fee, if the enterprises have their own treatment prior before discharge to the sewer system.

All sewer systems and wastewater treatment plants are public and owned by the municipalities or rural communes.

The wastewater discharge fee varies from municipality to municipality. A mean price for is about 2.5 EUR per m³ drinking water. The fee is, for those with municipal water supply, paid together with the water supply fee, while those with a partnership water supply or their own water supply, may pay the wastewater fee separately.

Connection to the sewer system is subject to a connection fee similar to the connection fee for water supply.

Water tax and VAT

Water tax is paid by the water supply companies based in the abstracted amount of water (minus 10% to cover un-accounted for water).

The water tax is a fiscal tax that is part of central government revenue and one of many "green taxes" intended to reduce the pressure on the environment. However, it was introduced in the middle of the 1990s at the same time that Denmark increased public expenditure on water resources management and monitoring in response to the EU Water Directive, and thus gained wide acceptance among the public.

The water tax is 0.60 Euro

VAT (25%) is paid on all water fees and charges and is also a fiscal tax paid to central government.

Collection of fees, charges and taxes

Fees, charges and taxes on water are paid to the municipality or water supply company, which will distribute the funds to the different authorities.

The water supply fee is transferred to or retained by the water supply company. The catchment management fee is sent to the provincial finance department and the wastewater fee is sent to the municipality, while the water tax and VAT is sent to the Ministry of Finance,

3. Status and vision on water charges and fees in Vietnam

Status of water charges and fees in Vietnam

The legislative framework for the water sector in Vietnam enables a range of fees, charges and taxes on the use of water for different purposes as well as a natural resources tax on water. The structure of the fees, charges and taxes in several cases reflect the social and economic value that water has to the users, and in many localities the tariffs for domestic water are progressive in order to cross-subsidize the poorest segment of the population and encourage water savings. However, the water fees have

not yet reached a level that enables full cost recovery, thus placing a heavy burden on central and provincial governments to subsidize the water sector and putting the long-term sustainability of government investments at risk. Furthermore, it is not clear to which extent the revenue from fees, charges and taxes is returned to the sector or included the general government revenue.

Table 2 Status of water fees, charges and taxes in Vietnam

Type of fee, charge or tax	Status
Charge on permits and licenses	Charges for permits for groundwater abstraction have been applied in at least one province, but were stopped by Ministry of Finance due to lack of legal basis
Bulk water supply fee	Bulk water supply fees do not exist, but are being considered to cover the cost of operation, maintenance and management of major hydraulic works, such as dams, weirs and primary irrigation channels.
Water supply and waste water discharge connection fee	<p>Fees for connection to distribution systems are applied in piped schemes in several rural areas, but appears to be uncommon in urban areas.</p> <p>The costs of the household connection for water supply are generally paid by the household.</p> <p>Wastewater is typically discharged to street drains, while sewerage systems are uncommon. The first towns building sewerage systems will require households to pay part of the household installation, only.</p>
Water supply fee	<p>Applied by urban water companies and in piped schemes in rural areas</p> <p>In urban areas the fee is progressive according to the purpose of water use and in many cities also according to the volume.</p> <p>Examples of full cost recovery are not known.</p>
Waste water fee	<p>Waste water fees have been introduced in a few cities where sewerage systems are under construction.</p> <p>The fee is calculated as a percentage of the water fee.</p> <p>A surcharge for drainage is also being considered in a few cities.</p>
Irrigation fee	<p>Irrigation fees are applied in all irrigation schemes, but are levied on the irrigated area and not on the actual water consumption.</p> <p>In all, except the smallest, irrigation schemes part of the irrigation fee is paid to the government Irrigation and Drainage Management Company, and may be considered a bulk water fee.</p>

Natural resources tax	A natural resources tax exists and is proportional to the value of water, ranging from 0% for domestic water and agricultural production, to 4% for bottled mineral water.
VAT	The water sector pays VAT, but at a preferential rate

Charges on permits and licenses

Charges on exploration permits, abstraction permits and drilling licenses might be introduced according to article 22 of the draft “Regulation on issuance of permits for groundwater exploration and groundwater abstraction, and licence for practising groundwater drilling” (4th October 2002 version).

Charges would be justified for three reasons:

- to cover administrative costs related to administration of permits and licences;
- to enable local governments to increase the level of water resources management; and
- to influence the behaviour of water users.

In order to have an impact on water use, the charge for the exploration and abstraction permits should be proportional to the size of the requested abstraction and be levied as an annual charge. Firstly there will be more work involved in approving and administering a large permit, secondly this will encourage applicants to apply for license only for the actual amount of water they intend to use, thus maximising the amount of water that can be allocated for other purposes.

The charge on abstraction permits could also depend on the purpose, i.e. charges could be different for domestic water supply, irrigation, industrial use, etc., and eventually on the quantity and quality of water that is available in a given region.

Similarly, the charge on permits to discharge waste water might depend both on the expected amount of waste water and on the type of waste water. Wastewater from households and urban areas without industry typically has a low impact on the environment and may be a valuable source of nutrients if it is reused in agriculture and aquaculture, thus justifying a low charge on waste water discharge permits, whereas industrial enterprises can discharge highly toxic waste water and should be encouraged to treat waste water prior to discharge through a high permit charge.

The charge on a driller’s license could depend on the social and commercial potential, that the license enables, e.g. the charge on a license to drill small diameter boreholes for rural water supply should be less than the charge on drilling of large diameter boreholes for urban water supply, industrial water supply and irrigation, which have significant commercial aspects.

Charges should be defined by the state authority and assessed by the province authority.

The charges on exploration and abstraction permits should be paid to the treasure of the province, where the exploitation area or abstraction wells or the drilling company

are located. In case permits are issued by central government a part of the charge should be remitted to central government.

Bulk water supply fee

Bulk water supply fees are not applied, but are being considered in order to finance the operation, maintenance and management of major hydraulic works, for instance the dams, weirs, water intakes and canals for irrigation.

Water supply and waste water discharge connection fee

Fees for connection to public water supply or sewer systems do not exist, except in a few provinces where they are applied in community managed piped water supply systems.

The lack of connection fees is a major barrier to expansion of urban water supply and sewerage systems. Without the possibility to charge a connection fee urban water and waste water companies compete for scarce government finance to expand their networks, thus being unable to fully utilise their production capacity.

Fees on domestic water supply

Fees on domestic water supply are applied throughout Vietnam, but they are strictly regulated by central and provincial government at levels that do not enable full cost recovery. The water tariffs are typically structured to enable recovery of the costs of operation, maintenance and management, while they are insufficient to cover repayment of loans for investment and depreciation of assets. The tariff levels make the water companies dependent on central and provincial government for funding of investments in system expansion and major repairs leading to an overall low service level, and placing a severe burden on government budgets for subsidies to the water sector.

The first and overall target for the water sector in Vietnam should be to achieve full cost recovery within urban water supply, whereas a certain level of subsidy to poor rural areas may be necessary for years ahead.

In all urban areas the water tariff is progressive according to the value that the water has to the consumer, thus providing cross-subsidy from high-value use of water to social uses of water. In Hanoi for instance the following water tariff applies:

- Domestic drinking water supply 0.13 EUR per m³
- Office drinking water supply 0.23 EUR per m³
- Commercial drinking water supply 0.42 EUR per m³

In many urban areas the water tariff is also progressive in proportion to the amount of water that is consumed. The primary objective is to provide the basic needs of water to poor people at a cost they can afford. In most cases this is achieved by cross-subsidisation from the large and well-off water consumers to the small and poor consumers. The secondary objective is to encourage water savings

This illustrates that the price is not based in the actual water production cost.

It is recommended that the pricing of water should be made more transparent and that the water price to a greater extent should reflect the actual costs of producing and

distributing water. However, the block tariffs which support poor people should be retained, while it may be discussed whether other progressions in the tariffs should be administered by the water supply company, or be applied through a water resources tax that benefits government.

Waste water service fee

In most cities in Vietnam untreated waste water is discharged directly via the streets to drainage systems or open water courses. In a few major cities separate sewer systems are under construction, but they will for a foreseeable future serve only the central parts of the cities.

In some of the cities where sewer systems are under construction a wastewater fee has been introduced, typically as a 10% surcharge on the water tariff.

Irrigation fee

In the Ordinance no 32/2001 on 'Utilisation and protection of hydraulic works' the irrigation fee is defined as a service charge for water delivered to organisations and individuals, who utilise water or render water related services from irrigation schemes for agricultural production. The fee is for operation, maintenance and management of the irrigation system and its individual irrigation schemes.

The responsible ministry (MARD) specifies the irrigation fee for state-run irrigation schemes under their management, while People's Committees of provinces and cities determine the water fees for the state-run irrigation schemes and the water user co-operatives managed by the local authorities.

In the past irrigation schemes were owned by the state and managed by a state owned Irrigation and Drainage Management Company, which collected the entire irrigation fee. Under recent legislation on participatory irrigation management, the management of smaller schemes may be transferred to community-based organisations, which are permitted to retain part of the irrigation fee for rehabilitation, operation and maintenance within the scheme. The other part of the irrigation fee is still collected by the Irrigation and Drainage Management Company, irrespective of the level of service the company provides to farmers. In major irrigation systems, where the Irrigation and Drainage Management Company manages the headworks and primary canals that deliver water to individual schemes, this part of the irrigation fee may be considered a bulk water fee.

In order to achieve full cost recovery within the irrigation sector, the Irrigation and Drainage Management Companies could be converted to public service enterprises and be made responsible for management of headworks and primary canals, only. The present irrigation fee could be converted into a bulk water fee payable on the amount of water delivered to the irrigation system and reflecting the actual costs of efficient management of the headworks.

Natural resources tax and VAT

According to the Government Decree no. 68/1998/ND-CP on Implementation of natural resource tax it is possible to collect a water tax, which reflects the social and economic value of water. The current rates of the water tax is:

- Domestic water supply, public and private 0 %
- Irrigation and aquaculture 0 %
- Industrial water for cooling and others 1 %

- Hydropower water consumption 2 %
- Water for production industries 3 %
- Thermal water and mineral bottle water 4 %

In addition water services are subject to VAT, which for water supply is 4%. It is recommended to abolish this tax for domestic water supply in rural areas, in order to facilitate an expansion of the rural water supply and reduce the administrative burden on small water companies.

Strategy towards a water resource charge

In the future it is expected that the Government may wish to introduce a water resource charge or other type of charge to cover the cost of increasing water resources management at both national and provincial level. Such a resource charge should be designed in a manner that it will contribute to regulation of water demands.

The vision is to levy the water resource charge on the abstracted water and pass it on to consumers. This will encourage the water supply companies to reduce water losses and all other users to reduce their water consumption.

The charge may be applied to the actual amount of water that is abstracted, or better on the abstraction permit, in which case it will provide added incentive to reduce the water abstraction.

Figure 3 gives an impression of the flow of funds. It illustrates that the charge will be applied to all major water users. It will be collected by the provincial administration which will forward the revenue to the Ministry of Finance. It will then be the Government who decides the distribution to ministries and the provinces in accordance with their role in water resources management.

Another possibility is that the provinces cover their part of the water resource charge according to a defined formula and forward the rest to the Ministry of Finance.

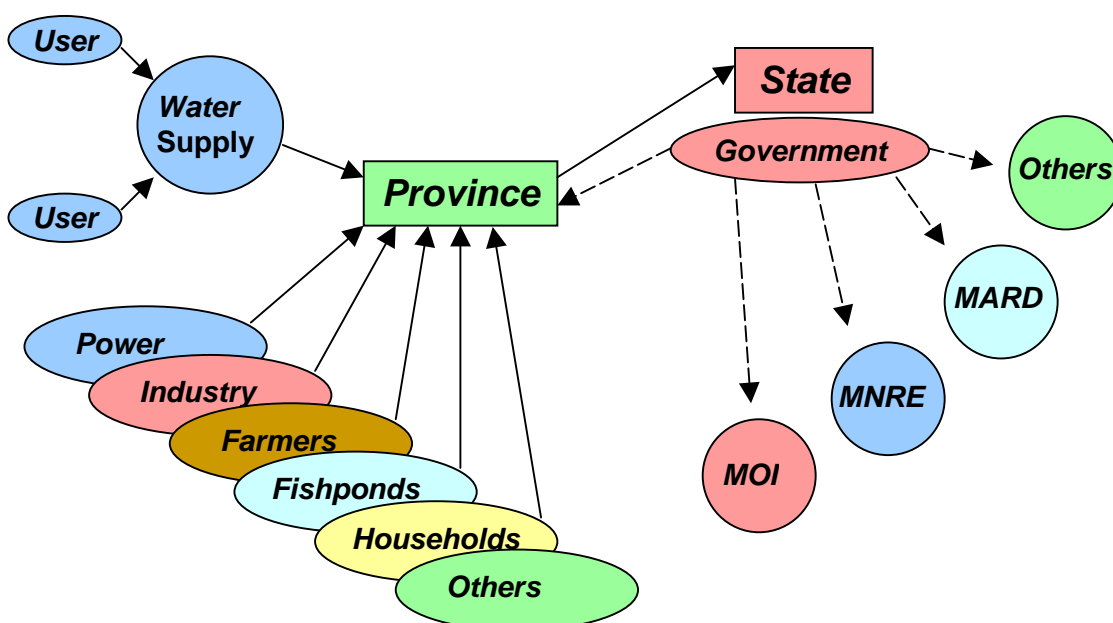


Figure 3 Future cash flow of a water resource charge with the purpose to cover the cost to manage and regulate the water sector in Vietnam.

4. Policy and strategy related to responsibilities and obligations of the authorities

Management levels

Integrated water resource management and development is best carried out on the basis of river basins (catchment areas). However, the administrative structure of provinces, municipalities, districts and communes, rarely coincide with river basins or sub-basins. Therefore integrated water resources management and development should be carried out in co-operation between the administrative units that constitute river basins.

Another principle is that the water should be managed at the lowest appropriate level. In Vietnam the most appropriate level for the majority of decisions related to water resources management is the provincial level, whereas water services are best provided at lower administrative levels and with user participation. The government policy on decentralisation should also be applied in water resources management with responsibilities and functions gradually being decentralised to lower levels in step with proven competence.

The system of water management is expected to cover three levels. The lowest levels are where the water supply companies and irrigation associations have the responsibility to deliver water in adequate quantity and quality at an affordable price. The mid-level is the authority responsible for the sustainable use of the natural resources – the provinces. The upper level is the Ministry responsible for legislation and co-operation between provinces on the sustainable use of the natural resources and for public information on the state of the natural resources.

Integrated water resource management and development might comprise:

- Domestic water supply
- Ecological demands to minimum flow and flow variation
- Irrigation
- Aquaculture
- Industrial water supply
- Hydropower
- Navigation
- Flood control
- Salinity control
- Wastewater discharge
- Pollution control
- Tourism

It is important to recognise that land-use planning, and economic and social developments have profound effects on the water demand.

Instead of delegating the responsibility of water resources to the provinces the responsibility might be delegated to public, but independent river basin authorities or to private water management companies. However in such cases there should be a willingness to co-operate between the river basin authority or the water management company on one side and the regional authorities on the other side to ensure adequate integration between water management and planning.

However, direct management of water supply companies, irrigation schemes or waste water treatment plants may well be handed over to user (partnership) organisations, NGO's or private companies with appropriate public regulation and control.

Table 3 Overview of proposed responsibilities and obligations of the authorities in groundwater management and use at different administrative levels

Local Public and Private Organisations and Companies	Province Administration (Departments)	State Administration (Ministries)
<ul style="list-style-type: none"> • Water Supply, Operation Maintenance and Control • Irrigation • Quality Assurance 	<ul style="list-style-type: none"> • Land Use Planning • Licensing and Permits • Inspection and Control • Guidance 	<ul style="list-style-type: none"> • Legislation, Rules and Guidance • Appeal Instance • Planning Approval

<ul style="list-style-type: none"> • Data Reporting • Compliance with Legislation, Rules, Permits and Licenses 	<ul style="list-style-type: none"> • Groundwater Protection • Groundwater Monitoring • Data Management and Information 	<ul style="list-style-type: none"> • Emergency Prioritisation • Province Support and Education • Data Storage and Information • Research and Education • Progressive Delegation of Responsibilities • International Relations
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The local level

The local level comprises public and private organisations (districts administration, water supplies, etc.) and public and private companies (enterprises). The question is whether the district authority shall have any responsibility in relation to fees and charges.

Water supply operation, maintenance and control

The main local activity in relation to groundwater is the domestic water supply. The main task of the water supply companies is to distribute clean drinking water of a chemical and biological acceptable quality and at the same time maintain their facilities in as good state as possible.

Irrigation

Groundwater is a valuable resource, which should be reserved for use as domestic water, both now and in the future, and used for other less valuable purposes only in locations and cases where the groundwater resource is well known and well managed.

In many countries abstraction of groundwater for irrigation has depleted the groundwater resource to the extent that fresh groundwater no longer is available for domestic purposes.

Abstraction of groundwater for irrigation should therefore be strictly regulated and major development of agriculture based on groundwater should not be supported until the groundwater resource is fully assessed.

Quality assurance and data reporting

In the future water companies and individuals abstracting groundwater will be given increased responsibility for data collection on the amount and quality of water that is abstracted. The manager of the water supply will be responsible for quality assurance that the data collected are realistic, accurate and registered correctly. Receivers of data higher in the system are not able to do other quality assurance than decide whether the data should be included in the database or not.

Depending on future regulation data should be reported to the water authority of the province.

Compliance with legislation, rules, permits and licenses

Everybody must comply with the legislation, rules, permits and licenses. However, it is a common experience that compliance requires regular control by the authorities

The regional level

The regional level is the department of the provincial administration.

The departments are supposed to undertake all activities related to natural resource management and administration, in this case in relation to groundwater. This will include spatial land use planning, licensing and permits, inspection and control, guidance to local organisations, groundwater protection, surface water protection, water quality and quantity monitoring, and data management and information.

Spatial planning

Spatial planning is a system of development plans describing how the government plans the future land use taking into consideration the development of the social and economic sectors. In relation to groundwater this might include issues such as:

- How is the demand for groundwater expected to develop in the next 5, 10, 20 and even 50 years;
- Where will the towns be accepted to develop in the next 5, 10, 20 years;
- Which areas (aquifers) shall be reserved for public water supply;
- Which measures is it necessary to take to maintain or increase the recharge of groundwater, e.g.: reforestation or agricultural diversification;
- Which measures is it necessary to take to maintain or improve the groundwater quality, e.g.: restrictions on use of fertilisers and pesticides, relocation of polluting industries;
- Where is it acceptable to locate industries that constitute a risk to the groundwater resources.

When allocating the amount of water at disposal for a certain activity, information on the entire water cycle must be taken into account. The physical planning is proposed in general to be a provincial instrument, but plans must be approved by the central government to ensure that broader national interests are taken into account. Land use planning should also be introduced gradually at district level in order to achieve greater public participation in and acceptance of the planning.

Physical planning of water resources management, development and monitoring must take place in the context of river basins, and should therefore be coordinated in a river basin committee. In some cases it will be advantageous to centralise planning in a technical office under the river basin committee, in other cases it may be more efficient to maintain planning at the provincial level.

Licensing and permits

To implement the one-door-policy all licenses and permits should be issued by the provincial authorities, even in cases when the decision on the permit is a central level responsibility.

Inspection and control

Provincial authorities will have the main responsibility for enforcement of permits and licences, without systematic inspection and control the conditions of licenses and permits will not be adhered to.

Guidance

Delegation of duties and tasks to district, commune and community based organisations need to be accompanied by increased guidance and supervision from the provincial authorities until adequate capacity has been developed.

Groundwater protection

A major task in the future will be the implementation measures to protect the groundwater resource against depletion and pollution. This will require mapping to identify areas where groundwater is recharged, and perhaps adjustment of the land use in these areas to ensure that the recharge is maintained or even increased compared with the present level of recharge. It will also involve mapping of pollution sources, restrictions on the future location of potentially polluting industries and remediation of already known polluted sites.

Water Monitoring

Provinces or river basin committees should have the principal responsibility for implementation of groundwater monitoring programs. Monitoring should be developed into a tool that leads to action whenever monitoring data are outside acceptable limits.

Data management and information

All relevant data on water resource management and (ground)water monitoring should be reported regularly to a common database system at national level. The state authorities will be those who implement and maintain the database system, while actual data primarily will come from the provincial authorities.

The national level

The national level is the line ministry and in exceptional cases the government.

The national level is where legislation and regulation take place. Furthermore, approval of natural resource planning and appeals of decisions made by the provincial authorities will take place at the national level. The national level will be responsible for data storage in a common database system, public information, research and education.

Legislation, rules and guidance

The state authorities are responsible for the structure of the legal documents including the clarification with the provinces. Furthermore the state authorities are responsible for the education and guidance of provincial staff in implementation of legislation.

Appeal instance

In order to maintain the democracy there must be at least one appeal level to decisions made by the provincial authorities. In minor cases appeals may be referred to the People's Committee, but in major cases a higher level is necessary, i.e. the ministry.

Planning approval

In order to ensure that local planning complies with national decisions, the physical planning at river basin and provincial level must be approved by the relevant ministry or by the government.

Emergency prioritisation

In general the allocation of water should be prioritised as follows:

- 1 Drinking water
- 2 Livestock watering
- 3 Ecological and environmental demands
- 4 Industrial water
- 5 Water for irrigation
- 6 Water for hydropower

During periods of water shortage the allocation for each may be reduced, but the priority should be maintained. The reduction of water allocations during water shortages should be detailed in a contingency or drought plan, which should be part of the overall water resources planning. The contingency plan should describe the circumstances when water abstraction must be reduced, which types of abstractions to reduce first, how much the abstraction must be reduced and how the authorities shall announce and enforce the reductions. The conditions described in the contingency plan must be included in the water abstractions permits, in order for permit holders to be legally bound to accept the reductions.

Province support and education

In order to ensure that all provinces are able to fulfil the delegation of responsibilities, the state and provincial authorities shall co-operate in staff education and development.

Data storage and information

The state authorities should implement and maintain a common structure of databases that might be build up by the state. The data to be included in this database structure will derive from state institutes and provincial departments.

This structure demands a very well developed data quality assurance system.

Access to withdraw data from the database should be given to both public institutions and individuals in accordance with the principle that "data collected for public money should be accessible to the public". Private companies should also have full access to data, but may be required to pay a nominal fee to cover part of the costs of making the data accessible.

Further it should be a demand that relevant state institutions report the data in a useable format for the political level as well as for the public.

The possible flow of data is illustrated in figure 4.

Progressive delegation of responsibilities

The future will show that progressive delegation of responsibilities and functions to the lowest appropriate levels, as close to the water user as possible, will leave more money and time for administrative bodies to support their political leaders.

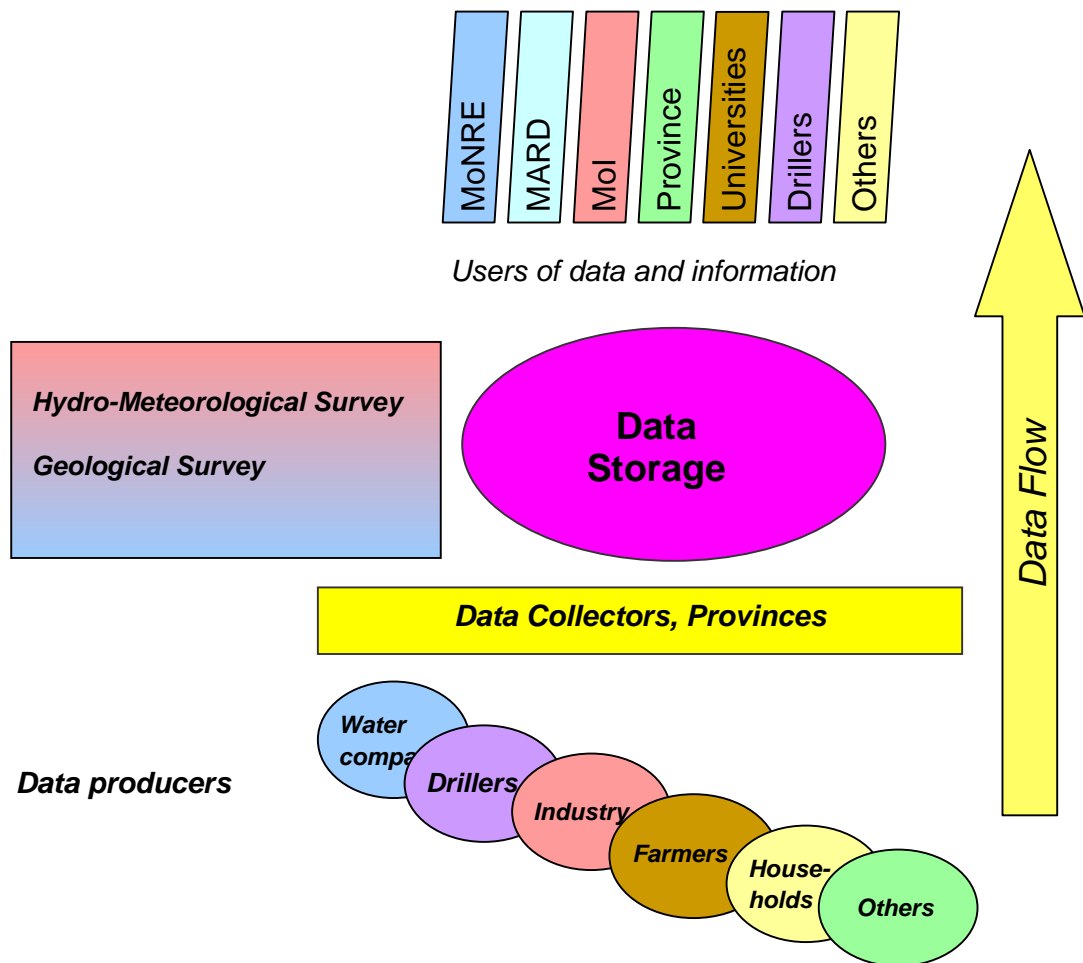


Figure 4 Vision on flow and use of data and information in Vietnam.