R822 VN00

ENB

[redacted] of Vietnam

Danish Ministry of Foreign Affairs
DANIDA

COMPONENT DESCRIPTION

NATIONAL CAPACITY BUILDING

WATER SECTOR

VIETNAM

Library
IRC International Water
and Sanitation Centre
Tel.: +31 70 30 689 80
Fax: +31 70 35 899 64

This report contains
restricted information
and is for official use only

Ref.No. 104.Vietnam.814-5

April 2000

R 822 - VN00 - 17653

Component Description

National Capacity Building

VIETNAM

LIBRARY IRC
PO Box 93190, 2509 AD THE HAGUE
Tel.: +31 70 30 689 80
Fax: +31 70 35 899 64
BARCODE: 17653
LO: R822 VN00

April 2000

Table of Contents

MAP OF THE COUNTRY

LIST OF ABBREVIATIONS

ADB	Asian Development Bank
Ausaid	Australian Aid
CERPAD	Centre for Residential Area Planning and Development
CERWASS	Centre for Rural Water Supply and Environmental Sanitation
CTA	Chief Technical Adviser
DARD	Department of Agriculture and Rural Development
Danida	Danish International Development Assistance
DfID	Department for International Development (British Aid)
DKK	Danish Kroner
DOC	Department of Construction
DOSTE	Department of Science, Technology and Environment
DWRMHW	Department of Water Resources Management and Hydraulic Works
ES	Environmental Sanitation
EVN	Electricity Vietnam
GDP	Gross Domestic Product
GODK	Government of Denmark
GOV	Government of Vietnam
GSO	Government Statistics Office
HCMC	Ho Chi Minh City
HRD	Human Resources Development
HQ	Headquarters
IDMC	Irrigation and Drainage Management Companies
IEC	Information, Education, Communication
ISG	International Support Group
IWRP	Institute for Water Resources Planning
IWRR	Institute for Water Resources Research
LWR	Law on Water Resources
LFA	Logical Framework Approach
MARD	Ministry of Agriculture and Rural Development
MOC	Ministry of Construction
MOET	Ministry of Education and Training
MOF	Ministry of Finance
MOH	Ministry of Health
MOI	Ministry of Industry

MOLISA	Ministry of Labour, Invalids and Social Affairs
MOSTE	Ministry of Science, Technology and Environment
MM	Manmonths
MPI	Ministry of Planning and Investment
MRCS	Mekong River Commission Secretariat
NGO	Non Government Organisation
NRWSSP	National Rural Water Supply and Sanitation Program
NRWSSS	National Rural Water Supply and Sanitation Strategy
NWRC	National Water Resource Council
O&M	Operation and Maintenance
PAP	Process Action Plan
PC	People's Committee
PER	Public Expenditure Review
PIM	Participatory Irrigation Management
PPC	Provincial People's Committee
RBA	River Basin Agency
RDE	Royal Danish Embassy
RWSS	Rural Water Supply and Sanitation
RWS	Rural Water Supply
SIWRR	Southern Institute of Water Resources Research
SOE	State Owned Enterprise
SME	Small Medium Enterprise
SPS	Sector Program Support
SPSD	Sector Program Support Document
STA	Senior Technical Advisor
TA	Technical Assistance
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
USD	United States Dollar
VND	Vietnamese Dong (April 2000: 1 USD = 14.000 VND)
VWU	Vietnam Women's Union
WATSAN	Water and Sanitation
WB	World Bank
WRU	Water Resources University

WSC Water Supply Company

COMPONENT SUMMARY	COVER PAGE
Country:	Vietnam
Sector:	Water Sector
Component Title:	National Capacity Building
Main National Agency:	MARD
Duration:	5 years
Starting Date:	1 October 2000
Overall Budget Frame:	DKK 89,1 Million

Description:

The component will assist the GOV to develop the national framework for the Water Sector, particularly in water resources management and Rural Water Supply and Sanitation. Institutional and organisational capacity will be built up to implement and adjust the national sector framework.

The main thrust of the component is to support the implementation of two major new policies: The Law on Water Resources (LWR) and the National Rural Water Supply and Sanitation Strategy (NRWSSS). The LWR and NRWSSS have been developed during the past five years and represent innovative and state of the art policies within water resource management and water service delivery. They will promote poverty alleviation by improving the access of the poorest people, including women and children to water resources and water supply and sanitation especially in the rural areas. The LWR will have a significant impact on environment and good governance as the Water Sector will start to be governed by a rational and fair institutional framework. The NRWSSS will have a significant impact on mainstreaming gender concerns within rural water supply and sanitation.

The ability of Vietnam to sustain these innovative approaches will be improved through the upgrading of the education of student and working professionals within the Water Resources University (WRU). In particular three important areas will be focused on: the demand responsive approach, integrated water resource management and the use of economic instruments.

Support will be given to four sub-components:

- Implementation of the Law on Water Resources;
- Implementation of the National Rural Water Supply and Sanitation Strategy;
- Capacity Building of WRU
- Capacity Building of the Institutes of Water Resources Research and Water Resources Planning (IWRR/IWRP)

The LWR sub-component presents a unique opportunity for Vietnam to consolidate and put into practice the innovative and far reaching reforms contained in the LWR. The task is enormous and it is clear that Vietnam needs external assistance. It is equally clear that Danida itself will not be able to provide all the support required. Therefore close coordination between government and donor efforts will be required if this sub-component is going to be successful. Danida will mainly provide support to the development of technical regulations and instruments. The sub-component will work closely with the provincially based water resource management component. The support to NRWSSS will be very closely linked to the rural water supply and sanitation component described in the SPSD – it will both benefit from experience of practical implementation as well as contribute to making the new policies operational. The sub-components that aim to build capacity at WRU and water sector institutes are relevant to all the other components as they will build the long term capacity to sustain them as well as make use of the opportunity afforded by practical implementation to carry out study tours, field studies and pilot applications of the models developed.

The component falls into category A for environmental assessment. The necessary assessment which will mainly involve identification of opportunities for positive environmental impact will be undertaken during the component implementation. The main assumptions for the successful implementation of the component are: Political willingness to enforce an environmentally and financially sustainable use of water based on firm water rights, resources fees and service charges; and continued administrative reform, in particular the decentralisation and private participation in water service delivery.

Signatures:

EXECUTIVE SUMMARY

The Sector Programme Support (SPS) to the Water Sector in Vietnam consists of four main components:

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

The first component is aimed at supporting the creation of an enabling environment for key government reforms in the Water Sector namely: the LWR and the NRWSSS. It will contribute substantially to the long term success of the other components. Component 1 has four sub-components:

1.1 Support to Implementation of the LWR
1.2 Support to Implementation of the NRWSS Strategy
1.3 Support to Capacity Building of WRU
1.4 Support to Capacity Building of Water Sector Institutes

The sub-components under component 1 will refer to a SPS coordination unit led by the Chief Technical Adviser (CTA) and a National Programme Adviser. Funds to the various sub-components will be transferred from the coordination unit to sub-component management groups, which will provide the day to day management of the sub-components.

Sub Component 1.1 Support to Implementation of the Law on Water Resources

The LWR sub-component presents a unique opportunity for Vietnam to consolidate and put into practice the innovative and far reaching reforms contained in the LWR. The task is enormous and it is clear that Vietnam needs external assistance. It is equally clear that Danida itself will not be able to provide all the support required. Therefore close coordination between government and donor efforts will be required if this sub-component is going to be successful.

Implementation of new reforms of the type contained in the LWR will result in a lot of political dialogue and negotiation. It is crucial that the Danida support is designed so as to avoid becoming entangled in internal politics which it can do little to help. At the same time it has to be acknowledged that the Danish resource base is not overwhelming strong in LWR especially at the higher more abstract levels. Therefore it has been agreed with Department of Water Resources Management and Hydraulic Works (DWRMHW) and the other donors (ADB,WB, Ausaid, Netherlands) that Danida support is concentrated at the technical levels of the implementation of the LWR, whereas the inter-ministerial and higher level drafting of decrees will be done by others.

The main outputs are:

- Output 1 Legislative Process designed
- Output 2 Enhanced Capacity for National Water Resources Planning
- Output 3 Technical level decisions, guidelines and instructions at MARD level.
- Output 4 Feasibility study on institutional arrangements for water resource management
- Output 5 Water rights administration system

- Output 6 Tariff and economic instruments system.
- Output 7 Retrained MARD and DARD staff
- Output 8 Trainers trained

The institutional anchorage for this sub-component is DWRMHW. It will be executed by the staff of the DWRMHW with assistance from Danish consultants. DWRMHW will coordinate the use of Danish resources with resources made available from other donors. A sub-component management group will be established consisting of the director of DWRMHW, bureau chiefs within DWRMHW, the Danish and Vietnamese consultants and the CTA.

Sub Component 1.2 Support to Implementation of National Rural Water Supply and Sanitation Strategy

The support to implementation of NRWSSS is strategic in nature. The NRWSSS is presently being internalised within the government structures. Once this is done, it will be vital to support the process of promoting the strategy at the national and provincial level. Successful promotion and adoption of the strategy will have a far reaching effect on the poverty alleviation impact of future investments in rural water supply and sanitation. However, as for the implementation of the LWR there are a number of institutional concerns. The first is that this function is new and there is not yet full clarity over roles. Political negotiation and uncertainty can be expected for some time to come. A considerable investment will be required to build up the capacity at central level while at the same time making sure that the approach does not become too centralised. The concept of user groups seems to be down played in the latest version of the strategy. This will need to be explored during the support period and advice given on how to ensure that the original concept of user autonomy is retained.

The sub-component will train CERWASS headquarters staff, develop guidelines and design pilot projects to be tested in the Component 2: Rural Water Supply and Sanitation.

The main outputs are:

- Output 1: RWSSS office established in CERWASS;
- Output 2: Awareness and acceptance of NRWSS Strategy at all relevant levels in GOV and Mass organisations at HQ, Province, District and Commune Level;
- Output 3: Awareness of NRWSS Strategy procedures and roles and responsibilities of user organisations;
- Output 4: National Fund for rural water supply and sanitation established on pilot basis;
- Output 5: Study of institutional development and organisational and HRD requirements;
- Output 6: HRD Programme Implemented;
- Output 7: Institutional and organizational development plan and programme;
- Output 8: New concepts, guidelines and procedures developed and incorporated in design of pilot projects for the RWSS Component;
- Output 9: Lessons learnt from first generation of pilot projects in few communes documented in evaluation report;
- Output 10: Second generation of pilot projects in 3-4 Districts in Dak Lak and Ha Tinh;
- Output 11: Lessons learnt from second generation of pilot projects documented in evaluation report; and

- Output 12: Plan for nationwide replication with adjustments for lessons learnt

The institutional anchorage of the sub-component is CERWASS. The sub-component will be implemented by CERWASS assisted by a Senior Danida Adviser and a team of short term consultants providing specialist inputs. The resources of the sub-component will be coordinated with the contributions from other donors especially DfID who will also provide an adviser to CERWASS. A sub-component management group will be formed composed of senior staff of CERWASS, the Danida Senior Adviser and the team leader of the short term consultants.

Sub Component 1.3 Support to Capacity Building of WRU

The support to the Water Resource University (WRU) will in the longer term provide a cadre of professionals that will enable Vietnam to better manage its water resources and provide an enabling environment for effective water service delivery. Shortage of funds and supervisory capacity has made it necessary to leave out or at least delay the proposed support to vocational centres. The support program is already sufficiently complex and intense and further elements are likely to distract rather than add to the usefulness of the Danida support.

The low budget of the university sector combined with the difficulty of obtaining recurrent funds means that the support aims at improvements which have little or no recurrent budget implications in the longer term. The main interventions proposed are improvements in the curriculum to reflect the concerns of integrated water resource management and the demand response approaches to service delivery. These curriculum reforms will be combined with intensive training of teaching staff and improved internationalisation.

The main outputs are:

- Output 1 Retrained WRU teaching staff
- Output 2 Developed teaching materials
- Output 3 Developed courses and curricula
- Output 4 Graduate students trained abroad
- Output 5 Up-to-date library facilities
- Output 6 Improved communication

The institutional anchorage of the sub-component is the WRU. The sub-component will be implemented by senior staff of WRU assisted by Danish consultants. A Sub-component management group will be formed composed of the Deputy Vice Chancellor of WRU, Director International Cooperation and relevant faculty heads as well as the team leader of the Danish consultants.

Sub Component 1.4 Support to Capacity Building of Water Sector Institutes

There are present and future needs for upgrading the technical capacity of key water resource institutes that currently are the main providers of specialist technical services. As water becomes more scarce and polluted there will be an increasing need for more accurate and sophisticated analysis to ensure that the complex problems are well understood and that economically and environmentally efficient solutions are proposed. Given the level of Danish expertise in data handling and analytical approaches and methods for integrating natural science and social science in water resources assessments and planning including mathematical modelling and need for

improving this capacity in Vietnam, it is appropriate that support is provided for technology transfer in this area.

Before the component can start, there is a need to further investigate the potential for support to the key institutes. There is a concern that that the Danish assistance should not distort competition by selecting 'winners'– an early institutional screening will ensure that support is directed in an appropriate manner. The data needs of the models should not be underestimated and the support budgets should ensure that data requirements are taken account of. The complications of different and competing models will need to be looked at as part of a formulation mission programmed for May-June 2000.

The institutional anchorage of the component will be the key water sector institutes. The component will be implemented by the institutes assisted by Danish Consultants. A sub-component management group will be formed composed of the Deputy Directors of the Institutes and the Consultant Team Leader. At a later stage it may be decided to split the component into two to reflect the two different institutions.

Budget

The budget for the component is summarised below:

Budget for Component 1: National Capacity Building

Sub-component	Year 1 000 DKK	Year 2 000 DKK	Year 3 000 DKK	Year 4 000 DKK	Year 5 000 DKK	Total 000 DKK
1.1 Support to Implementation of LWR	5.271	4.336	3.017	2.559	1.217	16.400
1.2 Support to Implementation of NRWSSS	3.814	3.375	1.617	2.467	1.426	12.700
1.3 Support to WRU	7.717	6.915	5.954	2.695	1.720	25.000
1.4 Support to Water Sector Institutes	5.000	15.000	5.000	5.000	5.000	35.000
Total	**21.802**	**29.626**	**15.588**	**12.722**	**9.363**	**89.100**

Implementation Plan

The component implementation plan is shown below. Implementation is expected to start October 1st, 2000.

Sub-component	2000				2001				2002				2003				2004				2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Sub-component 1.1																								
Inception period																								
Implementation																								
Sub-component 1.2																								
Inception period																								
Phase 1: 18 month																								
Phase 2: 24 month																								
Phase 3: 6 month																								
Sub-component 1.3																								
Inception Period																								
Phase 1: 24 month																								
Phase 2: 33 month																								
Sub-component 1.4																								
Formulation																								
Inception Period																								
Implementation																								

1 INTRODUCTION

Danish assistance to capacity building in water resources management at national and provincial level in Vietnam commenced in 1993 with the Action Plan for Water Resources Development in the Upper Srepok Basin implemented by the Mekong River Commission Secretariat (MRCS). The assistance was continued with support to water resources management in Dak Lak which since 1997 has implemented key recommendations of the Action Plan and continued the policy dialogue with the central level authorities.

Within water service delivery, Denmark has supported the formulation of the National Rural Water Supply and Sanitation Strategy (NRWSSS), which was submitted to Government in May 1999. Denmark has also provided assistance to a number of urban water supply and sanitation projects (Halong, Dalat, Bôun Ma Thôut).

In June 1997 the Sector Programme Support (SPS) Identification Mission identified Capacity Building , Water Resources Management, Rural and Urban Water Service Delivery as the main components for the SPS.

The Mission also identified approval of the LWR and completion of the NRWSSS as critical preconditions for more comprehensive support to water resources management. In October 1998, after the LWR had been passed by the National Assembly and the NRWSSS drafted, Danida fielded three preparatory studies for a detailed assessment of the needs for assistance to capacity building in water resources management.

The Institutional Assessment Study (February 1999) focused on the needs for support to implementation of the LWR and the institutional changes required for efficient implementation of the LWR and the NRWSS Program (NRWSSP). The Human Resource Development (HRD) Assessment Study (March 1999) identified the corresponding needs for support to curriculum development at both university, in-service training institutions and vocational training schools. The Financing Mechanisms Study (February 1999) analysed the possible flow of funds for capital investment in rural water supply and sanitation infrastructure and the corresponding needs for capacity building of the financial intermediaries.

In March 1999 a Preparation cum Formulation Mission for the SPS was assigned to compile component summaries on basis of existing documents. Comments were received from a number of organisations. On basis of this work and taking account of the comments received, missions were fielded in November 1999 to update and formulate the components in greater detail ready for appraisal in the year 2000. A desk appraisal was undertaken in April 2000. Following the desk appraisal and comments received from relevant authorities a final component description was prepared.

2 VISIONS, OPPORTUNITIES AND BARRIERS

2.1 VISIONS

The vision for the National Capacity Building in water resources management and water service delivery is that Vietnam in 5 years will have a working national framework for the Water Sector. This framework will be served by well functioning institutions for water resources management and water service delivery that can provide effective support to management and implementation at provincial levels.

An appropriate and well functioning legislative and administrative framework for water resources management and water service delivery will promote an equitable and economically efficient allocation of water. In turn this will improve the living standard of people and increase the access to water for different economic sectors in different parts of river basins. A secure access to water will safeguard existing and future capital investment in water resources development and will mobilise public and private sector funds for capital investment in the development of the Water Sector.

More specifically it is the vision that the SPS component for Capacity Building at national level will contribute to:

- A national framework for the Water Sector;
- A coherent water related legislation enabling the sustainable development of freshwater resources in Vietnam at all levels of society;
- A consideration of the feasibility of estabalishing of Department of Water Resources Management within MARD implementing the LWR and its water resources management functions at national level;
- Greater capacity within CERWASS to co-ordinate and assist provinces implementing the National Rural Water Supply and Sanitation Program;
- Greater capacity at Water Sector Institutes to be fully capable of undertaking a wide range of analytical tasks such as water resources modelling and data base management;
- A system for issue and administration of water rights for the use of water including abstraction for different purposes, discharge of wastewater, hydropower generation, aquaculture, navigation and other uses, that will contribute to an economic and environmentally sustainable use of water;
- Sector financing through a system of water resources fees and service charges that provide incentives for an economical and environmentally sustainable use of water, and contribute to the social and financial sustainability of water service delivery; and
- Improved university level education with staff and curricula that can produce candidates with the skills and knowledge required for integrated water resource management.

2.2 OPPORTUNITIES

The Law on Water Resources

The LWR provides a unique opportunity for Vietnam to introduce a coherent legislation to govern the future development of water resources on an economic, social, financial, and environmentally sustainable basis. The LWR recognises international principles in water resources management and provides the framework to bring Vietnam in line with proven international practices.

The LWR was passed by the National Assembly in May 1998 after 12 years of preparation. The LWR is a framework law which sets forth principles, policies and procedures for water resources management rather than specific regulations. Implementing the LWR will therefore require a very large legislative effort before it becomes operational.

The implementation of the LWR in accordance with the intentions embedded in the Law will enable Vietnam to develop its freshwater resources for the benefit of the entire population and protect its valuable water related environments.

National Rural Water Supply and Sanitation Strategy

The NRWSS Strategy constitutes a new approach to water service delivery in Vietnam replacing the current supply-driven programmes with a demand responsive approach that will put the user or user organisations in focus in the selection of service levels and in construction, operation and maintenance of facilities. The Strategy provides the first comprehensive review and guide on upgrading of the water supply and sanitation in rural areas, but significant work remains to translate the Strategy into operational programmes at national, provincial, district and commune levels. The NRWSS Strategy is well timed with the redirection of Government priorities towards Hunger Eradication and Poverty Reduction in rural areas where the first phase Program 135 "1000 Poorest Communes" was launched in 1999.

The strategy provides a very important opportunity to build on the momentum created so far and make the strategy operational so that CERWASS by the end of the period of assistance has the capability to implement the NRWSS Strategy in accordance with the lessons learnt through the various pilot projects implemented.

The NRWSS Strategy complements the LWR and will, when implemented, provide tangible benefits to the rural poor by improved domestic water supply and sanitation which will reduce the plight of women, in particular

Support to WRU

There is an opportunity following the LWR that the formal education sector within water services delivery and water resource management at university level is transformed so that it reflects the new concepts with the areas of demand response approach, water economics and integrated water resource management. If this is achieved the university will be capable of educating and training professionals so that the future human resource needs of the sector are met.

Support to Water Sector Institutes

This sub-component will support the component that focuses on integrated water resource management at river basin level (Ca and Srepok basins). It will provide the analytical tools for national level support to all the river basins. It is envisaged that the component will lead to specialist technical service providers being fully capable of undertaking a wide range of analytical tasks such as water resources river modelling and data base management.

Contributions to Poverty Alleviation, Gender, Environment, Good Governance and Participation

The contribution of the National Capacity Building component to poverty alleviation is indirect and long term. Capacity Building does not have direct impact on poverty, but is a prerequisite for the sustainability of water related services, thus protecting and ensuring maximum benefit from household investments which are crucial to the poor.

Sound water resources management is also a prerequisite for an economically efficient and environmentally sustainable utilisation of water resources and will thus contribute to the good governance of the resources as well as open up improved possibilities for economic growth.

Capacity constraints at the national level have delayed development and implementation of policy reform, in areas such as the LWR and implementation of the NWRSSS. The reforms include a more coherent system of water rights that will modify the present "first served takes all" system that tends to favour the richer less vulnerable sections of the community. Speeding up these reforms through capacity building will thus have a poverty alleviation impact by increasing the equity of access to water.

Capacity building can be expected to have a longer term impact in that professionals and sub-professionals within Vietnam will be empowered to better manage water resources and the delivery of water services – also in terms of a more gender sensitive approach. Within water resource management, greater knowledge of the LWR, improved capacity to make it operational and experience from pilot projects on water rights administration and application of economic principles to water tariffs are likely to lead to environmental benefits and improvements in good governance as water distribution is fairer and more transparent. Within water service delivery, professionals will be better equipped with technical modelling tools. The Water Resource University curriculum will be upgraded especially in three areas: the application of the demand responsive approach; the application of economic principles to water supply and the techniques and practice of integrated water resource management. These three areas will all contribute to cross cutting themes of gender, environment and good governance.

Since the component will strengthen rational management of water resources through the LWR, there will be a considerable environmental benefit in terms of sustainable use of water resources. The impact on the environment will include a greater focus on the quality of the water rather than just the quantity of water, the more rational distribution of scarce water resources and the closer linkage of land and water management. Tools such as economic instruments and water rights will be piloted and adopted in furtherance of these aims.

The component can contribute to a deeper understanding of gender issues. Since the target group includes young professionals there is an important opportunity to create awareness of the main gender issues and thus open up the possibilities for a greater degree of gender mainstreaming and agenda setting.

The component has as one of its core aims the establishment of rational governance over water resources and water service delivery. As such it has a significant potential to contribute to good governance and participation in the sector and in society as a whole. The operationalisation of the NWRSSS will give the sector new tools and examples of how to involve the target groups and deepen the level of participation of users, user groups and civil society as a whole.

2.3 BARRIERS

The rapid development and the comprehensive reforms that have taken place in Vietnam during the past decade after introduction of the "Doi Moi" policy present both opportunities and constraints to the future development within the water and sanitation sector. In water resources management and water service delivery the most significant barriers are related to:

- High pressures for economic development;
- Fragmented state management of the water resource;
- Water resources management being a new discipline with limited political awareness and lack of skilled staff;
- Low priority to rural water supply and sanitation;
- Tradition for focus on engineering rather than management solutions;
- Tradition for top down approach at all levels combined with weak capacity at provincial and lower levels; and
- Tradition for supply driven approach to provision of water services.

The environmental degradation in Vietnam is very much a reality today. The drive for rapid economic development has in recent years led to massive encroachment on the remaining forests. Watersheds have become degraded and there has been excess exploitation of valuable groundwater resources.

The management of water is both cross-sectoral and interdisciplinary in nature and it suffers when the legislative and administrative framework is fragmented which to a greater or lesser extent is the case throughout the World. Vietnam is no exception, in fact many of the problems experienced in the Water Sector can be traced to a long tradition for a sectoral management of the water resources, where each line ministry has had full authority over the development of water within its sub-sector. This has resulted in a self-centred and sector oriented approach with substantial overlap of responsibilities and duplication of functions. The LWR provides the first administrative tools for integrated water resource management that may govern the cross-sectoral utilisation of water. However, it is evident that it will be challenging to create institutions with sufficient strength to overcome entrenched sector traditions and maintain integrity to implement the LWR against strong political and popular pressures for short term economic development.

The National Water Resources Council (NWRC) which is defined in the LWR, and the Department of Water Resource Management proposed by the SPS Institutional Study, have the potential to become important vehicles for improved inter-ministerial co-operation in water resources planning and management. This will, however, require that both are given a status and composition which effectively screens them from influence by the service functions that MARD is responsible for.
Water resources management functions are new in Vietnam where the sector until now has focused on development of infrastructure for increased exploitation of the resource. A major barrier to longer term integrated management of water resources is the present university curriculum which is too focused on development and not sufficiently focused on management.

A principal reason for the weak position of water resource management in Vietnam is that Vietnam is endowed with ample water resources and only recently has begun to feel the impacts of water shortages, water pollution and deteriorating watersheds. Water resource management was limited to river basin planning, but there were neither mechanisms nor a perceived need to enforce the planning. Under the centrally directed economy this worked well, because implementation was trusted with state organisations only, whose investments were controlled by the central level and thus by definition and economic necessity would follow the state planning. Upon decentralisation and introduction of a market oriented economy with greater incentive to the private sector to participate in water resources development, the need for a more efficient regulatory framework to govern development and protection of the water resources has become increasingly obvious. The LWR provides this framework,

but it will require strong political will and technical support to change existing practices.

The public investment projects have in the past been implemented by State owned Enterprises (SOE) consulting and contractor companies. In a demand driven approach the user organisation will be free to choose the source of the services required. The private sector is likely to play a more dominant role in the future. But there is a need for support to the development of a facilitating environment in order for the private sector to fully utilise its potential.

A barrier to rural water supply and sanitation is that it involves low technology solutions, small investments and work in remote areas and is therefore accorded low priority and associated with low prestige among Government institutions and staff. The NRWSSS has not yet been approved by the Prime Minister. There is a need for the MOC and MARD to provide professional assistance to the Office of the Government to facilitate the process. Staff of core Government Institutions are not yet familiar with the content of the NRWSSS . The responsibility of implementing the NRWSSS rests with CERWASS. CERWASS is a relatively young institution staffed with approximately 60 professionals of which 10-15 percent have master degrees. None of them have experience with the implementation of the new concepts and approaches of the NRWSSS . A major effort in terms of Human Resources Development, institutional reform and organisational development will be required for CERWASS to become capable of fulfilling its role.

The focus on quantitative targets for land and water development has led to an emphasis on technical solutions to solve water resources availability, and judged by the position of Vietnam as a major rice and coffee exporter, Vietnam so far, has been very successful with this approach. The demand for future social, economic and environmental sustainability of the Water Sector will however, require a greater emphasis on management skills and substantial reorientation and re-training of government staff at both central and provincial level.

The top-down approach in the previous planning and management of water resources, means that the central level has a near monopoly on planning skills. Skills at the provincial level are weak and mainly directed towards construction of infrastructure. Rural communities are used to a demand responsive approach due to the fact that most investments in the past have been financed by individual households. The investments of the various government agencies involved in RWSS have been supply driven and implemented in a top down approach. A major reorientation of staff of MARD, CERWASS, and the Ministry of Planning and Investment (MPI) at central, provincial, district and commune level is a prerequisite for the successful implementation of the NRWSSS .

The sector has in the past been seriously under financed. The historic government and donor investments of USD 10 - 20 million per year are in stark contrast to the needs of USD 150 million per year estimated by the NRWSS Strategy. Even with considerable goodwill among donors it will take several years to increase the existing level of funding and establish new funding mechanisms, thus placing the ambitious targets of the NRWSS Strategy at serious risk. The existing credit institutions in rural areas provide credit for agricultural investments, but they have not developed services for investments in domestic water supply. Credit facilities are another pre-requisite for a demand driven approach to RWSS Strategy. Existing credit institutions need to be encouraged and assisted to develop cost-effective services for rural water supply and sanitation investments. The idea of a National Fund which can provide finance

for rural water supply and sanitation investments – combining grants and credit – has still to be developed and accepted by the appropriate GOV institutions.

In the past private households have undertaken most of the RWSS investments in individual solutions using their own savings. The role of the Government has been limited due to financial constraints and low political prioritisation. As a result the poor and marginal households have been badly served and environmentally unsustainable developments have often taken place. In the schemes assisted by the public sector, water has in the past been considered a social good to be provided free of charge by the State, who has been the provider of services, while users have contributed to operation and maintenance. In general the programs have been implemented without consideration being given to gender differences. The programs have thus tended to focus on the needs and demands expressed by men rather than women.

Many of the schemes have been poorly designed and constructed and hence have not been technically and financially sustainable. This is also the case in the irrigation sector which overwhelmingly dominates the consumption of water in Vietnam, yet receives water at a very low fee, that is related to the quality of land for rice production rather than the volume of water consumed. Also the urban sector utilises water at a cost well below the economic value of the water. A financially viable development within the sector with increased demand for capital investment and cost recovery from users, will break with deeply rooted social traditions and meet strong political barriers. It can build, however, on an almost equally strong tradition for rural communities to take hand of their own future when government investments fail to materialise.

Vietnam is still under a transition from a centrally planned economy to a more market orientated economy. The roles of the public and private sector are changing and a stable division of functions and roles has not yet been attained. Political interference in the selection and promotion of civil servants is common place. Civil servants are paid around 40 USD per month meaning that many government officials have to take on a second job, rely on family members or find other ways of ensuring economic survival. Cooperation with the government needs to take account of these realities and be formulated such that it can still achieve worthwhile goals despite these constraints.

2.4 CAPACITY BUILDING APPROACHES

The problem analysis in annex B and the institutional background given later in chapter three suggest that a highly flexible and tailored approach to capacity building would be appropriate. Each identified sub-component is in a different institutional setting and faces different capacity building needs and challenges. As an illustration of this the main capacity building needs of the different sub-components are summarised very briefly below:

The challenges facing Danida support to the first sub-component: Support to implementation of the LWR, are institutional rather than directly capacity building in nature. MARD have defined the main aim of the Danida support which is to provide expertise to develop the necessary institutional rules, tools and regulations so that the LWR can be made operational. A complicating but ultimately healthy factor is that other donors are also supporting these efforts – although with a different focus.

The capacity building challenges facing the second sub-component: Support to implementation of the NRWSSS revolve around the need to empower CERWASS

and deepen the internal and external understanding of the principles of the new strategy e.g. the demand responsive approach and innovation in financing rural infrastructure. During the second and third phases the capacity building challenge is to build up a self critical and learning capacity within the relevant organisations so that lessons from pilot projects and future implementation can be gathered and used to inform future efforts.

The capacity building challenge facing the third sub-component: Support to Capacity Building of the WRU is well defined and centres on the training of teachers and the development of new curriculum and courseware.

The capacity building challenge facing the fourth sub-component: Support to Capacity Building is focused on the transfer of highly specialised technology such as mathematical river modelling.

Despite the wide range and differing nature of the challenges, there are some general principles that are appropriate for the component as a whole. The main principle that should be adopted is the focus on learning processes rather than training delivery. The focus on learning processes is intended to put the learner – be it an institution or an individual – at the centre. Vietnamese government staff and professionals are highly motivated and eager for knowledge and access to new skills. A focus on learning processes places responsibility for learning on the institutions and individuals and there is abundant evidence that this approach will meet with success in Vietnam. In practice this means that training should be user defined, should not be prescriptive and should explicitly seek to draw value from the many learning opportunities that can be provided as a result of on the job exposure, coaching and mentorship.

There are many capacity tools and approaches that can be used depending on the circumstances. A range of possible approaches and tools is given in list form below. These are generally well appreciated by professionals within capacity building and will be selected, shaped and applied as required by the situation:

- Initially targeting those with the greatest self interest to learn;
- Transferring responsibility for training and capacity building to the target group itself;
- Use of institutional capacity building multipliers such as demonstration effect of pilot projects;
- Identifying agents of change through which to work;.
- Recognition of existing knowledge;
- Identification of local technical and capacity building support facilities;
- A training needs analysis that identifies local strengths not just weaknesses;
- Helping the target group to set realistic training goals;
- Use of several different training delivery strategies;
- Close monitoring of training effectiveness both in terms of impact and cost;
- Use of training agents in the private sector;
- Use of tried and proven training packages;
- Use of training cascades to reduce training effort and volume;
- Workshops - these cannot be over used as people already perceive that they spend too much time at workshops and there is a frustration over the amount of talk compared to the lack of concrete results. Workshops are good for brainstorming, appointing task groups and evaluating proposals but not for detailed design type tasks;
- Task Groups - these are small groups of experts where detailed work can be done which would be impossible at a workshop. They can be used to engage

commitment and to delegate responsibility and to provide on the job training in management of processes;

- Focus discussion groups - these are relevant to explore and uncover issues in depth. They can initiate a valuable dialogue between different interest groups and lead to resolution of complex problems by the key parties themselves;
- Awareness raising - often a lack of awareness is the key block to learning. Awareness raising needs to be designed differently for different groups. It needs to take account of hidden prejudices that prevent other points of views from being understood. It needs in some cases to shatter these so that blocking behaviour can be changed;
- Development of listening skills - giving listening a high priority in the processes. Poor communication is the biggest reason for low co-operation and poor listening is the biggest reason for poor communication;
- Reflection of opinion - this can be done as part of the processes to increase self awareness and help to shatter myths and unhelpful prejudices;
- Perception mapping - this can allow people to appreciate other's viewpoints on complex issues where it is not a case of one is right and one is wrong;
- Perceptions can sometimes be more relevant and useful than the "facts";
- Problem understanding before problem solving - break up and analysis of the problem before rushing into solutions often reveals a pattern that suggests a viable solution;
- Innovation - brainstorming. The process needs to allow the injection of fresh ideas to problems of the vicious circle type. This can be done by :Group brainstorming; Involvement of outside parties; encouraging lateral thinking; throwing the problem back to the to those that have most to gain by its solution;
- Team building - the process can use group events to build the teams that will needed for the long and difficult implementation phase;
- Controlled withdrawal - often also called "deliberate neglect" can be used to allow others to take over ownership;
- Building on present capacity not substituting it - the process should also seek out local knowledge and attempt an approach that can build on that rather than start something new; and
- Avoiding parallel structures - the process should use existing structures as much as possible. For example in restructuring tasks the HRD department or the personnel manager should be in the lead.

3 GOVERNMENT MANAGEMENT

3.1 ORGANISATION OF THE WATER SECTOR

A comprehensive assessment of the Water Sector is given in the SPS Institutional Study whilst rural sanitation is dealt with in the RWSS Strategy. Consequently, the present component summary focuses on institutions important to the Capacity Building component.

Following recent re-organisation of the sector, MARD has been given the core responsibility for the sector. Coordination between the various ministries and sectors involved in water resource management and water service delivery is planned to take place through the recently established National Water Resource Council (NWRC). The NWRC will be the mechanism to ensure that the concerns of important ministries such as MOC, MPI, MOSTE and MOH are taken account of and that all initiatives are coordinated with the plans of these ministries.

Organogrammes of the relevant organisations are given in Annex C.

3.1.1 MARD

At national level the main responsibility for water resource management and water service delivery in rural areas lies with MARD where the DWRMHW is responsible for implementation of the LWR as well as water service delivery within irrigation and drainage. Other water related services within MARD lie with the Department of Flood Control and Dyke Management.

At provincial level the functions of MARD are undertaken by the Department of Agriculture and Rural Development (DARD), which administratively belongs to the Provincial People's Committee, but technically is responsible that the decisions, regulations, standards and guidelines of MARD are adhered to.

Rural water supply and sanitation is not represented at department level, but is both managed and implemented by the Centre for Rural Water and Environmental Sanitation (CERWASS). CERWASS was originally established as counterpart agency to UNICEF for implementation of the Water and Sanitation (WATSAN) program, but with the recent focus on rural water supply and sanitation the centre has become increasingly involved in policy formulation and program preparation.

3.1.2 Department of Water Resources Management and Hydraulic Works

Within MARD the special purpose department, responsible for the management of water resources and hydraulic works is the DWRMHWResponsibilities for flood control and dike management are allocated to another special purpose department.

Responsibilities for Rural Water Supply, when transferred from the MOC have not been finally allocated, but it appears that they will be allocated to the Department for Agricultural and Forestry Products Processing and Rural Jobs.

The responsibilities of DWRMHW are defined in Decision of the Prime Minister no 354/TTg of 28 May 1996 . The Department is under the Minister responsible for the implementation of state management over:

- Water resources including rural domestic water (excluding mineral water and thermo-geological water);

- Management of hydraulic works; and
- Management of the exploitation and integrated development of rivers throughout the country.

Under these responsibilities the Department shall develop master plans, long-term, mid-term and annual plans for surveys of water resources; water balance and development and protection of the resource as well as plans for the exploitation, protection and development of hydraulic works systems.

The Department shall prepare the legal and policy documents for the regulatory functions and systems; issue operational regulations and procedures, standards and technological norms; appraise all hydraulic works projects before presentation to the Government; plan and implement big multi-purpose hydraulic works as well as inter-provincial works; prepare and propose management organisational models for hydraulic works, water resources and river basins.

The DWRMHW comprises two general purpose departments, Bureau of Plan, Economics and Personnel and Bureau of Administration and Legislation, five special purpose bureau dealing with water resource planning, environmental management, irrigation, hydraulic engineering and groundwater management. The DWRMHW has a south bureau and two special purpose centres are attached the department: the Centre for Water Resources Survey and Evaluation and the Centre of Technology Transfer for Management of Water Resources and Hydraulic Works.

The main difference between a Bureau and a Centre lies in the funding arrangements. All bureau are fully and only financed by the state budget for the Ministry, whereas the Centres are financed for activities, ordered and managed by a bureau within the DWRMHW or by other ministries and sub-structures. A Centre is thus partly autonomous and may for example exceed government salary scales for their staff. The DWRMHW is headed by a Director and six Vice-Directors. The Director is executive officer, referring to the Minister, who decides the number of bureau within the department.

Since the DWRMHW is the core organisation for implementation of the LWR and for water resource management in Vietnam it is described in greater detail in annex C.

3.1.3 CERWASS

Under the assignment of the MARD, the functions of CERWASS, as officially presented, are to:

- Synthesise the situation of Rural Water Supply (RWS) and Environmental Sanitation (ES), to help the Minister of MARD establish annual long term/ midterm plans and conduct the implementation of those approved plans;
- Make plans of estimation, allocation, guidance in the use of capital investment sources (including international grant and counterpart fund) for the schemes of RWS and ES in the whole country;
- Guide to establish projects, co-ordinate to the related organizations to consider, approve projects then submit them to the MARD for the approval.
- Conduct the implementation of the approved projects of RWS and ES;
- Integrate the programs/ activities of RWS & ES conducted by UNICEF and other international organizations and related socio-economic studies in rural areas;
- Cooperate with UNICEF and different international/ domestic organizations to design projects for the support and grant to RWS and ES;

- Conduct studying and applying the advances of science - technology; and implement the models of RWS and ES;
- Organise training for personnel/ staff/ workers/ farmers on techniques, skills of water supply and sanitation;
- Communicate and promote the use of clean water and keeping the environment in rural area in good sanitary conditions;
- Make policies/ regulations for the fields managed by CERWASS; and
- Organize activities of supplying materials/ equipment and transfer techniques/ technologies of RWS and ES;

CERWASS have a head office within MARD and provincial CERWASS offices have been formed in all 61 provinces. The head office is staffed with some 60 to 70 professional staff. Amongst the staff are 5 social scientists, a lawyer and the rest are engineers and technicians. About 5% of the staff have Ph.Ds, about 15% are educated to masters level and the rest are either at B.Sc or diploma level.

The provincial offices are responsible for the implementation of the National Plan for Rural Water Supply and Sanitation, which includes the UNICEF- funded elements and which will also include the Danish funded component under the RWSS. Typically, a provincial CERWASS would be responsible for development of the provincial (and district and commune level) annual action plan for development and installation of rural water supply schemes. Two to five professional staff are employed in each provincial office.

3.1.4 WRU and the Human Resource Development Institutions Serving the Water Sector

A detailed study of the human resources of the sector was undertaken in 1999 (Danida and MARD, HRD assessment study, 1999). A summary of the tertiary level education system is given below based on this assessment. The study showed that professional and skilled manpower to the Water Sector is divided into three categories:

- Professional education and training;
- Technician education and training; and
- Skilled worker education and training.

For professional level staff there are a number of mono-specialised and structured universities providing education for water supply engineers under the responsibility of different ministries - Ministry of Agriculture and Rural Development (MARD), Ministry of Construction (MOC) and Ministry of Education and Training (MOET). These include the:

- Water Resources University, Hanoi (MARD);
- Mining & Geology University (MOET);
- The Civil Engineering University, previously the Polytechnic University (MOET);
- Architectural University, Hanoi (MOC);
- University of Technology, Hanoi (MOET); and
- National University of Ho Chi Min City (MOET).

For the middle level technician level staff for the water supply industry, there are three Water Resources Training Colleges managed by MARD:

- at Phaly Town in Han Am Province for the northern region;
- at Hoi An City in Quang Nam Province for the central region;
- at My Tho in Tien Giang Province for the southern region.

and seven vocational / technical schools managed by the Ministry of Construction:

For the provision of skilled workers for the water supply industry there are 26 vocational training schools, some of which provide for the irrigated sub-sector of agriculture managed by MARD and 18 skills training centres managed by the Ministry of Construction.

A detailed assessment of the roles, performance gaps and project needs is made in the Danida and MARD, HRD assessment study, 1999. The main conclusions are that a comprehensive retraining effort is deemed necessary to bring the professional skills and knowledge to the desired level relative to the requirements in the LWR and the NWRSSS.

The main partner for sub-component 1.3 is the Water Resources University (WRU). The WRU was founded in 1959 to focus on training and research within the Water Sector. The WRU provides education of engineers at all levels, B.Sc., MA and Ph.D. As a general education institution, the WRU refers to the Ministry of Education and Training with respect to curricula and content, whereas it is attached to the MARD as a line ministry for the sector. By 1996, the University had trained over 10,000 water resources engineers, 100's of post-graduates and 50 PhD's, of whom a number are leading sector specialists or key leaders both centrally and locally. The annual output of B.Sc. engineers amounts to 600-675. Besides the main campus in Hanoi, the University has a recently established satellite centre in Ho Chi Minh City.

3.1.5 The Water Sector Institutes

The Institute of Water Resources Planning (IWRP) is an agency under MARD specializing in water resources planning. It formulates water resources development plans for the whole country with the aim of integrated use, protection and sustainable development of water resources and environment serving socio-economic development. It has two offices: The head office in Hanoi with a staff of about 140, and a sub-institute in Ho Chi Minh City with a staff of about 100. The activities of the Institutes are mainly funded directly from MARD, but some funding is also generated through consulting activities for the provinces and other clients.

The Institute of Water Resources Research (IWRR) and the Southern Institute of Water Resources Research (SIWRR) are national research institutions under MARD. They mainly undertake research and consulting activities in relation to the design and impact assessments of specific water resources development activities such as e.g. river training, flood control, irrigation, land reclamation, and small-scale hydropower development. Each have a staff of about 200. The activities of the institutes are partly funded by MARD, but a substantial part of the revenue (70%) is generated through consulting activities for the provinces and other clients like NGO's.

3.1.6 Other Relevant Actors in the Water Sector

Other institutions involved in water resource management and water service delivery include: commercialised companies under provincial control; the private sector; NGOs and, at the individual level users and their organisations.

Commercialised Companies under Provincial control
The provincial government institutions have traditionally covered all sector activities including planning agencies, management companies, engineering design institutions, and commercial construction and manufacturing companies. Reform of the state administration has given these institutions increasing autonomy with responsibility to generate their own income.

Urban Water Supply Companies exist in all provincial capitals, but typically they are attached to the Construction Department of the provincial PC rather than the municipal PC. In addition to the provincial capital the WSC may undertake design and construction in district centres and rural areas.

The Irrigation and Drainage Management Companies (IDMC) are trusted with the management of the majority of irrigation and drainage schemes that have been built with state support. The IDMC takes a direct role in the daily operation and management of schemes at all levels that conflicts with the principle of "management at the lowest appropriate level".

The Investigation and Design Companies carry out feasibility studies and designs for hydraulic structures and irrigation schemes and should become the principal consultant for development of rural water supply.

Private Sector
The private sector is vibrant but limited to very small companies that do not compete directly with the commercialised companies mentioned above. Small companies and individuals provide important services such as stocking and distribution of sanitation hardware, as well as providing pipes and pumps for water supply. Craftsmen and small contractors are engaged in borehole drilling, digging wells and installation of simple water and sanitation facilities. Small consultancy companies providing design services for urban developments including water supply are emerging. The development of a larger scale more formalised private sector is still limited by the overall political environment, which favours state owned enterprises. However, it is clear that the private sector is likely to grow and become more and more significant in the future.

Small private organisations are emerging that provide training and educational services of relevance to the Water Sector. These include computer training companies, language training companies and companies that provide training for their workforce within construction, engineering design and related fields.

NGOs
There are many NGOs in Vietnam and these are usually registered under the Fatherland Front or as part of an association of NGOs that is registered. The individual NGOs are too numerous and scattered to mention here except for the Women's Union which is highly influential, in part, due to its official backing and the Vietnam Union of Science and Technology Associations which is a large association that has taken an interest in water resources and which amongst it members hosts the Vietnamese partner for the Global Water Partnership.

There are at least three different types of NGOs in Vietnam. Many NGOs are registered as research-based organisations that also offer services within areas such as capacity building, socio-economic surveys and environmental assessment – these are sometimes called not for profit companies. Some NGOs function as mass organisations that serve a very useful function when undertaking large collective tasks such as dyke repair or mitigating flood damage. Other NGOs play an advocate role and seek to influence government and society within specialised areas such as conservation of bio-diversity. Many of these organisations have an important and constructive role to play in the broad definition of the Water Sector.

Users

Consumers and users of Water Sector services such as domestic supply, sanitation and irrigation water are at the core of the sector. In effect, the sector is defined by the many daily decisions made at this level much more than by policy statements or institutional arrangements at a higher level. In principle, consumers and users are responsible for the paying for the services and ensuring that they are operated and maintained. These responsibilities are discharged in a variety of ways. In the urban situation, water companies undertake to manage the water supply and sanitation systems in exchange for tariff payments. Often, these arrangements involve a considerable degree of subsidy. In the rural situation, water supply and sanitation is sometimes a village level activity but more usually is an individual household responsibility especially where point source water supply and on site sanitation is used. Irrigation services are usually provided through large companies and farmers are taxed according to a complicated system that assesses the amount of land being irrigated and the crop yield obtained. Often there are communal duties, usually based at village level, to upgrade the infield works which fall outside the direct responsibility of the irrigation companies.

3.2 GOVERNMENT INPUTS

It is expected that the GOV at National and Provincial levels shall provide the following types of input:

- All professional and support staff of involved organisations and institutions;
- office premises, adequately furnished and equipped, to accommodate the Planned component activities, including Danida advisers, short-term specialists and local consultants; and
- Invitations for technical advisers and consultants to work and live in Vietnam, and exemptions for taxes and duties of expatriate staff and imported equipment in accordance the Government agreement on bilateral development assistance.

There is an emerging practice for a cost sharing model under which Danida finances 80% and the GOV 20% of component costs, the Danida contribution being higher for technical assistance projects and the Government share being higher for infrastructure investments. The contribution by the GOV is typically provided in kind in terms of counterpart staff, office facilities and transport, and as cash contributions earmarked for infrastructure construction.

All the sub-components require extensive government inputs since the Danida inputs are only providing a limited support to government led initiatives. As the work of the sub-components is a core duty of the government and involves the part time input of many staff from across different disciplines and departments, it is difficult to define and quantify the exact inputs to be provided by the government. The five year

horizon, varying staff productivity, the institutional and other changes that can be expected combined with the difficult of quantifying inputs such as attendance at meetings, makes any mechanical assessment more or less meaningless. Ultimately the only practical approach is to make the working assumption that the government will provide all inputs that are necessary, over and above those inputs provided by Danida. If this does not happen then it signals a change in priorities at the government level and the level of ambition and the nature of the support will need to be reassessed.

3.3 DONOR SUPPORT

Donor support to the Water Sector has until now been dominated by irrigation and urban water supply. It has been focused on the physical rehabilitation and expansion of infrastructure in accordance with Vietnamese priorities and approaches to water resource management. Rural water supply and sanitation and capacity building have been minor components of these projects.

The Action Plan for Water Resources Development in the Upper Srepok Basin supported by Danida was the first significant attempt towards introduction of modern principles for water resource management and accompanying HRD.

One of the significant projects relevant to this SPS component is the Red River Basin Water Resource Management Project co-financed by the Asian Development Bank (ADB) and the Netherlands. This project has promoted the concept of integrated water resource management in a river basin context and is setting up models for River Basin Agencies.

In water supply and sanitation, strategies have been developed for urban areas with support from Finland and for rural areas with support from Denmark. The NRWSS Strategy applies proven approaches to the rural water and sanitation sector, yet it will require substantial reorientation of the national programme and broad capacity building for this to succeed.

The approval of the LWR has attracted considerable interest among donors for assistance to implementation of the new functions in water resource management. The SPS Institutional Study in November 1998 established the framework for water resource management which subsequently has been adopted and elaborated upon, in particular at an international workshop on water resource management in March 1999, organised by MARD with support from the ADB. What has emerged is a framework where different donors are considering to support each of the principal functions in water resource management at national level and an integrated approach to water resource management at river basin or province level.

Table 3.1 Donor Coordination within water resource management (tentative areas of assistance)

Support Area	Main Donors					
	Danida	ADB	WB	AusAid	Netherlands	UNDP
NWRC		*		*	*	
Secretariat		*	*			
Capacity Building for LWR in MARD	*		*		*	
Information Management				*		
Dam Safety						*
Central Region Investment		*			*	
Dong Nai, river modelling and institutions		*			*	
Mekong Delta				*		
Srepok, Ca	*					
Red River		*				
HRD	*			*	*	

In its Country Assistance Strategy 1999-2002 the WB has made "Implementation of the LWR and Satisfactory Water Resource Management" one of the triggers of increased assistance to Vietnam and "Establishing a Water Resources Commission to allocate water amongst different users", i.e. the NWRC, is one of the WB indicators of progress within the sector.

The WB intends to support water resources through three different components:

- Financing of multi-purpose storage and downstream works in selected basins in Central Region;
- Financing of local water management throughout Vietnam, including irrigation rehabilitation; and
- Budgetary support for national water resource management in close coordination with other donors.

Some of the elements of the WB program are dependent on the availability of grant financing of Technical Assistance TA and preparation work. In addition the WB is seeking grant finance to support the drafting of decrees in continuation of previous work in supporting the drafting of the LWR..

ADB is preparing a TA-cluster to Vietnam including support to capacity building in water resource management at national and river basin levels as well as the preparation of infrastructure investments on the central coast and in the Dong Nai Basin. The proposed ADB assistance to capacity building in water resource management broadly complements the assistance MARD has requested under the SPS. The cluster agreement was signed in November 1999.

Furthermore, the need for funding of capital investment in rural water supply and sanitation in accordance with the NRWSS Strategy and the proposed funding mechanisms (cf. SPS Funding Mechanism Study, December 1998) were discussed both with the ADB resident mission and an ADB programme preparation mission which visited Vietnam in March 1999.

UNICEF has been the principal donor in rural water supply and sanitation and has since 1982 supported and strengthened this sub-sector through co-operation with CERWASS. UNICEF has adopted the NRWSS Strategy for its future assistance. UNICEF has secured co-finance for RWSS from Great Britain.

DfID is considering long term direct support to the rural water supply and sanitation sector and will station an adviser in CERWASS to assist with the IEC aspects of the national strategy – the adviser is scheduled to start in April 2000.

Australia is in the process of restructuring its assistance towards a sector program approach with water and agriculture as the main sectors and the Mekong Delta as the geographic focus. It has indicated a strong willingness to provide assistance complementary to the proposed SPS. In the Water Sector Australia will focus its assistance in water resource management, and rural water supply and sanitation. In water resource management Australia has indicated it will support the monitoring and associated data management at national level and the development of agencies for river basin management, where Australia has a comparative advantage. In rural water supply and sanitation Australia considers support to 5 provinces in the Mekong Delta and is prepared to adopt the NRWSS Strategy. Australia also considers to support vocational training in water supply and sanitation engineering in the Mekong Delta.

The Netherlands has been approached by the Hanoi Water Resources University for support to curriculum development and seadyke engineering. It has provisionally been agreed to co-ordinate support to WRU, with the Netherlands focusing on engineering aspects of irrigation and flood control, and Danida on water resource management and socio-economic disciplines.

An International Support Group (ISG) has existed within MARD for 2 years receiving support from Sweden. The ISG comprises representatives of different ministries as well as different sub-sectors within MARD and donors, and meets 2-3 times per year. Thus it meets the recommendations of the SPS Institutional Study for donor co-ordination under the auspices of the MARD Department of International Coordination. Sweden has indicated that it may have to withdraw its assistance to the ISG by the end of 1999 due to reduction of funding and recommends other donors to take over. MARD are considering options for improving donor coordination in the future and have expressed a desire to set up a forum where coordination issues can be discussed.

Danish assistance is also being given within the Agriculture and Fisheries Sectors. There is also an important environmental programme using MIFRESTA funds. Enreca is a Danish supported programme that funds research with environmental areas. Most of these programmes have substantial capacity building activities that are being supported through other ministries. It is important that activities under the National Capacity Building for the Water Sector are in harmony with these and other efforts at capacity building.

4 LOGICAL FRAMEWORK ANALYSIS

The Component is designed in accordance with the Logical Framework Approach (LFA) to project planning. The problem analyses for the four sub-components are presented in Annex B.

4.1 DEVELOPMENT OBJECTIVE

The development objective for the component is the immediate objective 1 for the SPS:

"An enabling legislative and institutional framework for sustainable use of water resources and water service delivery with capable staff for its administration and enforcement at central and provincial levels."

4.2 IMMEDIATE OBJECTIVES

The immediate objectives, which reflect the different sub-components are:

Immediate Objective 1
"Assist MARD in implementing an enabling legislative and institutional framework for water resource management, based on the LWR, at national level, and at provincial levels within the geographic focus areas supported by the SPS."

Immediate Objective 2
"Assist in the establishment of capability of CERWASS to implement the NRWSS Strategy in a cost-effective manner and in accordance with the overall political and institutional framework and the lessons learned in a number of pilot schemes in selected communes, districts and provinces."

Immediate Objective 3
"Assist the Water Resources University in producing graduates and trainees of short term in-service courses with appropriate skills in water resource management and water services delivery."

Immediate Objective 4
"Assist key sector institutes in improving their performance as main national providers of specialist advisory services within the water resources sector."

4.3 SUB COMPONENT 1.1: SUPPORT TO IMPLEMENTATION OF THE LAW ON WATER RESOURCES

The objective of the sub-component is to:

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

4.3.1 Outputs

At the end of the sub-component the government and especially the relevant department (DWRMHW) should be able to manage the ongoing process of implementing the LWR. Technical guidelines should be written, water rights and economic instruments should have been tested at pilot level and be ready for national replication.

Eight outputs have been identified as suitable for Danida assistance under this sub-component. The choice of outputs will be subject to flexible adjustment during the implementation as there are many factors such as the presence of other donor funds which could change the priorities for Danish assistance in this sub-component.

The main division of support between Danida and other donors will be that the WB and ADB will focus on institutional arrangements and the higher level ministerial and inter ministerial levels including the setting up of the NWRC and its secretariat. Whereas, Danida will concentrate on providing support at the technical level. In reality each topic area such as water rights, groundwater control etc will probably be tackled by task forces led by the relevant bureau within DWRMHW and assisted by local and international consultants. Coordination and planning will be crucial if confusion and long delays are to be avoided.

This sub-component is intended to assist the government (DWRMHW) efforts at implementing the LWR together with other donors. Implementing the LWR is likely to be more of a process than an event. The outputs are intended to support the government in that process especially in the early crucial years where concrete evidence of success will be necessary if the many stakeholders involved are to be motivated to support the LWR.

In order to ensure that the necessary flexibility is built into the sub-component there will be a four month inception phase during which the first output which involves the design of the legislative process is achieved. In addition to this the inception phase will confirm the relevance of the other outputs and alter or confirm the inputs and detailed implementation plan. Roles and responsibilities will be confirmed.

Output 1: Legislative process designed

This output will take place during the inception phase and will involve a number of preparatory activities aimed at establishing a working methodology for strategy development and implementation of the law at the technical guideline level. Since policy formulation, even at technical guideline level, is a consultative process, coordination will be of the utmost importance. Coordination is also essential if MARD is to make best use of the international resources put at its disposal by donors. The output will result in Task forces being formed, TOR being developed and

deadlines set. Clear outputs, work plans and budgets will be produced. At the same time a communication strategy will be drafted.

Output 2: Enhanced capacity for national water resources planning

Enhanced capacity for national water resources planning will be principally provided through assistance to developing national strategies and action plans. A draft national water resources strategy has been drafted but MARD have requested assistance to adjust, refine and test it against international practice and experience. The strategy will be used to improve understanding and gain wider consensus on approaches of the LWR. The action plan can provide long term guidance on how to manage the balance between conservation and exploitation of the nation's water resources.

This is an area, which has attracted the interest (although not the irreversible commitment) of many donors. Because of uncertainty about the inputs of other donors, it is an output that will have to be confirmed during the inception period. Danida support should be characterised by assistance to the process rather than production of a finalised strategy. The support will take the form of international consultants, funds for study tours and provision of the texts of the water resource strategies of other countries.

The strategy will define the transition process from the present situation to the envisaged one. The main institutional anchorage for this component will be the bureau for water resources planning management.

Output 3: Technical level decisions, guidelines and instructions at MARD level supported.

The process design under output 1 will help in the screening of the most important regulations to be drafted and also in the assembly of task forces to undertake this work following an agreed process design. Initially a review will be done of the regulatory requirements. Based on this review priorities will be set such as delegation of responsibilities to provincial level, funding of water resource management and conservation, ownership and transfer of infrastructure, participation of the private sector and the public (civil society), licensing of water discharge etc. Danida will assist with a selection of the necessary guidelines depending on the priorities and the areas where external assistance is most necessary. A special focus of Danida support to the guidelines could be the integration of poverty alleviation and gender issues.

Output 4: Feasibility study on institutional arrangements for water resource management.

An organisational feasibility study will be undertaken by a highly qualified and independent team of consultants. The TOR and selection will be approved at the highest levels in MARD and possibly at the NWRC level.

The feasibility study will examine the pros and cons for separation of functions. The implications in terms of public sector recurrent budget will be examined as will the impact on improved inter ministerial cooperation. At the moment many of the statements on this subject are of an anecdotal nature. The study will attempt to provide a structured and professional assessment as the basis for a political decision.

Output 5: Water rights administration system supported.

The different options for a water rights administration system will be examined. One of the most important considerations will be the level of ambition and the long to medium term phasing in of this system. It is important that an ambition level is selected which is in line with the governments ability to fund, administrate and monitor compliance. Otherwise the provisions and approaches of the LWR will be undermined rather than strengthened.

The establishment of initial thresholds and the selection of a pilot area are important as are the delegation of duties to the province level. The use of source directed and resource directed water quality strategies will have to be investigated. The data and planning implications will need to be worked out.

Output 6: Tariff and economic instruments system supported.

The options for rationalising the present systems for tariffs will be studied. The need to raise funds in the long term for the water resource management function will be examined. Initially a system of tariffs and economic instruments will need to be piloted in an area that is representative and will provide good demonstration value.

Output 7: MARD and DARD staff retrained.

Technically qualified specialists will be trained in the implementation of the Law of Water Resources and participatory and demand driven practices in water services delivery at the central level (MARD) and at provincial level (DARDs) in focal provinces for Danish assistance. The exact numbers are not known but it is likely to cover at least 10 professionals at central level and a further 3 to 5 at each of the three focus provinces. Funds are made available for this training in the budget and it will be up to the DWRMHW to forward detailed proposals on how best to arrange the training together with the CTA and the consultants. These proposals should be dependent on detailed training needs assessments that take the organisational functions into account. Initial indications show that the main requirement is to expose the staff to international experience and to build confidence. Issues relating to Environment, Good Governance, Participation, Gender and Poverty Alleviation are likely to be core elements of the re-training.

Output 8: Trainers trained.

A core group of trainers from MARD and DARD will be trained to implement in-service training programs for professional staff in Water Sector institutions and administrative units focusing on management implications of the LWR. It is important that those with the greatest teaching capacity are selected to be trainers of trainers.

4.3.2 Activity Outline

Inception Phase
The Component will be initiated with an inception phase which will undertake the activities resulting in output 1, but also activities related to output 2 and 3 will be initiated.

Activities associated with output 1
1.1 Review resources available for the sub-component including training needs

1.2 Establish an agreed process design and work plan for drafting strategy and decrees (screening of requirements, scheduling of policy debates, prioritisation, allocation of responsibilities and deadlines)
1.3 Assemble the relevant task forces and ensure clear TOR for each task force
1.4 Prepare communication strategy.

Activities associated with output 2
2.1 Review present drafts, identify gaps and areas to be strengthened
2.2 Obtain a selection of water resource strategies from other countries
2.3 Undertake training needs assessment
2.4 Arrange for study tours/ training (see output 7)
2.5 Finalise drafting according to TOR with the selected task force
2.6 Disseminate strategy, hold workshops and province visits

Activities associated with output 3
3.1 Review present drafts, identify gaps and areas to be strengthened
3.2 Obtain a selection of similar regulations from other countries
3.3 Prioritise instruments and regulations
3.4 Decide on which areas Danida will provide specific inputs
3.5 Finalise drafting according to TOR with the selected task force
3.6 Disseminate, hold workshops and province visits.

Activities associated with output 4
4.1 Draft TOR
4.2 Select consultancy team
4.3 Support the study as required
4.4 Establish the process for reacting to and discussing the study outcome

Activities associated with output 5
5.1 Undertake feasibility study based on agreed TOR
5.2 Subject findings to sector wide discussion and consultation
5.3 Assist the design of the pilot project
5.4 Assist in monitoring the pilot project
5.5 Disseminate lessons learnt and prepare updated water rights system for national adoption

Activities associated with output 6
6.1 Undertake feasibility study based on agreed TOR
6.2 Subject findings to sector wide discussion and consultation
6.3 Assist the design of the pilot project
6.4 Assist in monitoring the pilot project
6.5 Disseminate lessons learnt and prepare updated tariff and economic instruments for national adoption

Activities associated with output 7
7.1 Clarify the learner centred concept for supporting training
7.2 Under take learner based training needs assessment
7.3 Filter and consolidate learning requirements
7.4 Arrange training delivery
7.5 Follow up and evaluate

Activities associated with Output 8
8.1 Clarify the needs at WRU level
8.2 Select trainers of training
8.3 Arrange training delivery

8.4 Follow up and evaluate

A detailed plan of implementation is presented in Annex D.

4.3.3 Inputs by Danida and Budget

The inputs by Danida will be of three types:

- Consultancy inputs
- Training and materials
- Equipment and support to workshops and travel.

The counterpart organization will provide staff and office space.

The main assumptions made are shown in the detailed budgets.

Job Profiles for Consultants

In order to implement the sub-component the following international TA input will be required (national job profiles are similar but without the requirement for international or regional experience). Further details are given in the budget annex.

Profile	Tasks and Inputs
Institutional Specialist, - (Team Leader international, Deputy Team Leader local) Minimum of 10 years experience of institutional development including substantial exposure to water resource sector. The specialist should have a through appreciation of tariff design, the use of economic instruments and the design of water right administration systems. Experience with monitoring of water resources and data management. The specialist should have extensive experience of capacity building, training and human resource development. An up to date knowledge of institutional development practice is required. The specialist should be able to formulate learning objectives and clearly identify target groups. Sensitivity is required in considering local traditions and customs in the design of training events. Experience in writing and adjusting job descriptions. Experience in the design and evaluation of learning materials. An ability to identify organizational roles and responsibilities is required. Experience in creating adaptive feedback learning experiences. Understanding of change management processes and appreciation of the cross cutting issues such as environment, gender and participation are	Process Design Enhancing Capacity for - Water Resources Planning Feasibility Study on Institutional Arrangements Design of Tariff and economic instruments In total, 17mm for the international team leader and 30 mm for the local deputy team leader.

essential. Regional experience necessary. Ability to lead a multidisciplinary team. Good report writing and communication skills.	

Profile	Tasks and Inputs
Technical Specialists Specialists with experience of public sector regulation within the water and environmental sectors. A wide range of skills within surface and ground water should be represented. Environmental management in public administrations in Europe and elsewhere is important as is exposure to drafting technical guidelines and implementing regulations. Experience in monitoring and environmental performance management is essential. An appreciation of the legal implications needs to represented in the skill range. The staff should have experience of the application and design of water right systems, effluent control regulations. Domestic, industrial and agricultural experience should be reflected in the team.	Drafting guidelines and technical decisions Water Rights Administration 25mm for international specialists and 64 mm for local specialists.

Profile	Tasks and Inputs
Economist Experience in the design of tariff systems for water supply, both domestic and agricultural. Extensive experience of public sector administration and management. Understanding of green taxes and how they can promote conservation is important. Experience of undertaking cost – benefit analysis within water resources and agriculture is needed. A good appreciation of institutional development and capacity building is required. Experience of public sector financing and budgeting is required.	Tariff Design and economic instruments Feasibility Study on Institutional Arrangements 12mm for international and 26 for local.

Profile	Tasks and Inputs
Training Specialists	
Extensive experience of training needs assessment and design of training delivery for in service professionals.	Design of training and retraining (cascade) training.
Experience from organising study tours.	4 mm for international and 4 mm for local specialists.
Knowledge of the Danish resource base and the Asian regional resource base for training in water resource related areas.	

The TA input will be contracted from an international consultancy firm. The budget is shown below. It is split into consultants, equipment/workshops and training. The training is presented as a lump sum based on assumptions of training volumes and unit costs. The training delivery may or may not involve international consultants depending on the nature of the training needs and the training delivery options available.

Role of TA and estimation of inputs

The main role of consultant provided technical assistance in the sub-component is to assist government led efforts to implement the LWR. The sub-component does not aim to implement the LWR itself but purely to support this process. The consultants will thus join a wide ranging team composed of government staff and consultants provided from other donors. This combined team of internal and external resources will, under the direction of MARD, undertake the necessary tasks to be done. As mentioned before, coordination will be of the utmost importance. Danida have been asked to support by providing experts that can develop and test the necessary technical guidelines – especially in the areas of economic instruments and water rights. External assistance is considered valuable by MARD because the concepts behind the LWR are new to Vietnam and as a result very few local consultants or government staff have experience in how to implement them. International consultants will bring international experience and exposure. They will also bring a higher degree of specialist knowledge. Finally it is expected that international expertise will be able to provide extensive on the job coaching and mentoring through the counterpart and team working approach.

The detailed and mechanical estimation of how much technical assistance is required and how it should be arranged is very difficult if not directly counterproductive for a number of reasons. The sub-component spans over five years where many things will change including institutional arrangements and the relative capacity of local and international professionals. The inputs of government staff and local consultants are untested in this area and the productivity of these efforts is not known. If high, less external assistance will be required. If low, more external assistance will be required. The inputs of other donors are not yet defined. They could turn out to be very small or very large. Very detailed or prescriptive definitions of inputs at this time will not be more accurate and may reduce the scope for future flexibility.

Summary Budget for Sub-component 1.1

Item	Year 1 ('000 DKK)	Year 2 ('000 DKK)	Year 3 ('000 DKK)	Year 4 ('000 DKK)	Year 5 ('000 DKK)	Total ('000 DKK)
International Consultants	3.150	2.400	1.950	1.650	600	9.750
Local Consultants	700	640	640	500	260	2.740
Computers	150	0	0	0	0	150
Communication	220	220	220	220	220	1.100
Workshops	32	48	48	32	16	176
Travel	90	90	90	90	90	450
Translation	40	60	30	30	13	173
Retraining	640	640	0	0	0	1 280
Cascade Training	120	120	0	0	0	240
Sub total	5.142	4.218	2.978	2.522	1.199	16.059
Contingency	129	118	39	37	18	341
Total	5.271	4.336	3.017	2.559	1.217	16 400

Further details on the budget breakdown are given in Annex A.

4.3.4 Implementation Strategy

As stated in its objective, the main aim of the sub-component is to create an enabling environment for water resource management. The creation of this enabling environment will be achieved through supporting the implementation of the LWR. Danida's assistance will lead to an acceleration and an improvement in the quality of the implementation. The main capacity building rationale behind the sub-component is that by supporting this enabling environment, the capacity of all major actors in the Water Sector will be increased, in the long term, because they will be operating in a well functioning institutional and legal environment. This will have a very wide and self perpetuating impact that will far exceed the cost of the sub-component. The main thrust of the component is thus not capacity building of individuals but assistance to implementation of the LWR which is a specialist form of institutional strengthening. Some limited assistance is given to training individuals in output 7 and 8 and the exact training delivery strategy for this training will be outlined once a training needs assessment has been made.

Implementation of the LWR is a very large and complex task. The role of Danida support and the technical assistance provided is not to implement the LWR but to assist MARD and its partners in part of the implementation. Danida cannot support the whole spectrum of needs. The Vietnamese authorities will do the bulk of the work, will lead the process and own the end product. Other donors such as the World Bank, ADB and Australian aid will also provide considerable support. It is important that the Danida assistance is well coordinated with other donors and with the internal resources of the department itself. In order to make sure that Danida assistance does not dominate the process and to ensure local anchorage, the Danida assistance will not exceed half of the total manpower needed to implement the LWR.

The focus of Danida assistance will be at the technical level. The higher level political and inter ministerial coordination and communication tasks will be undertaken by the DWRMHW with assistance from WB and ADB. Already now there exist a number of tasks at the technical level which need to be completed. These include establishing the regulations for a system of water rights. Since there is still unclarity on who will do what, it is important that a four month inception phase is included in the beginning of the component implementation.

The main implementation strategy will be to gain an early overview of the different tasks to be done and to seek coordination by establishing task forces with clear deadlines and TOR. The DWRMHW will head up the task forces and will together with the CTA coordinate the inputs of the external consultants.

Water rights and tariff systems will be designed and will then be pilot tested in representative provinces where the greatest demonstration value can be gained. After piloting, the systems will be prepared for national replication.

The training will primarily be learner centred and this is reflected in the budget structure. A participatory training needs assessment will be made and is expected to focus on exposure to international experience as well the building of confidence. Consolidation of individual training needs will be made so as to gain from economy of scale. A selection of those trained will be given further training as trainers who will be available to assist the WRU and other organisations to upgrade their knowledge, skills and contribute to shifts in perception and attitude.

The sub-component will help to create an enabling environment for the other components supported by Danida especially the component that will support water resource management in Ca and Srepok river basins. The timing of this sub-component is primarily governed by wider national concerns about the need to accelerate the implementation of LWR. However, it is likely that the timing of the components in Ca and Srepok will be such that they can be used as pilot areas for many of the important policy instruments to be tested under this sub-component. This will imply that the Ca and Srepok components are sufficiently developed to receive and link with the pilot activities.

4.3.5 Assumptions, Risks and Preconditions

It is assumed that national resources combined with support from other donors will amount to at least the same as the resources provided by the sub-component.

It is assumed that MARD successfully establishes coordination of donor inputs.

It is assumed that political interference does not seriously affect the productivity or quality of the outputs.

It is assumed that institutional changes do not occur that would seriously affect the productivity or relevance of the outputs.

It is assumed that Danida is able to recruit sufficiently qualified consultants.

The assumptions above are judged as important to the achievement of the objective of the sub-component and whilst likely to be valid there is still sufficient uncertainty to warrant them being monitored on a regular basis.

The main risk is that coordination between donor inputs and national inputs is not sufficiently good with the result that duplication and confusion will occur. This can be minimised by good communication, frequent reviews and flexibility in planning.

Another key risk area is that institutional change and political interference will lower the relevance of the work being done and distract national level efforts. This is very difficult to minimise except by prioritising those elements and outputs of the sub-component that are not subject to political interference. Flexibility in responding to

institutional changes and acceptance of the need for frequent re-planning will minimise the negative effects of institutional changes.

4.3.6 Indicators and Means of Verification

Narrative Description	Verifiable Indicators	Means of Verification
Objective level: "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 SPS. "	Documentation on LWR and institutional framework exists, is familiar to provincial authorities and being used as expected.	Inspection of documentation. Interviews of provincial authorities and key water users.
Output 1: Legislative Process designed	Work is well coordinated without duplication of inputs between different donors.	Inspection of records of coordination meetings.
Output 2: Enhanced Capacity for National Water Resources Planning	Government staff finalise the drafting of the strategy and action plan	Inspection and confirmation of the physical existence of the strategy and plan
Output 3: Technical level decisions, guidelines and instructions at MARD level.	Prioritised regulations drafted	Inspection of physical existence of the regulations
Output 4: Feasibility study on institutional arrangements for water resources management	Study completed	Inspection of study and comments received
Output 5: Water rights administration system	Report on water rights system Result of pilot study replicated nationally	Inspection of reports
Output 6: Tariff and economic instruments system.	Report on Tariff systems Result of pilot study replicated nationally	Inspection of reports
Output 7: Retrained MARD and DARD staff	Staff attendance on study tours Staff understand and able to use concepts of integrated water resource management	Inspection of attendance lists Review of training evaluation reports
Output 8: Training of Trainers	Staff effectively transferring knowledge to students	Student Evaluation forms

4.4 SUBCOMPONENT 1.2: SUPPORT TO IMPLEMENTATION OF THE NATIONAL RWSS STRATEGY

The objective of the sub-component is to:

"Assist in the establishment of capability of CERWASS to implement the NRWSSS in a cost-effective manner and in accordance with the overall political and institutional framework and the lessons learned in a number of pilot schemes in selected communes, districts and provinces."

4.4.1 Outputs

At the end of the period of Danish support the sub-component will have generated the Human Resources, the Institutional Framework, and the organisational capabilities required for National implementation of the Strategy. The various concepts and elements in a demand driven approach to RWSS will have been tested in a Vietnamese context and formed the basis for the development of National RWSS programme for 2006-2010. The concepts will have been tested through a number of pilot projects under the Danida financed RWSS component in Ha Tinh, Dak Lak and Nghe An – there is a also the possibility of the concepts being tested through RWSS programmes financed by other sources and this would be an advantage. There will therefore be a very close collaboration between the RWSS component and this sub-component.

In order to achieve the immediate objective 2, several outputs will be generated in a phased manner. The following outputs will be generated in phase one (18 months)

Output 1 : NRWSS Office established in CERWASS

The NWRSS office that will be established will be staffed with trainable and retainable professionals with proficiency in strategic management, financial management and finance provision, and IEC.

It is envisaged that the office will have a staff of three professionals and support staff headed by a deputy director to be appointed in early 2000. The office will also be staffed by a Senior Technical Adviser (STA funded by Danida). The STA will advise and assist the deputy director in the management of the project. The office will also be responsible for the facilitation of and the close cooperation with the TA team to be contracted by Danida.

Output 2 : Improved awareness and acceptance of NRWSS Strategy at all relevant levels

The awareness and acceptance of the NRWSS Strategy will be established in GOV and mass organisations at headquarters, Province, District and Commune Level.

The output will be generated in a process over two years starting with CERWASS staff and the preparation of a strategy and action plan for awareness creation. The aim is understanding and acceptance of the NRWSS Strategy. The output will involve the design and implementation of a communication strategy.

The following target groups for the awareness raising at different levels have been identified:

- MARD

- CERWASS Staff at HQ
- MPI
- MOF
- Other core ministries
- Mass organisations
- Provinces and districts starting in pilot project areas
- Credit institutions
- Professional associations
- Private sector
- Donors

Output 3: Improved awareness for User Groups/User Organisations

Awareness of NRWSS Strategy procedures and roles and responsibilities of user organisations in pilot communes, districts and provinces through " Social Marketing and Mass Media Strategy".

In order to initiate a demand driven approach the rural households must be well informed about the NRWSS Strategy with the revised roles and responsibilities. The possibilities of receiving subsidised credit through local credit institutions must be clearly communicated in a cost-effective manner so that user organisations eligible for assistance can initiate discussion among themselves. A key element of the output will be a communication strategy and in particularly a strategy for the use of mass media in the information campaign. For this purpose TA for a local media specialist will be made available. This output will require very close co-ordination with the physical implementation programmes as it is important that awareness raising is done in a coherent manner.

Output 4: National Fund for Rural Water Supply and Sanitation established on pilot basis.

Alternate financial mechanisms identifying the strengths, weaknesses and constraints of existing rural credit institutions were identified in November, 1999. The first activity will be to update this identification, review the outcome and prepare an action plan for its implementation. The update should involve a review of other similar ongoing revolving fund financing mechanism including the proposed World Bank assistance to set up a revolving fund for medium scale rural water resource management infrastructure. A team of national and international consultants will assist the deputy director with the development of a pilot model that will be tested in the SPS assisted RWSS schemes in Ha Tinh and Dak Lak province. Close links will also be made with other RWSS programmes.

Output 5: Study of Institutional Development and Organisational and HRD requirements.

The study will take its point of departure in the proposed roles and responsibilities of the various stakeholders as suggested in the NRWSS Strategy. It will assess the present roles and capabilities with regard to the future roles and identify the necessary changes in the institutional set-up, the need for organisational development within the existing organisation, and the related need for human resources development.

The first activity will be to prepare the TOR for the Study, and then to have it tendered and implemented. While the study will be done by an external consultant the terms of reference will emphasise the need for a participatory approach in order to

ensure the CERWASS and MARD "ownership" of the recommendations. The study team will make a quick assessment of the HRD needs of the core staff of the NRWSS Strategy unit. And the training in the form of short courses will be implemented immediately in order to secure that the staff will be able to contribute professionally to the work of the institutional development study team at an early stage.

Output 6: HRD Programme Implemented

A HRD programme based on the outcome of Output 5 will be designed and implemented. The programme will be derived from an analysis of the most cost-effective way to achieve the HRD targets within the time perspective and overall objective of the sub-component. Emphasis will be given to tailor made programmes for in-service training and short term courses in Vietnam and in the region. The preparation of the training programme will be the responsibility of the deputy director assisted by the STA.

Output 7: Institutional and Organisational Development Plan and Programme

The Institutional Development Output (Output 5) will also identify the need for change in the institutional roles and responsibilities as well as the need for assistance to initiate the processes. In the five year period the emphasis will be on achieving the required institutional and organisational developments at the MARD and CERWSS HQ as well as in the Provinces and Districts identified for the pilot schemes.

The lessons learnt will provide the basis for a Nationwide institutional development process in preparation of the full scale implementation of the NRWSS Strategy for the period 2006-2010.

Output 8: New Concepts and Procedures - developed and incorporated in design of Pilot Projects

The new concepts and procedures should be developed in line with principles of demand responsive Approaches to RWSS. The CERWSS staff, trained in output 6, will be assisted by the STA and a TA team to develop concepts and provide guidelines for its incorporation into the design of the first schemes that are implemented using the NRWSSS. These pilot projects will be the schemes financed by Danida through the rural water supply and sanitation component in Ha Tinh, Dak Lak and Nghe An. The incorporation of the new concepts and procedures will be a collaborative exercise between CERWASS in Hanoi supported under this sub-component and CERWASS in the provinces supported by the RWSS component – clearly there will need to be very close coordination. The guidelines will address the following issues:

- RWSS Strategy models which are specific according to:
  - Density of population (rural versus minor urban)
  - Service level (private connection or common point supply)
  - Nature of water sources and technological options
  - Management capability of rural communities;
- Formation of user groups into legal entities liable for subsidised credit;
- Preparation of feasibility studies;
- Contract management;
- Loan agreement and repayment schedules;
- Tariff structure and revenue collection and accounting and financial management systems; and

- O&M systems for various types of schemes

The following outputs will be generated in phase 2 (36 months or possibly less):

Output 9: Lessons learnt from first generation of Pilot Projects in few communes documented in evaluation report

The lessons will be documented in an evaluation report which will cover the pilot projects undertaken by the Danida financed RWSS component in Ha Tinh, Nghe An and Dak Lak provinces.

Output 10: Design of second generation of Pilot Projects

The pilot projects will be situated in 3-4 Districts in Dak Lak and Ha Tinh assisted by Danida, and several other districts in provinces assisted by likeminded donors supporting the principles of the NRWSSS.

The following outputs will be generated in phase 3 (6 months):

Output 11: Documentation of lessons learnt from second generation of Pilot Projects.

The lessons will be documented in an evaluation report which will cover the pilot projects which are in several provinces, districts and communes.

Output 12: Plan for Nationwide replication with adjustments for lessons learnt

4.4.2 Activity Outline

In order to generate the 12 outputs the following activities need to be initiated:

Activities associated with Output 1
1.1 Set up CERWASS office according to specifications in Government agreement.
1.2 Procure vehicles and equipment initiated by Danida
1.3 Recruitment of Senior Technical Adviser and confirmation of recruitment of CERWASS staff.

Activities associated with Output 2
2.1 Identify Target Groups
2.2 Prepare methodology, strategy and programme of awareness raising targeting the specific target groups
2.3 Implement Awareness Raising Plan

Activities associated with Output 3
3.1 Identify target groups for social marketing
3.2 Make TOR for mass media consultant
3.3 Identify cost-effective media
3.4 Prepare methodology, strategy and programme targeting the specific target groups
3.5 Test social marketing mass media campaign on target group
3.6 Implement awareness raising plan through mass media campaign

Activities associated with Output 4
4.1 Review and up-date study of finance mechanisms for RWSS
4.2 Strategy and action plan for implementation of recommendations of updated study

4.3 Establish finance mechanism on pilot basis for SPS pilot projects in Ha Tinh and Dak Lak
4.4 Evaluate pilot finance mechanism to establish lessons learned
4.5 Establish national fund to attract all donor and GOV finance for RWSS

Activities associated with Output 5
5.1 Prepare TOR
5.2 Mobilise TA team
5.3 Prepare work programme
5.4 Implement study
5.5 Identify training needs and prepare HRD programme for CERWASS core staff.
5.6 Approve recommendations of study

Activities associated with Output 6
6.1 Confirm staff qualification requirements
6.2 Confirm trainable and retainable CERWASS staff
6.3 Prepare recruitment and training programme
6.4 Implement training programme
6.5 Assess training impact
6.6 Undertake on the job training programme for individual CERWASS staff

Activities associated with Output 7
7.1 Identify of ID and OD requirements (from output 5)
7.2 Prepare of ID/OD strategy and action plan
7.3 Implement of action plan in CERWASS headquarters concepts and procedures included in design of pilot schemes
7.4 Implement of action plan in pilot provinces and districts
7.5 Assess institutional and organisational impact
7.6 Incorporate lessons learnt in design of pilot schemes

Activities associated with Output 8
8.1 Identify relevant "Strategy Models"
8.2 Develop guidelines for each model
8.3 Prepare information material on implementation procedures
8.4 Make communication strategy for dissemination of implementation procedures in pilot provinces/districts/schemes
8.5 Include concepts and procedures in design of pilot schemes

Activities associated with Output 9
9.1 Evaluate and assess impact of pilot schemes
9.2 Disseminate findings in seminars

Activities associated with Output 10
10.1 Modify guidelines and procedures according to lessons learned for incorporation in second generation of pilot schemes.
10.2 Include concepts and procedures in design of second generation of pilot schemes.

Activities associated with Output 11
11.1 Evaluate and assess impact of second generation pilot schemes.
11.2 Disseminate findings in seminars.

Activities associated with Output 12
12.1 Modify guidelines and procedures according to lessons learned for incorporation in National RWSS Programme for year 2005-2010.

12.2 Prepare National RWSS Programme for year 2005-2010 in accordance with the principles of the NRWSSS and the lessons learnt from pilot schemes.

A detailed plan of implementation is presented in Annex D.

4.4.3 Inputs by Danida and Summary Budget

In order to undertake the activities outlined above the following inputs will be required to be financed by Danida :

- One Danida STA
- TA team contracted by Danida
- Office Equipment
- Transport Equipment
- Funds for consultancies
- Funds for HRD
- Funds for Awareness Raising Campaigns
- Operational Budget

The Draft TOR for the STA is presented in Annex E.

In addition and as summarised in chapter 3 the government will provide:

- CERWASS Staff assigned to the RWSSS Office
- Office Facilities for 10 people (approximately 120 Square metre)

Job Profiles for Consultants

In order to implement the sub-component the following international TA input will be required (national job profiles are similar but without the requirement for international or regional experience). Further details are given in the budget annex.

Profile	Tasks and Inputs
Economist Wide ranging experience within rural water supply and sanitation in developing countries. Ability to operate at the policy and strategy level. Experience in implementation of strategies. Knowledge of rural credit supply and development of investment funds. Experience in innovative financing mechanisms for rural infrastructure including revolving funds and using existing banking infrastructure. Insight into the establishment of credit worthy assessments and the minimization of credit risks balanced with the need to reach the poorest. Experience of collective loan schemes. Exposure to demand responsive methodologies. Experience of designing and developing pilot projects, including monitoring and evaluating of lessons learnt. Ability to engage in participatory assessments. Experience in on the job training and coaching of counterpart staff. Minimum 10 years of international	Establishment of finance mechanism (3mm in total for international staff and 3 mm for local staff)

experience with Government finance and financial sector institutions in Asian developing countries	

Profile	Tasks and Inputs
Communication Specialist Experience from the public as well as the private sector. Experience in social marketing is required. Experience in designing extension messages to user level target groups as well as to government officials and the private sector. Experience in communicating gender messages is required. Experience in identifying market segments and prevailing attitudes of different groups as well as designing appropriate messages to shift attitudes and approaches. Knowledge of Vietnamese communication channels such as radio and TV as well as other forms of mass communication. Awareness of technological aspects of communication and ability to contract and manage communication agents.	Communication of strategy and mass media campaigns. 3mm of local consultant inputs.

Profile	Tasks and Inputs
Institutional Specialist Wide experience of capacity building, training and institutional development in the Water Sector. Knowledge of personnel management and human resource development practice. Knowledge of recruitment practice. Through understanding of public sector organisations as well as the private sector. Ability to initiate and engage in participatory approaches aimed at team building and fostering the adoption of shared principles and organisational values. The specialist should be able to formulate learning objectives and clearly identify target groups. Sensitivity in considering local traditions and customs in the design of training events. Experience in writing and adjusting job descriptions is required. Experience in the design and evaluation of learning materials. An ability to identify organizational roles and responsibilities is required. Experience in creating adaptive feedback learning experiences. Experience in facilitating participation of user groups for water supply and sanitation. Experience in making training needs assessments and measuring training impact. Degree in Economics, Public Administration, Or Political Science. Minimum 10 years of international experience in institutional and organisational analysis of public sector institutions and a proven record in cross cultural communication.	Organisational Study Training Programme Institutional development A total of 11 mm for the international consultant and a further 11mm for the local consultant.

Profile	Tasks and Inputs
Cross Cutting Specialists Different specialists with wide experience of demand responsive approaches. Anthropologists, sociologists as well as technical and other skills should be represented. Experience in working with the private sector as suppliers of services and in building capacity to respond to new opportunities. Wide experience in education and training including health education and awareness raising. Experience in monitoring rural water supply and sanitation projects and in developing appropriate indicators. Experience in developing pilot projects, evaluating and documenting lessons learnt. Experience in developing and adjusting policy and strategy.	Development of Concepts Develop Monitoring System Evaluation of Pilot Projects In total 12 mm of international and 13 mm of local consultants will be required.

The TA input will be contracted from a Danish Consultant.

Role of TA and estimation of inputs

The main role of consultant provided technical assistance in the sub-component is to assist government led efforts to implement the NWRSSS. The sub-component does not aim to implement the NWRSSS itself but purely to support this process. The consultants will thus join a team composed of government staff and consultants provided from other donors (at this stage DifD is the main donor also supporting implementation of the NRWSSS). A combined team of internal and external resources will, under the direction of CERWASS, undertake the necessary tasks to be done. As mentioned before, coordination will be of the utmost importance. External assistance is considered valuable by MARD because the concepts behind the NWRSSS are new to Vietnam and as a result very few local consultants or government staff have experience in how to implement them. International consultants will bring international experience and exposure. They will also bring a higher degree of specialist knowledge. Finally it is expected that international expertise will be able to provide extensive on the job coaching and mentoring through the counterpart and team working approach.

The detailed and mechanical estimation of how much technical assistance is required and how it should be arranged is very difficult if not directly counterproductive for a number of reasons. The sub-component spans over five years where many things will change including institutional arrangements and the relative capacity of local and international professionals. The inputs of government staff and local consultants are untested in this area and the productivity of these efforts is not known. If high, less external assistance will be required. If low, more external assistance will be required. The inputs of other donors are not yet defined. They could turn out to be very small or very large. Very detailed or prescriptive definitions of inputs at this time will not be more accurate and may reduce the scope for future flexibility.

Summary Budget

A Summary Budget is presented below. For details refer to Annex A.

Summary Budget for Sub-component 1.2

Item	Year 1 (' 000 DKK)	Year 2 (' 000 DKK)	Year 3 (' 000 DKK)	year 4 (' 000 DKK)	Year 5 (' 000 DKK)	Total (' 000 DKK)
International Consultants	1.350	1.950	450	1.200	300	5.250
Local Consultants	240	300	60	160	40	800
Equipment	1.015	0	0	0	0	1.015
Training and Staff Costs	395	395	395	395	395	1.974
Communication Costs	200	200	200	200	200	1.000
Workshops	32	48	32	32	16	160
Operational Costs	380	380	380	380	380	1.900
Sub total	3.612	3.273	1.517	2.367	1.331	12.099
Contingency	202	102	101	101	95	601
Total	3.814	3.375	1.617	2.467	1.426	12.700

4.4.4 Implementation Strategy

The NRWSSS is based upon a number of general principles which have to be tested and applied in an appropriate version in specific locations in various districts and provinces in Vietnam. This requires a high degree of institutional learning capacity within CERWASS as the organisation made responsible for nation wide implementation of the strategy. The objective of the sub-component is to support the development of this capacity in CERWASS. The methodology is a learning by doing approach with a dual purpose. The first purpose is to test different elements of the proposed strategy through Component 2: Rural Water Supply and Sanitation, and apply the lessons learned in a second generation of pilot schemes in Component 2 before national guidelines and a five year national programme for nation wide implementation is designed. The second purpose is for the CERWASS staff to learn through direct involvement in all stages of this learning exercise.

The transformation of CERWASS into a learning organisation is a major challenge. While CERWASS is well equipped with professionally well qualified staff it is also a young organisation with limited experience in the implementation of demand responsive approaches to RWSS. The capacity building for institutional learning will build upon the capacity of the individual officer to learn and share with others. The process of transformation will be initiated through a participatory institutional study which will identify the need for institutional development, organisational development and HRD. The recommendations of the institutional development study will be implemented by CERWASS staff trained for this particular purpose and assisted by a STA and a small group of national and international consultants acting as advisors, facilitators and change agents with CERWASS and MARD.

The sub-component will start with a 4 month inception phase where the planning can be confirmed and adjusted. During the inception phase detailed work plans will be made that will link closely this sub-component with the rural water supply and sanitation component in Dak Lak and Ha Tinh provinces and later in Nghe An province. Close links will also be established with other RWSS programmes in other provinces. There is a significant benefit to be gained from ensuring that implementation of the strategy is well coordinated with physical implementation. A coherent approach will ensure that the operationalisation of the strategy guides the physical implementation works and that the physical implementation serves as a pilot project to test and develop the strategies.

Three implementation phases are envisaged. Phase one has a duration of 18 months and incorporates outputs 1 to 8. Phase one will run concurrently with the inception phase. Phase one concentrates on raising awareness and understanding of the NRWSSS and developing operational guidelines. Phase two has a duration of 36 months, although this maybe shortened depending on progress. Phase two will result in outputs 9 to 11 and concentrates on evaluating and incorporating the lessons learnt from pilot projects into new guidelines. Phase three has a duration of 6 months and will result in output 12: Plan for Nationwide replication. Phase three aims to plan and prepare for national replication of the NWRSSS on the basis of what has been learnt in the pilot projects.

It is important that funding and preparation for implementation of rural water supply and sanitation is ready at the provincial level so that the NWRSSS can be tested and the necessary adjustments made. The Danida supported rural water supply and sanitation components in HaTinh, NgheAn and DakLak are scheduled to start early in 2001 meaning that this sub-component can both contribute to the implementation of the components and benefit from the practical experience gained.

4.4.5 Assumptions and Risks

These are factors which will serve as useful information to the sub-component management team. They will monitor assumptions in order to ensure that activities listed as assumption are undertaken by those responsible. Moreover, they will manage the risks and address the identified limiting factors in order to undertake realistic planning.

Assumptions for Outputs to contribute to the achievement of Objectives:

Lessons learnt in pilot projects confirms the soundness of the basic principles of the NRWSSS

Assumptions for Activities to generate Outputs:

- Enabling environment for sharing of experience
- Enabling environment for institutional learning
- Contract management system transparent and cost-effective
- Central Bank of Vietnam and MOF supportive
- GOV Staff receptive of NRWSSS, in place and able to contribute full time.

4.4.6 Indicators and Means of Verification

Narrative Description	Verifiable Indicators	Means of Verification
Objectives of sub-component: Capability of CERWASS to implement the NRWSSS	❑ A National Programme 2005-2010 in accordance with NRWSSS approved by year 2004 ❑ A National Fund for RWSS used by GOV and Donors to channel funds for RWSS investments undertaken by user organisations ❑ Competent staff at all levels capable to fulfill their new roles and responsibilities	Impact assessment in evaluation report by October 2004
Output 1 RWSSS Office established in CERWASS	Inspection/progress report	Minutes of meeting in Steering Committee
Output 2 Awareness and acceptance of NRWSSS at all relevant levels in GOV and Mass Organisations at HQ, Province, District and Commune Level	Satisfactory reports from workshops, seminars and other awareness raising activities	Minutes of meetings in Steering Committee
Output 3 Awareness of NRWSSS procedures and roles and responsibilities of user organisations	Applications from User Organisations	Management Information System and sub-component quarterly report
Output 4 National Fund for Rural Water Supply and Sanitation established on pilot basis	Fund Organisation, management, regulation and procedures in place and approved by GOV	Fund Regulation/Ordinance
Output 5 Study of Institutional Development and Organisational and HRD requirements	Recommendations of Study approved by SPS Steering Committee	Minutes of SPS steering Committee
Output 6 HRD Programme	HRD Programme approved by SPS Steering Committee	Minutes of SPS Steering Committee
Output 7 Institutional and Organizational Development Plan and Programme	Institutional and organisational plan and programme approved by SPS Steering Committee	Minutes of SPS Steering Committee
Output 8 New Concepts, Guidelines and Procedures developed and incorporated in design of Pilot Projects	Design of Pilot Schemes approved by SPS Steering Committee	Minutes of SPS Steering Committee
Output 9 Lessons learnt from first generation of Pilot Projects in few communes documented in evaluation report	Evaluation of Lessons learnt in SPS Review	Evaluation report
Output 10 Second generation of Pilot Projects in 3-4 Districts in Dak Lak and Ha Tinh	Scheme Progress Reporting	Quarterly Progress Reports from Provinces
Output 11 Lessons learnt from second generation of Pilot documented in evaluation report	Evaluation of Lessons learnt in SPS Review	Evaluation report
Output 12 Plan for Nationwide replication with adjustments for lessons learnt	National seminars disseminates and discusses draft plan with widely acceptable guidelines and procedures for Nation Wide implementation of the NRWSSS	Recommendation of Seminar reports

4.5 SUBCOMPONENT 1.3: SUPPORT TO CAPACITY BUILDING AT THE WATER RESOURCES UNIVERSITY

The objective of the sub-component is to:
"Assist the Water Resources University in producing graduates and trainees of short term in-service courses with appropriate skills in water resource management and water services delivery."

4.5.1 Outputs

At the end of the period of Danish support the WRU will be able to produce graduates with improved skills and provide in-service short term courses in areas relevant to integrated water resource management, the demand responsive approach and the use of economic instruments. Strategically these improvements are of vital importance for the future management of the water resources and consequently for the social and economic development of the country. The support to the WRU is envisaged to spread to the relevant MARD/DARD institutions via new graduates as well and improved in-service courses. Teachers from MARD technical colleges and vocational schools as well as government and private sector employees will benefit.

Six outputs have been identified for the sub-component.

Output 1: Retrained Teaching Staff

The staff of the University has for a long time had to undertake their tasks as teachers and researchers without adequate exposure to recent international developments within their respective professional fields. There are a number of reasons for this situation. Besides political and economic factors, the lack of English language knowledge offers part of the explanation. It is however of utmost importance for the future management of the water resources and consequently for the social and economic development of the country that this situation be changed. The enthusiasm of the WRU staff for participating in this change is encouraging and convincing. The capabilities of the teaching staff will be upgraded in accordance with international standards and national requirements with respect to teaching methodology, computer literacy, English language, curriculum development and courseware design and subject matter issues (disciplines).

Output 2: Developed teaching and courseware materials

There is a need for upgrading of teaching materials, comprising publication and printing of textbooks, teaching aids (active and passive), laboratory and workshop equipment, and computer class equipment. Similarly there is a need to design, develop, test and adjust adequate courseware. Courseware comprises a full set of training and teaching material and includes readings, presentation material, tests and exercises, guidelines for field trip and field work, hand-outs, students textbooks and trainers' handbooks. Faculty members could be exposed through study tours and attachments to projects in the field.

The upgraded courseware should be both for students and for in-service training of working professionals. It is important that the courseware gives a broad understanding of thematic areas such as poverty alleviation, gender, environment and participation which are behind the adoption of the LWR and the NRWSSS.

Output 3: Developed Courses and Curricula

There is a need to attain a higher level in curricula and course content for the academic education at the WRU, focusing upon specialties of highest relevance for the SPS, such as sustainable water resources planning and management, demand responsive water services delivery, and water resources economics. This includes the need for preparation of appropriate case studies for training. The possibilities of study tours and student attachment to projects in the field should be explored. As for the previous output, the courses and curricula should be for both students and for in-service training of working professionals. It is important that the courses give a broad understanding of thematic areas such as poverty alleviation, gender, environment and participation which are behind the adoption of the LWR and the NRWSSS.

Output 4: Graduate Students Trained Abroad

A few of the most talented graduate students should be selected and offered scholarships for MSc and PhD studies at suitable universities abroad. This will contribute to a much needed future internationalisation of the Vietnamese human resource base within the water resources sector.

Output 5: Up-to-date library facilities for staff and students

The present state of WRU's library facilities is extremely unsatisfactory and inadequate. Most of the available textbooks are old and in Russian language. As most of the students have English as their foreign language and do not read Russian, the library is in reality offering no service to this group and an unacceptable level of service to the remaining potential loaners at the University.

Output 6: Improved internet access for staff and students

In an effort to strengthen the practical possibilities for the staff and the students of the University of keeping good international contact it is found essential to improve the present very limited communication facilities in particular in terms of internet access. If found relevant assistance can be given to improving the website.

4.5.2 Activity Outline

The following provides an outline of the supporting activities associated with the outputs of the sub-component:

Activities associated with output 1

1.1 Key WRU-representatives to undertake familiarizing study tours to foreign institutions suitable for cooperation.
1.2 Identify and select a core group of WRU-teachers to be retrained in relevant focus areas (ensure sufficient proficiency in English).
1.3 Design individual retraining programs for selected teachers.
1.4 Selected teachers to participate in retraining activities at cooperating institutions.

Activities associated with output 2

2.1 Thorough review of existing teaching material (textbooks, lecture notes, exercises, etc) and training equipment.

2.2 Revise and update course material (including more English text material) and recommend update of training equipment based on the experience gained by the teachers participating in the retraining activities at foreign institutions.
2.3 Procure training equipment.
2.4 Test the updated course material and training equipment in use.

Activities associated with output 3
3.1 Thorough review of existing courses and curricula with particular emphasis on the focus areas for Danida support.
3.2 Planning of revision of courses and curricula based on the experience gained by the teachers participating in the retraining activities at foreign institutions.
3.3 Implementation of the revised and new courses including short term in-service courses.

Activities associated with output 4
4.1 Identification and selection of qualified students to receive scholarships for a few MSc and PhD studies abroad.
4.2 Identify suitable foreign universities for individual MSc/PhD studies.
4.3 Design of individual study programs for students selected.
4.4 Studies conducted successfully.

Activities associated with output 5
5.1 Review existing library facilities.
5.2 Undertake a participatory library needs assessment of English literature (books & journals) within the focus areas.
5.3 Design new library service and supporting infrastructure.
5.4 Procurement of books, journals, shelves, equipment etc.

Activities associated with output 6
6.1 Thorough needs assessment of communication facilities such as Internet access and fax machines.
6.2 Procure and install adequate server and workstation facilities.
6.3 Training of staff and students on internet operation.
6.4 Establish WRU homepage.

Activities and milestones during the Inception Phase

During the three months inception phase the team leader will establish the WRU-project office, review the sub-component description and the preliminary plan of implementation, and prepare and inception report with a revised sub-component description and plan of implementation.

The WRU-project office will be fully operational after one month of the inception period.

A detailed plan of implementation is presented in Annex D.

4.5.3 Inputs by Danida and Summary Budget

In order to undertake the activities outlined above the following inputs will be required to be financed by Danida:

- TA team contracted by Danida (international consultants: 84,5 mm, local consultants 51 mm)
- Internationalisation inputs (study tours, retraining and networking)

- Postgraduate Scholarships
- Equipment and training materials (office, courseware, library, communication)
- Operational cost

In addition the WRU will provide:

- Staff for the retaining/teaching activities and library upgrading
- Accommodation for a project office (Team Leader with secretary)
- English speaking secretary for the Team Leader

The TA input and job profiles for consultants is presented in the table below:

TA INPUT (MANMONTHS)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Team Leader – international						
A background at a Danish University or similar with international experience in integrated water resources management from Asian countries	10,5	10,5	10,5	3	3	37,5
Short Term Consultants – international All with teaching and research experience at associate professor level and international experience in university twinning arrangements – experience and knowledge of the important underlying cross cutting issues of environment, gender, poverty alleviation, good governance and participation.						
Integrated water resources management	3	3	3	2	2	13
Demand responsive water services delivery	3	3	3	2	2	13
Water resources economics	3	3	3	2	2	13
Unspecified international input	**2**	**2**	**2**	**1**	**1**	**8**
Total International TA Input	**21,5**	**21,5**	**21,5**	**10**	**10**	**84,5**
Local Consultants (To cover the 3 main areas, including support tasks)	**18**	**13**	**9**	**8**	**3**	**51**

The TA input will be contracted from an international Consultancy company.

Role of TA and estimation of inputs

The main role of consultant provided technical assistance in the sub-component is to assist WRU led efforts to implement improvements in the curriculum and teacher training. The sub-component does not aim to implement the improvements itself but purely to support this process. The consultants will thus join a small management team composed of university staff and external assistance. International experience is considered valuable by WRU because the concepts behind the LWR and NRWSSS(demand management, integrated water resource management and the use of economic instruments) are new to Vietnam and as a result very few universities have sufficient experience to implement them. International consultants will bring international experience and exposure. They will also bring a higher degree of specialist knowledge. Finally it is expected that international expertise will be able to provide extensive on the job coaching and mentoring through the counterpart and team working approach.

The detailed and mechanical estimation of how much technical assistance is required and how it should be arranged is very difficult if not directly counterproductive for a number of reasons. The sub-component spans over five years where many things will change including institutional arrangements and the relative capacity of university staff and international professionals. The inputs of university staff are untested in this area and the productivity of these efforts is not known. If high, less external assistance will be required. If low, more external assistance will be required.

A summary budget for the sub-component is presented below. For details refer to Annex A.

Summary Budget for Sub-component 1.3

Item	Year 1 ('000 DKK)	Year 2 ('000 DKK)	Year 3 ('000 DKK)	Year 4 ('000 DKK)	Year 5 ('000 DKK)	Total ('000 DKK)
International Consultants	3.225	3.225	3.225	1.500	1.500	12.675
Local Consultants	360	260	180	160	60	1.020
International travel	330	0	110	0	0	440
Accommodation expenses	1.560	0	720	0	0	2.280
International networking	100	100	100	100	100	500
Postgraduate Scholarships	700	1.050	1.050	700	0	3.500
Equipment	806	1.748	152	0	0	2.706
Operational Costs	260	220	185	150	50	865
Sub total	7.341	6.603	5.722	2.610	1.710	23.986
Contingency	376	312	232	85	10	1.014
Total	7.717	6.915	5.954	2.695	1.720	25.000

4.5.4 Implementation Strategy

The subcomponent will start with a four month inception phase where the planning and budgeting is confirmed and institutional and management arrangements made. The total sub-component period of about five years will be divided in two phases. During phase one , which will be two years and run concurrently with the inception phase, the sub-component will focus on the strengthening of selected parts of the B.Sc. program and short term courses of most relevance for integrated water resource management, demand responsive and participatory water services delivery and water resources economics. Phase two will take place during the remaining three years. Phase two will consolidate what has been achieved during phase one and in addition assist in similar strengthening of the Master and Ph.D. level programs within the same focus areas.

The Faculties of Hydrology & Environmental Engineering; Irrigation, Drainage and Land Reclamation; and Water Resources Economics have been identified as the most appropriate entry points for a focused Danida support.

The sub-component will be implemented so as to make the best of the comparative advantages offered by international experience. This will include exposure to new techniques and teaching methods as well as links to both Danish and regional universities and centres of learning within water resource management and water service delivery. A highly flexible approach will be maintained and inspiration will be gained from similar support activities at the Asian Institute of Technology in Bangkok as well as the collaboration between university consortiums in Denmark, Malaysia and Thailand (supported under the environmental programme administered by the Danish Ministry of Environment and Energy).

To ensure that the sub-component retains its relevance there should be close links kept to practicing professionals. It might be appropriate to establish close links to the sub-components aimed at assisting the government in implementing the LWR and NRWSSS. Similarly, contacts at provincial level should be kept and study tours/ student attachment to water resource management and water service delivery projects could be undertaken as part of the curriculum.

The sub-component does not make any extra demands on sustainability. It is expected that the upgraded courses and course material will improve teaching productivity and

student interest to the extent that the cost effectiveness of the courses increases. Increasing cost effectiveness will improve the financial sustainability over the present situation. The introduction of new curriculum and teaching programmes is self perpetuating. In the end it will be driven by the interest of students and the external demand for students with these type of qualifications. In the short to medium term it is expected that the demand within this area will increase.

4.5.5 Assumptions, Risks and Preconditions

It is assumed that future public sector employment packages will not limit the attractiveness of careers in the Water Sector and hence the number of students that want to enrol at the WRU.

It is assumed that the present top down approach from line ministries to the development and management of Vietnam's academic institutions, including WRU, at least in part will be replaced with increased autonomy.

It is assumed that the financial situation of WRU, based on the present annual budget allocation from the GOV, will not deteriorate in the coming years.

It is assumed that Danida is able to recruit sufficiently qualified consultants.

All international M.Sc and Ph.D studies should be approved by the RDE before commitments are made.

4.5.6 Indicators and Means of Verification

Narrative Description	Verifiable Indicators	Means of Verification
Objective of sub-component: Assist WRU in producing graduates and trainees of in-service courses with appropriate skills in water resources management and water services delivery	Availability of and demand for courses in water resources management and demand responsive water delivery services at WRU. Increased number and improved quality of graduates and trainees of in-service courses leaving WRU.	Curricula and enrolment of courses offered by WRU. Enrolment and graduation statistics from WRU. Impact assessment in evaluation report by October 2005
Output 1 Retrained WRU teaching staff	First group of WRU-teachers (10 nos.) have completed their retraining abroad about 10 months after the start of the project *. Second group of WRU-teachers (5 nos.) have completed their retraining abroad about 29 months after the start of the project.	Progress reports Minutes of meetings in SPS Steering Committee
Output 2 Developed teaching materials	Updated/developed course material and procured equipment tested in use 17months after the start of the project (BSc) 26 months after the start of the project (In-service) 36 months after the start of the project (MSc)	Progress reports Physical inspection of equipment and samples of course material
Output 3 Developed courses and curricula	Revised course contents and curricula for the first group of students 17 months after the start of the project (BSc) 26 months after the start of the project (In-service) 36 months after the start of the project (MSc)	Progress reports Official course content and curricula documentation
Output 4 Graduate students trained abroad	First overseas MSc study supported with scholarship by the project completed 3 ½ years after start of the project Five overseas MSc studies supported with scholarships by the project completed by October 2005 Five other graduate studies (3 MSc, 2 PhD) supported with scholarships by the project are still ongoing by October 2005	Progress reports Graduation certificates from overseas universities
Output 5 Up-to-date library facilities	Upgraded library facilities in use after one year	Progress reports Library records
Output 6 Improved communication	Staff members at involved faculties have access on demand to internet after one year Graduate students at involved faculties have at least weekly access to internet after one year.	Progress reports Inspection of installed internet facilities
Activities in Inception Phase WRU-project office established	Office functioning with the Team Leader in place about one month after Danida having signed the contract with the Consultant.	Inspection/progress report Minutes of meetings in SPS Steering Committee

4.6 SUBCOMPONENT 1.4: SUPPORT TO CAPACITY BUILDING OF WATER SECTOR INSTITUTES

The future social and economic development of Vietnam is closely related to the prudent management of the country's water resources and environment. In this context there is a need for strengthening the national capability of key institutions that currently are the main providers of technical specialist services in relation to water resources development and management. This includes integrated planning of water resources development, protection and management at international, national and river basin levels, and design and impact assessment of specific water resources development activities like river training, land reclamation, hydropower and irrigation. Emphasis will be given to organisational development and capacity building, including business development and planning, product development and marketing.

The Institute of Water Resources Planning and the Institutes of Water Resources Research need to have access to up-to-date analytical tools in terms of water resources modelling software and equipment that will enable them to provide services at the highest professional level to institutions and programmes within the Water Sector.

It is recommended that sub-component 1.4 will provide support to important Water Sector Institutions like IWRP, IWWR and SIWRR by assisting in the transfer of up-to-date modelling technology with the aim of building up national capabilities for efficient water resource management that can be sustained on the basis of e.g. improved possibilities for the involved institutions to undertake income generating consulting activities for national clients as well as international donors financing Water Sector investment projects.

It is envisaged that the supported institutions in close consultation with the relevant authorities within the Srepok and Ca River Basins and as an integrated element in the transfer of the modelling technology will participate in developing the water resources and land use management plans for these river basins.

As a preparatory activity for the sub-component there is a need for a proper screening of potential institutions to be supported as well as a thorough assessment of the modelling and equipment needs. Draft TOR for a Formulation Mission has been prepared.

A tentative budget of DKK 35 million has been allocated for this sub-component.

5 IMPLEMENTATION PROCEDURES

5.1 ORGANISATION, MANAGEMENT AND ADMINISTRATION

The component has four sub-components with activities concentrated at the national level. The implementing agency for the four different sub-components are shown below:

Component	Implementing Agency
1.1 Support to implementation of LWR	DWRMHW, MARD
1.2 Support to implementation of NRWSS Strategy	CERWASS, MARD
1.3 Support to Capacity Building in WRU	WRU
1.4 Support to Water Sector Institutes	Water Sector Institutes

A sub-component management group will be set up for each of the 4 sub-components. The sub-component management group will be responsible for the day to day management and will report to the national sector program coordination unit.

The national sector program coordination unit will oversee implementation of the 4 sub-components and ensure their co-ordination with other national and donor supported programs.

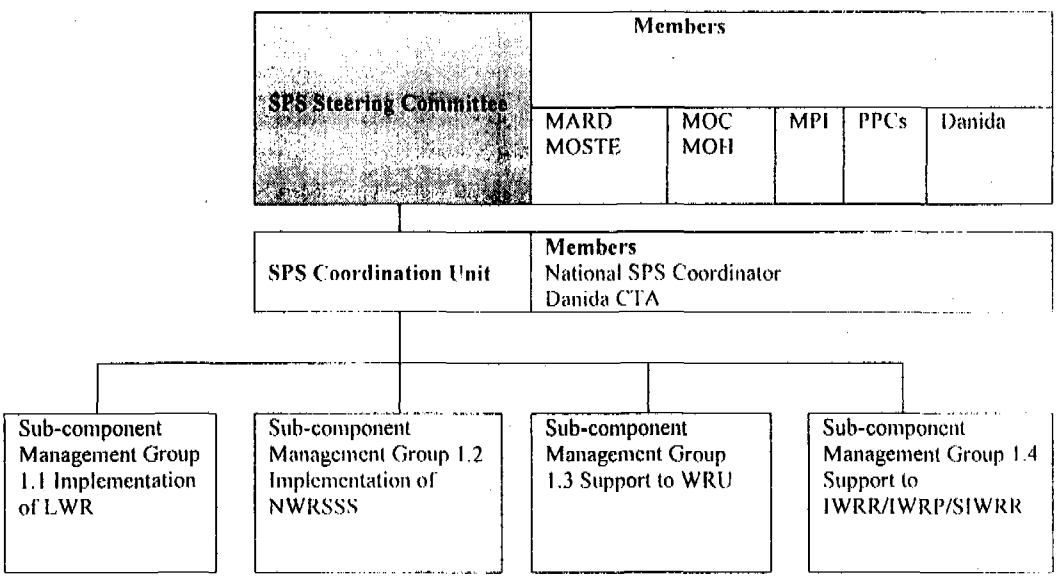


Figure 5.1 Organogramme of Component Management Structure

The SPS Co-ordination Unit

Responsibility:
Secretariat for the SPS Steering Committee. Responsible for the overall and day-to-day management of the SPS Program as well as supervision of the National Capacity Building component. The unit will initiate and assist review and support missions and approve the recruitment of short-term consultants for support to individual sub-components.

Members:

The SPS Co-ordination Unit will consist of two/three sector professionals, the Danida Chief Technical Adviser and two National SPS Advisers/Managers representing MARD and the MOC, respectively. The Head of the Unit will be the Danida CTA.

Staffing:
The Danida CTA and counterparts with the necessary clerical support, i.e. one accountant cum financial controller and one secretary.

Sub-component Management Group

The sub-component management groups will be responsible for the day to day implementation of the sub-components. The composition of the different groups are summarised below:

Sub component	Management Group
1.1 Support to implementation of LWR	Deputy Director, DWRMHW Bureau Heads CTA/ NSPC Consultant team leader
1.2 Support to NRWSS Strategy	Director CERWASS Deputy Director, CERWASS Danida Adviser
1.3 Support to Capacity Building in WRU	Director International Cooperation Deputy Vice Chancellor Faculty heads (hydrology and environment, irrigation drainage and land reclamation, water resources economics) Consultant team leader
1.4 Support to IWRP/IWRR	Component yet to be formulated

The sub-component management groups will formally report to the SPS Coordination Unit. Informal channels of communication will be kept open between the sub-components and with other components.

5.2 MONITORING, REVIEW, REPORTING AND EVALUATION

Monitoring, review, reporting and evaluation will be conducted as described in the SPS Document.

5.3 FLOW OF FUNDS

Funds
Funding of the component will be divided into two main streams:

International procurements, covering the procurement of consultancy services, construction works and equipment from international providers, will be paid directly by Danida; and Local procurement and operations, covering the procurement of consultancy services, construction works and equipment from local providers, will be paid by the individual sub-components through funding from the Danish Embassy.

The local funds will, in agreement between GOV and Danida, be transferred directly to the bank account of the sector program coordination unit by the Royal Danish Embassy and the national counterpart. The Embassy will make disbursements based on requests from the sub-components. Disbursements will be made in accordance

with Danida's rules and regulations and will be subject to approved component budgets.

Accounting
Each sub-component must establish an accounting system in accordance with the Danida publication "Decentralised Project Accounting" of April 1996. The Danida employed adviser or consultant will have the overall responsibility towards Danida for the financial management of the sub-components. This responsibility implies, among other duties, the establishment of:

- Means to ensure that funds are properly accounted for;
- Secure accounting systems;
- Rules for authorisation of vouchers, cheques, etc.;
- Supervision of cash and bank holdings; and
- Budget control.

Each sub-component must acquire and use the Navision accounting system. Accounts should be kept in VND and USD - in identical charts of accounts except for the currency.

Local institutions implementing sub-components will be responsible for providing the Danida CTA or Senor Technical Adviser (component 1.2) with accounts on a monthly basis.

Reporting
The sub-component management must on a monthly basis furnish the national sector program coordination unit with a report of expenses. The financial controller of the national sector program coordinator unit will work in cooperation with the Danish embassy.

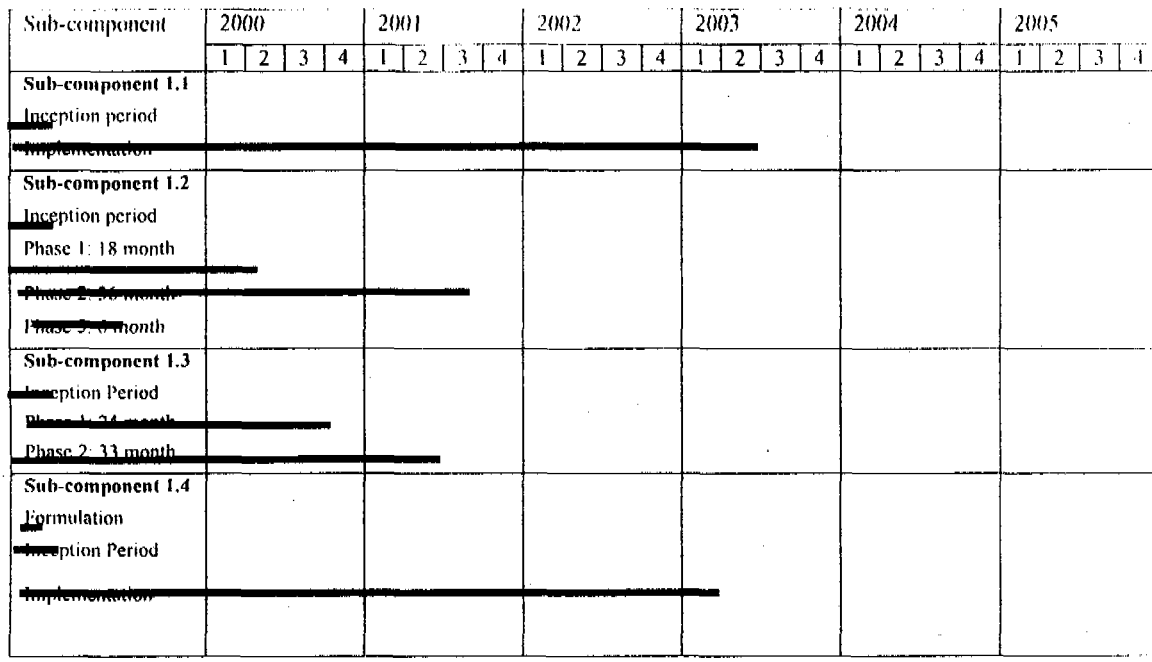
By the end of the financial year the books of accounts of the sub-component shall be closed and an annual report shall be prepared and furnished to the Embassy and the national counterpart.

The sub-component's accounts shall be audited by a reputable auditing firm appointed or approved by the Embassy.

5.4 COMPONENT IMPLEMENTATION PLAN

Detailed plans of implementation for each sub-component are presented in Annex D. A summary component implementation plan is presented below. The first action will be the Formulation Mission to prepare the sub-component 1.4. Activities on the other components will be initiated with an Inception phase which can start when the SPS Programme Advisor is in position.

The starting date is October 1st, 2000.



ANNEXES

ANNEX A - COMPONENT SUMMARY BUDGET

Budget for Component 1: National Capacity Building

Sub-component	Year 1 000 DKK	Year 2 000 DKK	Year 3 000 DKK	Year 4 000 DKK	Year 5 000 DKK	Total 000 DKK
1.1 Support to Implementation of LWR	5.271	4.336	3.017	2.559	1.217	16.400
1.2 Support to Implementation of NRWSSS	3.814	3.375	1.617	2.467	1.426	12.700
1.3 Support to WRU	7.717	6.915	5.954	2.695	1.720	25.000
1.4 Support to Water Sector Institutes	5.000	15.000	5.000	5.000	5.000	35.000
Total	**21.802**	**29.626**	**15.588**	**12.722**	**9.363**	**89.100**

Table A1 - Budget for Sub-component 1.1 Support to Implementation of the LWR

Item	Year 1 (DKK)	Year 2 (DKK)	Year 3 (DKK)	Year 4 (DKK)	Year 5 (DKK)	Total (DKK)	Notes
International Consultants	3.150.000	2.400.000	1.950.000	1.650.000	600.000	9.750.000	1
Local Consultants	700.000	640.000	640.000	500.000	260.000	2.740.000	2
Computers	150.000					150.000	3
Communication	220.000	220.000	220.000	220.000	220.000	1.100.000	4
Workshops	32.000	48.000	48.000	32.000	16.000	176.000	5
Travel	90.000	90.000	90.000	90.000	90.000	450.000	6
Translation	40.000	60.000	30.000	30.000	13.000	173.000	7
Retraining	640.000	640.000				1.280.000	8
Cascade Training	120.000	120.000				240.000	8
Sub total	5.142.000	4.218.000	2.978.000	2.522.000	1.199.000	16.059.000	
Contingency	129.200	117.800	38.800	37.200	18.000	341.000	9
Total	5.271.200	4.335.800	3.016.800	2.559.200	1.217.000	16.400.000	

Detailed Budget Notes:

1) **International Consultants**

In terms of individual inputs the following staff inputs are proposed:

Input type (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Team Leader	7	3	3	2	2	17
Technical Specialists	5	7	6	5	2	25
Economist	3	4	2	3		12
Training Expert	4					4
Unspecified	2	2	2	1		7
Total	21	16	13	11	4	65

The estimated international manmonth (mm) inputs over the 5 years between the different outputs are as follows:

Manmonths	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Output 1	2	1				3
Output 2	2	1				3
Output 3	2	4	3	2		11
Output 4	5					5
Output 5	2	3	4	4	2	15
Output 6	2	5	4	4	2	17
Output 7	2					2
Output 8	2					2
Unspecified	2	2	2	1		7
Total	21	16	13	11	4	65

The unit rate to include all reimbursable costs such as travelling and allowances is 150.000 DKK/mm

The costs per year are thus:

Costs in DKK	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Specified inputs	2.850.000	2.100.000	1.650.000	1.500.000	600.000	8.700.000
Unspecified inputs	300.000	300.000	300.000	150.000	0	1.050.000
Total	3.150.000	2.400.000	1.950.000	1.650.000	600.000	9.750.000

2) **Local Consultants**

In terms of individual inputs the following staff inputs are proposed:

Input type (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Deputy Team Leader	8	8	6	5	3	30
Technical Specialists	14	13	17	14	6	64
Economist	4	8	6	5	3	26
Training Expert	4					4
Unspecified	5	3	3	1	1	13
Total	35	32	32	25	13	137

The local manmonth inputs over the 5 years between the different outputs is as follows:

Manmonths	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Output 1	2	1				3
Output 2	8	2	1			11
Output 3	4	8	12	8		32
Output 4	6					6
Output 5	4	8	8	8	4	32
Output 6	2	10	8	8	8	36
Output 7	2					2
Output 8	2					2
Unspecified	5	3	3	1	1	13
Total	35	32	32	25	13	137

The unit rate to include all reimbursable costs such as travelling and allowances is 20.000 DKK/mm

The costs per year are thus:

Costs in DKK	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Specified inputs	*600.000*	*580.000*	*580.000*	*480.000*	*240.000*	*2.480.000*
Unspecified inputs	100.000	60.000	60.000	20.000	20.000	260.000
Total	700.000	640.000	640.000	500.000	260.000	2.740.000

3) **Computers**

Six computers will be bought in the first year at a unit cost of 25.000 DKK

4) **Communication and Dissemination**

A lumpsum for expenses such as books, maps, printing materials, communication and dissemination is allowed for: An amount of 220.000 DKK per year is estimated.

5) **Workshops**

Twenty two workshops in total are allowed for spread over the 5 years as shown below. The unit cost per workshop is 8000 DKK

Workshop Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Total
No. Of Workshops	4	6	6	4	2	22
Workshop Cost (DKK)	32.000	48.000	48.000	32.000	16.000	176.000

6) **Travel**

Five hundred travel days are allowed for during the 5 years distributed evenly. The unit cost per travel day is 900 DKK

Travel Costs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Costs (DKK)	90.000	90.000	90.000	90.000	90.000	450.000

These travel costs relate to travel costs of non-consultant staff.

7) **Translation**

An allowance of 5000 pages of translation over the 5 years is made. The distribution assumed over the years is given below. The unit cost assumed is 40 DKK/page

Translation	Year 1	Year 2	Year 3	Year 4	Year 5	Total
No. Of pages	1.000	1.500	750	750	325	4.325
Cost (DKK)	40.000	60.000	30.000	30.000	13.000	173.000

8) **Training Expenses**

A budget of 80.000 DKK/ person is assumed for retraining for 20 people. A more exact estimate will be made once the training needs analysis is done. It is assumed that half of the costs will take place in the first year and the other half in the second year.

A budget of 40.000 DKK/person is assumed for training of 6 people selected for training others (cascade training). It is assumed that half of the costs will occur in the first year and the other half in the second year.

9) **Contingency**

A contingency of approximately 10% is applied to all items expect the technical assistance.

Table A2 - Budget for Sub-component 1.2 Support to Implementation of the NWRSSS

Item	Year 1 (DKK)	Year 2 (DKK)	Year 3 (DKK)	year 4 (DKK)	Year 5 (DKK)	Total (DKK)	Notes
International Consultants	1.350.000	1.950.000	450.000	1.200.000	300.000	5.250.000	1
Local Consultants	240.000	300.000	60.000	160.000	40.000	800.000	2
Equipment	1.015.320					1.015.320	3
Training and Staff Costs	394.800	394.800	394.800	394.800	394.800	1.974.000	4
Communication Costs	200.000	200.000	200.000	200.000	200.000	1.000.000	5
Workshops	32.000	48.000	32.000	32.000	16.000	160.000	6
Operational Costs	380000	380000	380000	380000	380000	1.900.000	7
Sub total	3.612.120	3.272.800	1.516.800	2.366.800	1.330.800	12.099.320	
Contingency	202.212	102.280	100.680	100.680	94.828	600.680	8
Total	3.814.332	3.375.080	1.617.480	2.467.480	1.425.628	12.700.000	

Detailed Budget Notes

1) **International Consultants**

In terms of individual inputs the following staff inputs are proposed:

Input type (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Economist	3					3
Institutional Specialist	5	5	1			11
Cross cutting specialists		6		6		12
Unspecified	1	2	2	2	2	9
Total	9	13	3	8	2	35

The international manmonth (mm) inputs over the 5 years between the different areas of work is as follows:

Area of Work (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Establishment of Finance mechanisms	3					3
Mass Media Campaign						0
Oganisational Study	5					5
Training Programme		1				1
Institutional/ Organisational Development		5				5
Development of Concepts		5				5
Development of Monitoring System			1			1
Evaluation of pilot projects				6		6
Unspecified	1	2	2	2	2	9
Total	9	13	3	8	2	35

The unit rate to include all reimbursable costs such as travelling and allowances is 150.000 DKK/mm

The costs per year are thus:

Costs in DKK	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Specified inputs	1.200.000	1.650.000	150.000	900.000	0	3.900.000
Unspecified inputs	150.000	300.000	300.000	300.000	300.000	1.350.000
Total	1.350.000	1.950.000	450.000	1.200.000	300.000	5.250.000

2) **Local Consultants**

In terms of individual inputs the following staff inputs are proposed:

Input type (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Economist	3					3
Institutional Specialist	3	7	1			11
Cross cutting specialists	1	6		6		13
Communication specialists	3					3
Unspecified	2	2	2	2	2	10
Total	12	15	3	8	2	40

Area of Work (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Establishment of Finance mechanisms	3					3
Mass Media Campaign	3					3
Oganisational Study	4					4
Training Programme		1				1
Institutional/ Organisational Development		6				6
Development of Concepts		6				6
Development of Monitoring System			1			1
Evaluation of pilot projects				6		6
Unspecified	2	2	2	2	2	10
Total	12	15	3	8	2	40

The unit rate to include all reimbursable costs such as travelling and allowances is 20.000 DKK/mm

The costs per year are thus:

Costs in DKK	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Specified inputs	200.000	260.000	20.000	120.000	0	600.000
Unspecified inputs	40.000	40.000	40.000	40.000	40.000	200.000
Total	240.000	300.000	60.000	160.000	40.000	800.000

3) **Equipment**

The following equipment is required and assumed unit prices are given below:

	unit price DKK	No.	Amount DKK
Vehicles	400000	2	800.000
Laptops	18200	4	72.800
PCs	7700	7	53.900
Printers	3780	4	15.120
Photocopier	21000	1	21.000
Fax machine	3500	1	3.500
Air-conditioners	7000	7	49.000
Total			1.015.320

The equipment will be purchased in the first year, any subsequent renewel of equipment will be paid for by CERWASS.

4) **Training and Staff Costs**

The implementation unit will be supported over the 5 years by paying for half of the salary costs and some of the associated travel costs of the staff. The main assumptions behind the estimates are:

a) Salary contribution

Staff type	No.	Salary USD/M	DKK/m	Total DDK/m
Cerwass leader	1	600	4.200	4.200
Professionals	3	500	3.500	10.500
Support Staff	3	300	2.100	6.300
Drivers	2	200	1.400	2.800
Total	9			23.800

The sub-component will fund half the salary level over 5 years.
The total amount is therefore: 23.800 DKK/month x 12 months/year x 5 years x 50%= 714.000 DKK

b) Trainee travel and education costs
10 trainees for a 3 month duration assuming travel and fee costs of 24.500 DKK/ trainee month gives a total cost of 735.000 DKK.

c) Travel costs for implementation unit staff.

Number of person travelled		5
Number of visits per year		12
Number of days per visit		5
Airfare costs		1.000 DKK
Hotel rates per day		150 DKK
		DKK
Total cost	airfares	300.000
	Hotels	225.000
	Total	525.000

d) total implementation unit costs

	DKK
Staff Salaries	714.000
Trainee costs	735.000
Travel Costs for staff	525.000
Total	1.974.000

These costs are distributed evenly over the 5 years.

5) **Communication Costs**

An allowance of 200.000 DKK is allowed for each of the 5 years as a Danida contribution to the cost of media campaigns and communication.

6) **Workshops**

Twenty workshops in total are allowed for spread over the 5 years as shown below. The unit cost per workshop is 8000 DKK

Workshop Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Total
No. Of Workshops	4	6	4	4	2	20
Workshop Cost (DKK)	32.000	48.000	32.000	32.000	16.000	160.000

7) **Operational Costs**

a) office costs

An allowance of 20.000 DKK/ month is allowed for. This results in an expenditure of 240.000 dkk per year and total expenditure of 1.200.000 DKK

b) Vehicle operation

An allowance of 50.000 DKK/ year per vehicle is made. This amounts to 100.000 DKK per year and 500.000 DKK in total over the 5 year period.

c) Total operational costs

	DKK
Office	1.200.000
Vehicle	500.000
Miscellaneous	200.000
Total	1.900.000

8) **Contingency**

A contingency of approx. 10% is applied to all items expect the technical assistance.

Table A3 - Budget for Sub-component 1.3 Support to WRU

Item	Year 1 DKK	Year 2 DKK	Year 3 DKK	Year 4 DKK	Year 5 DKK	Total DKK	Notes
International Consultants	3.225.000	3.225.000	3.225.000	1.500.000	1.500.000	12.675.000	1
Local Consultants	360.000	260.000	180.000	160.000	60.000	1.020.000	1
International travel	330000		110000			440.000	2
Accommodation expenses	1.560.000	0	720.000	0	0	2.280.000	3
International networking	100.000	100.000	100.000	100.000	100.000	500.000	4
Postgraduate Scholarships	700.000	1.050.000	1.050.000	700.000	0	3.500.000	5
Equipment	806.000	1.748.000	152.000	0	0	2.706.000	6
Operational Costs	260.000	220.000	185.000	150.000	50.000	865.000	7
Sub total	7.341.000	6.603.000	5.722.000	2.610.000	1.710.000	23.986.000	
Contingency	375.600	311.800	231.700	84.900	10.000	1.014.000	8
Total	7.716.600	6.914.800	5.953.700	2.694.900	1.720.000	25.000.000	

Detailed Budget Notes

1) **International and Local Consultants**

International Consultants
The international manmonth (mm) inputs over the 5 years between the different type of input is as follows:

Type of Input	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Team Leader	10,5	10,5	10,5	3	3	37,5
Integrated Water Resource management	3	3	3	2	2	13
Demand Responsive approaches	3	3	3	2	2	13
Water Resource Economics	3	3	3	2	2	13
Unspecified	2	2	2	1	1	8
Total	21,5	21,5	21,5	10	10	84,5

The unit rate to include all reimbursable costs such as travelling and allowances is 150.000 DKK/mm

The costs per year are thus:

Costs in DKK	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Specified Inputs	2.925.000	2.925.000	2.925.000	1.350.000	1.350.000	11.475.000
Unspecified Inputs	300.000	300.000	300.000	150.000	150.000	1.200.000
Total	3.225.000	3.225.000	3.225.000	1.500.000	1.500.000	12.675.000

Local Consultants

Type of Input (MM)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Water Resources	6	4	2	1	1	14
Economics	3	2	1	1		7
Sociology	6	4	4	5	1	20
Unspecified	3	3	2	1	1	10
Total	18	13	9	8	3	51

The unit rate to include all reimbursable costs such as travelling and allowances is 20.000 DKK/mm

The costs per year are thus:

Costs in DKK	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Specified inputs	300.000	200.000	140.000	140.000	40.000	820.000
Unspecified inputs	60.000	60.000	40.000	20.000	20.000	200.000
Total	360.000	260.000	180.000	160.000	60.000	1.020.000

2) **International Travel**

A total of 5 trips for study tours will be made in year 1. Each trip is estimated to cost 22.000 DKK. In addition to this some 10 retraining trips will be made at the same unit cost. The total costs will therefore be 330.000 DKK in the first year. In year 3 a further 5 retraining trips will be made at a total cost of 110.000 DKK (5 x 22.000 DKK/trip).

4) **International Networking**

A lumpsum of 100.000 DKK is allowed for each of the 5 years.

5) **Post Graduate Scholarships**

10 post graduate scholarships are allowed for with an estimated cost of 350.000 DKK each. These are distributed over the 5 years as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
No. Of Scholarships	2	3	3	2	0	10
Cost (DKK)	700.000	1.050.000	1.050.000	700.000	0	3.500.000

6) **Equipment**

The budget for equipment is based on the following requirements and assumptions:

Item	unit	Quantity	Rate	Year 1 DKK	Year 2 DKK	Year 3 DKK	Year 4 DKK	Year 5 DKK	Total DKK
Training equipment (computers)	nos.	50	7.700	154.000	154.000	77.000			385.000
Training equipment (printers)	nos.	10	3.800	19.000	19.000				38.000
Teaching materials	LS			25.000	25.000	25.000			75.000
Laboratory equipment	LS			50.000	50.000	50.000			150.000
Library infrastructure	LS			25.000	0				25.000
Library photocopier	nos.	1	21.000	21.000	0				21.000
Internat. (English) Textbooks &	nos.	1200	800	-	-	-	-		-
Server, workstation, internet	LS			500.000	1.500.000				2.000.000
Fax machines	nos.	3	4.000	12.000	0				12.000
Sub-total Equipment costs				806.000	1.748.000	152.000	0	0	2.706.000

7) **Operational Costs**

The operational costs are based on the following requirements and assumptions.

Item	unit	Quantity	Rate DKK	Year 1 DKK	Year 2 DKK	Year 3 DKK	Year 4 DKK	Year 5 DKK	Total DKK
Office installation	LS			10.000					10.000
Photocopier	nos.	1	21.000	21.000	0				21.000
Fax machine	nos	1	4.000	4.000	0				4.000
Office operating cost	LS			10.000	5.000	5.000			20.000
Preparation of case studies for	LS			100.000	100.000	100.000	100.000	0	400.000
Local vehicle transport	km	30.000	3	30.000	30.000	30.000			90.000
Interpretation (pages)	nos	2.000	35	35.000	35.000				70.000
Miscellaneous				50.000	50.000	50.000	50.000	50.000	250.000
Sub-total Operational cost				260.000	220.000	185.000	150.000	50.000	865.000

8) **Contingencies**

A contingency of approx. 10% is applied to all items expect the technical assistance.

ANNEX B - PROBLEM ANALYSES

B1: PROBLEM ANALYSIS FOR SUB-COMPONENT 1.1 IMPLEMENTATION OF LAW ON WATER RESOURCES

BACKGROUND

The main barriers and obstacles to integrated water resources management and capacity building have been identified as lack of capacity to implement the LWR and continued reliance on the investment fixated and technically dominated planning approaches inherited from the Soviet era.

The present water resource development practices will lead to environmental and economic loss. Water resources will tend to become committed towards whatever project is most upstream independent of its relative social or economic value. Pollution and soil erosion will combine to reduce the availability of usable land and water resources. The rural poor will be the first to suffer but ultimately economic loss and environmental degradation will affect all levels of society.

Although the LWR was passed in January 1999 relatively little progress has happened in the last year. It seems that implementation of the LWR suffers from a number of institutional and capacity related constraints.

PROBLEMS

On the institutional front there is the problem that the fundamental restructuring of the Water Sector in 1995 and the resultant concentration of functions in MARD is still not fully accepted in those ministries that have seen a loss of influence. As is normal practice in all countries there is along drawn out process of political negotiation between ministries. To this is added a lack of conviction, at the highest levels, that the LWR, with its focus on management and not just development of water resources, is the right or only way to go. This is a problem area that an external agency can do little to help. It is a natural process that will take time.

The presence of numerous previous legislation on the water related matters which has not been repealed makes it difficult for the new LWR to gain dominance. It will need to prove its superiority in practice if it is going to gain widespread acceptance.

The capacity related constraints relate first and foremost to the fact that since the LWR and many of its fundamental principles are new to Vietnam there is little or no local experience in implementation. There is a need to build technical skills, deepen understanding and increase confidence.

Once the LWR is made operational and the political, institutional and capacity constraints resolved there will still be a number of considerable challenges in implementing the law. Water has been considered a free good in many areas of it usage. Although there is a tradition for paying something for irrigation services the amounts involved are often far short of an economic tariff. Imposition of restrictions and tariffs is likely to meet strong resistance from vested interests.

Vested interests are not the only problem. The lack of capacity to administrate the procedures, monitor compliance and apply sanctions is likely to be a strong factor in limiting the feasible ambition level of many of the concepts mentioned in the law. Transparent and efficient administration is essential if the law is to work as intended. In many provinces the overall institutional conditions for such administration do not exist and will not exist for many years to come. There are many obstacles related to efficient public sector performance which go beyond the limits of the LWR or an external effort to assist in the implementation of the law.

Added to the capacity constraints there are serious financial sustainability implications since implementation of the new LWR will in most circumstances require a higher level of recurrent expenditure than at present. The law has made provisions for collecting money for administration, monitoring and enforcement. However the means suggested have not been tested and can be expected to receive strong resistance from those having to pay.

It is important that the LWR does not systematically go beyond the political willingness to support it. Resources will have to devoted to making sure that there is an understanding at different levels of society of the importance of the provisions of the LWR.

Whilst these problems seem formidable, it should not be forgotten that they are broadly the same as those facing any country that has decided to adopt an integrated approach to the management of water resources. Vietnam can at least learn from the mistakes and approaches of other countries and attempt to phase its introduction of the new concepts in line with its capacity to carry them out.

B2: Problem Analysis for Sub-component 1.2 Support to Implementation of the National RWSS Strategy

BACKGROUND

Presently, CERWASS is implementing the policies regarding RWSS through its management of the National Programme for Rural Water Supply and Sanitation year 2000-2005. Many of the ideas of the NRWSSS has been incorporated in this National Programme, but the ultimate shift towards a demand driven approach, will only materialise in the next 5 year National Programme.

The GOV has delegated the responsibility for the implementation of the NRWSS Strategy to CERWASS of MARD, but there is a strong need to provide assistance for development of the necessary capabilities for this new role at CERWASS. The staff of CERWASS is professionally well educated, but without experience in demand responsive approaches and the respective roles and responsibilities of users, government at the different administrative levels, and the private sector in the form of credit institutions, consultants and contractors. Hence, there is a strong need for assistance for capacity building in CERWASS.

A Vietnamese version of the NRWSSS document has been jointly prepared and submitted by MOC and MARD to the Deputy Prime Ministers Office for approval. A text analysis has compared the Vietnamese and English text and find no major differences in content although differences in style of presentation may leave the impression that the role of user organisations have been downplayed. This is rather unfortunate as the empowerment of users is the cornerstone in the shift from a supply driven to a demand responsive approach. Consequently, MARD has been requested to confirm that the formation of user groups as legal entities - eligible for commercial credit and grant - has been retained as one of the basic principles of the NRWSSS.

It is also seen as an immediate problem, that a clear plan for the approval of the NRWSS Strategy has not as yet been prepared by the concerned ministries. The Formulation Mission in its debriefing note suggested, that such a plan be made part of the Vietnamese-Danish Process Action Plan for the approval of the SPS and its components.

The provision of credit is an important cornerstone in the NRWSSS. In 1998 Danida assisted the GOV to undertake a study of alternate ways of establishing cost-effective finance mechanisms for RWSS schemes. The recommendations of the team was presented in November 1998 and after the incorporation of the comments of GOV and Danida the final report was submitted in January, 1999. The study recommends the establishment of a National Fund – as a budget line in MARD – to which GOV and international donors can transfer credit to user groups organised as legal entities – through existing rural credit institutions. Unfortunately, it has not been possible for MARD to follow up on the recommendations of the Study until after the official approval by the Prime Ministers Office, of the NRWSS Strategy.

The vision of the sub-component is that CERWASS by the end of the period of assistance has the capability to implement the NRWSS Strategy in accordance with the lessons learnt through the various pilot projects implemented with assistance from Danida and other international donors in the period 2001 to 2004 – on a nationwide scale in a programme covering the period 2005-2010.

In order to achieve this vision the support through the SPS and programmes of other Donors have to address several problems and to overcome numerous barriers.

PROBLEMS

The basic problems are:

While rural communities are quite used to a demand responsive approach due to the fact that most investments in the past have been financed by individual households, the investments of the various government agencies involved in RWSS has been supply driven and implemented in a top down approach. A major reorientation of staff of MARD, CERWASS, and MPI at central, provincial, district and commune level is a prerequisite for the successful implementation of the NRWSSS .

The existing credit institutions in rural areas provide credit for agricultural investments, but they have not developed services for investments in domestic water supply. Credit facilities is another pre-requisite for a demand driven approach to RWSS strategy. Existing credit institutions need to be encouraged and assisted to develop cost-effective services for rural water supply and sanitation investments.

The public investment projects have in the past been implemented by SOE consulting and contractor companies. In a demand driven approach the user organisation will be free to choose the source of the services required. The private sector is likely to play a more dominant role in the future. But there is a need for support to the development of a facilitating environment in order for the private sector to fully utilise its potential.

BARRIERS AND OBSTACLES

To address these problems a number of critical barriers must be overcome:

The NRWSS Strategy has not yet been approved by the Prime Minister. There is a need for the MOC and MARD to provide professional assistance to the Office of the Government to facilitate the process.

Staff of core Government Institutions are not yet familiar with the content of the NRWSS Strategy.

The idea of a National Fund which can provide finance for Rural Water Supply and Sanitation investments – combining grants and credit – has still to be developed and accepted by the appropriate GOV institutions.

The responsibility of implementing the NRWSS Strategy rests with CERWASS. CERWASS is a relatively young institution staffed with approximately 60 professionals of which 10-15 percent with master degrees. None of them have experience with the implementation of the new concepts and approaches of the NRWSSS. A major effort in terms of Human Resources Development, institutional reform and organisational development will be required for CERWASS to become capable of fulfilling its role.

B3: Problem Analysis for Sub-component 1.3 Support to Capacity Building at the Water Resources University

BACKGROUND

The Water Resources University (WRU) was founded in 1959 as a specialized tertiary level education institution, focusing on the Water Sector. The WRU offers education of engineers at all levels, BSc, Master and PhD. Although there are other universities in Vietnam providing education within certain areas of the Water Sector, WRU is the main supplier of professional manpower to the Water Sector as a whole. As a general education institution, the WRU refers to the Ministry of Education and Training with respect to curricula and content, whereas it is attached the MARD as the line ministry for the sector.

Building upon 9 different basic studies the WRU offers 20 specialties at BSc level. Basic studies are completed within two years; specialties are completed within three years. The total annual output amounts to around 600-675 BSc engineers of which about 530 specializes from the faculties forming the entry point for the Danish support (Hydrology & Environment; Irrigation, Drainage and Land Reclamation; and Water Resources Economics).

Starting from 1992 the WRU offers education at Master's level within three programs (Hydrology and environment; Hydraulic engineering; and Irrigation and drainage engineering). A Master's degree requires 2 years full time studies based on a completed BSc study. To date in total about 60 Masters have obtained their degree. Presently there is an annual output of 13 Masters from two of the faculties forming the entry point for Danish support (the Faculty of Water Resources Economics does not have a Master program).

PhD-programs are offered within six different specialties. A PhD degree requires 4 years full time studies based on a completed BSc study or two years full time studies based on a Masters degree. To date in total about 40 PhDs have been awarded. Presently there is an annual output of 4 PhDs from two of the faculties forming the entry point for Danish support.

It is generally recognized that the Water Resources University in its present shape does not meet the requirements for contributing in a satisfactory way to the sustainable development and management of the country's water resources and thus to the modernization and social and economic development of Vietnam.

THE PROBLEMS

The WRU fails to meet the country's tertiary training and research needs within the water resources sector in a number of ways:

A significant shortage of BSc engineers may be envisaged to occur over the next 5-10 years whereas the number of BSc candidates presently produced may prove sufficient in the long-term, depending however on the development in the demand of the private sector.
The present output of Masters and PhDs is dramatically short of the demands of the public sector (MARD, universities, research institutions) not to mention the envisaged growing private sector.
The graduates are inadequately qualified according to international standards with insufficient exposure to e.g. modern international teaching materials and equipment, computer technology, and up-to-date analytical tools in terms of water resources modelling software.
The training and research at WRU does inadequately reflect the changes and reforms that now characterize Vietnam within the Water Sector by giving less emphasis to the development of infrastructure for increased exploitation of water resources and more emphasis to integrated water

resources management, demand responsive water services delivery, and water resources economics.

There are a number of reasons behind the core problems such as:

- Insufficient funding,
- Limited attractiveness of WRU to potential students,
- Limited motivation among students at WRU
- Inadequate qualifications and experience of some of the teaching staff partly due to insufficient international contact and exposure,
- Inadequate teaching materials,
- Inadequate library facilities,
- Insufficient laboratory facilities and equipment including computers, and
- Inadequate communication facilities including internet access

For academic staff it is noted that the lack of knowledge and skills within foreign languages (English in particular) is a strong barrier for upgraded state-of-the-art knowledge which hampers the quality of teaching and research and consequently national scientific development.

Limited international co-operation in the form of for example exchange of guest lecturers, staff and student exchange programs and easy access to international literature and information via e.g. an effectively functioning library and internet connection are also recognized constraining factors.

The immediate effect of the core problems is that the relevant skills and knowledge in some of the important water resources areas such as integrated water resources management, demand responsive water services delivery, and water resources economics are not available to the public sector institutions and to the private sector. Furthermore it is also worrying that the scientific level candidates being employed by the country's water resources research institutions have not received up-to-date training in the use of computers and analytical tools in terms of water resources modelling software.

To contribute towards the solution of the core problems the sub-component will provide support to the capacity building at the Water Resources University within areas of relevance for integrated water resources management, demand responsive and participatory water services delivery, and water resources economics. The capacity building will include BSc, Master and PhD studies as well as in-service training and comprise:

Retraining of teaching staff
Development of teaching and courseware materials
Development of courses and curricula
Graduate students training abroad
Up-to-date library facilities
Improved internet facilities

B4: Problem Analysis for Sub-component 1.4 Support to Capacity Building at Water Sector Institutes.

BACKGROUND

The Institute of Water Resources Planning (IWRP) is an agency under MARD specializing in water resources planning. It formulates water resources development plans for the whole country with the aim of integrated use, protection and sustainable development of water resources and environment serving social and economic development. It has two offices: The head office in Hanoi with a staff of about 140, and a sub-institute in Ho Chi Minh City with a staff of about 100. The activities of the Institutes are mainly funded directly from MARD, but some funding is also generated through consulting activities for the provinces and other clients.

The Institutes of Water Resources Research (IWRR) and The Southern Institute of Water Resources Research (SIWRR are national research institutions under MARD. They mainly undertake research and consulting activities in relation to the design and impact assessments of specific water resources development activities such as e.g. river training, flood control, irrigation, land reclamation, and small-scale hydropower development. It has a total staff of about 500. The activities of the Institute are partly funded by MARD, but a substantial part of the revenue (70%) is generated through consulting activities for the provinces and other clients like NGO's.

PROBLEMS

The Core Problem

The future social and economic development of Vietnam is closely related to the prudent management of the country's water resources and environment. In this context it is generally recognized that there is a need to strengthen the national capability of key institutions that currently are the main providers of technical specialist services in relation to water resources development and management, such as integrated planning of water resources development, protection and management at international, and national and river basin levels as far as IWRP is concerned, and design and impact assessment of specific water resources development activities like river training, land reclamation, hydropower and irrigation as far as IWRR is concerned.

The Causes of the Core Problem

One of the main reasons behind the core problem is that the Institute of Water Resources Planning and the Institute of Water Resources Research do not have access to state-of-the-art analytical tools in terms of water resources modelling software and equipment. This is partly due to lack of sufficient funding partly due to lack of staff with sufficient training in using the mathematical modelling software.

The Effects of the Core Problem

The immediate effect of the core problem is that the two institutions are unable to provide their services at the highest professional level to the benefit of the country.

Support to Capacity Building at Important Water Sector Institutions

To contribute towards the solution of the core problem the sub-component 1.4 will provide support to the capacity building at important Water Sector Institutions like the Institute of Water Resources Planning and the Institute of Water Resources Research by assisting in the transfer of state-of-the-art software modelling technology with the aim of building up national capabilities for efficient water resources management that can be sustained on the basis of e.g. improved possibilities for the involved institutions to undertake income generating consulting activities for national clients as well as international donors financing Water Sector investment projects such as ADB and WB.

ANNEX C - ORGANOGRAMMES

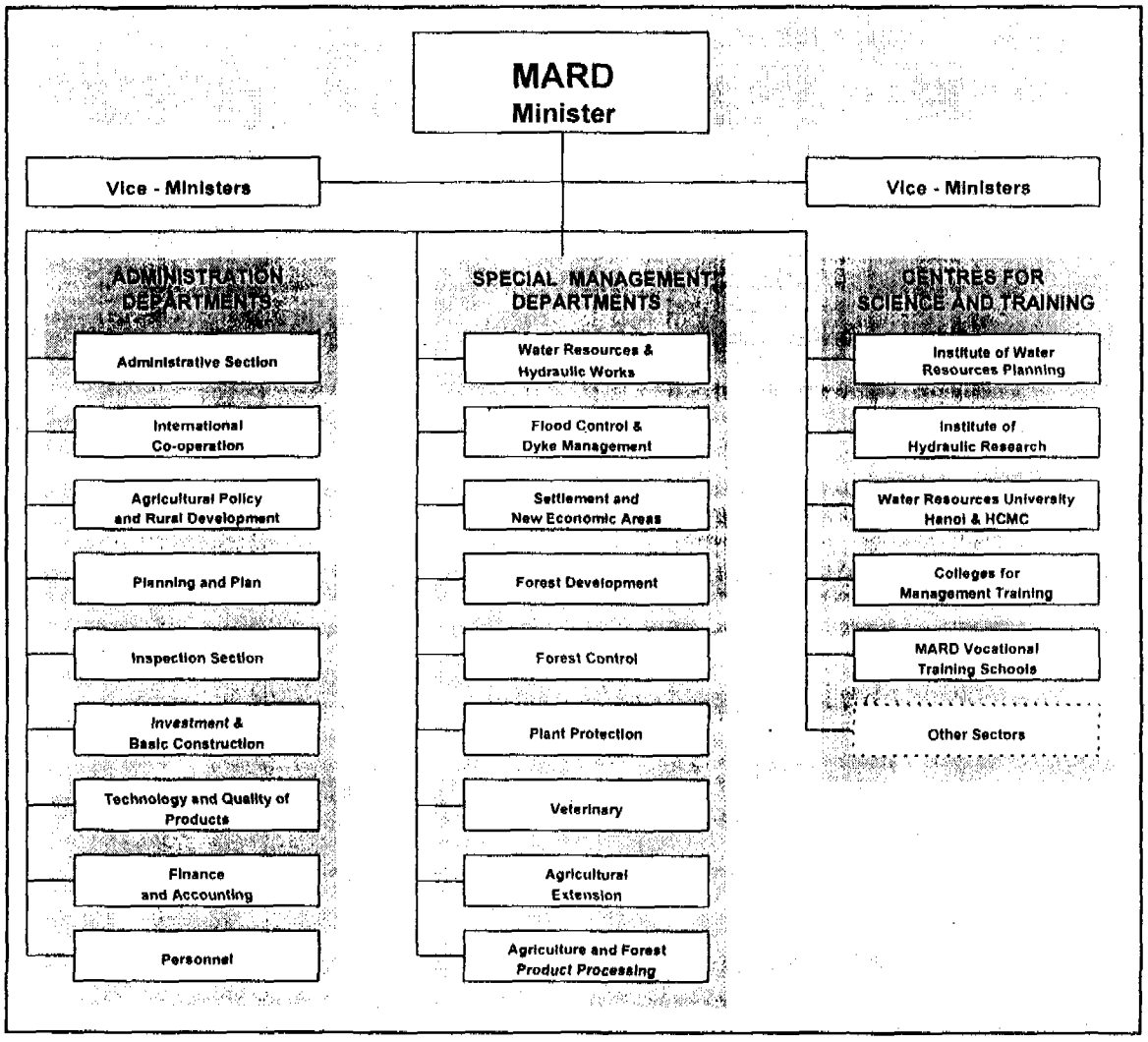
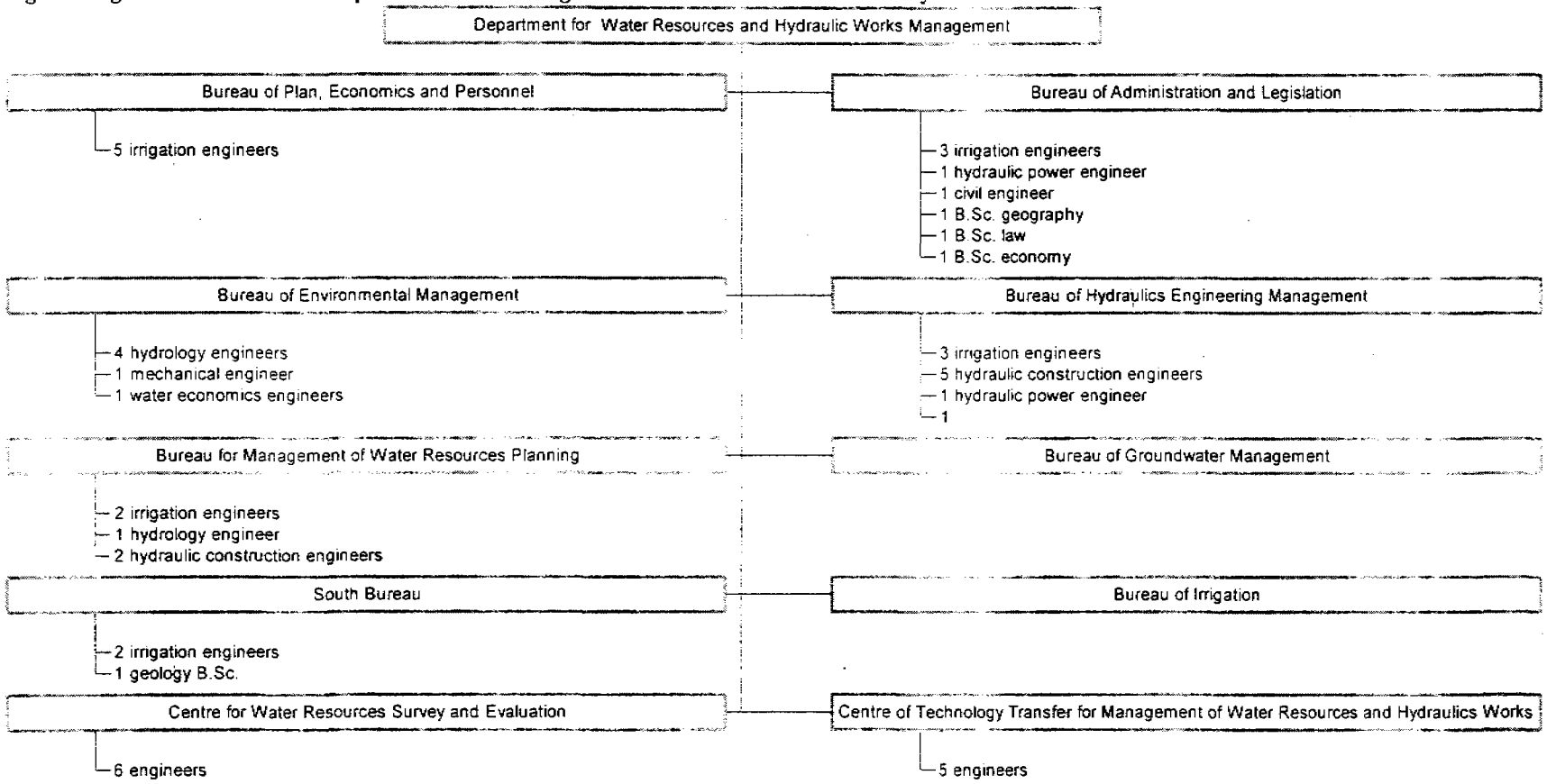

MARD
Minister
Vice - Ministers
Vice - Ministers
ADMINISTRATION DEPARTMENTS
Administrative Section
International Co-operation
Agricultural Policy and Rural Development
Planning and Plan
Inspection Section
Investment & Basic Construction
Technology and Quality of Products
Finance and Accounting
Personnel
SPECIAL MANAGEMENT DEPARTMENTS
Water Resources & Hydraulic Works
Flood Control & Dyke Management
Settlement and New Economic Areas
Forest Development
Forest Control
Plant Protection
Veterinary
Agricultural Extension
Agriculture and Forest Product Processing
CENTRES FOR SCIENCE AND TRAINING
Institute of Water Resources Planning
Institute of Hydraulic Research
Water Resources University Hanoi & HCMC
Colleges for Management Training
MARD Vocational Training Schools
Other Sectors

Figure Organisational Chart: Department for Management of Water Resources and Hydraulic Works



COMMENTS TO ORGANOGRAMME

The following presentation of the most important offices of DWRMHW has been prepared by the department.

Bureau of Plan, Economics and Personnel
Five staff, of which one Senior Engineer (Head of the Bureau), three Senior Engineers and one Engineer
Responsibilities:

- Taking the chair and co-ordinate with concerned bureaux to develop legal documents and technical standards for the use and operation of hydraulic work systems. The documents are submitted to the Director for further submitting to MARD.
- Take the chair and co-ordinate with concerned offices to appraise and approve production and financial plan for enterprises under MARD in pursuant to the Government Decree 56/CP and Circular 90/1997/TTLT/TC-NN.
- Co-ordinate with concerned bureaux within DWRMHW to develop the technical-economic norms; labour price and salary norms; and irrigation system management equipment norms.
- Compounding the short, middle and long term plans within Dept. for submit to MARD.
- Data collection, statistical analyses and data management of hydraulic works and provide the data follows Director's order .
- Supervise the organisation model on Management of Water Resources and Hydraulic Works and Irrigation at local level for the Director and further submit to MARD.
- Co-ordinates with concerned Units to set up training programmes for staff in Management of Water Resources and Hydraulic works sector.

Bureau of Administration and Legislation

12 staff of which one Senior Engineer (Head of Bureau), one Senior Engineer (deputy of Bureau), seven Senior Engineer, two administrative staff and two drivers.

Responsibilities:

- Prepare weekly, monthly, yearly and haft year work programmes. Assisting the Director in supervising implementation of the work programmes. Adjust schedules in the work programmes when necessary.
- Progress reporting according to MARD regulations. Submitted by the Director to MARD.
- Protect and use the properties and material, provided by MARD.
- Planning and implementing financing and accounting procedures.
- Implementing administrative works such as archives, records etc. in accordance with Government regulations.
- Take the chair and co-ordinate with concerned bureaux to arrange seminars, workshops and public events.
- Carry out the administration in the Department; control the cars for field trips and local visiting plans.
- Executive in tender evaluation board; supervise the implementing of national competitive bidding and business management within the Department's irrigation enterprises. Executive of the Department's science-technical council, assisting Director evaluating the result of science studies and science activities in the units under modal administration by the DWRMHW.
- Assisting in supervision of the external works.
- Assisting Director implementing personnel regulations.
- Assisting Department to plan the development of legal documents of water resources and hydraulic works management. Take the chair and co-ordinate with concerned bureaux

developing and drafting the decrees and regulations under the law and propagate these documents.

- Take the chair in developing, planing and supervising implementation of sector inspection.
- Assisting Dept. on management of the rivers in border regions.

Bureau of Environmental Management

Six staff of which one Master (Head of Bureau), two Senior Engineers and three Engineers.

Responsibilities:

- Take the chair and co-ordinate with relevant environmental offices developing water quality standards for difference users.
- Setting up the procedures, legal documents for Water Quality Management .
- Standing Management of Water Resources Survey Projects and co-ordinating with concerned bureaux to approve and submit to MARD.
- Setting up the plans on protection and preventing water pollution.
- Assess the impact on water environment of development projects.
- Study and apply the modern technology for Water Environment Management.
- Take the chair and co-ordinate with concerned bureaux within DWRMHW approving issues and revoke waste water discharge permits.
- Managing National water quality data.

Bureau of Hydraulics Engineering Management

Seven staff of which 1 Senior Engineer (Head of Bureau), 1 Senior Engineer (deputy of Bureau) and 5 Senior Engineers

Responsibilities:

- Propose and take the chair of setting up, revising the regulation operation norms, technical standards belong hydraulic works management. Submit to Director in order to submit to MARD or Government promulgate. Directing and supervising when these documents are promulgated.
- Take the chair of appraising for repair, upgrading, completing projects on existing irrigation systems according to MARD distribution.
- Developing the technical norms for big repair and repairs.
- Take the chair of creating and appraising the planing on enlarging, completing, upgrading for existing irrigation systems.
- Propose the plan on repair, upgrading and completing of hydraulic works for the Dept. proportion and combining for submit to MARD.
- Supervising and examining the hydraulic works before and after flood season.
- Inspecting the implementation of promulgated regulation and procedures.
- Supervise the constructing, estimating the quality of new and repaired hydraulic works. Assisting Director implementing mission of executive of appraisal commission for hydraulic works under Central management to be put into operation.
- Proposing and directly take part in developing the investment policies for building, repair, upgrading hydraulic works according to Governmental legislation.
- Storing the technical documents of hydraulic works.

Bureau for Management of Water Resources

Five staff of which one hydrology Senior Engineer (Head of the Bureau), two Senior Engineer and two Engineers.

Responsibilities:

- Collect and processing of WR data and existing WRP Projects; set up database on WR and river basin WR planning or local WR planning Projects.

- Take the chair and co-ordinating in proposing and enlarging the river basin or regional WR planning projects; supervise the project proposal setting and approving and implementing these projects. Co-ordinates with other concerned organisations within MARD to evaluate and approve the WR planning projects based on the annual plan and submit to MARD.
- Take the chair and co-ordinating with concerned bureau within . MWRHW, create the national Water Resources Management Strategy. Co-ordinate with concerned bureaux to approve and revoke permit of using surface water in accordance with the Laws.
- Managing WR data and WR Planning data.

Bureau of Groundwater Management

Five staff of which one Master (Head of Bureau), one Senior Engineer and three Engineers.

Responsibilities:

- Collecting and processing groundwater data, setting up groundwater database.
- Proposing and developing the legislation documents for managing the groundwater exploitation.
- Inventing the groundwater exploitation works, collect and evaluate the groundwater capacity of pilot areas throughout the country.
- Balance calculating, making groundwater distribution flow chart for basin or region.
- Take the chair and co-ordinate with concerning bureaux assisting Dept. on issue and revoking the permit of exploiting-exploration-drill and using groundwater, and practising exploitation-exploration-drill of groundwater.
- Co-ordinating inspect and treat against in exploitation and management of groundwater.
- Take part in recommendation for development projects associated with exploitation, using and protection of groundwater.
- Application modern technology into exploitation and management of groundwater.
- Co-ordinate with concerning bureaux in Ministry of Industrial for indicating groundwater measure in order to evaluate groundwater exhaustion and pollution, propose the treatment measures.
- Take part in appraising the projects on groundwater supply.
- Directing locals for groundwater management.

Bureau of Irrigation

7 staff of which 1 Senior Engineer (Head of Bureau) and six 6 Senior Engineers

Responsibilities:

- Organise or take part in drafting and revising the legal documents, technical norms of operation and water using in hydraulic works systems for Dept. Director submit to MARD.
- Provide creation, appraising the rules of operation of big-multiple purposes irrigation systems for Director submit to MARD approve or the Dept. Director will approve according to the Dept.'s authority; and provide local authorities to draft the rules of operation for the rest of hydraulic works; inspect implementing the rules of operation of Hydraulic works systems. Take part in creating the rule of operation of the reservoirs.
- Assisting Director monitoring the hydraulic works Management Council.
- Combining the information and supervise the variation of climate, irrigation and drainage demand, domestic inundation, draught, water source in side and outside hydraulic works systems. Propose measures for Dept. and MARD indicate the local operating hydraulic works and protection from inundation, draught effectively.
- Co-ordinate with bureau of hydraulic Engineering Management to find out the unreasonable phenomenon of hydraulic works; take part in proposing the overcoming measures; ensuring safe and effectively for hydraulic works .

- Making fast report on production serving of hydraulic works.
- Co-ordinate with other offices inside and outside MARD proposing the overcoming measures consequences of natural disaster for hydraulic works and supervising the implementation.
- Take part in implementing projects on improving or implementing the operation technology in hydraulic works
- Take part in evaluation of effect of hydraulic works.

South Bureau

Three staff of which one Senior Engineer (Vice Director) and three Senior Engineers.

Responsibilities: being representative office of Dept. for DWRMHW in Ho Chi Minh city aiming make convenience conditions for connecting with internal and external organisations; proposing and communicating the information of southern water resources and hydraulic works management units to Department for MWRHW and on be haft of Director solve the works of management for water resources and hydraulic works in the southern.

Centre of Technology Transfer for DWRMHW

Five staff of which one Vice Director (Manager of Centre) one Head of bureau (Deputy Manager) and three Engineers

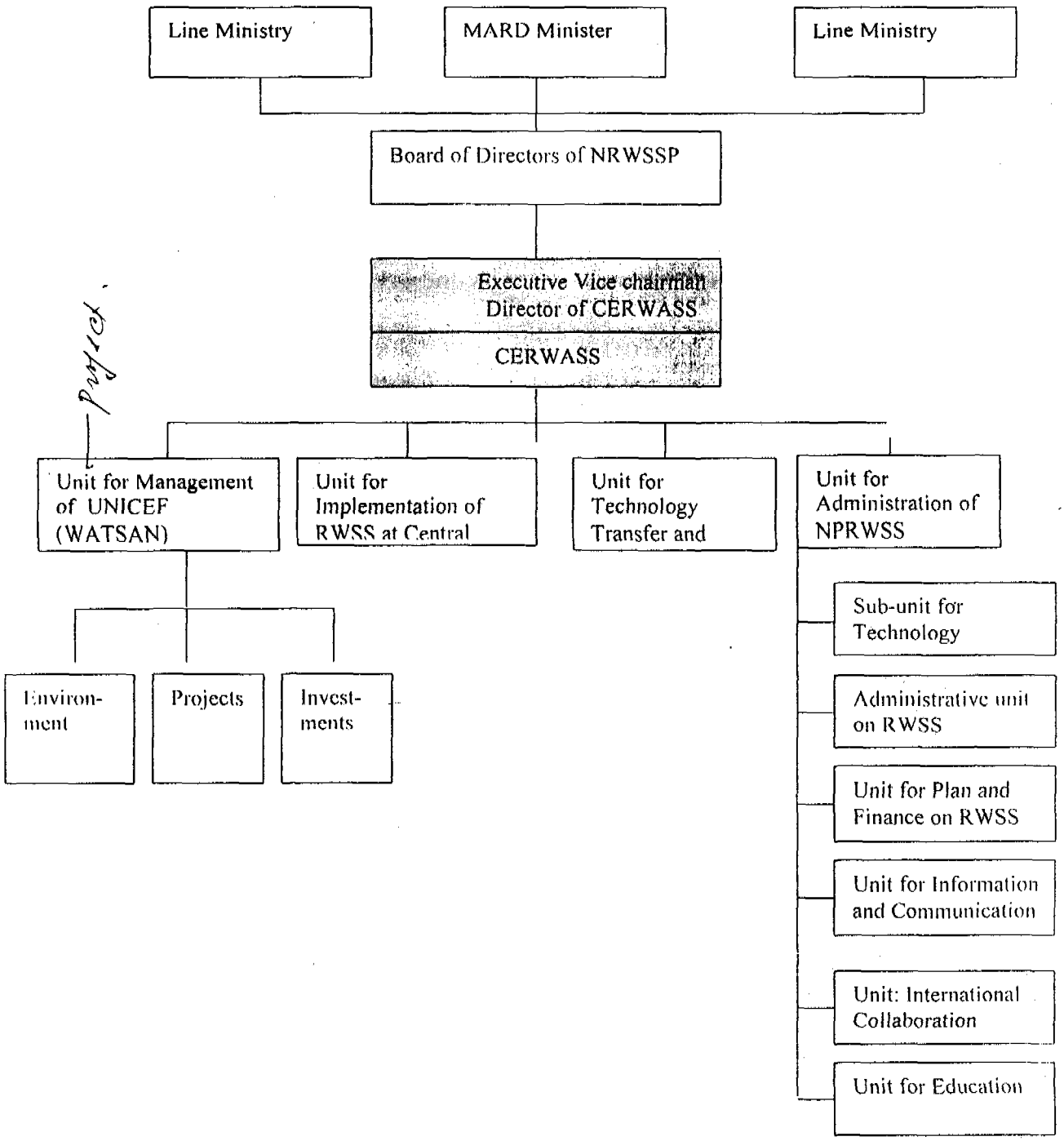
Responsibilities: holding the training courses for Transfer the model technology on management of water resources and hydraulic works to cadres within Department and the staffs in sub-departments, Central Irrigation systems, Local Irrigation systems.

Centre for Water Resources Survey and Evaluation

Six staff of which one Vice Director (Manager of the Centre) one Head of bureau (Deputy Manager) and four Engineers.

Responsibilities:

- Implementing the water resources basic survey projects. Studies on Water Sector.
- Evaluating on water resources, water quality according to contracts and/or project


Line Ministry
MARD Minister
Line Ministry
Board of Directors of NRWSSP
Executive Vice chairman
Director of CERWASS
CERWASS
Project
Unit for Management of UNICEF (WATSAN)
Unit for Implementation of RWSS at Central
Unit for Technology Transfer and
Unit for Administration of NPRWSS
Environ-ment
Projects
Invest-ments
Sub-unit for Technology
Administrative unit on RWSS
Unit for Plan and Finance on RWSS
Unit for Information and Communication
Unit: International Collaboration
Unit for Education

ANNEX D - PLANS OF IMPLEMENTATION

ANNEX E - TOR FOR SENIOR TECHNICAL ADVISER

Draft Terms of Reference
Senior Technical Adviser
For
Capacity Building in CERWASS of MARD
For
Implementation of National Rural Water Supply and Sanitation Strategy

DRAFT

1 BACKGROUND

Danida has assisted the GOV to develop a National Rural Water Supply and Sanitation Strategy (NRWSSS). The strategy suggest a radical change from a supply driven to a demand responsive approach to the provision of rural water supply and sanitation. The cornerstones of the strategy are (i) the promotion of water and sanitation as an integrated service through cost-effective Health Education Campaigns (ii) the formation of user groups into legal entities eligible for subsidised credit for construction of schemes, (iii) the empowerment of user organisations to establish a financially sustainable entity ("water and sanitation company ") to choose the service level and technology of the scheme, contract consultants and contractors, to set tariff and establish revenue collection systems which cross subsidises poor consumers and to operate and maintain the scheme upon finalisation of construction.

As part of a Sector Program Support to the Water Sector in Vietnam, Danida will provide financial assistance and technical assistance to the implementation of the NRWSSSIn the first five years the assistance will emphasise on capacity building for the preparation of operational guidelines and the testing of the new strategy in pilot schemes in a few districts in the provinces of Ha Tinh and Dak Lak. The targeted outcome is tested concepts and operational well functioning procedures to be included in a nationwide implementation of the NRWSSS during 2006-2010.

Danida will provide financial and technical assistance for the operationalisation and pilot testing of the strategy. A Senior Technical Adviser will be posted to CERWASS of MARD which has been trusted with the responsibility for the implementation of the NRWSSS. Technical assistance will be provided for the necessary institutional development related to the pilot testing of the strategy in the two districts and the development of organisational capabilities and human resources in the institutions which has been made responsible for implementation.

The immediate objective of the Danish support to the sub-component: Support to Implementation of the NWRSSS is :

- the pilot testing and operationalisation of the NRWSSS before full scale national implementation in 2006-2010
- the establishing of institutional and human capacity to test and implement the NRWSSS

At the end of the period of Danish support the sub-component will have generated the human resources, the institutional framework, and the organisational capabilities required for national implementation of the NRWSSS. The various concepts and elements in a demand driven approach to RWSS will have been tested in a Vietnamese context, operational guidelines will have been prepared and the lessons learnt will have formed the basis for the development of National RWSS programme for 2006-2010.

2 DUTIES

The STA will be the Senior Adviser to the Director of CERWASS which will be the executing agency of the Danish assistance to Rural Water Supply and Sanitation under the SPS. The STA will advise CERWASS and the TA team on overall implementation of the Capacity Building Programme. The challenge is to transform CERWASS into a learning organisation which can generate the following outputs in a participatory work process.

The scope of work of the STA includes but is not limited to the activities below:

- Advise the Director of CERWASS on all aspects of the implementation of the programme
- Assist in preparing draft TOR for TA inputs
- Coordinate and guide the TA work
- Liase closely with the CTA and the work of the SPS coordination unit. Undertake weekly meetings with the CTA to ensure good coordination. Assist in the preparation of agenda for SPS coordination unit meetings for elements dealing with the sub-component. Follow the internal procedures as laid out in the procedures manual to be developed by the SPS coordination unit.
- Liase closely with the rural water supply and sanitation components in Dak Lak, Ha Tinh and Nghe An.
- Inspire, motivate and participate in ID and HRD work in CERWASS
- Assist in preparing draft progress reports and workplans according to approved procedures following Danida and GOV formats.
- Lead the inception phase together with the director of CERWASS and ensure that the sub-component planning is updated and well conceived.
- Follow the monitoring system and develop improved indicators together with CERWASS.
- Assist in donor coordination of support to the rural water supply and sanitation sub-sector as required.
- Undertake responsibility for the overall budgeting, accounting and monitoring of disbursement and the use of Danida funds that are allocated to the sub-component. Ensure that accounts are booked and kept ready for auditing.
- Anticipate problems and constraints and opportunities for the Danish support to contribute more effectively to the overall objectives of the sub-component.
- Follow up on the pilot projects and make frequent visits to the provinces to support implementation of the NWRSSS and obtain information on progress.
- Prepare annual reports and annual work programmes following Danida and GOV formats
- Manage the Danida Grant financially and prepare accounts in accordance with Danida accounting procedures

In professional matters the STA will report to the CTA through the Director of CERWASS. In financial matters the STA will report to the national SPS Coordination Unit.

3 QUALIFICATIONS AND EXPERIENCE

Successful candidates will have the following academic background and professional experience:

- Minimum a Master Degree from an internationally recognised university in one or more of the following disciplines: Engineering, Sociology, Economics, Human Resources Development.

- Minimum 10 years experience with strategic management aspects and institutional and human resources development related to Rural Water Supply and Sanitation in national programmes.
- Experience with rural water supply and sanitation in Vietnam or countries in the region.
- Fluency in English, both written and spoken.
- A proven ability to communicate, cooperate and negotiate with people with a different social and cultural background.
- Knowledge of Danish policies and approaches to development in general and the Water Sector in particular.
- Wide experience of donor supported programmes.
- A good understanding of capacity building and HRD issues.

4 DUTY STATION

The STA will be posted to the CERWASS Head Quarter in MARD, Hanoi. The duties will include travelling to the Pilot Project Areas in Ha Tinh and Dak Lak provinces.

5 DURATION OF EMPLOYMENT

Two years with the possibility of extension.

6 DATE OF AVAILABILITY

The assignment should be taken up late in 2000.