Belgian Technical Cooperation
Public-law company with social purposes

Coopération Technique Belge
Société Anonyme de droit public à finalité sociale

BTC
CTB

EMPOWERING
DEVELOPMENT

VIE 04 021 01
TECHNICAL AND FINANCIAL FILE

"CONSTRUCTION OF AN IRRIGATION NETWORK AND RESERVOIR TO INCREASE AGRICULTURAL PRODUCTION IN NINH PHUOC DISTRICT, NINH THUAN PROVINCE"

Belgian Development Cooperation
.be

BTC REPRESENTATION IN VIETNAM – F7, 14 THUY KHUE STREET, HANOI – T 84 4 728 05 71 – F 84 4 728 05 72 – VIETNAM@BTCCTB.ORG

Table of Contents

		Page
1	EXECUTIVE SUMMARY	1
2	THE CONTEXT AND BACKGROUND OF THE PROJECT	4
2.1	Project Description	4
2.2	Project History	4
2.3	Geographic and Climatic Setting	5
2.4	Socio-Economic Situation	6
2.4.1	Ninh Thuan Province	6
2.4.2	Ninh Phuoc District	7
2.4.3	Phuoc Vinh Commune	7
2.4.4	Gender Issues	7
2.5	The present Agricultural Situation in Ninh Phuoc District	8
2.5.1	General Importance of Agricultural Sector	8
2.5.2	Agriculture in Ninh Thuan Province	8
2.5.3	Agricultural Situation in Ninh Phuoc District	9
2.5.4	Agriculture in Phuoc Vinh Commune	10
2.5.5	Present Land Use in proposed Reservoir Area	11
2.6	Potential Water Resources in Ninh Thuan Province and Ninh Phuoc District	11
2.7	The Flood Situation in the Project Area	12
2.8	Environmental Issues	12
2.9	Policy Context of Irrigation Works	13
2.10	Institutional Context of Irrigation Works	17
2.10.1	Project Construction	17
2.10.2	Project Operation and Maintenance	17
2.11	Other Irrigation Projects	18
2.11.1	General	18
2.11.2	Song Trau Project	19
3	VALIDATION OF THE IDENTIFICATION	20
4	DESCRIPTION OF THE PROJECT	23
4.1	Project Objectives	23
4.2	Specific Objectives	23
4.3	Beneficiaries	23
4.4	Project Strategy	23
4.5	Results	24
4.5.1	Result 1: Design of Lanh Ra Project	24
4.5.2	Result 2: Land Use Rights and Compensation	25
4.5.3	Result 3: Construction of the Lanh Ra Irrigation Project	26
4.5.4	Result 4: 1050 ha of irrigable land available	26
4.5.5	Result 5: Sustainable Operation of Irrigation Project in order to allow 2 to 3 annual crops	27

4.6 Implementation Schedule 27

5 PRECONDITIONS, ASSUMPTIONS AND RISKS 29

5.1 Preconditions 29

5.2 Risks 29

6 LOGICAL FRAMEWORK OF THE PROJECT 32

7 IMPLEMENTATION PROCEDURES 39

7.1 General 39

7.2 Implementing Authorities 39

7.3 Project Management Structure 39
7.3.1 Project Steering Committee (PSC) 40
7.3.2 The Project Management Unit (PMU) 41
7.3.3 The Belgian Government Agencies 42

7.4 Financial Mechanism 42
7.4.1 The Belgian Contribution 43
7.4.2 The Vietnamese Government Contribution 43
7.4.3 The Counter Value Fund 43
7.4.4 The Provincial People's Committee Contribution 43

7.5 Reporting, Monitoring and Evaluation 44
7.5.1 Monitoring and Evaluation 44
7.5.2 Reporting 44

7.6 Ending the Project 45

8 RESOURCES 46

8.1 Human Resources 46

8.2 Material Resources and Services 46

8.3 Financial Resources 46
8.3.1 Project Cost Estimate 46
8.3.2 Economic Viability 47
8.3.3 Sustainability of Project Operation 49
8.3.4 Sources of Funds 49

Annex 1. Job Description for International Project Coordinator 52

GLOSSARY

AFD	Agence Française de Développement (French Development Agency)
bio.	Abbreviation for billion
BTC	Belgian Technical Cooperation
CEM(MA)	Committee for Ethnic Minorities (and Mountainous Areas)
CPC	Communal Peoples Committee
CPRGS	Comprehensive Poverty and Growth Strategy
CVF	Counter Value Fund
DARD	Department of Agriculture and Rural Development (Ninh Thuan Province)
DGDC	Directorate General of Development Cooperation of the Belgian Ministry of Foreign Affairs
DOC	Department of Construction (Ninh Thuan Province)
DoE	Department of Economics
DoF	Department of Finance
DoL	Department of Land Administration
DONRE	Department of Natural Resources and Environment (Ninh Thuan Province)
DPI	Department of Planning and Investigation (Ninh Thuan Province)
DPC	District Peoples Committee
EUR	Euro, European Union Currency
FS	Feasibility Study
GDP	Gross Domestic Product
GSO	General Statistical Office
GOB	Government of Belgium
GOV	Government of Vietnam
HRD	Human Resources Development
IEC	Information, Education and Communication
IMC	Irrigation Management Company
IMS	Irrigation Management Station
JBIC	Japanese Bank for International Cooperation
MARD	Ministry for Agriculture and Rural Development
mio.	Abbreviation for million
M&E	Monitoring and Evaluation
MOF	Ministry of Finance
MPI	Ministry of Planning and Investment
MOC	Ministry of Construction
NA	National Assembly
ODA	Official Development Assistance
OVI	Objectively Verifiable Indicator
O&M	Operation and Maintenance
PMU	Agricultural Infrastructures Project Management Unit
PPC	Provincial Peoples Committee
PSC	Project Steering Committee
TOR	Terms of Reference
USD	US Dollar
VN	Vietnam
VS	Verification Study
VND	Vietnam Dong (Currency of Vietnam)
WB	World Bank

Figures

Figure 1-1: Proposed Organisation Chart
Figure 2-1: Map of Ninh Thuan Province with Project Area
Figure 2-2: Organisation Chart of Agencies involved in the Irrigation Project
Figure 4-1: Tentative Implementation Schedule
Figure 7-1: Project Implementation Organisation Structure
Figure 8-1: Tentative Disbursement Schedule

Tables

Table 1-1: Summary of Investment Costs and Proposed Funding
Table 1-2: List of Irrigation Projects recently completed
Table 2-1: Population Structure in Ninh Thuan Province
Table 2-2 Agricultural Production of Ninh Thuan province in 2004
Table 2-3: Important Production Data in Ninh Phuoc District
Table 2-4: Production of important Crops in Phuoc Vinh Commune
Table 2-5: Classification of Project
Table 2-6: Major irrigation Projects in Master Plan
Table 2-7: Main features of Song Trau Project
Table 3-1: Assessment of the Choices/Options in the Identification
Table 4-1: Main Technical Data of Lanh Ra Irrigation Project
Table 5-1: Risks
Table 6-1: Objectives, Indicators, Verification and Assumptions
Table 6-2: Activities, Means Costs and Assumptions
Table 8-1: Project Cost Estimate (excl. VAT)

1 EXECUTIVE SUMMARY

Ninh Thuan is a poor province in the South-Central part of Vietnam. The average income in the province is only about 300 $/year (less than 1$/day). Agriculture is remains the backbone of the local economy. However, since Ninh Thuan is also the driest province of whole Vietnam, agricultural production is heavily affected by the lack of water during the dry season and frequent flooding during the rainy season.

Within Ninh Thuan Province, the living standard in the District of Ninh Phuoc is below the provincial average. A significant portion of the population of the Ninh Phuoc District belong to ethnic minorities, in particular of the Cham and Rac Lay groups.

Due to its relative poverty and the high proportion of ethnic minorities, the Ninh Thuan Province and Ninh Phuoc District in particular are the focus of the Comprehensive Poverty Reduction and Growth Strategy (CPRGS) of the Government of Vietnam. The development of the rural economy is a crucial component of this strategy. Investment in irrigation infrastructure in order to extend the area of cultivated land is one of the important mitigation measures the GOV is focusing on. The CPRGS also puts due emphasis on disaster prevention to minimise losses and damage in disaster prone areas.

In order to improve the living conditions in the province and enhance the agricultural production, development of irrigation systems and storage reservoirs are required. This can reduce dependency on the dry and erratic climatic conditions and will allow production of 2 to 3 crops per year. The construction of irrigation reservoirs also contribute to disaster prevention by their flood retention effects.

In 2000 the Peoples Committee of Ninh Thuan Province (PPC) approved a master plan for the period 2000 to 2010 for the development of irrigation projects. The Lanh Ra Irrigation Project is one of 10 which have been proposed for implementation by ODA assistance. It was presented to the Belgium-Vietnam Joint Commission of July 2000 for funding. A Feasibility Study commisioned by the Provincial authorities, an Identification Report as well as a verification of this Feasibility Study, executed by International Consultants have been prepared in the period from 2001 to 2003. The project formulation mission, which is the subject of this Technical and Financial File, has the main goals to verify the Identification, to assess the institutions and procedures for implementation and operation as well as to delineate the steps required, in order to implement the project.

The general project objective, in line with the objectives of the CPRGS, aims to **improve the socio-economic situation in Ninh Thuan Province**. Its specific objective is to **Improve the agricultural production in Lanh Ra valley** in the District of Ninh Phuoc. The project to be implemented consists of the construction of the necessary headworks needed to create a reservoir in order to allow seasonal storage of the flows of the Lanh Ra river. The water will be used to irrigate a command area of 1050 ha, by means of a water distribution network, consisting of two main channels, a larger number of secondary or branch canals and a system of tertiary and on-farm distribution canals to distribute the irrigation water to the cultivated farm land.

The direct project beneficiaries will be the population of Ninh Phuoc District, in particular the two communes directly profiting from the irrigation system, as well as seven additional communes, downstream of the project, profiting of the flood reduction effect of the reservoir.

Since the identification, the costs of the project have substantially increased mainly due to construction price escalation and the addition of compensation scheme that had not been included in the identification. The evolution of the costs together with the proposed funding is shown in Table 1-1:

Table 1-1: Summary of Investment Costs and Proposed Funding

Values at	Identification million Euro	Formulation million Euro	Increase in percent
Total Investment Costs	**4.500**	**5.766**	**28**
Belgian Government Contribution	2.500	2.600	4
Counter Value Fund	1.064	1.250	17
Government of Vietnam / Province	0.936	1.916	205

The increased cost wil be largely borne by the Provincial Government and the Counter value Fund. There is a firm commitment by the PPC of Ninh Thuan to implement the project even at this higher cost. The Belgian Government increased its contribution with 100.000 Euro to cover the inputs of a part-time (1/3) project coordinator

The project appears economic, with an internal rate of return of 12.7 %, considering revenue values of agricultural production for the cropping pattern proposed. However the benefit to cost ratio is only about 1.03 at an assumed discount rate of 12 %.

An elaborated collection of laws and regulations govern the design and construction of irrigation works, such as Lanh Ra Irrigation Project. It is recommended, that the project be implemented by the local institutions, consultants and contractors. These are used to work within the framework of the prevailing regulations and are capable of performing the required tasks. It is foreseen, that the implementation largely follows the Vietnamese regulations.

Established institutions exist for managing the implementation as well as the operation and maintenance stages. For the implementation phase, this is the Agricultural Infrastructures Project Management Unit (PMU), directly under the PPC, which is responsible for managing the implementation of all ODA supported irrigation projects including the Lanh Ra Irrigation Project. A list of some of the projects recently implemented by this PMU is given below:

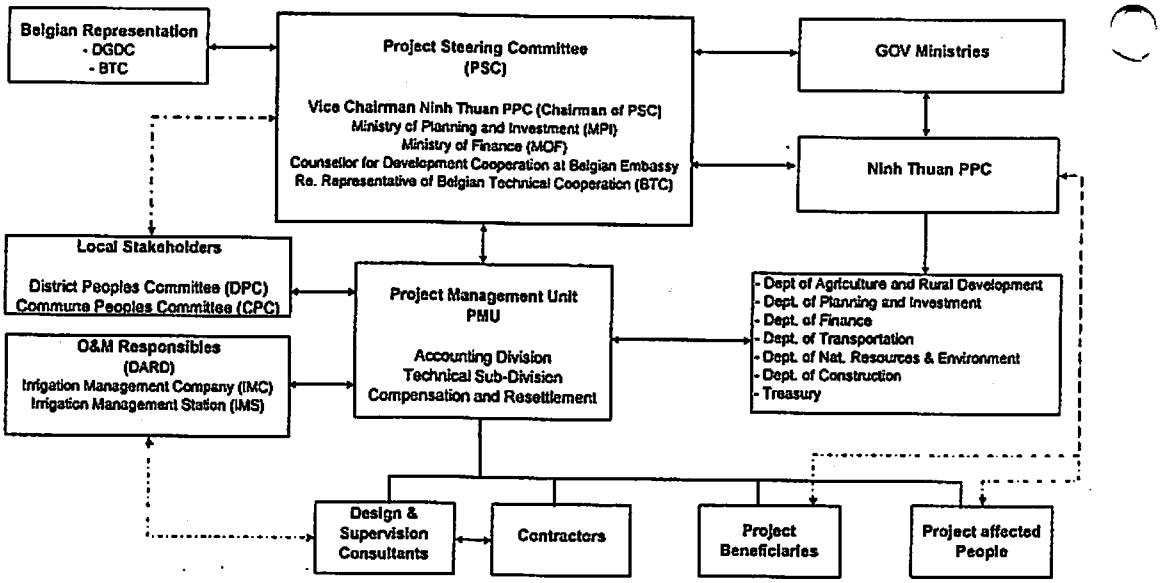
Table 1-2: List of Irrigation Projects recently completed

District	Project Name	Res.size Mio m^3	Irrigated Area ha	Status
Ninh Son	Than Son	1.8	250	Completed
	Ong Kinh	0.8	120	Completed
Ninh Hai	Song Trau	30.3	3000	Completed
	Muoc Ngot	2.8	260	Completed
Ninh Phuoc	Tan Giang	12.1	3000	Completed
	CK7	1.2	100	Completed
	Suoi Lon	1.1	125	Completed
	So 7	0.5	35	Completed

It is expected, that the implementation of the project, including the design, tendering and contracting, land acquisition and compensation procedures, construction of head-works and irrigation distribution system will require approximately three years. Under optimal conditions it should be possible to take the project into service by the end of the year 2008. The above implementation schedule is realistic but challenging goals and will require that all steps are executed in an efficient manner. It must be realized that any substantial delays will delay the start of operation by a complete year, since filling of the reservoir in an ordinary year will require the inflows of the rainy season.

The implementation phase will be accompanied and supervised by a Project Steering Committee, composed of the PPC, of involved Vietnamese Ministries, and of representatives of the Belgian Government. A proposed organisation chart for the implementation is shown in Figure 1-1 below.

Figure 1-1: Proposed Organisation Chart



The Irrigation Management Company (IMC) under the Department of Agriculture and Rural Development (DARD), is the provincial agency which is responsible, together with its district subsidiaries, the Irrigation Management Stations (IMS), for the operation and maintenance phase of all irrigation schemes. The Lanh Ra Irrigation Project will require an increase of the IMS staff in order to cope with the increased work load. The project budget foresees funds for maintenance and for capacity building during the operation phase.

The local institutions, contractors and consultants are deemed to be capable to implement the project, as verifiable from existing projects in operation and similar recently completed projects. It is therefore not deemed necessary under this project, that full-time foreign advisors will be recruited either for the implementation or the subsequent operational phase of the project . To satisfy Belgian requirements on control of ODA funds a part-time (1/3) International Project Coordinator will be added to assist the Project PMU.

2 THE CONTEXT AND BACKGROUND OF THE PROJECT

2.1 Project Description

The project focuses on developing irrigation in the Lanh Ra Valley, in Ninh Phuoc District of Ninh Thuan Province. The immediate benefit of the project is a significant increase in agricultural production. This will help increase the income generated in the project area.

Funding is partly provided through a 2.5 million Euro grant from the Belgian Government and through a 1.25 million Euro grant from the Counter Value Fund made available through the Vietnamese Ministry of Finance. The remaining balance will have to be sourced from the Ninh Thuan provincial budget.

The project area covers the Lanh Ra Valley. The Lanh Ra River has a number of tributaries that have their sources in the hilly area bordering the province of Lam Dong. Ninh Phuoc district consists of 14 communes.

Agricultural land in the lower regions consists mostly of sandy arid soils. Recent shifts in seasonal patterns, accompanied by deforestation in the up-stream area lead increasingly to accentuated droughts and flooding. The project therefore also aims at mitigating the damage from floods as a top priority.

The project includes the following main technical features:

- Main earth dam with a crest height of 19m and a length of 1,000m
- Two auxiliary dams with lengths of 250m and 236m
- Main distribution canals with lengths of 1,480m and 5,910m

This will create a reservoir with a gross storage capacity of 9.3 mio m^3 servicing an irrigated area of 1,050 ha.

2.2 Project History

The Lanh Ra irrigation project was originally introduced for funding by the Vietnamese delegation at the Belgium-Vietnam Joint Commission of July 2000,. Lanh Ra irrigation project is one of ten schemes that were identified for construction with ODA assistance in the provincial irrigation masterplan for the Ninh Thuan Province in 2000. A feasibility study (FS) was commissioned in 2001 for the Lanh Ra irrigation project by local authorities.

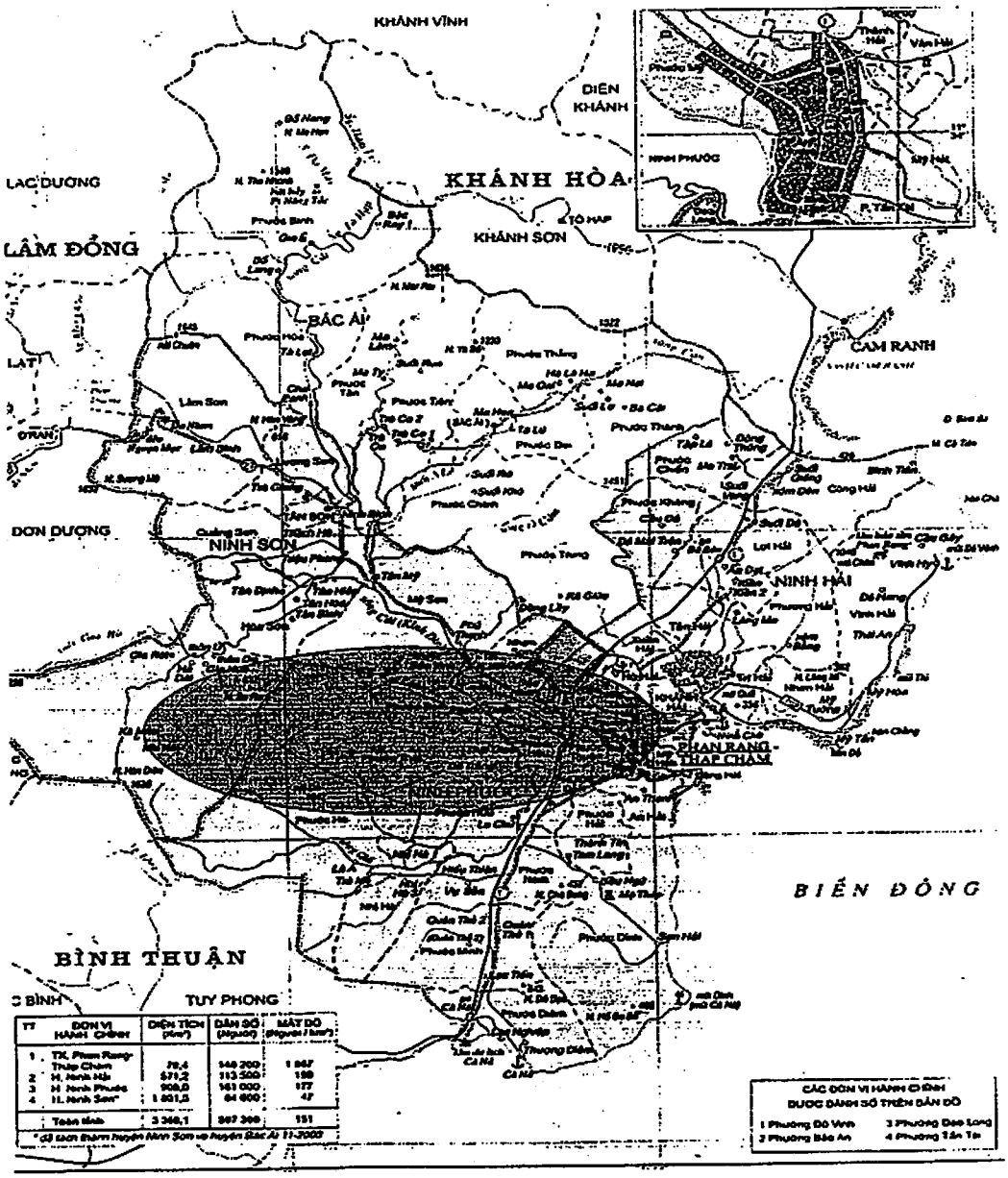
An identification mission was conducted in late 2002 and early 2003 with an Identification Report issued in April 2003 and transmitted to DGDC Brussels in September 2003.

In 2003 a Verification of the FS was performed by international consultants at the initiative of the Study and Consultancy Fund. The report was transmitted for consideration to DGDC Brussels in November 2004.

2.3 Geographic and Climatic Setting

The province of Ninh Thuan is a coastal province in the South of Central Vietnam. The area of Ninh Thuan province covers 3,360 km^2 (60% hills and mountains. 40% of plains). It is divided into 4 districts (Ninh Son, Bac Ai. Ninh Phuoc, Ninh Hai) and one provincial town (Phan Rang - Thap Cham).

Figure 2-1: Map of Ninh Thuan Province with Project Area



Ninh Thuan province has one dry and a wet season per year. Overall it is the driest province of Vietnam due to a combination of low rain fall during a limited number of days and high solar radiation. Therefore severe droughts are common during the dry season (December to August), and certain affluents of the Cai Phan Rang river sometimes nearly dry up.

The rainy season lasts from September to November and causes frequent floods. in particular in the communes downstream the Cai Phan Rang river and its affluents. The frequency of the floods seems to be on the increase which probably can be explained by the deforestation upstream. The existent dams on the stream are insufficient to check these floods.

The Ninh Phuoc district has mountains up to 1,050m in the West. Its eastern border is the sea. The district has two main rivers (the Gia and the Lanh Ra). The Highway No 1 and the Hanoi-Ho Chi Minh City railway cross the district from North to South. Within the province, the average rainfall of the Ninh Phuoc District is even lower, than the provincial average.

In Ninh Phuoc district, the Lanh Ra River (36 km) in the North and the Gia River in the West and central part, are the main affluents to the Cai Phan Rang River which separates Ninh Phuoc district from Ninh Son District and Phan Rang-Thap Cham. The catchment area of 295km^2 generates an annual average flow of 1.35m^3/s.

In the dry seasons, flow discharges of the district's streams reduce considerably, with some rivulets drying up all together.

2.4 Socio-Economic Situation

2.4.1 Ninh Thuan Province

The total population of Ninh Thuan province amounts to approximately 557,000 of which 67,7% lives in rural areas. There are 15 ethnic groups in Ninh Thuan province. The most important groups are the Kinh (78%) and the Cham (12%) mostly living in the plains; and the Rac Lay (8%) rather living in the hills. Poverty is widespread in the mountainous area and in particular among the Rac Lay. Lack of economic potential forced the population to look for employment outside the province. However recently the low population density has in recent years attracted migrants from other provinces to settle in Ninh Thuan despite the economic difficulties.

Table 2-1: Population Structure in Ninh Thuan Province

District/Town	Surface (Km^2)	Population	Density Pop./Km^2
Phan Rang-Thap Cham	79.39	160,771	2,025
Bac Ai	1,030.9	19,806	19
Ninh Son	770.58	73,859	96
Ninh Hai	571.18	124,851	218
Ninh Phuoc	908.01	177,439	195
Total	**3,360.06**	**556,726**	**166**

Source: Statistical yearbook 2004
* In 2001, Ninh Son District was split into Ninh Son and Bac Ai Districts

The GDP growth between 1995 and 2004 amounted to 9.5%. In 2004, the structure of the gross domestic product in the area by economic sector was as follows: agriculture, including forestry and aquaculture, is the most important sector accounting for 44.5% of GDP but the sector develops relatively slowly, industry and construction accounted for 19.0%, while services accounted for 36.5%. Agriculture involved 62.8% of the active population.

2.4.2 Ninh Phuoc District

Ninh Phuoc district is located in the south of the Province and is made up of 14 communes and one district town. The population of Ninh Phuoc district totaled 177,500 in 2004, consisting of 69% Kinh, 30% Cham and 1% Rac Lay. Ninh Phuoc district composes of three separate topographical areas: the plain area with 8 townships/communes, the coastal area with 3 communes, and the mountainous area with 4 communes.

The district has mountains up to 1,050m in the West. Its eastern border is the sea. The district has two main rivers (the Gia and the Lanh Ra). The Highway No 1 and the Hanoi-Ho Chi Minh City railway cross the district from North to South.

Agriculture, fisheries and forestry accounts for 61.6%, industry and home craft accounts for 11.3%, and commercial and services industries account for 27.1% of the GDP of the District.

2.4.3 Phuoc Vinh Commune

Phuoc Vinh commune will be a direct beneficiary from the Lanh Ra irrigation project. It was separated from Phuoc Son commune in October, 2003. The total natural area of Phuoc Vinh commune is 4,557 ha of which 2,169 ha is farmland. Its total population amounts to 10,000 persons, 87% of which live from agriculture. 12.5% of the commune population belong to the Rac Lay ethnic minority..

In 2004, the yearly average income per capita in Phuoc Vinh commune amounted to 3.5 million VND.only. This puts 15% of households (218) under the poverty line In the project area most of poor households have a low education level and lack capital to improve cultivation. Various NGO's are working in the area and are supporting women with micro-loans, such as 120 capital, ASA capital, Canada capital, capital for poor women.

There are 5 villages in the commune. Most of the Rac Lay people in the commune live in the Lien Son 1 and Lien Son 2 communes. Lien Son 1 and Lien Son 2 village have both some areas which will fall within the reservoir area. In the late nineties the government resettled the majority of the Lien Son 2 commune. Each of the resettled households received 2 million VND to build a house, and were provided with about 3,000m^2 of land for housing and gardening and some land for cultivation in the outside area.

2.4.4 Gender Issues

The education level of the women in the project area is low, with only general education at primary school level. Women in the project area face high unemployment rates and low income. Ninh Phuoc district has 1,392 women as head of household. Most women undertake agricultural works such as transplanting, scooping water into field, and weeding, whilst the men do the heavy works that require physical strength such as ploughing and harrowing.

2.5 The present Agricultural Situation in Ninh Phuoc District

2.5.1 General Importance of Agricultural Sector

It is estimated that the agriculture sector (including crop cultivation, animal husbandry, aquaculture, agro-processing) accounted for 23.3% of the country's gross domestic product (GDP) and provided a living for 70% of the Vietnamese population in 2001. Agriculture provided the most remarkable results of Vietnam's progress in terms of economic growth and development since the beginning of the economic reforms in the early 1980s. The assignment of land-use rights to farm households and the liberalisation of the marketing arrangements led to spectacular production growth of commodities such as rice, coffee, pepper, cashew nuts, rubber and aquatic products.

Rice still dominates Vietnam's agriculture production, consumption and exports. Since 1988, Vietnam has doubled its rice output and gone from a food deficit country to the world's second largest rice exporter. Rice currently accounts for one-sixth of the national income. Vietnam provides 18% of the rice on the world market. Rice yields are high and have been increasing at a rate of 4% per year nationwide.

2.5.2 Agriculture in Ninh Thuan Province

Ninh Thuan province is one of the poorest provinces of central Vietnam[1]. Agriculture is still the dominant socio-economic sector and hence of paramount importance for the development of the province.

Table 2-2 Agricultural Production of Ninh Thuan province in 2004

Crops	Area (ha)	% of total area	Yield (quintal/ha)	Output (ton)	% of total output
Paddy (year round)	33,852	58	46.6	157,557	52
Maize	12,305	21	22.5	27,686	9
Cassava	1,424	3	162.0	23,069	8
Sugarcane	1,391	2	491.6	68,382	23
Cotton	868	2	11.2	972	-
Tobacco	507	1	24.0	1,217	-
Cashew	5,974	10		970	-
Grape	1,688	3	135.1	22,805	8
Total	58,009			302,658	

Sources : Report of the DARD-June, 2005

The main objective of Ninh Thuan provincial agriculture development plan for 2006 to 2010 is to keep the annual average growth at 6.5%. It is hoped to be able to increase the agricultural contribution to overall GDP to 17-18%. It is also planned to have crop cultivation contributing 53-55% while the livestock sector contributes 35-37% to the overall agricultural production.

[1] The Human Development Index (HDI) rank for Ninh Thuan Province is 52 out of 61 provinces in Vietnam with 15% living below the income poverty line

Total irrigated land area of the province is about 20,000 ha, accounting for about one third of the existing cultivated area. The Irrigation Management Company (IMC) under the auspices of the provincial Department of Agriculture and Rural Development (DARD) is responsible for the management, development and maintenance of major irrigation schemes in the province.

The overall irrigation scheme of the province composes of two systems namely Nha Trinh – Lam Cam, and the Song Pha system. Together they consist of 6 irrigation reservoirs and 5 pumping stations. The drainage system contains 8 drainage axes, 83km long in total, that drain 12,000 ha. Each IMS (see 2.10.2) collects user fees from individuals using the irrigation schemes. Annual irrigation fees amounts to 5% of the production of the cultivated area, averaged over a period of 3 years.

While Ninh Thuan province is considered to be the driest province of Vietnam, the area is also often hit by typhoons causing heavy rainfall over very short periods of time. The water mass produced by such erratic rainfalls discharges therefore largely to the Sea, causing flooding and damage on its way while providing very little benefits for agriculture and contributing little to the groundwater recharge. Regular droughts and floods are therefore plaguing the Province and explain why agriculture has not been able to developed to its full potential.

The priority investment that can improve agricultural production is therefore the creation of water storage reservoirs, which catch and store the rainfall produced during these heavy rain storms, thereby reducing floods, and store rain water for irrigation.

Better irrigation infrastructure certainly will improve the socio-economic situation and have an impact on the living standards of the population of Ninh Thuan province in particular of vulnerable groups such as ethnic minorities, women and children.

The ~~the~~ irrigation masterplan of 2000 therefore focuses on developing agricultural production by enhancing the respective infrastructure for irrigation. However such infrastructure requires large investments, which the Province is not capable of funding alone.

The Belgian government has therefore been asked to contribute to this development, as part of a programme introduced by the Vietnamese delegation at the Belgium-Vietnam Joint Commission of July 2000. The People's Committee of Ninh Thuan Province proposed Belgium to support the development of the Lanh Ra Irrigation Project in Ninh Phuoc District.

2.5.3 Agricultural Situation in Ninh Phuoc District

Agriculture – Fishery – Forestry account for 61.6%, while industry accounts for 11.3% and commerce – services accounts for 27.1%. The fertility of the soil is only fair but does allow a variety of crops to be grown. The most important crop is rice with a total production of 66,010 tons in 2004. Corn, cotton, tobacco, grape and sugar cane are other important crops. Animal husbandry activities consist mainly of raising cows, sheep and goats.

Table 2-3: Important Production Data in Ninh Phuoc District

Crops	Area (ha)	Yield (quintal/ha)	Output (tons)	Net Income/ha (1,000 VND)
Rice	14,406	46.6	68,010	1,685
Maize	1,854	40.6	7,535	3,066
Cassava	59	153.0	902	
Sugarcane	153	500.0	7,650	
Cotton	98	20.2	196	3,395
Tobacco	168	27.4	461	27,502
Grape	1,113	117.7	13,100	

The Irrigation Management Station (IMS) of Ninh Phuoc District currently manages 6,800 ha of irrigated area[2]. It is in charge of regulating the use of the infrastructure and assuring small maintenance. In practice maintenance is assured by volunteers, in collaboration with local authorities.

Rainfall in Ninh Phuoc district is lower than the average of the province, and droughts and floods are common. Nine communes in the North of the district[3], downstream the Cai Phan Rang river, the Gia river and the Lanh Ra river are particularly prone to flooding.

2.5.4 Agriculture in Phuoc Vinh Commune

Cattle and poultry husbandry have strongly developed and have become a major source of income. Animal husbandry activities consist mainly of raising cows, sheep and goats.

Table 2-4: Production of important Crops in Phuoc Vinh Commune

Crops	Area (ha)	Yield (quital/ha)	Output (tons)
Rice	320	50	1,600
Maize	480	60	2,880
Grass	70	40	280
Sugarcane	55	500	2,750
Cotton	83	18	150
Tobacco	135	30	405
Grape	50	120	600

[2] 6,000 ha of the Nha Trinh scheme south of the Cai Phan Ran river and 800 ha of 5 small scale schemes in the south of the district.

[3] i.e. the communes of Phuoc Son, Phuoc Vinh, Phuoc Thai, Phuoc Dan, Phuoc Huu, Phuoc Thuan, Phuoc Hai, An Hai and Phuoc Hau.

2.5.5 Present Land Use in proposed Reservoir Area

The reservoir area to be inundated is about 200 ha. According to the local authorities 140ha of this land is fertile and currently being cultivated. Most of this land belongs to about 100 households living in Lien Son 1 and Lien Son 2 villages in the Phuoc Vinh commune.

The cultivated land in the reservoir is presently mainly rain-fed while small parts are irrigated by dug wells. Crops that are grown are tobacco, corn, rice, chilli and grass. According to the commune authorities, the project affected households of Lien Son 1 and Lien Son 2 will be partly compensated with land in surrounding villages.

According to the Sector Standard 14TCN 118-2202 of MARD the project is graded at level 3 amongst irrigation works. Level 3 irrigation works require a separate report on compensation and resettlement. Currently a resettlement and compensation plan still has to be drawn up. Consequently the FS of Lanh Ra project does not yet comply with the above mentioned standard and the relevant part of the FS should be updated. Updating of the FS is presently proceding and is expected to be completed before end of November 2005. If this target is met the subsequent approval by the Ninh Thuan provincial authorities will be possible by the end of December 2005.

2.6 Potential Water Resources in Ninh Thuan Province and Ninh Phuoc District

The most important river system of the province is the Cai Phan Rang river system (119 km) which is composed of 10 tributary rivers. The province has now 6 reservoirs, with the largest one being Tan Giang Reservoir with a capacity of 13 million cubic meters storage. Five other reservoirs provide 1 million cubic meters storage each. Total irrigated land area is about 20,000 ha, servicing 33% of the existing farmland area. From January to September, the main water sources in Ninh Thuan province consist of tail water of Da Nhim Hydropower Plant (Don Duong Reservoir – 160 million cubic meters).

The Ninh Phuoc District has two main rivers. The Lanh Ra river (39km) in the North and the Gia river in the West. In the central part there are the tributaries of Cai Phan Rang river which separates Ninh Phuoc District from Ninh Son District and Phan Rang-Thap Cham towns.

Rainfall in Ninh Phuoc District is far below the average of the province, therefore droughts are common during the dry season (from December to August). The rainy season on the contrary lasts from September to November and causes frequent floods. The rainfall distribution in the year is very variable. On average about 55% of the total annual rainfall is concentrated in the three months from September to November. The rest falls scattered throughout the remaining months.The Verification Study of the FS, puts the total average annual rainfall fdor the district at about 850 mm.

According to the groundwater assessment in Irrigation Master Plan of Ninh Thuan province, which was approved by MARD in March 2000, the groundwater resources in Ninh Thuan province as well as in Ninh Phuoc district are very limited. There is one aquifer in the district geological area at approximately 20m depth, which can be utilized. The quality of the groundwater is however complicatedly variable. The same aquifer contains fresh water in one place and saline water in another. Insufficient yield

and quality explains why the existing irrigation pumping stations of Lien Son and Bao Vinh are not operating according to plan.

Unfortunately, several South-Central provinces of Vietnam including Ninh Thuan province and Ninh Phuoc district experienced recently a severe drought. The drought lasted from January 2004 to August 2005. As a result most of the existing reservoirs have now fallen dry, seriously affecting agricultural production and creating dramatic water shortages for the local population.

2.7 The Flood Situation in the Project Area

The area downstream of the proposed Lanh Ra irrigation reservoir is very flat. Once the rivers rise above their banks large areas of land are inundated. Since various rivers are flowing through this plain most times floods in these rivers are simultaneous and the flooding cannot be specifically attributed to a single origin.

Reportedly during the extreme flood of 2003, the water flowed over the plain at a height of about 3 m and caused heavy damage. The DPC explained that since then some flood protection works have been executed on the right bank of Kinh river, from the Nha Trin weir to about 7km downstream. Bank stabilisation works are under construction downstream of this point along the right bank of the river. More flood protection by dykes are planned. However no funding has yet been identified for this. Further flood protection measures by improving drainage is being planned near Phuoc Dan, the district capital of Ninh Phuoc District, with JBIC funding.

However, a coherent study of the flood situation and the effects of the various projects on flooding does not appear to be available. Therefore, while flood protection will be a definite result of the Lanh Ra project, the effects cannot precisely be quantified.

2.8 Environmental Issues

Due to the relatively small size of the Lanh Ra Irrigation project, a full Environmental Impact Assessment (EIA) is not required. However, environmental considerations need to be presented in an environmental registration form and need to be reviewed and approved by the responsible Department of Natural Resources and Environment (DONRE) in before approval of the FS can be obtained.

A registration for compliance with environmental standards is required for the proposed project. Representatives of DONRE believe, that the project as a whole will have beneficial impacts on the environment.. While no particular negative environmental impact has been identified in the project area, the project will contribute to groundwater replenishment and will reduce the dependency on groundwater for irrigation purposes. This will reduce the salination of soils in the area, which is apparently a problem now.

An additional major positive environmental impact of the project, on the contrary, is the flood protection the reservoir will have on the downstream area.

2.9 Policy Context of Irrigation Works

Before 1986, Vietnam's Government adopted a Soviet style centrally planned economy. In 1982, the government switched its priorities from heavy industries to agriculture and light industries in order to provide the population with sufficient food and consumer goods. However, further change was needed. *Doi Moi* (renovation) was launched in 1986. The government decided to implement a far more flexible economic regime. The resulting comprehensive reform policy introduced a market-oriented system suited to the Vietnamese economy's stage of development. Policies implemented under *Doi Moi* include price liberalisation, state sector reform and support for the private sector and promotion of foreign investment.

Reform of irrigation and drainage management organisations began in the late 1980s. The Government created provincial irrigation companies which had to be financially autonomous, self supporting institutions based on hydrologic boundaries. Large investments have since doubled the size of the irrigated area over the past 20 years. Of the total irrigated area, 2.3 million hectares are covered by gravity schemes and 1.. million hectares by electrical pumping stations.

Land reform was arguably the single most important step in Vietnam's path to rapid growth and poverty reduction in the 1990s. While all of Vietnam's land belongs to the state, the rights to its use have been assigned to individuals and firms through land-use certificates starting in 1993. These certificates legalise their owners' rights to the long term use of allocated land and allow to transfer, exchange, lease, inherit and mortgage the land-use rights. However land-use right certificates have not yet been distributed for all available land. Lack of proper land-use certificates is still an important drawback for smallholder farmers to obtain credit as they cannot provide any other collateral. Lack of credit in turn is considered an important constraint for rural development.

In the last decade, there have been significant developments in the Vietnamese economy which have resulted in the reduction of poverty in the country from 58% to about 14%. The national focus on poverty reduction has led to the development of a Comprehensive Poverty Reduction and Growth Strategy (CPRGS), approved by the Prime Minister in 2002. Its main objectives are:

- Promote rapid and sustainable economic growth
- Reduce vulnerability and provide social protection

The above CPRGS conforms fully with the United Nations Millennium Development Goals (MDGs) which also puts very strong emphasis on poverty reduction and also to the objectives of the Belgian development cooperation to support development actions that enhance sustainable development and support developing countries in their fight against poverty.

Under this overall strategic framework, the following legislation, documents and policy papers are most relevant for the irrigation sector in general and the Project in particular:

<u>Land use rights</u>

Constitutionally all land belongs to the State as the representative of the people. However, one of the most radical and influential reforms implemented since Doi Moi has been the granting of long-term land lease to Vietnamese farmers. By developing the

system of Land Use Rights, under the 1988 Land Law with amendments in 1993 and 10 December 2003 (2003 Land Law), the Government created the conditions under which farm households as well as private and public enterprises gained security of tenure of land. The lease periods currently applied are 20 years for land with annual crops and 50 years for perennial crops.

The Typical Policy for Land Allocation to the Poor Minorities in Hardship :

Provincial People Committee (PPC) can allocate extra cultivated land on top of the minimum land allocation quota for minority households depending on its land capacity (Decision No 134/2004/QDD-TTg, dated 20th July, 2004). The minimum land allocation quota per household is 0.5ha of arable area, or 0.25ha of one paddy crop land, or 0.15 ha of two paddy crops land.

The Government's Decree No. 64/CP, and Decision No. 201, and Circular 346 of General Department of Land Administration concerning registration of land use rights have been realized in almost all communes of Ninh Phuoc District. To December 2004, the district authority has granted land-use certificates (Red Certificate) for 94.5% farmland area, 45% forest area, 31% resident area.

In Phuoc Vinh commune, 89% of farmland and 78% of resident area have land-use titles.

Farmland area of Lien Son 1 and Lien Son 2 communes, which will be occupied by the reservoir, includes 131 ha with titles and 20-25% without titles.

Resettlement and compensation

Compensation for forced resettlement when the State recovers land is regulated in Article 42 of Land Law 2003. For Lanh Ra Irrigation Project, when the Project recovers the land and its land user has the "certificate of land use right" or eligible condition they are considered qualified to receive land compensation.

Two types of land compensation exist, i.e. 1) land-to-land: new land allocation of the same purpose with;, 2) land-to money: monetary compensation is to be paid for land user in case no land for land-to-land compensation is possible.

Based on the State policies regarding to compensation for land acquisition (Decree No 197/2004/ND-CP dated 3rd December, 2004) and Ninh Thuan PPC Decision 209/2004/QD-UBNT, dated 31st December, 2004 in relation to the price of land in Ninh Thuan province, the people subject to receive compensation for land are as follows:

1) Land user who has the certificate of land use right, or the land allocation decision issued by the State Authority body or official transfer papers of land use right in accordance with the State regulation; and
2) In case when conditions described above are unmet, a paper which is confirming that the land usage in question commenced before October 15th, 1993 and no conflict is involved, issued by the Commune PC.

No land compensation shall be provided for land acquisition in the cases: land user does not meet the conditions to get compensation as described above; or agricultural land used by "against payment" for land use; or leased land use from the State (Article 43, Land Law, 2003).

No property compensation for land acquisition in case a property on land recovered is created after the cut-off date announced by the State Authority body.

Ninh Thuan PPC has issued Decision No.17/2005/QD-UBNT, dated 17th May, 2004 and Decision No. 4178/199/QD- UBNT, dated 29th December 1998 in relation to the price for compensation of lost house, architectural works, plants, fruits, tombs, when the State acquires land for project activities.

Ninh Phuoc DPC will set up a compensation, assistance and Resettlement Council in accordance with the aforementioned regulations and decrees. Council members shall be Vice Chairman of DPC, Director of District's Department of Finance, Director of PMU, Director of District's Department of Natural Resources and Environment, Director of District's Department of Economic Infrastructure, Director of District's Department of Economics, Chairman of Phuoc Vinh CPC, representatives of households and individuals who have their land areas in the project's construction area.

The PMU of Ninh Thuan province has estimated compensation cost for the construction of Lanh Ra Reservoir as follows:

		Amount VND	Equivalent in Euro
1.	Compensation for land acquisition:	6,584,310,000 VND	343,000 Euros
2.	Compensation for structures:	57,000,000 VND	3,000 Euros
3.	Compensation for crops	1,728,000,000 VND	90,000 Euros
4.	Assistant policies (20 households)	222,000,000 VND	12,000 Euros
5.	Survey and inventory cost	177,191,690 VND	7,693 Euros
	Total	8,768,501,685 VND	456,693 Euros

In the project cost estimate the above direct costs are complemented with associated administration/management costs and contingencies.

Water Resources

Water resources and irrigation systems have been the backbone of Vietnam's agriculture for centuries. In order to provide a legal framework for water resources management, a series of policies and institutional reforms has been launched by the National Assembly (NA) and Government.

- The Law on Water Resource (LWR) was passed by the NA on 20 May 1990.
- Decree No 32/1999/ND-CP on Implementation of Law on Water Resources passed by Prime Minister dated 30th December, 1999
- The National Water Resources Council was established in July 2000.
- A National Rural Water Supply and Sanitation Strategy was approved by the Prime Minister in August 2000.
- Regulation on Water Works Management and Protection, No 32/2001/UBTV-QH passed by the Permanent Committee of the National Assembly on 4th April, 2001.
- Decree on stipulation of water charge collection, No 143/2003/ND-CP passed by Prime Minister, on 28th January 2003.
- Decision on introduction of water charge collection issued by Ninh Thuan PPC, No 06/2005/QD-UB, dated 31st January, 2005
- The Government has also, a few years ago, launched a multi-purpose program on water and flood control.

Environmental Issues

The Law on Environment was passed in December 1993. Environmental protection as stipulated in this law includes activities aimed at preserving and improving a clean environment, ensuring ecological balance, preventing and overcoming adverse impacts on the environment and making a rational and economical exploitation and utilisation of natural resources.

Based on Circular No. 490/1998/TT-BKHCNMT dated 29/4/1998 of MOSTE in relation to the guideline for appraisal of EIA report. Lanh Ra Irrigation project must make an application for certification of compliance to the Vietnamese environmental standards.

Construction Legislation

A new Law on construction is in effect since Junly 1 , 2004 Under this legislation a number of decrees, standards and stipulations are regulating all aspects of construction, from design to construction management and construction procedures. These regulations shall have to be be complied with in the case of Lanh Ra Irrigation Project. This regulations also includes stringent guidlines on bidding procedures.

Every irrigation project is categorized and ranked in a class for its scale and significance in conformity with "Hydraulic Structures - Basic Stipulation for Design" (TCVN 285-2002) in Vietnam as shown below:

Table 2-5: Classification of Project

Type of project	Design Class				
	I	II	III	IV	V
1. Irrigation and drainage canal system with an irrigated area or drained area, (1,000 ha)	> = 50	< 50 - 10	< 10 - 2	< 2 – 0.2	< 0.2
2. Earth dam on rock foundation with maximum height, (m)	> 100	>70 - 100	> 25 - 70	> 10 - 25	<= 10
3. Earth dam on rock gravel and sand foundation with maximum height, (m)	> 75	>35 - 75	> 15 - 35	> 8 - 15	< =8
4. Concrete or reinforced concrete weir on rock foundation with maximum height, (m)	> 100	>60 - 100	> 25 - 60	> 10 - 25	< =10
5. Concrete or reinforced concrete weir on rock gravel and sand foundation with maximum height, (m)	> 50	>25 - 50	> 10 - 25	> 5 - 10	< =5
6. Retaining wall on rock foundation with maximum height, (m)	> 40	> 25 - 40	> 15 - 25	> 8 - 15	< =8
7. Retaining wall on rock gravel and sand foundation with maximum height, (m)	> 30	> 20 - 30	> 12 - 20	> 5 - 12	< =5

In accordance with the above, the Lanh Ra Irrigation Project can be categorised as follows:

- Project: Class IV
- Headwork: Class III (Earth dam on sand, gravel foundation (Group B - with max. height of 18.70 m)
- Recommended Design Class for overall project design: Class III
- Major design criteria:
  - Irrigation dependability: p=75%
  - Drainage dependability: p=10%
  - Design flood frequency: p=1.0% (100 years return period)
  - Check flood frequency: p=0.01% (10'000 years return period).
  - Design flood frequency for construction: p=10% (diversion works, cofferdam...)

2.10 Institutional Context of Irrigation Works

Various agencies are involved in the Irrigation Sector in the Ninh Thuan Province. One organisation is responsible for the project implementation and another organisation for the project operation and maintenance. The organisation chart of the main entities involved and associated activities is shown in Figure 2-2 below.

2.10.1 Project Construction

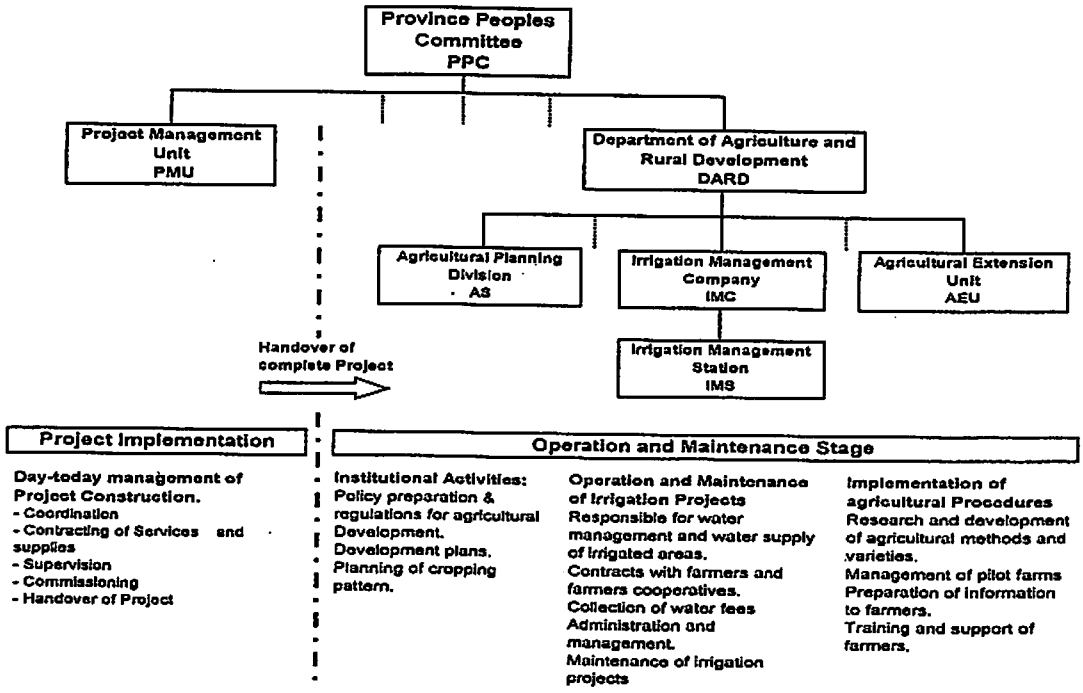
The agricultural infrastructures project management unit (PMU) of the Ninh Thuan province is the agency responsible for the management and supervision of implementation of large irrigation projects and for projects involving ODA contributions. It is under the direct responsibility of the PPC and has been charged by the PPC with the management of the implementation of the Lanh Ra Irrigation Project.

2.10.2 Project Operation and Maintenance

The Department of Agriculture and Rural Development (DARD) is primarily responsible for the general planning of the agriculture sector, management, operation and maintenance of irrigation systems, as well as farmer's support and training and improving farming methods.

DARD has various sections which will be involved with the project after completion, as indicated in Figure 2-2. The Irrigation Management Company (IMC) and the Irrigation Management Stations (IMS) are the organisations primarily involved with the operation and maintenance of operational irrigation projects. The IMC is acting on a provincial level assuming overall responsibilities for irrigation projects in Ninh Thuan Province and coordination of the IMS. The IMS are the organisations at district level, directly involved with the management, operation and maintenance of the individual projects. The IMS of Ninh Phuoc district will be in charge of operation and maintenance of Lanh Ra Irrigation Project.

Figure 2-2: Organisation Chart of Agencies involved in the Irrigation Project



2.11 Other Irrigation Projects

2.11.1 General

Construction of irrigation projects in the Ninh Thuan Province continues in accordance with the irrigation Masterplan of 2001. Most projects of major size have been or shall be co-funded by international donor agencies, such as AFD, OPEC, JBIC.

All of these projects have been or are being designed and executed by Vietnamese consultants & contractors, with only international inputs to review the technical designs in some instances.

Following is a list of the projects involving storage reservoirs, including status of the project as of October 2005:

Table 2-6: Major irrigation Projects in Master Plan

District	Project Name	Res. size Mio m^3	Irrigated Area ha	Co-funding by (where known)	Status
Ninh Son					
	Than Son	1.8	250		Completed
	Ong Kinh	0.8	120		Completed
	Song Than	38.5	3700	OPEC	Phase 2 FS preparation
	Song Sat	46.9	3510	AFD	Under construction
	Tra Co	33.8	1230		Pre-investment
	Song Cai	75.6	600		Pre-investment (MARD)
	Tan My Weir		3700		Pre-investment (MARD)
	Cho Mo	15.6	1250	AFD	Pre-investment
	Phuoc Trung	3.7	270	AFD	Pre-investment
Ninh Hai					
	Song Trau	30.3	3000	OPEC	Completed
	Muoc Ngot	2.8	260		Completed
	Ba Rau	6.5	480	AFD	Pre - FS completed
	Phuoc Nhon	1.9	200		Pre-investment
	Dong Nha	2.7	220		Planned/proposed
Ninh Phuoc					
	Tan Giang	12.1	3000		Completed
	CK7	1.2	100		Completed
	Suoi Lon	1.1	125		Completed
	So 7	0.5	35		Completed
	Nui Mot	2.2	230		Under Construction
	Bau Ngu	1.6	160		Under Construction
	Ta Ranh	1.2	80	JBIC	Pending approval of FS
	Song Bieu	13.0	940		Pending approval of FS
	Lanh Ra	9.3	1050	Belgian Government	Formulation Stage
	Bau Zon	1.7	120	AFD	Pre-investment
	Tra Van	4.2	350		Planned/proposed

At present, the same PMU which is also responsible for the Lanh Ra Irrigation Project is also responsible for all other projects involving foreign funding in the Ninh Thuan Province . This PMU is directly responsible to the Ninh Thuan PPC.

The Lanh Ra irrigation scheme is independent of other projects. However, comparison of the other projects is of interest to confirm the capabilities of the local institutions to implement and operate such projects successfully.

The formulation team had the opportunity to visit some of the completed projects, in order to verify the standard of implementation. A short description of one project similar to Lanh Ra, the Song Trau Irrigation Project is given hereafter.

2.11.2 Song Trau Project

This project lies in the Ninh Hai District of Ninh Thuan Province. It has the following main features:

Table 2-7: Main features of Song Trau Project

River	Song Trau
Drainage area at dam site	66 km^2
Dam height	27 m
Dam volume	300'000 m^3
Reservoir volume	30.4 Mio m^3
Irrigated area thereof gravity thereof pumped	3000 ha 2500 ha 500 ha
Length of primary canals	17 km

The project has been completed in 2005, whereas the reservoir is only filled to about 10%, due to the extremely dry climate in this year and due to the fact that the rainy season has only recently started. Land clearing and preparation of tertiary systems and fields are presently under way, apart from the project proper.

About 370 families previously living permanently in the reservoir area have been resettled to the upstream of the reservoir. They have been compensated with land and money for new houses, while the infrastructure, such as roads, electricity supply, schools and medical stations were provided by the project. The new settlements have a nice appearance, looking rather better than the previously existing villages.

The project was almost completely (over 95%) been funded by a 10 Mio $ grant from OPEC.

3 VALIDATION OF THE IDENTIFICATION

Overall, the formulation mission has been able to generally confirm the findings of the Identification report. In particular it has been confirmed that the need for the general and specific objectives is still high and the population strongly supports the Implementation of the Lanh Ra Irrigation Project.

The Identification Report contains a number of choices and options either proposed or implied by the report. Table 3-1 summarises these choices and options and proposes some modifications where necessary. The table extends also to the Feasibility Study and the Verification Study.

Table 3-1: Assessment of the Choices/Options in the Identification

Issue	Identification Report outcome	Verification / Modification
Direction of PMU	A project management unit (PMU) will be responsible for the day to day management of the project. The PMU shall be directed by a Vietnamese Director and an international co-Director.	A permanent PMU, directly responsible to the PPC exists and is responsible for the implementation of all foreign funded irrigation projects in the Province. The PMU shall be directed by a Vietnamese Director. A part-time International Coordinator appointed by Belgium shall shall assist the PMU .
Resettlement and Compensation	While the identification has acknowledged, that resettlement and compensation activities will be required, the associated costs have not been included in the project cost estimates.	There are no permanent settlements in the project area, which will require resettlement. However, existing land use rights are in place on an estimated area of more than 150 ha inside the future reservoir area. Costs for procedures and compensation are estimated at approx. 520'000 Euro, which should be considered as project costs.
Project budget	Total project costs of 4.5 million EURO have been estimated at identification stage, funded as follows: - Belgian Government: max. 2.5 mio. EURO - Counter Value Fund 1.064 mio. EURO - Province: 0.936 mio. EURO	Considerably increased costs have to be taken into consideration to date for the reasons mentioned below: Construction cost escalation has been high during the past 4 years. Costs related to resettlement and compensation as well as costs for the tertiary irrigation distribution system need to be included in the project costs.

Issue	Identification Report outcome	Verification / Modification
		In addition some modifications due to new construction regulations add to increased costs. While the Belgian Government involvement remains fixed except for the additional budget for the International Project Coordinator, the contributions by the Vietnamese Government, respectively the provincial budget will have to increase. At present the cost estimate of the project, including compensation costs, is approx. 5.766 mio. Euro. The budget allocation therefore will be: GOB: 2.600 mio. EURO CVF: 1.250 mio. EURO Province: 1.916 mio. EURO The portion to be funded by the Province has doubled. The provincial authorities have commited themselves tol implement the project to its full extent even if an additional burden is placed on the province budget.
Dam location alternatives and storage capacity	Various dam location alternatives have been studied during the FS. Alternative IIA, including main dam and two saddle dams with a maximum height of 19 m and a total length of approx. 1500 m and an unregulated spillway has been proposed. Alternative IIB is the same dam, but with a regulated spillway. Alternative I is located only little upstream of dam axis II and includes a shorter dam with only 950 m total length and an unregulated spillway. The catchment area of Alternative I is somewhat smaller, than the one for Alternative II. Alternative I has been abandoned due to reduced storage capacities and inflows and due to expected higher costs for foundation treatment, which have however not been included in the respective cost estimate.	Dam location should be studied further during detailed design stage and based on additional geological/geotechnical exploration, which shall be executed for both dam axes. With alluvial deposits known to be highly heterogeneous, it is not obvious, that expensive foundation treatment should be required at one location and not required at another very close one. The comparison should however also keep in mind the different catchment areas and the hydrological conditions in order to verify if the higher costs of a larger dam are covered by the additional water yield. The storage capacity can easily be adapted to the respective requirements by applying lower or higher dams.

Issue	Identification Report outcome	Verification / Modification
Cropping Pattern	Different cropping patterns have been proposed and compared in the FS and pattern 2 is retained by the local authorities. The Verification Study reaches the conclusion that water availability in dry years will only be sufficient for cropping pattern 3.	According to confirmation by PMU it is confirmed that cropping pattern 2 (mainly cash crops) is the preferred option. However, new planning is done each year by DARD and adaptation of the cropping pattern to the season and to actual water availability is standard practice.
Spillway design	In the FS spillway design has been prepared for a check flood of 0.5% (1:100 years flood) in accordance with the Vietnamese regulation in place at that time. Since the FS the regulations have changed and a check flood of 0.2% (1:500-years flood) will have to be applied. The spillway will have to be modified accordingly. The verification study recommends to apply international dam guidelines, which would foresee a 1:10'000 years event as check flood.	Considering the high population living in the area downstream of the dam and the associated risks in case of failure, it has been agreed to comply with the proposal of the Verification Study and to apply a check flood with a return interval of once in 10,000 years. Technically this may be solved by increasing the height between spillway sill and dam crest or by increasing the spillway length or by adding an emergency (fuse plug) spillway.
Efficiency of the canal system	A canal system efficiency of 85 % has been considered by the FS. According to the VS an overall system efficiency of 60% is more realistic.	Realistic figures, based on the proposed canal lining, and considering also to the losses in tertiary canals and on-field losses should be applied in the Detailed Design in accordance with Vietnamese experience.
Tertiary canal system and on-field canals	These works are not dealt with in the FS or the Identification and are not included in the cost estimates	It is considered that tertiary and on-farm irrigation distribution system are an integral and necessary part of the Project. Their design and construction must be included in the cost estimate and in the project budgets.

4 DESCRIPTION OF THE PROJECT

4.1 Project Objectives

The identified and agreed general objective for the Lanh Ra Irrigation Project is:

"The socio-economic situation in Ninh Thuan Province improved"

4.2 Specific Objectives

Ninh Thuan Province is one of the poorest provinces in Vietnam. Its economy is mainly based on agriculture. Improvement of the agricultural sector is the most important key to achieve the above objective. The specific objective of the project has therefore been defined and agreed as:

"The agricultural production in Lanh Ra valley improved"

Ninh Thuan is one of the driest province of Vietnam. Improvement of the agricultural production is closely related to using the availability of water for Irrigation.

4.3 Beneficiaries

The beneficiaries of the project will be the population of Ninh Thuan Province and in particular:

- the populations of the communes of Phuoc Son, Phuoc Vinh and Phuoc Thai, which will profit from the opportunity to cultivate more land,
- the residents of 9 communes of Ninh Phuoc district particularly affected by repeated flooding (Phuoc Son, Phuoc Vinh, Phuoc Thai, Phuoc Dan, Phuoc Huu, Phuoc Thuan, Phuoc Hai, An Hai and Phuoc Hau,
- the staff of the provincial Department of Agriculture and Rural Development and of the Irrigation Management Company.
- additionally and not mentioned by the Identification Report, the staff and workers of the various Contractors executing the works, most of which will be recruited in Ninh Thuan Province, will temporarily benefit from the employment generated.

4.4 Project Strategy

In accordance with the context of the project, as described in chapter 2, the general and specific objectives can be realized in the Lanh Ra valley through the construction of the following infrastructures:

- the project headworks, in order to collect and store the available water resources for optimum agricultural use at the times required. The headworks consist mainly of the main dam and auxiliary dams with foundation treatment and associated structures as spillway and irrigation outlets. The dams form a storage reservoir.
- the irrigation system supplying the irrigation command area with water. A canal system of main, secondary, and tertiary/on-farm canals along with associated structures, such as control and distribution structures, drop structures, aqueducts etc.

Table 4-1: Main Technical Data of Lanh Ra Irrigation Project

Headworks	Description	Unit	Value / Text
Reservoir	Catchment Area	km^2	84.90
	Total Storage Capacity	mio m^3	9.26
	Active Storage Capacity	mio m^3	8.10
	Average annual Inflows	mio m^3	14.98
	Full Supply Level (FSL)	m a.s.l.	35.70
	Minimum Operating Level	m a.s.l.	29.20
	Surface Area at FSL	ha	192.00
Main & Auxiliary Dams	Type	-	Earth dam
	Crest Elevation	m a.s.l.	41.97
	Maximum height	m	18.70
	Total Crest length	m	1,487.00
	Total Fill Volume	m^3	913 069
Spillway	Type	-	Free over fllow
	Sill Elevation	m a.s.l.	35.70
	Design Flood (1:100 years)	m^3/s	1490 [1)]
	Check Flood (1:10'000 years)	m^3/s	2145 [1)]
Irrigation Outlet No.1	Type	-	Concrete box
	Length	m	81.00
	Discharge Capacity	m^3/s	0.66
Irrigation Outlet No.2	Type	-	Concrete box
	Length	m	81.00
	Discharge Capacity	m^3/s	0.66
Irrigation System			
Size	Total Command Area	ha	1050
Main Canals	Type	-	Concrete lined
	Total Length	m	7,390
Secondary Canals	Type	-	Concrete / masonry lined
	Total Length	m	16,990

Note [1)]: According to Verification of Feasibility Study – DHI/Haskoning 2003

4.5 Results

Given the above design and context, the project is proposed to be structured around the following five Results, as reflected in the Logical Framework Matrix in Chapter 6:

1. Design of Lanh Ra Project
2. Land Use Rights and Compensation
3. Construction of the Lanh Ra Irrigation Project
4. 1050 ha of irrigable land available
5. Sustainable Operation of Irrigation Project in order to allow 2 to 3 annual crops

4.5.1 Result 1: Design of Lanh Ra Project

A primary key element for the successful implementation and long-term sustainability of any project is its careful design. For the design of the Lanh Ra project, this includes in particular enhanced geological/geotechnical investigations in order to review and optimise dam axis and foundation treatment and verification of the hydrological condi-

tions. Careful design is also important, to avoid unnecessary risks during construction and operation and to guarantee a long life period of the various structures without requiring excessive operation and maintenance input throughout the project life. The technical specifications, which will be prepared under the detailed design task, and which will form part of the Tender Documents, are important to achieve good quality construction works and to allow efficient cost management during the project execution.

The Vietnamese regulations on design and tendering procedures are considered adequate to guarantee optimum cost/benefits and are therefore proposed to be applied. However one deviation from the Vietnamese standards has been agreed for the design of the project headworks. Here the use of the WB International Standard for check flood corresponding to a 1:10,000 year flood event will be used. This is justified due to the fact that a large population lives downstream of the dam in the impact zone of a hypothetical dam breach (refer to Section 5.2: Risks).

Activities necessary to achieve Intermediate Result 1:

- Prepare TOR and conduct submission for Detail Design
- Execute and approve the Detail Design. In accordance with good practice and with Vietnamese regulations, the detailed design shall be reviewed by a highly qualified, independent consultant.
- Prepare tender documents for construction contracts and construction supervision.

Various activities may run in parallel or overlap. Total time requirement estimated for realization of result 1 is about 8 months

4.5.2 Result 2: Land Use Rights and Compensation

Before construction of the project works can start, the project owner needs to settle all land use rights and compensate the legal users. As has been mentioned previously, no permanent settlements exist in the reservoir area and resettlement is therefore not required.

The rights of land users in general and of poor/minority population are well protected in Vietnam and strict, well established procedures have to be followed. PMU has a section, which is responsible for coordinating and following up the activities associated with compensation issues. The following activities are required to achieve Intermediate Result 2:

- Establish a Compensation Committee by the DPC
- Survey the land uses in the reservoir area and in the line of irrigation canals and associated works.
- Negotiate compensations and reach agreements with all land users
- Execute compensations
- Transfer land use rights to the project Owner

The compensation procedures are estimated to take about 6 to 10 months and will go on in parallel with the Detailed Design and should be completed before the start of construction works.

4.5.3 Result 3: Construction of the Lanh Ra Irrigation Project

Clearly, this step is the most elaborate in the project implementation. In accordance with Vietnamese practice it is expected that the total works will be split in various smaller contract lots. The PMU needs to prepare a bidding plan indicating the proposed lots, which requires approval by PPC before the bidding procedures can start. The construction works will be executed by Vietnamese contractors on the basis of competitive bidding procedures in accordance with the relevant Vietnamese regulations. For the selection of the Contractors, the price shall not be the sole criterion; at least for critical items such as dam construction and foundation preparation sufficient capabilities and experience of the kind of work needs to be considered.

The quality of the performed works is important for the longevity and safety of the structures and for the future O&M costs. Strict supervision by well qualified and experienced staff is mandatory for quality, schedule and cost control.

The Project Steering Committee will keep close track of the activities and shall receive periodic reports, structured by Contract lots, including status of works, cost status of works and any particular events. The status reporting shall always be compared to expected values.

The following activities are necessary for the execution of the works

- PMU to prepare Bidding plan for the approval of PPC
- Perform Bidding process for various construction lots of irrigation project. The bidding procedures may be staged in accordance with schedule requirements. The PMU shall be responsible for the performance of this activity and do the bid analysis for approval.
- Perform preparatory works (access roads, construction camps, quarries).
- Execute the main project works.
- Filling the Reservoir. Works shall be scheduled so, that reservoir filling may start before all works are completed. Usually complete filling will not be possible during the dry season, but only towards the end of the rainy season. Completion of the works, including complete commissioning is therefore not expected before October/September 2008.
- Supervise and commission of the project.

4.5.4 Result 4: 1050 ha of irrigable land available

Besides the headworks and primary and secondary canals, all with associated works, as per the designed project, the tertiary canal system and the preparation of the irrigable land have also to be prepared, before the irrigation system can optimaly fulfil its service.

For the time being, it is assumed that tertiary canals will remain unlined. However in view of geotechnical conditions found this may be reconsidered later on

According to Vietnamese regulations and customs, about 40% of the tertiary and on-farm system should be contributed by the benefiting farmers via manual labor.

It is to be noted, that the costs for the development of the tertiary system was not included in the cost estimate of the Lanh Ra Irrigation Project. However, it is evident, that without this the general and specific objects of the project can not be achieved.

These costs, excluding the farmer's contributions, have therefore been included in the cost estimates of this TFF.

4.5.5 Result 5: Sustainable Operation of Irrigation Project in order to allow 2 to 3 annual crops

Once the implementation of the project has been completed and the reservoir will be filled during the rainy season, the operation phase of the project starts. The project ownership will be transferred from the implementation organisation to the organisation responsible for operation and maintenance of the system. The following activities are required during the operation phase.

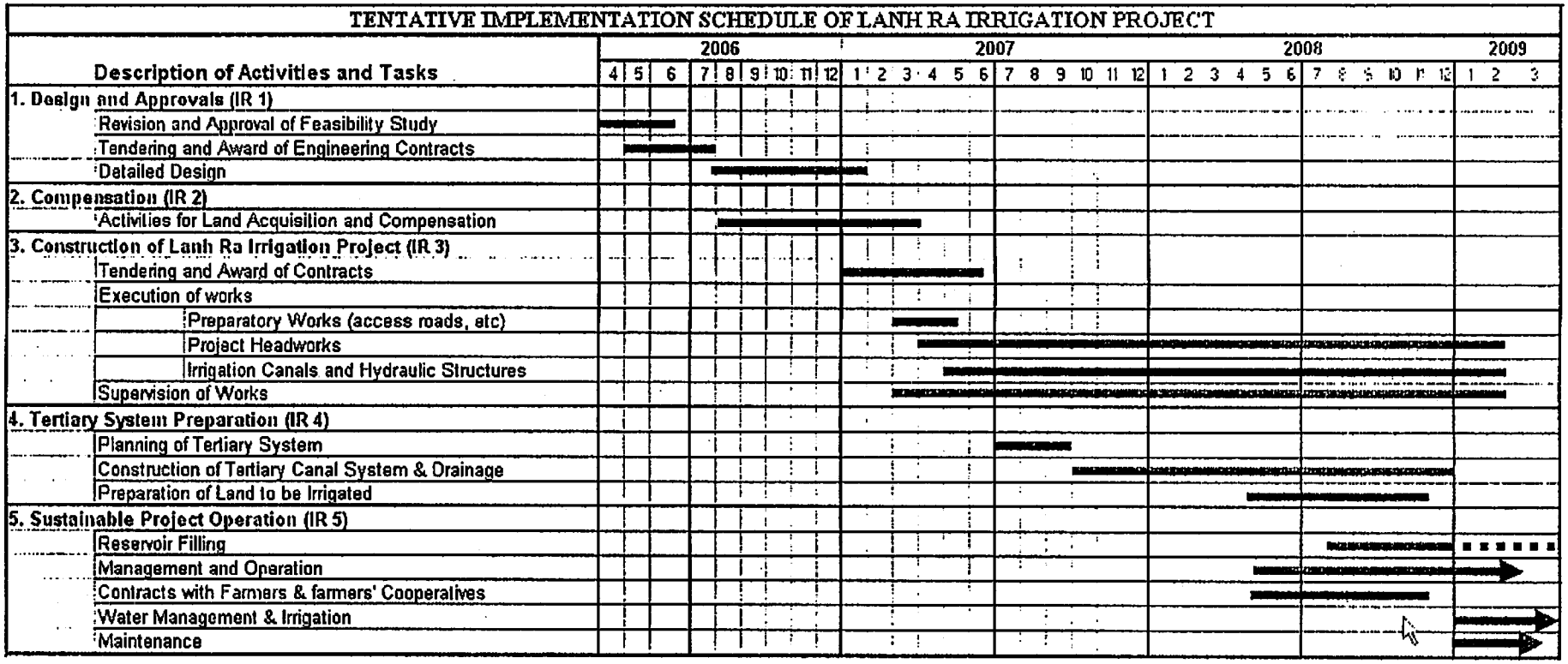
- Hand over irrigation project by PMU to operating entities
- Extension of IMC and IMS to operate and maintain the irrigation project
- Capacity building of IMS staff and water users
- Water management and water releases
- Planning of cropping patterns
- Training and instruction to farmers in order to efficiently produce the crops
- Management of Lanh Ra irrigation infrastructure and collection of water fees
- Maintenance of Lanh Ra project

4.6 Implementation Schedule

A tentative time schedule for the implementation of the Lanh Ra irrigation project is shown in Figure 4-1 hereafter. The schedule is structured in accordance with the results. The schedule assumes realistic, but challenging time estimates for execution of individual tasks. It is important to note, that intermediate result 4, namely the start of project operation can only be reached once the Lanh Ra storage reservoir is filled. Filling of the reservoir may start, before the project's headworks are completed. Scheduling of the respective activities needs careful attention during the detailed design. However during normal years, the reservoir cannot be filled without the inflows during the rainy season. It is therefore not considered realistic to assume, that operation of the irrigation system can start before late 2008, even if design and construction works are expedited. It must be realized that serious delays during the implementation of the headworks will delay the operation phase by one complete year.

A total implementation period for the planning and construction phases of about 3 years has to be realistically assumed.

Figure 4-1 : Tentative Implementation Schedule



5 PRECONDITIONS, ASSUMPTIONS AND RISKS

5.1 Preconditions

The structures for project implementation in the irrigation sector are well established, with a permanent PMU in charge of coordination and management of Project implementation. Procedures have been applied in various projects similar to Lanh Ra irrigation Project.

Under DARD an organisation is in place, to manage, operate and maintain irrigation projects.

The IMC and IMS are earmarked to take over Lanh Ra irrigation scheme after completion. Approximately 10 to 12 additional staff will be recruited and trained, to handle the additional project.

There is no need for specific pre-requisites at this level..

5.2 Risks

Overall, there are a number of risks that might adversely impact on the Project and its subsequent progress and sustainability. However, considering the experience with the implementation and operation of many other irrigation projects in the Province and the institutional/management framework in place in the agriculture sector, and furthermore considering the high priority given to the Project by the Government agencies as well as the high expectations of the beneficiaries, the risks are considered low.

Table 5-1: Risks

Item	Comments	Risk Level	Mitigation Measures
Institutional Risks			
Organisation structure for implementation and operation stage inadequate.	There exist permanent, long-established organisation structures with successful experience in similar projects.	low	Maintain established organisations and procedures.
Inability to recruit required staff	Experienced staff already included in the existing organisations involved in implementation of the project. Enhancement of O&M organisation (IMS) required, to manage additional work.	low	Timely recruitment and training of additional staff required for extension of operation to new project
Social Risks			
Problems to solve the land acquisition and compensation issue.	There are no permanent settlements in the reservoir area and the land users may expect better living conditions after the completion of the project. Compensating procedures are well established and believed to be usually executed in a fair way.	low	Relevant costs to be included in the budget of the Project. Fair compensations.

Item	Comments	Risk Level	Mitigation Measures
Delayed approvals	The Project and its implications are known to the agencies involved. While high priority is attributed to the Project, in particular in the wake of the extreme drought which has started in 2004 and is still lasting, and the generally high acceptance level, approvals can be expected within due times.	low	Appropriate information by PMU
Operation-Management Risks			
Farmers not willing to enter into Contracts for Irrigation water Supply	Farmers and farmers cooperatives respectively in the command area can not be forced into the water supply contracts. They have however a strong interest to participate, since the benefits are much higher than the water fees, they have to pay for the irrigation water.	low	Information programmes and awareness rising through IMC, IMS, DARD
Failure to collect water fee	Farmers can legally not be forced to pay their water fee. Reductions in the water fee apply, when the crops have bad yields, e.g. due to droughts and floods. The average collection rate of the water fee is about 70 %. The provincial government has to compensate for the losses. Reduced collection of water fee will not put the operation of the project at risk, but may endanger appropriate maintenance.	low	Compensation from Provincial Government sources. Other sources of revenues: e.g. domestic water supply.
Availability of Market for the crops produced	If the cropping pattern is not following requirements of the market, farmers may envisage difficulties to sell their crop.	low	DARD, who is preparing cropping patterns, needs to consider the actual market situation and adapt cropping patterns, if required.

Item	Comments	Risk Level	Mitigation Measures
Technical Risks			
High flood during execution of the works	Construction stages are usually not designed for as high flood events as the completed structure. During certain construction stages the uncompleted works are sometimes particularly vulnerable to flooding. Damage, respectively partial destruction of the works under construction might result.	low	Consideration of adequate construction stages. Execution of critical phases during dry season. Adequate protection of critical works. Provision of insurance.
Design deficiencies	Some of the project features, in particular the dams with adequate foundation treatment, the spillway and the irrigation outlets could in the worst case lead to partial or complete loss of the works and present a high risk to the population living downstream of the reservoir.	low	Selection of sufficiently experienced design Consultant for the Detailed Design. Employment of an independent experienced Consultant for design review. Site supervision by staff experienced in such works.
Insufficient quality of works executed.	Construction quality is the key to low maintenance costs as well as to reliable and safe operation of the project. In the case of the dam and associated structure insufficient quality might in the worst case lead to dam break with catastrophic consequences.	low	Stringent specifications included in Bidding and Contract Documents. Qualified site supervision by experienced Consultant.
Higher costs	The costs of infrastructure works such as the Lanh Ra Irrigation Project, involving dams and depending on underground conditions can never be accurately estimated. Due to unfavourable underground conditions, due to necessary design adaptations, cost escalation and estimation inaccuracies the construction costs may increase.	low	Carry out design with due diligence and with efforts toward economic designs, provision of sufficient contingencies in cost estimates, competitive bidding process, efficient cost control during execution of works. Moreover, the increase in the CVF contribution will further help lowering this risk

6 LOGICAL FRAMEWORK OF THE PROJECT

Table 6-1: Objectives, Indicators, Verification and Assumptions

Narrative Summary	Verifiable Indicators	Means of Verification	Assumptions
General Objective: **The socio-economic situation in Ninh Thuan Province is improved**	Average per-capita income increased	Statistical yearbooks of the Province	
Specific Objective: **The agricultural production in Lanh Ra valley is improved**	Increased area of irrigated land. Increased production output per ha. of Farmland. Increased per-capita income of population living in Lanh Ra valley.	Statistical reports of DARD Statistical Records of DARD Statistical yearbooks Statistical data reported by the Communes to PPC	

Narrative Summary	Verifiable Indicators	Means of Verification	Assumptions
Result 1: Design of the project. **Objective:** Prepare and get approved all design with a view to economical use of available resources and for a sustainable use of the Project.	Accepted Feasibility Study Accepted detailed design with drawings and specifications	Approved F.S distributed to project stakeholders, PSC. Approved Detailed design reports distributed to stakeholders, PSC.	
Result 2: Land Acquisition and Compensation. **Objective:** The land use rights for all land to be used by the project structures and to be inundated by the future reservoir will legally be available for the project Owner. All previous land use rights are settled and compensated for.	Surveyed Register of land use rights, prepared under the responsibility of compensation Committee	Signed agreement by all previous holders of land use rights. Report by the compensation Committee	All land owners are willing to release their land use rights in return for fair compensation and prospects for improved future social situation.
Result 3: Construction of Lang Ra Irrigation Project: **Objective:** Build all the structures necessary for collection, storing, management and distribution of available water resources for irrigation of land in the command area, in accordance with detailed design.	Physical structures in place Adequacy of financial resources. Commissioning of the Project.	Inspections Quarterly reports by PMU Payment certificates Final Report by PMU	

Narrative Summary	Verifiable Indicators	Means of Verification	Assumptions
Result 4: Preparation of Tertiary Irrigation system. **Objective:** The tertiary / on-farm irrigation water distribution system is complete and farm land in the Command area is ready for crops plantation, when the irrigation water is available	Physical Structures in place.	Inspections by PMU, IMC/IMS and PSC	Planning for the tertiary / on-farm irrigation system is performed in the framework of Detailed Design. Farmers are informed and are willing to supply their own input as required.
Result 5: Sustainable Operation of Project. **Objective:** Operation and maintenance of the project are managed by the responsible organisations in a way that the purpose of the project can be maintained over a long period of time. This includes preserving sufficient resources to pursue operation and maintenarice as well as maintenance of the physical components of the project.	Irrigation water supply is available according to the requirements of the season and the crops planted. Number of contracts with farmers and farmers cooperatives and irrigated land covered by these contracts Physical components of the project operational and in good order	Statistical information by DARD on irrigated area and crop production in relevant communes and in Ninh Phuoc District. Financial and operational Reports of IMC and IMS on the status of the project, annual budgets Reports of IMC/IMS, Inspection/verification by the stakeholders	Farmers and farmers cooperatives have sufficient interest and resources to maintain their own part of the project and to pay the water fee.

Table 6-2: Activities, Means, Costs and Assumptions

Activities	Means	Costs in Euro	Assumptions
Activities under Result 1		**231'500**	
1.1 Terms of Reference for Detailed design prepared and approved. Bidding procedure done, contract finalised and detailed design done.	PMU Consultants		Preparations may already start prior to FS approval, so that bidding procedures for detailed design may start quickly upon approval of FS. Experienced Consultants will be awarded with the design work
1.2 Field investigations (topo survey, geological/geotechnical investigations): according to Vietnamese regulations and standard practice that are part of the Detailed Design, taking Into account the recommendations of the verification study	Consultants		
1.3 Review of the Detailed Design by an independent Consultant shall be done in accordance with Vietnamese regulations. Bidding for and selection of Review Consultant to be done beforehand.	PMU Consultants		
1.4 Approval of the Detailed Design	PPC		

6. KHUNG LÔ GIC CỦA DỰ ÁN

Bảng 6-1: Các mục tiêu, các chỉ tiêu đánh giá, phương tiện kiểm chứng và các giả định

Tóm tắt	Các chỉ tiêu đánh giá	Phương tiện kiểm chứng	Giả định
Mục tiêu chung: **Tình hình kinh tế xã hội tỉnh Ninh Thuận được cải thiện**	Tăng thu nhập bình quân đầu người	Niên giám thống kê của tỉnh	
Mục tiêu cụ thể: **Tình hình sản xuất nông nghiệp trong khu vực thung lũng Lanh Ra được cải thiện**	Diện tích đất được tưới tăng thêm Sản lượng tính trên mỗi ha đất nông nghiệp tăng lên Thu nhập tính theo đầu người tăng thêm đối với nhân dân sống trong khu vực thung lũng Lanh Ra	Báo cáo Thống kê của Sở NN&PTNT Số liệu thống kê của Sở NN&PTNT Niên giám thống kê Số liệu thống kê mà các xã báo cáo lên UBND Tỉnh.	
Kết quả 1: Thiết kế công trình **Mục tiêu:** Lập và được phê duyệt toàn bộ thiết kế nhằm sử dụng hiệu quả kinh tế khả năng nguồn nước có sẵn và để sử dụng công trình được bền vững.	Nghiên cứu khả thi đã được duyệt Thiết kế chi tiết, cùng tất cả các bản vẽ và các tiêu chuẩn kỹ thuật được duyệt	NCKT sau khi được duyệt sẽ được chuyển tới các bên tham gia dự án, Ban Chỉ đạo Dự án. Báo cáo Thiết kế Chi tiết được duyệt cũng sẽ được chuyển tới các bên tham gia dự án, Ban Chỉ đạo	
Kết quả 2: Đền bù và thu hồi đất. **Mục tiêu:** Chủ dự án có quyền sử dụng đất hợp pháp đối với toàn bộ khu đất để xây dựng công trình và đất làm hồ chứa. Tất cả các đối tượng có quyền sử dụng đất trước đó được đền bù và ổn định cuộc sống.	Tình hình đăng ký quyền sử dụng đất đã được điều tra với trách nhiệm thực hiện thuộc về Ban đền bù.	Thỏa thuận đã được ký với tất cả các đối tượng trước đó có quyền sử dụng đất. Báo cáo của Ban đền bù	Nhân dân sẵn sàng giao quyền sử dụng đất để được hưởng đền bù xứng đáng và các triển vọng về tình hình xã hội trong tương lai sẽ được cải thiện.

Tóm tắt	Các chỉ tiêu đánh giá	Phương tiện kiểm chứng	Giả định
Kết quả 3: Xây dựng công trình hồ thuỷ lợi Lanh Ra: **Mục tiêu:** Xây dựng tất cả các công trình cần thiết để thu nước, tích nước, quản lý và phân phối tài nguyên nước để phục vụ tưới cho diện tích đất của khu tưới, theo thiết kế chi tiết.	Xong các công trình xây dựng. Đủ nguồn tài chính. Nghiệm thu công trình	Kiểm tra Các Báo cáo Quý của Ban QLDA. Các giấy tờ thanh toán Báo cáo cuối cùng của Ban QLDA	
Kết quả 4: Chuẩn bị hệ thống tưới cấp ba **Mục tiêu:** Hệ thống phân phối nước tưới nội đồng/ cấp ba hoàn thành và các diện tích đất trong khu tưới sẵn sàng cho canh tác ngay khi có nước tưới.	Các công trình xây dựng đã hoàn thành	Các lần kiểm tra của Ban Quản lý Dự án, Công ty Khai thác Công trình Thủy lợi/ Trạm Quản lý Thủy nông và BCĐ Dự án.	Quy hoạch hệ thống tưới nội đồng/ cấp ba được thực hiện theo khung Thiết kế Chi tiết. Nông dân được thông báo và sẵn sàng đóng góp theo yêu cầu.
Kết quả 5: Vận hành khai thác ổn định công trình. **Mục tiêu:** Công tác vận hành khai thác và duy tu bảo trì công trình được cơ quan tổ chức có trách nhiệm quản lý theo cách thức để có thể duy trì mục tiêu của dự án trong thời gian dài Việc này cũng bao gồm việc duy trì nguồn nước đủ để có thể thực hiện được công tác vận hành khai thác và duy tu bảo trì, cũng như duy tu bảo trì các hạng mục công trình khác của dự án.	Nước tưới có thể được cấp theo mùa vụ hoặc theo từng loại cây trồng. Số hợp đồng ký với các nông dân và các Hợp tác xã và diện tích đất được tưới theo các hợp đồng này. Các công trình của dự án có thể vận hành được và trong tình trạng tốt.	Các thông tin thống kê của Sở NN&PTNT về diện tích đất được tưới và sản xuất của các xã có liên quan trong huyện Ninh Phước. Các báo cáo hoạt động và báo cáo tài chính của Công ty KTCTTL và các trạm QLTN về hiện trạng của dự án, ngân sách hàng năm. Các báo cáo của Công ty KTCTTL và Trạm QLTN, Kiểm tra/ kiểm định của các bên tham gia dự án	Nông dân và các hợp tác xã của nông dân quan tâm đầy đủ và có đủ nguồn lực để duy trì phần hệ thống của mình và để trả thủy lợi phí.

Activities under Result 4		**200'000**	
4.1 Construction of tertiary irrigation distribution system	Contractors		
4.2 Construction of on-farm canals and preparation of land for irrigation	Farmers, Farmers Cooperatives		According to standard practice, approximately 40 % of the tertiary / on-farm system shall be contributed by the Farmers benefiting from the project by manual labour.
Activities under Result 5		Not covered by Project Funds	
5.1 Taking over of Completed irrigation scheme by the Organisations responsible for Operation and Management of the Irrigation System	DARD, IMC IMS		IMC and IMS recruit and train their staff in time for the taking over of the new project.
5.2 Planning of cropping patterns and information / instructions to farmers	DARD IMC IMS		Awareness raising of the farmers in the command area started well ahead of first irrigation operations.
5.3 Establishing contracts with farmers and farmers cooperatives on the supply of irrigation water	IMC IMS		Farmers are willing to enter into contracts.
5.4 Water Management and irrigation releases	IMC IMS		
5.5 Performing agricultural production	Farmers, Farmers cooperatives		Sufficient assistance by IMS, DARD to apply optimum production procedures. Marketing of produced crops at interesting prices is guaranteed.
5.6 Maintenance of Irrigation Project	IMC IMS		

7 IMPLEMENTATION PROCEDURES

7.1 General

The project realization can be subdivided in two main phases namely the design phase and the construction phase.

For both phases there exist strict regulations and procedures in Vietnam, which are well known to Provincial Authorities, Design Consultants and Contractors. The Project Owner, the Peoples Committee of Ninh Thuan Province has much experience in successfully implementing similar irrigation projects. A PMU is in place for the project coordination and management of Lanh Ra Irrigation Project.

7.2 Implementing Authorities

The Government of Vietnam designates the Provincial Peoples Committee (PPC) of Ninh Thuan Province as the Owner of the Project. The vice-chairman of the PPC of Ninh Thuan Province shall be the chairman of the Project Steering Committee. He/she will verify whether activities are properly implemented, mobilise & guide the implementing team and coordinate with government institutions and offices on all legal aspects affecting the project.

The PPC of Ninh Thuan Province appoints the Director of the permanent Agriculture Infrastructure Project Management Unit (PMU) as the Project Director responsible for the operational management of the project. The PMU is the executing agency of the project and has 20 permanent staff. It is subdivided in two divisions namely a **general division**, including accounting, administration & infrastructure and a **project management division** with 8 Engineers in the technical subdivision and 2 specialists in the Land Acquisition and Compensation Subdivision. Both the management and leading staff of PMU have all university degrees, mostly in irrigation engineering.

The Belgian Technical Cooperation (BTC) is charged with the timely mobilisation of the Belgian contribution and inputs to the project. BTC, represented in Vietnam by its Resident Representative in Hanoi, will facilitate and support the Agriculture Infrastructure Project Management Unit (PMU) in its role as executing agency. The BTC Resident Representative will be assisted by the part-time International Project Coordinator. He/She will provide the necessary oversight on behalf of BTC through regular technical and financial audits.

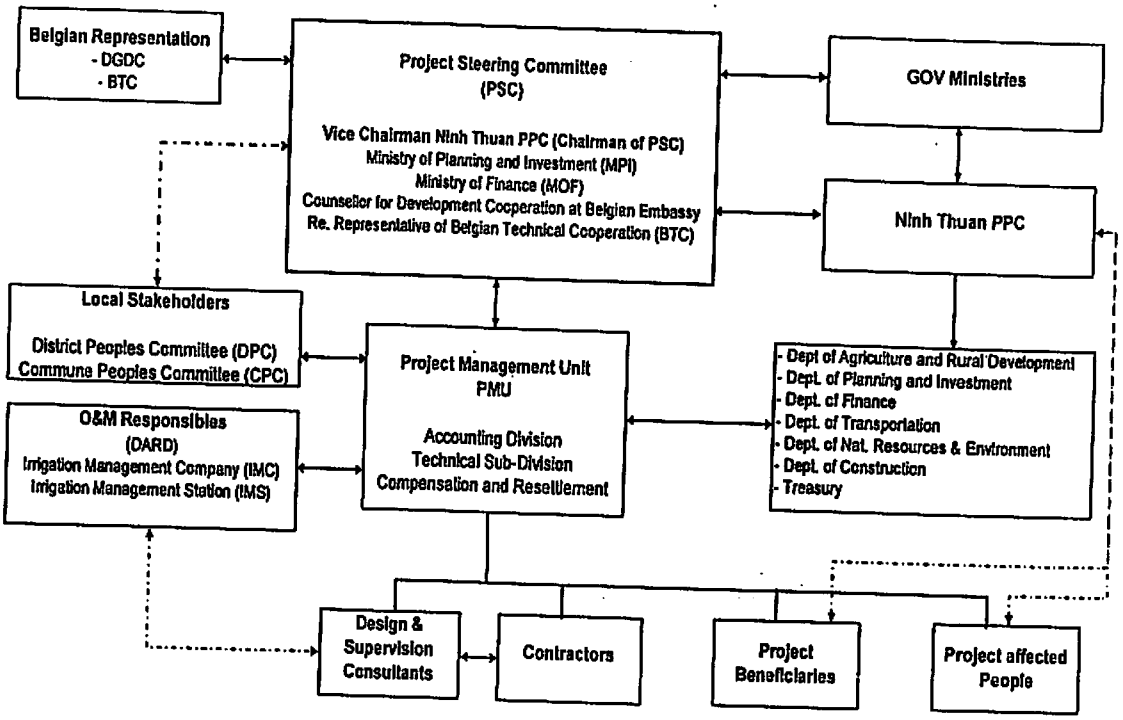
7.3 Project Management Structure

The Project Steering Committee (PSC) represents the highest management level of the project. It is responsible to provide the necessary strategic guidance to all project implementers and ensures that project objectives are timely attained. The PSC is the organisational, technical and financial auditor of the project. The PSC has the additional important function of maintaining linkages between the various government departments at different levels that have inputs into the project.

The second management level consists of the Project Management Unit (PMU). The PMU facilitates and manages the daily implementation of the project, coordinates the activities of all parties involved to guarantee an efficient project implementation. It is responsible for assuring the good governance of all project resources (human and material). It provides conceptual inputs with regard to project design and strategy and makes policy recommendations. It prepares Tenders, prepares tender evaluations and and drafts & manages contracts, all subject to the approval of the PSC.

The organisation structure is shown below in Figure 7-1. This diagram also includes the interactions between various organisational entities.

Figure 7-1: Project Implementation Organisation Structure



7.3.1 Project Steering Committee (PSC)

The PSC is mandated to ensure the implementation of the Specific Agreement on a strategic level. It is not involved in the day-to-day management of the project

The PSC will assume the following responsibilities and is mandated to:

- approve operational and financial management procedures for the project, including signing powers, flow of funds, funds disbursement etc.
- analyse the management of the resources (human, financial or material) and decide on modifications to these, proposed by the PMU, provided that such modifications do not alter the project's general and specific objectives and/or its overall budget;
- appraise the state of progress of the project and the achievement of its general and specific objectives;
- approve the budgeted work plans proposed by the PMU and decide on the (re)scheduling of the project activities when necessary;
- order and appraise financial audits of the project;

- approve modifications of project duration, intermediate results, activities and budget realignment provided that such modifications do not alter the project's general and specific objectives and/or its overall budget;
- seek approval of both Governments for project duration, results and activities, that do alter the projects general and specific objectives and/or its overall budget;
- provide general guidance to the project implementation;
- decide on the fielding and ToR of review missions and external financial audits, as well as appraise their recommendations.

Within the limitations imposed by the Specific Agreement of the project, the PSC shall lay down its own internal rules and take its decisions by consensus.

In view of its strategic decision making mandate, the PSC membership will be limited to the following members:

For Vietnam:

- The Vice Chairman of the People's Committee of Ninh Thuan Province (PPC);
- The Ministry of Finance (MOF)
- The Ministry of Planning and Investment (MPI);

For Belgium:

- The Counsellor for Development Cooperation at the Belgian Embassy or his delegate;
- The Resident Representative of the Belgian Technical Cooperation (BTC) or his delegate;

The PMU will provide the secretariat of the PSC. The Project Director will propose the agenda of the PSC and provide reports and budgeted work plans for approval. The financial report will provide a detailed overview of the overall state of utilisation of the project funds regardless of their source.

The PSC will have regular meetings approximately every 6 months or at important milestones in the implementation when important decision need to be taken (allocation of big tenders, approval of design etc). The first meeting shall be held immediately after approval of the FS. As required, the PSC may change the interval of meetings or schedule additional meetings, as the need arises.

7.3.2 The Project Management Unit (PMU)

The Agricultural Infrastructure Project Management Unit (PMU) is a permanently existing organisation which has been and is successfully managing the construction of various irrigation projects comparable to Lanh Ra project. Given its established track record it is clear that the PMU has the necessary capabilities and experience to perform the Lanh Ra project and does not require additional strengthening. The PMU has 20 permanent staff and is managed by a Director who is assisted by a Deputy Director. The management and leading staff of the PMU all have university degrees, mostly in irrigation engineering.

The PMU assures the coordination and day-to-day management of the whole project during the implementation phase and is responsible for:

- Completion and approval of the FS;
- Preparation and approval of Detailed Design;
- Overall planning of the project activities;
- Organising, coordinating and supervising the implementation of project activities in accordance with the approved work plans;
- Technical guidance on project methodology and strategy;
- Preparation of Tender Documents [4], performance of Bidding procedures and drafting of Contracts for procurement of goods and services;
- Overview supervision by Consultant of the Contractors executing the project works and supplying goods and services;
- Provide financial management and compilation of quarterly reports;
- Timely completion of progress reports and budgeted work plans for the following period for consideration by the PSC;
- The secretariat for the PSC (dissemination of reports, proposal of agenda, drafting of PSC meeting minutes etc.);
- Coordination and networking with other national and, if appropriate, international partners;
- Commissioning of completed parts and total project and hand over to the operating and maintenance entity at the end of the implementation;
- Compilation of the project final report at the end of the project.

7.3.3 The Belgian Government Agencies

From the Belgian side the Resident Representative of the Belgian Technical Cooperation (BTC) will review and secure the appropriate use of the Belgian Fund in accordance with the objectives set forth in the Agreements. He will be back-stopped by a part-time (1/3) International Project Coordinator who will provide the necessary independent oversight through regular technical and financial audits. The BTC Resident Representative will receive six-monthly reports from the PMU and conduct supervision missions to the project area.

7.4 Financial Mechanism.

Regardless of the source of funding, all financial resources of the project will be managed transparently and reported on in accordance with the principles of joint partnership.

The disbursement and utilization of project funds is approved by the PSC based on six-monthly budgeted Action Plans submitted by the PMU. Every six months a financial report on the utilization of the contributions, jointly signed by the Project Director & International Project Coordinator, will be submitted for acceptance by the PSC. All contracts, original invoices and payments, duly signed by the Project Direct & the International Project Coordinator, must be kept available for verification at the PMU office.

[4] Effective preparation of Tender Docs. and Bidding Procedures usually performed by the Design Consultants.

Regardless of the source of funding but with the exception of the remuneration of the International Project Coordinator and the costs for the formulation, the PMU will tender for the procurement of all goods and services in accordance with the Vietnamese Regulations on Public Procurement. To facilitate the selection of the best qualified tenderer the PMU will, for each tender, produce a comprehensive analysis of all offers received. Up to 12.000 Euro the Project Director & International Project Coordinator will be responsible for awarding the tender. Their choice shall be properly motivated based on objective criteria contained in a tender analysis. Above 12.000 euros, the tender will be approved by relevant members of the Project Steering Committee in line with the current decentralisation regulations on public procurement of the Government of Vietnam.

7.4.1 The Belgian Contribution

A separate project account shall be opened at a commercial bank in Phan Rang, the provincial capital of Ninh Thuan. This account will be replenished by the BTC, on request of both the Project Director and the BTC Resident Representative, in quarterly installments based on the provisions made in the six-month budgeted Action Plans submitted by the PMU and approved by the Project Steering Committee. This account shall have two signatories namely the Project Director and the International Project Coordinator. For payments not exceeding 12.000 euros, payments will be made against the joint signatures of the Project Director & International Project Coordinator. For payments above 12.000 euros the Project Director will mandatoy seek a written approval from the BTC Resident Representative prior to making such payments.

The PMU will, for monitoring purposes, provide monthly financial reports on the disbursement of the Belgian contribution to the BTC Resident Representative according to a mutually agreed format.

7.4.2 The Vietnamese Government Contribution.

The Vietnamese Government will exempt all goods, equipment and services purchased for the project from all custom duties and taxation.

7.4.3 The Counter Value Fund

The contribution from the Counter Value Fund (CVF) will timely be made available by the Vietnamese Ministry of Finance. Comprehensive six monthly reports on the utilization and planned utilization of the CVF will be presented by the PMU for approval to the Project Steering Committee.

The Ministry of Finance will certify the total amount spent in accordance with Vietnamese regulations, before the project ends.

7.4.4 The Provincial People's Committee Contribution

The contribution from the PPC will be made available in a timely manner by the Province People's Committee. The PPC will bear all the cost not covered either by the Belgian contribution or the Vietnamese Counter Value Fund.

The PPC in cooperation with the PMU will certify the total amount spent in accordance with Vietnamese regulations, before the project ends. A comprehensive report on the

utilisation of the counterpart funds, certified by the treasury of the PPC, will be included in the Final Report.

7.5 Reporting, Monitoring and Evaluation

7.5.1 Monitoring and Evaluation

Monitoring and evaluation will be made at two levels: the project delivery level and the project impact level. Project delivery monitoring is relatively simple and straightforward: it shows the level of delivery against the projected delivery plans (results, activities). Available indicators and means of verification have been introduced in the logical framework.

The monitoring of the impact of the Project is more complicated as it aims at comparing pre-project situation(s) with the post intervention situation(s), while trying to "neutralise" the impact of other external influences on the target population. Given that the implementation period of the project will barely cover the operational phase of the irrigation scheme a meaningfull impact assessment (reduction on poverty, income stability due to reduced risks, flood reduction etc.) will hardly be possible. The time horizon needed for such impact assessment would require many years of follow-up.

The BTC will recruit a part-time International Project Coordinator (1/3) to verify that the Belgian funds are utilized in a manner ensuring that the Project's Goal and Purpose will be achieved. He/She will visit the Project on a regular basis to review the progress. The budget for the International Project Coordinator will be managed directly and solely by BTC in line with standard BTC's human resources policy.

The PSC will commission an annual External Audit to be carried out by an accredited accounting firm. The Belgian Ministry of Finance and BTC can at any time audit the Project accounts, as per the requirements of the Belgian Government.

7.5.2 Reporting

The PMU will ensure that the reports, plans and documents indicated below are produced in accordance with applicable requirements and formats. The reports, plans and documents will be submitted to the PSC for approval. All reports made by the PMU will be issued in Vietnamese and English.

Progress Reports: the progress in each area of the project will be documented. The report will be prepared by the PMU every six months and presented for approval at the PSC meetings. The reports must contain at least the following chapters:

- Progress review of the achievement of the outputs and activities of each area of the project monitored against the Technical and Financial File and the Action Plans approved at the previous PSC meeting. Constraints and delays will be analyzed and proposals given for solving the problems identified
- Presentation of financial reports on the use of Belgian, Vietnamese and Counter-Value Fund contributions during the reporting period.
- Presentation of Action Plan for the next reporting period and financial allocations accordingly.
- Any important issue the PSC needs to resolve.

7.6 Ending the Project

To draft a Final Report is the responsibility of the PMU. The Final Report shall be submitted to the PSC members at the final PSC meeting for approval. Apart of an overview of the infrastructure constructed it will also include a survey of the status and opinion of a representative sample of PMU, IMC and IMS staff of the impact of the Project.

The PMU is responsible for the final closure of accounts within three months of the project completion date. At the end of the project all equipment will be transferred to the Vietnamese Authorities. The last PSC shall decide on the destination of all project equipment transferred.

8 RESOURCES

8.1 Human Resources

The human resources which shall be employed in the framework of the Lanh Ra irrigation project will belong to either of the following organisations:

- Project management and administration during implementation phase: the staff of the existing PMU have the experience and capabilities to handle the Lanh Ra Irrigation Project implementation.
- Consultants: local consultants, experienced and qualified, for the type of works are available in Vietnam
- Contractors and Suppliers: it is foreseen, that local contractors and suppliers are capable of performing the required works and furnishing goods necessary for the project.
- Project operation and maintenance: Staff of Irrigation Management Company (IMC) and Irrigation Management Station (IMS), the irrigation management and operating divisions of the Department of Agricultural and Rural Development (DARD), are foreseen to take over the Lanh Ra Irrigation Project after completion and to manage and operate it.
- The International Project Coordinator shall be an international expert based in Vietnam with experience in ODA projects in Vietnam within the field of irrigation.

8.2 Material Resources and Services

All materials and services required for the implementation of the project will be procured in accordance with Vietnamese Law on Public Procurement.

The largest quantities of materials required will be the earth materials for the embankment of the main and auxiliary dams of the project headworks, including filter and riprap. The detailed quantities and qualities for these materials will have to be established during detailed design and to be specified in the Tender Documents. It is expected, that such materials are available in the reservoir area or nearby, as the investigations made for the FS have demonstrated.

8.3 Financial Resources

8.3.1 Project Cost Estimate

A new cost estimate has been prepared as per October 2005, which resulted in substantially higher budget requirements estimated at approximately 5.766 mio. Euro (without tax), an increase of 1.28 mio. Euro or 28% higher than the original estimate (refer to Table 1-1 and Table 8-1 below).

The increase in cost is due on one side to the escalation of construction prices since the first cost estimate and on the other side to cost components, which have not been included in the original cost estimate, but which are deemed an integral part of the project costs, in particular (rounded cost values):

- Escalation of construction prices 475,000 Euro
- Costs of compensation for existing land uses 520,000 Euro
- Costs for construction of tertiary canal system 208'000 Euro

8.3.2 Economic Viability

Based on the revised cost estimates and on the proposed cropping pattern, the economic calculations result in the following indicators:

• Economic internal rate of return	IRR	=	12.7 %
• Benefit / Cost ratio	BC	=	1.03
• Net present worth	NPW	=	0.43 mio. Euro

The analysis is based on the following parameters

Investment cost	C	=	5.68 mio. Euro
Annual operation and maintenance Cost	O&M	=	67'000 Euro/a
Net annual value of production	NPV	=	1.14 mio. Euro/a
Discount rate (opportunity cost of capital)	i	=	12.0 %
Economic life period	n	=	40 years

The project can be considered economically viable.

Table 8-1: Project Cost Estimate (excl. VAT)

NINH THUAN, LANH RA IRRIGATION PROJECT
COST ESTIMATE (Based on revised FS, 10.Okt.2005)

	Total Project Cost		Total per Source of Funding (Euro)		
	VND ('000'000)	Euro	GOB	CVF	GOV
Total Project Cost	**109,563.50**	**5,766,500**	**2,600,000**	**1,250,000**	**1,916,500**
		100%	45.09%	21.68%	33.24%
Result 1 (Design Stage)	**4,398.50**	**231,500**	**0**	**0**	**231,500**
Detailed Design	2,090.00	110,000	0	0	110,000
Field Investigations	1,235.00	65,000	0	0	65,000
Reviews and Experts	380.00	20,000	0	0	20,000
Project Management, Administration	237.50	12,500	0	0	12,500
Contingency	456.00	24,000	0	0	24,000
Result 2 (Land use rights - Compensation)	**9,718.50**	**511,500**	**0**	**0**	**511,500**
Management, Administration, Procedures	313.50	16,500	0	0	16,500
Compensations	8,550.00	450,000	0	0	450,000
Contingency	855.00	45,000	0	0	45,000
Result 3 (Construction)	**86,991.50**	**4,578,500**	**2,370,000**	**1,235,000**	**973,500**
Project Management, Administration PMU	3,420.00	180,000	0	0	180,000
Bidding Procedures	66.50	3,500	0	0	3,500
Construction Supervison	855.00	45,000	0	0	45,000
Preparatory Works	2,660.00	140,000	0	0	140,000
Main & Auxiliary Dams, incl. Found. Treatment	42,750.00	2,250,00	2,250,000	0	
Spillway	11,400.00	600,000	0	600,000	0
Irrigation Outlets	2,375.00	120,000	120,000	0	0
Primary Canal 1 + Appurtenances	2,280.00	120,000	0	120,000	0
Primary Canal 2 + Appurtenances	4,750.00	250,000	0	250,000	0
Secondary Canals to Primary 1	1,805.00	95,000	0	0	95,000
Secondary Canals to Primary 2	5,035.00	265,000	0	265,000	0
O&M Equipment and Capacity Building	2,090.00	110,000	0	0	110,000
Contingency	7,600.00	400,000	0	0	400,000
Result 4 (Tertiary System)	**3,800.00**	**200,000**	**0**	**0**	**200,000**
Construction Cost of Tertiary System	3,800.00	200,000	0	0	200,000
Project Preparation and Monitoring	**4,655.01**	**245,000**	**230,000**	**15,000**	**0**
Formulation Mission + Costs	659.36	34,703	34,703	0	0
International Project Coordinator	3,420.00	180,000	180,000	0	0
Vehicle & operation costs	290. 64	15,297	15,297	0	0
External Audit	285.00	15,000		15,000	0

Exchange Rate is 19.000 VND/Euro

8.3.3 Sustainability of Project Operation

The operation and maintenance of the project is funded by the income of the water fees and from contributions by the provincial budget. The only direct source of income generated is from the water fees. The maximum revenue is 1 mio. VND per ha of irrigated land, i.e. 1.05 bio. VND or 55'000 Euro.

This revenue level should allow to operate and maintain the scheme under normal circumstances. In case of decreased revenue due to social issues, the provincial authorities would have to make provisions to meet any shortfall.

Anyway, extra costs due to floodings (the risk of which should be lowered due to the construction of the dam) could reveal much more costly than contributions related to social issues; and these costs could not be spread over a long period of time.

8.3.4 Sources of Funds

The amount of the Belgian ODA contribution is fixed at 2.6 mio Euro. At the present status of the cost estimate, this is a ratio of about 45% of the total project cost.

From the Vietnamese Counter Value Fund an amount of approx. 1,250,000. Euro has been allocated for the Lanh Ra Irrigation Project at the time of the initial agreement, representing a ratio of approximately 22%of the total project cost.

The remaining 33% or 1,916,500 Euro will have to be made available by the Vietnamese Government, out of the Ninh Thuan provincial budget.

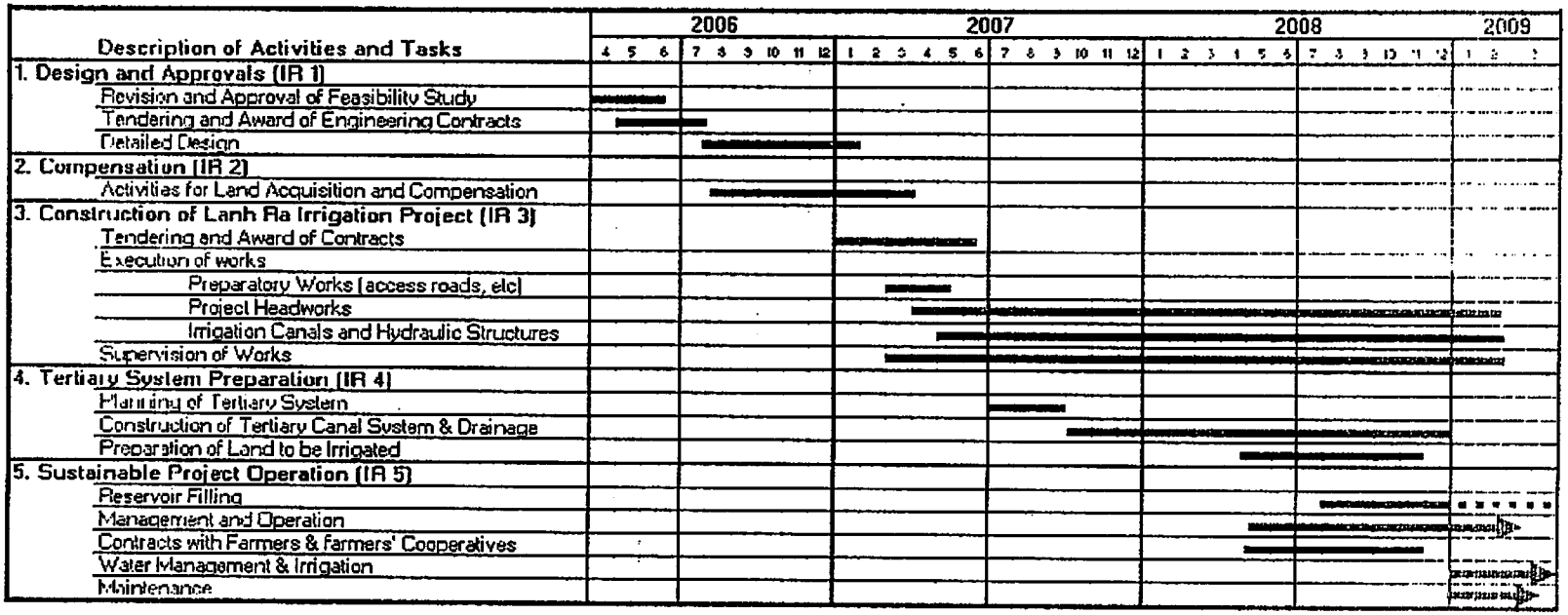
The allocation of sources of funding are proposed in Table 8-1. The distribution has been made in view of logical procedure as well as for simplicity in handling of the funds. In case the funds provided by the Belgian Governement and the CVF are not fully used by the proposed cost components, the remaining portions may also be used for other cost components, subject to the agreement of the PSC.

The Belgian funds would mainly be used to cover the formulation mission, their own direct costs in pursuing the supervision of implementation and construction of the project works and part of the construction of the project headworks.

The Government Contribution would cover all remaining costs, not covered by the Belgian contribution or the CVF. This would be mainly the compensation of land use rights, including the associated management and administration, the preparatory works for the construction and the irrigation works, including main and secondary canals as well as tertiary / on-farm canals.

Based on the cost estimate, the proposed distribution of funds and the tentative time schedule, a tentative disbursement schedule has been prepared, as shown in the following Figure 8-1.

Figure 8-1 : Tentative Disbursement Schedule – Lanh Ra Irrigation Project



TENTATIVE DISBURSEMENT SCHEDULE		2006		2007		2008		2009
(All Values in EURO)								
Total Funds		Sem 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2	Sem 1
Intermediate Result 1	231,500	30,000	150,000	51,500	0	0	0	0
Intermediate Result 2	511,500	0	0	511,500	0	0	0	0
Intermediate Result 3	4,570,500	0	0	700,000	950,000	1,250,000	1,450,000	220,500
Intermediate Result 4	200,000	0	0	0	0	0	160,000	40,000
International Project Coordinator	180,000	22,500	37,500	30,000	30,000	22,500	22,500	15,000
Formulation Cost	34,703	34,703	0	0	0	0	0	
Transportation Cost & Internal Travel	15,297	2,000	3,000	2,000	2,000	2,000	2,000	2,297
Audit	15,000	0	0	0	0	0	15,000	
TOTAL	5,766,500	89,203	190,500	1,295,000	982,000	1,274,500	1,649,500	285,297
Distribution of Funds								
GoB	2,600,000	57,785	37,500	515,000	680,000	630,000	433,000	336,715
CVF	1,250,000	0	0	0	325,000	400,000	380,000	145,000
GoV	1,916,500	40,000	400,000	485,000	325,000	360,000	325,000	151,285
	5,766,500	97,785	437,500	1,000,000	1,330,000	1,390,000	938,000	633,215

The disbursement schedule shown in Figure 8-1 is based on when the costs should be incurred. Depending on invoicing and payment conditions for procured and contracted items, it is possible that some of the costs may overlap in the subsequent period.

All costs estimates and implementation schedules have to be refined and revised during the detailed design. Accordingly also the disbursement schedule will be affected and will need modifications in the further development of the project.

Annex 1. Job Description for International Project Coordinator.

Responsibilities

The responsibilities include

- Provide support to the Project Director regarding all his responsibilities.

Activities

In close cooperation with counterparts and national consultants, support the Project Director regarding the following activities

- Develop a detailed framework and implementation plan for the Project
- Establish good working relations with Vietnamese counterpart staff and key stakeholders.
- Ensure close coordination between all key players and Project staff – conduct coordination meetings where appropriate
- Carry out team building / communication activities as is necessary
- Supervise the work of sub-consultants undertaking work for the Project (e.g. for the detailed design)
- In conjunction with the Design and Contracts Engineer, work with key stakeholdes such as PPC, DPC and BTC to ensure that approvals and appointment/award of contracts are obtained in time for the meeting of construction milestones
- Prepare required reports – see below – and prepare and implement PSC meetings as required
- Participate in high profile CD activities as required to facilitate recognition of the Project and increase awareness and actions of the communities and individuals in water related issues.
- Prepare required reports (see below)

Input

The total input will be spread over 36 man-months on a part-time basis (1/3).

Reporting

Support the Project Director in his reporting duties, which includes but is not necessarily limited to:

- Review of the inception report
- Work programs and review of project progress and quality
- Preparation of the six monthly Project Progress report
- Collation and preparation of the Project Completion Report

Qualifications

Agricultural Engineer with minimum 10 years experience in irrigation infrastructure management. Fluent in English.

Activities under Result 4		**200'000**	
4.1 Construction of tertiary irrigation distribution system	Contractors		
4.2 Construction of on-farm canals and preparation of land for irrigation	Farmers, Farmers Cooperatives		According to standard practice, approximately 40 % of the tertiary / on-farm system shall be contributed by the Farmers benefiting from the project by manual labour.
Activities under Result 5		Not covered by Project Funds	
5.1 Taking over of Completed irrigation scheme by the Organisations responsible for Operation and Management of the Irrigation System	DARD, IMC IMS		IMC and IMS recruit and train their staff in time for the taking over of the new project.
5.2 Planning of cropping patterns and information / instructions to farmers	DARD IMC IMS		Awareness raising of the farmers in the command area started well ahead of first irrigation operations.
5.3 Establishing contracts with farmers and farmers cooperatives on the supply of irrigation water	IMC IMS		Farmers are willing to enter into contracts.
5.4 Water Management and irrigation releases	IMC IMS		
5.5 Performing agricultural production	Farmers, Farmers cooperatives		Sufficient assistance by IMS, DARD to apply optimum production procedures. Marketing of produced crops at interesting prices is guaranteed.
5.6 Maintenance of Irrigation Project	IMC IMS		

7 IMPLEMENTATION PROCEDURES

7.1 General

The project realization can be subdivided in two main phases namely the design phase and the construction phase.

For both phases there exist strict regulations and procedures in Vietnam, which are well known to Provincial Authorities, Design Consultants and Contractors. The Project Owner, the Peoples Committee of Ninh Thuan Province has much experience in successfully implementing similar irrigation projects. A PMU is in place for the project coordination and management of Lanh Ra Irrigation Project.

7.2 Implementing Authorities

The Government of Vietnam designates the Provincial Peoples Committee (PPC) of Ninh Thuan Province as the Owner of the Project. The vice-chairman of the PPC of Ninh Thuan Province shall be the chairman of the Project Steering Committee. He/she will verify whether activities are properly implemented, mobilise & guide the implementing team and coordinate with government institutions and offices on all legal aspects affecting the project.

The PPC of Ninh Thuan Province appoints the Director of the permanent Agriculture Infrastructure Project Management Unit (PMU) as the Project Director responsible for the operational management of the project. The PMU is the executing agency of the project and has 20 permanent staff. It is subdivided in two divisions namely a **general division**, including accounting, administration & infrastructure and a **project management division** with 8 Engineers in the technical subdivision and 2 specialists in the Land Acquisition and Compensation Subdivision. Both the management and leading staff of PMU have all university degrees, mostly in irrigation engineering.

The Belgian Technical Cooperation (BTC) is charged with the timely mobilisation of the Belgian contribution and inputs to the project. BTC, represented in Vietnam by its Resident Representative in Hanoi, will facilitate and support the Agriculture Infrastructure Project Management Unit (PMU) in its role as executing agency. The BTC Resident Representative will be assisted by the part-time International Project Coordinator. He/She will provide the necessary oversight on behalf of BTC through regular technical and financial audits.

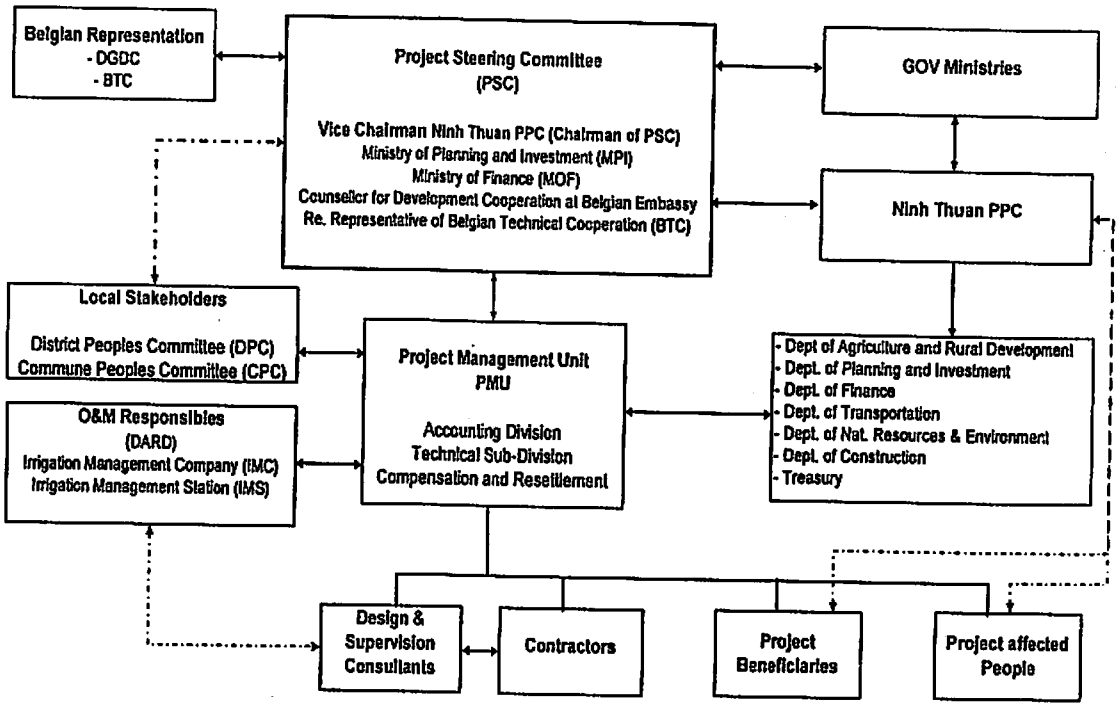
7.3 Project Management Structure

The Project Steering Committee (PSC) represents the highest management level of the project. It is responsible to provide the necessary strategic guidance to all project implementers and ensures that project objectives are timely attained. The PSC is the organisational, technical and financial auditor of the project. The PSC has the additional important function of maintaining linkages between the various government departments at different levels that have inputs into the project.

The second management level consists of the Project Management Unit (PMU). The PMU facilitates and manages the daily implementation of the project, coordinates the activities of all parties involved to guarantee an efficient project implementation. It is responsible for assuring the good governance of all project resources (human and material). It provides conceptual inputs with regard to project design and strategy and makes policy recommendations. It prepares Tenders, prepares tender evaluations and and drafts & manages contracts, all subject to the approval of the PSC.

The organisation structure is shown below in Figure 7-1. This diagram also includes the interactions between various organisational entities.

Figure 7-1: Project Implementation Organisation Structure



7.3.1 Project Steering Committee (PSC)

The PSC is mandated to ensure the implementation of the Specific Agreement on a strategic level. It is not involved in the day-to-day management of the project

The PSC will assume the following responsibilities and is mandated to:

- approve operational and financial management procedures for the project, including signing powers, flow of funds, funds disbursement etc.
- analyse the management of the resources (human, financial or material) and decide on modifications to these, proposed by the PMU, provided that such modifications do not alter the project's general and specific objectives and/or its overall budget;
- appraise the state of progress of the project and the achievement of its general and specific objectives;
- approve the budgeted work plans proposed by the PMU and decide on the (re)scheduling of the project activities when necessary;
- order and appraise financial audits of the project;

- approve modifications of project duration, intermediate results, activities and budget realignment provided that such modifications do not alter the project's general and specific objectives and/or its overall budget;
- seek approval of both Governments for project duration, results and activities, that do alter the projects general and specific objectives and/or its overall budget;
- provide general guidance to the project implementation;
- decide on the fielding and ToR of review missions and external financial audits, as well as appraise their recommendations.

Within the limitations imposed by the Specific Agreement of the project, the PSC shall lay down its own internal rules and take its decisions by consensus.

In view of its strategic decision making mandate, the PSC membership will be limited to the following members:

For Vietnam:

- The Vice Chairman of the People's Committee of Ninh Thuan Province (PPC);
- The Ministry of Finance (MOF)
- The Ministry of Planning and Investment (MPI);

For Belgium:

- The Counsellor for Development Cooperation at the Belgian Embassy or his delegate;
- The Resident Representative of the Belgian Technical Cooperation (BTC) or his delegate;

The PMU will provide the secretariat of the PSC. The Project Director will propose the agenda of the PSC and provide reports and budgeted work plans for approval. The financial report will provide a detailed overview of the overall state of utilisation of the project funds regardless of their source.

The PSC will have regular meetings approximately every 6 months or at important milestones in the implementation when important decision need to be taken (allocation of big tenders, approval of design etc). The first meeting shall be held immediately after approval of the FS. As required, the PSC may change the interval of meetings or schedule additional meetings, as the need arises.

7.3.2 The Project Management Unit (PMU)

The Agricultural Infrastructure Project Management Unit (PMU) is a permanently existing organisation which has been and is successfully managing the construction of various irrigation projects comparable to Lanh Ra project. Given its established track record it is clear that the PMU has the necessary capabilities and experience to perform the Lanh Ra project and does not require additional strengthening. The PMU has 20 permanent staff and is managed by a Director who is assisted by a Deputy Director. The management and leading staff of the PMU all have university degrees, mostly in irrigation engineering.

The PMU assures the coordination and day-to-day management of the whole project during the implementation phase and is responsible for:

- Completion and approval of the FS;
- Preparation and approval of Detailed Design;
- Overall planning of the project activities;
- Organising, coordinating and supervising the implementation of project activities in accordance with the approved work plans;
- Technical guidance on project methodology and strategy;
- Preparation of Tender Documents [4], performance of Bidding procedures and drafting of Contracts for procurement of goods and services;
- Overview supervision by Consultant of the Contractors executing the project works and supplying goods and services;
- Provide financial management and compilation of quarterly reports;
- Timely completion of progress reports and budgeted work plans for the following period for consideration by the PSC;
- The secretariat for the PSC (dissemination of reports, proposal of agenda, drafting of PSC meeting minutes etc.);
- Coordination and networking with other national and, if appropriate, international partners;
- Commissioning of completed parts and total project and hand over to the operating and maintenance entity at the end of the implementation;
- Compilation of the project final report at the end of the project.

7.3.3 The Belgian Government Agencies

From the Belgian side the Resident Representative of the Belgian Technical Cooperation (BTC) will review and secure the appropriate use of the Belgian Fund in accordance with the objectives set forth in the Agreements. He will be back-stopped by a part-time (1/3) International Project Coordinator who will provide the necessary independent oversight through regular technical and financial audits. The BTC Resident Representative will receive six-monthly reports from the PMU and conduct supervision missions to the project area.

7.4 Financial Mechanism.

Regardless of the source of funding, all financial resources of the project will be managed transparently and reported on in accordance with the principles of joint partnership.

The disbursement and utilization of project funds is approved by the PSC based on six-monthly budgeted Action Plans submitted by the PMU. Every six months a financial report on the utilization of the contributions, jointly signed by the Project Director & International Project Coordinator, will be submitted for acceptance by the PSC. All contracts, original invoices and payments, duly signed by the Project Direct & the International Project Coordinator, must be kept available for verification at the PMU office.

[4] Effective preparation of Tender Docs. and Bidding Procedures usually performed by the Design Consultants.

Regardless of the source of funding but with the exception of the remuneration of the International Project Coordinator and the costs for the formulation, the PMU will tender for the procurement of all goods and services in accordance with the Vietnamese Regulations on Public Procurement. To facilitate the selection of the best qualified tenderer the PMU will, for each tender, produce a comprehensive analysis of all offers received. Up to 12.000 Euro the Project Director & International Project Coordinator will be responsible for awarding the tender. Their choice shall be properly motivated based on objective criteria contained in a tender analysis. Above 12.000 euros, the tender will be approved by relevant members of the Project Steering Committee in line with the current decentralisation regulations on public procurement of the Government of Vietnam.

7.4.1 The Belgian Contribution

A separate project account shall be opened at a commercial bank in Phan Rang, the provincial capital of Ninh Thuan. This account will be replenished by the BTC, on request of both the Project Director and the BTC Resident Representative, in quarterly installments based on the provisions made in the six-month budgeted Action Plans submitted by the PMU and approved by the Project Steering Committee. This account shall have two signatories namely the Project Director and the International Project Coordinator. For payments not exceeding 12.000 euros, payments will be made against the joint signatures of the Project Director & International Project Coordinator. For payments above 12.000 euros the Project Director will mandatoy seek a written approval from the BTC Resident Representative prior to making such payments.

The PMU will, for monitoring purposes, provide monthly financial reports on the disbursement of the Belgian contribution to the BTC Resident Representative according to a mutually agreed format.

7.4.2 The Vietnamese Government Contribution.

The Vietnamese Government will exempt all goods, equipment and services purchased for the project from all custom duties and taxation.

7.4.3 The Counter Value Fund

The contribution from the Counter Value Fund (CVF) will timely be made available by the Vietnamese Ministry of Finance. Comprehensive six monthly reports on the utilization and planned utilization of the CVF will be presented by the PMU for approval to the Project Steering Committee.

The Ministry of Finance will certify the total amount spent in accordance with Vietnamese regulations, before the project ends.

7.4.4 The Provincial People's Committee Contribution

The contribution from the PPC will be made available in a timely manner by the Province People's Committee. The PPC will bear all the cost not covered either by the Belgian contribution or the Vietnamese Counter Value Fund.

The PPC in cooperation with the PMU will certify the total amount spent in accordance with Vietnamese regulations, before the project ends. A comprehensive report on the

utilisation of the counterpart funds, certified by the treasury of the PPC, will be included in the Final Report.

7.5 Reporting, Monitoring and Evaluation

7.5.1 Monitoring and Evaluation

Monitoring and evaluation will be made at two levels: the project delivery level and the project impact level. Project delivery monitoring is relatively simple and straightforward: it shows the level of delivery against the projected delivery plans (results, activities). Available indicators and means of verification have been introduced in the logical framework.

The monitoring of the impact of the Project is more complicated as it aims at comparing pre-project situation(s) with the post intervention situation(s), while trying to "neutralise" the impact of other external influences on the target population. Given that the implementation period of the project will barely cover the operational phase of the irrigation scheme a meaningfull impact assessment (reduction on poverty, income stability due to reduced risks, flood reduction etc.) will hardly be possible. The time horizon needed for such impact assessment would require many years of follow-up.

The BTC will recruit a part-time International Project Coordinator (1/3) to verify that the Belgian funds are utilized in a manner ensuring that the Project's Goal and Purpose will be achieved. He/She will visit the Project on a regular basis to review the progress. The budget for the International Project Coordinator will be managed directly and solely by BTC in line with standard BTC's human resources policy.

The PSC will commission an annual External Audit to be carried out by an accredited accounting firm. The Belgian Ministry of Finance and BTC can at any time audit the Project accounts, as per the requirements of the Belgian Government.

7.5.2 Reporting

The PMU will ensure that the reports, plans and documents indicated below are produced in accordance with applicable requirements and formats. The reports, plans and documents will be submitted to the PSC for approval. All reports made by the PMU will be issued in Vietnamese and English.

Progress Reports: the progress in each area of the project will be documented. The report will be prepared by the PMU every six months and presented for approval at the PSC meetings. The reports must contain at least the following chapters:

- Progress review of the achievement of the outputs and activities of each area of the project monitored against the Technical and Financial File and the Action Plans approved at the previous PSC meeting. Constraints and delays will be analyzed and proposals given for solving the problems identified
- Presentation of financial reports on the use of Belgian, Vietnamese and Counter-Value Fund contributions during the reporting period.
- Presentation of Action Plan for the next reporting period and financial allocations accordingly.
- Any important issue the PSC needs to resolve.

7.6 Ending the Project

To draft a Final Report is the responsibility of the PMU. The Final Report shall be submitted to the PSC members at the final PSC meeting for approval. Apart of an overview of the infrastructure constructed it will also include a survey of the status and opinion of a representative sample of PMU, IMC and IMS staff of the impact of the Project.

The PMU is responsible for the final closure of accounts within three months of the project completion date. At the end of the project all equipment will be transferred to the Vietnamese Authorities. The last PSC shall decide on the destination of all project equipment transferred.

8 RESOURCES

8.1 Human Resources

The human resources which shall be employed in the framework of the Lanh Ra irrigation project will belong to either of the following organisations:

- Project management and administration during implementation phase: the staff of the existing PMU have the experience and capabilities to handle the Lanh Ra Irrigation Project implementation.
- Consultants: local consultants, experienced and qualified, for the type of works are available in Vietnam
- Contractors and Suppliers: it is foreseen, that local contractors and suppliers are capable of performing the required works and furnishing goods necessary for the project.
- Project operation and maintenance: Staff of Irrigation Management Company (IMC) and Irrigation Management Station (IMS), the irrigation management and operating divisions of the Department of Agricultural and Rural Development (DARD), are foreseen to take over the Lanh Ra Irrigation Project after completion and to manage and operate it.
- The International Project Coordinator shall be an international expert based in Vietnam with experience in ODA projects in Vietnam within the field of irrigation.

8.2 Material Resources and Services

All materials and services required for the implementation of the project will be procured in accordance with Vietnamese Law on Public Procurement.

The largest quantities of materials required will be the earth materials for the embankment of the main and auxiliary dams of the project headworks, including filter and riprap. The detailed quantities and qualities for these materials will have to be established during detailed design and to be specified in the Tender Documents. It is expected, that such materials are available in the reservoir area or nearby, as the investigations made for the FS have demonstrated.

8.3 Financial Resources

8.3.1 Project Cost Estimate

A new cost estimate has been prepared as per October 2005, which resulted in substantially higher budget requirements estimated at approximately 5.766 mio. Euro (without tax), an increase of 1.28 mio. Euro or 28% higher than the original estimate (refer to Table 1-1 and Table 8-1 below).

The increase in cost is due on one side to the escalation of construction prices since the first cost estimate and on the other side to cost components, which have not been included in the original cost estimate, but which are deemed an integral part of the project costs, in particular (rounded cost values):

- Escalation of construction prices 475,000 Euro
- Costs of compensation for existing land uses 520,000 Euro
- Costs for construction of tertiary canal system 208'000 Euro

8.3.2 Economic Viability

Based on the revised cost estimates and on the proposed cropping pattern, the economic calculations result in the following indicators:

• Economic internal rate of return	IRR	=	12.7 %
• Benefit / Cost ratio	BC	=	1.03
• Net present worth	NPW	=	0.43 mio. Euro

The analysis is based on the following parameters

Investment cost	C	=	5.68 mio. Euro
Annual operation and maintenance Cost	O&M	=	67'000 Euro/a
Net annual value of production	NPV	=	1.14 mio. Euro/a
Discount rate (opportunity cost of capital)	i	=	12.0 %
Economic life period	n	=	40 years

The project can be considered economically viable.

Table 8-1: Project Cost Estimate (excl. VAT)

NINH THUAN, LANH RA IRRIGATION PROJECT
COST ESTIMATE (Based on revised FS, 10.Okt.2005)

	Total Project Cost		Total per Source of Funding (Euro)		
	VND ('000'000)	Euro	GOB	CVF	GOV
Total Project Cost	109,563.50	5,766,500	2,600,000	1,250,000	1,916,500
		100%	45.09%	21.68%	33.24%
Result 1 (Design Stage)	4,398.50	231,500	0	0	231,500
Detailed Design	2,090.00	110,000	0	0	110,000
Field Investigations	1,235.00	65,000	0	0	65,000
Reviews and Experts	380.00	20,000	0	0	20,000
Project Management, Administration	237.50	12,500	0	0	12,500
Contingency	456.00	24,000	0	0	24,000
Result 2 (Land use rights - Compensation)	9,718.50	511,500	0	0	511,500
Management, Administration, Procedures	313.50	16,500	0	0	16,500
Compensations	8,550.00	450,000	0	0	450,000
Contingency	855.00	45,000	0	0	45,000
Result 3 (Construction)	86,991.50	4,578,500	2,370,000	1,235,000	973,500
Project Management, Administration PMU	3,420.00	180,000	0	0	180,000
Bidding Procedures	66.50	3,500	0	0	3,500
Construction Supervison	855.00	45,000	0	0	45,000
Preparatory Works	2,660.00	140,000	0	0	140,000
Main & Auxiliary Dams, incl. Found. Treatment	42,750.00	2,250,00	2,250,000	0	
Spillway	11,400.00	600,000	0	600,000	0
Irrigation Outlets	2,375.00	120,000	120,000	0	0
Primary Canal 1 + Appurtenances	2,280.00	120,000	0	120,000	0
Primary Canal 2 + Appurtenances	4,750.00	250,000	0	250,000	0
Secondary Canals to Primary 1	1,805.00	95,000	0	0	95,000
Secondary Canals to Primary 2	5,035.00	265,000	0	265,000	0
O&M Equipment and Capacity Building	2,090.00	110,000	0	0	110,000
Contingency	7,600.00	400,000	0	0	400,000
Result 4 (Tertiary System)	3,800.00	200,000	0	0	200,000
Construction Cost of Tertiary System	3,800.00	200,000	0	0	200,000
Project Preparation and Monitoring	4,655.01	245,000	230,000	15,000	0
Formulation Mission + Costs	659.36	34,703	34,703	0	0
International Project Coordinator	3,420.00	180,000	180,000	0	0
Vehicle & operation costs	290. 64	15,297	15,297	0	0
External Audit	285.00	15,000		15,000	0

Exchange Rate is 19.000 VND/Euro

8.3.3 Sustainability of Project Operation

The operation and maintenance of the project is funded by the income of the water fees and from contributions by the provincial budget. The only direct source of income generated is from the water fees. The maximum revenue is 1 mio. VND per ha of irrigated land, i.e. 1.05 bio. VND or 55'000 Euro.

This revenue level should allow to operate and maintain the scheme under normal circumstances. In case of decreased revenue due to social issues, the provincial authorities would have to make provisions to meet any shortfall.

Anyway, extra costs due to floodings (the risk of which should be lowered due to the construction of the dam) could reveal much more costly than contributions related to social issues; and these costs could not be spread over a long period of time.

8.3.4 Sources of Funds

The amount of the Belgian ODA contribution is fixed at 2.6 mio Euro. At the present status of the cost estimate, this is a ratio of about 45% of the total project cost.

From the Vietnamese Counter Value Fund an amount of approx. 1,250,000. Euro has been allocated for the Lanh Ra Irrigation Project at the time of the initial agreement, representing a ratio of approximately 22%of the total project cost.

The remaining 33% or 1,916,500 Euro will have to be made available by the Vietnamese Government, out of the Ninh Thuan provincial budget.

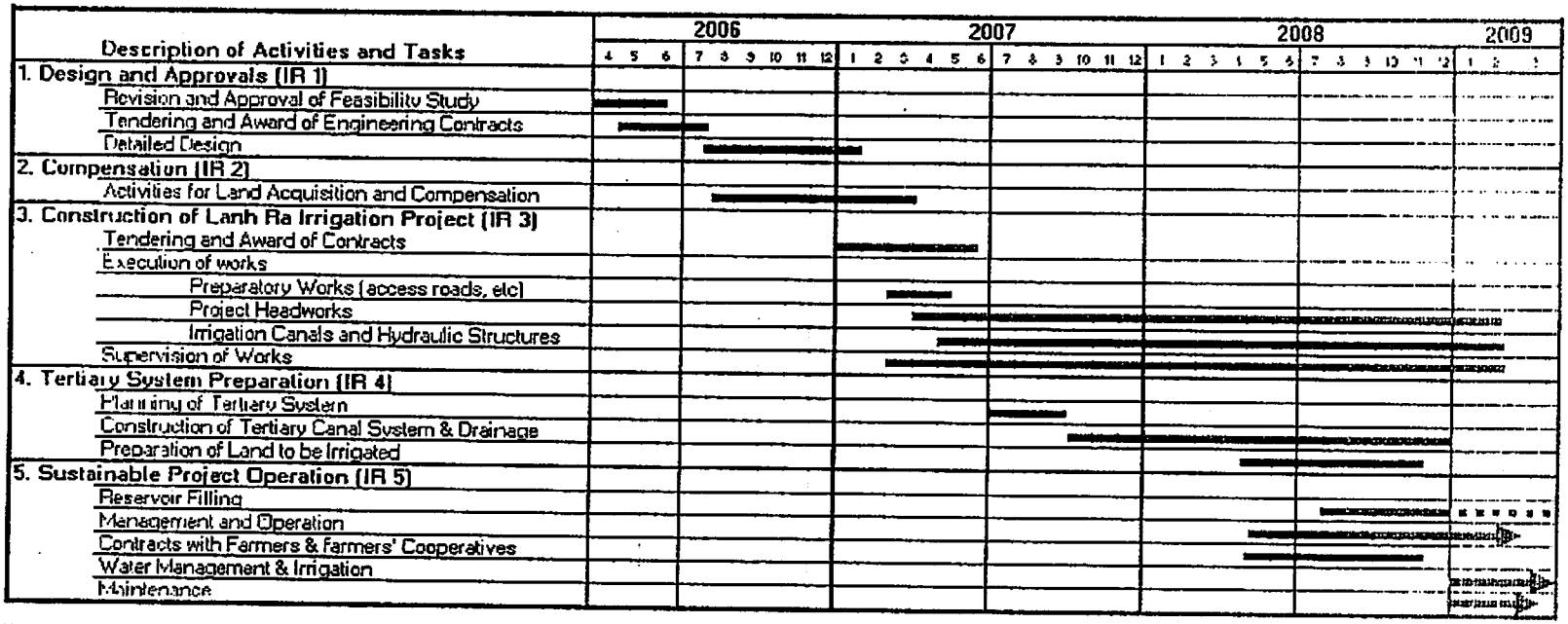
The allocation of sources of funding are proposed in Table 8-1. The distribution has been made in view of logical procedure as well as for simplicity in handling of the funds. In case the funds provided by the Belgian Governement and the CVF are not fully used by the proposed cost components, the remaining portions may also be used for other cost components, subject to the agreement of the PSC.

The Belgian funds would mainly be used to cover the formulation mission, their own direct costs in pursuing the supervision of implementation and construction of the project works and part of the construction of the project headworks.

The Government Contribution would cover all remaining costs, not covered by the Belgian contribution or the CVF. This would be mainly the compensation of land use rights, including the associated management and administration, the preparatory works for the construction and the irrigation works, including main and secondary canals as well as tertiary / on-farm canals.

Based on the cost estimate, the proposed distribution of funds and the tentative time schedule, a tentative disbursement schedule has been prepared, as shown in the following Figure 8-1.

Figure 8-1 : Tentative Disbursement Schedule – Lanh Ra Irrigation Project



TENTATIVE DISBURSEMENT SCHEDULE (All Values in EURO)		2006		2007		2008		2009
Total Funds		Sem 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2	Sem 1
Intermediate Result 1	231,500	30,000	150,000	51,500	0	0	0	0
Intermediate Result 2	511,500	0	0	511,500	0	0	0	0
Intermediate Result 3	4,570,500	0	0	700,000	950,000	1,250,000	1,450,000	220,500
Intermediate Result 4	200,000	0	0	0	0	0	160,000	40,000
International Project Coordinator	180,000	22,500	37,500	30,000	30,000	22,500	22,500	15,000
Formulation Cost	34,703	34,703	0	0	0	0	0	
Transportation Cost & Internal Travel	15,297	2,000	3,000	2,000	2,000	2,000	2,000	2,297
Audit	15,000	0	0	0	0	0	15,000	
TOTAL	5,766,500	89,203	190,500	1,295,000	982,000	1,274,500	1,649,500	285,297
Distribution of Funds								
GoB	2,600,000	57,785	37,500	515,000	680,000	630,000	433,000	196,715
CVF	1,250,000	0	0	0	325,000	400,000	310,000	215,000
GoV	1,916,500	40,000	400,000	485,000	325,000	360,000	906,500	91,582
	5,766,500	97,785	437,500	1,000,000	1,330,000	1,390,000	938,000	173,215

The disbursement schedule shown in Figure 8-1 is based on when the costs should be incurred. Depending on invoicing and payment conditions for procured and contracted items. it is possible that some of the costs may overlap in the subsequent period.

All costs estimates and implementation schedules have to be refined and revised during the detailed design. Accordingly also the disbursement schedule will be affected and will need modifications in the further development of the project.

Annex 1. Job Description for International Project Coordinator.

Responsibilities

The responsibilities include

- Provide support to the Project Director regarding all his responsibilities.

Activities

In close cooperation with counterparts and national consultants, support the Project Director regarding the following activities

- Develop a detailed framework and implementation plan for the Project
- Establish good working relations with Vietnamese counterpart staff and key stakeholders.
- Ensure close coordination between all key players and Project staff – conduct coordination meetings where appropriate
- Carry out team building / communication activities as is necessary
- Supervise the work of sub-consultants undertaking work for the Project (e.g. for the detailed design)
- In conjunction with the Design and Contracts Engineer, work with key stakeholdes such as PPC, DPC and BTC to ensure that approvals and appointment/award of contracts are obtained in time for the meeting of construction milestones
- Prepare required reports – see below – and prepare and implement PSC meetings as required
- Participate in high profile CD activities as required to facilitate recognition of the Project and increase awareness and actions of the communities and individuals in water related issues.
- Prepare required reports (see below)

Input

The total input will be spread over 36 man-months on a part-time basis (1/3).

Reporting

Support the Project Director in his reporting duties, which includes but is not necessarily limited to:

- Review of the inception report
- Work programs and review of project progress and quality
- Preparation of the six monthly Project Progress report
- Collation and preparation of the Project Completion Report

Qualifications

Agricultural Engineer with minimum 10 years experience in irrigation infrastructure management. Fluent in English.

Activities under Result 4		**200'000**	
4.1 Construction of tertiary irrigation distribution system	Contractors		
4.2 Construction of on-farm canals and preparation of land for irrigation	Farmers, Farmers Cooperatives		According to standard practice, approximately 40 % of the tertiary / on-farm system shall be contributed by the Farmers benefiting from the project by manual labour.
Activities under Result 5		Not covered by Project Funds	
5.1 Taking over of Completed irrigation scheme by the Organisations responsible for Operation and Management of the Irrigation System	DARD, IMC IMS		IMC and IMS recruit and train their staff in time for the taking over of the new project.
5.2 Planning of cropping patterns and information / instructions to farmers	DARD IMC IMS		Awareness raising of the farmers in the command area started well ahead of first irrigation operations.
5.3 Establishing contracts with farmers and farmers cooperatives on the supply of irrigation water	IMC IMS		Farmers are willing to enter into contracts.
5.4 Water Management and irrigation releases	IMC IMS		
5.5 Performing agricultural production	Farmers, Farmers cooperatives		Sufficient assistance by IMS, DARD to apply optimum production procedures. Marketing of produced crops at interesting prices is guaranteed.
5.6 Maintenance of Irrigation Project	IMC IMS		

7 IMPLEMENTATION PROCEDURES

7.1 General

The project realization can be subdivided in two main phases namely the design phase and the construction phase.

For both phases there exist strict regulations and procedures in Vietnam, which are well known to Provincial Authorities, Design Consultants and Contractors. The Project Owner, the Peoples Committee of Ninh Thuan Province has much experience in successfully implementing similar irrigation projects. A PMU is in place for the project coordination and management of Lanh Ra Irrigation Project.

7.2 Implementing Authorities

The Government of Vietnam designates the Provincial Peoples Committee (PPC) of Ninh Thuan Province as the Owner of the Project. The vice-chairman of the PPC of Ninh Thuan Province shall be the chairman of the Project Steering Committee. He/she will verify whether activities are properly implemented, mobilise & guide the implementing team and coordinate with government institutions and offices on all legal aspects affecting the project.

The PPC of Ninh Thuan Province appoints the Director of the permanent Agriculture Infrastructure Project Management Unit (PMU) as the Project Director responsible for the operational management of the project. The PMU is the executing agency of the project and has 20 permanent staff. It is subdivided in two divisions namely a **general division**, including accounting, administration & infrastructure and a **project management division** with 8 Engineers in the technical subdivision and 2 specialists in the Land Acquisition and Compensation Subdivision. Both the management and leading staff of PMU have all university degrees, mostly in irrigation engineering.

The Belgian Technical Cooperation (BTC) is charged with the timely mobilisation of the Belgian contribution and inputs to the project. BTC, represented in Vietnam by its Resident Representative in Hanoi, will facilitate and support the Agriculture Infrastructure Project Management Unit (PMU) in its role as executing agency. The BTC Resident Representative will be assisted by the part-time International Project Coordinator. He/She will provide the necessary oversight on behalf of BTC through regular technical and financial audits.

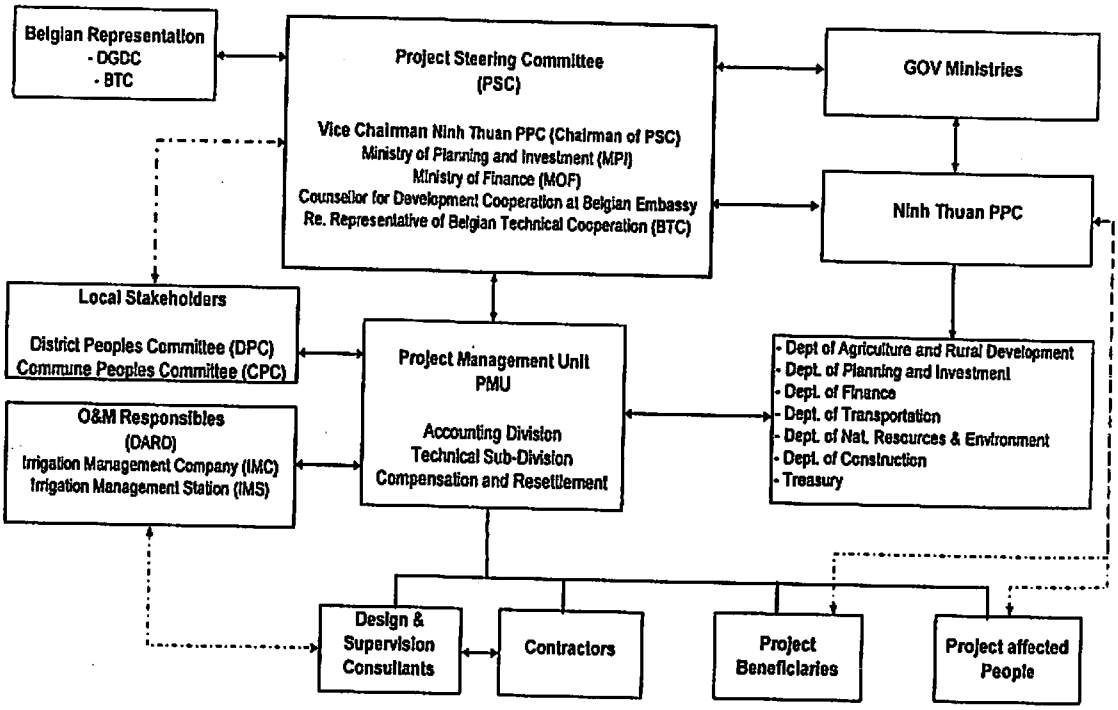
7.3 Project Management Structure

The Project Steering Committee (PSC) represents the highest management level of the project. It is responsible to provide the necessary strategic guidance to all project implementers and ensures that project objectives are timely attained. The PSC is the organisational, technical and financial auditor of the project. The PSC has the additional important function of maintaining linkages between the various government departments at different levels that have inputs into the project.

The second management level consists of the Project Management Unit (PMU). The PMU facilitates and manages the daily implementation of the project, coordinates the activities of all parties involved to guarantee an efficient project implementation. It is responsible for assuring the good governance of all project resources (human and material). It provides conceptual inputs with regard to project design and strategy and makes policy recommendations. It prepares Tenders, prepares tender evaluations and and drafts & manages contracts, all subject to the approval of the PSC.

The organisation structure is shown below in Figure 7-1. This diagram also includes the interactions between various organisational entities.

Figure 7-1: Project Implementation Organisation Structure



7.3.1 Project Steering Committee (PSC)

The PSC is mandated to ensure the implementation of the Specific Agreement on a strategic level. It is not involved in the day-to-day management of the project

The PSC will assume the following responsibilities and is mandated to:

- approve operational and financial management procedures for the project, including signing powers, flow of funds, funds disbursement etc.
- analyse the management of the resources (human, financial or material) and decide on modifications to these, proposed by the PMU, provided that such modifications do not alter the project's general and specific objectives and/or its overall budget;
- appraise the state of progress of the project and the achievement of its general and specific objectives;
- approve the budgeted work plans proposed by the PMU and decide on the (re)scheduling of the project activities when necessary;
- order and appraise financial audits of the project;

- approve modifications of project duration, intermediate results, activities and budget realignment provided that such modifications do not alter the project's general and specific objectives and/or its overall budget;
- seek approval of both Governments for project duration, results and activities, that do alter the projects general and specific objectives and/or its overall budget;
- provide general guidance to the project implementation;
- decide on the fielding and ToR of review missions and external financial audits, as well as appraise their recommendations.

Within the limitations imposed by the Specific Agreement of the project, the PSC shall lay down its own internal rules and take its decisions by consensus.

In view of its strategic decision making mandate, the PSC membership will be limited to the following members:

For Vietnam:

- The Vice Chairman of the People's Committee of Ninh Thuan Province (PPC);
- The Ministry of Finance (MOF)
- The Ministry of Planning and Investment (MPI);

For Belgium:

- The Counsellor for Development Cooperation at the Belgian Embassy or his delegate;
- The Resident Representative of the Belgian Technical Cooperation (BTC) or his delegate;

The PMU will provide the secretariat of the PSC. The Project Director will propose the agenda of the PSC and provide reports and budgeted work plans for approval. The financial report will provide a detailed overview of the overall state of utilisation of the project funds regardless of their source.

The PSC will have regular meetings approximately every 6 months or at important milestones in the implementation when important decision need to be taken (allocation of big tenders, approval of design etc). The first meeting shall be held immediately after approval of the FS. As required, the PSC may change the interval of meetings or schedule additional meetings, as the need arises.

7.3.2 The Project Management Unit (PMU)

The Agricultural Infrastructure Project Management Unit (PMU) is a permanently existing organisation which has been and is successfully managing the construction of various irrigation projects comparable to Lanh Ra project. Given its established track record it is clear that the PMU has the necessary capabilities and experience to perform the Lanh Ra project and does not require additional strengthening. The PMU has 20 permanent staff and is managed by a Director who is assisted by a Deputy Director. The management and leading staff of the PMU all have university degrees, mostly in irrigation engineering.

The PMU assures the coordination and day-to-day management of the whole project during the implementation phase and is responsible for:

- Completion and approval of the FS;
- Preparation and approval of Detailed Design;
- Overall planning of the project activities;
- Organising, coordinating and supervising the implementation of project activities in accordance with the approved work plans;
- Technical guidance on project methodology and strategy;
- Preparation of Tender Documents [4], performance of Bidding procedures and drafting of Contracts for procurement of goods and services;
- Overview supervision by Consultant of the Contractors executing the project works and supplying goods and services;
- Provide financial management and compilation of quarterly reports;
- Timely completion of progress reports and budgeted work plans for the following period for consideration by the PSC;
- The secretariat for the PSC (dissemination of reports, proposal of agenda, drafting of PSC meeting minutes etc.);
- Coordination and networking with other national and, if appropriate, international partners;
- Commissioning of completed parts and total project and hand over to the operating and maintenance entity at the end of the implementation;
- Compilation of the project final report at the end of the project.

7.3.3 The Belgian Government Agencies

From the Belgian side the Resident Representative of the Belgian Technical Cooperation (BTC) will review and secure the appropriate use of the Belgian Fund in accordance with the objectives set forth in the Agreements. He will be back-stopped by a part-time (1/3) International Project Coordinator who will provide the necessary independent oversight through regular technical and financial audits. The BTC Resident Representative will receive six-monthly reports from the PMU and conduct supervision missions to the project area.

7.4 Financial Mechanism.

Regardless of the source of funding, all financial resources of the project will be managed transparently and reported on in accordance with the principles of joint partnership.

The disbursement and utilization of project funds is approved by the PSC based on six-monthly budgeted Action Plans submitted by the PMU. Every six months a financial report on the utilization of the contributions, jointly signed by the Project Director & International Project Coordinator, will be submitted for acceptance by the PSC. All contracts, original invoices and payments, duly signed by the Project Direct & the International Project Coordinator, must be kept available for verification at the PMU office.

[4] Effective preparation of Tender Docs. and Bidding Procedures usually performed by the Design Consultants.

Regardless of the source of funding but with the exception of the remuneration of the International Project Coordinator and the costs for the formulation, the PMU will tender for the procurement of all goods and services in accordance with the Vietnamese Regulations on Public Procurement. To facilitate the selection of the best qualified tenderer the PMU will, for each tender, produce a comprehensive analysis of all offers received. Up to 12.000 Euro the Project Director & International Project Coordinator will be responsible for awarding the tender. Their choice shall be properly motivated based on objective criteria contained in a tender analysis. Above 12.000 euros, the tender will be approved by relevant members of the Project Steering Committee in line with the current decentralisation regulations on public procurement of the Government of Vietnam.

7.4.1 The Belgian Contribution

A separate project account shall be opened at a commercial bank in Phan Rang, the provincial capital of Ninh Thuan. This account will be replenished by the BTC, on request of both the Project Director and the BTC Resident Representative, in quarterly installments based on the provisions made in the six-month budgeted Action Plans submitted by the PMU and approved by the Project Steering Committee. This account shall have two signatories namely the Project Director and the International Project Coordinator. For payments not exceeding 12.000 euros, payments will be made against the joint signatures of the Project Director & International Project Coordinator. For payments above 12.000 euros the Project Director will mandatoy seek a written approval from the BTC Resident Representative prior to making such payments.

The PMU will, for monitoring purposes, provide monthly financial reports on the disbursement of the Belgian contribution to the BTC Resident Representative according to a mutually agreed format.

7.4.2 The Vietnamese Government Contribution.

The Vietnamese Government will exempt all goods, equipment and services purchased for the project from all custom duties and taxation.

7.4.3 The Counter Value Fund

The contribution from the Counter Value Fund (CVF) will timely be made available by the Vietnamese Ministry of Finance. Comprehensive six monthly reports on the utilization and planned utilization of the CVF will be presented by the PMU for approval to the Project Steering Committee.

The Ministry of Finance will certify the total amount spent in accordance with Vietnamese regulations, before the project ends.

7.4.4 The Provincial People's Committee Contribution

The contribution from the PPC will be made available in a timely manner by the Province People's Committee. The PPC will bear all the cost not covered either by the Belgian contribution or the Vietnamese Counter Value Fund.

The PPC in cooperation with the PMU will certify the total amount spent in accordance with Vietnamese regulations, before the project ends. A comprehensive report on the

utilisation of the counterpart funds, certified by the treasury of the PPC, will be included in the Final Report.

7.5 Reporting, Monitoring and Evaluation

7.5.1 Monitoring and Evaluation

Monitoring and evaluation will be made at two levels: the project delivery level and the project impact level. Project delivery monitoring is relatively simple and straightforward: it shows the level of delivery against the projected delivery plans (results, activities). Available indicators and means of verification have been introduced in the logical framework.

The monitoring of the impact of the Project is more complicated as it aims at comparing pre-project situation(s) with the post intervention situation(s), while trying to "neutralise" the impact of other external influences on the target population. Given that the implementation period of the project will barely cover the operational phase of the irrigation scheme a meaningfull impact assessment (reduction on poverty, income stability due to reduced risks, flood reduction etc.) will hardly be possible. The time horizon needed for such impact assessment would require many years of follow-up.

The BTC will recruit a part-time International Project Coordinator (1/3) to verify that the Belgian funds are utilized in a manner ensuring that the Project's Goal and Purpose will be achieved. He/She will visit the Project on a regular basis to review the progress. The budget for the International Project Coordinator will be managed directly and solely by BTC in line with standard BTC's human resources policy.

The PSC will commission an annual External Audit to be carried out by an accredited accounting firm. The Belgian Ministry of Finance and BTC can at any time audit the Project accounts, as per the requirements of the Belgian Government.

7.5.2 Reporting

The PMU will ensure that the reports, plans and documents indicated below are produced in accordance with applicable requirements and formats. The reports, plans and documents will be submitted to the PSC for approval. All reports made by the PMU will be issued in Vietnamese and English.

Progress Reports: the progress in each area of the project will be documented. The report will be prepared by the PMU every six months and presented for approval at the PSC meetings. The reports must contain at least the following chapters:

- Progress review of the achievement of the outputs and activities of each area of the project monitored against the Technical and Financial File and the Action Plans approved at the previous PSC meeting. Constraints and delays will be analyzed and proposals given for solving the problems identified
- Presentation of financial reports on the use of Belgian, Vietnamese and Counter-Value Fund contributions during the reporting period.
- Presentation of Action Plan for the next reporting period and financial allocations accordingly.
- Any important issue the PSC needs to resolve.

7.6 Ending the Project

To draft a Final Report is the responsibility of the PMU. The Final Report shall be submitted to the PSC members at the final PSC meeting for approval. Apart of an overview of the infrastructure constructed it will also include a survey of the status and opinion of a representative sample of PMU, IMC and IMS staff of the impact of the Project.

The PMU is responsible for the final closure of accounts within three months of the project completion date. At the end of the project all equipment will be transferred to the Vietnamese Authorities. The last PSC shall decide on the destination of all project equipment transferred.

8 RESOURCES

8.1 Human Resources

The human resources which shall be employed in the framework of the Lanh Ra irrigation project will belong to either of the following organisations:

- Project management and administration during implementation phase: the staff of the existing PMU have the experience and capabilities to handle the Lanh Ra Irrigation Project implementation.
- Consultants: local consultants, experienced and qualified, for the type of works are available in Vietnam
- Contractors and Suppliers: it is foreseen, that local contractors and suppliers are capable of performing the required works and furnishing goods necessary for the project.
- Project operation and maintenance: Staff of Irrigation Management Company (IMC) and Irrigation Management Station (IMS), the irrigation management and operating divisions of the Department of Agricultural and Rural Development (DARD), are foreseen to take over the Lanh Ra Irrigation Project after completion and to manage and operate it.
- The International Project Coordinator shall be an international expert based in Vietnam with experience in ODA projects in Vietnam within the field of irrigation.

8.2 Material Resources and Services

All materials and services required for the implementation of the project will be procured in accordance with Vietnamese Law on Public Procurement.

The largest quantities of materials required will be the earth materials for the embankment of the main and auxiliary dams of the project headworks, including filter and riprap. The detailed quantities and qualities for these materials will have to be established during detailed design and to be specified in the Tender Documents. It is expected, that such materials are available in the reservoir area or nearby, as the investigations made for the FS have demonstrated.

8.3 Financial Resources

8.3.1 Project Cost Estimate

A new cost estimate has been prepared as per October 2005, which resulted in substantially higher budget requirements estimated at approximately 5.766 mio. Euro (without tax), an increase of 1.28 mio. Euro or 28% higher than the original estimate (refer to Table 1-1 and Table 8-1 below).

The increase in cost is due on one side to the escalation of construction prices since the first cost estimate and on the other side to cost components, which have not been included in the original cost estimate, but which are deemed an integral part of the project costs, in particular (rounded cost values):

- Escalation of construction prices 475,000 Euro
- Costs of compensation for existing land uses 520,000 Euro
- Costs for construction of tertiary canal system 208'000 Euro

8.3.2 Economic Viability

Based on the revised cost estimates and on the proposed cropping pattern, the economic calculations result in the following indicators:

• Economic internal rate of return	IRR	=	12.7 %
• Benefit / Cost ratio	BC	=	1.03
• Net present worth	NPW	=	0.43 mio. Euro

The analysis is based on the following parameters

Investment cost	C	=	5.68 mio. Euro
Annual operation and maintenance Cost	O&M	=	67'000 Euro/a
Net annual value of production	NPV	=	1.14 mio. Euro/a
Discount rate (opportunity cost of capital)	i	=	12.0 %
Economic life period	n	=	40 years

The project can be considered economically viable.

Table 8-1: Project Cost Estimate (excl. VAT)

NINH THUAN, LANH RA IRRIGATION PROJECT
COST ESTIMATE (Based on revised FS, 10.Okt.2005)

	Total Project Cost		Total per Source of Funding (Euro)		
	VND ('000'000)	Euro	GOB	CVF	GOV
Total Project Cost	109,563.50	5,766,500	2,600,000	1,250,000	1,916,500
		100%	45.09%	21.68%	33.24%
Result 1 (Design Stage)	4,398.50	231,500	0	0	231,500
Detailed Design	2,090.00	110,000	0	0	110,000
Field Investigations	1,235.00	65,000	0	0	65,000
Reviews and Experts	380.00	20,000	0	0	20,000
Project Management, Administration	237.50	12,500	0	0	12,500
Contingency	456.00	24,000	0	0	24,000
Result 2 (Land use rights - Compensation)	9,718.50	511,500	0	0	511,500
Management, Administration, Procedures	313.50	16,500	0	0	16,500
Compensations	8,550.00	450,000	0	0	450,000
Contingency	855.00	45,000	0	0	45,000
Result 3 (Construction)	86,991.50	4,578,500	2,370,000	1,235,000	973,500
Project Management, Administration PMU	3,420.00	180,000	0	0	180,000
Bidding Procedures	66.50	3,500	0	0	3,500
Construction Supervison	855.00	45,000	0	0	45,000
Preparatory Works	2,660.00	140,000	0	0	140,000
Main & Auxiliary Dams, incl. Found. Treatment	42,750.00	2,250,00	2,250,000	0	
Spillway	11,400.00	600,000	0	600,000	0
Irrigation Outlets	2,375.00	120,000	120,000	0	0
Primary Canal 1 + Appurtenances	2,280.00	120,000	0	120,000	0
Primary Canal 2 + Appurtenances	4,750.00	250,000	0	250,000	0
Secondary Canals to Primary 1	1,805.00	95,000	0	0	95,000
Secondary Canals to Primary 2	5,035.00	265,000	0	265,000	0
O&M Equipment and Capacity Building	2,090.00	110,000	0	0	110,000
Contingency	7,600.00	400,000	0	0	400,000
Result 4 (Tertiary System)	3,800.00	200,000	0	0	200,000
Construction Cost of Tertiary System	3,800.00	200,000	0	0	200,000
Project Preparation and Monitoring	4,655.01	245,000	230,000	15,000	0
Formulation Mission + Costs	659.36	34,703	34,703	0	0
International Project Coordinator	3,420.00	180,000	180,000	0	0
Vehicle & operation costs	290. 64	15,297	15,297	0	0
External Audit	285.00	15,000		15,000	0

Exchange Rate is 19.000 VND/Euro

8.3.3 Sustainability of Project Operation

The operation and maintenance of the project is funded by the income of the water fees and from contributions by the provincial budget. The only direct source of income generated is from the water fees. The maximum revenue is 1 mio. VND per ha of irrigated land, i.e. 1.05 bio. VND or 55'000 Euro.

This revenue level should allow to operate and maintain the scheme under normal circumstances. In case of decreased revenue due to social issues, the provincial authorities would have to make provisions to meet any shortfall.

Anyway, extra costs due to floodings (the risk of which should be lowered due to the construction of the dam) could reveal much more costly than contributions related to social issues; and these costs could not be spread over a long period of time.

8.3.4 Sources of Funds

The amount of the Belgian ODA contribution is fixed at 2.6 mio Euro. At the present status of the cost estimate, this is a ratio of about 45% of the total project cost.

From the Vietnamese Counter Value Fund an amount of approx. 1,250,000. Euro has been allocated for the Lanh Ra Irrigation Project at the time of the initial agreement, representing a ratio of approximately 22%of the total project cost.

The remaining 33% or 1,916,500 Euro will have to be made available by the Vietnamese Government, out of the Ninh Thuan provincial budget.

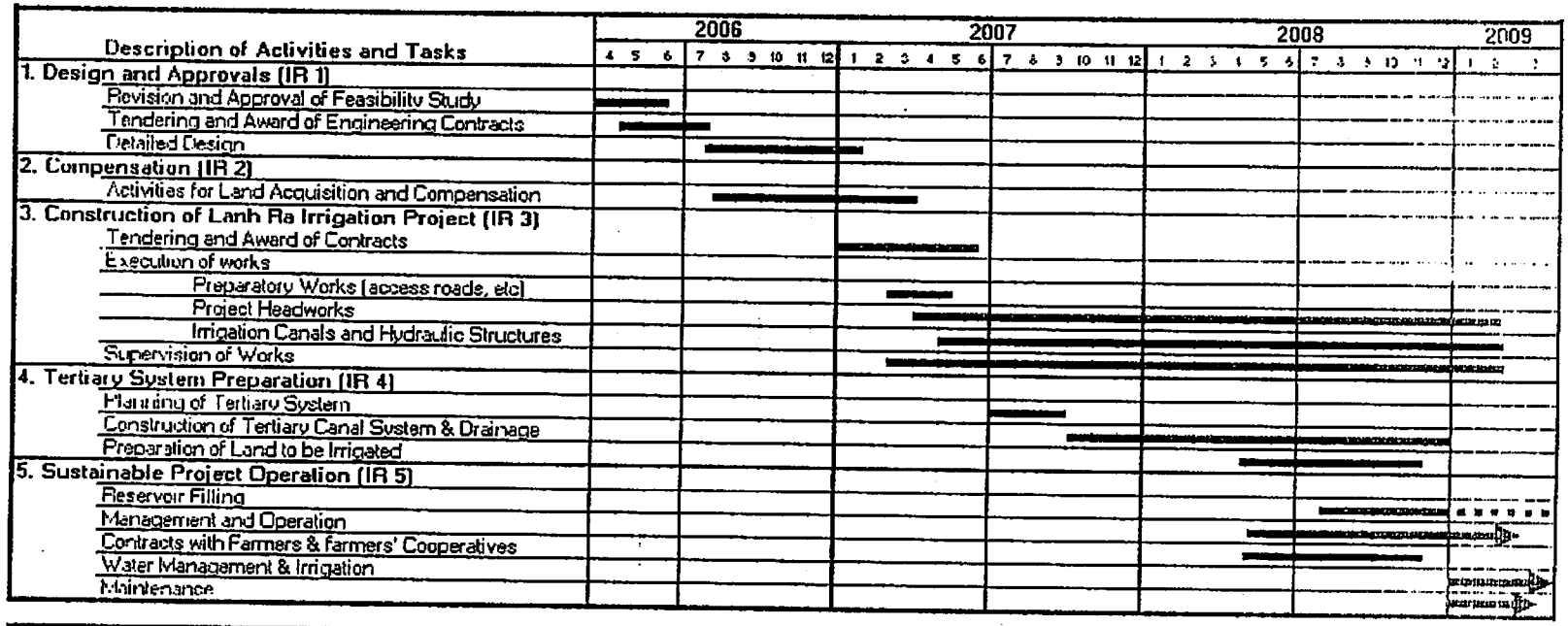
The allocation of sources of funding are proposed in Table 8-1. The distribution has been made in view of logical procedure as well as for simplicity in handling of the funds. In case the funds provided by the Belgian Governement and the CVF are not fully used by the proposed cost components, the remaining portions may also be used for other cost components, subject to the agreement of the PSC.

The Belgian funds would mainly be used to cover the formulation mission, their own direct costs in pursuing the supervision of implementation and construction of the project works and part of the construction of the project headworks.

The Government Contribution would cover all remaining costs, not covered by the Belgian contribution or the CVF. This would be mainly the compensation of land use rights, including the associated management and administration, the preparatory works for the construction and the irrigation works, including main and secondary canals as well as tertiary / on-farm canals.

Based on the cost estimate, the proposed distribution of funds and the tentative time schedule, a tentative disbursement schedule has been prepared, as shown in the following Figure 8-1.

Figure 8-1 : Tentative Disbursement Schedule – Lanh Ra Irrigation Project



TENTATIVE DISBURSEMENT SCHEDULE		2006		2007		2008		2009
(All Values in EURO)								
Total Funds		Sem 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2	Sem 1
Intermediate Result 1	231,500	30,000	150,000	51,500	0	0	0	0
Intermediate Result 2	511,500	0	0	511,500	0	0	0	0
Intermediate Result 3	4,570,500	0	0	700,000	950,000	1,250,000	1,450,000	220,500
Intermediate Result 4	200,000	0	0	0	0	0	60,000	40,000
International Project Coordinator	180,000	22,500	37,500	30,000	30,000	22,500	22,500	15,000
Formulation Cost	34,703	34,703	0	0	0	0	0	
Transportation Cost & Internal Travel	15,297	2,000	3,000	2,000	2,000	2,000	2,000	2,297
Audit	15,000	0	0	0	0	0	15,000	
TOTAL	5,766,500	89,203	190,500	1,295,000	982,000	1,274,500	1,649,500	299,797
Distribution of Funds								
GoB	2,600,000	57,785	37,500	515,000	680,000	630,000	423,000	256,715
CVF	1,250,000	0	0	0	325,000	400,000	380,000	145,000
GoV	1,916,500	40,000	400,000	485,000	325,000	360,000	205,000	101,082
	5,766,500	97,785	437,500	1,000,000	1,330,000	1,390,000	938,000	503,215

The disbursement schedule shown in Figure 8-1 is based on when the costs should be incurred. Depending on invoicing and payment conditions for procured and contracted items, it is possible that some of the costs may overlap in the subsequent period.

All costs estimates and implementation schedules have to be refined and revised during the detailed design. Accordingly also the disbursement schedule will be affected and will need modifications in the further development of the project.

Annex 1. Job Description for International Project Coordinator.

Responsibilities

The responsibilities include

- Provide support to the Project Director regarding all his responsibilities.

Activities

In close cooperation with counterparts and national consultants, support the Project Director regarding the following activities

- Develop a detailed framework and implementation plan for the Project
- Establish good working relations with Vietnamese counterpart staff and key stakeholders.
- Ensure close coordination between all key players and Project staff – conduct coordination meetings where appropriate
- Carry out team building / communication activities as is necessary
- Supervise the work of sub-consultants undertaking work for the Project (e.g. for the detailed design)
- In conjunction with the Design and Contracts Engineer, work with key stakeholdes such as PPC, DPC and BTC to ensure that approvals and appointment/award of contracts are obtained in time for the meeting of construction milestones
- Prepare required reports – see below – and prepare and implement PSC meetings as required
- Participate in high profile CD activities as required to facilitate recognition of the Project and increase awareness and actions of the communities and individuals in water related issues.
- Prepare required reports (see below)

Input

The total input will be spread over 36 man-months on a part-time basis (1/3).

Reporting

Support the Project Director in his reporting duties, which includes but is not necessarily limited to:

- Review of the inception report
- Work programs and review of project progress and quality
- Preparation of the six monthly Project Progress report
- Collation and preparation of the Project Completion Report

Qualifications

Agricultural Engineer with minimum 10 years experience in irrigation infrastructure management. Fluent in English.

BỘ NGOẠI GIAO

Số : 38 /2006 /SL/LPQT

SAO Y BẢN CHÍNH

Hiệp định cụ thể giữa Chính phủ nước Cộng hòa xã hội chủ nghĩa Việt Nam và Chính phủ Vương quốc Bỉ về Dự án "Xây dựng hệ thống thủy lợi và hồ chứa nhằm tăng sản xuất nông nghiệp tại huyện Ninh Phước, tỉnh Ninh Thuận", ký tại Hà Nội ngày 8 tháng 6 năm 2006 có hiệu lực kể từ ngày 8 tháng 6 năm 2006.

Hà Nội, ngày 06 tháng 9 năm 2006

TL. BỘ TRƯỞNG

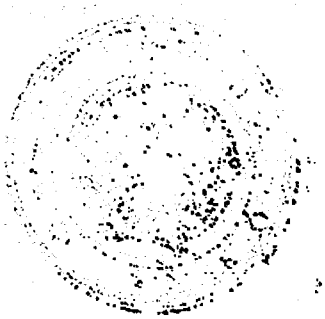
KT. Vụ trưởng Vụ Luật pháp và Điều ước quốc tế

Phó Vụ trưởng

Nguyễn Thị Hoàng Anh

Nơi nhận :

- Văn phòng Quốc hội *(để báo cáo)*,
- Văn phòng Chủ tịch nước *(để báo cáo)*,
- Văn phòng Chính phủ *(để báo cáo)*,
- Phòng Công báo, Văn phòng Chính phủ *(để đăng Công báo)*,
- Bộ Kế hoạch và Đầu tư,
- Bộ Nông nghiệp và Phát triển Nông thôn,
- Bộ Tài chính,
- Ngân hàng Nhà nước Việt Nam,
- UBND tỉnh Ninh Thuận,
- Đại sứ quán Việt Nam tại Bỉ,
- Vụ Châu Âu 2, BNG,
- Vụ Luật pháp và Điều ước quốc tế, BNG,
- Phòng lưu trữ, BNG.



Hiệp định cụ thể

giữa

Chính phủ nước Cộng hòa xã hội chủ nghĩa Việt Nam
và
Chính phủ Vương quốc Bỉ

về Dự án
"Xây dựng hệ thống thuỷ lợi và hồ chứa nhằm tăng sản xuất nông nghiệp tại huyện Ninh Phước, tỉnh Ninh Thuận"

Chính phủ nước Cộng hòa xã hội chủ nghĩa Việt Nam, sau đây gọi tắt là "Việt Nam"

và

Chính phủ Vương quốc Bỉ sau đây gọi tắt là "Vương quốc Bỉ",

Cả hai được gọi tắt là "các Bên",

Căn cứ vào "Hiệp định Khung về Hợp tác kinh tế, công nghiệp và kỹ thuật giữa Chính phủ Vương quốc Bỉ và Chính phủ nước Cộng hòa xã hội chủ nghĩa Việt Nam" ký tại Hà Nội ngày 11 tháng 10 năm 1977;

Căn cứ vào Hiệp định cụ thể giữa Chính phủ Vương quốc Bỉ và Chính phủ nước Cộng hòa xã hội chủ nghĩa Việt Nam về "Xóa nợ nước ngoài cho nước Cộng hòa xã hội chủ nghiã Việt Nam đối với Vương quốc Bỉ và tài trợ cho các dự án tại Việt Nam", ký ngày 7 tháng 12 năm 2000;

Căn cứ vào "Biên bản cuộc họp của Ủy ban Hỗn hợp về Hợp tác phát triển giữa Việt Nam và Vương quốc Bỉ" tiến hành ngày 15 tháng 12 năm 2003 tại Hà nội;

ĐÃ THỎA THUẬN NHƯ SAU:

Điều 1. Đối tượng của Hiệp định

Hiệp định cụ thể này quy định những cam kết đã được các Bên thống nhất về thể chế, hành chính và ngân sách trong việc thực hiện Dự án "Xây dựng hệ thống thuỷ lợi và hồ chứa nhằm tăng sản xuất nông nghiệp tại huyện Ninh Phước, tỉnh Ninh Thuận", sau đây gọi tắt là "Dự án".

Mục tiêu tổng quát của Dự án là *"Tình hình kinh tế xã hội của tỉnh Ninh Thuận được cải thiện"*.

Mục tiêu cụ thể của Dự án là: *"Sản xuất nông nghiệp tại thung lũng Lanh Ra được cải thiện"*.

Dự án này được mô tả đầy đủ trong Hồ sơ kỹ thuật và tài chính, sau đây gọi tắt là "HSKT&TC", được đính kèm theo và là một phần không tách rời của Hiệp định cụ thể này.

Điều 2. Các đơn vị chịu trách nhiệm

2.1 Việt Nam chỉ định:

- Bộ Kế hoạch và Đầu tư là đơn vị chịu trách nhiệm giám sát chung việc thực hiện Hiệp định này;
- Bộ Tài chính là đơn vị chịu trách nhiệm đóng góp tài chính cho Dự án từ Quỹ Đối ứng;
- Ủy ban nhân dân tỉnh Ninh Thuận là đơn vị chịu trách nhiệm thực hiện và theo dõi Dự án.

2.2 Vương quốc Bỉ chỉ định:

- Tổng vụ Hợp tác phát triển trực thuộc Bộ Ngoại giao, Ngoại thương và Hợp tác phát triển Liên bang, sau đây gọi tắt là "DGDC" là cơ quan chịu trách nhiệm đóng góp phần tài chính của Bỉ cho Dự án; DGDC có đại diện tại Việt Nam là Đại sứ quán Bỉ ở Hà nội;
- Cơ quan Hợp tác kỹ thuật Bỉ, sau đây gọi tắt là "BTC", là đơn vị điều hành chịu trách nhiệm thực hiện và theo dõi Dự án; BTC có đại diện tại Việt nam là Đại diện thường trú tại Hà nội.

Điều 3. Chi phí của Dự án và các nguồn tài chính

Tổng kinh phí của Dự án ước tính là 5.766.500 Euro (Năm triệu bảy trăm sáu mươi sáu ngàn năm trăm Euro).

Vương quốc Bỉ đóng góp vào Dự án một khoản viện trợ không hoàn lại là 2.600.000 Euro (Hai triệu sáu trăm ngàn Euro) bao gồm chi phí hình thành dự án.

Một khoản đóng góp 1.250.000 Euro (Một triệu hai trăm năm mươi ngàn Euro) được lấy từ Quỹ Đối ứng thành lập theo Hiệp định cụ thể về "Xóa nợ nước ngoài cho nước Cộng hòa xã hội chủ nghĩa Việt Nam đối với Vương quốc Bỉ và tài trợ cho các dự án tại Việt Nam", ký ngày 7 tháng 12 năm 2000.

Việt Nam sẽ đóng góp vào Dự án số tiền ước tính khoảng 1.916.500 Euro (Một triệu chín trăm mười sáu ngàn năm trăm Euro).

Điều 4. Các khoản đóng góp và nghĩa vụ của Việt Nam

Việt Nam sẽ áp dụng tất cả các biện pháp thể chế, hành chính và ngân sách cần thiết để thực hiện Dự án như được xác định trong Hiệp định này và trong HSKT&TC đính kèm theo. Theo đó, Việt Nam sẽ:

- Cho phép tiếp cận các tài liệu cần thiết cho việc thực hiện các hoạt động của Dự án, bao gồm cả đội giám sát dự án của BTC;
- Cho phép Ban Quản lý Dự án sẽ được đề cập đến ở Điều 6, mở các tài khoản ngân hàng cần thiết có thể chuyển đổi được;
- Miễn thuế hải quan và các loại thuế khác cho tất cả các hàng hóa và thiết bị của Dự án;
- Đảm bảo các thiết bị, bao gồm cả phương tiện vận chuyển mua sắm từ nguồn ngân sách của Dự án sẽ sử dụng cho dự án và được bảo dưỡng một cách hợp lý;
- Dành các ưu đãi và miễn trừ cho các chuyên gia nước ngoài của Dự án như được mô tả trong Quyết định số 211/1998/QĐ-TTg của Thủ tướng Chính phủ ban hành ngày 31/10/1998, về Quy chế đối với các chuyên gia nước ngoài thực hiện các chương trình hoặc/và dự án ODA tại Việt Nam;
- Hỗ trợ các chuyên gia quốc tế và gia đình họ (trong thời gian phù hợp) được cấp miễn phí thị thực và những giấy tờ cần thiết khác trong thời gian làm việc tại Việt Nam;

- Miễn thuế thu nhập cho các chuyên gia quốc tế và gia đình họ đối với các hoạt động của Dự án, thuế hải quan và các loại thuế khác đối với các đồ dùng cá nhân và phương tiện đi lại với điều kiện là những tài sản này được nhập khẩu trong vòng sáu tháng kể từ khi chuyên gia cùng gia đình đến Việt Nam và phù hợp với Quyết định số 211/1998/QĐ-TTg của Thủ tướng Chính phủ ban hành ngày 31/10/1998. Những đồ dùng cá nhân và phương tiện đi lại này có thể được tái xuất hoặc bán miễn thuế cho một người khác có cùng đặc quyền trên. Nếu những tài sản này được bán trên thị trường tự do, thì sẽ phải đóng thuế hải quan và các loại thuế khác tính theo giá trị được đánh giá tại thời điểm bán phù hợp với các quy định của Việt Nam;
- Cung cấp tất cả những hỗ trợ thông thường cho các chuyên gia quốc tế giúp họ hoàn thành nhiệm vụ của mình phù hợp với việc điều hành Dự án;
- Bổ nhiệm, với sự nhất trí của Trưởng Đại diện Cơ quan Hợp tác kỹ thuật Bỉ, một chuyên gia người Việt Nam làm việc bán thời gian là Giám đốc Dự án;
- Chỉ định các cán bộ Việt Nam có năng lực vào các vị trí như được mô tả trong HSKT&TC;
- Trả lương cho các cán bộ Dự án người Việt Nam;
- Cung cấp văn phòng làm việc phù hợp có trang bị các đồ đạc và thiết bị thích hợp;
- Đóng góp chi phí hoạt động và bảo trì của Dự án như được mô tả trong HSKT&TC.

Điều 5. Các khoản đóng góp và nghĩa vụ của Vương quốc Bỉ

Vương quốc Bỉ sẽ đóng góp vào việc thực hiện Dự án thông qua cung cấp đầu vào được nêu chi tiết trong HSKT&TC. Theo đó, BTC sẽ:

- Tuyển dụng và bổ nhiệm, với sự nhất trí của Ủy ban nhân dân tỉnh Ninh Thuận, các chuyên gia quốc tế làm việc bán thời gian cho Dự án;
- Trả lương, bảo hiểm xã hội, chi phí đi lại và nhà ở cho các chuyên gia quốc tế và các thành viên trong gia đình của các chuyên gia này (nếu và khi nào cần thiết);
- Trả công tác phí cho các cán bộ Dự án, bao gồm cả tiền ở, phù hợp với quy định của BTC;
- Cung cấp các dịch vụ tư vấn những khi cần thiết cho các nhiệm vụ và hoạt động đặc biệt và cụ thể của Dự án;

- Cung cấp các loại thiết bị văn phòng như được dự kiến trong HSKT&TC;
- Thanh toán các chi phí cho các chương trình đào tạo.

Điều 6. Quản lý, điều hành và giám sát Dự án

6.1 Việc quản lý về mặt kỹ thuật, hành chính và tài chính đối với Dự án sẽ được *Ban Quản lý Dự án* thực hiện, đứng đầu là Giám đốc Dự án người Việt Nam và Cố vấn trưởng kỹ thuật người nước ngoài. Giám đốc Dự án và Cố vấn trưởng kỹ thuật người nước ngoài sẽ đồng chịu trách nhiệm giải ngân ngân sách của Dự án và sẽ cùng xác nhận vào tất cả các chứng từ kế toán của Dự án. Thành phần và trách nhiệm của Ban Quản lý Dự án được mô tả chi tiết hơn trong HSKT&TC.

6.2 Một *Ban Chỉ đạo Dự án* sẽ được thành lập với thành phần, nhiệm vụ, trách nhiệm và cơ cấu tổ chức nội bộ như được mô tả trong HSKT&TC.

6.3 Dự án sẽ được giám sát, đánh giá và tổng kết như được mô tả trong HSKT&TC.

Điều 7. Sở hữu các kết quả của Dự án; Thông tin chung

Tất cả các tài liệu và số liệu có được từ các hoạt động của Dự án là tài sản của cả hai Chính phủ và sẽ ghi rõ nguồn gốc của các Bên.

Mỗi Bên sẽ chuyển cho Bên kia tất cả các thông tin phù hợp cho việc thực hiện thuận lợi và hiệu quả Dự án.

Điều 8. Các loại thuế và thuế nhập khẩu

Không một khoản tiền nào trong khoản đóng góp của phía Bỉ được sử dụng để chi trả các khoản thuế, thuế hải quan, thuế nhập khẩu và các loại phí liên quan đến thuế khác (gồm cả thuế giá trị gia tăng) đối với các hàng hóa và thiết bị, lao động và dịch vụ.

Điều 9. Sử dụng ngân sách có thể còn dư lại của Dự án

9.1 Khi Dự án kết thúc, bất kỳ khoản ngân sách nào còn dư lại trong phần đóng góp của phía Bỉ, số tiền tài trợ do phía Bỉ quản lý hoặc số tiền tài trợ chưa chuyển vào các tài khoản ngân hàng đồng quản lý sẽ bị thu hồi.

9.2 Các Bên sẽ cùng quyết định, trong khuôn khổ chương trình Hợp tác định hướng Việt Nam - Vương quốc Bỉ, việc sử dụng ngân sách còn lại trong các tài khoản đồng quản lý mở tại ngân hàng.

Điều 10. Thời hạn, gia hạn, hủy bỏ, sửa đổi và tranh chấp

10.1 Hiệp định cụ thể này sẽ bắt đầu hiệu lực kể từ ngày ký và có hiệu lực trong vòng 48 tháng kể từ ngày Cố vấn trưởng kỹ thuật người nước ngoài đến Việt Nam. Ngày này sẽ được xác định bằng thông báo chính thức của BTC gửi cho các cơ quan liên quan như được nêu trong điều 2 của Hiệp định này.

10.2 Hiệp định cụ thể này có thể được gia hạn hoặc sửa đổi thông qua Trao đổi Công hàm theo đường ngoại giao.

10.3 Hiệp định cụ thể này có thể được hủy bỏ bởi một trong các Bên, thông qua đường ngoại giao và phải được báo trước 3 tháng.

10.4 Bất kỳ tranh chấp nào liên quan đến việc áp dụng hay diễn giải Hiệp định cụ thể này sẽ được giải quyết thông qua đàm phán giữa các Bên.

Điều 11. Địa chỉ

Các thông báo liên quan đến Hiệp định này, cụ thể hơn là bất cứ thông báo nào liên quan đến việc sửa đổi và diễn giải Hiệp định này sẽ được thực hiện thông qua đường ngoại giao tới các địa chỉ sau:

Đối với phía Việt nam gửi về:
Bộ Kế hoạch và Đầu tư
2 Hoàng Văn Thụ
Hà nội, Việt Nam

Đối với phía Bỉ gửi về:
Đại sứ quán Bỉ
Tầng 9, 49 Hai Bà Trưng
Hà nội, Việt Nam

Tất cả những thông báo và thư từ liên quan đến việc điều hành về mặt kỹ thuật của Hiệp định này sẽ được gửi về:

Trưởng Đại diện
Cơ quan Hợp tác kỹ thuật Bỉ
Nhà F7, 14 phố Thuỵ Khuê, quận Tây Hồ
Hà nội, Việt Nam

Làm tại Ninh Thuận, ngày 8 tháng 6 năm 2006, thành hai bản chính, mỗi bản bằng tiếng Anh và bằng tiếng Việt, tất cả các văn bản đều có giá trị như nhau. Để làm bằng, các đại diện được ủy quyền của hai Chính phủ đã ký Hiệp định này.

Thay mặt Chính phủ nước Cộng hòa xã hội chủ nghĩa Việt Nam	Thay mặt Chính phủ Vương quốc Bỉ
CAO VIẾT SINH Thứ trưởng Bộ Kế hoạch và Đầu tư	PHILIPPE JOTTARD Đại sứ Vương quốc Bỉ tại Việt Nam

Specific Agreement

between

the Government of the Socialist Republic of Vietnam and the Government of the Kingdom of Belgium

concerning the Project "Construction of an Irrigation Network and Reservoir to increase the Agricultural Production in Ninh Phuoc District, Ninh Thuan Province"

The Government of the Socialist Republic of Vietnam, hereinafter referred to as "Vietnam"

and

the Government of the Kingdom of Belgium, hereinafter referred to as "Belgium",

hereinafter referred to as "the Parties",

Considering the "Accord Cadre de Cooperation Economique, Industrielle et Technique entre le Gouvernement du Royaume de Belgique et le Gouvernement de la République Socialiste du Vietnam" signed in Hanoi on October 11th, 1977;

Considering the Specific Agreement between the Government of the Kingdom of Belgium and the Government of the Socialist Republic of Vietnam concerning "A Debt Relief of the External Debt of the Socialist Republic of Vietnam towards the Kingdom of Belgium and the Financing of projects in Vietnam," signed on December 7th, 2000;

Considering the "Agreed Minutes of the Meeting of the Joint Commission on Development Cooperation between Vietnam and Belgium" held in Hanoi on December 15th, 2003;

HAVE AGREED AS FOLLOWS:

Article 1. Object of this Agreement

This Specific Agreement specifies the institutional, administrative and budgetary commitments agreed upon by the Parties with regard to the implementation of the Project "Construction of an Irrigation Network and Reservoir to increase the Agricultural Production in Ninh Phuoc District, Ninh Thuan Province", hereinafter referred to as "the Project".

The *overall objective* of the Project is: "The socio-economic situation in Ninh Thuan Province is improved".

The *specific objective* of the Project is: "The agricultural production in Lanh Ra valley is improved".

The Project is fully described in the Technical and Financial File, hereinafter referred to as "the TFF", attached hereto, and being an integral part of this Specific Agreement.

Article 2. Responsibilities of the Parties

2.1. Vietnam designates:

- the Ministry of Planning and Investment as the agency in charge of the overall supervision of the implementation of the present Agreement;
- the Ministry of Finance as the agency responsible for the financial contribution to the Project from the Counter Value Fund;
- the People's Committee of Ninh Thuan Province, as the agency responsible for the implementation and the follow-up of the Project.

2.2. Belgium designates:

- the Directorate General for Development Cooperation within the Federal Public Service of Foreign Affairs, Foreign Trade and Development Cooperation, hereinafter referred to as "DGDC", as the agency responsible for the Belgian financial contribution to the Project; DGDC is represented in Vietnam by the Belgian Embassy in Hanoi;
- the Belgian Technical Cooperation, hereinafter referred to as "BTC", as the executing agency responsible for the implementation and follow up of the Project; BTC is represented in Vietnam by its Resident Representative in Hanoi.

Article 3. Cost of the Project and sources of its funding

The total cost of the Project is estimated at five million seven hundred sixty six thousand and five hundred euros (5,766,500 EUR).

Belgium undertakes to contribute to the Project with a grant limited at two million and six hundred thousand euros (2,600,000 EUR), including the formulation cost.

An amount of one million two hundred and fifty thousand euros (1,250,000 EUR) shall be provided by the Counter Value Fund established by virtue of the Specific Agreement concerning "A Debt Relief of the External Debt of the Socialist Republic of Vietnam towards the Kingdom of Belgium and the Financing of projects in Vietnam," signed on December 7th, 2000.

Vietnam undertakes to contribute to the Project with an amount estimated at the equivalent of one million nine hundred sixteen thousand and five hundred euros (1,916,500 EUR).

Article 4. Contributions and obligations of Vietnam

Vietnam shall take all institutional, administrative and budgetary measures required for the correct implementation of the Project as specified in this Agreement and its attached TFF. Vietnam shall therefore:

- Give free access to all documentation required for the execution of the Project's activities;
- Allow the Project Management Unit mentioned in Article 6 to open the necessary convertible bank accounts;
- Exempt all goods and equipment for the Project from custom duties or any other type of taxation;
- Keep equipment purchased with Project resources, including vehicles, within the Project and assure their proper utilization and maintenance;
- Grant immunities and privileges to the international Project personnel as described in the Prime Minister Decision No. 211/1998/QĐ-TTg of 31/10/1998, promulgating the regulation on foreign specialists implementing ODA programs and/or projects in Vietnam;
- Assist the international experts and their families (when appropriate) in order to obtain free of charge the necessary visa and any other documents required for their stay in Vietnam;

- Exempt the international experts and their families from internal taxes on income related to the Project activities and from payment of custom duties and other taxes on their personal effects and vehicle on the condition that it is imported within six months from their arrival and it is in accordance with the Prime Minister Decision No. 211/1998/QĐ-TTg of 31/10/1998. These personal effects and vehicles can be re-exported or sold, free of duty, to a person with the same privileges. If goods are sold on the open market, duty and other taxes shall be paid on its assessed value at the time of the sale in accordance with Vietnamese regulations;
- Provide all usual assistance to the international experts in order for them to accomplish their tasks relevant to the execution of the Project;
- Nominate, in agreement with the Resident Representative of BTC, a part-time Vietnamese expert as Project Director,
- Appoint qualified Vietnamese staff to the positions described in the TFF;
- Bear the salaries of the Vietnamese Project staff;
- Provide adequate office space that is properly furnished and equipped;
- Contribute to the operational and maintenance costs of the Project as described in the TFF.

Article 5. Contributions and obligations of Belgium

Belgium shall contribute to the implementation of the Project by providing the inputs detailed in the TFF. BTC shall therefore:

- Recruit and assign, in agreement with the People's Committee of Ninh Thuan Province, part-time international experts;
- Bear the salary, the social insurance, the travel expenses and the accommodation for the international experts and their family members (if and when appropriate);
- Bear the costs for duty travel of the Project staff, including accommodation, in conformity with BTC regulations;
- Provide consultancy services as deemed necessary for specialized and specific tasks and activities of the Project;
- Provide various kinds of equipment as planned in the TFF;
- Bear the costs of training programs.

Article 6. Management, steering and monitoring of the Project

6.1. The technical, administrative and financial management of the project shall be assumed by the *Project Management Unit*, jointly headed by the Vietnamese Project Director and the International Chief Technical Advisor. Both the Project Director and the Chief Technical Adviser shall be accountable for the disbursement of the Project's funds and shall jointly certify all Project accounting documents. The composition and responsibilities of the Project Management Unit is further detailed in the TFF.

6.2. A *Project Steering Committee* shall be set up with a composition, mandate, responsibilities and an internal organisation as specified in the TFF.

6.3. The Project shall be monitored, evaluated and reviewed as specified in the TFF.

Article 7. Property of the Project's results; mutual information

All documents and data resulting from the activities of the Project are the property of both Governments and shall mention their bilateral origin.

Each Party shall forward to the other Party all information deemed relevant to the smooth and efficient implementation of the Project.

Article 8. Taxes and import duties

No part of the Belgian contribution shall be used to pay any taxes, customs, import duties or other tax-related fees (including VAT) on supplies or equipment, labour and services.

Article 9. Use of a possible budget balance

9.1. Any balance left on the Belgian contribution, concerning non-used funds in own-management or funds not yet transferred to co-managed bank accounts, shall be called off at the end of the Project.

9.2. The Parties shall jointly decide, in the framework of the Belgian-Vietnamese Indicative Cooperation Programme, on the use of any balance left on co-managed bank accounts.

Article 10. Duration, extension, cancellation, modifications and litigation

10.1. This Specific Agreement shall enter into force on the date of signing and shall remain in force until 48 months after the date of arrival in Vietnam of the International Chief Technical Adviser. This date shall be determined through an official notification sent by BTC to the agencies stated in article 2 of this Agreement.

10.2. This Specific Agreement may be extended or modified by Exchange of Letters communicated through diplomatic channels.

10.3. This Specific Agreement may be cancelled by each of the Parties, through diplomatic channels, subject to a three-month's notice.

10.4. Any dispute relating to the application and interpretation of this Specific Agreement shall be settled by negotiation between the Parties.

Article 11. Addresses

Notifications required by the present Agreement and, more specifically, any such notifications pertaining to its modification or interpretation, shall be handled via diplomatic channels at the following addresses:

For Vietnam to:

The Ministry of Planning and Investment
2 Hoang Van Thu Street
Hanoi, Vietnam

For Belgium to:

Embassy of Belgium
9/F, 49 Hai Ba Trung Street
Hanoi, Vietnam

All notifications and correspondence related to the technical execution of this Agreement shall be addressed to:

The BTC Resident Representative
C/o Belgian Technical Co-operation
Apartment F7, N°14 Thuy Khue Street, Tay Ho District
Hanoi, Vietnam

Done in Ninh Thuan Province, on 8 June 2006, in duplicate, in Vietnamese and English, all texts being equally authentic. In witness whereof, the undersigned being duly authorized thereto by their respective Governments, have signed this Agreement.

For the Government of the
SOCIALIST REPUBLIC OF VIETNAM

CAO VIET SINH
Vice-Minister
Ministry of Planning and Investment

For the Government of the
KINGDOM OF BELGIUM

PHILIPPE JOTTARD
Ambassador of Belgium
in Vietnam