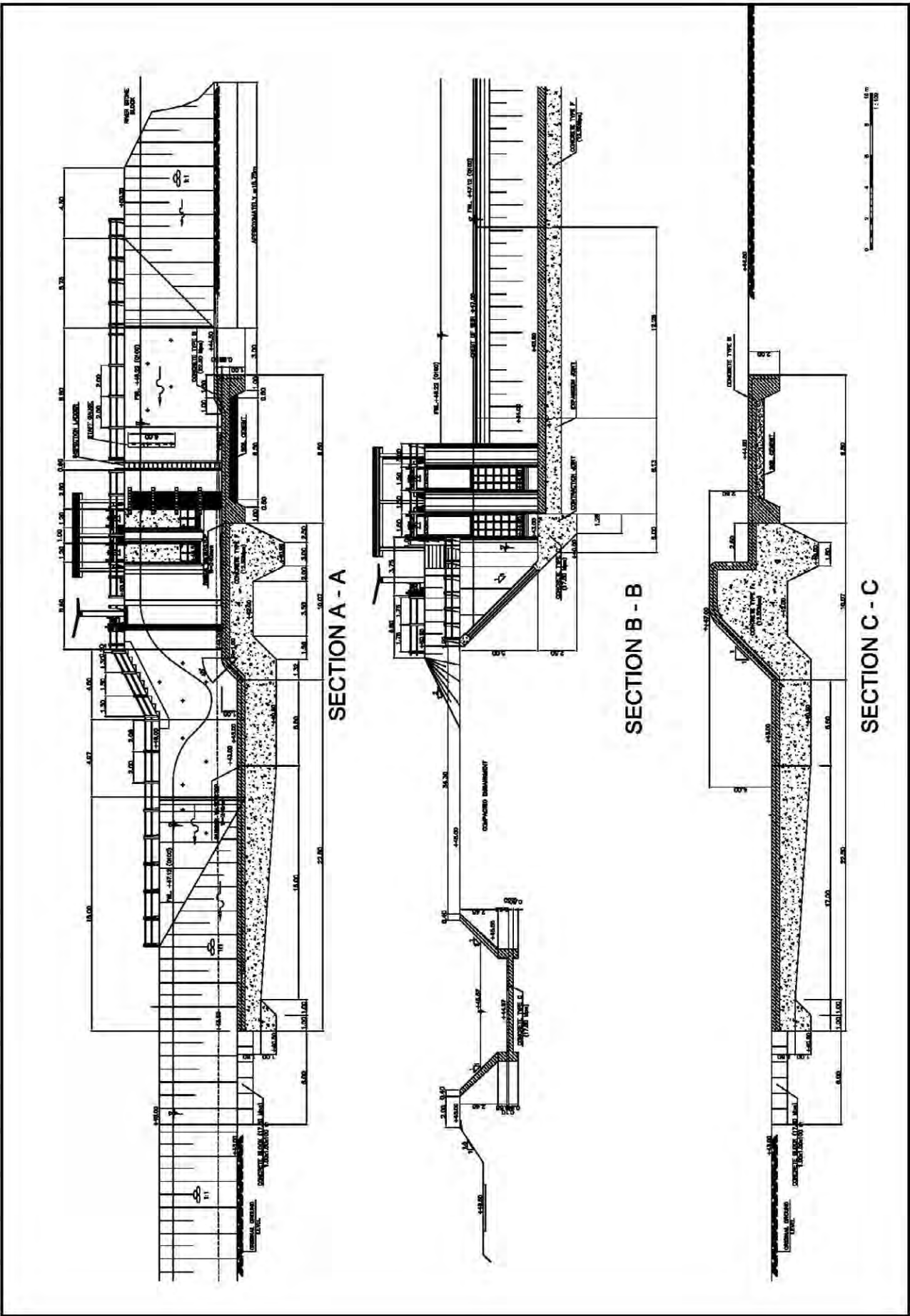
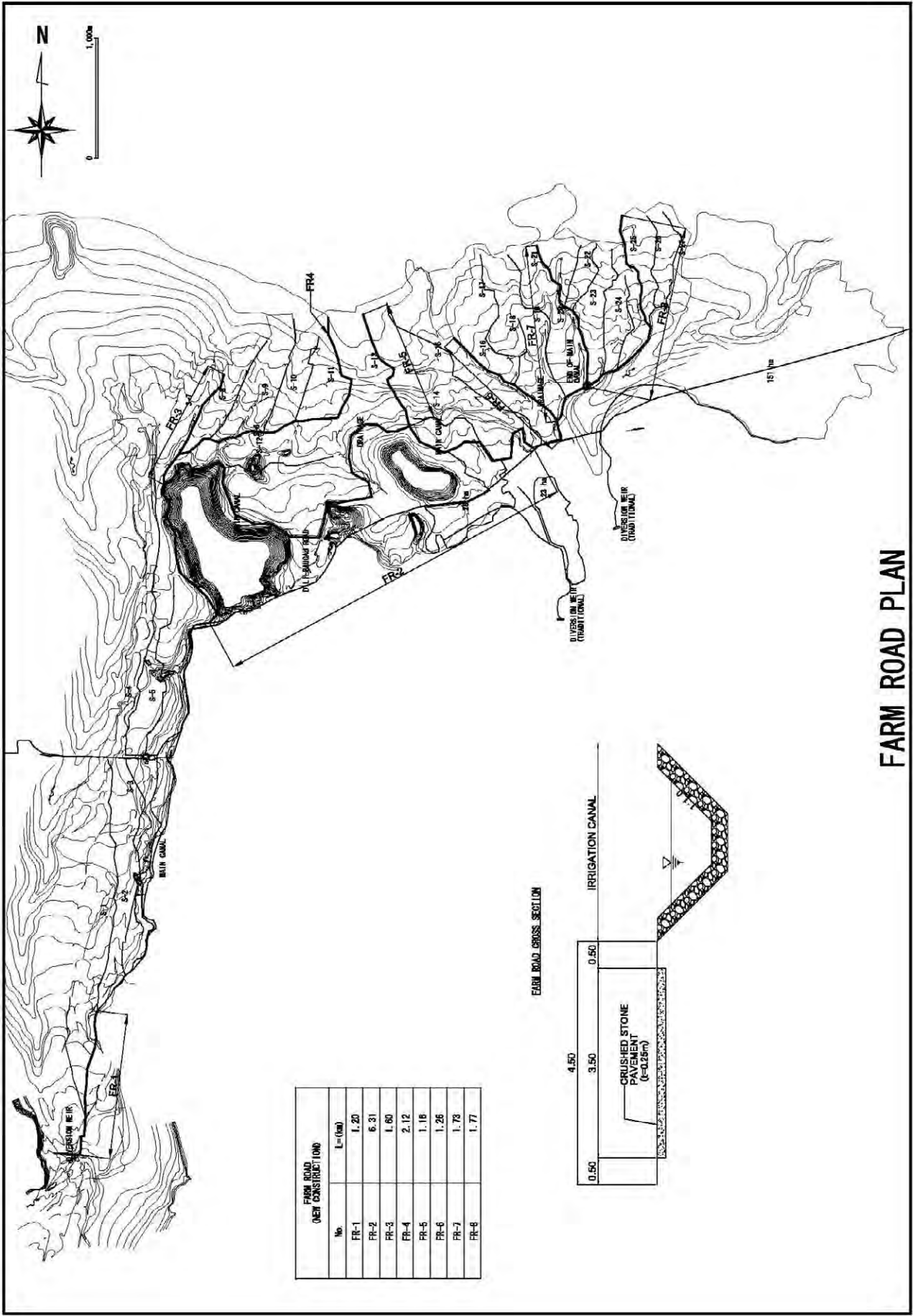


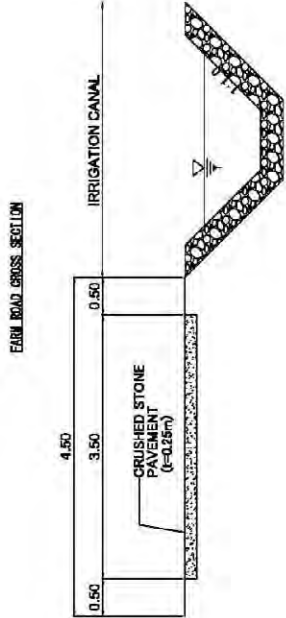
GENERAL PLAN OF LALEIA (BULUTO) INTAKE



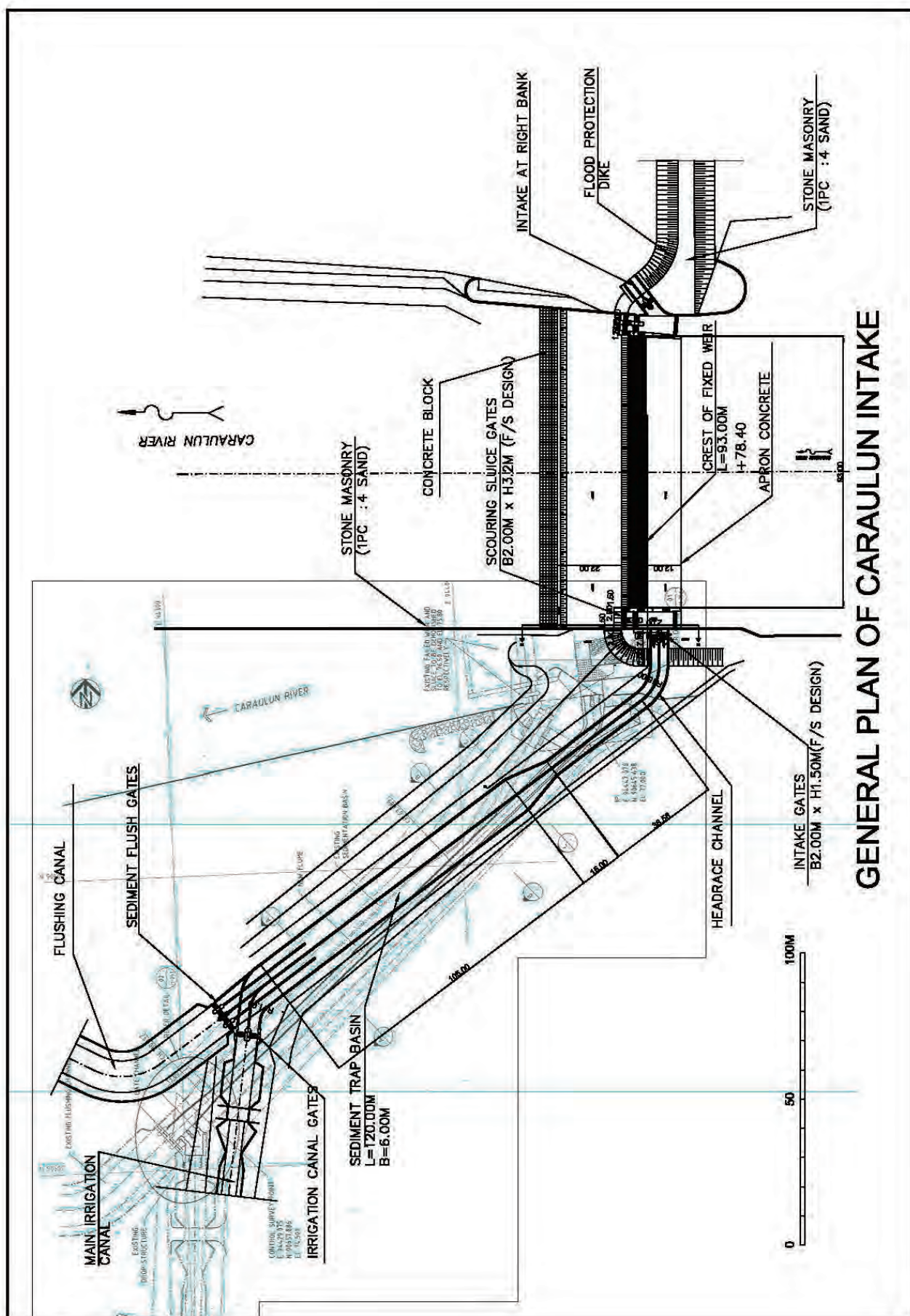


**FARM ROAD
NEW CONSTRUCTION**

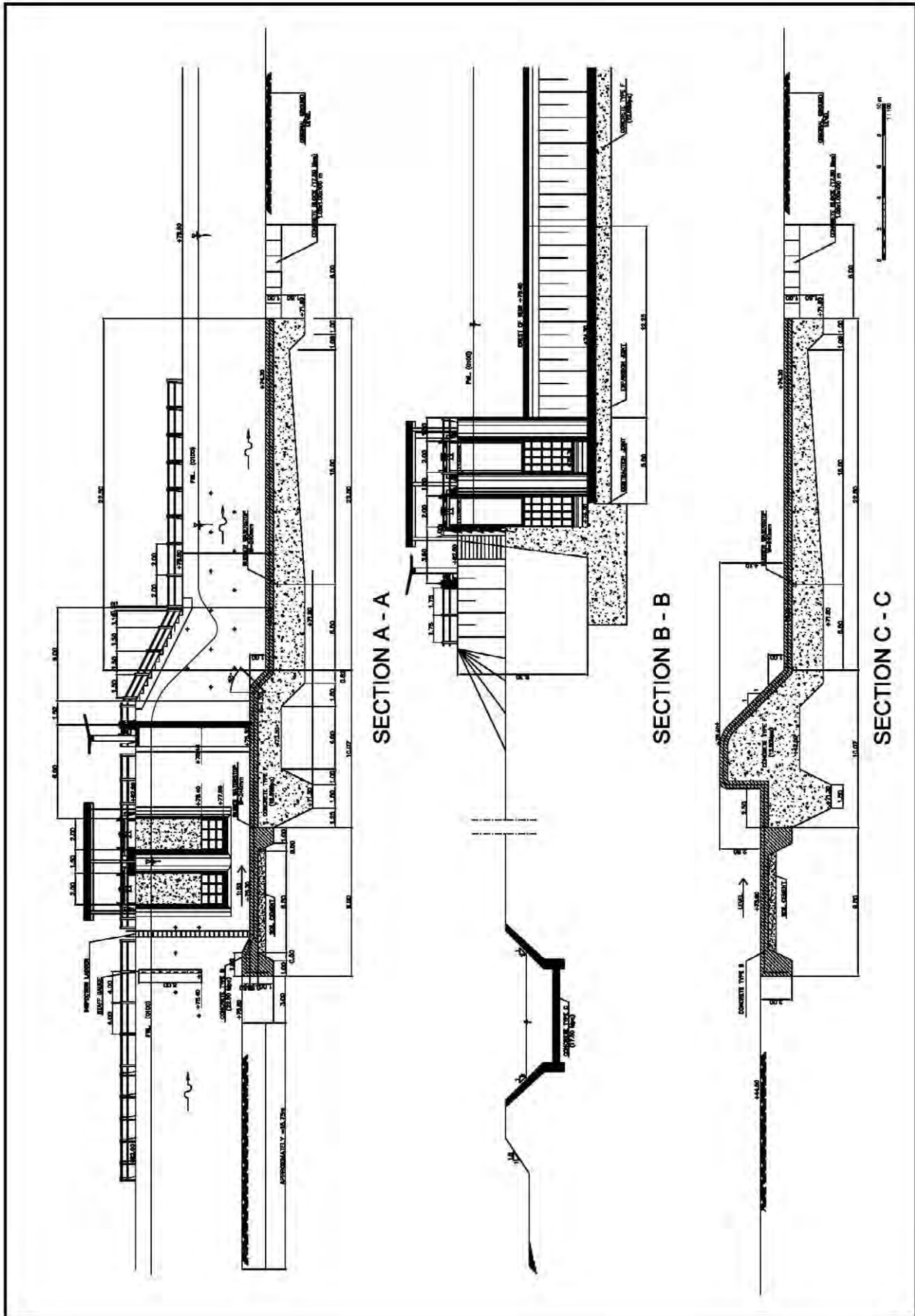
No.	L=(km)
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FR-2	6.31
FR-3	1.60
FR-4	2.12
FR-5	1.16
FR-6	1.26
FR-7	1.73
FR-8	1.77

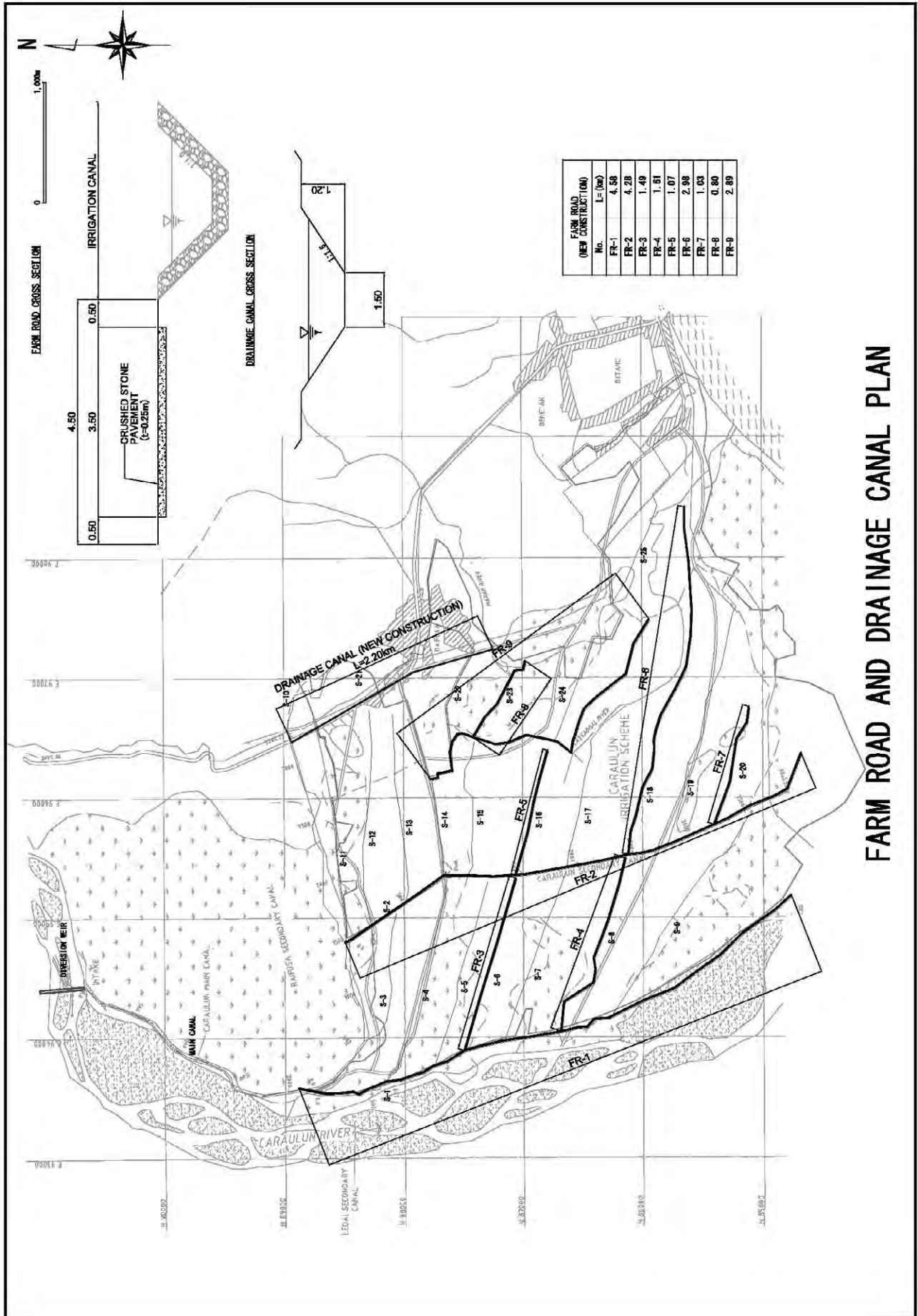


FARM ROAD PLAN



GENERAL PLAN OF CARAULUN INTAKE





Application Form for Grant Aid from Japan

Modification version in June of 2010

1. Country: The Democratic Republic of Timor-Leste
2. Date (dd/mm/yy): 29/11/2011
3. Requesting Department/Ministry
 - (1) Name of the department/ministry in charge of this application
National Directorate for Irrigation and Water Management, Ministry of Agriculture and Fisheries (MAF)
 - (2) Name and official position of the person in charge of this application
Martinho L. Soares, National Director, National Directorate for Irrigation and Water Management, Ministry of Agriculture and Fisheries
 - (3) Postal address, Telephone/Fax number, e-mail address
Postal address: Rua Presidenti, Nicolau Lobato #5, Comoro, Dili
Telephone: +670-7312317
Fax: ---
e-mail address: edyxitamar_2009@yahoo.com
4. Project/program title
The Project for Rehabilitation of Buluto Irrigation Scheme in the Democratic Republic of Timor-Leste
5. Background of the request
 - (1) The sector of the proposed project:
Agriculture:

In the Democratic Republic of Timor-Leste (hereinafter referred to as “RDTL”), agriculture, forestry and fishery sector dominates the country’s economy, accounting for one-third of the non-oil GDP in 2010. In agriculture sector, share of crop production reaches to approximately 60%, and Non-food production accounts for 34%, while the contribution of livestock, fisheries and forestry is limited to the remaining 6%. Approximately 23% of export earning comes from industrial crops, mostly from coffee exports. In RDTL, agriculture sector plays significant role in food security as well as rural economy since approximately 80% of population in RDTL lives in rural areas, depending their livelihoods on the sector. However, agriculture in RDTL is characterized by low-input and low-output subsistence farming, despite its importance in the economy as mentioned above.

Irrigation and Rice Cultivation:

It is estimated that 600,000 ha of land in RDTL is suitable for crops and livestock production, in which 72,000 ha is considered suitable for rice cultivation, 160,000 ha for other crops and the remaining for grazing pasture. In RDTL, rice is most preferred staple crop among the people for both consumption and trade, and thus most important basic cereal. The consumption of rice in RDTL has been increasing due to the preference and food habit of Timorese as well as increase of disposal income for population in urban areas, thus the domestic market for rice has a potential for expansion. Rice is also traded within the country, thus it is one of the common cash crops in the country. Together with other food crops such as maize, cassava and potato, the production of rice provides job opportunity to more than 70% of the total labor force in the whole population.

(2) Current situation and problems of the sector:

Despite its importance, agriculture in RDTL is characterized by “extensive farming and low productivity” and rice production and productivity remain low. Domestically produced rice currently meets only 40 to 50 % of rice demand in the domestic market, causing draining of government financial resource for import of rice, and food price increase in the country reflected the international market price of grain which results in food inaccessibility by economically fragile population.

In RDTL, it is estimated that 72,000ha of land has potential for irrigation farming. However, a significant area of land still remains in a devastated condition due to frequent floods and post-independence turmoil, and it results in merely 50% of potential area currently current under irrigation. It is, therefore, necessary to expand the irrigated area in RDTL in order to increase rice production. There are several modern irrigation schemes existing in the country despite its deteriorated and damaged condition, and farmers struggle in these areas to increase production. This is the base for the development and the rehabilitation of these damaged irrigation schemes are the most cost-effective and quickest path to expand the rice production, and therefore need to be prioritized.

The low agricultural production is also caused by lack of expertise and technical knowledge for irrigated rice cultivation among irrigation engineers, extension workers of the Central and Regional Government offices as well as farmers. The effective and efficient irrigation, appropriate management of irrigation facilities, improved farming practice are among the needed changes to be made in the sector.

With the objective to achieve food self-sufficiency, the Government of RDTL has implemented production support program, rehabilitation of the irrigation facilities, farm mechanization, provision of seeds and fertilizers. However the impact of government programs is still not sufficient and the production level remains low even though it showed remarkable improvement in productivity from 1.76 ton/ha in the year 2006 to 3.09 ton/ha in the year 2010.

- (3) Relationship between the project/program and any national development plan (Title of the national development plan and the position of the sector in it)

Strategic Development Plan (hereinafter referred to as “SDP”), the long-term national development plan for RDTL, aims the transition of Timor-Leste from a low income to an upper-middle income country, with a healthy, well educated and safe population by 2030. This objective reflects the aspirations of the Timorese people as expressed during an extensive national consultation in 2010 and built on the 2002 National Development Plan and ‘Timor-Leste 2020. SDP covers three key areas, namely; social capital, infrastructure development and economic development, and agriculture sector is regarded as one of the three key industries in the section of economic development.

Agricultural strategy and actions are presented under the section for economic development; "to achieve primary goal of food security by 2020 and to expand agriculture sector, improvement of farming practices and taking action to boost the production of specific crops". Development goals for the agriculture sector are to improve national food security, to reduce rural poverty, to support the transition from subsistence farming to commercial farming of crops, livestock and fisheries, and to promote environmental sustainability and the conservation of Timor-Leste’s natural resources.

Thus, agriculture is one of the key sectors in SDP, and self-sufficiency of food, particularly of rice, is mentioned as one of the top priority agendas. The proposed project with the objective to increase rice production is, therefore, in perfect line with the government plan for coming decades.

- (4) The project/program and any sector development plan (Title of the sector development plan and the position of the proposed project/program in it)

No development plan except for SDP comprehensively covers the agriculture sector. The followings are sub-strategies in agricultural development described in SDP:

1) Food security

The followings are four goals to achieve food security by 2020, i) create an additional 70,000 ha of irrigated rice fields, ii) use high yield seeds of life varieties, iii) use new crop production systems and iv) establish on-farm grain storage.

2) Rehabilitating and extending irrigation systems

A significant investment in rehabilitating irrigation systems and improving water storage should be made to accomplish the self-sufficiency in food. A number of hectares of previously irrigated land are unusable because of lack of maintenance or are not used or underused because of poor management. The long dry season prevents effective rain-based farming in many regions. There is also a need to source more water to feed existing and proposed irrigation schemes. Regions which are capable of rain-based farming have already been exploited, so any expansion of irrigated farm land

will depend upon building new irrigation schemes that can supply paddy field with water in the dry season.

3) Strategies and action for specific commodities

Overall, about 63% of households in Timor-Leste are engaged in crop production, with maize, cassava and vegetables the most produced crops. Rice is produced by 25% of households since the flat land is limited. Rice is, however, one of staple foods in Timor-Leste, and local production cannot meet demand despite country's high potential for rice production, and a large amount of rice is currently imported. National goal described in SDP is self-sufficiency in rice production by 2020.

Functional irrigation area is limited to approximately 36,000 ha out of the 72,000 ha potential irrigation area in the country. Rehabilitating and extending irrigation systems are essential requisite to achieve self-efficiency of rice, as stated in SDP as a strategy of "Rehabilitating and extending irrigation systems".

With this backdrop, the Government of RDTL rehabilitated Bebuy irrigation scheme with its own budget and the construction was completed in 2011. The Government of RDTL also identified nine irrigation schemes; namely Beikala, Buluto, Dardau, Galata, Larisula, Maucola, Oebaba, Raibere and Tono as priority schemes for rehabilitation, and conducted the feasibility studies. However, these efforts are not sufficient to achieve country's development goal such as rice self-sufficiency due to limited national budget and human resource which can carry out engineering work in a technically satisfactory manner. To address these constraints, the Government of RDTL requests the Government of Japan for grant aid assistance for the below proposed project. The proposed project is to increase rice production of the Buluto irrigation scheme, one of the identified priority schemes, with sufficient water supply and introduction of modernized farm practice such as Integrated Crop Management (ICM) through rehabilitation of irrigation facility and capacity building for farmers and government officials. The project is, therefore, consistent with SDP goal as well as strategies for agricultural and irrigation development taken by the Government of RDTL, and as a result of the project, it is expected that Buluto irrigation scheme will be rehabilitated with Japanese high quality engineering which will contribute to increase national rice production sustainably. It will eventually contribute to improve the self-sufficiency of rice in the country and poverty alleviation, especially for rural population.

6. Objectives of the project/program

(1) Overall goal

Food security situation of the country is improved.

(2) Project/program purpose

Project purpose: Rice production in Buluto Irrigation Schemes increased

- Importance, necessity, and urgency of the project:

Self sufficiency of rice is a top priority for the country because this will lead to food security and national security. Since rice import is equivalent to around 25 % of trade deficit, improvement of rice self-sufficiency contributes to better national trade balance as well as promoting national economy through import substitution, especially in the context of global soaring food price, and it will result in provision of income and job opportunity for rice farmers.

The Buluto Irrigation scheme is one of the nine irrigation schemes identified as priority schemes by the Government of RDTL. Its potential is estimated quite large and the economic impact and expected return from the rehabilitation are higher than those of other irrigation schemes as shown below. Thus it is important to rehabilitate Buluto irrigation scheme in order to make maximum contribution to the national goal of food security and poverty alleviation.

Furthermore, deterioration of existing functional irrigation facilities of Buluto irrigation scheme have caused gradual decline of rice production in the scheme even during wet season. Prompt rehabilitation can extend the functional period of existing facilities, and thus it is important from asset management view point.

In addition, project outputs of the technical cooperation projects such as improvement of farming practice, ability of well trained extension officers and extension materials shall be effectively extended to other irrigation schemes.

7. Outline of the project/program

(1) Project/program type (please select from the items below)

- 1) Facilities + Soft (Non-physical) components

(2) Appropriate amount of the request (US\$) and a rough breakdown

	Item	Cost (US\$'000,000)
Facilities	Weir and intake structures	6.90
	Irrigation canal	2.89
	Drainage canal	0.17
	Maintenance road for main/ secondary canal	0.25
	Others	0.04
	Sub-total	10.25
Soft (Non-physical) components	Capacity development of Government staff and WUA	0.05
Design/Supervision	Japanese consultant	1.23
Grand total		11.53

(3) Location and related information

- Country scale map indicating the project/program site
(see Attachment 1)
- State/province/prefecture/city map indicating the project/program site
Project site: Manatuto and Baucau Districts
 Suco: Lifau, Hat Uralan, Sub-District Laleia, Manatuto District
 Suco: Vemasse, Sub-District Vemasse, Baucau District
(see Attachment 2)
- Address of the project/program site: the access time from the capital or a major city, socioeconomic data on the administrative region (state/province/prefecture) or city where the site is located
 - It is located at the district boundary of Manatuto and Baucau Districts. It is 2 hours distance on land from capital city of Dili.
 - Major rice producing districts are Viqueque, Baucau, Bobonaro and Manatuto, accounting for about 77% of total production. Project site is located at boundary of Baucau and Manatuto. Population of primary industry occupies more than 88.8 % and 82.20 % mostly agriculture in Manatuto and Baucau Districts, respectively.
- Reasons for the selection of the site (the priority status of the sites, if plural)

Aiming at verification of project appropriateness and urgency as a grant aid program, four potential schemes (Beikala, Buluto, Dardau, Raibere) were short-listed from nine priority schemes mentioned in the section 5.(4), about which feasibility studies were completed by the Ministry of Agriculture and Fisheries (*The Feasibility Study and Detailed Design Services for Country Wide Irrigation Scheme* and *Etudo de Viabilidade Tecnico Irrigacao-RDTL 2010*), together with Carau-Ulun irrigation scheme which was also prioritized for rehabilitation by the Government of RDTL. These five irrigation schemes were thoroughly examined in terms of current farming practice aspects and from technical and engineering viewpoints. In conclusion, the Buluto irrigation scheme was proposed as a top priority scheme to be implemented under the Japan's grant aid program. Assessment results on the Buluto irrigation scheme are summarized below:

1) Site location:

The Buluto irrigation scheme is located at 30 minute driving distance from Laelo irrigation scheme where IRCP II project is being carried out under JICA Technical Cooperation Project in Manatuto. It gives advantage that improved farming methods such as ICM and high-end system on irrigation water management are immediately extended to the scheme through well trained Government extension officers by the project. In addition, the scheme is located two hour driving distance from Dili, and located along the national road A-01 which connects between Dili and Baucau. It assures the good market access of rice produced in the scheme, as currently 20 to 30% of rice produced are already marketed to Dili and Baucau as described below.

2) Farm practice:

Currently in the scheme, rice is cultivated in approximately 500 ha of land with 61 ha of double cropping. Other crops such as maize, cassava and vegetables are cultivated in areas which are planned to be developed in the proposed project. Farm land is well maintained with small farm plots, and weeding is also common practice among farmers in the scheme which is not usually the case in Timor-Leste. Double cropping has been introduced in a part of the irrigation area through free intakes located along the Laleia and Vemasse rivers, and a number of farmers express their willingness to practice double cropping once the issue of water shortage is overcome. Irrigable area of the Buluto scheme has been utilized for rice cultivation for tens of years, thus less seepage loss and well maintained soil fertility are also strengths to promptly expect project benefit by stable water supply.

3) Economical viability (Cost-benefit):

It is roughly estimated that about 500 ha of irrigation area is required to maintain economic viability of the project, although it of course depends on the construction cost of intake facilities. Out of five irrigation schemes examined, Beikala, Buluto and Carau-Ulun irrigation schemes meet this criterion, and the Buluto irrigation scheme has 750 ha of net irrigable area, thus shows one of the highest economic viability among the five irrigation schemes.

4) Technical aspects:

Outflow of sediment is relatively large and gradation and degradation of the river bed is occurred after large flooding at the intake sites of the selected schemes. To solve the problem, a fixed weir is constructed across the river to stabilize river bed elevation, thus constant water diversion is promised for irrigation. Proper gate operation of the intake and scouring sluice gates can control sediment flowing into the irrigation canal. No technical problem is found in the intake and canal design.

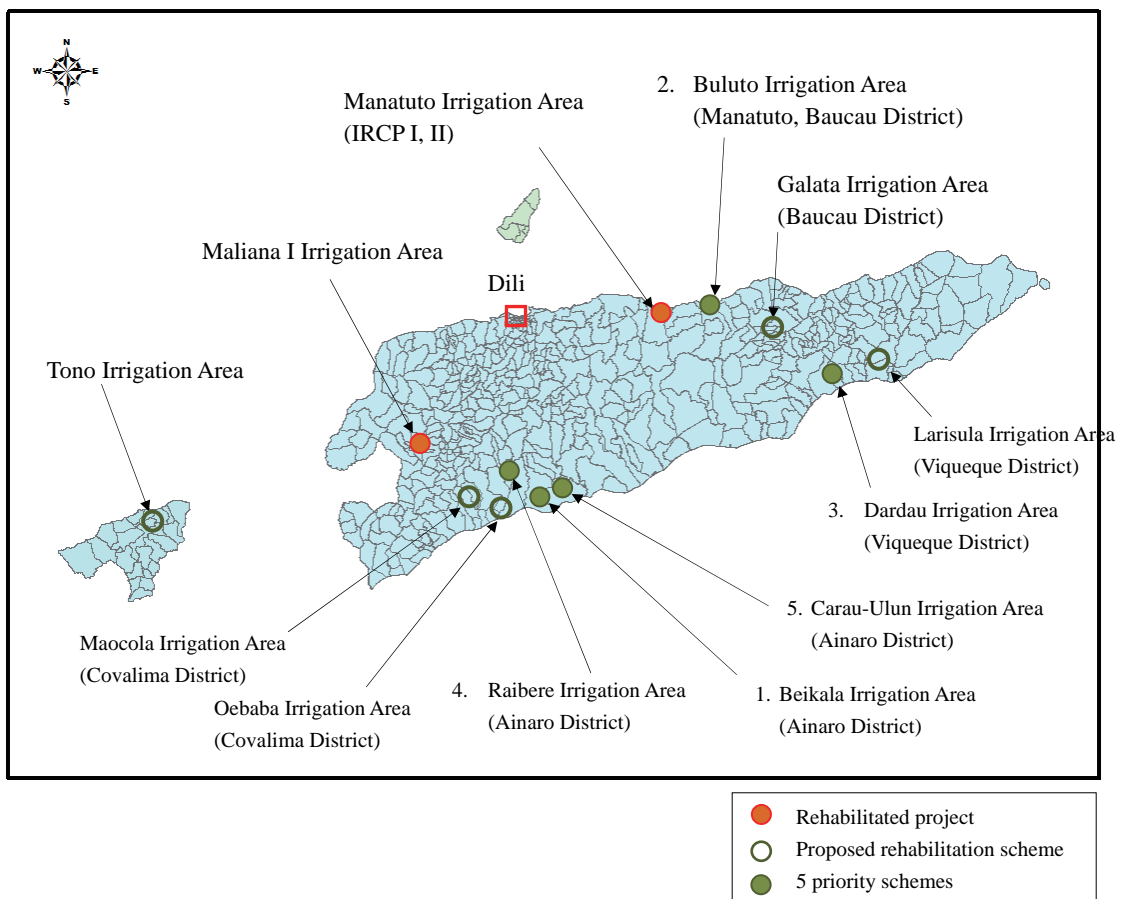
With respect to water potential, the Laleia river has its catchment area is 533 km² at proposed intake site, and 80 % exceedance probability river run-off is estimated at about 2.3 m³/sec in September (1952-1972 data: Assessment of Water Availability and Water Demand in Timor-Leste at River Basin Level, 2004). Water requirement of rice (second crop) is estimated at about 1.85 lit/sec/ha in September, diversion water of 0.69 m³/sec (50% crop intensity of total 750 ha) is equivalent to 30 % use of the total river flow for the Buluto irrigation scheme. In addition, water requirement for approximately 130 ha of traditional irrigation systems downstream of the intake site of the scheme at the left bank schemes is estimated at maximum 0.24 m³/sec (100 % crop intensity) in the same manner. Total water requirement of 0.93 m³/sec, thus, it does not reduce environmental loads, especially downstream area, such as river maintenance flow in the extent of 8.2 km from the intake to river mouth.

On the other hand, there is no residential area and farm land affected by back water due to a weir construction.

Detailed socio-economic survey was conducted in the potential irrigation schemes including the Buluto irrigation scheme by JICA in November 2011. The survey reported that a number of farmers in the Buluto irrigation scheme mainly cultivate rice in the wet season for self consumption and sell surplus rice to the Government or local traders. Area for rice cultivation of each farm household is about 1.5 ha in the area. Since present yield is approximately 2.0 ton/ha, rice for sale is estimated to be 20 to 30 % of the total production with reduction of amount for self consumption, seeds for next season cultivation, etc. All farmer wants to implement double cropping if sufficient water is available. The village head (Suco leader) of Vemasse made a comment that "It is expected that living expense including educational expenses will increase, therefore we would strongly like to practice double cropping and it will contribute to improvement of an employment opportunity in this village".

The irrigation scheme extends over Baucau and Manatuto Districts. Since many extension workers in the Districts have technical knowledge of rice farming, such as Integrated Crop Management (ICM) and System of Rice Intensification (SRI), their knowledge can be extended surrounding schemes through the Buluto irrigation scheme.

Also currently there exist informal groups which jointly work to maintain the traditional irrigation schemes. Thus there is a base for communal work for operation and maintenance of irrigation scheme including the formation of Water Users Association.



Location of Proposed Irrigation Schemes (F/S completed)

- Landowner (private or public estate) and the right to use the land for the project

Intake is constructed across the Laleia river and irrigation canal belongs to communities' properties. (Traditionally owned by communities, thus individual land owner does not exist.).

- Situation of the proposed site (land inclination, drainage, electric power and water supply, telephone lines, etc.)
 - Intake site is constructed across the Laleia river with its crest length of about 135 m. Irrigation canals are constructed along existing canal alignment located on the foot of hilly terrain. Beneficial area for rice cultivation has been already developed and leveled and rice cultivation on the flat plain is on-going.
 - Since the beneficial area has slight slope towards sea shore, drainage condition is well maintained.
 - Social infrastructure, electric and water supply have been well developed, and Timor Telecom network covers whole beneficial area including cellular phone service.
- Security situation
No security problem is reported.

(4) Outline of the facility

- Lay out plan of the existing facility which would be rehabilitated/improved
Project components consist of the construction of the intake facility, main and secondary canals, farm road and drainage improvement. The project includes unification of about six (6) traditional irrigation schemes and other farmers groups along the Laleia and Vemassee rivers, thus soft component for WUA capacity development is included. Detailed plans are indicated in Attachment 3.
- Size of the site/facility and their photographs (see Attachment 4)
 - Beneficial area is about 750 ha that are presently used for rice cultivation using Laleia and Vemassee river flow through traditional free intakes in the wet and partly in the dry seasons. Intake facility has its fixed weir length of about 135 m with 2 gates for the scouring sluice and 2 gates for intake. Sediment trap basin is 120 m long and 6 m wide to settle fine sediment materials. Main irrigation canal is 12.3 km long and secondary canal has its total length of 32.8 km. Division gates, off take structures, sediment flushing gates, and other appurtenant structures are equipped for smooth water distribution to each paddy plot.
 - Drainage canal is constructed to mitigate inundation of a part of the beneficial area in the wet season. Total length is about 4.6 km with earth lining.

- Facilities' design, construction standards in the requesting country
 - Since the Government has no design criteria for intake and irrigation canal planning, Japanese criteria is basically applied, otherwise similar criteria authorized in previous Indonesia period, i.e. (Irrigation Design Standards, KP series) is applied because of its similarity with Japanese criteria for river improvement and irrigation project. It is necessary to provide design criteria specified for the project for a client approval.
- Country from which materials are potentially available for construction
 - Common materials such as cement, steel bars, plywood and lumber for form work, cobble stones for masonry work are available in the country. Specific materials for steel structure, e.g., gates, hoisting materials are assembled in Japan, Indonesia and Singapore, etc. taking account of its qualitative reliability and easiness of procurement for replacement. Abrasion resistance materials to prevent from scouring of concrete surface by debris flow shall be manufactures in Japan, if required.
- Estimated cost of construction (equivalent to 7.(2))
 - US\$ 11.53 million

(5) Outline of the equipment (not applicable)

- Layout plan and photographs of the facility in which the equipment will be installed, and the size of the facility
- List of existing equipment (name, quantity, year of procurement, around 10 photographs of the equipment)
- List of the equipment requested (name, specification, quantity, and unit cost) and the criteria for the equipment selection
- Country where the equipment is potentially available and can be procured (please select from : the requesting country, Japan, other countries)
- Estimated cost of the equipment (equivalent to 7.(2)), with an estimate if available.

(6) Outline of the soft components

- Contents of the activities
 - MAF is responsible for establishment and further training of WUA. The project includes capacity building of Government staff in line with "Policy for WUA and Operation and maintenance irrigation facilities". Poor awareness of WUA on his operation and maintenance responsibility must be improved prior to a completion of the construction.
 - Operation and maintenance methods are transferred to the Government staff, especially intake gate operation and water distribution at on-farm level. Proper gate operation of the intake is essential to smoothly flush out sediment through a scouring sluice way and sediment trap basin, and also to prevent damages of intake structures.
 - Observation of river run-off and diversion water discharge is necessary for further

improvement of irrigation water use. Measurement method is transferred to the Government staff and beneficial farmers.

- Project effect must be envisaged to enhance farmers motivation on rice cultivation, as well as to generate incentive for proper operation and maintenance of the irrigation facilities. To address these purposes, monitoring and evaluation skills must be transferred to the Government staff and beneficiaries.

- Estimated cost

- Cost for the soft component is estimated at about US\$50 thousand.

- Human Resources for implementing the soft components activities (please select from: the requesting country, Japan, or other countries)

	Input schedule	Japanese side (M/M)	Recipient side (M/M)
1.	Detailed design stage	2.0	21.0 1 MAF officer × 3 M/M 3 District officers × 6 M/M)
2.	Construction stage	1.0	40.0 1 MAF officer × 4 M/M 3 District officers × 12 M/M)
3.	Initial period of implementation stage	1.5	64.0 1 MAF officer × 4 M/M 5 District officers × 12 M/M)
	Total	4.5	125.0

Notes: Capacity building shall be commenced from Basic design stage.

(7) Items for which the costs are borne by the requesting country (items and the budget)

- Salary for Government staff
- Transportation, communication cost
- Per diem, accommodation
- Necessary tools for meeting, seminar, WUA registration, etc.
- Necessary financial and human resources to be required for the sustainable use of the facilities during and after the completion of the project

(8) Benefits/beneficiaries and the expected results of the project/program (qualitative or quantitative descriptions such as the population and areas that will benefit from the project

- The number of beneficiaries: 600 households including tenant farmers
- Incremental benefit:

1) Rice production : 3,444 ton/year

	<u>1st cropping</u>	<u>2 nd cropping</u>
[Current production:	2.0ton/ha × 473ha + 1.8ton/ha × 61ha = 1,056ton]	
[Planned production:	4.0ton/ha × 750ha + 4.0ton/ha × 375ha = 4,500ton]	

Incremental rice production is equivalent to 5.9 % of present annual import volume of the rice of approximately 58,000 ton, and also it reaches 1.5 times of annual increase of a rice demand of the country.

[1,070,000 (population in 2010) × 90 kg/capita/year × 2.4% (population growth rate) = 2,311ton]

- 2) Reduction of labour force for maintenance of irrigation facility and scheme (Repair of free intake, sediment dredging in the canal, water distribution, etc.)
- 3) Capacity development of the Government staff and beneficial farmers through technical training for system operation and WUA management
- 4) Job opportunity for the construction (Common labour)

- Other expected impact:

- 1) Extension of farming skill to surrounding irrigation schemes including traditional ones
- 2) Synergetic effect of with MAF and donor assisted program (Succeeding project of Irrigation and Rice Cultivation Project (IRCP II), RDP IV, SoL program, etc.) through joint activities

8. Operation and maintenance of the facilities/equipment including the assignment of staff and the budget allocations after the completion of the project/program

	O&M item	Covered by water fee of WUA (US\$/year)	Covered by Government Budget (US\$/year)
1.	WUA personnel cost	950 (4 persons)	-
2.	Labour cost for gate keeper	3,000 (29 persons)	-
3.	Maintenance cost of gates, hoist devices	-	1,730-10,479* ¹
4.	Maintenance cost for river bank protection, canal and roads	7,893	31,076
5.	Maintenance cost for removal of sedimentation in sand trap facility and canals, and cleaning works for canals	6,952	5,564
	Total	17,795	38,370-47,522
	O&M cost per ha	US\$25/ha/year	US\$51-64/ha/year

*¹: US\$1,730 is for ordinal maintenance work of the gates, e.g., lubrication with grease, and US\$10,479 is for periodical gate maintenance, e.g., re-painting, replacement of water resistance rubber, etc.

9. Implementing agency

(1) Title of the implementing agency:

National Directorate for Irrigation and Water Management (NDIWM), MAF

(2) Number of personnel:

Technical staff is 61 persons in NDIWM including the District Agricultural Offices.

(NDIWM)

	Office (Dili)	Staff		District Agricultural Office	Chief (Irrigation)	Staff (Irrigation)
1.	National Director	1	1.	Ainaro	1	-
2.	Dept. of Planning and Finance	4	2.	Baucau	-	3
3.	Dep. of Irrigation Technology	3	3.	Bobonaro	-	2
4.	Dep. of Irrigation Development	4	4.	Cava Lima	-	2
5.	Dep. of Water Management	4	5.	Lautem	-	1
6.	Dep. of Farm Land Production	2	6.	Liquica	-	1
7	(Study abroad)	1	7.	Manatuto	-	2
	Sub-Total	19	8.	Manufahi	-	2
8.	Others (Operator, drivers, etc.)	22	9.	Oecusi	1	1
			10	Viqueque	-	4
				Sub-Total	2	18
	Total	41		Total		20

(3) Organization chart: (see Attachment 5)

(4) Amount of budget for last three (3) years

Annual Budget (US\$)	2009	2010	2011
MAF	33,914,000	15,398,000	15,228,000
Department of Irrigation and Water Management	6,041,000	3,713,000	2,361,000
Budget share in Dept. of Irrigation and Water Management	18%	24%	16%

(5) Contents of the activities of the organization that relate to the request:

The Ministry of Agriculture and Fisheries is responsible for the designing, executing, coordinating and evaluating the policies approved by the Council of Ministers for the areas of agriculture, forestry, livestock and fisheries. The Decree-Law No. 18/2008, of June 2008 establishes the organisational structure of MAF and defines their respective competencies. NDIWM is responsible for carrying out policies in the fields of irrigation and management of water use for farming, proposing policy measures and instruments, promoting their application and participating in monitoring and assessment; the service is empowered to function as the national irrigation authority.

10. Tax exemption

(In the Japan's Grant Assistance project, the custom duties, internal taxes and other fiscal levies which may be imposed in the recipient country should be exempted or borne by the recipient country's government.

(1) Names of the taxes to be exempted (customs duties, internal taxes, etc.)

- Timor-Leste's taxes are administered by the Ministry of Finance, National Directorate, Timor-Leste Revenue Service (TLRS). There are six main categories of taxes: (1) services; (2) excise; (3) sales; (4) import; (5) wage income; and (6) income. Details of the tax rules can be found in the Taxes and Duties Act, Decree Law No.: 8/2008.

- Excise tax is charged for specific categories of goods manufactured in Timor-Leste according to a published schedule.
- Sales tax of 2.5% is applied on all goods imported into Timor-Leste. Locally produced goods and services are exempt from Sales Tax.
- Unless exempt, an import duty of 2.5% is applied to all goods imported into Timor-Leste. There are only a few items exempt for import duties. These exempt goods include goods for use by UN, donor and charitable organizations.

(2) If tax exemption is not applicable, specify any alternative methods

- The Ministry of Agriculture and Fisheries shall refund the tax duties in the next fiscal year born by the project. It is practicable to allocate refund budget in budget dealing in previous fiscal year.

11. Relationship to other assistance schemes of Japan's ODA

(1) Study (Name of the study, year of implementation, relationship to the request)

The Study on Integrated agricultural Development of East Timor (2003)

The study aimed at verification of the Med-Term Integrated Agricultural Development plan (2003) through a pilot project in the Manatuto area. Verification points were, 1) production technologies of rice, 2) farm mechanization, 3) on-farm management using irrigation canal and 4) water management.

With development of the capacity of the Government staff in terms of training of farmers and also implementation of the Government program such as farm mechanization, etc., rice cultivation shall come into next stage to realize rice self sufficiency by strong leadership of the Government. The proposed project is implemented to accelerate rice cultivation towards extended regions with full utilization of project effects though the completed study and technical cooperation projects.

(2) Technical cooperation (Name of the project, type (project, experts, training, etc.), year of implementation, relationship to the request, input from the Japanese side)

(Technical cooperation Project)

	Items	Descriptions
1.	Irrigation and Rice Cultivation Project in Manatuto (Phase I): IRCPI	
2.	Implementation period	May 2005 – March 2010
3.	Project site	Laclo irrigation area, Manatuto Sub-District, Manatuto District
4.	Recipient body	Directorate for Irrigation and Water management, MAF
5.	Project purpose/ outputs	<ul style="list-style-type: none"> • Improvement of traditional cultivation skill (Land preparation, lone cultivation, weeding, etc.) • Enhancement of WUA activities (water distribution, WAU management, irrigation fee collection, etc.) • Increase of rice production (1.4ton/ha → target yield of 2.0ton/ha, results: 2.61ton/ha)

	Items	Descriptions
6.	Input from Japanese side	<ul style="list-style-type: none"> • JICA experts (Chief advisor/Irrigation, Chief advisor/Rice cultivation, Coordinator/Framers groups, Coordinator/Capacity building of WUA, Experts for ice cultivation, water requirement measurement, land preparation, farm mechanization) • Procurement of machinery and equipments (Vehicle, motor bicycle, generators, hand tractors) • Training program (Training in Japan, local and the third countries: Philippines and Indonesia)
7.	Relationship to the request	<ul style="list-style-type: none"> • Japanese assistance is focuses on irrigated rice cultivation to secure food security, improvement of self-sufficiency of rice. Project components of IRCP I, improvement of traditional cultivation skill, enhancement of WUA activities contribute to project implementation of the requested project.

	Items	Descriptions
1.	Irrigation and Rice Cultivation Project in Manatuto (Phase II): IRCP II	
2.	Implementation period	November 2010 – November 2015
3.	Project site	6 irrigation areas, Manatuto Sub-District, Manatuto District (Laclo, Malarahun, Sau, Sumasse, Rembor and Dirimane irrigation areas)
4.	Recipient body	Directorate for Irrigation and Water management, MAF
5.	Project purpose/ outputs	<ul style="list-style-type: none"> • Strengthening of Manatuto District Agriculture officers on farmers training • Dissemination of the improved rice cultivation system, improvement of operation and maintenance skill and improvement of traditional farming practice (Laclo Irrigation Site) • Demonstration of locally applicable irrigation method and preparation of manuals (4 irrigation sites except Laclo irrigation site)
6.	Input from Japanese side	<ul style="list-style-type: none"> • JICA experts (Chief advisor/ Irrigation water management, Coordinator/ Training, agricultural machinery, rice cultivation) • Procurement of machinery and equipments (Tractor, hand tractor, milling machine, etc.) • Training program (Training in Japan, local and the third countries: trainee from Philippines, etc.)
7.	Relationship to the request	<ul style="list-style-type: none"> • As a successive project of IRCP I, IRCP II extend project effects, such as improvement of traditional cultivation skill, enhancement of WUA activities should be extended to other project areas to maximize its results as wider as possible . • IRCP I has successfully improve rice production from previous 1.4ton/ha to 2.61ton/ha, that was beyond target yield of 2.0ton/ha. IRCP II has been also widening beneficial area into surrounding areas. Such purposed of the extension includes unification of several traditional irrigation groups. In this context, such as project effects should be extended to other watershed area.

(3) Yen loan (Name of the project, year of implementation, relationship to the request)
(Not implemented)

- (4) Grant aid other than the request (Name of the project, year of implementation, relationship to the request)

	Items	Descriptions
1.	The Project for Rehabilitation and Improvement of Maliana I Irrigation System	
2.	Implementation period	February 2008 – February 2009
3.	Project site	Maliana I Irrigation site, Bobonaro District
4.	Recipient body	Irrigation and Water Management Division, MAFF (during implementation period)
5.	Project purpose/ outputs	<ul style="list-style-type: none"> To distribute stable irrigation water to Maliana I area to improve cropping efficiency under irrigation
6.	Input from Japanese side	<ul style="list-style-type: none"> Rehabilitation of intake structure, main and secondary canal construction Soft components for capacity building on water distribution and facility operation and maintenance of Government staff and WUA.
7.	Relationship to the request	<ul style="list-style-type: none"> Development concept of increase crop production through stable water supply

- (5) Assistance from multilateral agencies (Name of the project, year of implementation, relationship to the request)

Japan has contributed to co-financial assistance for World Bank Trust Fund (TFET) through Multilateral Development Bank (MDBs) for an assistance of Timor-Leste. The Bank Group continued to play a catalytic role among development partners in Timor-Leste.

Agricultural Rehabilitation and Development Project: (ARP) by WB aimed at rehabilitation of irrigation systems targeting small scale irrigation schemes.

APR	Sites	Irrigable area (ha)	Cost (US\$)	Remarks
ARPI	46	5,248	369,650	Completed
ARPI	30	2,494	245,419	Completed
ARP II	10	1,554	241,329	Completed
ARP II (Phase II)	26	1,086	76,299	Completed
ARP III	4	3,530	9,854,530	Completed

Overall assessment, Final Evaluation of Timor Leste Rural Development Programme (TL RDP) EU Ref. 2009/208596 (SDC 294)

- (6) Assistance from NGOs (Name of the project, year of implementation, relationship to the request)
(not implemented)

12. Lessons learnt from past similar projects using Japanese grant aid

- (1) Title of the past similar project

The Project for Rehabilitation and Improvement of Maliana I Irrigation System

- (2) Results of the related evaluation

Post evaluation has not yet been conducted. In Pos-Evaluation, capacity development of

WUA was expected to appropriately operate and maintain the irrigation system. Capacity building of Government staff and WUA were conducted in soft component portion. It is reported that crop production has increased and farmers motivation for rice cultivation has been also encouraged, thus the project contributed to improvement of self sufficiency of rice and poverty alleviation of rural population, that is the target of National Priority, as well as National Irrigation Policy.

(3) Follow-up situation

Bobonaro and surrounding Districts are blessed with annual rainfall and farmer's skill of rice cultivation is also high. The farmers have innovated their farming practice applying several Government support programs, e.g., farm mechanization, seed and fertilizer distribution programs through farmers groups. The Government expects the project has an impact over surrounding areas as a model of the irrigated rice cultivation.

(4) Lessons learnt and feedback in relation to this request

Some farmers doubt about irrigation fee collection aside from non-compensatory policy of tractor fuel and fertilizer by the Government according to the field survey. It is necessary to train WUAs to let them shake off their reliance on subsidies. It is proposed to commence a capacity building program from an initial stage of the project planning to enhance WUA's capability and independency from a Government support.

13. Study year expected, Implementation year expected:

The following implementation schedule is proposed:

	2012												2013												2014												2015												
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul										
1. Preparatory Study (B/D)																																																	
2. Cabinet Approval																																																	
3. Detailed Design (D/D)																																																	
4. Tender/ Evaluation																																																	
5. Construction Stage																																																	

A preparatory study (basic design) is implemented in June 2012 considering appropriate construction scheduling in the dry season of the country.

14. Activities of other donor agencies in this sector

Please write the name of the donor agency, the year of implementation, type of assistance, and the contents of the assistance, if this is available.

(1) Seeds of Life (SoL)

SoL has been assisting introduction of staple food seeds, demonstration of farming, distribution of farming manuals and training of agricultural researchers aiming at food security. Assistance activities of SoL are made with technical assistances of MAF, ACIAR and IRRI. Since the commencement of the assistance in year of 2000, Phase 3 programme is

on-going at present. Several cereal crops, such as rice, maize, peanut, and new germplasm varieties are demonstratively cultivated to examine their productivity in local. Demonstration fields of 70 sites are located at 10 Sub-Districts, 5 Districts (Aileu, Baucau, Bononaro, Viqueque, etc.).

(2) RDP IV (The project planning document for the extension component itself is at this moment in Brussels for approval, so not yet suitable for publication.)

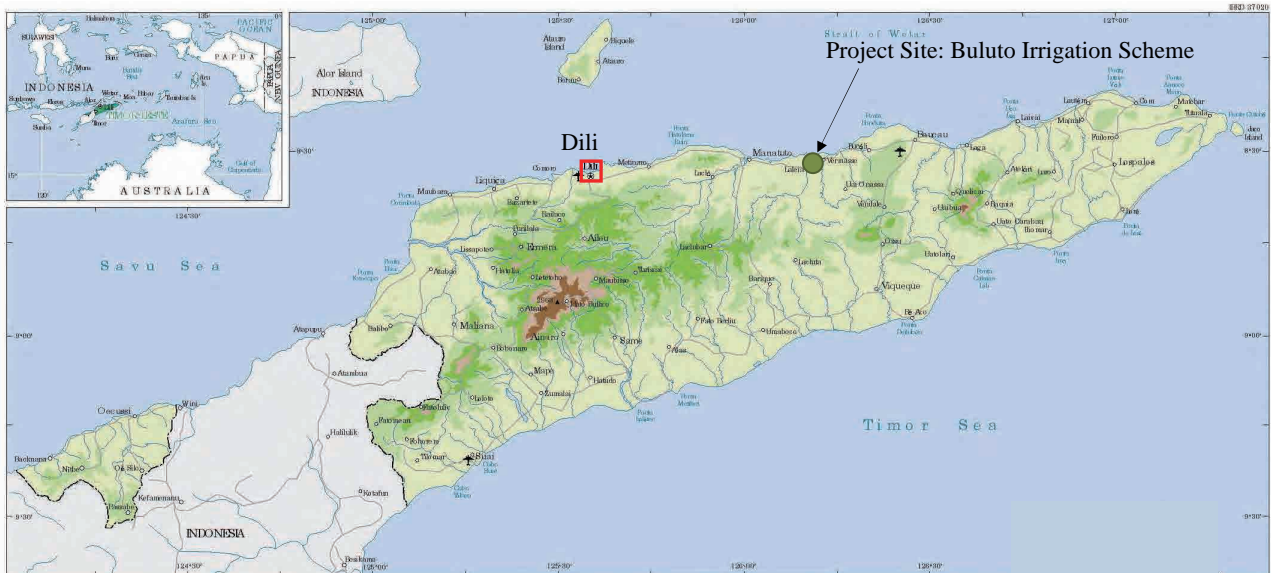
The overall objective of RDP IV is to contribute towards the realization of the Government's vision for rural development, as described in the Strategic Framework for Rural development. To contribute towards the overall objective, RDP IV has three main project purposes, targeting all Districts of the country:

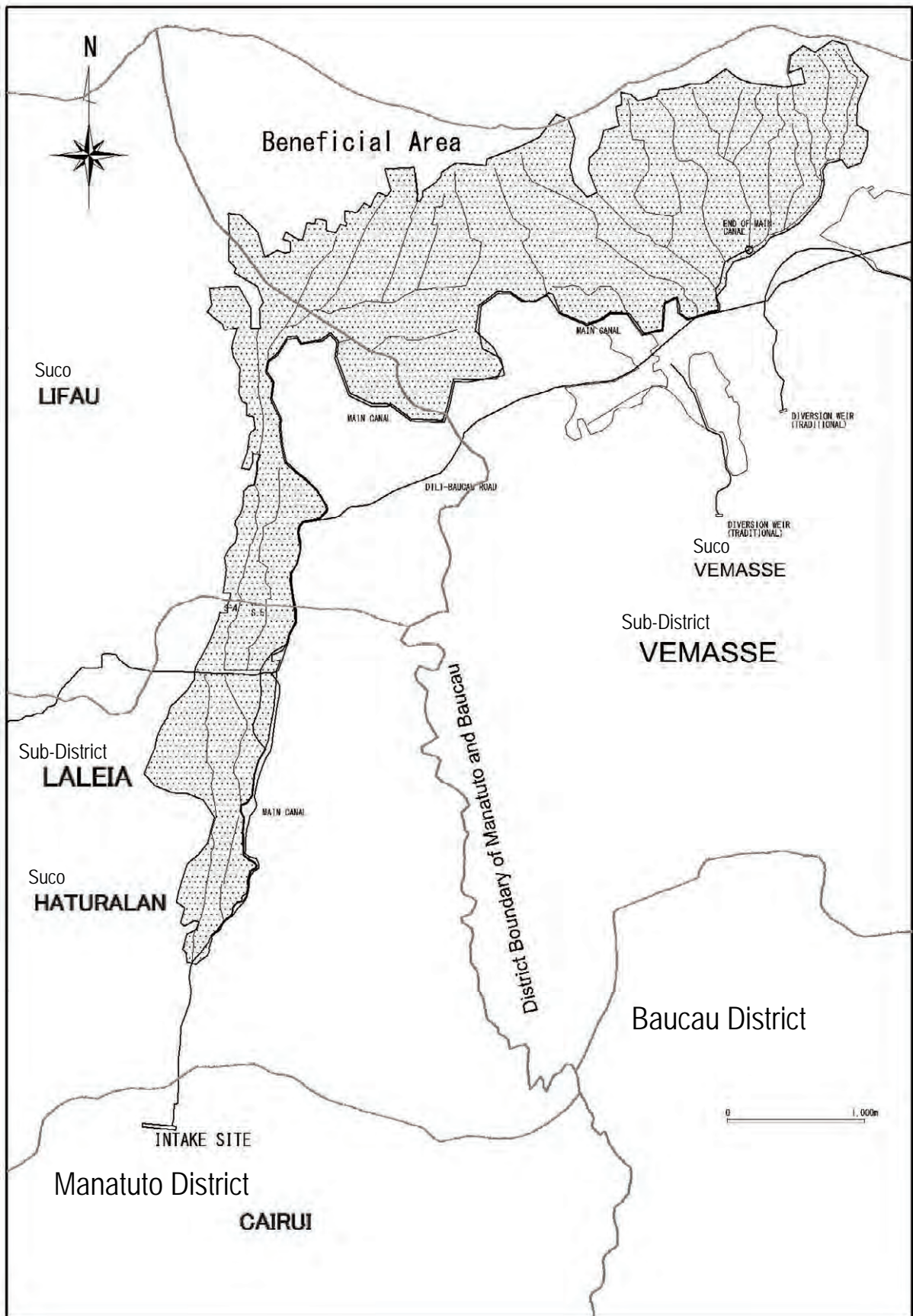
1. Project purpose 1: To contribute towards sustainable increase in nutrition and food security and reduced poverty for farm households and rural communities. However, extension systems and structures are yet in place to allow them to effectively transfer improved agricultural technologies and techniques to farmers. Expected results are:
 - New entrants to the agriculture sector educated in appropriate agricultural skills
 - Farmers and extension workers receive continuing skills development training
 - Effective agricultural extension management systems established
 - Extension campaigns efficiently executed
2. Project purpose 2: To rehabilitate and maintain Rural Roads (ILO portion)
3. Project purpose 3: Technical Assistance to the ICRD (Inter-ministerial Commission for Rural Development)

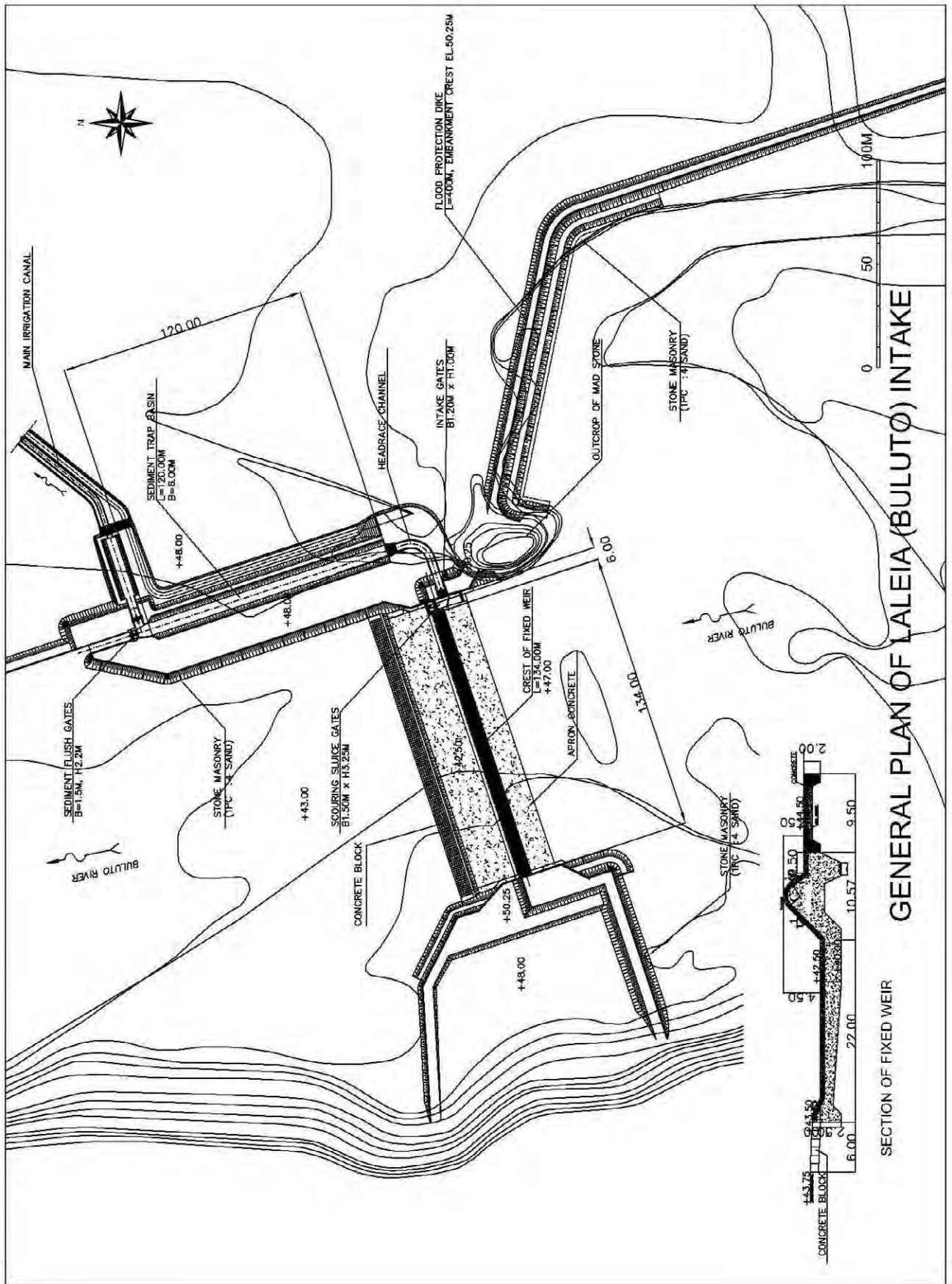
Program outputs of the above programs can be used in the proposed site and the project can provide a demonstration field for their programs, community development after the completion of the construction.

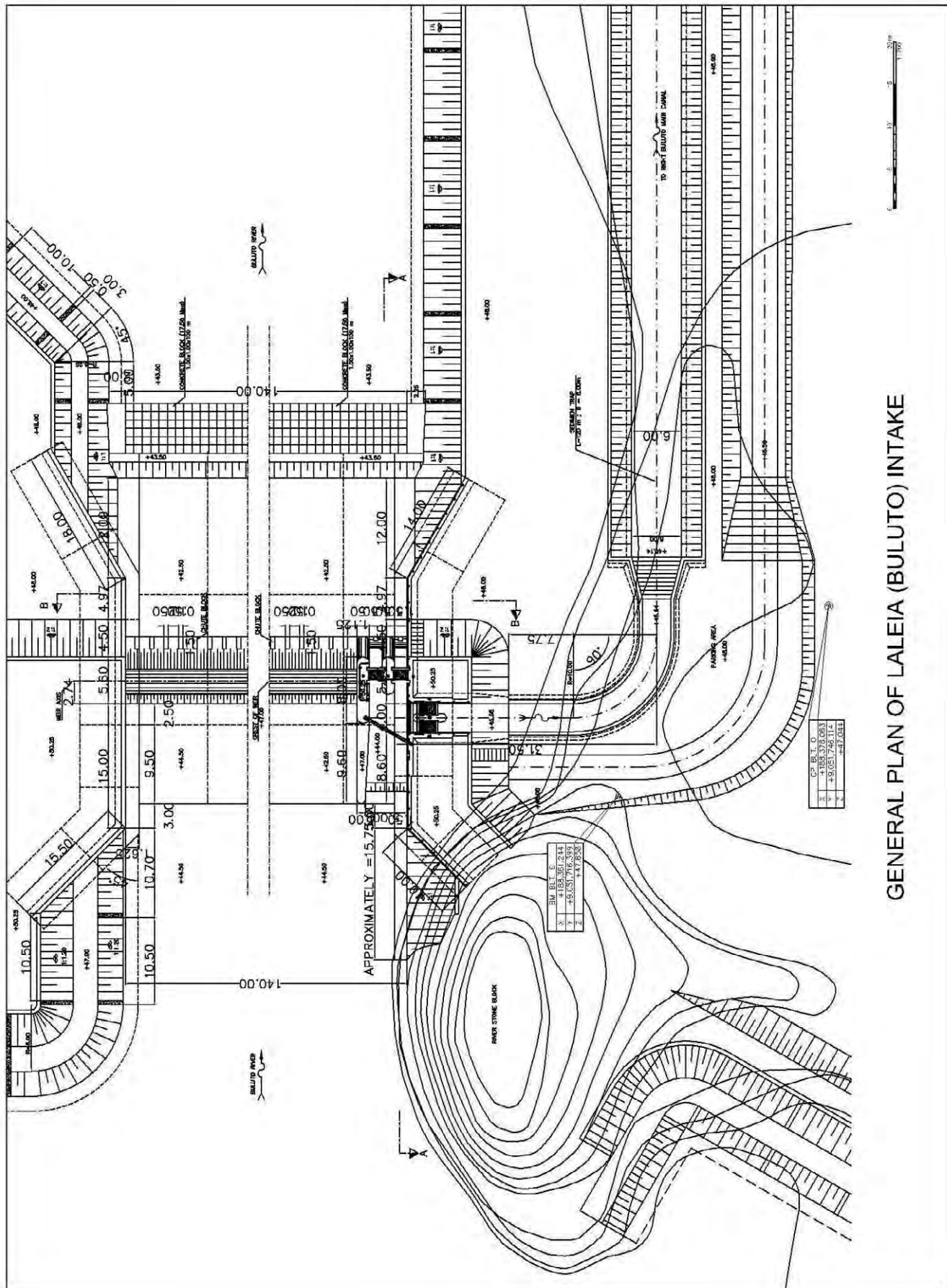
15. Environmental and social considerations
(Please fill in the attached screening format)

Attachment 1 Country map and the project site

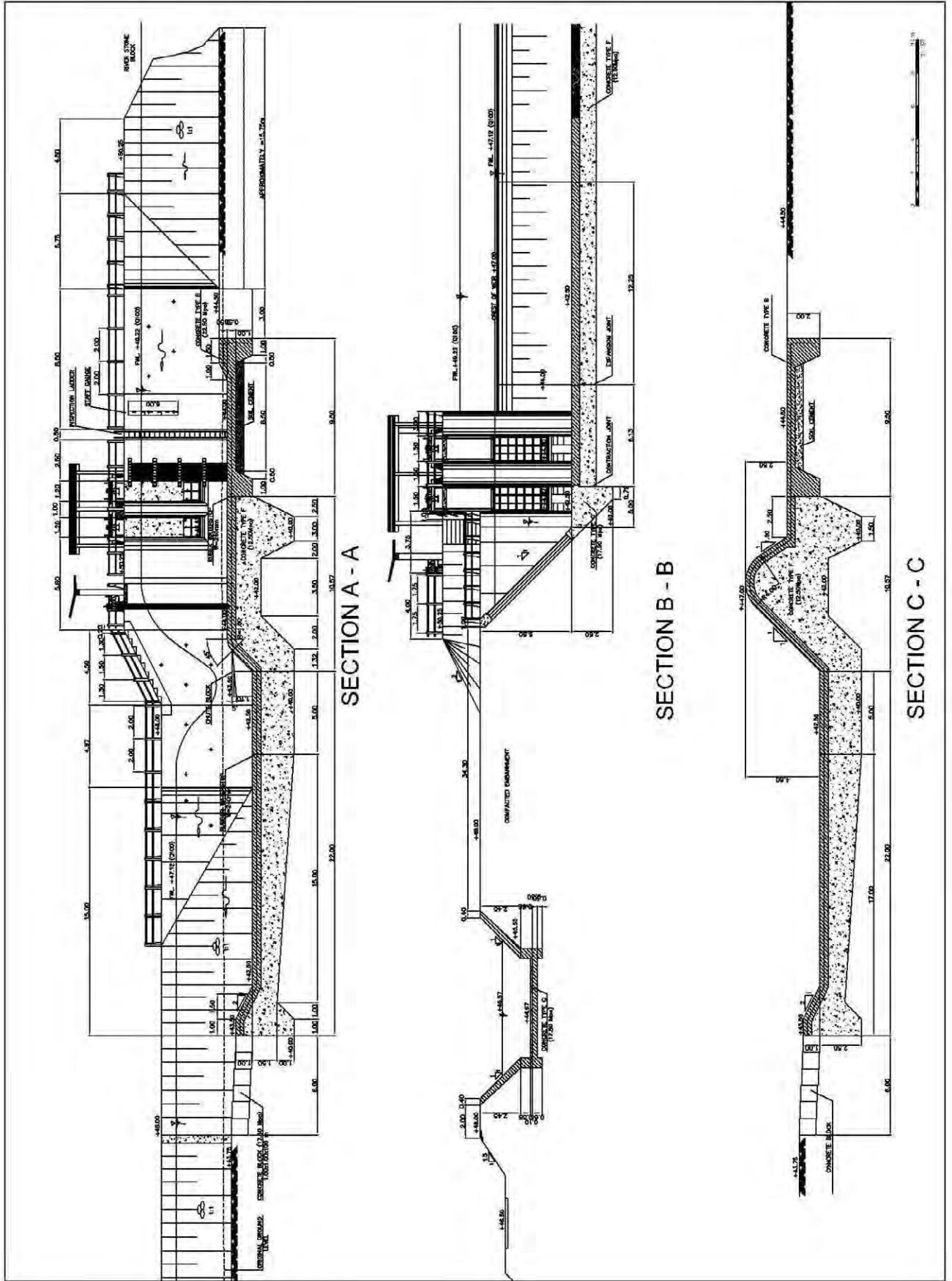


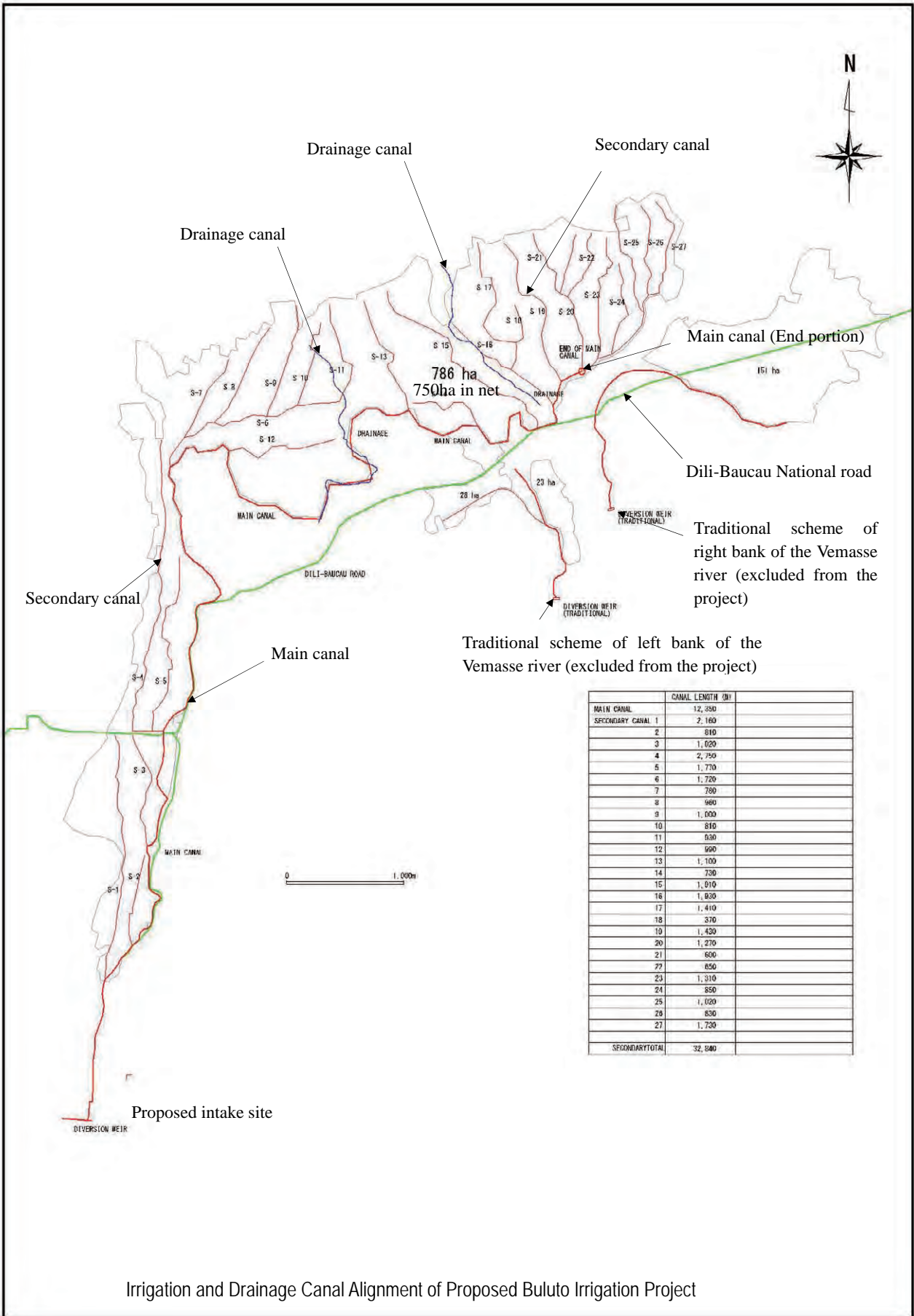






GENERAL PLAN OF LALEIA (BULUTO) INTAKE





	CANAL LENGTH (M)	
MAIN CANAL	12,350	
SECONDARY CANAL 1	2,160	
2	810	
3	1,020	
4	2,750	
5	1,730	
6	1,720	
7	780	
8	960	
9	1,000	
10	810	
11	930	
12	960	
13	1,100	
14	730	
15	1,910	
16	1,830	
17	1,410	
18	370	
19	1,430	
20	1,270	
21	600	
22	850	
23	1,310	
24	850	
25	1,020	
26	830	
27	1,730	
SECONDARY TOTAL	32,840	

Irrigation and Drainage Canal Alignment of Proposed Buluto Irrigation Project

Attachment 4 Site introduction



Proposed site of intake (Intake is installed at the most right side of the photograph)



Irrigation area of the Buluto irrigation project
(Main canal is constructed front of the photograph with flow direction of from left to right)



Existing irrigation canal
(Canal is well maintained by farmers)



Free intake along the Vemassee river
(Water is diverted when river water level is high)

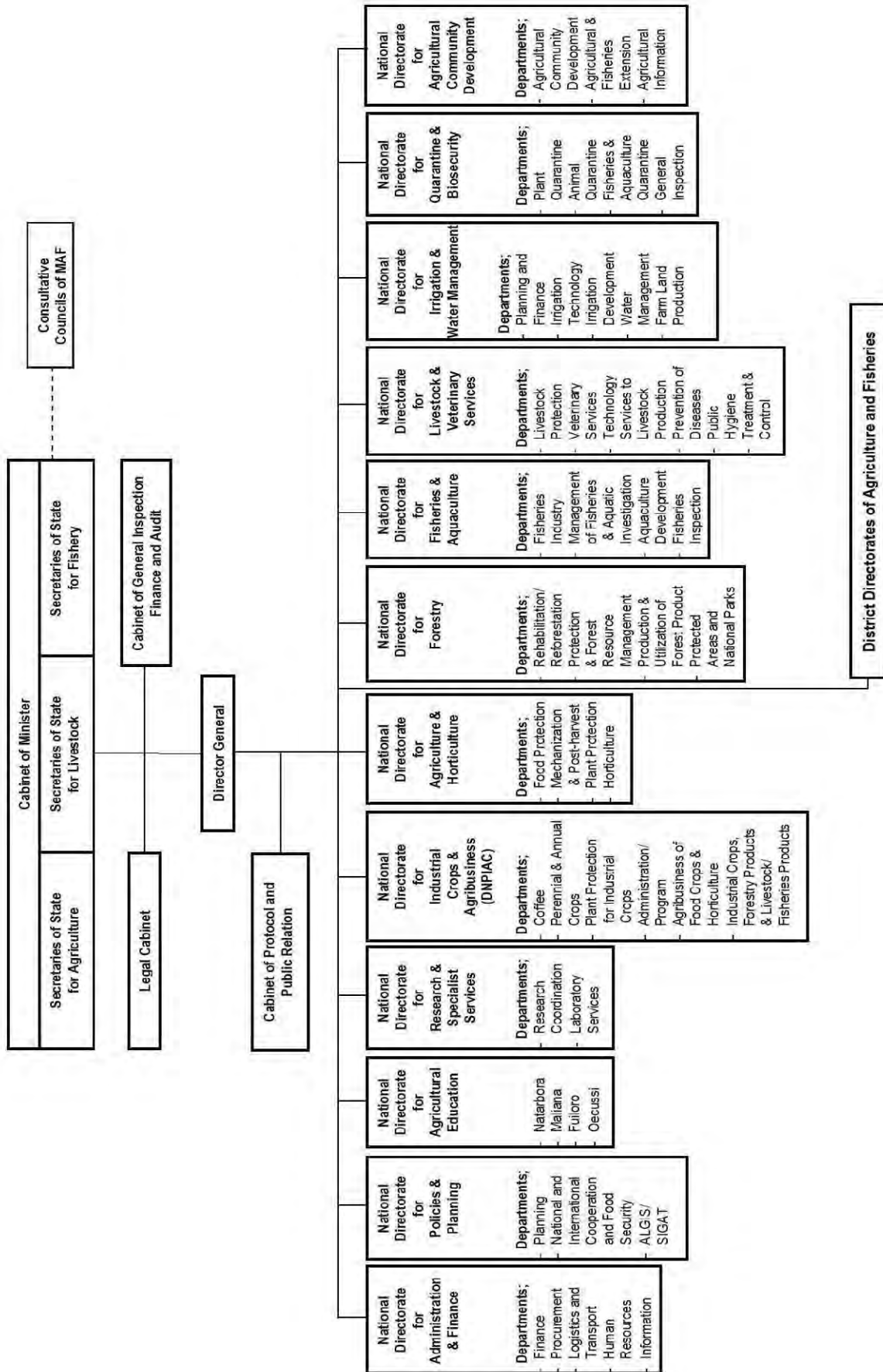


Seed production farm (IRCP II)
Project results are used for the proposed project



Rice milling and polishing work in Buluto site
(Japanese one-pass machine is well maintained by private farmer)

Attachment 5 Organization chart of MAF



Screening Format (Environmental and Social Considerations)

Please write “to be advised (TBA)” when the details of a project are yet to be determined.

Question 1: Address of project site

Suco: Lifau, Hat Uralan, Sub-District Laleia, Manatuto District

Suco: Vemasse, Sub-District Vemasse, Baucau District

Question 2: Scale and contents of the project (approximate area, facilities area, production, electricity generated, etc.)

2-1. Project profile (scale and contents)

- Irrigation area : 750 ha (Net irrigable area)
- Proposed facilities:
 - Intake, with fixed type weir (Crest length 130 m, intake capacity 2.0 m³/sec including 20 % surplus capacity)
 - Main irrigation canal (Masonry lining, L=12.3 km)
 - Secondary irrigation canal (Earth lining, L=32.8 km)
 - River protection dike (Earth filling)
 - Drainage canal (4.6 km)
 - Maintenance road (15.8 km)

2-2. How was the necessity of the project confirmed?

Is the project consistent with the higher program/policy?

■YES: Please describe the higher program/policy.

(SDP development goals for the agriculture sector are to improve national food security, reduce rural poverty)

□NO

2-3. Did the proponent consider alternatives before this request?

■YES: Please describe outline of the alternatives

(Sub technical intake, that has not fixed weir is another alternative. However, sub-technical system cannot divert river water in stable, especially in the dry season. Technical system can divert water through the year.)

□NO

2-4. Did the proponent implement meetings with the related stakeholders before this request?

■Implemented □Not implemented

If implemented, please mark the following stakeholders.

■Administrative body

■Local residents

□NGO

□Others ()

Question 3:

Is the project a new one or an ongoing one? In the case of an ongoing project, have you received strong complaints or other comments from local residents?

New Ongoing (with complaints) Ongoing (without complaints)

Other ()

Question 4:

Is an Environmental Impact Assessment (EIA), including an Initial Environmental Examination (IEE) required for the project according to a law or guidelines of a host country? If yes, is EIA implemented or planned? If necessary, please fill in the reason why EIA is required.

Necessity (Implemented Ongoing/planning)
(Reason why EIA is required:)

Not necessary

Other (please explain)

According to Environment Guideline of Timor Leste, new and improvement projects is required to submit an application to the Secretary of State for Environmental (SSE) and to secure approval on the contents of the development plan. Accordingly, prior to the project implementation, MAF shall provide an Environmental Management Plan (EMP) and obtain permission from SSE as a prerequisite procedure to implement the Project. In case SSE judges serious negative impact may occur, EIA is required. The project is categorized in A because the irrigable area is more than 100 ha according to the 12 sectors classified by the Decree-Law No. 5/2011 of 9 February, 2011.

Question 5:

In the case that steps were taken for an EIA, was the EIA approved by the relevant laws of the host country? If yes, please note the date of approval and the competent authority.

<input type="checkbox"/> Approved without a supplementary condition	<input type="checkbox"/> Approved with a supplementary condition	<input type="checkbox"/> Under appraisal
---	--	--

(Date of approval: Competent authority:)

Under implementation

Appraisal process not yet started

Other ()

Question 6:

If the project requires a certificate regarding the environment and society other than an EIA, please indicate the title of said certificate. Was it approved?

Already certified

Title of the certificate: ()

Requires a certificate but not yet approved

Not required

Other ()

Question 7:

Are any of the following areas present either inside or surrounding the project site?

Yes No

If yes, please mark the corresponding items.

- National parks, protection areas designated by the government (coastline, wetlands, reserved area for ethnic or indigenous people, cultural heritage)
- Primeval forests, tropical natural forests
- Ecologically important habitats (coral reefs, mangrove wetlands, tidal flats, etc.)
- Habitats of endangered species for which protection is required under local laws and/or international treaties
- Areas that run the risk of a large scale increase in soil salinity or soil erosion
- Remarkable desertification areas
- Areas with special values from an archaeological, historical, and/or cultural points of view
- Habitats of minorities, indigenous people, or nomadic people with a traditional lifestyle, or areas with special social value

Question 8:

Does the project include any of the following items?

Yes No

If yes, please mark the appropriate items.

- Involuntary resettlement (scale: households persons)
- Groundwater pumping (scale: m³/year)
- Land reclamation, land development, and/or land-clearing (scale: hectars)
- Logging (scale: hectars)

Question 9:

Please mark related environmental and social impacts, and describe their outlines.

- Air pollution
- Water pollution
- Soil pollution
- Waste
- Noise and vibrations
- Ground subsidence
- Offensive odors
- Geographical features

- Bottom sediment
- Biota and ecosystems
- Water usage
- Accidents
- Global warming
- Involuntary resettlement
- Local economies, such as employment, livelihood, etc.
- Land use and utilization of local resources
- Social institutions such as social infrastructure and local decision-making institutions
- Existing social infrastructures and services
- Poor, indigenous, or ethnic people
- Misdistribution of benefits and damages
- Local conflicts of interest
- Gender
- Children's rights
- Cultural heritage
- Infectious diseases such as HIV/AIDS
- Other ()

Outline of related impact:

[]

Question 10:

In the case of a loan project such as a two-step loan or a sector loan, can sub-projects be specified at the present time?

- Yes No

Question 11:

Regarding information disclosure and meetings with stakeholders, if JICA's environmental and social considerations are required, does the proponent agree to information disclosure and meetings with stakeholders through these guidelines?

- Yes No

Application Form for Grant Aid from Japan

Modification version in June of 2010

1. Country: The Democratic Republic of Timor-Leste
2. Date (dd/mm/yy): --/--/2012
3. Requesting Department/Ministry
 - (1) Name of the department/ministry in charge of this application
National Directorate for Irrigation and Water Management, Ministry of Agriculture and Fisheries (MAF)
 - (2) Name and official position of the person in charge of this application
Martinho L. Soares, National Director, National Directorate for Irrigation and Water Management, Ministry of Agriculture and Fisheries
 - (3) Postal address, Telephone/Fax number, e-mail address
Postal address: Rua Presidenti, Nicolau Lobato #5, Comoro, Dili
Telephone: +670-7312317
Fax: ---
e-mail address: edyxitamar_2009@yahoo.com
4. Project/program title
The Project for Rehabilitation of Caraulun Irrigation Scheme in the Democratic Republic of Timor-Leste
5. Background of the request
 - (1) The sector of the proposed project:
Agriculture:
In the Democratic Republic of Timor-Leste (hereinafter referred to as “RDTL”), agriculture, forestry and fishery sector dominates the country’s economy, accounting for one-third of the non-oil GDP in 2010. In agriculture sector, share of crop production reaches to approximately 60%, and Non-food production accounts for 34%, while the contribution of livestock, fisheries and forestry is limited to the remaining 6%. Approximately 23% of export earning comes from industrial crops, mostly from coffee exports. In RDTL, agriculture sector plays significant role in food security as well as rural economy since approximately 80% of population in RDTL lives in rural areas, depending their livelihoods on the sector. However, agriculture in RDTL is characterized by low-input and low-output subsistence farming, despite its importance in the economy as mentioned above.

Irrigation and Rice Cultivation:

It is estimated that 600,000 ha of land in RDTL is suitable for crops and livestock production, in which 72,000 ha is considered suitable for rice cultivation, 160,000 ha for other crops and the remaining for grazing pasture. In RDTL, rice is most preferred staple crop among the people for both consumption and trade, and thus most important basic cereal. The consumption of rice in RDTL has been increasing due to the preference and food habit of Timorese as well as increase of disposal income for population in urban areas, thus the domestic market for rice has a potential for expansion. Rice is also traded within the country, thus it is one of the common cash crops in the country. Together with other food crops such as maize, cassava and potato, the production of rice provides job opportunity to more than 70% of the total labor force in the whole population.

(2) Current situation and problems of the sector:

Despite its importance, agriculture in RDTL is characterized by “extensive farming and low productivity” and rice production and productivity remain low. Domestically produced rice currently meets only 40 to 50 % of rice demand in the domestic market, causing draining of government financial resource for import of rice, and food price increase in the country reflected the international market price of grain which results in food inaccessibility by economically fragile population.

In RDTL, it is estimated that 72,000 ha of land has potential for irrigation farming. However, a significant area of land still remains in a devastated condition due to frequent floods and post-independence turmoil, and it results in merely 50% of potential area currently under irrigation. It is, therefore, necessary to expand the irrigated area in RDTL in order to increase rice production. There are several modern irrigation schemes existing in the country despite its deteriorated and damaged condition, and farmers struggle in these areas to increase production. This is the base for the development and the rehabilitation of these damaged irrigation schemes are the most cost-effective and quickest path to expand the rice production, and therefore need to be prioritized.

The low agricultural production is also caused by lack of expertise and technical knowledge for irrigated rice cultivation among irrigation engineers, extension workers of the Central and Regional Government offices as well as farmers. The effective and efficient irrigation, appropriate management of irrigation facilities, improved farming practice are among the needed changes to be made in the sector.

With the objective to achieve food self-sufficiency, the Government of RDTL has implemented production support program, rehabilitation of the irrigation facilities, farm mechanization, provision of seeds and fertilizers. However the impact of government programs is still not sufficient and the production level remains low even though it showed remarkable improvement in productivity from 1.76 ton/ha in the year 2006 to 3.09 ton/ha in the year 2010.

- (3) Relationship between the project/program and any national development plan (Title of the national development plan and the position of the sector in it)

Strategic Development Plan (hereinafter referred to as “SDP”), the long-term national development plan for RDTL, aims the transition of Timor-Leste from a low income to an upper-middle income country, with a healthy, well educated and safe population by 2030. This objective reflects the aspirations of the Timorese people as expressed during an extensive national consultation in 2010 and built on the 2002 National Development Plan and Timor-Leste 2020. SDP covers three key areas, namely; social capital, infrastructure development and economic development, and agriculture sector is regarded as one of the three key industries in the section of economic development.

Agricultural strategy and actions are presented under the section for economic development; "to achieve primary goal of food security by 2020 and to expand agriculture sector, improvement of farming practices and taking action to boost the production of specific crops". Development goals for the agriculture sector are to improve national food security, to reduce rural poverty, to support the transition from subsistence farming to commercial farming of crops, livestock and fisheries, and to promote environmental sustainability and the conservation of Timor-Leste’s natural resources.

Thus, agriculture is one of the key sectors in SDP, and self-sufficiency of food, particularly of rice, is mentioned as one of the top priority agendas. The proposed project with the objective to increase rice production is, therefore, in perfect line with the government plan for coming decades.

- (4) The project/program and any sector development plan (Title of the sector development plan and the position of the proposed project/program in it)

No development plan except for SDP comprehensively covers the agriculture sector. The followings are sub-strategies in agricultural development described in SDP:

1) Food security

The followings are four goals to achieve food security by 2020, i) create an additional 70,000 ha of irrigated rice fields, ii) use high yield seeds of life varieties, iii) use new crop production systems and iv) establish on-farm grain storage.

2) Rehabilitating and extending irrigation systems

A significant investment in rehabilitating irrigation systems and improving water storage should be made to accomplish the self-sufficiency in food. A number of hectares of previously irrigated land are unusable because of lack of maintenance or are not used or underused because of poor management. The long dry season prevents effective rain-based farming in many regions. There is also a need to source more water to feed existing and proposed irrigation schemes. Regions which are capable of rain-based farming have already been exploited, so any expansion of irrigated farm land

will depend upon building new irrigation schemes that can supply paddy field with water in the dry season.

3) Strategies and action for specific commodities

Overall, about 63% of households in Timor-Leste are engaged in crop production, with maize, cassava and vegetables the most produced crops. Rice is produced by 25% of households since the flat land is limited. Rice is, however, one of staple foods in Timor-Leste, and local production cannot meet demand despite country's high potential for rice production, and a large amount of rice is currently imported. National goal described in SDP is self-sufficiency in rice production by 2020.

Functional irrigation area is limited to approximately 36,000 ha out of the 72,000 ha potential irrigation area in the country. Rehabilitating and extending irrigation systems are essential requisite to achieve self-efficiency of rice, as stated in SDP as a strategy of "Rehabilitating and extending irrigation systems".

With this backdrop, several irrigation schemes were rehabilitated by donors' technical and financial assistances, and recently the Government of RDTL rehabilitated Bebuy irrigation scheme with its own budget and the construction was completed in 2011. In addition, the Government of RDTL identified nine irrigation schemes; namely Beikala, Buluto, Dardau, Galata, Larisula, Maucola, Oebaba, Raibere and Tono as priority schemes for rehabilitation, and conducted the feasibility studies. JICA has assessed present conditions of the rehabilitated projects and reviewed studies of prioritized nine schemes for further assistance by Japanese side. In the course of the JICA study, JICA verified high viability of two irrigation schemes, i.e., the Buluto irrigation scheme, which rehabilitation work has been implemented under the Japan's grant aid program and the Caraulun irrigation scheme located at Manufahi District, that has not been functioning due to difficulty of river water diversion after demolition of fixed weir by the previous rehabilitation work under the financial support of World Bank. It is needless to say the Government of RDTL recognizes a necessity to rehabilitate un-functional irrigation schemes to achieve country's development goal such as rice self-sufficiency. However, such efforts are not achieved due to limited national budget and human resource which can carry out engineering work in a technically satisfactory manner. To address these constraints, the Government of RDTL requests the Government of Japan for grant aid assistance for the below proposed project. The proposed project is to increase rice production of the Caraulun irrigation scheme, one of the identified priority schemes, with sufficient water supply and introduction of modernized farm practice such as Integrated Crop Management (ICM) through rehabilitation of irrigation facility and capacity building for farmers and government officials. The project is, therefore, consistent with SDP goal as well as strategies for agricultural and irrigation development taken by the Government of RDTL, and as a result of the project, it is expected that the Caraulun irrigation scheme will be rehabilitated with Japanese high quality engineering which will contribute to increase national rice production

sustainably. It will eventually contribute to improve the self-sufficiency of rice in the country and poverty alleviation, especially for rural population.

6. Objectives of the project/program

(1) Overall goal

Food security situation of the country is improved.

(2) Project/program purpose

Project purpose: Rice production in Caraulun Irrigation Schemes is increased

- Importance, necessity, and urgency of the project:

Self sufficiency of rice is a top priority for the country because this will lead to food security and national security. Since rice import is equivalent to around 25 % of trade deficit, improvement of rice self-sufficiency contributes to better national trade balance as well as promoting national economy through import substitution, especially in the context of global soaring food price, and it will result in provision of income and job opportunity for rice farmers.

The Caraulun irrigation scheme is one of the priority irrigation schemes identified by the Government of RDTL. Its potential is estimated quite large and the economic impact and expected return from the rehabilitation are higher than those of other irrigation schemes as shown below. Thus it is important to rehabilitate the Caraulun irrigation scheme in order to make maximum contribution to the national goal of food security and poverty alleviation. Existing irrigation facilities of the Caraulun irrigation scheme have been deteriorating as left without proper maintenance works for a long period. Prompt rehabilitation can extend the functional period of existing facilities, and thus it is important from asset management view point.

7. Outline of the project/program

(1) Project/program type (please select from the items below)

- 1) Facilities + Soft (Non-physical) components

(2) Appropriate amount of the request (US\$) and a rough breakdown

	Item	Cost (US\$'000,000)
Facilities	Weir and intake structures	5.16
	Irrigation canal	3.29
	Drainage canal	0.03
	Maintenance road for main/ secondary canal	0.35
	Others	0.04
	Sub-total	8.87
Soft (Non-physical) components	Capacity development of Government staff and WUA	0.05
Design/Supervision	Japanese consultant	1.06
Grand total		9.98

(3) Location and related information

- Country scale map indicating the project/program site
(see Attachment 1)
- State/province/prefecture/city map indicating the project/program site

Project site: Manufahi Districts

Suco: Betano, Sub-District Same, Manufahi District

(see Attachment 2)

- Address of the project/program site: the access time from the capital or a major city, socioeconomic data on the administrative region (state/province/prefecture) or city where the site is located
 - It is located at the Manufahi District adjoining to the district boundary with Ainaro Districts. It is 0.5 hour distance on land from Same city and 5 hours distance from capital city of Dili.
 - Manufahi District is located on the south coast of the country and borders the districts of Manatuto, Aileu and Ainaro. Manufahi District has 5 % share of rice production next to the large share Districts of Baucau, Lautem, Viqueque, Bobonaro and Manatuto. About 84 % of household gains their income from agriculture and fisheries in the Manufahi District, which is second highest rate next to that of 92 % in the Ermera District. Same is the capital of the district.
- Reasons for the selection of the site (the priority status of the sites, if plural)

Aiming at verification of project appropriateness and urgency as a grant aid program, the Caraulun irrigation scheme which was prioritized for rehabilitation by the Government of RDTL and four potential schemes (Beikala, Buluto, Dardau, Raibere) were short-listed from nine priority schemes mentioned in the section 5.(4), about which feasibility studies were completed by the Ministry of Agriculture and Fisheries (*The Feasibility Study and Detailed Design Services for Country Wide Irrigation Scheme* and *Etudo de Viabilidade Tecnico Irrigacao-RDTL 2010*). These five irrigation schemes were thoroughly examined in terms of current farming practice aspects and from technical and engineering viewpoints. In conclusion, the Buluto and Caraulun irrigation schemes were proposed as a top priority scheme to be implemented under the Japan's grant aid program. Since the Buluto irrigation scheme has been implemented, following that the Caraulun scheme is supposed to be rehabilitated under grant aid program. Assessment results on the Caraulun irrigation scheme are summarized below:

1) Site location:

The Caraulun irrigation scheme is located at 30 minute driving distance from Same, capital of the Manufahi District and five hours driving distance to Dili by the National road of A-02. The road is primary and direct way connecting Dili to several districts

located along south coast of the country through Aileu, capital of Aileu District. It assures the good market access of rice produced in the scheme.

Several similar irrigation schemes are located along south coast, thus the project provides model project of the rehabilitation work from technical and institutional points.

2) Farm practice:

Project site, Betano is a main production area of rice in the country, thus rice is mainly cultivated as a cash crop. Currently in the scheme, rice cultivation area has decreased to approximately 300 ha in the first crop and 85 ha in the second crop, that is so small comparing to previous cultivation area of 600 ha and 300 to 400 ha in the respective crop season. It is equivalent to about 50 % and 20 to 30 % of each crop season because of water shortage caused by mainly intake failure. Project benefit is promptly generated with rehabilitation works of the intake facilities.

Extension officers of MAF are transferring improved farming methods such as ICM (Integrated crop management) and SRI (System of rice intensification) to the farmers. Project implementation in the scheme can accelerate extension of these skills as well as irrigation water management. Double cropping has been introduced in a part of the irrigation area through free intakes located along the Caraulun river, and a number of farmers express their willingness to practice double cropping once the issue of water shortage is overcome. Irrigable area of the Caraulun scheme has been utilized for rice cultivation for tens of years, thus less seepage loss and well maintained soil fertility are also strengths to promptly expect project benefit by stable water supply.

3) Economical viability (Cost-benefit):

It is roughly estimated that about 500 ha of irrigation area is required to maintain economic viability of the project, although it of course depends on the construction cost of intake facilities. The Caraulun irrigation scheme has 740 ha of net irrigable area, thus shows higher economic viability among several proposed irrigation schemes.

4) Technical aspects:

The Caraulun intake was constructed in 1996 and it served water diversion function until the fixed weir was collapsed by floods in 2001. Current functional failure is attributed to a lack of awareness on riverbed fluctuation and hydraulic design for sediment flush in the sediment trap basin. Restoration of fixed weir, intake and scouring sluice gates to original state promises stable and smooth intake from the river. Proper gate operation of the intake and scouring sluice gates can control sediment flowing into the irrigation canal. No technical problem is found in the intake and canal design.

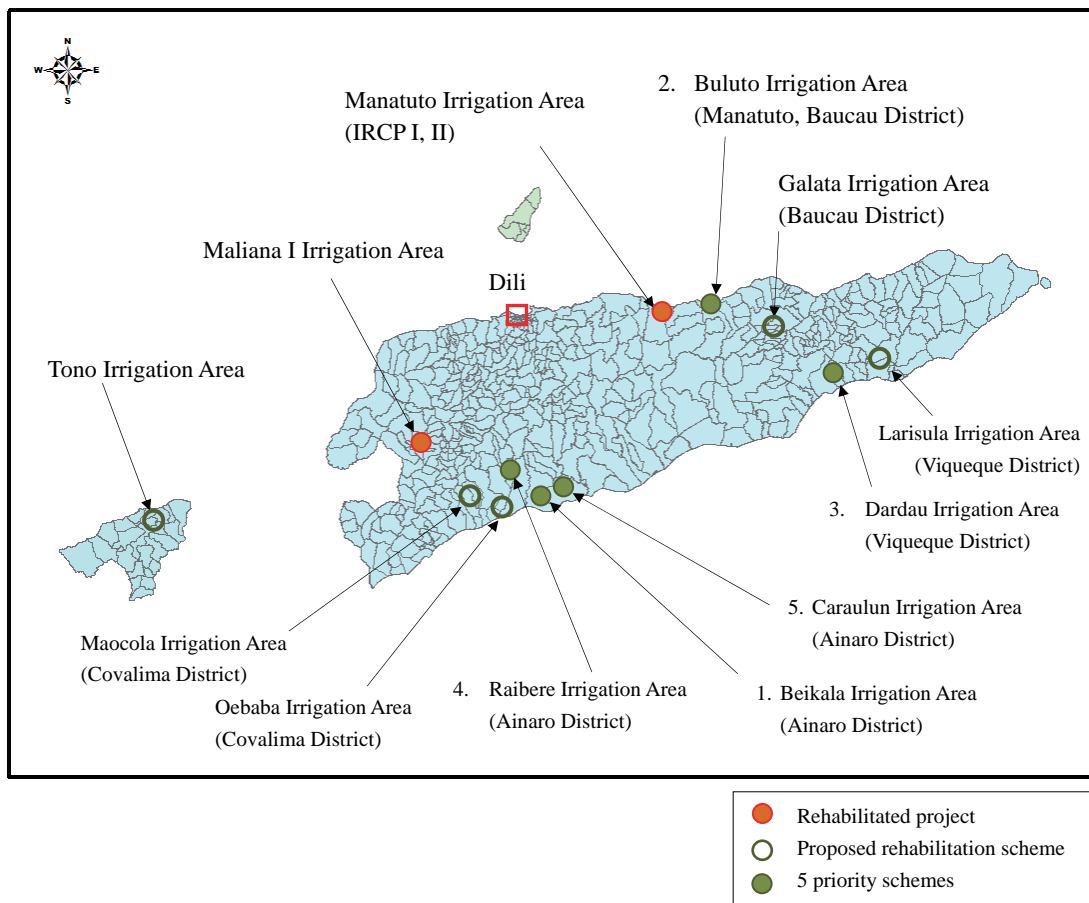
With respect to water potential, the Caraulun river has its catchment area is 554 km² at proposed intake site, and 80 % exceedance probability river run-off is estimated at about 2.66 m³/sec in September (1952-1972 data: Assessment of Water Availability and Water Demand in Timor-Leste at River Basin Level, 2004). Water requirement of rice (second

crop) is estimated at about 1.75 lit/sec/ha in September, diversion water of 0.65 m³/sec (50% crop intensity of total 740 ha) is equivalent to 26 % use of the total river flow for the Caraulun irrigation scheme. In addition, water requirement for approximately 870 ha of proposed Beikala irrigation systems downstream of the Caraulun intake site is estimated at approximately 0.76 m³/sec (50 % crop intensity of net irrigable area of 870 ha) in the same manner. Total water requirement of 1.41 m³/sec (equivalent to about 53 % of river flow), thus, it does not reduce environmental loads, especially downstream area, such as river maintenance flow in the extent of 10.2 km from the intake to river mouth.

On the other hand, there is no residential area and farm land affected by back water due to a weir construction.

Detailed socio-economic survey was conducted in the potential irrigation schemes including the Caraulun irrigation scheme by JICA in November 2011. The survey reported that the Caraulun irrigation scheme consists of 7 sub villages. Paddy cultivation area in the scheme in wet season is estimated to be 200 to 300 ha. The area is affected by rain condition. Paddy is cultivated by using traditional irrigation method in dry season in 85 ha scattered in the area. Many farmers use hand-tractors which were provided by the Government and cultivate the land by groups. Non fertilizer application and transplanting cultivation (random planting, regular planting) are generally implemented and the yield in dry season is lower than 2.0 ton/ha in this scheme. Betano village is major paddy producing area. Paddy and maize are cultivated as not only staple food but also cash crop. However, many farmers sell paddy when they need cash. Paddy is more important crop than maize in selling.

District extension workers of MAF are transferring the new paddy cultivation method (ICM, SRI) to farmers now. It is expected that these outcomes are spread over this scheme. Currently there exist Water Users Association. Hence, there is a base for communal work for operation and maintenance of the irrigation scheme.



Location of Proposed Irrigation Schemes (F/S completed)

- Landowner (private or public estate) and the right to use the land for the project

Rehabilitation work is designed for present intake and irrigation canal, in this regard, land properties belong to public and communities' properties. (Traditionally owned by communities, thus individual land owner does not exist.).

- Situation of the proposed site (land inclination, drainage, electric power and water supply, telephone lines, etc.)

- Fixed weir, intake, scouring sluice and sediment trap basin are subject to rehabilitation to ensure intake function of the system. Existing intake and scouring sluice located at the opposite right side of the existing intake are not included in the rehabilitation work because structural damage of these facilities are minimal except local scouring of wet masonry wall near the intake. Intake is constructed across the Caraulun river with its weir crest length of about 93 m.

Beneficial area for rice cultivation has been already developed and leveled and rice cultivation on the flat plain is on-going.

- Several natural drainage creeks have been developed in the beneficial area. Since the

beneficial area has slight slope towards sea shore, drainage condition is well maintained.

- Social infrastructure, electric and water supply have been well developed, and Timor Telecom network covers whole beneficial area including cellular phone service.

- Security situation

No security problem is reported.

(4) Outline of the facility

- Lay out plan of the existing facility which would be rehabilitated/improved

Project components consist of the rehabilitation works of whole intake facility, composed of fixed weir, intake and scouring sluice gates installation, sediment trap basin, and main and secondary canals, farm road and drainage canal improvement. Furthermore, the project needs re-organization of WUA, thus soft component for WUA capacity development is included. Detailed plans are indicated in Attachment 3.

- Size of the site/facility and their photographs (see Attachment 4)

- Beneficial area is about 740 ha that were previously cultivated for rice using Caraulun river flow. Intake facility has fixed weir of about 93 m long with 2 gates for the scouring sluice and 2 gates for intake. Sediment trap basin is 120 m long and 5 m wide to settle fine sediment materials. Main irrigation canal is 5.6 km long and secondary canal has its total length of 50.1 km. Division gates, off take structures, sediment flushing gates, and other appurtenant structures are equipped for smooth water distribution to each paddy plot.
- Drainage canal is constructed along the house built area to prevent sewage water from flowing into the irrigation canal. Total length is about 2.2 km with earth lining.

- Facilities' design, construction standards in the requesting country

- Since the Government has no design criteria for intake and irrigation canal planning, Japanese criteria is basically applied, otherwise similar criteria authorized in previous Indonesia period, i.e. (Irrigation Design Standards, KP series) is applied because of its similarity with Japanese criteria for river improvement and irrigation project. It is necessary to provide design criteria specified for the project for a client approval.

- Country from which materials are potentially available for construction

- Common materials such as cement, steel bars, plywood and lumber for form work, cobble stones for masonry work are available in the country. Specific materials for steel structure, e.g., gates, hoisting materials are assembled in Japan, Indonesia and Singapore, etc. taking account of its qualitative reliability and easiness of procurement for replacement. Abrasion resistance materials to prevent from scouring of concrete surface by debris flow shall be manufactures in Japan, if required.

- Estimated cost of construction (equivalent to 7.(2))
 - US\$ 9.98 million

(5) Outline of the equipment (not applicable)

- Layout plan and photographs of the facility in which the equipment will be installed, and the size of the facility
- List of existing equipment (name, quantity, year of procurement, around 10 photographs of the equipment)
- List of the equipment requested (name, specification, quantity, and unit cost) and the criteria for the equipment selection
- Country where the equipment is potentially available and can be procured (please select from : the requesting country, Japan, other countries)
- Estimated cost of the equipment (equivalent to 7.(2)), with an estimate if available.

(6) Outline of the soft components

- Contents of the activities
 - MAF is responsible for further training of WUA. The project includes capacity building of Government staff in line with "Policy for WUA and Operation and maintenance irrigation facilities".
 - Operation and maintenance methods are transferred to the Government staff, especially intake gate operation and water distribution at on-farm level. Proper gate operation of the intake is essential to smoothly flush out sediment through a scouring sluice way and sediment trap basin, and also to prevent damages of intake structures.
 - Observation of river run-off and diversion water discharge is continued for further improvement of irrigation water management as well as flood analysis. Measurement method is transferred to the Government staff and beneficial farmers.
 - Project effect must be envisaged to enhance farmers motivation on rice cultivation, as well as to generate incentive for proper operation and maintenance of the irrigation facilities. For these purposes, monitoring and evaluation skills must be transferred to the Government staff and beneficiaries.
- Estimated cost
 - Cost for the soft component is estimated at about US\$50 thousand.
- Human Resources for implementing the soft components activities (please select from: the requesting country, Japan, or other countries)

	Input schedule	Japanese side (M/M)	Recipient side (M/M)
1.	Detailed design stage	2.0	21.0 1 MAF officer × 3 M/M 3 District officers × 6 M/M)
2.	Construction stage	1.0	40.0 1 MAF officer × 4 M/M 3 District officers × 12 M/M)
3.	Initial period of implementation stage	1.5	64.0 1 MAF officer × 4 M/M 5 District officers × 12 M/M)
	Total	4.5	125.0

Notes: Capacity building shall be commenced from Basic design stage.

(7) Items for which the costs are borne by the requesting country (items and the budget)

- Salary for Government staff
- Transportation, communication cost
- Per diem, accommodation
- Necessary tools for meeting, seminar, WUA registration, etc.
- Necessary financial and human resources to be required for the sustainable use of the facilities during and after the completion of the project

(8) Benefits/beneficiaries and the expected results of the project/program (qualitative or quantitative descriptions such as the population and areas that will benefit from the project

- The number of beneficiaries: 800 households including tenant farmers
- Incremental benefit:
 - 1) Rice production : 4,797 ton/year

	<u>1st cropping</u>	<u>2 nd cropping</u>	
[Current production:	2.0ton/ha × 300ha + 1.8ton/ha × 85ha = 753ton]		
[Planned production:	4.0ton/ha × 740ha + 4.0ton/ha × 370ha = 5,550ton]		

Incremental rice production is equivalent to 8.3 % of present annual import volume of the rice of approximately 58,000 ton, and also it reaches 2.1 times of annual increase of a rice demand of the country.

[1,070,000 (population in 2010) × 90 kg/capita/year × 2.4% (population growth rate) = 2,311ton]
 - 2) Reduction of labour force for maintenance of irrigation facility and scheme (Repair of free intake, sediment dredging in the canal, water distribution, etc.)
 - 3) Capacity development of the Government staff and beneficial farmers through technical training for system operation and WUA management
 - 4) Job opportunity for the construction (Common labour)
- Other expected impact:
 - 1) Extension of farming skill to surrounding irrigation schemes including traditional ones
 - 2) Synergetic effect of with MAF and donor assisted program (Succeeding project of Irrigation and Rice Cultivation Project (IRCP II), RDP IV, SoL program, etc.) through joint activities

8. Operation and maintenance of the facilities/equipment including the assignment of staff and the budget allocations after the completion of the project/program

	O&M item	Covered by water fee of WUA (US\$/year)	Covered by Government Budget (US\$/year)
1.	WUA personnel cost	950 (4 persons)	-
2.	Labour cost for gate keeper	2,700 (26 persons)	-
3.	Maintenance cost of gates, hoist devices	-	1,730-10,479* ¹
4.	Maintenance cost for river bank protection, canal and roads	11,113	32,983
5.	Maintenance cost for removal of sedimentation in sand trap facility and canals, and cleaning works for canals	3,547	3,972
	Total	18,310	38,685-47,434
	O&M cost per ha	US\$25/ha/year	US\$52-64/ha/year

*1: US\$1,730 is for ordinal maintenance work of the gates, e.g., lubrication with grease, and US\$10,479 is for periodical gate maintenance, e.g., re-painting, replacement of water resistance rubber, etc.

9. Implementing agency

- (1) Title of the implementing agency:

National Directorate for Irrigation and Water Management (NDIWM), MAF

- (2) Number of personnel:

Technical staff is 61 persons in NDIWM including the District Agricultural Offices.

(NDIWM)

	Office (Dili)	Staff		District Agricultural Office	Chief (Irrigation)	Staff (Irrigation)
1.	National Director	1	1.	Ainaro	1	-
2.	Dept. of Planning and Finance	4	2.	Baucau	-	3
3.	Dep. of Irrigation Technology	3	3.	Bobonaro	-	2
4.	Dep. of Irrigation Development	4	4.	Cava Lima	-	2
5.	Dep. of Water Management	4	5.	Lautem	-	1
6.	Dep. of Farm Land Production	2	6.	Liquica	-	1
7	(Study abroad)	1	7.	Manatuto	-	2
	Sub-Total	19	8.	Manufahi	-	2
8.	Others (Operator, drivers, etc.)	22	9.	Oecusi	1	1
			10	Viqueque	-	4
				Sub-Total	2	18
	Total	41		Total		20

- (3) Organization chart: (see Attachment 5)

(4) Amount of budget for last three (3) years

Annual Budget (US\$)	2009	2010	2011
MAF	33,914,000	15,398,000	15,228,000
Department of Irrigation and Water Management	6,041,000	3,713,000	2,361,000
Budget share in Dept. of Irrigation and Water Management	18%	24%	16%

(5) Contents of the activities of the organization that relate to the request:

The Ministry of Agriculture and Fisheries is responsible for the designing, executing, coordinating and evaluating the policies approved by the Council of Ministers for the areas of agriculture, forestry, livestock and fisheries. The Decree-Law No. 18/2008, of June 2008 establishes the organisational structure of MAF and defines their respective competencies. NDIWM is responsible for carrying out policies in the fields of irrigation and management of water use for farming, proposing policy measures and instruments, promoting their application and participating in monitoring and assessment; the service is empowered to function as the national irrigation authority.

10. Tax exemption

(In the Japan's Grant Assistance project, the custom duties, internal taxes and other fiscal levies which may be imposed in the recipient country should be exempted or borne by the recipient country's government.

(1) Names of the taxes to be exempted (customs duties, internal taxes, etc.)

- Timor-Leste's taxes are administered by the Ministry of Finance, National Directorate, Timor-Leste Revenue Service (TLRS). There are six main categories of taxes: (1) services; (2) excise; (3) sales; (4) import; (5) wage income; and (6) income. Details of the tax rules can be found in the Taxes and Duties Act, Decree Law No.: 8/2008.
- Excise tax is charged for specific categories of goods manufactured in Timor-Leste according to a published schedule.
- Sales tax of 2.5% is applied on all goods imported into Timor-Leste. Locally produced goods and services are exempt from Sales Tax.
- Unless exempt, an import duty of 2.5% is applied to all goods imported into Timor-Leste. There are only a few items exempt for import duties. These exempt goods include goods for use by UN, donor and charitable organizations.

(2) If tax exemption is not applicable, specify any alternative methods

- The Ministry of Agriculture and Fisheries shall refund the tax duties in the next fiscal year born by the project. It is practicable to allocate refund budget in budget dealing in previous fiscal year.

11. Relationship to other assistance schemes of Japan's ODA

(1) Study (Name of the study, year of implementation, relationship to the request)

The Study on Integrated agricultural Development of East Timor (2003)

The study aimed at verification of the Med-Term Integrated Agricultural Development plan (2003) through a pilot project in the Manatuto area. Verification points were, 1) production technologies of rice, 2) farm mechanization, 3) on-farm management using irrigation canal and 4) water management.

With development of the capacity of the Government staff in terms of training of farmers and also implementation of the Government program such as farm mechanization, etc., rice cultivation shall come into next stage to realize rice self sufficiency by strong leadership of the Government . The proposed project is implemented to accelerate rice cultivation towards extended regions with full utilization of project effects though the completed study and technical cooperation projects.

(2) Technical cooperation (Name of the project, type (project, experts, training, etc.), year of implementation, relationship to the request, input from the Japanese side)

(Technical cooperation Project)

	Items	Descriptions
1.	Irrigation and Rice Cultivation Project in Manatuto (Phase I): IRCP I	
2.	Implementation period	May 2005 – March 2010
3.	Project site	Laclo irrigation area, Manatuto Sub-District, Manatuto District
4.	Recipient body	Directorate for Irrigation and Water management, MAF
5.	Project purpose/ outputs	<ul style="list-style-type: none"> • Improvement of traditional cultivation skill (Land preparation, lone cultivation, weeding, etc.) • Enhancement of WUA activities (water distribution, WAU management, irrigation fee collection, etc.) • Increase of rice production (1.4ton/ha → target yield of 2.0ton/ha, results: 2.61ton/ha)
6.	Input from Japanese side	<ul style="list-style-type: none"> • JICA experts (Chief advisor/Irrigation, Chief advisor/Rice cultivation, Coordinator/ Framers groups, Coordinator/Capacity building of WUA, Experts for ice cultivation, water requirement measurement, land preparation, farm mechanization) • Procurement of machinery and equipments (Vehicle, motor bicycle, generators, hand tractors) • Training program (Training in Japan, local and the third countries: Philippines and Indonesia)
7.	Relationship to the request	<ul style="list-style-type: none"> • Japanese assistance is focuses on irrigated rice cultivation to secure food security, improvement of self-sufficiency of rice. Project components of IRCP I, improvement of traditional cultivation skill, enhancement of WUA activities contribute to project implementation of the requested project.

	Items	Descriptions
1.	Irrigation and Rice Cultivation Project in Manatuto (Phase II): IRCP II	
2.	Implementation period	November 2010 – November 2015
3.	Project site	6 irrigation areas, Manatuto Sub-District, Manatuto District (Laclo, Malarahun, Sau, Sumasse, Rembor and Dirimane irrigation areas)
4.	Recipient body	Directorate for Irrigation and Water management, MAF
5.	Project purpose/ outputs	<ul style="list-style-type: none"> • Strengthening of Manatuto District Agriculture officers on farmers training • Dissemination of the improved rice cultivation system, improvement of operation and maintenance skill and improvement of traditional farming practice (Laclo Irrigation Site) • Demonstration of locally applicable irrigation method and preparation of manuals (4 irrigation sites except Laclo irrigation site)
6.	Input from Japanese side	<ul style="list-style-type: none"> • JICA experts (Chief advisor/ Irrigation water management, Coordinator/ Training, agricultural machinery, rice cultivation) • Procurement of machinery and equipments (Tractor, hand tractor, milling machine, etc.) • Training program (Training in Japan, local and the third countries: trainee from Philippines, etc.)
7.	Relationship to the request	<ul style="list-style-type: none"> • As a successive project of IRCP I, IRCP II extend project effects, such as improvement of traditional cultivation skill, enhancement of WUA activities should be extended to other project areas to maximize its results as wider as possible . • IRCP I has successfully improve rice production from previous 1.4ton/ha to 2.61ton/ha, that was beyond target yield of 2.0ton/ha. IRCP II has been also widening beneficial area into surrounding areas. Such purposed of the extension includes unification of several traditional irrigation groups. In this context, such as project effects should be extended to other watershed area.

(3) Yen loan (Name of the project, year of implementation, relationship to the request)
(Not implemented)

(4) Grant aid other than the request (Name of the project, year of implementation, relationship to the request)

	Items	Descriptions
1.	The Project for Rehabilitation and Improvement of Maliana I Irrigation System	
2.	Implementation period	February 2008 – February 2009
3.	Project site	Maliana I Irrigation site, Bobonaro District
4.	Recipient body	Irrigation and Water Management Division, MAFF (during implementation period)
5.	Project purpose/ outputs	<ul style="list-style-type: none"> • To distribute stable irrigation water to Maliana I area to improve cropping efficiency under irrigation
6.	Input from Japanese side	<ul style="list-style-type: none"> • Rehabilitation of intake structure, main and secondary canal construction • Soft components for capacity building on water distribution and facility operation and maintenance of Government staff and WUA.
7.	Relationship to the request	<ul style="list-style-type: none"> • Development concept of increase crop production through stable water supply

- (5) Assistance from multilateral agencies (Name of the project, year of implementation, relationship to the request)

Japan has contributed to co-financial assistance for World Bank Trust Fund (TFET) through Multilateral Development Bank (MDBs) for an assistance of Timor-Leste. The Bank Group continued to play a catalytic role among development partners in Timor-Leste.

Agricultural Rehabilitation and Development Project: (ARP) by WB aimed at rehabilitation of irrigation systems targeting small scale irrigation schemes.

APR	Sites	Irrigable area (ha)	Cost (US\$)	Remarks
ARPI	46	5,248	369,650	Completed
ARPI	30	2,494	245,419	Completed
ARP II	10	1,554	241,329	Completed
ARP II (Phase II)	26	1,086	76,299	Completed
ARP III	4	3,530	9,854,530	Completed

Overall assessment, Final Evaluation of Timor Leste Rural Development Programme (TL RDP) EU Ref. 2009/208596 (SDC 294)

- (6) Assistance from NGOs (Name of the project, year of implementation, relationship to the request)
(not implemented)

12. Lessons learnt from past similar projects using Japanese grant aid

- (1) Title of the past similar project

The Project for Rehabilitation and Improvement of Maliana I Irrigation System

- (2) Results of the related evaluation

Post evaluation has not yet been conducted. In Pos-Evaluation, capacity development of WUA was expected to appropriately operate and maintain the irrigation system. Capacity building of Government staff and WUA were conducted in soft component portion. It is reported that crop production has increased and farmers motivation for rice cultivation has been also encouraged, thus the project contributed to improvement of self sufficiency of rice and poverty alleviation of rural population, that is the target of National Priority, as well as National Irrigation Policy.

- (3) Follow-up situation

Bobonaro and surrounding Districts are blessed with annual rainfall and farmer's skill of rice cultivation is also high. The farmers have innovated their farming practice applying several Government support programs, e.g., farm mechanization, seed and fertilizer distribution programs through farmers groups. The Government expects the project has an impact over surrounding areas as a model of the irrigated rice cultivation.

(4) Lessons learnt and feedback in relation to this request

Some farmers doubt about irrigation fee collection aside from non-compensatory policy of tractor fuel and fertilizer by the Government according to the field survey. It is necessary to train WUAs to let them shake off their reliance on subsidies. It is proposed to commence a capacity building program from an initial stage of the project planning to enhance WUA's capability and independency from a Government support.

13. Study year expected, Implementation year expected:

The following implementation schedule is proposed:

	2012												2013												2014												2015													
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul											
1. Preparatory Study (B/D)																																																		
2. Cabinet Approval																																																		
3. Detailed Design (D/D)																																																		
4. Tender/ Evaluation																																																		
5. Construction Stage																																																		

A preparatory study (basic design) is implemented in June 2012 considering appropriate construction scheduling in the dry season of the country.

14. Activities of other donor agencies in this sector

Please write the name of the donor agency, the year of implementation, type of assistance, and the contents of the assistance, if this is available.

(1) Seeds of Life (SoL)

SoL has been assisting introduction of staple food seeds, demonstration of farming, distribution of farming manuals and training of agricultural researchers aiming at food security. Assistance activities of SoL are made with technical assistances of MAF, ACIAR and IRRI. Since the commencement of the assistance in year of 2000, Phase 3 programme is on-going at present. Several cereal crops, such as rice, maize, peanut, and new germplasm varieties are demonstratively cultivated to examine their productivity in local. Demonstration fields of 70 sites are located at 10 Sub-Districts, 5 Districts (Aileu, Baucau, Bononaro, Viqueque, etc.).

(2) RDP IV (The project planning document for the extension component itself is at this moment in Brussels for approval, so not yet suitable for publication.)

The overall objective of RDP IV is to contribute towards the realization of the Government's vision for rural development, as described in the Strategic Framework for Rural development. To contribute towards the overall objective, RDP IV has three main project purposes, targeting all Districts of the country:

1. Project purpose 1: To contribute towards sustainable increase in nutrition and food security and reduced poverty for farm households and rural communities. However, extension systems and structures are yet in

place to allow them to effectively transfer improved agricultural technologies and techniques to farmers. Expected results are:

- New entrants to the agriculture sector educated in appropriate agricultural skills
- Farmers and extension workers receive continuing skills development training
- Effective agricultural extension management systems established
- Extension campaigns efficiently executed

2. Project purpose 2: To rehabilitate and maintain Rural Roads (ILO portion)

3. Project purpose 3: Technical Assistance to the ICRD (Inter-ministerial Commission for Rural Development)

Program outputs of the above programs can be used in the proposed site and the project can provide a demonstration field for their programs, community development after the completion of the construction.

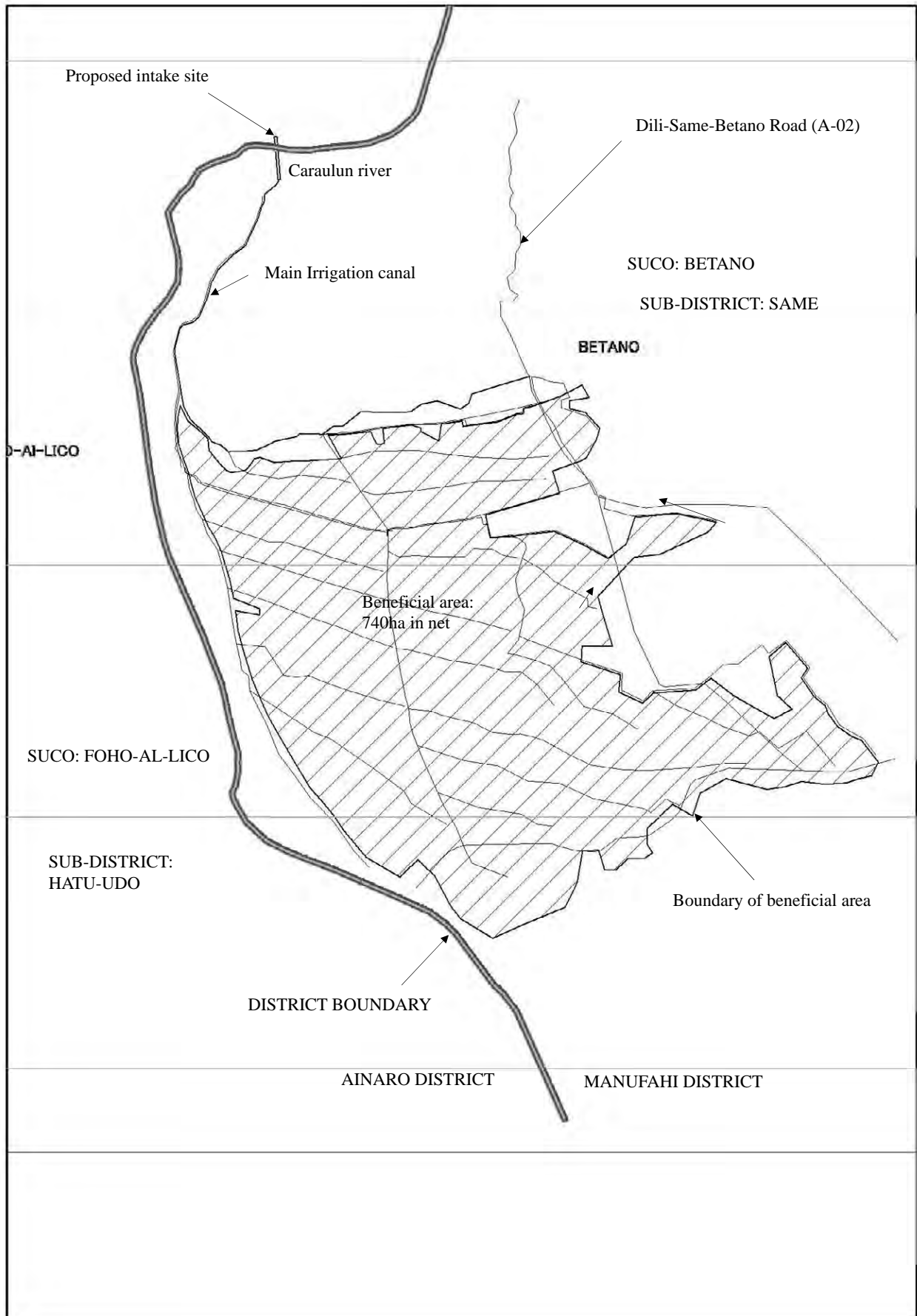
15. Environmental and social considerations

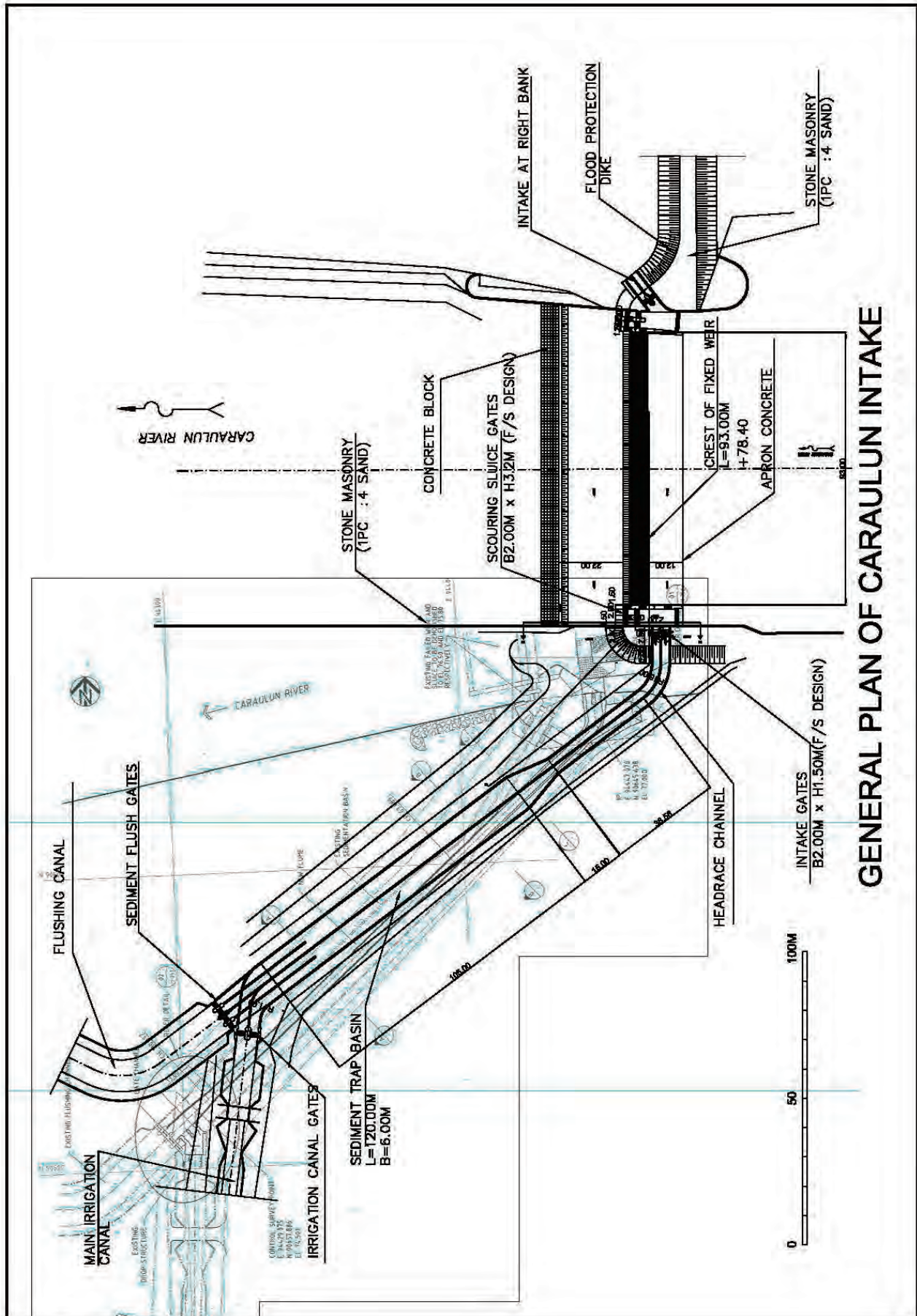
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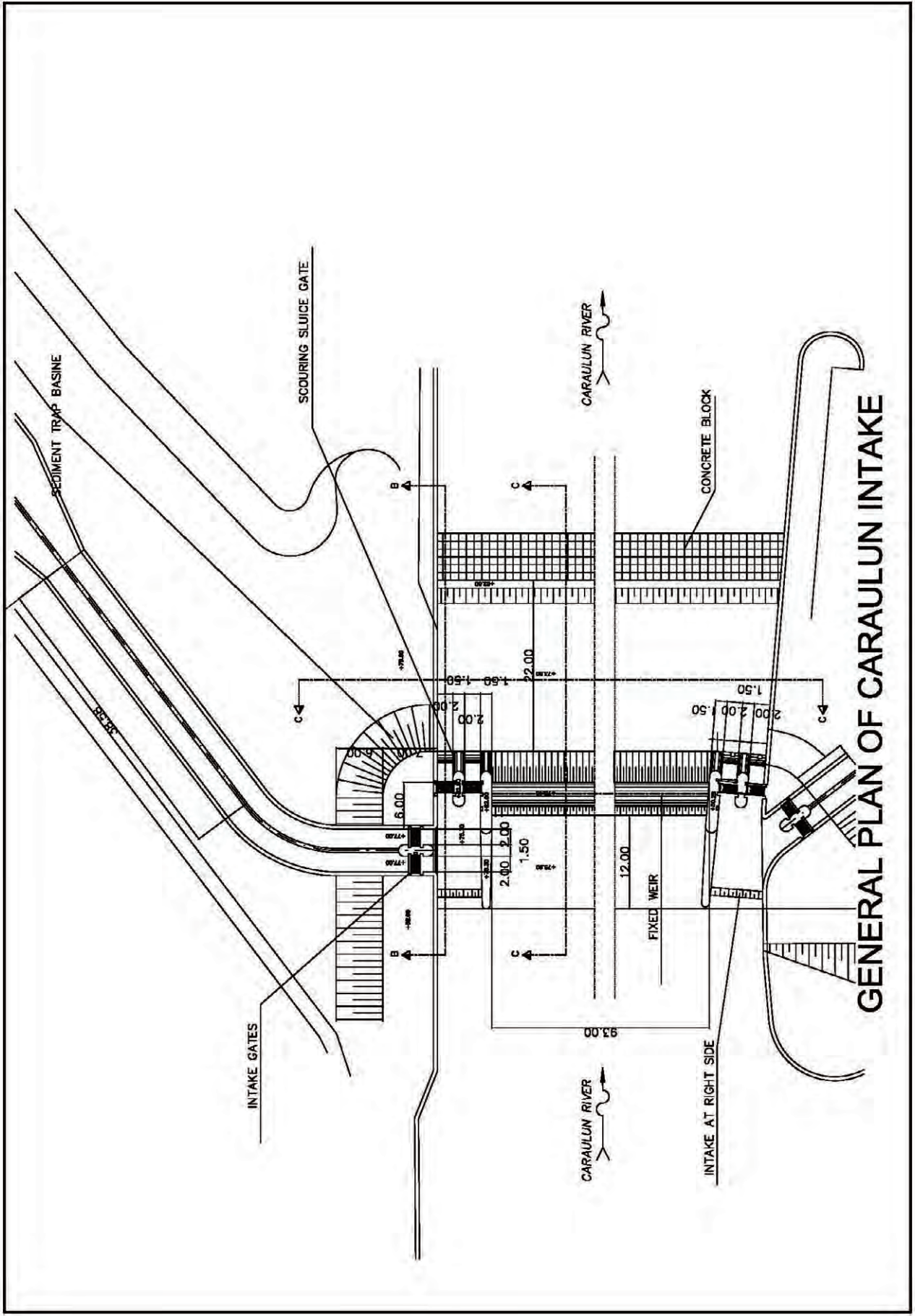
Attachment 1 Country map and the project site



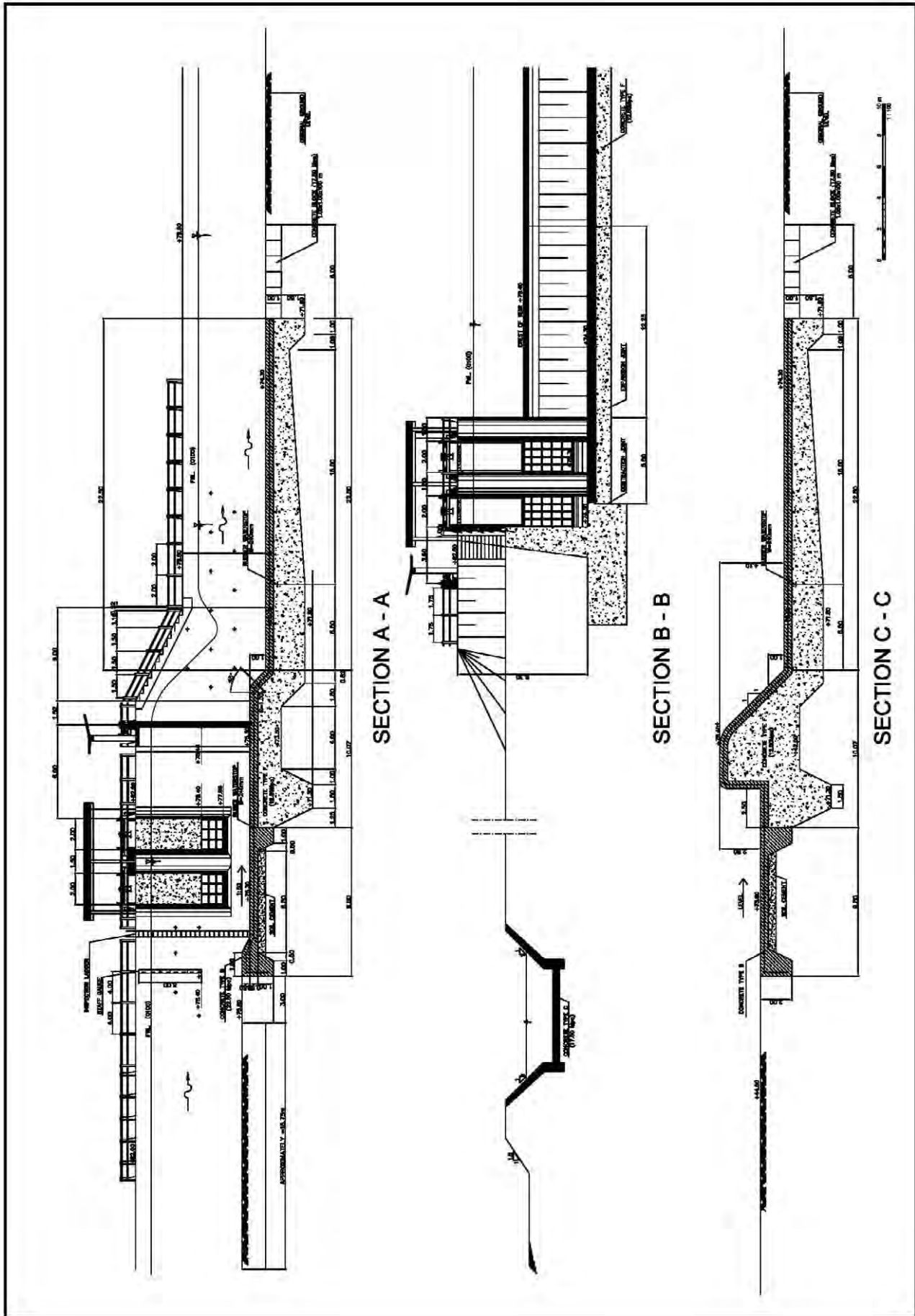
Attachment 2 Project site

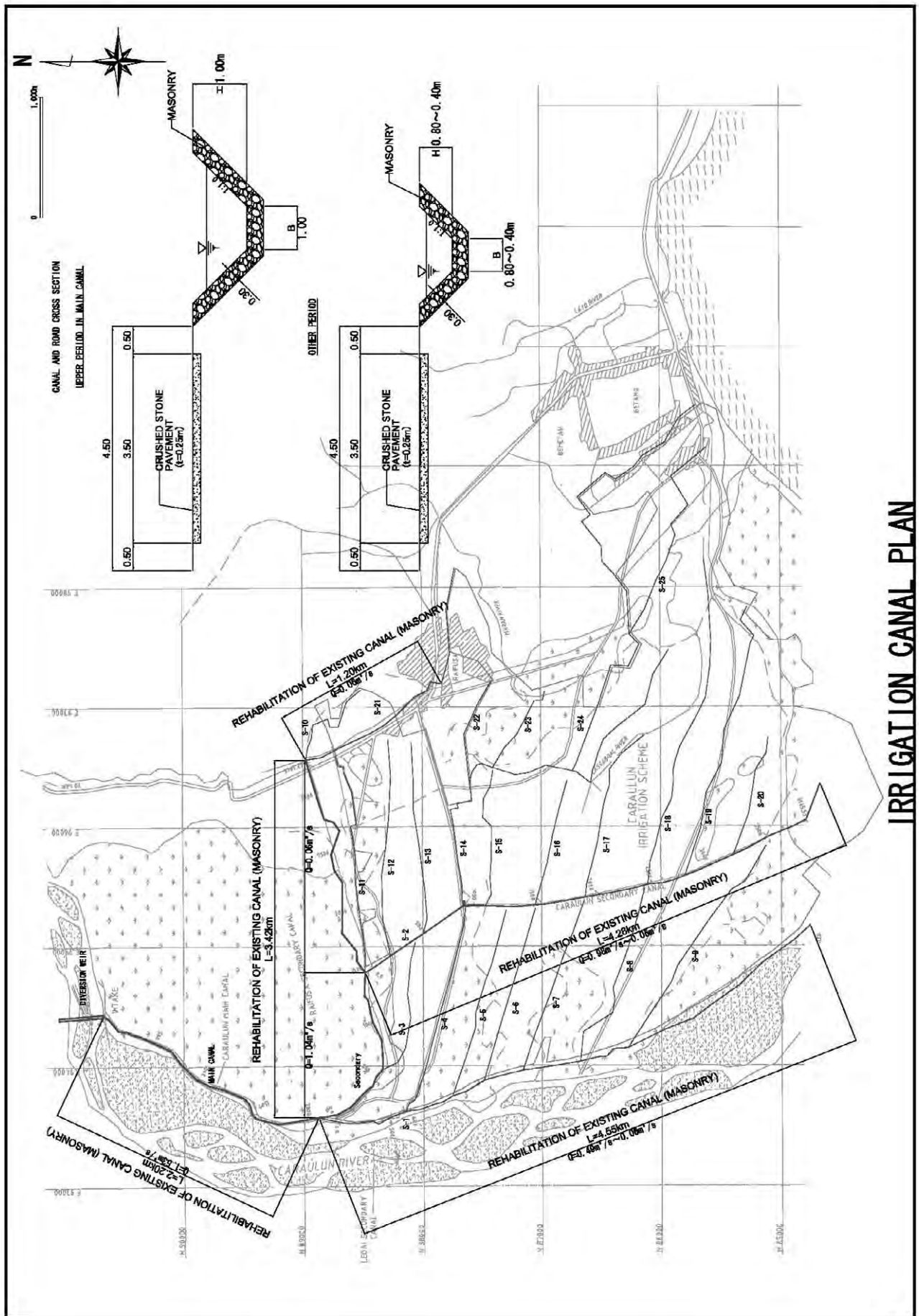




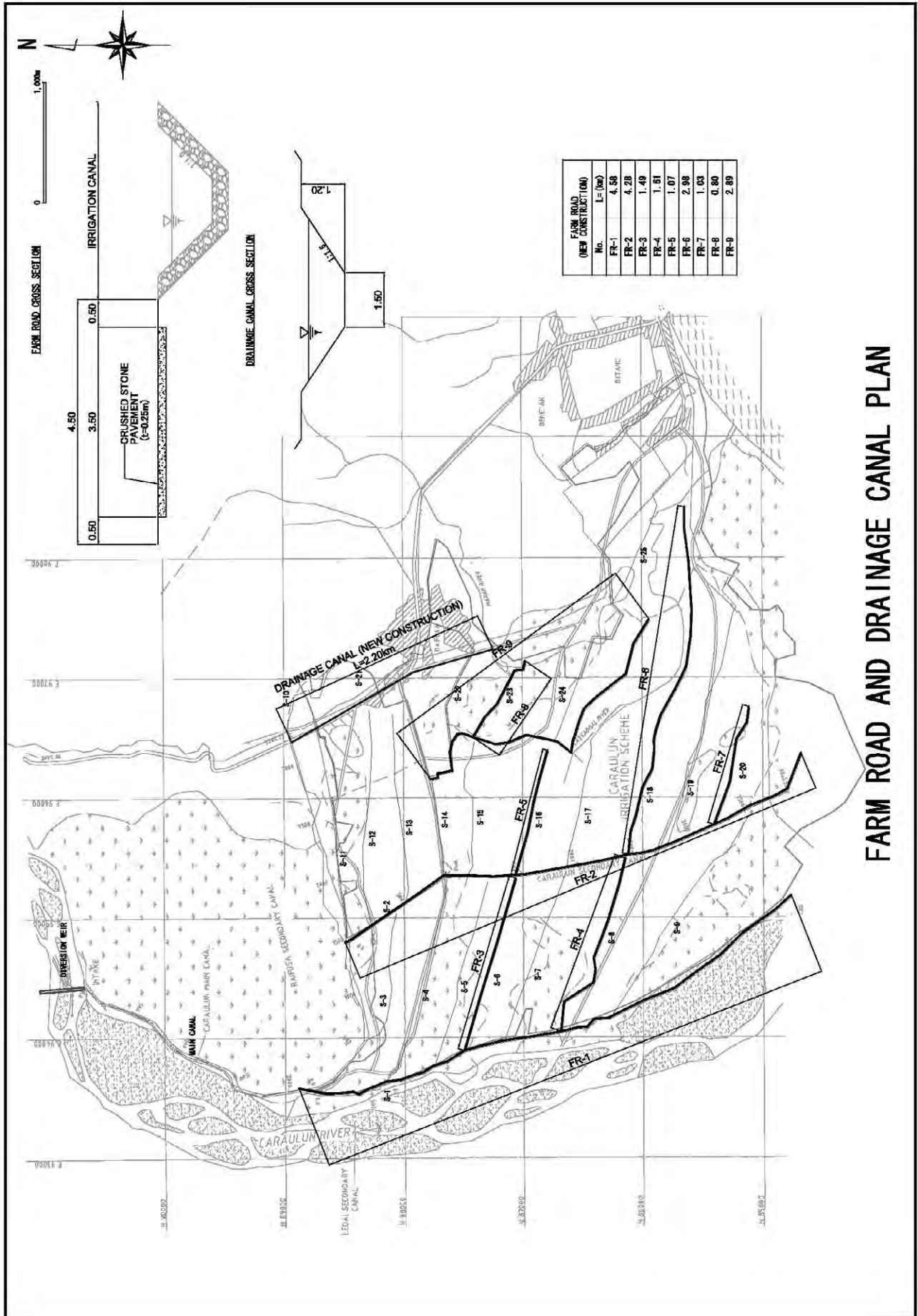


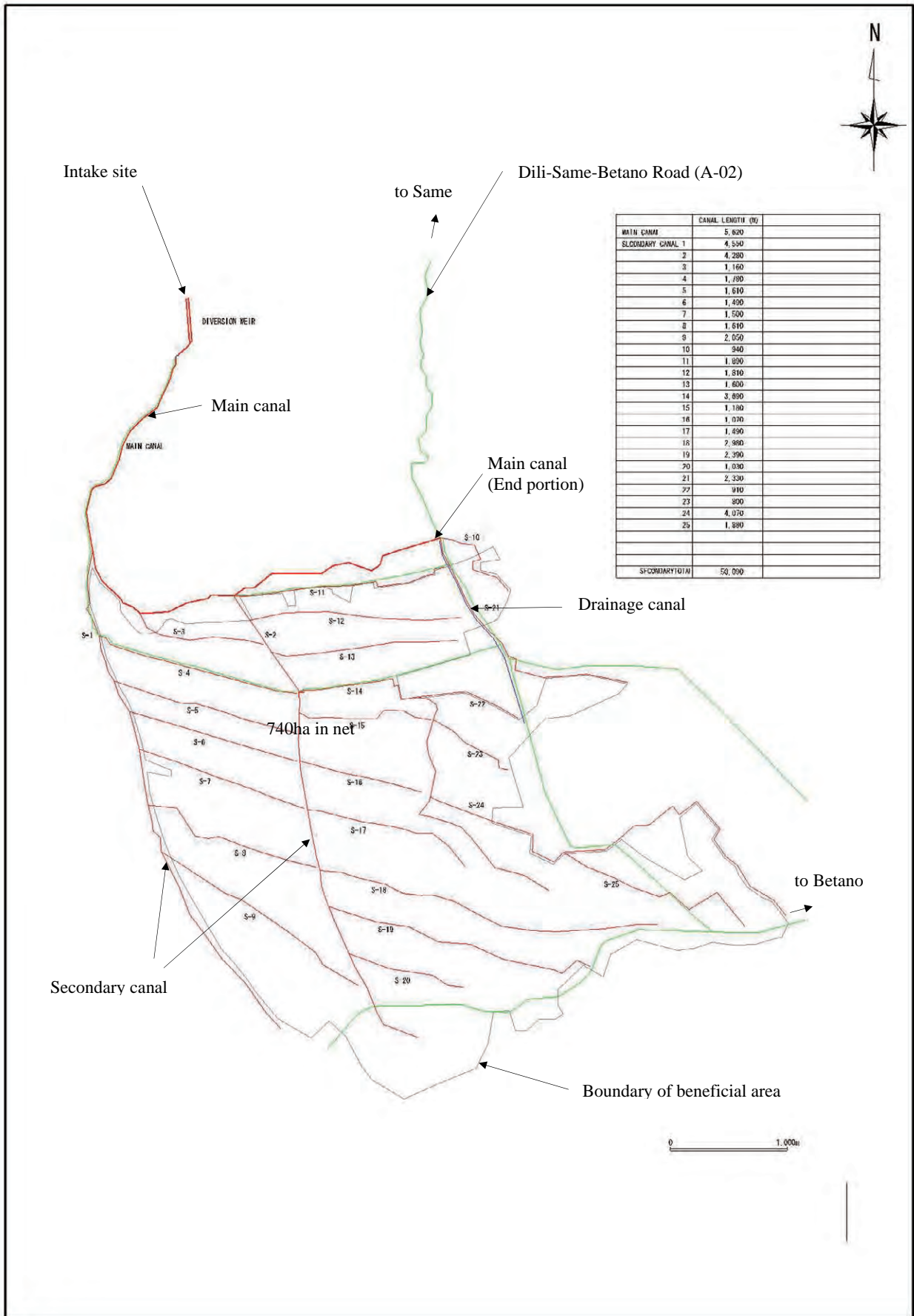
GENERAL PLAN OF CARAU LUN INTAKE





IRRIGATION CANAL PLAN

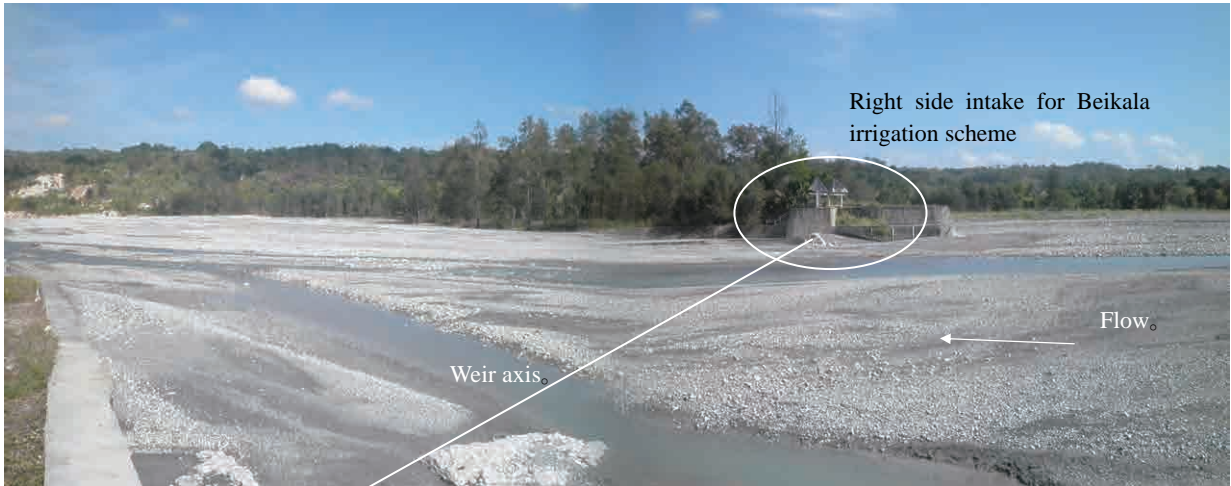




	CANAL LENGTH (M)	
MAIN CANAL	5,820	
SECONDARY CANAL 1	4,540	
2	4,280	
3	1,160	
4	1,780	
5	1,610	
6	1,400	
7	1,500	
8	1,610	
9	2,050	
10	940	
11	1,890	
12	1,810	
13	1,600	
14	3,890	
15	1,180	
16	1,070	
17	1,490	
18	2,980	
19	2,390	
20	1,030	
21	2,330	
22	910	
23	800	
24	4,070	
25	1,880	
26		
SECONDARY TOTAL	50,090	

Irrigation and Drainage Canal Alignment of Proposed Caraulun Irrigation Project

Attachment 4 Site introduction



Intake site of Caraulun irrigation scheme (Right side intake installed in 1996 was not so heavily damaged. However no canal plan was proposed by the Government of RDTL.)



Intake portion of present intake facility
(2 intake gates have not been operated due to severe siltation at intake gate portion, sediment trap basin and irrigation canal.)



Diversion point
(Diversion from main canal to secondary canals)

Beneficial area of the Caraulun irrigation scheme

(Rice is cultivated in 85ha with irrigation water supply through free intake (Traditional system) along the Caraulun river.)



Paddy plots just after harvest

(IR64 and local varieties were planted. Hand tractors were used for land preparation.)



Fixed weir composed of wet masonry with concrete lining was partly collapsed in 2001.

Rehabilitation work did not include restoration of the fixed weir due to financial problem according to the District officer of Manufahi District, MAF.

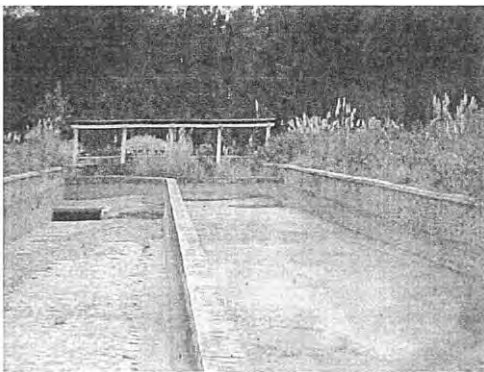
(Photo: District Agricultural Office, Manufahi District)



Upstream of the intake gates (September. 3, 2010)
Since fixed weir was removed, riverbed was degraded along the water course, and it enabled to divert water to the irrigation canal.



Beneficiaries were mobilized to construct earth bund to divert river water to the intake (January 7, 2010)



Sediment trap basin before rehabilitation work under ARP III in 2006

As shown in the photograph, sediment trap basin was well functioned before removal of the fixed weir. Sediment accumulated in the basin was flushed out to the river by gravity flow.

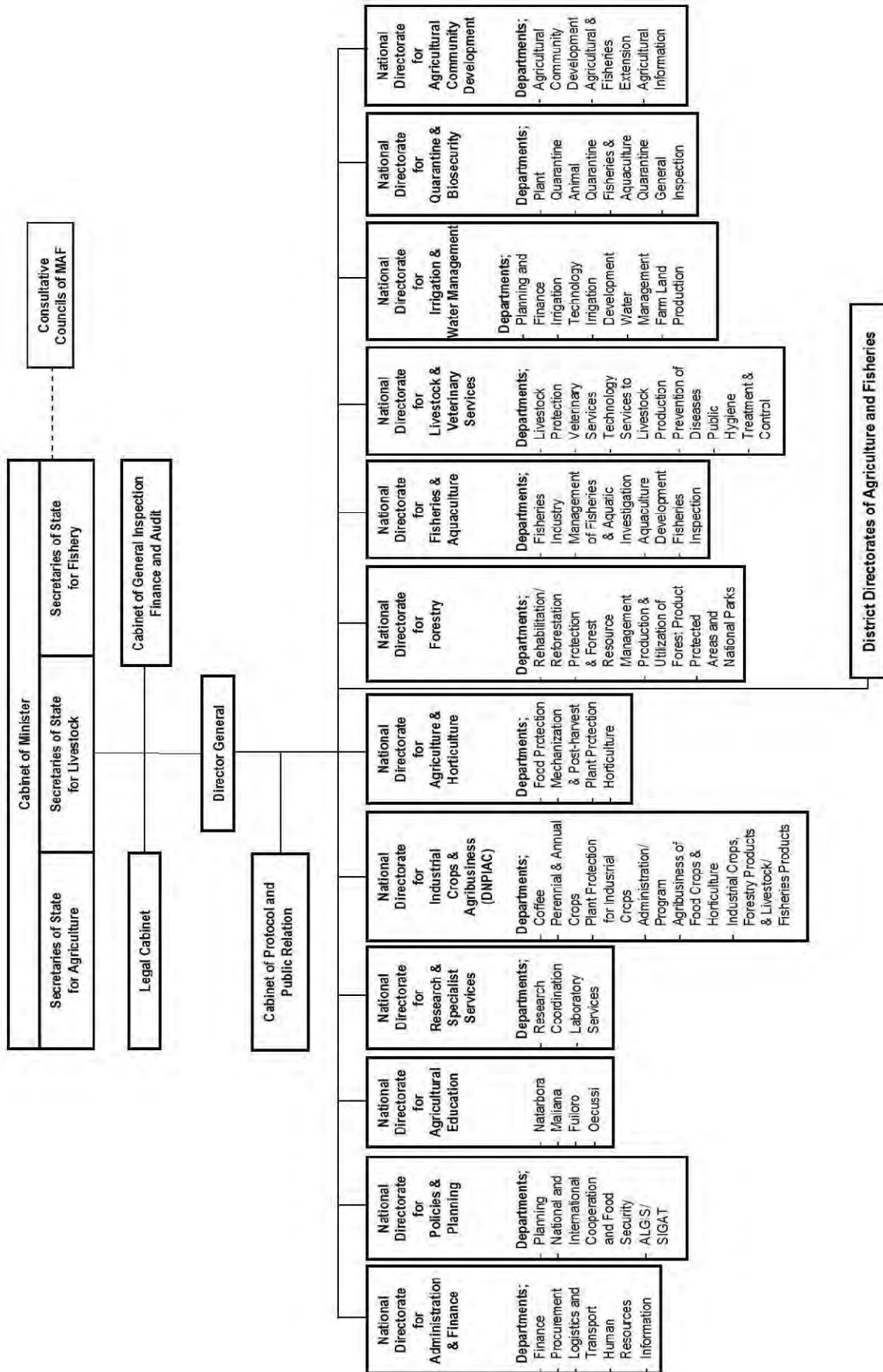


Sediment trap basin after rehabilitation work in 2006
(September. 3, 2010)

Basin was lowered 1.5 m below from previous design corresponding to of decrease of the intake water level by weir removal.

(Photograph: Kiyoko Hurusawa, Associate Professor, Tokyo Women's Christian University)

Attachment 5 Organization chart of MAF



Screening Format (Environmental and Social Considerations)

Please write “to be advised (TBA)” when the details of a project are yet to be determined.

Question 1: Address of project site

Suco: Betano, Sub-District Same, Manufahi District

Question 2: Scale and contents of the project (approximate area, facilities area, production, electricity generated, etc.)

2-1. Project profile (scale and contents)

- Irrigation area : 740 ha (Net irrigable area)
- Proposed facilities:
 - Intake, with fixed type weir (Crest length 93 m, intake capacity 1.86 m³/sec including 20 % surplus capacity)
 - Main irrigation canal (Masonry lining, L=5.6 km)
 - Secondary irrigation canal (Earth lining, L=50.1 km)
 - Drainage canal (2.2 km)
 - Maintenance road (20.7 km)

2-2. How was the necessity of the project confirmed?

Is the project consistent with the higher program/policy?

YES: Please describe the higher program/policy.

(SDP development goals for the agriculture sector are to improve national food security, reduce rural poverty)

NO

2-3. Did the proponent consider alternatives before this request?

YES: Please describe outline of the alternatives

(Sub technical intake, that has not fixed weir is another alternative. However, sub-technical system cannot divert river water in stable, especially in the dry season. Technical system can divert water through the year.)

NO

2-4. Did the proponent implement meetings with the related stakeholders before this request?

Implemented Not implemented

If implemented, please mark the following stakeholders.

Administrative body

Local residents

NGO

Others ()

Question 3:

Is the project a new one or an ongoing one? In the case of an ongoing project, have you received strong complaints or other comments from local residents?

New Ongoing (with complaints) Ongoing (without complaints)

Other ()

Question 4:

Is an Environmental Impact Assessment (EIA), including an Initial Environmental Examination (IEE) required for the project according to a law or guidelines of a host country? If yes, is EIA implemented or planned? If necessary, please fill in the reason why EIA is required.

Necessity (Implemented Ongoing/planning)
(Reason why EIA is required:)

Not necessary

Other (please explain)

According to Environment Guideline of Timor Leste, new and improvement projects is required to submit an application to the Secretary of State for Environmental (SSE) and to secure approval on the contents of the development plan. Accordingly, prior to the project implementation, MAF shall provide an Environmental Management Plan (EMP) and obtain permission from SSE as a prerequisite procedure to implement the Project. In case SSE judges serious negative impact may occur despite the work aims at restoration of previous function of irrigation water supply, EIA is required. The project is categorized in A because the irrigable area is more than 100 ha according to the 12 sectors classified by the Decree-Law No. 5/2011 of 9 February, 2011.

Question 5:

In the case that steps were taken for an EIA, was the EIA approved by the relevant laws of the host country? If yes, please note the date of approval and the competent authority.

<input type="checkbox"/> Approved without a supplementary condition	<input type="checkbox"/> Approved with a supplementary condition	<input type="checkbox"/> Under appraisal
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(Date of approval: Competent authority:)

Under implementation

Appraisal process not yet started

Other ()

Question 6:

If the project requires a certificate regarding the environment and society other than an EIA, please indicate the title of said certificate. Was it approved?

Already certified

Title of the certificate: ()

Requires a certificate but not yet approved

Not required

Other ()

Question 7:

Are any of the following areas present either inside or surrounding the project site?

Yes No

If yes, please mark the corresponding items.

- National parks, protection areas designated by the government (coastline, wetlands, reserved area for ethnic or indigenous people, cultural heritage)
- Primeval forests, tropical natural forests
- Ecologically important habitats (coral reefs, mangrove wetlands, tidal flats, etc.)
- Habitats of endangered species for which protection is required under local laws and/or international treaties
- Areas that run the risk of a large scale increase in soil salinity or soil erosion
- Remarkable desertification areas
- Areas with special values from an archaeological, historical, and/or cultural points of view
- Habitats of minorities, indigenous people, or nomadic people with a traditional lifestyle, or areas with special social value

Question 8:

Does the project include any of the following items?

Yes No

If yes, please mark the appropriate items.

- Involuntary resettlement (scale: households persons)
- Groundwater pumping (scale: m³/year)
- Land reclamation, land development, and/or land-clearing (scale: hectares)
- Logging (scale: hectares)

Question 9:

Please mark related environmental and social impacts, and describe their outlines.

- Air pollution
- Water pollution
- Soil pollution
- Waste
- Noise and vibrations
- Ground subsidence
- Offensive odors

- Geographical features
- Bottom sediment
- Biota and ecosystems
- Water usage
- Accidents
- Global warming
- Involuntary resettlement
- Local economies, such as employment, livelihood, etc.
- Land use and utilization of local resources
- Social institutions such as social infrastructure and local decision-making institutions
- Existing social infrastructures and services
- Poor, indigenous, or ethnic people
- Misdistribution of benefits and damages
- Local conflicts of interest
- Gender
- Children's rights
- Cultural heritage
- Infectious diseases such as HIV/AIDS
- Other ()

Outline of related impact:

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Question 10:

In the case of a loan project such as a two-step loan or a sector loan, can sub-projects be specified at the present time?

- Yes No

Question 11:

Regarding information disclosure and meetings with stakeholders, if JICA's environmental and social considerations are required, does the proponent agree to information disclosure and meetings with stakeholders through these guidelines?

- Yes No