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VIETNAMESE - ITALIAN COOPERATION

TAY NINH WASTEWATER COLLECTION AND TREATMENT SYSTEM PROJECT, PHASE I

PROJECT IMPLEMENTATION DOCUMENT (PID)

(Annex 1 to the MOU for the Project)

PROJECT IMPLEMENTATION DOCUMENT (PID)

**For the Project:
TAY NINH WASTEWATER COLLECTION AND TREATMENT SYSTEM PROJECT,
PHASE I**

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Chapter 1 - Scope of the Document

Scope of this PID is to describe the main activities included in the Tay Ninh Wastewater Collection and Treatment Project (the Project) and to define the modalities to be adopted by the bodies involved in the implementation for the utilization of the financial, human and material resources made available by the Vietnamese and Italian sides for the Project, according to the provisions of the Memorandum of Understanding (MoU),

Chapter 2 - Acronyms and Definitions

The acronyms and definitions used in the MoU and in this PID are listed below with their respective meanings:

MoU	The MoU signed by the People's Committee of Tay Ninh Province of Viet Nam, (TN-PPC), and the Ministry of Foreign Affairs of Italy, represented by the, Directorate-General for Development Cooperation
Artigiancassa	The Italian Bank appointed by the GoI as the Italian Financing Institution to manage the soft loans
BOD	Biochemical Oxygen Demand
CR	Contractor Representative
DDC	Dong Duong Investment and Construction Joint Stock Company
Embassy	Italian Embassy in Ha Noi
EPC	Engineering Procurement and Construction
FC	Financial Convention (loan agreement) signed by Artigiancassa and the MoF in order to define the soft loan terms and conditions and modalities of disbursement and repayment
FP	Financing Proposal
FSR	Feasibility Study Report
GDP	Gross Domestic Product
GoI	Government of the Italian Republic
GOP	General Operational Plan
GoV	Government of the Socialist Republic of Viet Nam
H ₂ S	Hydrogen Sulphide
HDI	Human Development Index
HDPE	High-density Polyethylene
HH	Household
IEs	Italian Experts (experts from MAECI-DGCS)
IFI	Italian Financing Institution
JSC	Joint Steering Committee
MAECI-DGCS	Directorate-General for Development Cooperation of the Italian Ministry of Foreign Affairs and International Cooperation (Italian Cooperation)
MoF	Vietnamese Ministry of Finance
MoU	Memorandum of Understanding
MPI	Vietnamese Ministry of Planning and Investment
N	Nitrogen
n.a.	not applicable
ODA	Official Development Assistance
OEDC	Organisation for Economic Development and Co-operation

OVI	Objectively Verifiable Indicators
PD	Project Director
PDO	Project Detail Outline
PID	Project Implementation Document
PIR(s)	Project Implementation Report(s)
PIS	Project Implementation Schedule
PMU	Project Management Unit
PPP	Poverty headcount ratio at national poverty line (% of population)
PPC	Provincial People's Committee of Tay Ninh
RC	Reinforced Concrete
Project	Tay Ninh Wastewater Collection and Treatment System Project (phase I)
TA	Technical Assistance
The Consultant	Dong Duong Investment and Construction Joint Stock Company (DDC)
The Mission	The members of the Italian appraisal mission
TKN	Total Kjeldahl Nitrogen
TOR	Terms of reference
UNDP	United Nations Development Program
UTL	Development Cooperation Office of the Italian Embassy in Ha Noi
VAT	Value Added Tax
VND	Vietnamese Dong
WSS	Tay Ninh Water Supply and Sewerage Company
WWTP	Wastewater Treatment Plant

Chapter 3 - Project origins

The latest meeting of the Joint Commission on Development Cooperation, between the Delegation of the Government of the Socialist Republic of Viet Nam (GoV) and the Delegation of the Italian Republic (GoI), took place at the Ministry of Foreign Affairs in Rome on December 4th, 2009. During the meeting, inter alia, the two Delegations discussed the status of the on going projects and the strategies and perspectives of future cooperation. The Italian side announced its decision to allocate new financial resources for the 2010-2012 Italian-Vietnamese Development Cooperation Programme. Among these new resources, the Italian side committed itself to allocate up to 30 million Euro as soft loan. The two parties agreed that the aforementioned soft loan allocation shall be used to fund development cooperation projects and programmes in three priority sectors, jointly selected by the two Governments, namely: (i) health, water & environmental protection and, (iii) vocational training. It was also specified that the financial resources shall translate into financial commitments according to the Italian rules governing the financing of development cooperation initiatives, that is: (i) upon requests presented by GoV, (ii) after a full technical appraisal by MAECI-DGCS of each project and programme and, (iii) the subsequent approval by the Italian Steering Committee for Development Cooperation.

Subsequently, On December 12th2009, the representatives of the two Governments signed in Milan the Agreement on Development Cooperation, which fully incorporated the issues discussed during the above-mentioned meeting and the reached agreements.

On December 23rd2009, the Ministry of Planning and Investment (MPI) sent to the Embassy a Verbal Note with its first official request to finance the Project out of the Italian commitment of 30 million Euro soft loan. The Project Detail Outline (PDO) was attached to the MPI Note, where MPI communicated that: (i) the PDO for the Project was approved by GoV and, (ii) the required Italian Official Development

Assistance (ODA) contribution was equal to US\$ 12.648.000. At the exchange rate prevailing in December 2009 (1€ = 1,48 US\$), the required Italian contribution was equivalent to € 8.520.000. In the PDO, it was also specified that the total Project cost was estimated at US\$ 16.216.000 corresponding, at that time, at about € 10.924.000. The UTL sent its staff to Tay Ninh for a first advise on Project preparation.

On March 29th2012, after completion, translation and approval of the Feasibility Study, the MPI sent to the Embassy the Feasibility Study Report (FSR) dated 2011. The FSR was prepared by the consulting firm upon request of the Tay Ninh provincial authorities. In the same letter, the MPI requested the Italian side to send as soon as possible its experts in Viet Nam to appraise the Project to allow for the completion of the Project preparation procedures. In the FSR the costs of the Project and the needed amount of the Italian contribution were estimated as indicated in Table 1.

Table 1: Project estimated costs in the FSR of 2011

	Estimated Cost (including VAT)	Source of financing	
		Viet Nam	Italy
Total cost before escalation (VND) (*)	277.490.073.637	61.938.719.924	215.551.353.713
10% Physical contingency (VND)	27.749.007.364	6.193.871.992	21.555.135.371
10% Inflation contingency (VND)	27.749.007.364	6.193.871.992	21.555.135.371
Total rounded cost including escalation (VND)	332.998.088.000	74.326.464.000	258.661.624.000
US\$ conversion (**)	16.164.470	3.608.081	12.556.390
Euro conversion (**)	11.287.732	2.519.541	8.768.191
Distribution between financial sources		22,3%	77,7 %

(*) Includes all Project costs before the provisions for possible escalations (design, construction, management, preparation, site clearance and compensation, ancillary costs etc.)

(**) Exchange rates utilized: 1 US\$ = VND 20,600; 1 Euro = VND 29,500; 1 Euro = 1,43 US

From October 7th to November 20th2012, based on the FSR prepared by DDC on instructions by the Provincial People's Committee (PPC) of Tay Ninh, MAECI-DGCS carried out, in coordination with the MPI and with Tay Ninh PPC, an appraisal mission in Viet Nam. The Italian Mission visited the site and had deep and extensive discussions both in Ha Noi and in Tay Ninh with the representatives of MPI, of Tay Ninh PPC, of the Consultant and of the Tay Ninh Water Supply and Sewerage Company (WSS), which is the Public Utility that will be responsible for the management of the new facilities to be built under the Project.

The Mission was informed that, from re-calculations from the consultant, the Project costs substantially changed, as illustrated in the following Table 2.

Table 2: Project estimated costs as re-calculated by the consultant DDC in November 2012

	Estimated Cost (including VAT)	Source of financing	
		Viet Nam	Italy
Total cost before escalation (VND) (*)	387.341.536.932	74.523.046.118	312.818.490.814
10% Physical contingency (VND)	38.734.153.693	7.452.304.612	31.281.849.081
22,4% Inflation contingency (VND)	86.847.175.000	30.147.295.000	56.699.880.000
Total rounded cost including escalation (VND)	512.922.865.625	112.122.646.000	400.800.220.000
US\$ conversion (**)	24.656.197	5.389.734	19.266.463
Euro conversion (**)	18.997.143	4.152.690	14.844.453
Distribution between financial sources		21,9 %	78,1 %

(*) Includes all Project costs before the provisions for possible escalations (design, construction, management, preparation, site clearance and compensation, ancillary costs etc.)

(**) Exchange rates utilized: 1 US\$ = VND 20.803; 1 Euro = VND 27.000; 1 Euro = 1,298 US

Comparing Table 2 with Table 1, it appears that there is a increase of about 68% for both the total Project cost in Euro and the Italian contribution in Euro. Considering this substantial increase, the Mission and the Consultant analyzed its causes and the following factors were identified:

- 1) The inflation in Viet Nam. The cost estimates in Table 1 were done utilizing for the civil works the official Vietnamese unit price lists valid for the year 2010, while the estimates in Table 2 were calculated on the basis of the official price lists for year 2012. In the period 2010 – 2011, the inflation rate in Viet Nam was varying between 10% and 20% per year. The incidence of the inflation on the Project costs can be roughly estimated at about 28%.
- 2) The increase in the provision for “inflation contingency” from 10% to 22,4%. On request by the Tay Ninh province, the Consultant applied this increase. The incidence of this factor on the Project costs can be roughly estimated at about 9%.
- 3) The deterioration of the exchange rate between the VND and the Euro. The incidence of this factor on the Project costs in Euro can be roughly estimated at about 9%.
- 4) The increase of the Project area. On request by the Tay Ninh province, the Consultant increased the Project area. Five wards of Tay Ninh town (ward 1, ward 2, ward 4 and Hiep Ninh ward) were included in the Project area relevant to the cost estimates in Table 1. The cost estimates in Table 2 have been calculated considering two additional areas: Ninh Tho and Hiep Ninh. The global incidence of this factor together with the factor at the following point on the Project costs can be roughly estimated at about 22%.
- 5) During the re-calculation of the cost estimates, the Consultant realized that in the previous calculation some quantities were underestimated. In particular the volume of material for excavation and refilling of the sewage pipeline trenches had to be adjusted.

The analysis gave a rough explanation of the substantial 68% cost increase from Table 1 to Table 2 (28+9+9+22=68%).

In the meantime, after the visit on the Project site and having examined the FSR and the additional technical documents provided by the Consultant, the Mission sent to the PPC of Thai Ninh a letter with eleven recommendations and requests for modifications of the Project design, as follows:

- 1) **Wastewater collection pipes.** Two kinds of pipes are foreseen: High-density Polyethylene (HDPE) for pressure pipes downstream the pumping stations and Reinforced Concrete (RC) pipes for the entire remaining network. The Mission observed that the RC pipeline in the wastewater network has the following disadvantages: (i) the concrete is subject to chemical attack from the H₂S gas present in the system, limiting the life of the pipeline and, (ii) the connection joints between the RC pipe elements do not guarantee a sufficient sealing and therefore both wastewater can leak in the ground out of the pipe and ground water can seep into the pipe. These disadvantages might cause pollution of the surrounding ground and problems for the proper functioning of the wastewater treatment plant (WWTP). **The Mission strongly recommends to replace the RC pipes in the wastewater network, including the interceptors pipes, with HDPE pipes.**
- 2) **Capacity of the WWTP and incoming wastewater characteristics.** In the FSR, for a population of about 80.000 inhabitants equivalent, the plant has been designed with an inflow of 6.000 m³/day and with a BOD₅ concentration of 340 ppm. According to international standard, with the same inflow and BOD₅ concentration, the estimated served population would be a maximum of 45.000 inhabitants. This will not affect the functioning of the plant, but will affect the size of the future expansions. It should be noted that, at page 80 of the FSR, a table with the average characteristics of the incoming wastewater is indicated. In this table, the ratio between BOD₅ and the total N is 15, which is much higher than the same ratios measured all over the world (normally 5 to 7). Since this ratio has a great impact on the nitrification/denitrification process and the prescribed total N at the outlet is very low (10 ppm), the Mission recommends that the characteristics of the incoming flow be duly investigated.
- 3) **Design of the civil works for the WWTP.** During the site visit, the Mission noted that the site was completely flooded. Therefore the excavation works must be properly planned and estimated to protect the area from flooding during the construction. The foundations must be properly designed in order to avoid cost escalations.
- 4) **WWTP oxidation ditch.**

- Reactor Biological Process. The adopted process assumes to obtain, depending on the distance from the rotating aerator, both aerobic and anoxic zones to be established in the same basin. In practice, a properly functioning zonal subdivision it is almost impossible to obtain. In facts, it depends from a number of different factors (BOD/TKN ratio, temperature of the liquor, water circulation speed, activated sludge concentration etc.), which cannot be taken under control. **The Mission strongly recommends to physically separate the aerobic and anoxic zones and also to introduce an anaerobic selector in order to favour the growth of flock-forming bacteria (three-stages Bardenpho process).**
 - Number of Biological Process Units. The FSR foresees one single biological process unit. This solution is critical with respect to operation and maintenance. In order to assure the maintenance of the unit, it could be necessary to completely empty the basin with consequent total loss of the activated sludge and the stop of the WWTP for some months. **The Mission strongly recommends to foresee two parallel biological process units instead of one.**
 - Aeration equipment for the oxidation process. The Mission suggests to take into consideration the possibility to replace the surface mechanical aerators with a “fine bubble air diffuser system” in order to save energy and to operate with more flexibility.
- 5) Capacity of the secondary sedimentation tanks. In consideration of the expected peak flows during dry and rainy times, the surfaces of the two secondary sedimentation tanks appear too small. **The Mission strongly recommends to increase the diameter of the tanks from 15 to 22 meters.**
 - 6) **Necessity of a buffer capacity (with function of pre-thickener) between the secondary sludge pumping station and the de-watering system.** The FSR foresees that the sludge to be wasted is directly pumped from the secondary sludge pumping station to the de-watering system. **The Mission strongly recommends to introduce an additional tank (about 150-200 m³, roughly the volume of secondary sludge to be wasted in a day) in order: (i) to make independent the functions of wasting and de-watering of sludge and, (ii) to allow the de-watering system to process a pre-thickened sludge.**
 - 7) **De-watering sludge equipment.**
 - (i) Centrifuge versus belt press. In the FSR, one belt press is foreseen for sludge de-watering. This type of machine requires a complex maintenance and a noticeable flow of clean water for backwashing. For this reason, in current years, in Italy the centrifuge is replacing this machine. The advise of the Mission is to consider the possibility to replace the belt press with the centrifuge.
 - (ii) Stand-by machine. In the FSR only one unit for de-watering is foreseen. This solution will not allow the plant to function during the shutdown times of the machine for extraordinary maintenance. **The Mission strongly recommends to foresee the installation of a second unit.**
 - 8) **Chlorination system.** In the FSR, a chlorination system with chlorine gas is foreseen. In Europe this system is not used anymore due to the fact that the chlorine gas is dangerous and difficult to handle. The Mission suggests evaluating the possibility to substitute the chlorine gas system with a system using a sodium hypochlorite solution.
 - 9) **Sludge disposal.** The Mission recommends to verify that the sludge disposal site is not subjected to be washed away by rain and will not allow contamination of underground water.
 - 10) **Start up and Training.** In the FSR, a small amount has been foreseen for the training of the personnel that will be in charge to run the WWTP. This item is essential for the sustainability of the project and often under estimated. Normally, start up activities for a period of, at least, six months are included in the scope of work of the contractor. The relevant costs should be covered by the contract price and therefore are part of the investment cost. A possibility is to extend the presence of the construction company in the plant and, in this period the contractor can provide a proper train on-the-job. **In any case, the Mission strongly recommends to make the design of the necessary start up and training activities, to estimate their cost and to include such cost in the investment.**
 - 11) **Cost of the work supervision.** In the FSR a relatively small amount has been foreseen for the supervision of the works. In any case, the Mission strongly recommends to re-evaluate the cost of the work supervision, especially for the construction of the WWTP.

On November 3rd 2012, the PPC of Tay Ninh sent a letter to the UTL where all the above requests of the Mission for modifications were accepted and all the Mission recommendations were taken into consideration.

The Tay Ninh PPC and the Mission received indications both from MPI and the MAECI-DGCS headquarters that the Italian contribution to the Project must not exceed the amount of € 9,7 million.

Accordingly, the PPC gave instruction to the Consultant to prepare a new cost estimate for the Project, which:

- Includes all the increases/reductions of cost deriving from the modifications requested by the Mission.
- Is based on 2012 costs.
- Includes a provision for inflation contingency of 10%.
- Have distribution of the total Project cost between sources of financing, where the Italian contribution do not exceed the amount of € 9,7 million.
- Is based on a Project area reduced in respect of the area considered in the case of Table 2 and eventually reduced also in respect of the area considered in the case of Table 1, in order to accommodate all the previous four conditions. The Project area includes only 4 wards (1, 2, 3 and 4), which implies a served population of about 78.000 in 2020.

On November 12th, the Consultant completed a revised cost estimation according to the conditions required by PPC, as summarized in Table 3.

Table 3: Final Project estimated costs according to the indications of PPC

	Estimated Cost (including VAT)	Source of financing	
		Viet Nam	Italy
Total Cost before escalation (VND) (*)	296.303.508.000	78.074.982.000	218.228.526.000
20% Contingency (VND)	59.260.707.000	15.614.991.000	43.645.716.000
Total cost including escalation (VND)	355.564.215.000	93.689.973.000	261.874.242.000
Rounded Euro conversion (**)	13.170.000	3.470.000	9.700.000
Distribution between financial sources		26,3 %	73,7%

(*) Includes all Project Cost before the provisions for possible escalations (design, construction, management, preparation, site clearance and compensation, ancillary costs etc.)

(**) Exchange rate utilized: 1 Euro = VND 27.000

This PID has been prepared taking into consideration the FSR dated 2011 and received by the Embassy on March 29th 2012, as well as all the subsequent modification to the Project design that have lead to the cost estimate in Table 3.

Chapter 4 – Project Context, Problems to be addressed and Strategy

1) National Context

Viet Nam has seen a number of remarkable socio-economic achievements in recent years, and has been one of the best-performing economies over the last decade, with average GDP growth rates of 7%. Viet Nam is now a lower Middle-Income Country. After a period of sustained growth, the Vietnamese economy, also as a consequence of the global crisis, is facing a critical period starting from 2008 with the GDP annual growth falling from 8,5% in 2005, 2006 and 2007 to 6% in 2011.

Analysis of Viet Nam’s economic performance over the past 12 months indicates that the Vietnamese macro-economy is continuing on a path of gradual recovery, following the turmoil of late 2010 and early 2011. The inflationary pressure is easing, the Vietnamese Dong is relatively stable and both trade and

fiscal deficits have been reduced. This is largely a result of the policy measures introduced by the government in February 2011. Since then, the authorities have repeatedly committed themselves to ensuring macroeconomic stability, even at the expense of economic growth in the short term. There are also clear signs that policymakers have begun to address some of the structural weaknesses inherent in the Vietnamese economy, particularly the weaknesses in the banking sector and inefficient state-owned enterprises.

Viet Nam's economic transformation and rapid economic growth have been accompanied by a remarkable reduction in poverty, with income poverty rates falling sharply from 58% in 1993 to 10% by 2010 according to government figures. The pace of poverty reduction, however, is now slowing and regional variations in the incidence remain significant, with poverty becoming increasingly concentrated among ethnic minority populations. In urban centers, rising inequality becomes more and more apparent, with sections of society benefitting more from Viet Nam's economic development than others. In recent years, the near poor are increasingly affected by external global events, domestic macro instability and relatively slower growth.

In terms of non-income dimensions of poverty, 6 of the 8 Millennium Development Goal targets set for 2015 have already been largely met. Between 1990 and 2010, Viet Nam averaged an annual Human Development Index (HDI) growth rate of 1,70%, second only to China in terms of improvement in the group of countries classified as having "medium human development".

Table4: Select UNDP Human Development Indicators

Indicator	Scoring
HDI value 2011	0,593 (128 th)
Life expectancy at birth (years)	75,2 years (2011)
Adult literacy rate (both sexes - aged 15 and above)	92,8% (2011)
Expected years of schooling (of children)	10,4 years (2011)
Average years of schooling (adults aged 25 and above)	5,5 years (2011)
Combined gross enrolment ratio in education (both sexes)	63,8% (2011)
Under-five mortality (per 1.000 live births)	28 (2011)
Population living under US\$ 1,25 PPP per day	13% (2011)

Source: UNDP HDI (2011)

Rapid economic expansion, industrialization and continuing population growth have had an adverse impact on the natural environment, despite many policy actions and reforms. These factors, coupled with a weak institutional capacity to adequately address environmental issues, limited technical infrastructure and financial resources allocated to environmental protection, have contributed to a wide range of environmental problems. These issues and measures to mitigate the impact of climate change are now receiving more attention from policy makers.

Although Viet Nam has been one of the top recipients of ODA in the world in recent years, it is not an aid-dependent country. ODA provides only a minor share of development finance: the volume of ODA is much less than that of other sources such as Foreign Direct Investment, remittances or tourist revenues. According to government figures, the proportion of ODA to GDP fell from 5,9% in 2000 to 2,2% in 2008, and the share of ODA in the national budget declined from 23,9% in 2000 to 7,1% in 2008. ODA is nonetheless regarded by GoV as an important source of finance in its own right, accounting for 12-13% of the total state investment budget.

2) Local Context

Tay Ninh town, with a population of about 70.000 (2009), is located at about 90 km northwest of Ho Chi Minh City, and represents the gateway to Cambodia whose border is at about 20 km.

Climate in Tay Ninh is relatively humid (average 70 – 80%) and divided into a rainy season (from May to November) and a dry season (from December to April). The average annual rainfall is 1.800 – 2.200 mm but the rainfall distributes unevenly during the rainy season due to the overlap of this season with the southwest monsoon. The time concentration of the rainfall causes serious erosion in the sloping terrain.

In recent years the **economic growth** of Tay Ninh province has been high with two-digit annual percentage increases. In recent years the structure of the economy in the province was as follows: (i) about 30% agriculture, forestry and aquaculture, (ii) about 26% industry and construction and, (iii) about 44% services. From 1976, it has been registered a strong shift from agriculture to industry and services.

In August 2010 the Consultant, in preparation of the FSR mentioned in Chapter 1, conducted a sample survey in the Project area through interviews of 1.399 households. The purposes of the survey were: (i) to assess the current socio-economic situation, living standard, job structure, educational background, healthcare, habits in environmental sanitation, habits in using clean water and in draining water through environment, (ii) to assess the current situation of rain water drainage and inundation, (iii) to assess the current situation of wastewater drainage system, collection and treatment, (iv) to assess the current situation of rubbish collection, management and treatment, (v) to survey diseases relates to drainage condition and environmental sanitation and, (vi) to survey the willingness and ability of community to pay for environmental service, especially willingness to take part in drainage system and central wastewater treatment in town and willingness to pay for this service.

According to a social-economic development report of Tay Ninh town in 2009, the percentage of **poor** households has been reduced to 8%, lower than average level of the whole province. The results of the above-mentioned survey confirm the great change of the economic status of Tay Ninh in recent years. Regarding the causes of poverty, the poor households interviewed self-assess that the main causes of poverty are: (i) lack of working capital (65,8%), (ii) illness, diseases (17%), (iii) unemployment (8,7%), and, (iv) lack of capacity (6,4%). Apart from the “lack of working capital”, that in many cases could be an effect rather than a cause of poverty, it should be noted the high ranking assigned to health. There is a vicious cycle of poverty: diseases more easily affect the poor households and illness leads to poverty.

The **surface water** is based on the canal system of the province with a length of 617 km, which mainly consists of two large canals: Saigon canal and Van Co Dong canal. The Dau Tieng lake in Tay Ninh with 1.053 secondary canals (total length 1.000 km) is for irrigation and water supply purposes (daily consumption, aquaculture and industry). Tay Ninh has abundant sources of underground water. The people mostly build the drilled and dug wells without compliance with regulations and hydro-geological requirements. Consequently the quality and the hygienic requirements of drinking water from wells are not ensured. Because of low capacity and limited extension of the network, the Tay Ninh water supply system only meets a small part of demand of clean water. At present, about 36% of the town area is served by the water supply system (about 250 km), therefore a high percentage of the population is facing hygienic problems for the use of drinking water from dug wells, drilled wells and surface water of lakes and rivers. The town has about 20.000 wells.

The hygienic situation linked to the modality of use of drinking water is worsened by the prevailing use of various types of latrines. Until now, the town has about 16.000 latrines and about 15.000 house toilets. The wastewater from the latrines is discharged in the soil and can contaminate both the wells for drinking water (if not properly located) and the water table. Part of wastewater from the house toilets is discharged in the drainage system, directly or through septic tanks. At present in Tay Ninh does not exist a separate collection system for wastewater and storm water and the existing sewage system discharge into the canal without any previous treatment. Therefore, also the wastewater discharged from the toilets can contaminate the surface water and the water table.

The drainage system of Tay Ninh collects both storm water and wastewater (directly from toilets or after the septic tanks) and discharge to the canal. It mostly serves part of the key central wards. Because of its

limited extension, the families must find ways to deal with wastewater. Some residents dig trenches around the house in order to allow for the wastewater to be absorbed in the small garden or to drain wastewater to the roads or to the drainage ditches along the ground outside the path of residential areas. However, these are all inefficient solutions, just to solve the problem of hygiene within the household. Water discharged to the outside by the trenches stagnates and worsen the sanitary situation of the neighbourhood.

Flood in Tay Ninh occurs because of two factors: overflow of canals and insufficient drainage system. Tay Ninh canal receives about 70% of the collected wastewater and storm water. According to the above-mentioned survey, 69,8% of the households affirmed that in their area, flood often occurs. Flooding phenomenon often occurs outside the home (81,2%) and outdoors (18,8%). 22,3% of the households were flooded 1 time/year, 67,5% of households were flooded 2 times/year and 10,2% were flooded from 3 to 5 times/year. The depth of the water also depends on the location. In low topographic area, water depth reaches up to 1-2m for durations up to one month. The remaining areas of wards 1, 2, 4, and Ninh Hiep, Ninh Thanh, Ninh Son commune, depths range from 30cm to 50cm and the duration is a few hours.

Flood causes many disadvantages for human life and activities, such as environmental pollution, water pollution, epidemics arising, impediments to the traffic etc. According to the survey, as major problems caused by the flood, the households ranked first “polluted water resources”, second “diseases” and third “the adverse impact on cleanliness of houses and roads”.

The above-mentioned survey tried to assess the impact on the households by the common type of diseases related to water and sanitation. The sources of information were the households themselves and not the statistics of the health sector. According to survey results, many of diseases occur locally, in which the most common are: (i) flu (76,9%), (ii) headache (58,8%), (iii) diarrhea (41%), (iv) dysentery (21,9%) and, (v) skin diseases (43,3%), other diseases appear a rate no higher. It should be noted that the intestinal diseases (identified as “dysentery” and “diarrhea”) globally rank second in the appreciation of the households.

3) Problems to be addressed

The main problems that the Project wants to contribute to solve are the following:

- a) The sewage system of Tay Ninh does not have a separate network for storm water and wastewater.
- b) The wastewater is not treated before its discharge in the canals.
- c) The coverage of the sewage is limited to some key wards in the center of the town and does not allow for the collection of all the storm water in periods of heavy rain.
- d) The existing sewage network, which receives also wastewater is built with pipes in RC, which is subject to chemical attack from the H₂S gas present in the system, limiting the life of the pipeline and, the connection joints between the RC pipe elements do not guarantee a sufficient sealing and therefore both wastewater can leak in the ground out of the pipe and ground water can seep into the pipe.
- e) The Tay Ninh Water Supply and Sewerage Company (WSS) does not have the equipment and the capacities to properly run and maintain a modern storm water and wastewater collection and treatment system.
- f) The shortcomings of the storm water and wastewater collection system adversely affect the environment.
- g) The pollution, caused by the above-mentioned shortcomings, adversely affects the health status of the population.

4) Project strategy

The Project strategy has been selected taking into account the problems outlined in the previous paragraph and the amount of funds that the Italian and the Vietnamese side can provide to finance the Project.

In the FSR, prepared by DDC on instruction by the Tay Ninh PPC, which was presented to the Italian side on March 29th2012, the renovation and upgrading of the Tay Ninh sewage system was conceived in two phases, as follows:

Phase I

- a) Construction of two separate sewage network systems for storm water and wastewater, including the necessary pumping stations. The project area was limited to five wards (1, 2, 3, 4 and Hiep Ninh) and part of the two communes of Ninh Son and Ninh Thanh.
- b) Construction of the connections from the households to the new wastewater network.
- c) Construction of a WWTP with a capacity of 6.000 m³/day. The preliminary design in the FSR already included all the devices and facilities to allow for a future upgrading of the capacity to 12.000 m³/day.
- d) Supply the WSS with all the equipment and training of personnel needed to properly run and maintain the new storm water and wastewater collection and treatment system.

Phase II

- a) Extension of the separate sewage network systems for storm water and wastewater, indicated at point a) of Phase I, including the necessary pumping stations, to 5 communes: Ninh Son, Thanh Tan, Binh Minh and Tan Binh.
- b) Construction of the connections from the households to the extended wastewater network.
- c) Upgrading of the WWTP to a capacity of 12.000 m³/day.

The present Project is based on the preliminary design in the FSR for the Phase I, with some adjustment due to: (i) the budget available and, (ii) the modifications requested by the Mission and approved by the Tay Ninh PPC. In particular, the Project area has been slightly reduced, the modifications have been introduced in the preliminary design and the WWTP capacity has been reduced to 5.000 m³/day.

Chapter 5 – Project Objectives, Results and Activities

The **General Objectives** of the Project are: (i) to improve the health status of the Vietnamese population; (ii) to protect the environment from the increasing anthropic pressure in urban areas.

The **Specific Objective** of the Project, that will contribute to achieve the General Objectives, is: **to improve the urban sanitation conditions in Tay Ninh town.**

The main expected **Project Results**, through which the Specific Objective will be achieved, are:

- a) Construction of a wastewater treatment plant (WWTP) with a capacity of 5.000 m³/day.
- b) Construction of new storm water and wastewater sewage facilities for a Project area that includes Ward 1, Ward 2, Ward 3 and Ward 4.
- c) Personnel of the Tay Ninh Water Supply and Sewerage Company properly trained for the management and operation of the sewage system and of the WWTP.
- d) Tay Ninh Water Supply and Sewerage Company provided with all the equipment needed for the correct operation of the new facilities.

The above Project Results will be achieved through the **Project Activities** listed here below. For some of the activities, the quantities deriving from the preliminary design are indicated. The purpose of the indicated quantities was to establish the estimate of the Project costs and they can be modified during Project implementation (in particular during the preparation of the final design). Therefore any modification to the quantities indicated here below will not imply the necessity to amend this PID.

- Activity 1. Survey and detailed design for the WWTP according to the original preliminary design in the FSR with the subsequent modifications requested by the Mission and approved by the PPC.
- Activity 2. Construction, on the site already identified and made available by the Tay Ninh PPC and according to the design in Activity 1, of a WWTP with a capacity of 5.000 m³/day, including civil works and supply and erection of equipment.

- Activity 3. Supply of services, for a period of six month after the completion of the blank tests, for: (i) the Start-up of the WWTP and (ii) the training of the WWS personnel, which will operate the plant. These services will include at least the presence on site of two expatriate experts for six months.
- Activity 4. Supervision of works for the WWTP.
- Activity 5. Survey and detailed design for the new storm water and wastewater networks in the new Project area, including the detailed design of the necessary pumping stations.
- Activity 6. Construction, on the sites already identified and made available by the Tay Ninh PPC and according to the design in Activity 5, of the wastewater pumping stations, including civil works and supply and erection of equipment.
- Activity 7. Construction, on the sites already identified and made available by the Tay Ninh PPC and according to the design in Activity 5, of a storm water drainage pipeline: RC pipes DN600-1000, total length m 6.522 (or different based on the result of the final design).
- Activity 8. Construction, on the sites already identified and made available by the Tay Ninh PPC and according to the design in Activity 5, of a wastewater pipeline: HDPE pipes DN300-600, total length m 26.280 (or different based on the result of the final design).
- Activity 9. Construction, according to the design in Activity 5, and procurement of the connections between the houses and the main wastewater pipeline.
- Activity 10. Supervision of works for the Activities 6, 7, 8, and 9.
- Activity 11. Supply all the equipment needed for the correct operation of the new facilities (treatment plant, pumping stations and pipeline network), including, but not limited to various items like: wastewater pumps, office equipment for WWTP, pipe clearing truck, transferring truck, small crane truck, street cleaning truck, 5-seater car, shovel car, canal dredging machine, equipment and tools for laboratory, computer system, protection clothing, mobile testing equipment, land peripheral equipment, electric generator.
- Activity 12. Site clearance and compensation of people affected by the new facilities during and after their construction.
- Activity 13. Project management including PMU. This activity includes the equipping of PMU with office equipment and furniture, including computers, printers, scanners, telephones, fax machines, photocopy machines, air conditioner, office furniture and a car.
- Activity 14. Project consultancy services like: preparation of feasibility study, translations, assistance during project preparation with donor, topographical- geographical survey for basic design, revision of cost estimate, assistance for bid preparation and evaluation, assistance for contract management, EIA preparation, socio-economic survey etc.
- Activity 15. De-mining.
- Activity 16. Auditing.

The Activities 1, 2 and 4 are related to the Result a).

The Activities 5, 6, 7, 8, 9, 10 are related to the Result b).

The Activity 3 is mostly related to the Result c) but, in part also to the Result b).

The Activity 11 is related to the Result d).

The Activities 12 and 15 are related to the Results a) and b).

The Activities 13, 14 and 16 are related to all the Results.

Chapter 6 – Project Execution Modalities

1) Components, Contracts and Relevant Source of financing

- A. As detailed at the following Chapter 7, the total Project cost is estimated at € 13.170.000,00 equivalent, out of which, about 74% will be financed through the Soft Loan (€ 9.700.000,00) and about 26% (€ 3.470.000,00) will be financed through Vietnamese funds.

- B. The subdivision of the Project into components and the definition of the contracts to be awarded under each component has been conceived for a smooth Project implementation and taking into account the following:
- The available costs of the various Project activities are estimated and the actual costs will be known only after the completion of the bidding and the definition of the contracts.
 - The purpose to reach, as far as possible, the full utilization of the Soft Loan.
 - The purpose to make use, at the maximum possible extent, of the capacities of the local contractors and suppliers of goods and services.
 - The necessity to utilize the capacity and experience of foreign contractors and suppliers of goods and services where more technically complex issues are involved and the locally available capacity and experience do not sufficiently guarantee the proper execution.
- C. The Project is articulated into the following three Components:
- C.1. Component A, which includes all the activities related to the construction of the wastewater treatment plant including final design, start up and training (but excluding the supervision of works, which will be part of Contract B5). All the activities will be carried out through a single contract (Contract A). Contract A will be totally financed through the Soft Loan except the costs for the VAT (10%) on each invoice, that will be financed through Vietnamese funds.
- C.2. Component B, which includes all the activities related to the new storm water and wastewater sewage facilities (piping network, pumping stations etc.). The activities will be carried out through five contracts (Contracts B1, B2, B3, B4 and B5), as follows:
- Contract B1 includes the supply of services for the final design related to the new storm water and wastewater sewage facilities, including the connections from the households to the main wastewater sewage network. The Contract B1 will be entirely financed through Vietnamese funds.
- Contract B2 includes all the construction, start up and training activities for the new storm water and wastewater sewage facilities, improving the existing manholes to be the smelling prevention manholes and dredging the existing sewers (excluding the connections from the households to the main wastewater sewage network). Contract B2 will be financed both through the Soft Loan and Vietnamese funds. The cost for the VAT (10%) on each invoice will be financed through Vietnamese funds. The remaining Contract costs will be financed through the Soft Loan. Should the Soft Loan balance (after the full coverage of Contract A costs) be not sufficient to cover such net-of-VAT cost of Contract B2, the balance will be financed with Vietnamese funds.
- Contract B3 includes the construction of the connections from the households to the main wastewater network. The Contract B3 will be entirely financed through Vietnamese funds.
- Contract B4 includes the supply of the equipment needed, to the public utility that will manage the new facilities, for the correct operation and maintenance. The Contract B4 will be financed both through the Soft Loan and Vietnamese funds, unless the Option 1 at the following point D is applied; the cost for the VAT (10%) will be financed through Vietnamese funds; the remaining Contract costs will be financed through the Soft Loan, unless the Soft Loan balance after the full coverage of the net-of-VAT cost of Contract A and Contract B2 will not be sufficient, in the latter case or in case the Option 1 at the following point D is applied, the balance will be financed with Vietnamese funds.

Contract B5 includes the services for work supervision relevant to Contract A, Contract B2, Contract B3 and Contract B4. The Contract B5 will be entirely financed through Vietnamese funds.

C.3. Component C, which includes all the remaining activities of the Project as detailed in Chapter 5 of this PID. The activities will be carried out through various contracts and purchasing of goods and services. The Component C will be entirely financed through Vietnamese funds.

D. Should, after the full coverage of the net-of-VAT price of the Contract A and Contract B2, a portion of the Soft Loan be still available, two options can be adopted, in order to pursue the goal of the full utilization of the Soft Loan amount. The selection between the two options will be done through a decision of the JSC that can also decide for a solution where both the options are applied. The decision will be taken by the JSC on the basis of a report of the PMU accompanied by technical documents/studies that show the feasibility of the proposed solution/s. The two options are the following:

Option 1: to enlarge the Project area by including in the scope of work of Contract B2 the construction of storm water and/or wastewater sewage pipelines (and relevant pumping stations) additional to those included in the Project and relevant to the considered Project area. In order to be fully feasible, a decision on this option must be taken before the launching of the bid for Contract B2, otherwise the provisions in **Annex 2 to the MoU** for contract modification will apply.

Option 2: to cover, totally or partially, with the balance of the Soft Loan also the net-of-VAT cost of Contract B4. In order to be feasible, a decision on this option must be taken before the launching of the bid for Contract B4 in order to make use of the procurement procedures for contracts to be financed through the Soft Loan.

E. The Contracting Party for all the above-mentioned contracts and procurement actions will be the PMU on behalf of the Tay Ninh PPC.

2) Project Implementation Structure and Management

A. Tasks, Responsibilities and Composition of the Joint Steering Committee

A Joint Steering Committee (JSC) shall be constituted as a high-level consultative and decision making body for the Project and composed by:

- representatives of Tay Ninh PPC, MPI and MoF, for the Vietnamese side;
- representatives of the Italian Embassy and of MAECI-DGCS for the Italian side.

The representative of the PPC of Tay Ninh chairs the JSC. The Chairperson, upon request of one of the members, convenes the meetings of the JSC in the key moments of the Project; at least one meeting of the JSC shall be held per year. During the JSC meetings, corrective measures can be taken and/or proposed for subsequent implementation. All JSC decisions shall be taken unanimously. In case of proposed measures that will imply modifications to the MoU and/or to its Annexes, it must be considered that the provisions of the Article 16 of the MoU shall apply. The JSC has the task and responsibility to supervise the Project's activities. In particular it will:

- Coordinate and provide directions for the project implementation
- Carry out all expediting activities aimed at avoiding delays in Project implementation.
- Approve the changes in the Project's components and proposed budget allocated for those component, provided that those changes will not alter the project's objectives and will not result in increasing the soft loan amount over the maximum amount engaged in the project MOU. The changes can be considered in the following cases: (i) the changes are required to adapt to the current circumstances/conditions and such circumstances/conditions were not foreseeable during the preparation of the Project Feasibility Study Report; (ii) the changes are necessary to improve the quality and performance of Project.

- Endorse any recommendation for variation of the contracts to be financed through the Soft Loan proposed by the PD prior to its submission to MAECI-DGCS for no-objection whenever the variation implies an allocation of funds among the various activities, which is different from the allocation foreseen in this PID. The approval by the JSC of the proposal for contract variation will represent also an approval of the revised allocation.
- Organize and supervise the monitoring of the Project through surveys and through examination and approval of Project Implementation Reports (PIR).

For the decisions of the JSC, it is not required a formal meeting but simply, the approval by each member of the JSC separately, subsequently formalized by a minute signed by the members.

B. The Project Management Unit (PMU), its tasks, responsibilities, composition and funding

In order to facilitate an effective implementation of the Project, a PMU will be established pursuant to the Article 39 of the Vietnamese Decree 38/2013/ND-CP and the Articles 15 of Circular 01/2014/TT-BKHDT. PMU headed by a Project Director (PD), and includes Vietnamese supporting staffs. The key staffs of PMU shall have good knowledge of the English language. PMU can be supported by Italian experts, appointed by MAECI-DGCS and/or by the personnel of the Cooperation Office of the Italian Embassy in Ha Noi.

The Vietnamese side shall finance, out of the Project funds (indicated at Item V of Table 5 at Chapter 7), all the costs relevant to: (i) the assignment of the PD and of the Vietnamese core staff, (ii) the assignment of the Vietnamese supporting staff, (iii) the PMU office and, (iv) the office furniture, equipment, utilities and consumable items.

The PMU office will be located at WSS premises in Tay Ninh. In addition to the tasks and powers assigned to the PMU according to the Article 40 of the Decree 38/2013/ND-CP and the Articles 15, 16 of the Circular 01/2014/TT-BKHDT, PMU shall undertake the following tasks (but not limited to):

- to prepare, at the beginning of the Project the General Operational Plan (GOP) of the Project and submit it to the JSC. Any variation to GOP proposed by the PMU will be sent to the JSC for approval;
- to liaise with the UTL for project progress and technical assistance;
- to forward bidding documents, together with an explicative report, to MAECI-DGCS, through UTL, in order to obtain the “no-objection” to the launching of the bids;
- to forward bidding documents to MAECI-DGCS, through UTL, for bid advertising on Italian newspaper;
- to submit to MAECI-DGCS, through UTL, for no-objection, the report on the results of contractor selection process together with the relevant draft contract to be financed through the Soft;
- to prepare six-month and yearly Project technical and financial Implementation Reports (IRs) to be sent to JSC;
- to monitor and evaluate Project progress, taking all necessary actions needed to ensure a smooth implementation;

C. Tasks and Responsibilities of the Project Director (PD)

At the start-up of the Project, a PD (Head of the PMU) shall be nominated by Tay Ninh PPC, among professionals with experience in project management and fluency in English. The PD has the task and responsibility to grant an effective and efficient Project implementation. Inter alia, he will have the following task and responsibilities:

- to directly execute, coordinate or facilitate/support all the activities needed to implement the Project, according to the MoU and this PID (technical and administrative activities);
- to guarantee functional liaisons with the relevant local and Italian authorities;
- to sign, on behalf of the Tay Ninh PPC, all contracts and purchase order relevant to the Project;
- to direct, supervise and coordinate all contract management activities;
- to formally accept goods, services and works and approve the payment of the invoices from the contractors.
- to assist and monitor the preparation of bidding documents;
- to coordinate the preparation of the semi-annual PIRs and their transmission to JSC and MAECI-DGCS;
- to monitor the activities and their progress and promptly intervene in order to avoid problems, delays and mistakes;
- to guarantee the normal functioning of PMU and the compliance with its tasks and responsibilities as established in this PID and in the MoU.
- to guarantee the correct use of funds and other resources and the correctness of the accountancy and reporting activities;
- to ensure the day-by-day liaison between the PMU, the Italian Experts (IEs) - if any - and all other persons or institutions involved in the Project;
- to cooperate with the IEs and other consultants in all their activities, providing information, facilitating meetings with all bodies involved in the Project etc.;

D. PMU supporting staff

Among the support personnel in the PMU there shall be a bilingual Vietnamese -English translator, an English speaking accountant or secretary/translator with basic accounting skills and a driver. This personnel shall be appointed and assigned to the PMU for all the duration of the Project. This staff will support the daily duties of the PD, of the Vietnamese experts assigned by PPC, of the IEs and Vietnamese expert assigned by MAE-DGCS (if any) and of other consultants, in all the secretarial, translation and accountancy activities related to the Project.

E. Support to PMU by MAECI-DGCS

The MAECI-DGCS will designate, in agreement with the JSC, Italian Experts to provide specific technical support to the PMU. For the same task and for the coordination between the PMU and the UTL, the MAECI-DGCS may also assign Vietnamese Experts (normally on a temporary and case-by-case basis).

Specific technical assistance may be provided through the above-mentioned Experts in various disciplines, according to Project needs. IE's missions will be requested by the PD to the UTL. The UTL and MAECI-DGCS, as well, according to Projects needs, may activate the IE's missions (communicating it to the PD). The IEs can support the PMU in carrying out planned activities, as well as, in monitoring and evaluating the quality of supplies, services and other activities carried out by the Contractors. Among the possible tasks of the IEs there are the following:

- Equipment list and specifications final revision.
- Functional assessment, preliminary functional design and preliminary (architectural) design for civil works (including ancillary plants) related to priority departments: Emergency, ICU etc.
- Assistance to PMU, for preparation of TOR for services.
- Assistance to PMU in the preparation of bidding documents and during the site visits by the bidders.
- Assistance to PMU in bid evaluation.

The MAECI-DGCS will have the right to send Italian and/or Vietnamese Experts to participate to the works of the Evaluation Committees, relevant to bidding for contracts to be financed out of the Soft Loan proceeds.

The Italian side will finance the costs relevant to the assignment of the above-mentioned Italian and Vietnamese Experts with additional grant funds.

Chapter 7 – Project Estimated Costs

The summary of the Project cost estimate is in Table 5 here below. For each items, the following is indicated in the table: (i) the relevant activity, according to what is specified in Chapter 5, (ii) the Component of which the item is part, according to the previous Chapter 6, paragraph 1 and, (iii) the Contract through which the item will be purchased, according to the same Chapter 6, paragraph 1.

Table 5: Summarized Project Cost Estimate in EURO

No	Item	Unit	Quantity	Total cost estimate	Source of Funds		Component	Activity	Contract
					Viet Nam	Italy			
I	Wastewater Treatment Plant Total	Plant	1	3.415.818	43.428	3.372.390			
1	Survey and detailed design for the WWTP	package	1	104.454	-	104.454	A	1	A
2	Construction and procurement for the WWTP	package	1	3.076.345	-	3.076.345	A	2	A
3	Startup and Training for the WWTP	package	1	191.591	-	191.591	A	3	A
4	Supervision of works for WWTP	package	1	43.428	43.428	-	B	4	B5
II	New Sewage Network Total	package	1	4.968.285	806.808	4.161.477			
1	Survey and detailed design for the networks including pumping stations	package		212.684	212.684	-	B	5	B1
2	Construction and procurement of wastewater pumping stations	stations	3	78.779	-	78.779	B	6	B2
3	Construction and procurement for the storm water drainage pipes: RC pipes DN600 - 1000	m	6.522	570.753	-	570.753	B	7	B2
4	Construction and procurement for the wastewater collection pipes: HDPE pipes DN300-600; improving the existing manholes to be the smelling prevention manholes and dredging the existing sewers	m	26.280	3.511.945	-	3.511.945	B	8	B2
5	Construction and procurement of house connections	package	1	540.503	540.503	-	B	9	B3
6	Supervision of works for the new sewage networks	package	1	53.621	53.621	-	B	10	B5
III	Supply of the equipment needed for the correct operation of the new facilities			548.671	-	548.671	B	11	B4
IV	Site clearance and compensation	package	1	777.778	777.778	-	C	12	n.a.
V	Project management	package	1	99.695	99.695	-	C	13	n.a.
VI	Project consultancy services (FS preparation, socio-economic surveys, EIA report etc.)	package	1	110.728	110.728	-	C	14	n.a.
VII	Other costs (insurances, demining, auditing, etc.)	package	1	128.932	128.932	-	C	15 16	n.a.

VIII	Total cost estimate (before tax)			10.049.907	1.967.369	8.082.538	-	-	-
IX	Tax (VAT)			924.297	924.297	-	-	-	-
X	Total cost estimate (including VAT)			10.974.204	2.891.666	8.082.538	-	-	-
XI	Contingencies (20%)			2.194.841	578.333	1.616.508	-	-	-
XII	TOTAL INVESTMENT COST (INCLUDING CONTINGENCIES)			13.169.045	3.469.999	9.699.046	-	-	-
XIII	TOTAL ROUNDED INVESTMENT COST (INCLUDING CONTINGENCIES)			13.170.000	3.470.000	9.700.000			
				100%	26,3%	73,7%			

Note: exchange rate utilized: 1 Euro = VND 27.000

The Table 5 has been prepared on the basis of the cost estimates elaborated by the Consultant, according to the following assumption:

- The Project taken into consideration has the configuration delineated in Chapter 5 above.
- There is a provision of 20% for contingencies proportionally distributed between the Vietnamese and the Italian contributions.
- With the available amount of the Soft Loan, it is possible to finance: (i) all the net-of-VAT price of Contract A, (ii) all the net-of-VAT price of Contract B2, and (iii) all the net-of-VAT price of Contract B4. This event, on turn, is based on the following assumptions:
 - the provision for contingencies will be entirely absorbed by unexpected events;
 - the Option 2 at previous Chapter 6, paragraph 1D, will be selected.
- The unit prices utilized for the estimate of the civil works are those of official price list valid for 2012.
- During the start up and training 6-months period for the WWTP, the Contractor will provide 2 expatriates and local technicians.

As detailed in the following Chapter 13, all the cost estimates in Table 5 have been prepared only for preliminary budgeting purposes. Therefore they must be considered as tentative and are subject to modification during Project implementation.

Chapter 8 – Project Implementation Schedule

Project implementation is expected to last thirty-six (36) months. The Project Implementation Schedule (PIS) in Attachment 1 has been prepared during formulation and has to be considered only tentative; nevertheless the total implementation period has to be considered correct. The beginning of the implementation period (start up of the Project) will be the date of the entering into force of the MOU. In order to complete the Project in the shortest possible time, it is advisable that, before start-up, in addition to the activities aimed at having the soft loan funds available, some preparation activities can take place, in particular those relevant to the preparation of bidding documents.

It should be noted that the PIS in Attachment 1 has been prepared taking into consideration only those activities that have high importance for the overall duration of the Project. For instance, the supply of equipment for the operation and maintenance of the new utilities has not been taken into consideration.

The PIS in Attachment 1 will be updated and completed with all the Project activities, by the PD, according to actual events and Project needs during implementation. The updated PIS will be submitted by the PD to the JSC every six months of activities. The first revised PIS will be submitted within one month from Project start-up.

During implementation, in order to avoid delays, the PD has to put particular attention to the planning of the activities relevant to the construction of the WWTP and to the construction of the sewage network and

connections to the households. The PD should take into account the fact that the start up of the WWTP can take place only after the completion of the works that allow the wastewater to reach the WWTP.

Chapter 9 – Procurement Procedures

1) Generalities

All procurement procedures under this MoU will be conducted under the responsibility of the Vietnamese authorities. The Contract shall be signed between the PD, representing PPC, and the Contractor. Each Contractor shall designate a Contractor Representative (CR) who shall coordinate the Contractor activities and represent the Contractor with the PMU for all contract obligations.

The procurement procedures to be used have been established taking into account: (i) the Vietnamese Law on Tendering 43/2013/QH13 (ii) the relevant Decree, issued by GoV guiding this Law on Tender and the selection of construction contractors under the construction law and, (iii) the procurement principles and procedures adopted by the Italian Cooperation. According to Article 3.3 of the above-mentioned Law on Tendering, wherever the present MoU and/or PID specify conditions for procurement different from those in the Law on Tendering, the conditions of this MoU/PID apply.

The procurement for the various activities will be carried out according to different procedures depending on the expected source/sources of financing. In particular, if the contract has to be financed, totally or partially, out of the Soft Loan proceeds, the procedures to be adopted are those of the Vietnamese Law on Tendering but with the additional prescriptions stipulated in the MOU and in this PID, including the “Eligibility criteria, ethical clauses, contract general principles” listed in Annex 2 to the MOU. The prescriptions of the MOU will prevail upon the prescriptions of the Vietnamese law. If the contract or the purchasing has to be totally financed with Vietnamese funds, the procedures to be adopted are those of the Vietnamese Law on Tendering.

The bidding documents using the soft loan shall be submitted by PMU, thorough UTL, to MAECI-DGCS for “no-objection”, before the publication of the tender procurement notice. PMU, for each tender relevant to items to be financed using Soft Loan funds, will evaluate the bids, will prepare and submit to MAECI-DGCS a tender evaluation report, along with the contract, initialed by the selected contractor, in order to obtain the “no-objection” by MAECI-DGCS before the final signature.

The procurement procedures to be adopted for each Component, Contract and purchasing mentioned in Article 4 above, are detailed here below.

2) Procurement Procedures for Component A

Component A includes only Contract A. The basic principle governing the award of the Contract is competitive tendering. The purpose is twofold:

- to ensure the transparency of operations; and
- to obtain the desired quality of goods, services and works at the best possible price.

The applicable regulations oblige DGCS to guarantee the widest possible participation, on equal terms, in tender procedures and contracts financed by itself.

In order for the Contract A to be eligible for financing out of the Soft Loan and to receive the no-objection by the DGCS, it must be awarded according to the procedures described here below.

- A. The procurement activity must be conducted in order to, together with the other contracts under Component B to be financed out of the proceeds of the Soft Loan, cumulatively allow for the compliance of the minimum percentage of goods, services and works of Italian origin indicated in Article 7.6 of the Agreement.

- B. In order to optimize the implementation of the Project, all the Project activities under Component A will be carried out under a single Engineering Procurement and Construction (EPC) contract, according to the definition in the Vietnamese law on procurement (*EPC tender package means a tender package which comprises the entire work of design, supply of equipment and materials, and construction and installation*).
- C. Considering that the activities under Component A require a Contractor with a mix of capacities and experiences, the bidding documents will be prepared in a way to allow the participation of a group of companies and/or companies that can show evidence of the necessary mix of capacities.
- D. Participation will be allowed only to: (i) Italian companies, (ii) joint ventures among Italian companies and, (iii) joint ventures among Italian and Vietnamese companies where the leading company is Italian.
- E. The tender will be carried out without pre-qualification; therefore will not be “restricted” to a short-list of pre-qualified companies.
- F. The single envelope method of tendering shall apply. A tenderer shall submit his tender in one envelope including his technical and financial proposals in accordance with the requirements set out in the tender invitation documents. There shall only be one opening of tenders.
- G. The language to be used in tender invitation documents, tenders and data exchanged between the party calling for tenders and tenderers shall be Vietnamese and English, where the English version shall prevail.
- H. The tender documents shall specify that, during tender preparation, all the bidders must mandatorily participate to a joint site visit that will be organized at least 20 days before the bid submission date. During the site visit, the bidders may ask for clarifications. All the clarifications will be given to all the bidders.
- I. After preparation of the bidding documents the PMU shall send, before the launching of the bids, copy of the said documents to MAECI-DGCS for its no-objection.
- J. The bid advertising in Italy will be carried out by MAECI-DGCS at its own expenses and the PMU will send copy of the bidding documents and of the invitation for bid to UTL at least 60 days prior to the expected date of publication on the Italian newspapers. The procurement notice will be published by MAECI-DGCS on Italian newspapers, on its web site, and with any other appropriate media if it deemed necessary. The PMU, may directly arrange, at its own expenses, the publication on local newspapers in English language and, if deemed necessary, with other local media. The procurement notice must state clearly, precisely and completely: (i) what is the subject of the Contract, (ii) who is the contracting party and, (iii) all the information needed by the potential bidders to determine their capacity to fulfil the Contract in question. The procurement notice published locally by the PMU must be identical to the procurement notice published by MAECI-DGCS in Italy and must appear at the same time.
- K. The time allowed for candidates to submit their applications must be sufficient to permit proper competition. The minimum deadline, for submitting bids from the date of the notice's publication on the web and on the Italian and local newspapers, is 60 days.
- L. The PMU must send bidding documents to would-be Tenderers. Bidding documents can be sent out for a fixed fee that must not exceed the printing and delivery costs. The bidding documents will also be made available for inspection at the premises of PMU, of UTL and of MAECI-DGCS.
- M. The bid evaluation committee may be composed and organized according to what established in the Vietnamese procurement law with the following additional prescriptions:
- All the meetings and documents of the committee must be done adopting both the Vietnamese and the English language.
 - An observer or a group of observers designated by MAECI-DGCS must be allowed to participate to all the works of the evaluation committee; to this end the PMU must inform MAECI-DGCS in advance of the scheduled meetings and of the composition of the committee.
- N. After completion of the bidding and bid evaluation, the PMU shall prepare a proposal for award that must include a copy of the Contract that the PMU intends to sign with the Contractor (or that has already been signed with a suspension clause which links the entering into force to the no-objection of the MAECI-DGCS).

- O. In the preparation of the final version of the Contract, the PMU can include variations in respect of the budget allocations foreseen in the PID, provided that such variations: (i) are done according to the procedure specified under Chapter 13 of this PID, and (ii) are within the limits indicated in the tender documents and stipulated in Annex 2 to this MoU.
- P. The PMU shall submit its proposal for award to MAECI-DGCS for the necessary no-objection. Should MAECI-DGCS deem it necessary, before granting its no-objection, it may request the PMU to provide copy of all the offers received. MAECI-DGCS, after giving its no-objection on PMU proposal for award, shall notify it to the PMU. Once the PMU has received the no-objection by MAECI-DGCS on its proposal for award and has signed the Contract with the Contractor, the PMU will send the signed Contract to MAECI-DGCS through the Embassy/UTL.
- Q. All authorizations/approvals by MAECI-DGCS, relevant to the procurement activities, will be limited to verify that all procedures and provisions indicated in the MOU and in this PID have been/are being duly accomplished. The responsibility of the selection of the Contractor will remain with the PMU.

3) Procurement Procedures for Component B

Component B includes five contracts: (i) Contract B1, to be financed totally with Vietnamese funds, (ii) Contract B2, to be financed totally or partially, with the Soft Loan, (iii) Contract B3 to be financed totally with Vietnamese funds, (iv) Contract B4, to be financed totally or partially, with the Soft Loan and, (v) Contract B5, to be financed totally with Vietnamese funds. The basic principle governing the award of the contracts is the same of Component A.

The five contracts must be awarded according to the procedures described here below, in order to allow Contract B2 and Contract B4 to be eligible for financing out of the Soft Loan proceeds and to receive the no-objection by MAECI-DGCS.

Contract B1 Procurement for contract B1 will be carried out according to the Vietnamese law.

Contract B2 Procurement for contract B2 will be carried out according to the same procedures described in the previous paragraph 2 for Contract A, with the exception of the points B, C, D, J, K that will not be applicable in view of the nature of Contract B2. Instead the following prescription will be added:

R. Contract B2 will be awarded as a single Construction contract.

S. The bidding documents will be prepared in a way to allow the participation of a group of companies ad/or companies that can show evidence of the necessary mix of capacities.

T. Participation will be allowed only to: (i) Vietnamese companies, (ii) joint ventures among Vietnamese companies.

U. The bid advertising will be carried out, at its own expenses, by the PMU only in Viet Nam. The procurement notice must state clearly, precisely and completely: (i) what is the subject of the Contract, (ii) who is the contracting party and, (iii) all the information needed by the potential bidders to determine their capacity to fulfil the Contract in question.

V. The time allowed for candidates to submit their applications must be sufficient to permit proper competition. The minimum deadline, for submitting bids from the date of the notice's publication is the minimum limit established by the Vietnamese law on procurement.

Contract B3 Procurement for contract B3 will be carried out according to the Vietnamese law.

Contract B4 Should Contract B4 be totally financed through Vietnamese funds, its procurement will be carried out according to the Vietnamese law. Otherwise, in order for the Contract B4 to be eligible for financing out of the Soft Loan and to receive the no-objection by MAECI-DGCS, it must be awarded according to the same procedures described for Contract B2, with the exception of the point R that will not be applicable in view of the nature of Contract B4. Instead the following prescription will be added:

W. Contract B4 will be awarded as a single contract for supply of goods.

Contract B5 Procurement for contract B5 will be carried out according to the Vietnamese law.

4) Procurement Procedures for Component C

All procurement activities under Component C will be carried out according to the Vietnamese law.

Chapter 10 – Reporting

One month before the end of each semester, the PD, with the assistance of the PIC, will prepare the PIR. All PIRs will be submitted to the JSC for appraisal and subsequent submission to MAECI-DGCS. The PRs shall include:

- a) the status of each planned activity;
- b) the problems encountered during implementation and proposals of solutions (recommendations);
- c) the status of expenditures (when applicable);
- d) an updated and complete PIS.

Chapter 11 – Soft Loan Disbursement Procedures

The main features of the Soft Loan disbursement procedure, which will be detailed in the FC, are summarized here below:

- After preparation of the bidding documents, the PMU shall send, before the launching of the bids, copy of the said documents to MAECI-DGCS for its no-objection.
- After completion of the bidding and bid evaluation, the PMU shall prepare a proposal for award that must include a copy of the Contract that the PMU intends to sign with the Contractor (or that has already been signed with a suspension clause which links the entering into force to the no-objection of the MAECI-DGCS).
- In the preparation of the final version of the Contract, the PMU can include variations in respect of the budget allocations foreseen in the PID, provided that such variations are done according to the procedure specified under Chapter 6 and Chapter 9 above.
- The PMU shall submit its proposal for award to MAECI-DGCS for the necessary no-objection.
- The MAECI-DGCS, after giving its no-objection on PMU proposal for award, shall notify it to the PMU.
- Once the PMU has received the no-objection by MAECI-DGCS on its proposal for award and has signed the Contract with the Contractor, the PMU will send the signed Contract to MAECI-DGCS through the Embassy/UTL.
- After having verified the compliance of the signed Contract, the MAECI-DGCS will send to the IFI the request for the insertion of the Contract in the Soft Loan.
- Upon receipt of the above request, the IFI will complete the inquiry over the Contractor (including compliance of the Contractor with anti-mafia Italian regulations). The successful result of such inquiry will cause the allocation of the Contract to the Soft Loan for financing.
- Once that each single payment becomes due according to the terms stipulated in the Contract, the Contractor will submit to the IFI a request of disbursement. The Contractor shall send, attached to this request, the full documentation that is stipulated in the Contract as due by the Contractor in order to receive the payment (hereinafter referred to as Contractual Documentation), like bank guarantees, invoices, shipping documents etc.
- Upon receipt of the request for disbursement, the IFI shall make the relevant payment to the Contractor after a successful review of the Contractual Documentation.
- According to the procedure outlined here above, the payments will be made directly by the IFI to the Contractor on presentation by the Contractor itself of the Contractual Documentation. In order to ensure that the payments will be made only after allowing the PMU to have full insurance that the relevant goods and/or services and/or works are in accordance with the Contract, in the Contract itself must be specified that, among the Contractual Documentation to

be presented for each payment, the Contractor has to include also the formal Authorization of Payment by the PMU. In the Contract it must be specified the maximum time allowed for the PMU to perform its verifications (after that each payment is due and it has been requested by the Contractor) and to provide its Authorization of Payment.

- Any variation or amendment to the Contract shall receive a prior no-objection by the MAECI-DGCS.

Chapter 12 – Project Control, Monitoring and Evaluation

1) Controls by the Vietnamese side

The Vietnamese side will have full and continuous control over the Project during its implementation, since all the activities will be carried out under the responsibility of the Vietnamese authorities at central and provincial level and utilizing personnel designated by such authorities. This arrangement will ensure, the continuous monitoring of the activities and the control on procurement and on expenditures (also through the official audit system of the GoV over its bodies at central and provincial level).

2) Controls by the Italian side

The controls by the Italian side will concern the following aspects:

- A. General control on Project implementation, aimed to ensure: (i) that results and objectives will be achieved, (ii) that implementation of the Project is smooth and, (iii) that the use of the funds provided by Italy is transparent, effective and efficient. This control will be carried out through: (i) the presence of the Italian side in the JSC, (ii) the reporting system mentioned in the previous Chapter 10, (iii) the presence as support in the PMU of personnel of the Cooperation Office of the Italian Embassy in Ha Noi and/or of Italian Experts specifically fielded by MAECI-DGCS, and (iv) specific monitoring and evaluation missions of Italian Experts fielded by MAECI-DGCS.
- B. Control on procurement, aimed to ensure that the relevant prescription in this MoU are fully applied. This control, relevant to the bidding for contracts to be financed through the Soft Loan, will be carried out directly by MAECI-DGCS in its headquarters by providing its no-objection on: (i) the draft tender documents, and (ii) the proposals for contract award. In addition, during bid evaluation, MAECI-DGCS may send one or more observers to participate to the works of the evaluation committee.
- C. Financial Controls, aimed to ensure that the expenditures are within the limits and the prescription established in this MoU and in the FC. These controls are assigned to the IFI.
- D. In order to allow the MAECI-DGCS controls, the PMU will ensure, upon receipt of MAECI-DGCS prior written notice, that MAECI-DGCS personnel has access to the Project areas and to the Project technical documentation. The PPC will retain records of all Project documentation, including the related correspondence and reports, for 10 (ten) years after the completion of the Project.

3) Monitoring and Evaluation

- A. Joint Monitoring and Evaluation. Considering that the success of the Project is a common goal and its implementation is a common effort, whenever possible all monitoring and evaluation activities will be jointly carried out, under the supervision of the JSC.
- B. The Parties will have the right to perform at their own expenses, all the monitoring, evaluation, control and auditing activities that shall be deemed necessary in addition to those already foreseen in this MoU.

Chapter 13 – Budget Allocations and Variations

All the costs indicated in the previous Chapter 7 are only first estimates done during the Project formulation. A better estimation will be done during TOR and tender documents preparation. The real cost will be known only at the end of bidding process.

In order to pursue the best utilization of funds, it is possible, depending on the actual results of the procurement activities, in case the price of contract awarded is lower than that allocated by the Italian cooperation, to exercise the Option 1 and 2 as described in page 14 of the PID (Chapter 6).

The procedure to be followed for the reallocation is the following:

- 1) The PD has to prepare, when it is deemed necessary, a motivated report on the reasons and justifications of the proposed request
- 2) In order to be effective the reallocation must be approved by the JSC.

Chapter 14 - Amendments to the PID

The PID can be amended upon agreement of the Joint Steering Committee, through meetings or exchange of official letters, provided that amendments will not alter the contents and conditions of this MoU

ATTACHMENT 1: Implementation Schedule

Entering into force of the MOU



Activities	MONTHS																																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36		
Establishment of PMU & JSC	█																																					
Prep. bid docs and launch tender for WWTP	█	█	█	█																																		
Bid evaluation and award of contract for WWTP							█	█	█	█	█																											
Construction of the WWTP											█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Start up and training for WWTP																																			█	█	█	█
Prep. TOR and bid docs for sewage network design	█	█																																				
Bid evaluation and award of contract for network design, incl. HH connections					█	█																																
Design of sewage network, prep of bid docs and launch of the bids for construction							█	█	█	█	█																											
Bid evaluation and award of contracts for network construction																	█	█	█																			
Construction of sewage network																																						
Bid evaluation and award of contract for HH connections construction												█	█																									
Construction of household connections																																						
Site clearance and demining		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█