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Ministry of Agriculture
கமத்தொழில் அமைச்சு

ENVIRONMENTAL SCREENING REPORT

Rehabilitation of Pump house, installation of solar panels & motors, an overhead tank, and laying PVC pipes at RB canal of Muthiyankattu tank in Thaddayamalai GND (Pump No 4 & 5)

Sri Lanka Agriculture Sector Modernisation Project (ASMP)

Prepared for Project Management Unit of the Agriculture Sector Modernization Project

Democratic Socialist Republic of Sri Lanka, Ministry of Agriculture (MOA)

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ABBREVIATIONS

ASMP	Agriculture Sector Modernization Project
DSD	Divisional Secretary Division
EMP	Environmental Management Plan
GND	Grama Niladhari Division
LKR	Sri Lanka Rupees
MOA	Ministry of Agriculture
PMU	Project Management Unit
WQI	Water Quality Index
RDS	Rural Development Society
WRDS	Women Rural Development Society

Agriculture Sector Modernization Project
Environmental Screening Report

1. PROJECT IDENTIFICATION

Project title	Rehabilitation of Pump house, installation of solar panels and motors, an overhead tank and laying PVC pipes at RB canal of Muthiyankattu tank in Thaddayamalai GND (Pump No 4 & 5) as per the design done by Irrigation Department -NP
Project Proponent	Agriculture Sector Modernization Project (ASMP) – Implemented through Department of Irrigation, Northern Province

2. PROJECT LOCATION

Location (*Relative to the nearest town, highway*)	Mullaitivu District was declared in 1979 and is located in the Northern Province of Sri Lanka. The District is bounded by Jaffna and Kilinochchi District from the North, Sea from the East, Trincomalee and Vavuniya Districts from the South, Mannar District from the West, and a small part of the South. The absolute location of the District is longitude 090 14/ N & latitude 800 32/ E. The total land area of the District is approximately 2616.9 sq. km This District accounts for 3.87% of the country's total land area. The District has six Divisional Secretary Divisions namely Maritimepattu, Puthukkudiyiruppu, Oddusuddan, Thunukkai, Manthai East, Welioya. There are 127 Grama Niladari Divisions & 624 Villages. Administratively the District belongs to part of Vanni electoral District and having five Pradeshiya Sabha's sub Office. Selected project locations belong to the Oddusudan DSD and it represents around 24% of the total land area of the Mullaitivu district. Oddusudan DSD has 27 GND and the selected project locations belong to the Thaddayamalai village which is in the Thaddayamalai GN division. Solar panels will be installed on top of the Groundnut producer society-building and it will be contributing 40 KWh to the main grid (this is the same installation discussed under Pump 6&7 ESR). Pump house is attached to the RB canal of the Muthiyankattu tank and the overhead tank will be at a different location. The Overhead tank is around 480 m away from the pump house. All below location maps are shown in Annexure 2. 1) Pump House (4&5)- $9^0$11'33" N, $80^0$38'35" E 2) Overhead tank of pump 4&5 - $9^0$11'29.9" N, $80^0$38'20.3" E Muthiyankattu Major Irrigation scheme is one of the dedicated tanks for Food Crop Production in Sri Lanka. Of the 6,000 acres command area, 4,100 acres are fed by gravity irrigation system while the remaining 1,900 acres are fed by the lift irrigation system. Originally, the lift irrigation scheme was established in the late 1960s for dried chili and red onion production. However, farmers of the area have abandoned the cultivation due to conflict, displacement, and liberalization of food commodity imports in the past years. As a result, the lift irrigation systems were not in operation and were left in dilapidated conditions for a long period. Especially, the Right Bank (RB) canal of the tank has been designed for the lift irrigation for the command area.
Definition of Project Area *(The geographical*	The proposed development activities include rehabilitation of the existing Pumphouse located on the Right Bank of Muthiyankattu Tank in Thaddayamalai which belongs to the Thaddayamalai GN division. Further, motors will be installed

extent of the project & areas affected during construction)	at the same location while overheads tank to be constructed in a different location to cover entire selected farmlands. Supplying and laying of PVC pipes and Construction of Pipelining structures of RB canal will be facilitating to all the beneficiaries identified in Annexure 3. Pipe laying will be taking place along the road and either side will be disturbed during pipe laying. Lands are generally flat terrain. Either side of the proposed area contains both cultivated and bare lands. Mullaitivu is an agricultural economy-based district and rice production is the main agricultural activity undertaken by farmers in lowlands. Almost all farmers have both lowlands and uplands for their livelihood activities. However, Thaddayamalai RB canal farmers don't have a well-established and managed irrigation system, farmers cultivate paddy on a lowland in one term (Maha Seasons) per year. During Yala season (May to August), cultivation activities are limited to paddy on lowlands with water scarcity. Farmers have cultivated perennial crops such as coconut and mango on upland for their household consumption. Since it is receiving high rainfall during the Maha season (September to March), some farmers are cultivating seasonal crops on their uplands. During the Yala season, seasonal crops such as groundnuts, Chili, and various vegetables are cultivating by using open well/tube well water. However, open well/tube well water is not sufficient to cultivate their entire land, and most of the time only around 1acre is cultivated. One existing pump is in operational condition and only 4, 5 farmers are getting benefit from it. Further, 40KWh solar panels will be installed and concession will be applicable to the electricity bill of the motors. Hence, proposed pump house rehabilitation initiatives will benefit the farmers in Thaddayamalai by providing enough water to increase their acreage and the yield and it will ensure sustainability in the agriculture sector.
Adjacent land and features	Oddusuddan DS Division is one of the divisions among the six DS divisions in Mullaitivu District. There are 27 GN Divisions in the Oddusuddan DS Division. On the northern border of this DS division there are Puthukkudiyiruppu DS division of Mullaitivu district and Karaichchi DS division of Kilinochchi district, and on the eastern border is the Maritimepattu DS division. Similarly in the southern border Vavuniya North DS division of the Vavuniya district and at the western border is Thunukkai and Mathai east DS divisions. The total extent of the division is 618sq.km, and this DS division is the largest one consisting of 28% of the land area of the district. The Land Cover of the District mainly includes Agricultural Lands, Home Gardens, Forest Lands, and Water Bodies. The total land area of the District is 261,690ha. Approximately 13% of the total land area consists of agriculture; Forest Lands cover nearly 69%; Home Garden accounts for 6%. All selected locations are in the Thaddayamalai GN division which belongs to the Oddusudan DS division. RB canal of Muthiyankattu Tank is feeding water to paddy lands during the paddy season. The rehabilitation pump house is right next to the RB canals and the land belongs to the Implementing Agency - Department of Irrigation, Northern Province. New motors will be installed in the pump house. However, adjoining lands are owned by farmers, and most of the farmers are having 3-acre upland plots for crop cultivation. Most of these adjacent lands are used to cultivate groundnuts, chili, and vegetables. Perennial crops such as coconut and Mango are also found. Permits/deeds were available for all farmers and No main structures were found other than houses near the project area.

	The Overhead tank of pumps 4&5 will be at 9011'29.9" N, 80038'20.3" E, and the selected location is belonging to the department of irrigation. Throughout the length of the proposed PVC pipes laying, both sides are agricultural lands out of the majority is on-field cultivation. In-between there are houses of the owners of the same lands. Solar panels will be installed on top of the existing Ground nut producer society building.

3. PROJECT JUSTIFICATION

Need for the project (*What problem is the project going to solve*)	Dried Chili production and value addition under the lift irrigation schemes project in Mullaitivu, ASMP project is engaged in rehabilitating irrigation pumps and pipe laying for irrigation water distribution to farmer fields will be rehabilitated. The existing pump house at Thaddayamalai belongs to the Department of Irrigation contains two pumps (Pump 4&5) and the area is now outdated and dysfunctional. Agricultural activities in the area especially vegetable and fruit cultivations are mainly depending on pump water. Due to the inefficiency and dysfunctionality of these two pumping stations, local farmers are facing a lot of difficulties in finding water, and most of their cultivations are destroyed due to insufficient water especially during the dry periods. Currently, selected beneficiaries cultivate two seasons per year using water from open wells and tube wells by confirming that they will go for three times cultivation per year if they are provided enough water from the proposed project. Further, almost all farmers are having 3-acre land plots and most farmers cultivate only half of their total land area due to insufficient water. Rehabilitation of pump house with new motors and laying of PVC pipes to distribute water among the beneficiaries will provide sufficient water to cultivate entire land plots of selected farmers with high frequency and high yield. Overhead tanks are designed to develop the pressure required for the operation of an on-farm drip irrigation system in the scheme. Water will be pumped to the overhead tanks directly and gravitational force will create the required pressure required to the on-farm drip irrigation system. In addition, below objectives to be achieved to increase the economy of selected farmers.
Purpose of the project (*What is going to be achieved by carrying out the project*)	Under the lift irrigation schemes project in Mullaitivu is driven to achieve the below objects. a. To rehabilitate lift irrigation system to expand crop production b. To introduce and demonstrate efficient and effective water management in farmlands c. To increase the productivity of the agricultural crop by minimizing additional costs for irrigation activities To achieve these objectives, the ASMP is engaged in rehabilitating a set of dilapidated lift irrigation pumps and water distribution infrastructure in Muthiyankattu to improve water accessibility. Under this project, irrigation pumps (4&5) at Thaddayamalai and pipe laying for irrigation water distribution to farmer fields in the area will be rehabilitated. Dysfunctional pump stations will be functional and irrigated water will be able to pump for local cultivation taking place based on the Right Bank and Left Bank of Muthiyankattu Tank. Construction of overhead tanks will help develop the pressure required for the operation of an on-farm drip irrigation system in the scheme. Therefore, local farmers' difficulties in finding water will be reduced, cultivation frequency will be increased from twice a

	year to thrice a year, an increase of yield of their cultivations, encourage farmers to cultivate more lands and farmers who have left cultivation will be encouraged to start farming activities again. At last, increase regional and national agriculture productivity. A total of 40 farmers (37 families) will be benefitted from the project and it will cover 80 acres of uplands. Overhead tanks and PVC laying will ensure the accessibility of the pumped water and both availability and accessibility drive towards the sustainable economy in various ways as follows. • Increased of the amount of individually cultivated lands up to 3 acres • Cultivation frequency will be increased up to thrice a year • New crops/projects will be introduced based on the water abundancy • Young generation will be attracted to seasonal crops • Women involvement to be increased • New employment opportunities will be available with the increased cultivation
Alternatives considered (*Different ways to meet the project need and achieve the project purpose*)	The "site alternative" would mean the feasibility of meeting the project needs at the selected cluster. Thaddayamalai has well-established farmer organizations already and the production of seasonal crops is available immediately. There are experienced ground nuts, chili, and vegetable farmers and all these upland cultivations rely on water abundance. Most of the farmers have large-scale, low-flat farmer-based lands with a lack of water. These farmers are capable of cultivating their entire uplands 3 times per year if sufficient water is available. Further, an attitude and market-led vision of field staff are highly acceptable. Hence, the selected area is highly supportive to meet the project needs within a short period of time with the expected quality. The "technology alternative" would mean different technology applications to meet the project needs at the selected cluster. Rehabilitation of pumps 4&5 will ensure the extraction of water. Overhead tanks and PVC laying will be taking place to distribute water among the selected farmers with the pressure required for the operation of an on-farm drip irrigation system in the scheme, and it will increase the accessibility of water. Further, 40KWh solar panels will be installed to generate renewable energy and it will be directly benefitted to reduce the electricity cost of motors. On-farm technological applications will be introduced by ASMP with the dry chili cluster development plan. The "no-action" alternative would mean that no pump rehabilitation undertake by the ASMP and hence no irrigational support for the existing cultivators in the selected area. That will lead the same agricultural activities and economy of farmers won't increase. Therefore, conventional farm practices, low productivity, low quality, and low income will continue to dominate the economy of the farmers, and the agriculture sector will not develop in Thaddayamalai.

4. PROJECT DESCRIPTION

Proposed start date	October 2021
Proposed completion date	March 2022

Estimated total cost	LKR 47 million
Present land ownership	Existing pump house 4&5 is owned and operated by the Department of Irrigation, Northern Province. The proposed pipe laying will be done along the road edges that are under the purview of the Department of Irrigation, Northern Province. The proposed overhead tanks will be constructed on the land that belongs to the Department of Irrigation, Northern Province. Both lands ownership and implementing agency of this subproject is the Department of Irrigation, Northern Province and the operations also will also be a responsibility of the Department of Irrigation.
Planned interventions	Planned interventions of the project includes • Rehabilitation of Pump house • Installation of two motors (pump 4&5) • Laying of PVC lines covering all beneficiaries • Construction of one overhead tank • Installation of 40KWh solar panels • Construction of Training, capacity building, and extension
Description of the project (*With supporting material such as maps, drawings etc. attached as required*)	Chilli is one of the main spice ingredients in cooking. Thus, it should be made available without shortage and price hikes. The country's annual dried chili requirement of 60,000 MT is largely imported and supplied. Local chili production is mainly for green chili production and dried chili production is very much marginal. Thus, self-reliance on dried chili is essential. Chili production is very low in the drier months of May, June, July and again in the rainy days of November, December and January. During the dry period production is affected due to extreme heat causing stress to the plant which in turn reduces the fruit set. Further, the presence of a peak insect pest population during the months of May to July also makes the plants less productive. Flower drops are very high during the rainy season and the wet conditions are more favourable for many fungal diseases leading to loss of production. Muthiyankattu Major irrigation scheme is the only dedicated tank for Other Food Crop Production in Sri Lanka. Originally the said lift irrigation scheme was established in the late 1960s for dried chili and red onion production. However, farmers of the area have abandoned the cultivation due to conflict, displacement, and liberalization of food commodity imports in the past years. As a result, the lift irrigation systems were not in operation and were left in dilapidated conditions for a long period. Since this project rehabilitates one of the above abandoned (pump 4&5) pump stations, it will not impact the downstream users. Muthiyankattu tank is originally designed to feed for highlands and the command area is around 6000 acres. 4100 acres out of it fed by gravity while around 1,900 acres fed by the lift irrigation. RB canal is design for lift irrigation and only the existing motors will be rehabilitated. Water requirement for the selected area under pump houses 6&7 is around 2300 m3 per day and the extraction capacity of the pump house is around 165 m3 per hour. Only around 14-hour extraction time is required to fulfil the daily requirement. This clearly shows that the extraction capacity is well enough to cater to the requirement. Further, extraction frequency and quantity will be decided by the irrigation engineer since daily watering is not required for the crops. Hence, it is clear that this project will not extract additional water than what it is originally designed to. Water extraction and distribution will be carried out using 9, 8- and 6-inches pipes and finally farmers will get water for the farmlands using 2 inches pipes.

	About 200 families having about 600 acres of high land living in the lift irrigation are presently cultivating groundnut only in Maha season and those who have dug wells were able to continue the same cultivation in Yala season too. If we can rehabilitate the dilapidated lift irrigation systems for these farm families and provide water during the dry season, dried chili (8 months) can be cultivated along with groundnut (4 months) on a rotational basis throughout the year. Based on a need assessment conducted by ASMP, PDOA, and Dept. of Irrigation, identified about 85 farm families living in 255 acres of land are urgently requiring water for irrigation to cultivate dried chili and groundnut in Thaddayamalai and Thoddiyadi. They are willing to cultivate about 182 acres of chili (8months) and 182 acres of groundnut in the same plot after the chili crop is harvested leaving the balance extent for perennials and homestead. Out of these 80 acres will be covered by Pump 4&5. In the first stage, if we can rehabilitate the following pumping stations and pipeline with one overhead tank in Thaddayamalai and two overhead tanks in Thoddiyadi, about 182 acres of land will get irrigation water supply throughout the year for one crop of dried chili and another crop of groundnut in a year. The cycle can be continued year after year. The construction of an overhead tank will help develop the pressure required for the operation of an on-farm drip irrigation system in the scheme. In this project Pump (4&5) house will be rehabilitated and new motors will be installed. PVC pipelining and overhead tanks will be taken place covering all above beneficiaries in Thaddayamalai, about 80 acres of land will get pressurized irrigation water supply throughout the year for one crop of dried chili and another crop of groundnut in a year. The cycle can be continued year after year. Solar-powered energy will be transferred to the grid and return will be dealt with the electricity bill of the motors. Overhead tanks are designed to develop the pressure required for the operation of an on-farm drip irrigation system in the scheme. Water will be pumped to the overhead tanks directly and gravitational force will create the required pressure required to the on-farm drip irrigation system. One overhead tank will be constructed to distribute water pumped through 4&5 and the capacity of the tank is 4*4*3 m3. The designs of the overhead tank are attached in Annexure 4. There are about 40 leading farmers will be selected with existing plantations in the most suitable locations with maximum exposure to a large number of farmers. The project is keenly looking to get on board at least 30`% of female representation for the project. The selection of such farmers will be carried out with the participation of farmer organizations of the area, agriculture instructors, agriculture research and production assistant, agriculture scientist of PPMU, etc.

Project Management Team	A PMU was established under the Ministry of Agriculture to implement proposed project activities. **Project Director** Agriculture Sector Modernization Project Ministry of Agriculture No. 123/2 Pannipitiya Road, Battaramulla Tel: +94 112 877 550 Fax: +94 112 877 546 Email: projectdirectorasmp2@hotmail.com Web: https://www.asmp.lk/ Deputy Project Director – Northern Province Agriculture Sector Modernization Project Ministry of Agriculture Tel:+94 773 876 364 **Environmental and Social Safeguards Specialist** Agriculture Sector Modernization Project Ministry of Agriculture No. 123/2 Pannipitiya Road, Battaramulla Tel: +94 112 877 550 Fax: +94 112 877 546 Email: sanjayadms@hotmail.com Web: https://www.asmp.lk/ **Sub-project will be implemented by the Department of Irrigation, Northern Province with the financial and supervision support of ASMP** **Nature of Consultations and Inputs Received** Consultations with Environmental and Social Safeguard Specialist/ PMU • Great potential to increase Farmer income with less labour and inputs. • Ability to save water in the reservoir for next seasonal cultivation and minimize water crisis during Yala season. • Effective mechanism to attract young farmers for commercial agriculture. • Almost all the farmers cannot cultivate their entire farmland (3 acres) due to lack of water • All farmers are waiting till completion of the project to extend the land area for the cultivation

5. DESCRIPTION OF THE EXISTING ENVIRONMENT

PHYSICAL FEATURES – ECOSYSTEM COMPONENTS	
Topography and terrain	The Topography of Mullaitivu District is flat land, gently sloping to the East and North and in the Western part, the directed towards West and South. This District has 70km of coastal belt and four lagoons namely Kokkulai, Nayaru, Nanthikadal, and Mathalan with high potentials for prawn culture. The elevation varies from sea level to 36.5 meters. Geologically, the project area belongs to the Wanni Complex of Sri Lanka. Generally, the project site is undulating terrain with a gentle slope (slope <30%) and the relief is <20m. The elevation of the project site is around 36.5m AMSL. Agro ecologically the District is located in the low country dry zone. There are two agro-ecological regions namely DL1 and DL3. The DL 1 Region is subdivided into 4 sub-regions i.e. DL1b, DL1e, DL1f, and DL1d.
Soil (*type and quality*)	According to the agro-ecological map of Sri Lanka, the annual rainfall pattern in the Mullaitivu district is around 1,270mm. Reddish Brown Earths cover 44% of the land area in the Mullaitivu District. Other soil types namely Grumusols, Alluvial Soil, Regosols, and solodized solonetz and solonchaks are scattered in the District. Some of the surfaces are eroded and it accounts for about 12% of the total land area of the District. The Reddish Brown Earths (RBE) occupy the crest and the upper and mid-slopes of the landscape. The Low Humic Gley (LHG) soils occupy the lower parts of the slope and upper parts of the valley bottom. A narrow strip of alluvial soils occurs along the natural drainage stream. Reddish-brown earth soil is a well-drained soil found on the crest, upper slope, and mid-slope physiographic positions within undulating and rolling landforms. Depth of soil varies according to the physiographic position of the landform. On hilly terrain, surface soil is eroded and quarts rich subsurface soil is present as a surface layer. The size of the quartz fraction and the amount depends on the location. The texture and structure of the sub-surface soil are gravelly sandy loam. Available soil moisture content is very low and therefore very susceptible to drought conditions. The soil is susceptible to soil erosion and should not be exposed. It has low organic matter content but is fair in available nutrients. Low Humic Gley soil is a deep and poorly drained soil found in flat terrain. The texture is sandy clay loam throughout the profile. CaCO3 depositions are present in the subsurface soil as concretions and it is a potential saline soil. Available soil moisture content is medium. It has low organic matter content and low available nutrient. Soil is used mainly for irrigated paddy. The dominant soil type of the Oddusudan DS division is Reddish Brown Earths & Low Humic Gley soils with undulating terrain. Further, Eroded lands and Red Yellow Latosols with flat to slightly undulating terrain were found within the DS division. Reddish Brown Earths & Red Yellow Latosols which are suitable for cultivation.
Surface water	Mullaitivu District is having 3 major tanks, 16 medium tanks, and 208 minor tanks with command areas of 5791ha, 2794ha, and 5098ha respectively.

(*Sources, distance from the site, local uses and quality*)	There are no major perennial rivers that could be tapped to provide irrigation for cultivation. Many annual streams enter into Mullaitivu District from their uppermost catchment areas occupied in the Vavuniya District. The stream network has created some opportunities to form small tank cascade systems. The streams running towards the East of the Mullaitivu District end up flowing into Nayaru and Nanthikdal lagoons. Some of the major and medium tanks found in the Mullaitivu District are Iranamadu, Vavunikulam, Akkarayan, Muthuaiyankaddu, Tannimurippu, and Udayankattu. The Irrigation schemes mainly depend on rainfall-runoff and river basins for capacity filling. As there are no perennial rivers, seasonal rivers drain the rainfall water into the tank. Nevertheless, surface runoff water is stored in the irrigation tanks. However, there are certain environmental issues, particularly the inland salinity and major and minor irrigation tank pollution that need careful consideration in the district. Most of the canals and the streams within a 1 Km radius from the selected location are fed by Muthiyankattu Tank. Other than these canals and streams, no other surface water sources are found within the radius.
Ground water (*Sources, distance from the site, local uses and quality*)	In Mullaitivu district deep confined aquifers of more than 60m deep have a relatively high recharge rate. The sedimentary limestone is highly faulted and it separates the aquifer into a series of isolated blocks, thus forming a number of separate groundwater basins. Based on field investigations, it is not possible to exactly quantify the availability, yield, and capacity within the project area. The groundwater table could be observed at 5-6m depth from the ground surface. The water table goes deeper during the dry season, however, it rises up during the rainy season. Groundwater is used for drinking purposes through dug wells, however, "hard water" is found in the project area. Agricultural wells are a common sight in the area which is used to extract groundwater to irrigate small areas of high-value crops or to provide a supplementary and secure source of water for the paddy crop. There is a possibility of contaminating groundwater by salinity due to the area is located very close to lagoons and the shoreline.
Air quality (*Any pollution issues*)	Any major air pollution sources in the vicinity of the project site are not recorded. Small scale industries and traffic may cause air pollution within the area. However, https://www.breezometer.com/air-quality-map/air-quality/sri-lanka/kachchilamadu shows that the Air Quality Index (AQI US) of Thaddayamalai is 32/500 and $PM_{2.5}$ is the dominant pollutant.
ECOLOGICAL FEATURES – ECOSYSTEM COMPONENTS	
Vegetation (*Trees, ground cover, aquatic vegetation*)	The land Cover of the Mullaitivu District mainly includes Agricultural Lands, Home Gardens, Forest Lands, and Water Bodies. The total land area of the District is 261,690ha. Approximately, 13% of the total land area consists of agriculture; Forest Lands cover nearly 69%; Home Garden accounts for nearly 6% of the total land area of the Mullaitivu district[1].

[1] https://luppd.gov.lk/images/content_image/downloads/pdf/llrc_mullaitivu.pdf

	A Study conducted based on GIS and RS Technology on land Cover Change Detection in Oddusuddan DS Division in 2016 shows that vegetation occupied 447.14 km2, representing 61.45% of the DS divisional area. Similarly, agricultural activity covers a land area of 140.91km2 which is about 19.36% of the total area. The area of bare land constituted 106.42 km2, representing 14.62% of the total land area. Waterbody has an area of 33.21 km2 (representing 4.56%). Agricultural activities include paddy cultivation and high lands are used for seasonal crops such as groundnuts, chili, long bean, and several cereal crops. Further, perennial crops such as Palmyra, coconut, Cashew are found within the selected area. The habitat downstream of the tank is dominated by low grasses and common aquatic herbs and retains water most of the time. In addition, it was observed that many Adathoda and some plant species such Neems, Moringa, etc
Presence of wetlands	Mullaitivu district has water bodies covering around 8% of the total land area and it is around 13% of the total protective areas of the Mullaitivu district. Annexure 5 shows the distribution of water bodies of the Mullaitivu district. These water bodies include lagoons, major and minor tanks, natural ponds, and rivers and streams. There were no Wetlands observed within a 500m radius from the selected location.
Fish and fish habitats	The economy of the Mullaitivu district mainly depends on Agriculture and fishing. Livestock and Forestry play a supplementary role in the district's economic activities. Nearly 23,680 and 4,850 families are engaged in Agriculture and fishing sector respectively. This district has a coastal belt of 70 km and four lagoons namely Mathalan, Nanthikadal, Nayaru & Kokulai which are very suitable for fishing development. These lagoons are famous for crab and prawn cultivation. There are possibilities for inland fishing development in Major Tanks. The fishing sector takes an important place in generating employment opportunities and income facilities for a considerable number of families in this district. Mutiyankattu tank and associated waterways can be identified as fish habitats around the selected area. The reservoir provides important habitats for a wide range of species including migratory birds and waterfowl, amphibians, and fish.
Birds (*waterfowl, migratory birds, others*)	The Tank and associated vegetation, natural scrublands, and abandoned paddy fields can be potential bird habitats including migratory birds. Many large birds such as owls, eagles, and hawks hunt rodents. Also, aquatic bird species such as cranes, storks, and herons feed on insects and crabs that pose a threat to rice production.
Presence of special habitat areas (*special designations and identified sensitive zones*)	Mullaitivu district has protected areas such as forest reserves, historical reserves, archaeological reserves, and water bodies. More than 99% of the protected area includes forest reserves and water bodies. Refer to Annexure 7 which shows the reserve forest of Mullaitivu district. The selected project area has not been identified as a special habitat area. However, the tank provides important habitats for a wide range of species including migratory birds and waterfowl, amphibians, and fish. Many of these species also comprise a large part of the daily nutritional intake. The tanks also benefit neighboring farmers by providing a habitat for bio-control

<table>
<tr><td></td><td>agents, which consume pests such as insects, crabs, and rodents. The surrounding canals also provide a habitat for a variety of flora.</td></tr>
<tr><td colspan="2">5.3 OTHER FEATURES</td></tr>
<tr><td>Residential/Sensitive Areas
(E.g., Hospitals, Schools)</td><td>Commonly, there are few Hindu temples found and 1 of them is within 1 Km distance from the selected rehabilitation centre. The closest Hindu temple is around 700 m away from the pump house. The closest school is called Eeswaran Vidyalayam and it is around 2.6 Km away from the pump house. However, there are few public service offices such as the Police station, Post office, DS divisional office, and state timber corporation are within 5 Km distance from the selected pump house.</td></tr>
<tr><td>Traditional, economic and cultural activities</td><td>Out of the 27, Grama Niladhari's (GN) Thaddayamalai is one GN division in the Oddusuddan DS division which has been selected for the implementation of the Agriculture Sector Modernization Project (ASMP). There are four villages namely Thaddaiyamalai, Periyasalampan, Poonthoddam, and Murukanoor. The land area of the GN division is nearly 471.0 HA.

Thaddayamalai GN division has 267 families consisting of 799 members. The number of males is 385 and the females account for 414. The population density in the division is 1.69 per hectare which is very low. The entire population was displaced and resettled gradually after the cessation of the civil war in 2009. The ethnic composition of the GN division is Sri Lankan Tamils. All 267 families are Tamils. All the families in the GN division are Hindus.

The age structure and gender distribution of the GN division's population are given below in the following table.

Table 1: Demographic information area
<table>
<tr><th>Age</th><th>Male</th><th>Female</th><th>Total</th><th>Age</th><th>Male</th><th>Female</th><th>Total</th></tr>
<tr><td>0-05</td><td>10</td><td>09</td><td>19</td><td>19-30</td><td>177</td><td>175</td><td>352</td></tr>
<tr><td>6-10</td><td>20</td><td>22</td><td>42</td><td>31-60</td><td>96</td><td>114</td><td>210</td></tr>
<tr><td>11-18</td><td>22</td><td>26</td><td>48</td><td>≥ 60</td><td>60</td><td>68</td><td>128</td></tr>
<tr><td>Total</td><td>52</td><td>57</td><td>109</td><td>Total</td><td>333</td><td>357</td><td>690</td></tr>
</table>
Source: Oddusuddan DS Divisional Statistical Handbook 2020

Only 79.3% of the population is economically active in the GN division. Nearly 16.0% of the population is above 60 years of age and 13.6% of the population is below 18 years of age. The average family size in the GN division is 3.0. As per the age structure, 86.3% of the population should have registered as voters eligible for voting in the public elections. However, only 52.0% of the population has registered themselves with the Department of Elections and has the right to vote. This is equivalent to 3.8% of the total registered voters in the DS division.
Major income sources of the majority of families are crop cultivation and sale of milk and cow dunk from their cattle herd. The paddy lands in the vicinity of major tanks are cultivable in the Yala and Maha seasons. There are two Agrarian Service Centres in the DS division servicing for the farmers by providing inputs such as chemical fertilizers at subsidized prices and paddy and other seeds. There are 10 small-scale enterprises such as mills, shops, and tailoring in the GN division.</td></tr>
</table>

	Accordingly, there are 122 families out of 267 are receiving Samurdhi in the GN division. Almost 44.0% of the families are living in poverty and receiving Samurdhi monthly cash grant. Twenty-five families or 9.0% of the families are receiving rupees 1,500 per month and 11.9 % of the families are getting rupees 2,500 per month and 23.1% of the families considered as most vulnerable are receiving rupees 3,500 per month (Divisional Statistical Handbook 2019). Further, there are 92 members in the division are receiving P.A.M.A grant provided by the Government for helpless people. Moreover, there are 39 widows, 22 orphans who lost their both parents, and 15 disabled people in the division. There are two sports clubs in the GN division. They are Barathy and Kalaimagal sports clubs. The major commercial activities are conducted by the Muthiyankattu MPCS located in Vithiyopuram having 16 branches in the DS division. One such branch located in the Muthaiyankaddukulam GN division is not functioning currently. Rural Development Society (RDS) and Women Rural Development Society (WRDS) are social-based organizations. 24 RDS and 25 WRDS are functioning in Oddusuddan D.S Division. In the Thaddayamalai GN division, both RDS and WRDS are functioning. Moreover, there is a youth club and a sports club in the GN division. There are three registered Hindu temples in the GN division. Community participation in the above community organizations is satisfactory.
Archaeological resources (*Recorded or potential to exist)*	Figure 1 shows the archaeological resources of the Mullaitivu district. As per the map, there are 8 archaeological reserves found in the Oddusudan DS division, and most of them are located nearby DS divisional office. Further, the map of the historical reserve shows there are few historical reserves in the Oddusudan DS division The proposed pump house is attached to the RB canal of the Muthiyankattu tank and no archaeological reserves were found. However, two religious places were found along the RB canal, but not affected by the rehabilitation activities.

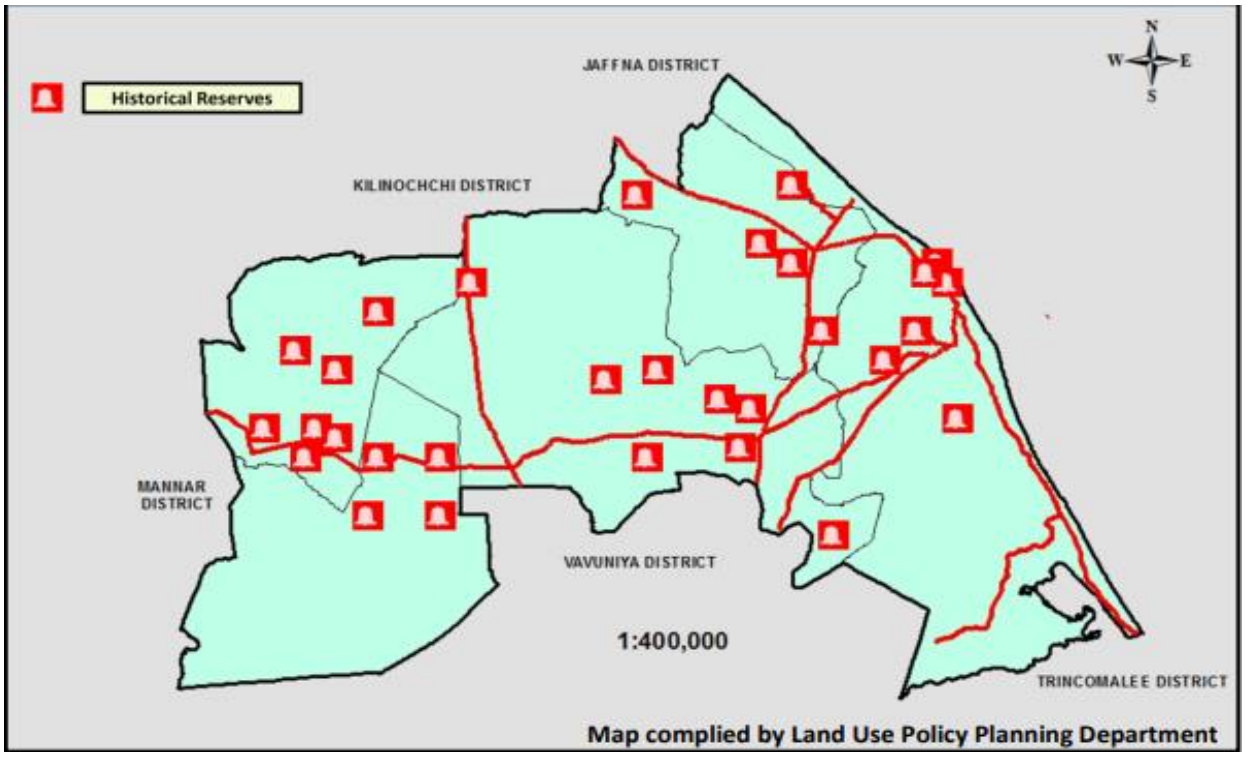


Figure 1: Historical and Archaeological reserves – Mullaitivu district

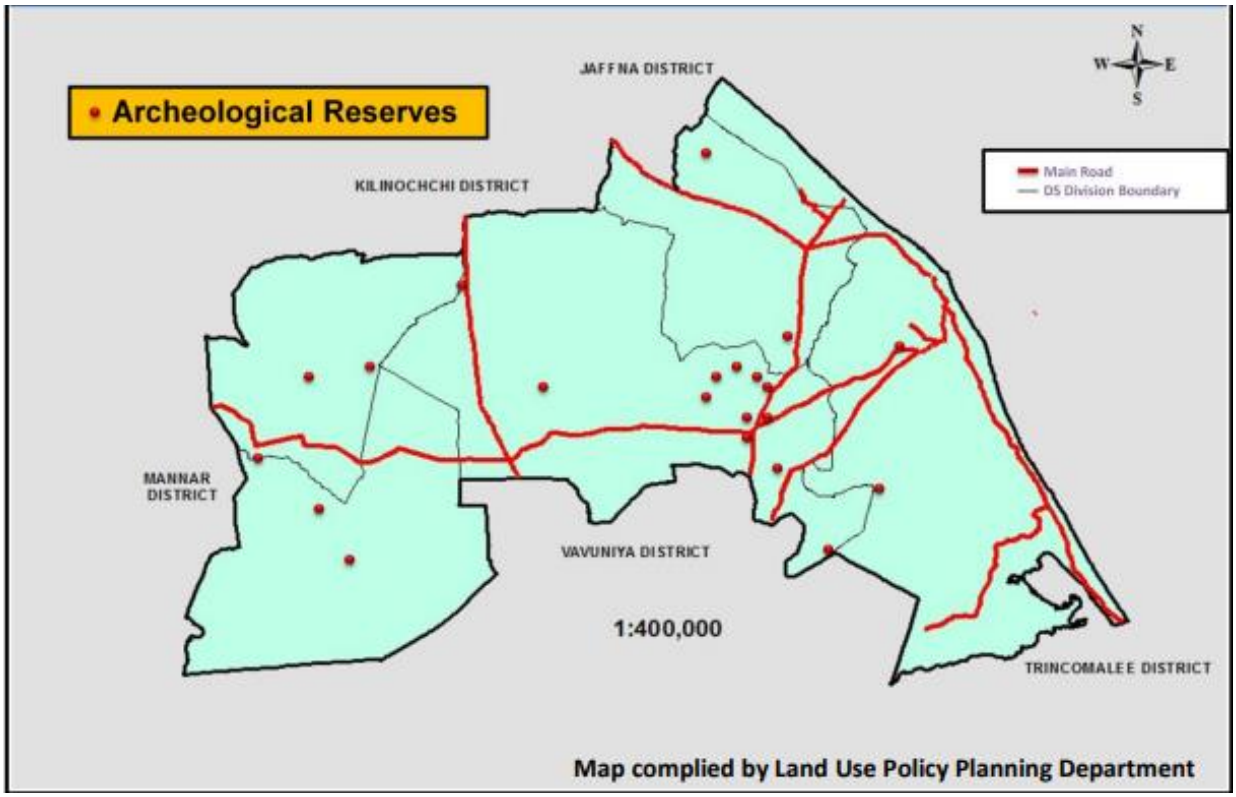


Figure 2: Archaeological reserves

6. PUBLIC CONSULTATION

The consultation was held with the support of the project director, project engineer, and agricultural scientist of the Northern Province and the project coordinator of the selected DS division. Overall project implementation and future plan were discussed with them and deep level information was collected. They were trying hard to rehabilitate and distribute water as soon as possible to the beneficiaries.

Farmer gatherings were not conducted due to the pandemic situation. However, on-field discussions were conducted with benefitted farmers while ensuring COVID 19 safety precautions. The conclusion of the consultation was clear, and it was to rehabilitate the pump house and provide water immediately starting from next season onwards. Further, the following comments were taken during the discussions held with farmers in the selected area.

- **Current users of pump 4&5**

It was observed that existing motors are used by few farmers and these two motors were rehabilitated by the existing users. Motor 4 is used by 4 farmers and it is enough to feed 12 acers. Motor 5 is used by another 3, 4 farmers. Some farmers are complaining that only a few farmers are getting benefits out of it and ask to accelerate the project to have an equal benefit. Existing users reveal that they are using it by maintaining motors by baring the cost.

- **Construction of Overhead tanks**

As per the comments given by the farmers; one land slot was selected initially and that was discarded due to the elevation drop. A new nearby location was selected and both land slots belong to the department of irrigation.

Figure 3: Location of Overhead tank (Pump 4&5)

- **Expansion of cultivation and new crops introduction**

Concerns were raised from beneficiaries that they do not have the opportunity to have different crops or vegetables due to the difficulties of accessing water. Farmers are mainly stuck with crops such as

groundnuts, Mun beans, Kaupi beans, and few vegetables. Individually used areas for the vegetables are low during the dry season and that is mainly due to insufficient water. Further, all most all these beneficiaries having 3-acre uplands, and only around 1-1.5 acres are cultivated during the dry season. Hence, it was confirmed that they will cultivate their entire upland area once they are provided with the water. Further, they expect to go for different vegetable options with the availability of water.

- **Upcoming ASMP projects**

Beneficiaries are well aware of the upcoming dry chili project which is to be introduced by ASMP and feedbacks was collected. Some beneficiaries already cultivating Chili up to 0.25-0.5 acres along with the other crops. They are very keen to expand the chili cultivation once water accessibility is confirmed and willing to take technical support towards the high yield. Market accessibility was highlighted during the discussion and it was mentioned that the closest market is Oddusudan. Oddusudan market price per 1Kg of dry chili is around 550 LKR and farmers looking to have a higher and stable price in the future.

- **Current water usage**

All most all beneficiaries have their own open wells/agro wells or tube wells for the cultivation and maximum utilization ensure 1-1.5 acres of different crops. They cultivate two seasons per year using these resources and maximum land usage is limited to 1-1.5 acres. The water level is 6-7 m below the ground level and it goes deeper with the dry season. There were few farmers who take pump water from the RB canal using their own pumps. It was clearly communicated that all beneficiaries will get water from the pump 4&5 and will be distributed through the PVC pipelines.


Figure 4: Open wells

- **Issues bound with flood irrigation system**

Excessive flood irrigation creates many problems such as waterlogged conditions, poor crop performances, high disease incidence and waste of water, high soil erosion due to prolonged flood irrigation were identified in underwater conservation and management discussions. Bringing water to inaccessible lands was a prioritized question raised by farmers and the introduction of water-conserving and low-pressure drip and the mini sprinkler systems was highlighted during the discussion. However, technical knowledge on implementation and continuity of mini sprinkler systems needed to be given.

- **Failure on export market**

One of the main objectives of the project is to full fill the local market-based production and doubt were highlighted that what will happen if local market demand is lower than the supply. Are there any options available in the local market for excessive production?

- **Infrastructure development**

Some farmers looking to bring water to lands that are not flooded by the existing irrigation systems. Hence water and drainage work is required to bring water to farms and to avoid flooding and waterlogging. Further construction of pump house and overhead tank and solar-powered energy project was highlighted during the discussions.

Further, there were points highlighted during the discussions such as the use of weedicide, poor and inefficient land utilization pattern, attention for micronutrient fertilizers, and knowledge of farmers for IPM mechanism for better crop production. There is a high tendency of using organic fertilizers and most of them are producing compost on their own. Further, livestock farming is found at each beneficiary.

The majority of the community is willing to support the project activities as they will benefit from the proposed sub-project directly. Extensive social screening has been covered under the Social Safeguard component.

Figure 5: Onsite discussions with farmers

- **Existing environmental issues**

Some farmers have raised their existing issues related to the agricultural activities during the public consultation such as water scarcity and accessibility difficulties. Unavailability of enough water is a major issue and they are extracting groundwater using agro wells and tube wells. Further, it is 6-7 m deeper from the ground level.

Pump house and the farmlands are accessible through gravel roads and most of these are eroded during rainy seasons. All these roads are to be developed to ensure the smooth transportation of goods. Further, it was highlighted that elephants are damaging the crops 3, 4 times per year. In addition, crop damages from monkeys were highlighted by few farmers.

Table 2: Community Consultation's Outputs

Name	Details	Matter Discussed/Suggestions
R. Ananatharupan (Farmer)	He is the secretary of the Ganesapuram groundnut producer farmer society. He has four children and has 3 acres own farmland and 6 acres extent rented land.	Only a part of the land is cultivated twice a year using open well water and the water from pump 4. Currently, pump 4 is maintained by 4 farmers and they use the pump for their cultivation activities for around 12 acres. The current water level of the open well is around 20 feet below the ground level. However, he is getting piped water for drinking and eagerly looking to have the pump house in place to expand the cultivation. Groundnuts, Green peace, and green chili are the main crops he is entitled to, and the closest market is Oddusudan. Livestock farming is also continuing with the cultivation activities.
K. Karunananthan (Farmer)	He has 4 family members including himself and he is having 6 acres of farmland including 3-acre paddy land.	Only a part of the highland is used to cultivate per season. He is also getting water from the No. 4-pump and his open well. Only two seasons are cultivated. Chili, Kurakkan, Long bean, and green pea are his main crops and waiting to cultivate whole land (3 acres) under improved irrigation supply.
S.Nickelace (Farmer)	He has 3 family members and 3 acres of cultivable land available.	Similarly, only a part of the land is used to cultivate due to the un availability of water. Currently, he uses water from an open well and suggests completing the project asap.
Pubalasingam (Farmer)	He does not have relatives with him and he lives alone	He is also cultivation a part of his upland and he uses water from the existing pump 4. He has contributed up to some extent with other shareholders to maintain this pump and use water for their individual cultivation activities.

7. ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

7A. SCREENING FOR POTENTIAL ENVIRONMENTAL IMPACTS

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
1	Will construction and operation of the Project involve actions which will cause physical changes in the locality (topography, land use, changes in water bodies, etc?)	√		1) Moderate 2) Low 3) Low	1) Existing pump house will be moved 200-300m away from the current location and the water extraction point will be changed. That will increase the water extraction capacity during the dry season. Hence, yield and the number of cultivated lands will be increased during the dry season and that will create a strong economy for the beneficiaries. 2) During pipe laying, trenches will be excavated to lay pipes which will slightly change the topography and will have an impact on the natural drainage patterns of the locality. Debris/unsuitable excavated or clearing material should not be disposed of improperly. 3) Overhead tanks will be constructed above the ground and solar will be installed on top of the Groundnut producer society building.
2	Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?	√		**Low**	In terms of repairing of pump house, installation motors and fixing solar panels will have low scale substances which could harm human health and the environment such as cement. During PVC laying, construction of overhead tanks, transport of material, and construction activities including vegetation removal, site preparation, and material piles will emit dust, and fugitive particles. However, as the affected area is small and mitigation is straightforward; therefore the significance of the effect can be considered as low.

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
3	Will the Project produce solid wastes during construction or operation?	√		**Low**	Proposed rehabilitation activities will generate a low level of solid wastes which the Contractors or ID or Farmer Organization should handle properly. During pipe laying and construction of overhead tanks, excavated material and debris will be generated and the contractor is responsible to manage this waste properly until it is disposed of properly. Solid waste collected on the site should be disposed of by the contractor himself at a suitable location.
4	Will the Project release pollutants or any hazardous, toxic or noxious substances to air?		√		No any chemical blasting or any hazardous substance was anticipated.
5	Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	√		**Low**	During repairing of pump house, noise and vibration impacts can be anticipated. Noise and vibration impacts can be anticipated during pipe laying and the construction of overhead tanks. Site clearing, excavation, backfilling, compaction, loading, and unloading of materials are potential sources of noise and vibration during construction.
6	Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater or coastal wasters?	√		**Low**	Wash offs from material stockpiles, sedimentation of surface waterways especially RB of Muthiyankattu.
7	Will the project cause localized flooding and poor drainage during construction	√		**Low**	If PVC laying is taken place during the rainy season, poor drainage and local flooding will be anticipated due to blockage of natural drainage paths.

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
	Is the project area located in a flooding location?				
8	Will there be any risks and vulnerabilities to public safety due to physical hazards during construction or operation of the Project?	√		**Low**	All the safety measures deployed in "Best Engineering Practices" need to be adopted during repair works and fixing and installation of pumps & PVC pipes. Safety issues in terms of injuries due to construction work, using heavy machinery could be anticipated. However, such incidences can be avoided with proper precautions exercised on health and safety aspects.
9	Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?		√	**N/A**	
10	Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the project?		√	**N/A**	
11	Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?		√		No area or features with high landscape or scenic value on or around the location.
12	Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other water bodies, the coastal	√		**Low**	No important or sensitive areas on the project location are affected by the project. Wash offs from material stockpiles, sedimentation of surface waterways especially RB of Muthiyankattu.

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
	zone, mountains, forests which could be affected by the project?				
13	Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, migration, which could be affected by the project?	√		**Low**	Muthiyankattu tank and surrounding vegetation are an ideal habitat for aquatic birds.
14	Is the project located in a previously undeveloped area where there will be loss of green field land		√		No such Greenfields are encountered.
15	Will the project cause the removal of trees in the locality?		√		No removal of trees is required during PVC laying as the existing width of the road and canal will not be changed.
16	Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?		√		No features of historical importance identified
17	Are there existing land uses on or around the location e.g. home gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?		√	**N/A**	
18	Are there any areas on or around the location which are densely populated or built-up, which could be affected by the project?		√		No densely populated or built-up areas are affected by the project.

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
19	Are there any areas on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the project		√		No sensitive land-uses in the vicinity are affected by the project.
20	Are there any areas on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?	√		**Low**	RB of Muthiyankattu Tank may have a low impact only during the project implementation.
21	Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?		√		No location where any environmental standards are exceeded or have been environmentally polluted.

7B. Environmental Management Plan

Contractor's responsibility for mitigating adverse environmental issues raised during agricultural activities

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
1	Public complaints and lack of community support for the project implementation	• Information Disclosure among Stakeholders • Community Outreach activities including training	• Discussions should be conducted with the beneficiary farmers including women, and youth • The beneficiary farmers selection based on the criteria which were developed at stakeholders meeting and identifying of beneficiary farmers were undertaken transparently

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			• Residents in the area will be briefed on the project, purpose and design, and outcomes with a comprehensive discussion • Communication and training activities focusing on women, youth, and farmers who are poor in communication • The contractor should take note of all impacts, especially temporary issues and safety hazards that will be of concern to the cropping pattern of the farmers. All possible impacts will be mitigated as stipulated in the EMP to mitigate them • The contractor will maintain a log of any grievances/complaints and actions are taken to resolve them • A copy of the EMP should be available at all times at the project supervision office on site
2	Spreading COVID 19 virus	• All activities	• The contractor must ensure that all workers, including managers, are well trained on COVID 19 safety precautions published by the health ministry. • Follow WB Interim Guidelines on COVID-19 issued for Construction (Annex 8)
3	Water Quality	• Spill out of fuels and lubricants from machinery • Vegetation removal	• Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets • Prioritize re-use of excess spoils and materials in the construction works. • Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; • Place storage areas for fuels and lubricants away from any drainage leading to water bodies; • Dispose of any wastes generated by construction activities in designated sites. • Irrigation works must be planned to be carried out during times of lowest flow
4	Exposing and damaging of physical cultural resources (PCR)	• Site preparatory work • Vehicle and machinery movements	• Upon discovery of physical cultural material during project implementation work, the following should be carried out • Immediately stop construction activities

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			• With the approval of the resident engineer delineate the discovered site area. • Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remains, a night guard should be present until the responsible authority takes over. • Through the Resident Engineer, notify the responsible authorities, the Department of Archaeology, and local authorities within 24 hours. • Submit a brief chance to find the report, within a specified time period, with the date and time of discovery, location of discovery, description of finding, estimated weight and dimension of PCR, and temporary protection implemented. • Responsible authorities would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. • An evaluation of the finding will be performed by the Department of Archaeology who may decide to either remove the PCR deemed to be of significance, further excavate within a specified distance of the discovery point and conserve on-site, and/or extend/reduce the areas demarcated by the contractor, etc. This should ideally take place within about 7 days. • Construction work could resume only when permission is given from the Department of Archaeology after the decision concerning the safeguard of the heritage is fully executed.
5	Spreading of Invasive Alien Species	• Vegetation clearing • Material transportation • Desilting	• Close monitoring of transportation, storage of borrowing material for the spread of any invasive species must be done. • Vehicles should be covered during transportation of cleared vegetation to and from the construction site. • Borrow material to be brought from properly identified borrow pits and quarry sites, the sites should be inspected in order to ensure that no invasive plant species are being carried with the burrowing material. • Washing the vehicles should be conducted periodically to prevent carrying any invasive species

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			• The construction site should be inspected periodically to ensure that no invasive species are establishing themselves at the site. • Good housekeeping
6	Noise Pollution & Vibration that can affect nearby structures	• Operation of equipment and machinery. • Material storage and transport • Use of hammer type pile driving will generate high noise and vibration. • Laying pipes	• Working time for noise/vibration generation activities should be restricted and carried out only from 6.00 am to 6.00 pm. • All equipment and machinery should be operated of noise not to exceed 75 dB (during construction) as practical as possible. Regularly maintenance of all construction vehicles and machinery to meet noise control regulations stipulated by the CEA in 1996 (Gazette Extra Ordinary, No 924/12). If the construction activities happen during the night-time, it is necessary to maintain the noise level at below 50 dB • Use of mechanically driven saw blades for tree felling will make the noise levels restrict to only a short period of time. • Construction equipment and machinery should be maintained in good condition. The contractor shall submit the list of high noise/vibration generating machinery & equipment to the PE for approval
7	Air Pollution including dust generation that can affect nearby vegetation and households	• Site Preparation activities setting up of material storage yards, and removal of vegetation • Transport of construction material and storage on site • Excavation for trenches	• In the construction method statement, the contractor should clearly designate areas for maintaining material stockpiles, waste stockpiles, labor camps, and vehicle maintenance yards. These dust-emitting sources should be located away from human activity and natural drainage paths as much as possible. • All heavy equipment and machinery shall be fitted in full compliance with the national and local regulations. • Stockpiled soil and sand shall be slightly wetted before loading, particularly in windy conditions. • The site should be wetted at least 2/3 times a day during dry weather to keep dust levels low. • Vehicles transporting soil, sand, and other construction materials shall be covered. Limitations to the speeds of such vehicles are necessary. Transport through densely populated areas should be avoided.

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			• Regular and proper maintenance of construction vehicles and machinery to avoid air emissions. • There should be no burning of wastes on-site. • Until removal to arranged disposal sites, waste from demolition shall be held stockpiled in a place with minimal interference with local drainage paths and obstruction to traffic, local residents.
8	Solid Waste Disposal	• Site clearing • Excavation of trenches for pipe laying • Waste from labour resting areas	• The contractor shall make a list of all types of waste resulting from the construction activity, and obtain direction from the LA on possible disposal sites for each waste type. • Any hazardous type of waste shall be dealt with special care and instructions from the LA. • The contractor shall document all types and quantities of waste generated and removed from the site and the disposal locations. • The contractor shall remove waste from the site each day and dispose of the waste in the LA-approved site/s.
9	Blocking of surface drainage paths leading to localized flooding and ponding of water	• Site Preparation including provision of access roads, material/waste piles • Cutting of trenches along the road during PVC pipes laying may blocks the drainage paths	• Until transported out to arranged disposal sites, debris and waste from site preparation work and desilting shall be stockpiled in a place with minimal interference with local drainage paths and obstruction to traffic and local residents. The contractor shall identify areas for stockpiling material and waste. • The stockpiles should be suitably covered to minimize wash-offs to nearby waterways. • If impacts to surface drainage cannot be avoided leading to ponding of rainwater and inconvenience to people, the contractor must provide an adequate surface drainage system to safely remove water from the site to the canal to avoid on-site ponding or flooding. • Proper planning to avoid construction during the rainy season. • Preventing total blockage of streams / providing alternative drainage paths during construction.
10	Public/occupational safety hazard	• Site clearing, storage of	**Training**

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
		equipment, material etc. • Increased traffic of heavy vehicles for material transportation • Noise and vibration of construction machinery	1. The contractor must ensure that all workers, including managers, are trained on occupational health and public safety risks and mitigation measures for the site, prior to commencement of construction. **Personal Protective Equipment** 2. All workers will be provided with necessary PPEs (basic should include a safety helmet, protective footwear, and high visibility jackets) 3. In addition, the contractor shall maintain in stock at the site office, gloves, ear muffs, goggles, dust masks, safety harness, and any other equipment considered necessary. 4. A safety inspection checklist should be prepared to take into consideration what the workers are supposed to be wearing and monitored. **Site Delineation and Warning Signs** 5. The entire construction site should be delineated using devices such as cones, lights, tubular markers, orange and white stripes, and barricades to inform oncoming vehicular traffic and pedestrians in the area about work zones. 6. All digging and installation work items that are not accomplished should be isolated and warned of by signposts and flash lamps in the nighttime. 7. Dangerous warning signs should be raised to inform the public of particular dangers and to keep the public away from such hazards. 8. Trenches should be progressively rehabilitated once work is completed. 9. Overloading of vehicles with materials should be controlled 10. Construction wastes should be removed as much as possible within 24 hours from the site to ensure public safety. 11. The safety inspection checklist must look to see that the delineation devices are used, whether they are appropriately positioned if they are easily identifiable, and whether they are reflective. **Equipment safety**

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			12. Work zone workers use tools, equipment, and machinery that could be dangerous if used incorrectly or if the equipment malfunctions. Inspections must be carried out to test the equipment before it is used so that worker safety can be secured. Inspections should look for evidence of wear and tear, frays, missing parts, and mechanical or electrical problems. **Emergency Procedures** 13. An emergency aid service must be in place at the worksite. 14. During health and safety training, site staff should be properly briefed as to what to do in the event of an emergency, such as who to notify and where to assemble in an emergency. This information must be conveyed to employees by the site manager on the first occasion a worker visits the site. **Construction camps** 15. Construction camps should have adequate sanitation facilities for construction workers to control the transmission of infectious diseases. 16. Avoid housing workers in camps and provide socio-economic benefits locally by employing local people. If there is no alternative to employing workers from elsewhere, locate accommodation camps away from communities on land acquired from willing sellers. Provide labor camps with adequate sanitation, waste disposal, and health facilities according to labor laws. Clear work campsites after use and reinstate vegetation. Conduct programs to raise worker awareness of HIV/AIDS. **Information management** 17. Develop and establish the contractor's own procedure for receiving, documenting, and addressing complaints from the affected public and nearby communities. 18. 18. Provide advance notice to local communities by way of information boards or leaflets about the schedule of construction activities, interruption to services and access, etc.

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
11	Damage to Flora and Fauna	• Vegetation clearing	• Speed limits and operating times for the construction vehicles should be imposed. • Due consideration should be given to carefully clearing of vegetation avoiding the destruction of habitats of fauna. • The de-silted matter shall immediately be disposed of off to pre-decided disposal sites. • The contractor will take reasonable precautions to prevent workmen or any other persons from removing and damaging any flora (plant/vegetation) and fauna (animal) including fishing in any water body and hunting of any animal. • If any wild animal is found near the construction site at any point of time, the contractor will immediately upon discovery thereof acquaint the Engineer and carry out the Engineer's instructions for dealing with the same. • The Engineer will report to the nearby Forest Department /Department of Wild Life Conservation (range office or divisional office) and will take appropriate steps/ measures if required in consultation with the forest officials. • It is recommended to do the project work day time only.
12	Soil erosion, sedimentation of nearby waterbodies and low lying areas	• Construction work including desilting, canal embankment • Removal of top soil	• Soil stockpiles and other construction material should not be placed within the bed or banks of the tanks or canal. • Installing and maintaining permanent erosion and sediment control measures such as silt traps to avoid sediment runoff into tanks and nearby waterways.
13	Access restrictions and public inconvenience	• PVC pipe laying • Noise, vibration, dust and waste piling from demolition and construction during PVC pipe laying.	• If any temporary interruptions to house access taken place, the contractor should inform the concerned houses prior to breaching access. • Provision of access during designated times of the day or where possible provides temporary access paths for pedestrians on the downstream side of the bund. • If road is closed completely for a period, signage to be put up at both ends.

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
Post construction phase			
14	Clearing/Closure of Construction Site/Labour Accommodations		• Contractor to prepare site restoration plans for approval by the engineer. The plan is to be implemented by the contractor prior to demobilization. This includes burrowing sites and storage yards as well • On completion of the works, all temporary structures will be cleared away, all rubbish cleared, excreta or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the contractor's expenses, to the entire satisfaction of the engineer.
15	Environmental Enhancement/ Landscaping		• Landscape plantation, including turfing, shall be taken up as per either detailed design or typical design guidelines given as part of the Bid Documents. • The contractor also shall remove all debris, piles of unwanted earth, spoil material, away from the site and disposed at locations designated or acceptable to the Engineer or as per the stipulated waste management criteria of this EMP

8. COST OF MITIGATION

№	Environmental mitigation measure	Cost (LKR)	Remarks
1	Information Boards, leaflets	35,000	Diversion of roads, Safety signage, awareness leaflets & COVID 19 signboards
2	On site first aid facilities	15,000	
3	Safety equipment	70,000	Basic should include sanitizers, safety helmet, protective footwear and high visibility jackets.
4	Site delineation and barricading material and equipment	15000	

4	Dust suppression	20,000	Need to be done during road and canal renovation activities
5	Waste removal from site	20,000	Desilted material, waste from vegetation clearing, labour camps

9. CONCLUSION AND SCREENING DECISION

Summary of environmental effects:

Assuming that all mitigation measures are implemented as proposed, the following effects can be predicted

Key project activities	**Potential Environmental Effects**	**Significance of environmental effect with mitigation in place[2]**
Material transportation and storage	Emission of dust, generation of noise and disturbance to community including farmers, and households	NS
Vegetation clearing	Clearing of vegetation will collect significant amount of waste which will lead to several environmental issues such as blockage of drainage, siltation of downstream, damage to habitats, spreading of invasive species etc.	NS
Repairing of Pump House	Emission of dust, generation of noise and disturbance to community including farmers, and households	NS
Fixing of pumps	Emission of dust, generation of noise, disturbances to the community, leakage/oil spills, solid wastes	NS
Construction of Overhead tanks	Emission of dust, generation of noise and disturbance to community including farmers, and households	NS
Installation of Solar panels	Generation of noise and disturbance to ground nut producer society members	NS

[2] NS - Effect not significant, or can be rendered insignificant with mitigation, SP - Significant positive effect, SN - Significant negative effect, U - Outcome unknown or cannot be predicted, even with mitigation

Key project activities	**Potential Environmental Effects**	**Significance of environmental effect with mitigation in place[2]**
Excavation, and disposal of waste	Excavation of trenches with significant sizes will collect significant amount of waste which will lead to several environmental issues such as blockage of drainage, siltation of RB Canals, disturbances to the local households, etc.	U
Demolition and Removal of structures	Emission of dust, generation of noise, disturbance to local traffic	NS
Excavation of trenches	Deep excavations would result in collapsible vertical soil faces increased susceptibility to soil erosion leading to embankment failures. This may lead to hectic traffic congestion	NS

10. EMP IMPLEMENTATION RESPONSIBILITIES AND COSTS

The overall responsibility of ensuring compliance with safeguard requirements lie with PMU while the contractor will be responsible for implementing the provisions of the EMP. In addition, the PMU will be directly responsible for reviewing the proposed design to ensure that all design related mitigation measures mentioned herein are implemented with the support and supervision of the PMU. The overall supervision will be carried out by the PMU with assistance of Department of Irrigation, Northern Province who is responsible for the overall supervision of the proposed project. Any consequent design modification will be reflected in the project cost. Department of Irrigation, Northern Province should take the leadership of all as they own the project and they will have to operate it.

Environmental monitoring will be carried out largely through visual observations and compliance monitoring using the checklist provided in the EMF by the Provincial project engineer of the PMU and the contractor jointly. The Environmental and Social Safeguards Specialist will need to visit the site on a monthly or quarterly and report on issues and performance on EMP implementation to the PMU.

11. SCREENING DECISION RECOMMENDATION

Majority of the potential adverse effects can be classified as general construction related impacts and can be mitigated on site with proper engineering interventions. These potential impacts are temporary in nature. It is recommended to start the project work off-season for upland cultivation and avoid night time work. However, it should be noted that installation of solar panels related activities are excluded from this report and those project activities will be separately investigated and reported. Implementation of the Environmental Management Plan is sufficient to mitigate the identified impacts.

12. DETAILS OF PERSONS RESPONSIBLE FOR THE ENVIRONMENTAL SCREENING

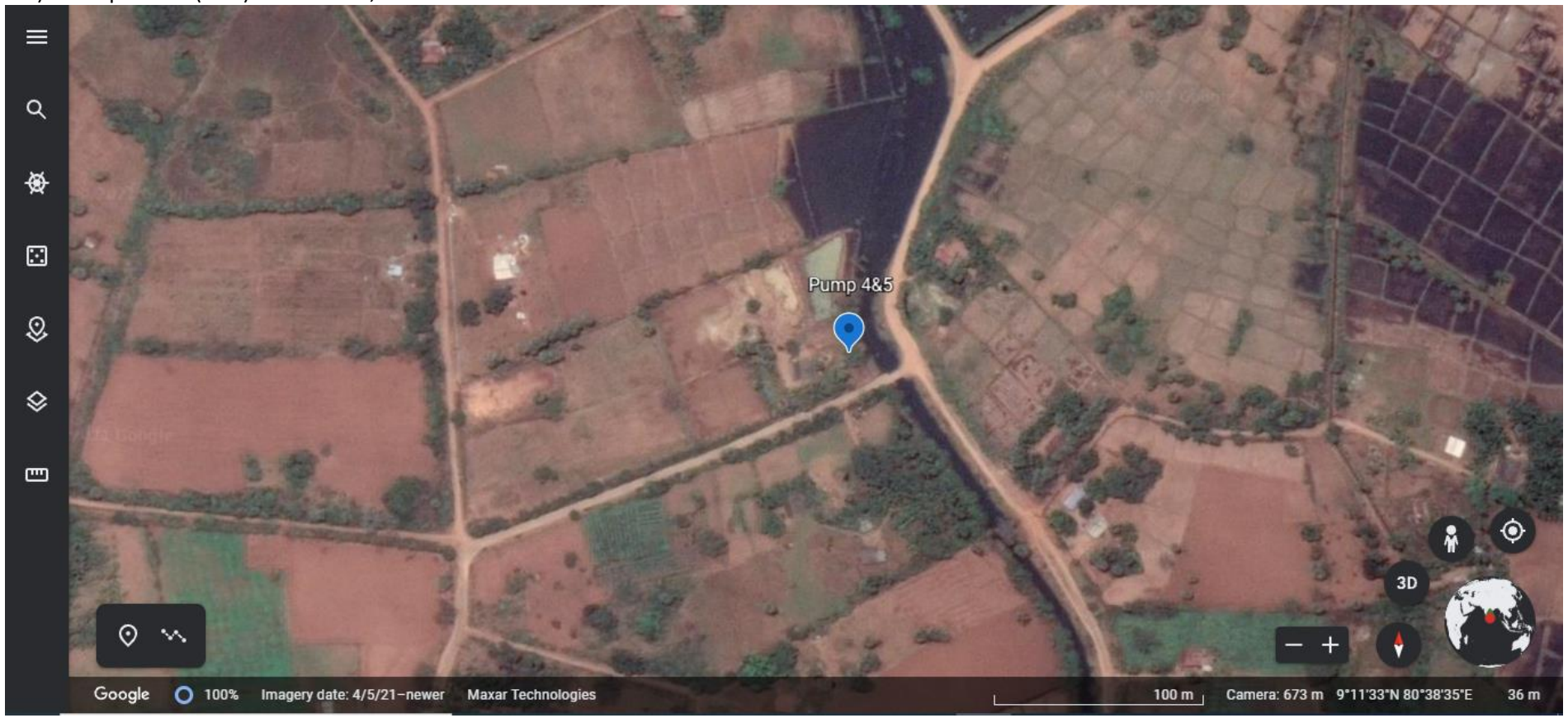
Screening conducted and reviewed by **D.M. Sanjaya Bandara** **Environment and Social Safeguard Specialist** Agriculture Sector Modernization Project Name/Designation/Contact information	**Date** **October 2021**  **Signature**
Screening report recommended by **Dr. Rohan Wijekoon** **Project Director** Agriculture Sector Modernization Project Name/Designation/Contact information	**Date** **October 2021**  **Signature**

Annexure 1: List of References

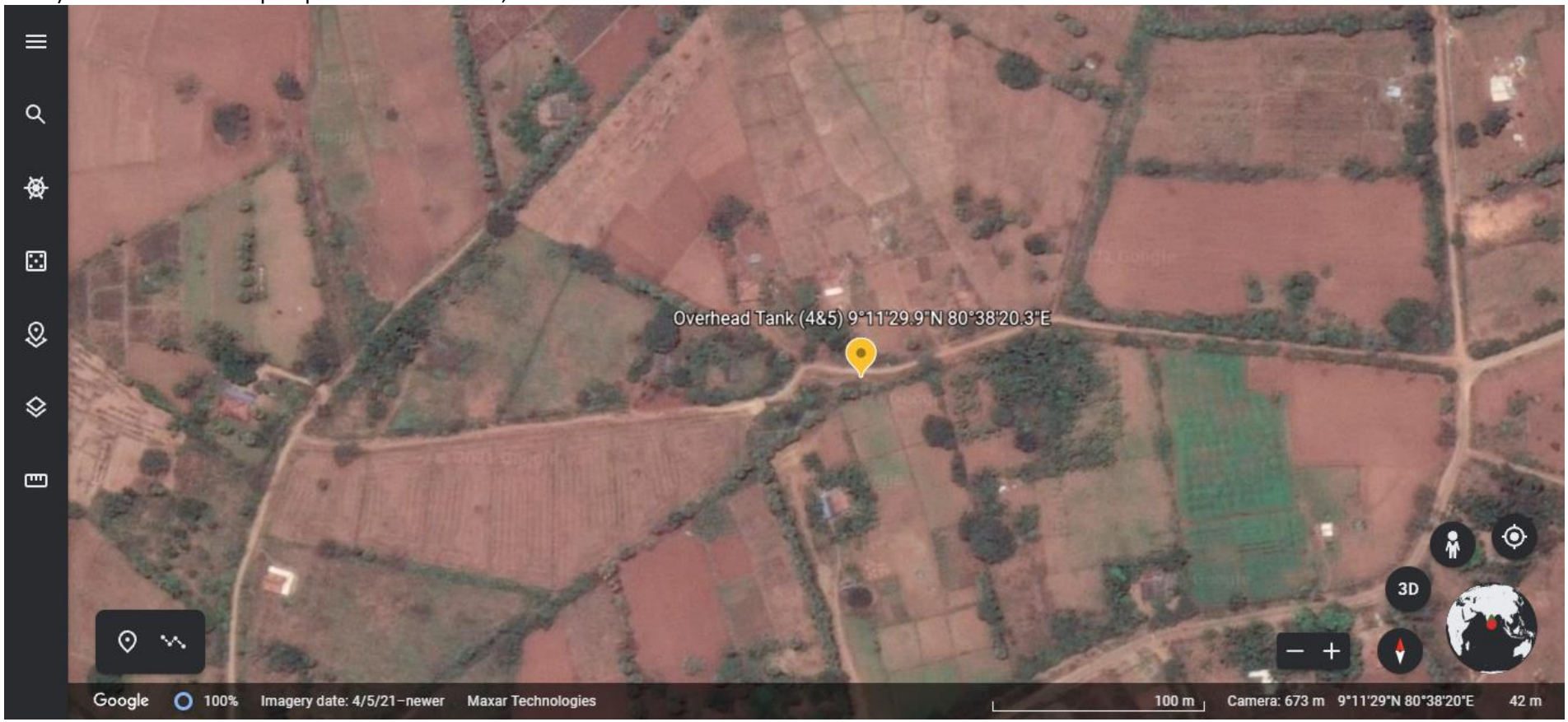
1) https://luppd.gov.lk/images/content_image/downloads/pdf/llrc_mullaitivu.pdf
2) Natural Resources Management Centre, Department of Agriculture, Peradeniya

Annexure 2: Project location maps

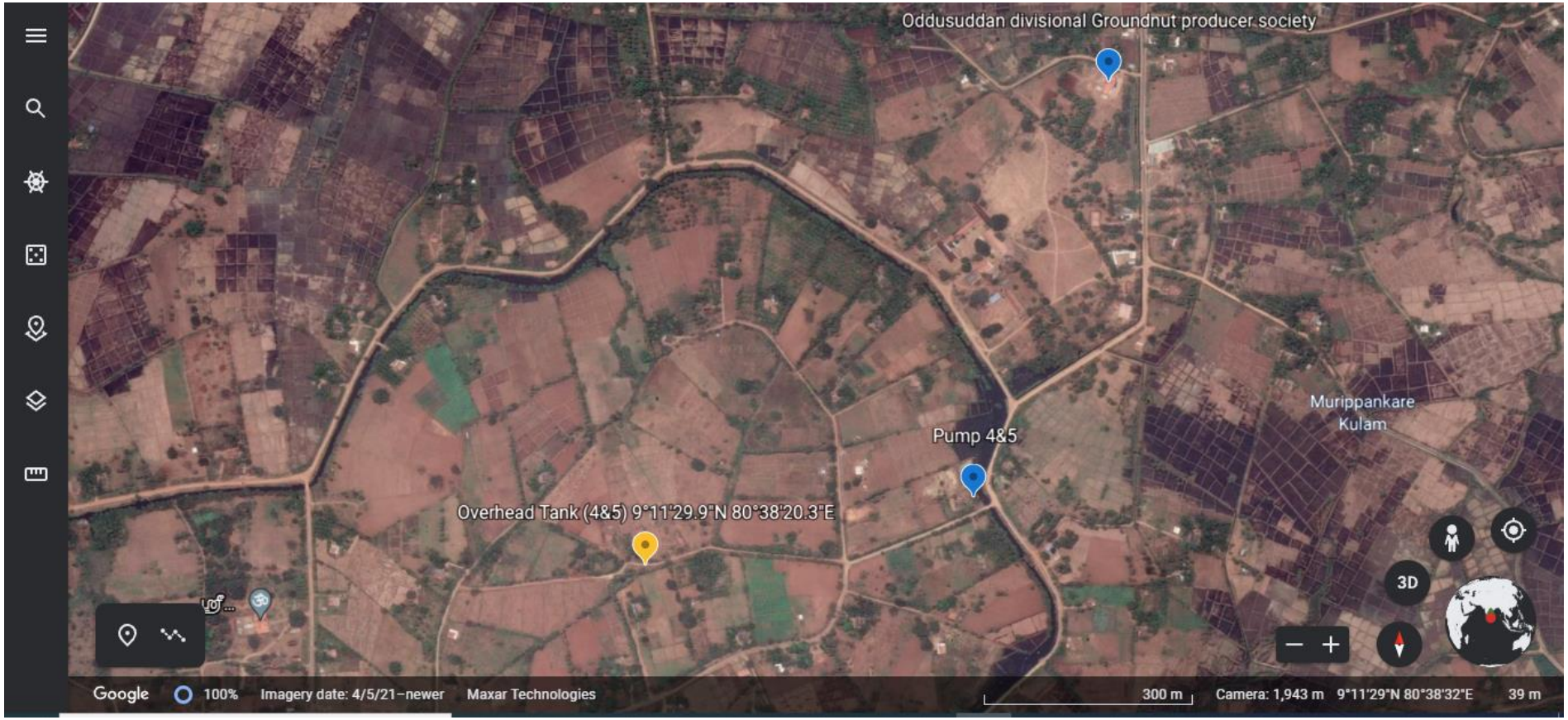
1) Pump House (4&5)- $9^0$11’33” N, $80^0$38’35” E



3) Overhead tank of pump 4&5- $9^0$11’29.9” N, $80^0$38’20.3” E

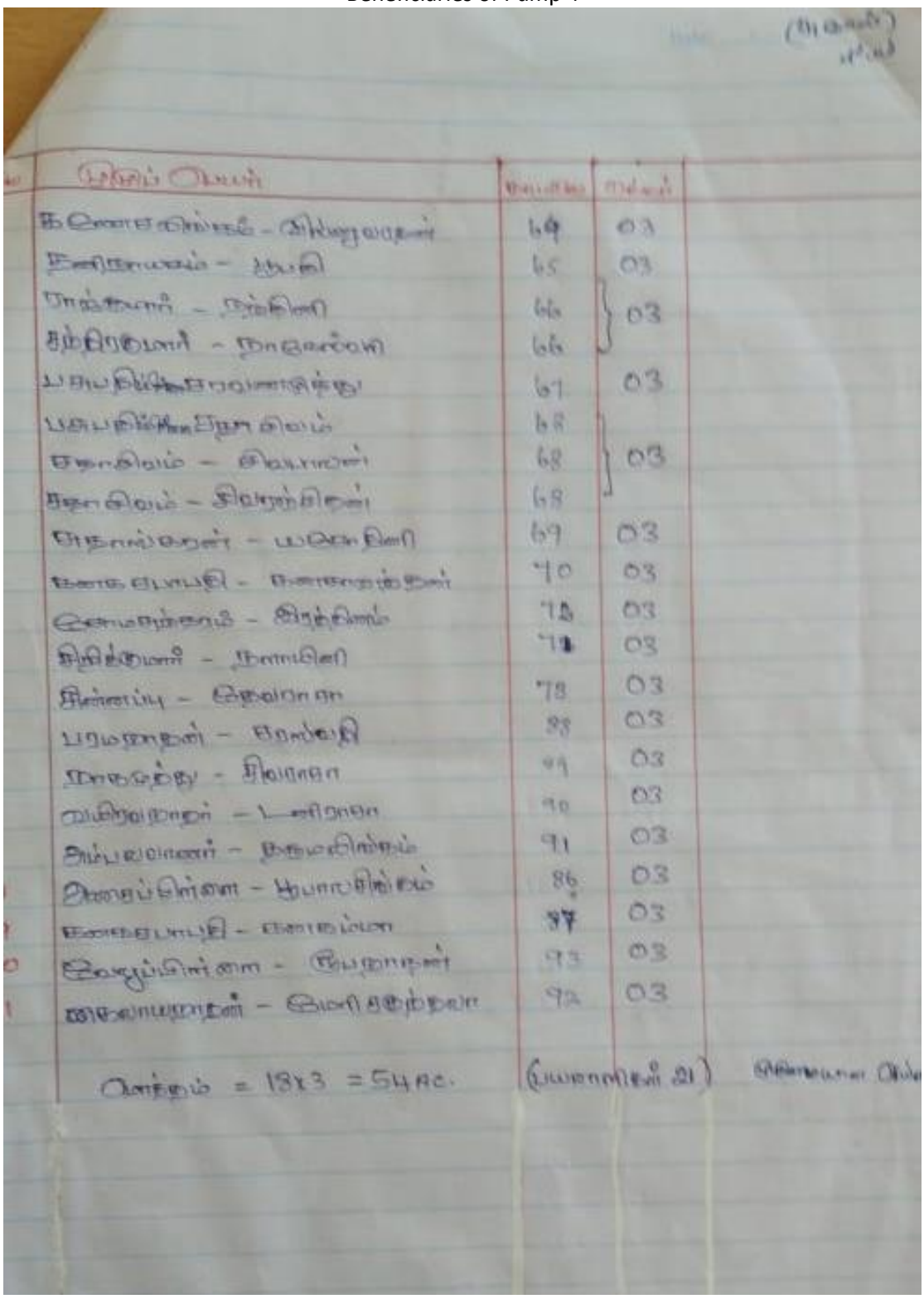


3) All locations



Annexure 3: Beneficiaries list

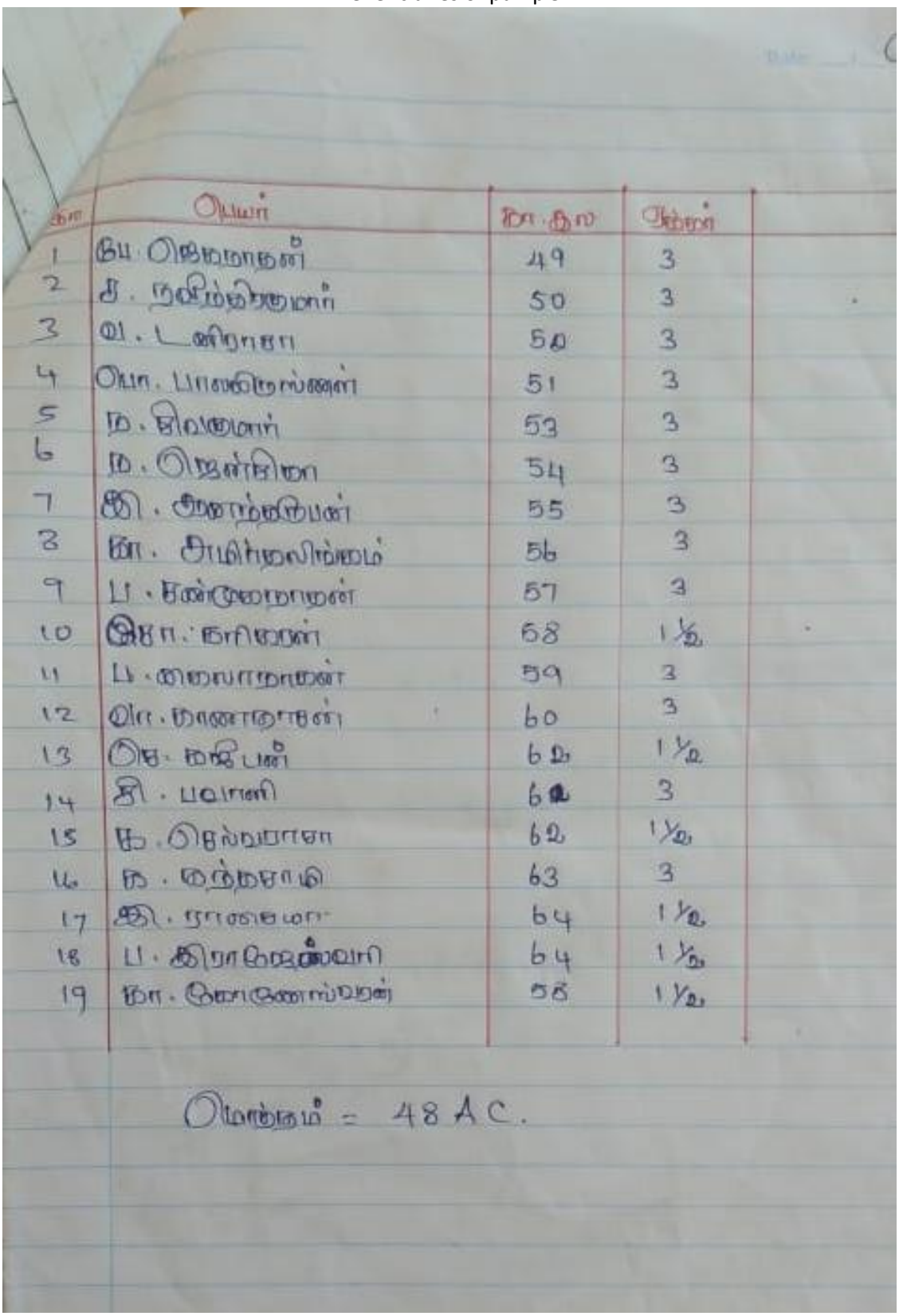
Beneficiaries of Pump 4



64	03	
65	03	
66	03	
66		
67	03	
68		
68	03	
68		
69	03	
70	03	
72	03	
73	03	
73	03	
88	03	
89	03	
90	03	
91	03	
86	03	
87	03	
93	03	
92	03	

18x3 = 54 Ac. (மொத்தம் 21)

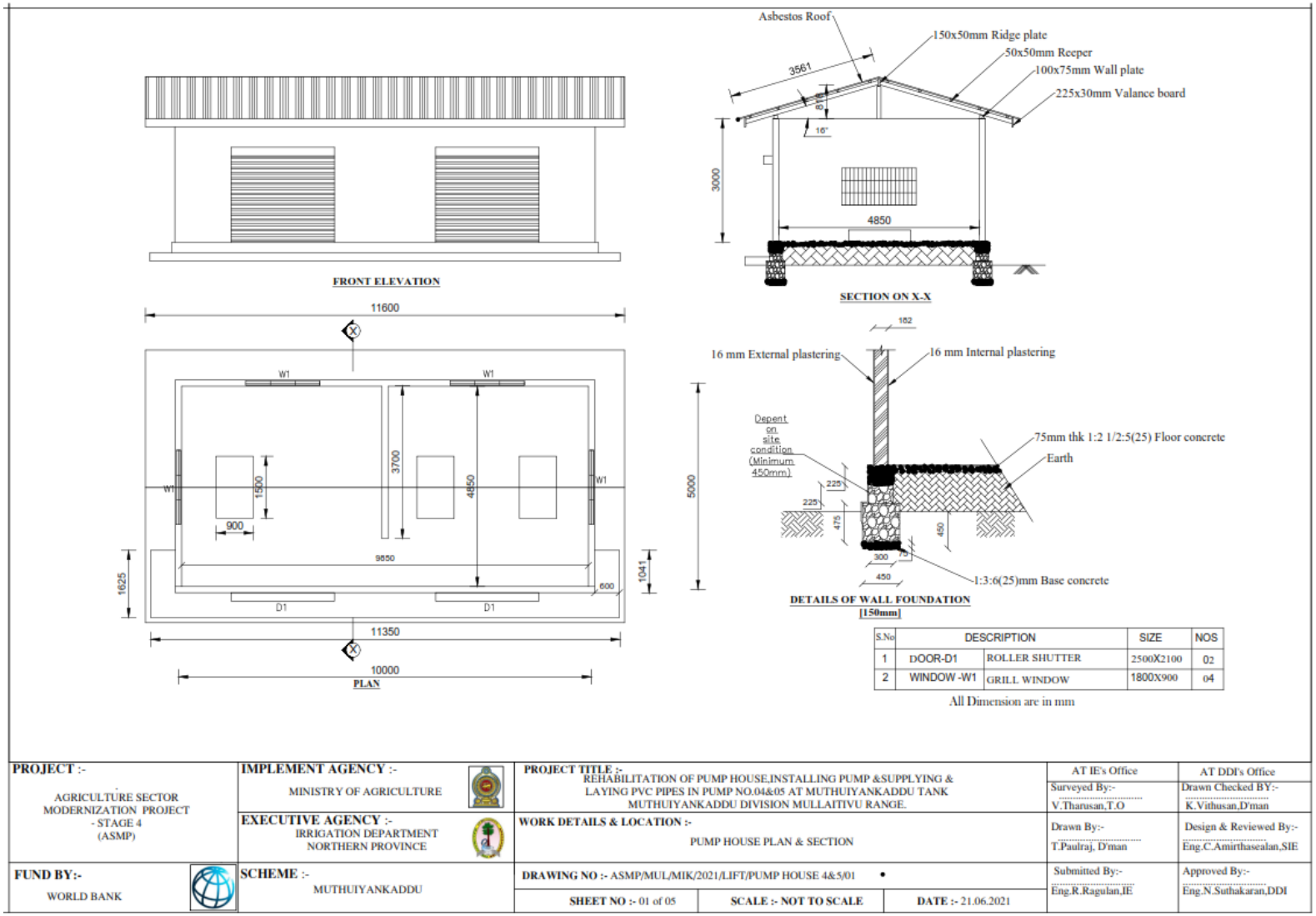
Beneficiaries of pump 5



1	கே. ஜெகநாதன்	49	3
2	தீ. நரசிம்மலு	50	3
3	வி. டனிராஜ	50	3
4	ஏ. பாலகிருஷ்ணன்	51	3
5	ஜ. திலகவள்	53	3
6	ஜ. ஜெயந்திலா	54	3
7	ஆர். அனந்தபன்	55	3
8	ஜ. அபிஷேலிங்கம்	56	3
9	பி. கண்ணையாதன்	57	3
10	ஜெ. ஹரிதன்	58	1½
11	பி. ஜவராஜன்	59	3
12	வி. ராஜாதன்	60	3
13	ஜெ. ஹரிபன்	62	1½
14	ஆர். பவானி	62	3
15	ஜ. ஜெஸ்பாசா	62	1½
16	ஜ. ஹரிதசாமி	63	3
17	ஆர். ராஜலெமா	64	1½
18	பி. ஸ்ரீராமுலுவரி	64	1½
19	ஜ. ஜெயகணேஸ்வரன்	58	1½

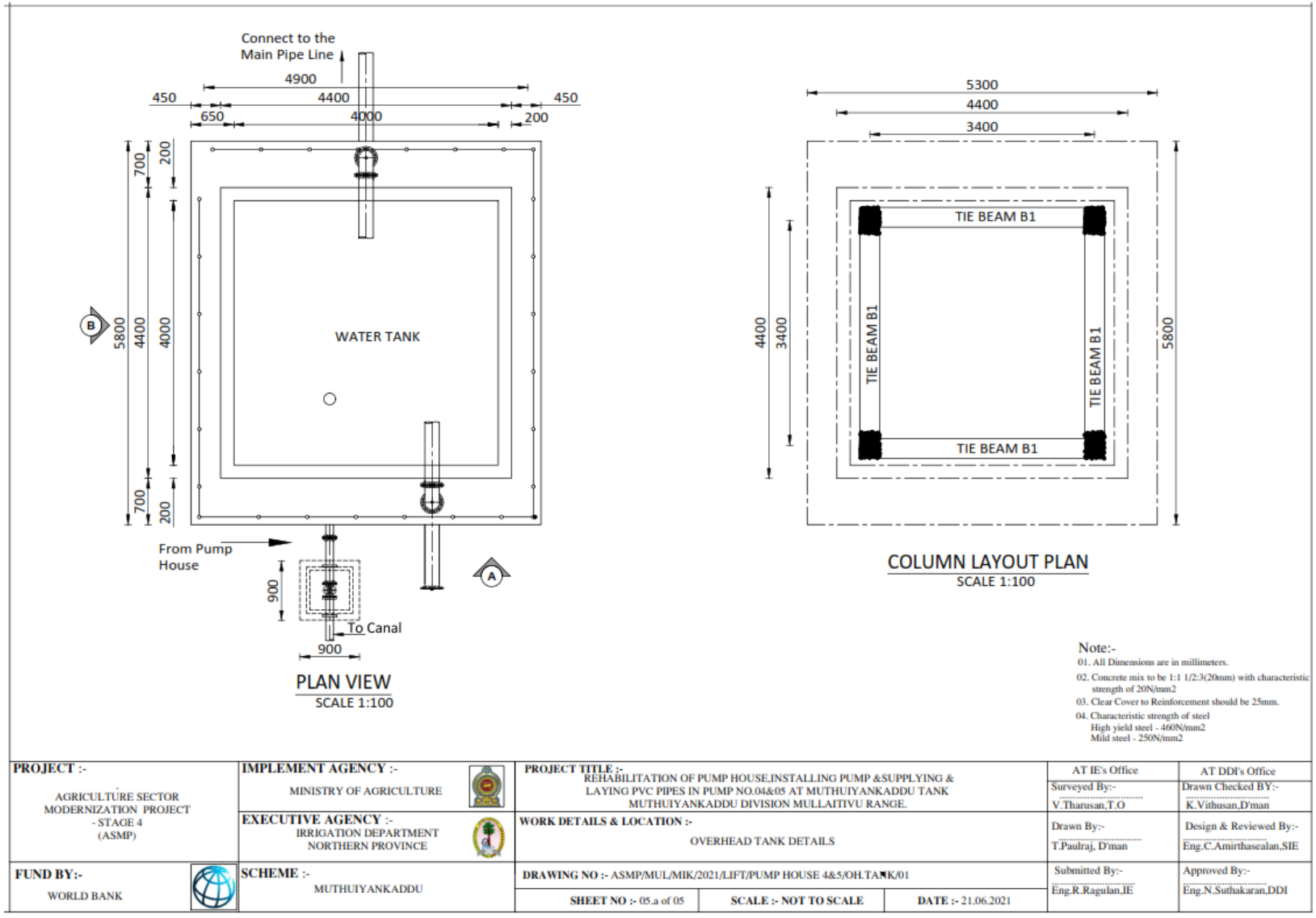
மொத்தம் = 48 AC.

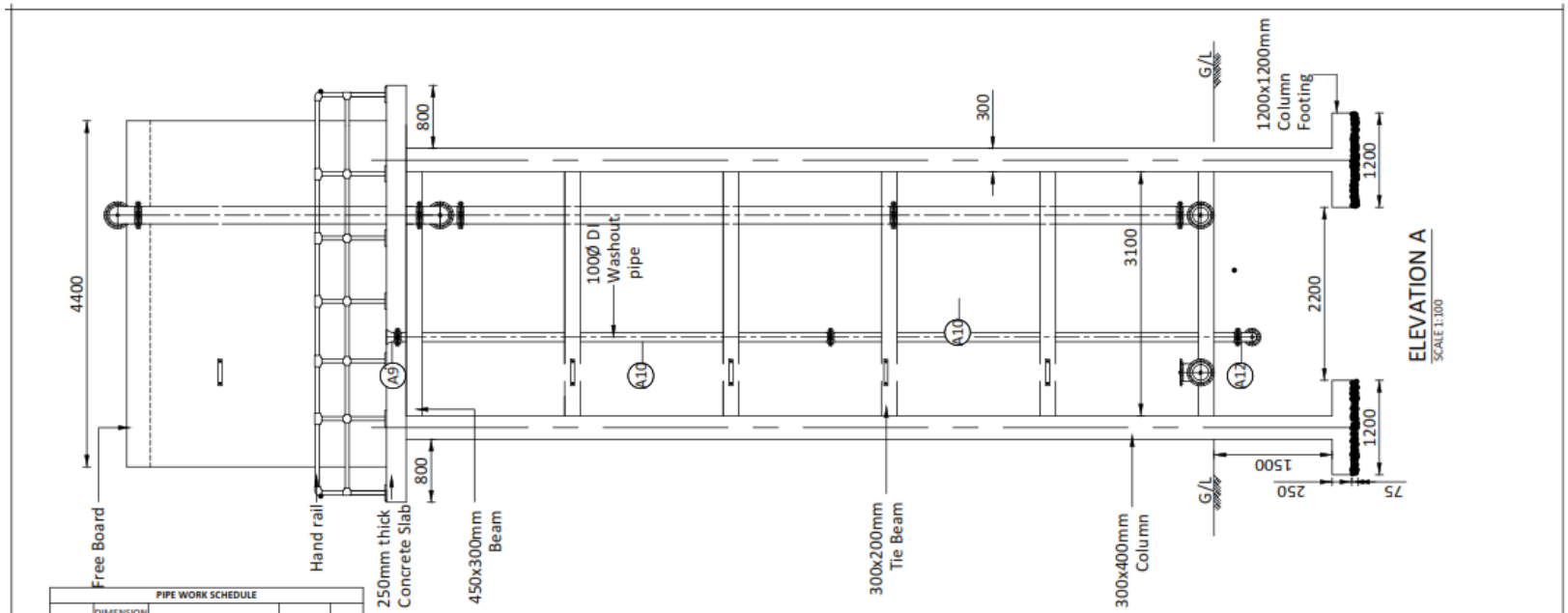
Annexure 4: Design of the Overhead tanks



S.No	DESCRIPTION		SIZE	NOS
1	DOOR-D1	ROLLER SHUTTER	2500X2100	02
2	WINDOW -W1	GRILL WINDOW	1800X900	04

PROJECT :- AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)	**IMPLEMENT AGENCY :-** MINISTRY OF AGRICULTURE	**PROJECT TITLE :-** REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.	AT IE's Office	AT DDI's Office
	EXECUTIVE AGENCY :- IRRIGATION DEPARTMENT NORTHERN PROVINCE	**WORK DETAILS & LOCATION :-** PUMP HOUSE PLAN & SECTION	Surveyed By:- V.Tharusan,T.O Drawn By:- T.Paulraj, D'man	Drawn Checked BY:- K.Vithusan,D'man Design & Reviewed By:- Eng.C.Amirthasealan,SIE
FUND BY :- WORLD BANK	**SCHEME :-** MUTHUIYANKADDU	**DRAWING NO :-** ASMP/MUL/MIK/2021/LIFT/PUMP HOUSE 4&5/01 •	Submitted By:- Eng.R.Ragulan,IE	Approved By:- Eng.N.Suthakaran,DDI
		SHEET NO :- 01 of 05 / **SCALE :-** NOT TO SCALE / **DATE :-** 21.06.2021		


Connect to the
Main Pipe Line
4900
450
4400
450
650
4000
200
700
200
5800
4400
4000
WATER TANK
B
700
200
From Pump
House
900
A
To Canal
900
PLAN VIEW
SCALE 1:100
5300
4400
3400
TIE BEAM B1
TIE BEAM B1
TIE BEAM B1
TIE BEAM B1
4400
3400
5800
COLUMN LAYOUT PLAN
SCALE 1:100
Note:-
01. All Dimensions are in millimeters.
02. Concrete mix to be 1:1 1/2:3(20mm) with characteristic strength of 20N/mm2
03. Clear Cover to Reinforcement should be 25mm.
04. Characteristic strength of steel
High yield steel - 460N/mm2
Mild steel - 250N/mm2
PROJECT :-
AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)
IMPLEMENT AGENCY :-
MINISTRY OF AGRICULTURE
EXECUTIVE AGENCY :-
IRRIGATION DEPARTMENT NORTHERN PROVINCE
FUND BY:-
WORLD BANK
SCHEME :-
MUTHUIYANKADDU
PROJECT TITLE :-
REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.
WORK DETAILS & LOCATION :-
OVERHEAD TANK DETAILS
DRAWING NO :- ASMP/MUL/MIK/2021/LIFT/PUMP HOUSE 4&5/OH.TANK/01
SHEET NO :- 05.a of 05
SCALE :- NOT TO SCALE
DATE :- 21.06.2021
AT IE's Office
Surveyed By:- V.Tharusan,T.O
Drawn By:- T.Paulraj, D'man
Submitted By:- Eng.R.Ragulan,IE
AT DDI's Office
Drawn Checked BY:- K.Vithusan,D'man
Design & Reviewed By:- Eng.C.Amirthasealan,SIE
Approved By:- Eng.N.Suthakaran,DDI

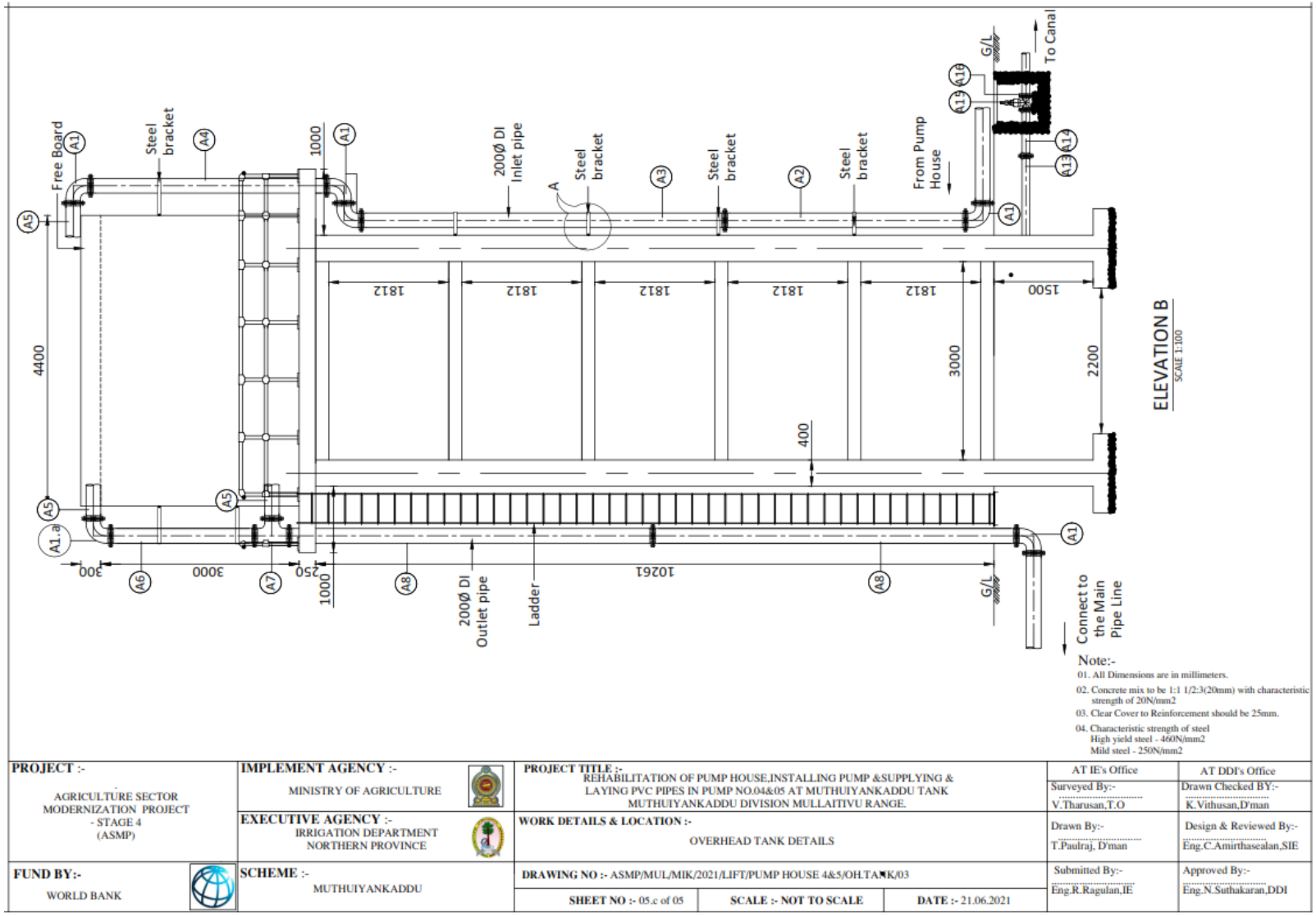


PIPE WORK SCHEDULE

PIPE No.	DIMENSION ND (mm)	DESCRIPTION	MATERIAL	QTY.
A1	200	FLANGE 90° BEND	DI	4
A1.a	200	FLANGE 90° BEND	DI	2
A2	200	DOUBLE FLANGE PIPE	DI	1
A3	200	DOUBLE FLANGE PIPE	DI	1
A4	200	DOUBLE FLANGE PIPE	DI	1
A5	200	FLANGE & SPIGOT PIPE	DI	1
A6	200	DOUBLE FLANGE PIPE	DI	1
A7	200x200	FLANGE TEE	DI	1
A8	200	DOUBLE FLANGE PIPE	DI	1
A9	100	BELL MOUTH	DI	1
A10	100	DOUBLE FLANGE PIPE	DI	1
A11	100	DOUBLE FLANGE PIPE	DI	1
A12	100	FLANGE 90° BEND	DI	1
A13	100	DOUBLE FLANGE PIPE	DI	1
A14	100	DOUBLE FLANGE WITH PUDDLE	DI	1
A15	100	SLUICE VALVE	DI	1
A16	100	FLANGE ADAPTOR	DI	1

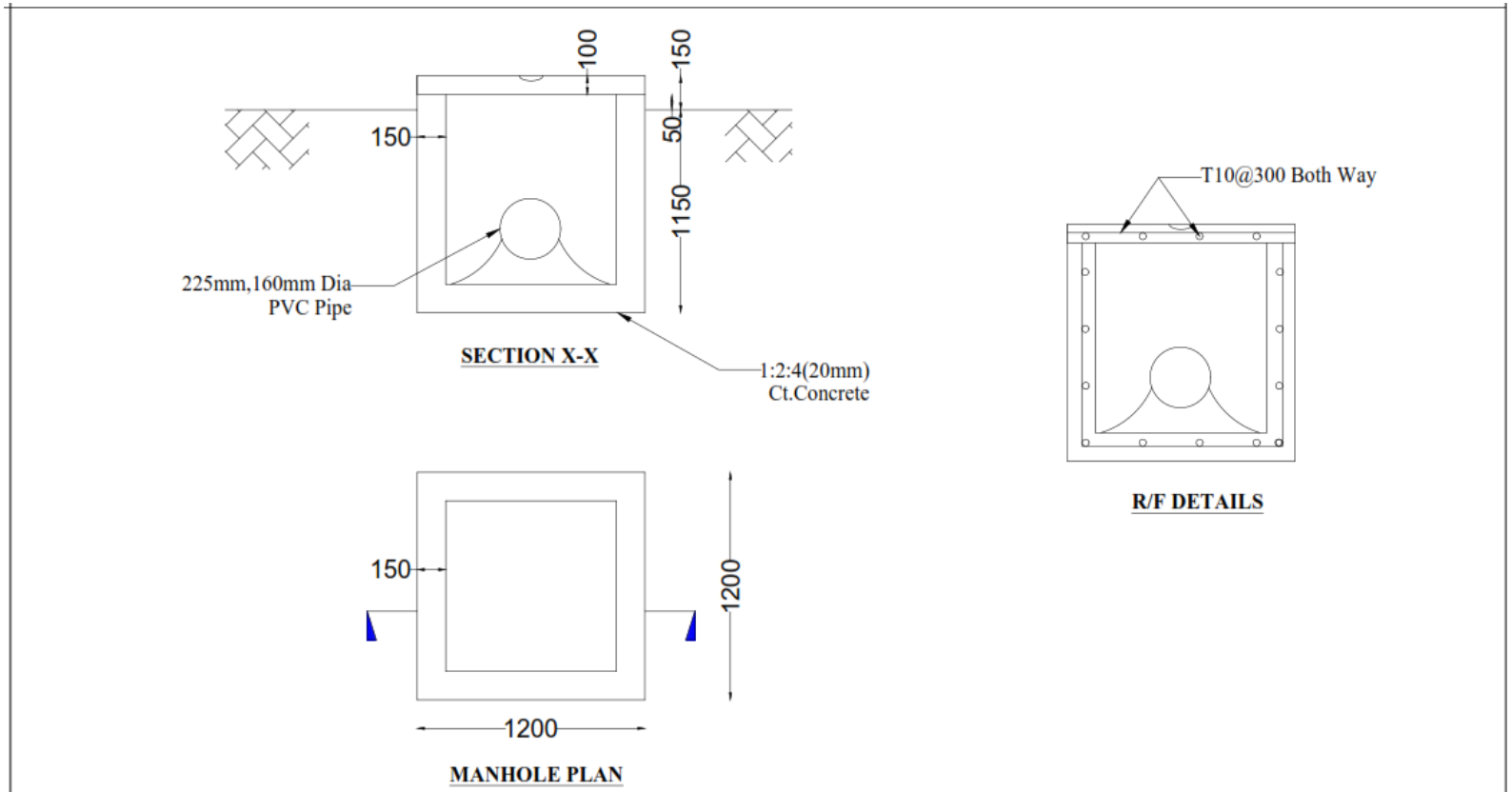
Note:-
01. All Dimensions are in millimeters.
02. Concrete mix to be 1:1 1/2:3(20mm) with characteristic strength of 20N/mm2
03. Clear Cover to Reinforcement should be 25mm.
04. Characteristic strength of steel
High yield steel - 460N/mm2
Mild steel - 250N/mm2

PROJECT :- AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)	**IMPLEMENT AGENCY :-** MINISTRY OF AGRICULTURE	**PROJECT TITLE :-** REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.	AT IE's Office	AT DDI's Office
	EXECUTIVE AGENCY :- IRRIGATION DEPARTMENT NORTHERN PROVINCE	**WORK DETAILS & LOCATION :-** OVERHEAD TANK DETAILS	Surveyed By:- V.Tharusan,T.O	Drawn Checked BY:- K.Vithusan,D'man
			Drawn By:- T.Paulraj, D'man	Design & Reviewed By:- Eng.C.Amirthasealan,SIE
FUND BY:- WORLD BANK	**SCHEME :-** MUTHUIYANKADDU	**DRAWING NO :-** ASMP/MUL/MIK/2021/LIFT/PUMP HOUSE 4&5/OH.TANK/02	Submitted By:- Eng.R.Ragulan,IE	Approved By:- Eng.N.Suthakaran,DDI
		SHEET NO :- 05.b of 05 **SCALE :- NOT TO SCALE** **DATE :-** 21.06.2021		

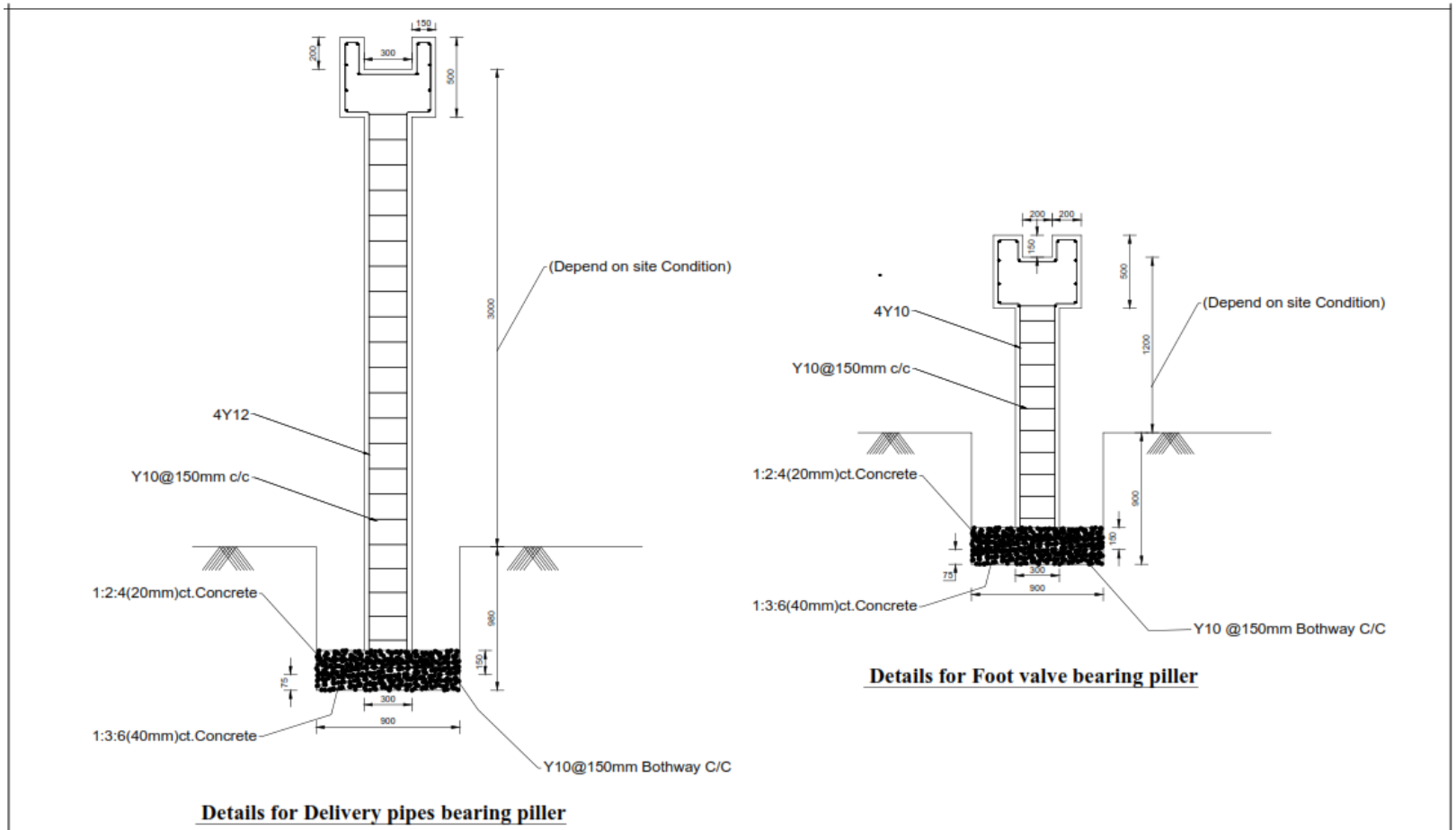


Note:-
01. All Dimensions are in millimeters.
02. Concrete mix to be 1:1 1/2:3(20mm) with characteristic strength of 20N/mm2
03. Clear Cover to Reinforcement should be 25mm.
04. Characteristic strength of steel
High yield steel - 460N/mm2
Mild steel - 250N/mm2

PROJECT :- AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)	**IMPLEMENT AGENCY :-** MINISTRY OF AGRICULTURE	**PROJECT TITLE :-** REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.	AT IE's Office	AT DDI's Office
	EXECUTIVE AGENCY :- IRRIGATION DEPARTMENT NORTHERN PROVINCE	**WORK DETAILS & LOCATION :-** OVERHEAD TANK DETAILS	Surveyed By:- V.Tharusan,T.O	Drawn Checked BY:- K.Vithusan,D'man
FUND BY:- WORLD BANK	**SCHEME :-** MUTHUIYANKADDU	**DRAWING NO :-** ASMP/MUL/MIK/2021/LIFT/PUMP HOUSE 4&5/OH.TANK/03	Drawn By:- T.Paulraj, D'man	Design & Reviewed By:- Eng.C.Amirthasealan,SIE
		SHEET NO :- 05.c of 05 **SCALE :- NOT TO SCALE** **DATE :-** 21.06.2021	Submitted By:- Eng.R.Ragulan,IE	Approved By:- Eng.N.Suthakaran,DDI



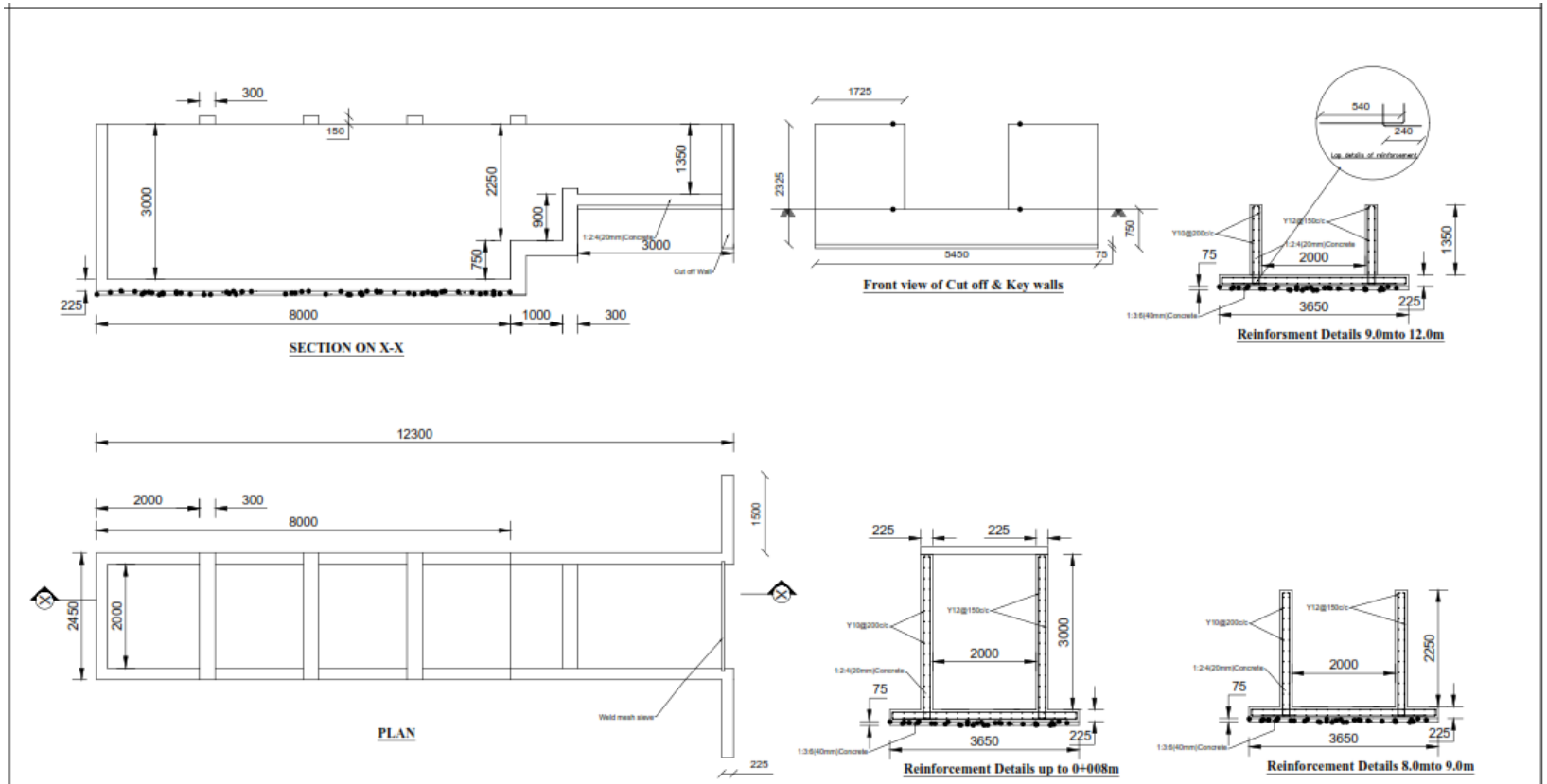
PROJECT :- AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)	**IMPLEMENT AGENCY :-** MINISTRY OF AGRICULTURE	**PROJECT TITLE :-** REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.	AT IE's Office	AT DDI's Office
	EXECUTIVE AGENCY :- IRRIGATION DEPARTMENT NORTHERN PROVINCE	**WORK DETAILS & LOCATION :-** MANHOLES DETAILS	Surveyed By:- V.Tharusan,T.O Drawn By:- T.Paulraj, D'man	Drawn Checked BY:- K.Vithusan,D'man Design & Reviewed By:- Eng.C.Amirthasealan,SIE
FUND BY:- WORLD BANK	**SCHEME :-** MUTHUIYANKADDU	**DRAWING NO :-** ASMP/MUL/MIK/2021/LIFT/PUMP4&5/MANHOLES/01 • **SHEET NO :-** 04 of 05 **SCALE :- NOT TO SCALE** **DATE :-** 21.06.2021	Submitted By:- Eng.R.Ragulan,IE Approved By:- Eng.N.Suthakaran,DDI	



Details for Delivery pipes bearing piller

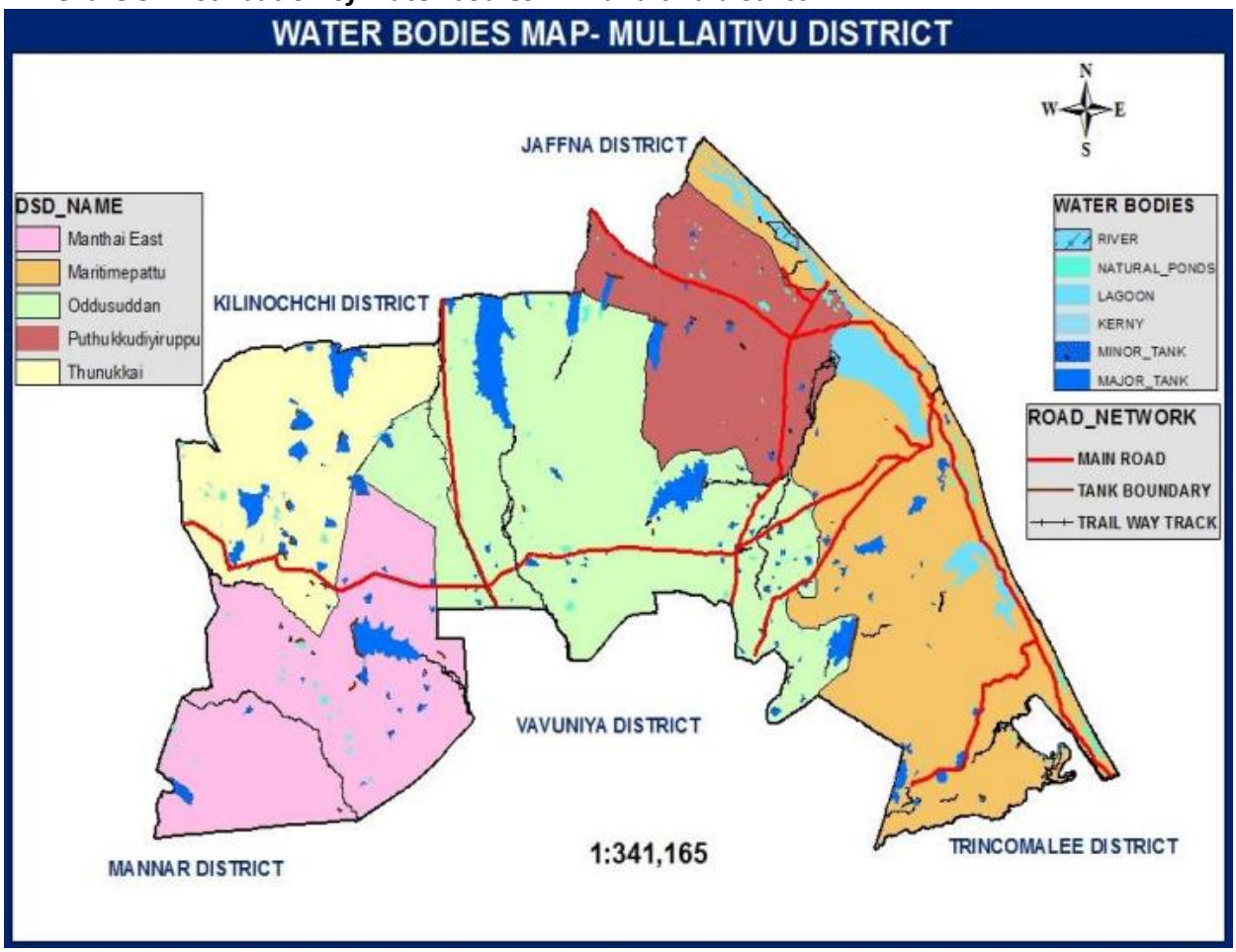
Details for Foot valve bearing piller

PROJECT :- AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)	**IMPLEMENT AGENCY :-** MINISTRY OF AGRICULTURE	**PROJECT TITLE :-** REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.	AT IE's Office Surveyed By:- V.Tharusan,T.O	AT DDI's Office Drawn Checked BY:- K.Vithusan,D'man
	EXECUTIVE AGENCY :- IRRIGATION DEPARTMENT NORTHERN PROVINCE	**WORK DETAILS & LOCATION :-** FOOT VALVE & DELIVERY PIPE BEARING PILLERS DETAILS	Drawn By:- T.Paulraj, D'man	Design & Reviewed By:- Eng.C.Amirthasealan,SIE
FUND BY:- WORLD BANK	**SCHEME :-** MUTHUIYANKADDU	**DRAWING NO :-** ASMP/MUL/MIK/2021/LIFT/PUMP4&5/PILLERS/01	Submitted By:- Eng.R.Ragulan,IE	Approved By:- Eng.N.Suthakaran,DDI
		SHEET NO :- 03 of 05 **SCALE :- NOT TO SCALE** **DATE :-** 21.06.2021		

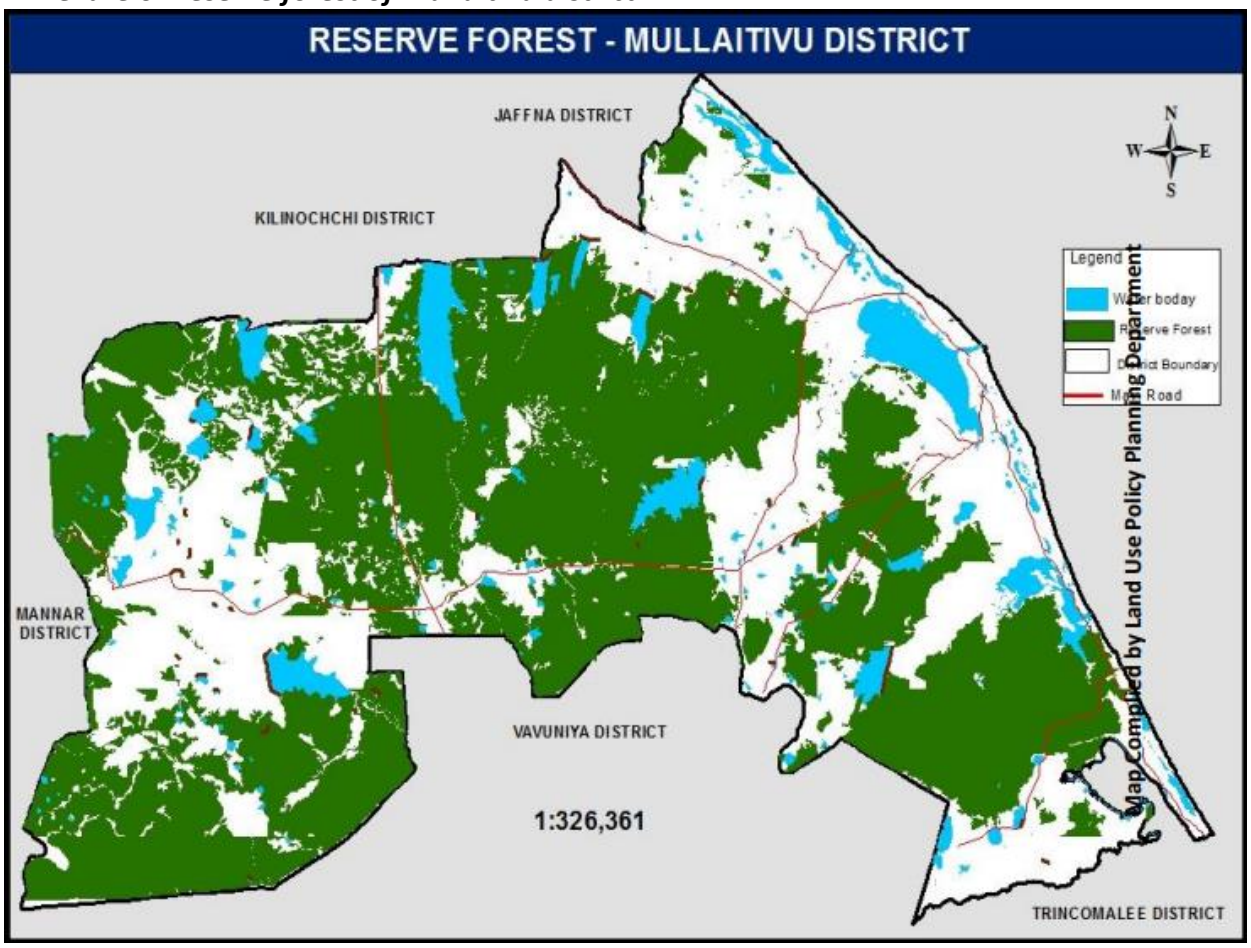


PROJECT :- AGRICULTURE SECTOR MODERNIZATION PROJECT - STAGE 4 (ASMP)	**IMPLEMENT AGENCY :-** MINISTRY OF AGRICULTURE	**PROJECT TITLE :-** REHABILITATION OF PUMP HOUSE,INSTALLING PUMP &SUPPLYING & LAYING PVC PIPES IN PUMP NO.04&05 AT MUTHUIYANKADDU TANK MUTHUIYANKADDU DIVISION MULLAITIVU RANGE.	AT IE's Office	AT DDI's Office
	EXECUTIVE AGENCY :- IRRIGATION DEPARTMENT NORTHERN PROVINCE	**WORK DETAILS & LOCATION :-** SUCTION BAY PLAN & SECTION	Surveyed By:- V.Tharusan,T.O Drawn By:- T.Paulraj, D'man	Drawn Checked BY:- K.Vithusan,D'man Design & Reviewed By:- Eng.C.Amirthasealan,SIE
FUND BY:- WORLD BANK	**SCHEME :-** MUTHUIYANKADDU	**DRAWING NO :-** ASMP/MUL/MIK/2021/LIFT/PUMP4&5/SUCTION BAY/01 **SHEET NO :-** 02 of 05 | **SCALE :- NOT TO SCALE** | **DATE :-** 21.06.2021	Submitted By:- Eng.R.Ragulan,IE	Approved By:- Eng.N.Suthakaran,DDI

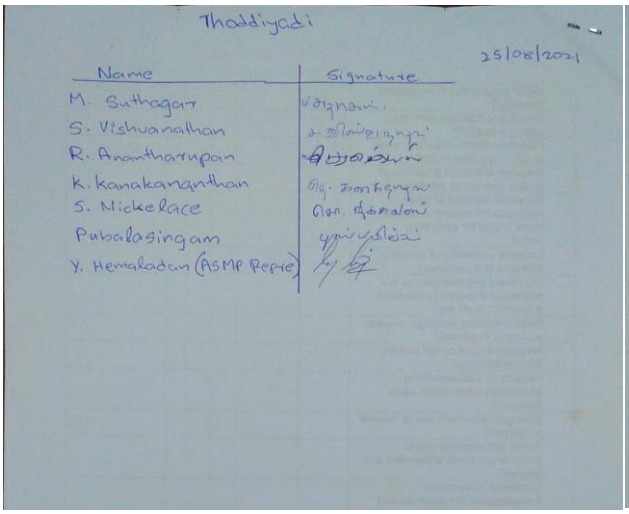
Annexure 5: Distribution of water bodies in Mullaitivu district



Annexure 6: Reserve forest of Mullaitivu district



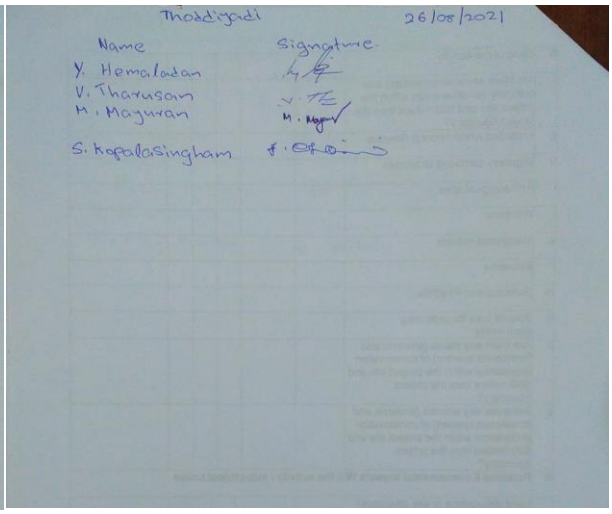
Annexure 7: Attendance sheets of public consultation and its photographs



Thoddiyadi

25/08/2021

Name	Signature
M. Suthagar	
S. Vishvanathan	
R. Anantharupan	
K. Kanakanandhan	
S. Nickelace	
Pubalasingam	
Y. Hemaladan (ASMP Repre)	



Thoddiyadi 26/08/2021

Name	Signature
Y. Hemaladan	
V. Tharusan	
M. Mayuran	
S. Kopalasingham	

Annexure 8: Interim Guidelines on COVID-19 of World Bank

ESF/SAFEGUARDS INTERIM NOTE: COVID-19 CONSIDERATIONS IN CONSTRUCTION/CIVIL WORKS PROJECTS

This note was issued on April 7, 2020 and includes links to the latest guidance as of this date (e.g. from WHO). Given the COVID-19 situation is rapidly evolving, when using this note it is important to check whether any updates to these external resources have been issued.

1. INTRODUCTION

The COVID-19 pandemic presents Governments with unprecedented challenges. Addressing COVID-19 related issues in both existing and new operations starts with recognizing that this is not business as usual and that circumstances require a highly adaptive responsive management design to avoid, minimize and manage what may be a rapidly evolving situation. In many cases, we will ask Borrowers to use reasonable efforts in the circumstances, recognizing that what may be possible today may be different next week (both positively, because more supplies and guidance may be available, and negatively, because the spread of the virus may have accelerated).

This interim note is intended to provide guidance to teams on how to support Borrowers in addressing key issues associated with COVID-19, and consolidates the advice that has already been provided over the past month. As such, it should be used in place of other guidance that has been provided to date. This note will be developed as the global situation and the Bank's learning (and that of others) develops. This is not a time when 'one size fits all'. More than ever, teams will need to work with Borrowers and projects to understand the activities being carried out and the risks that these activities may entail. Support will be needed in designing mitigation measures that are implementable in the context of the project. These measures will need to take into account capacity of the Government agencies, availability of supplies and the practical challenges of operations on-the-ground, including stakeholder engagement, supervision and monitoring. In many circumstances, communication itself may be challenging, where face-to-face meetings are restricted or prohibited, and where IT solutions are limited or unreliable.

This note emphasizes the importance of careful scenario planning, clear procedures and protocols, management systems, effective communication and coordination, and the need for high levels of responsiveness in a changing environment. It recommends assessing the current situation of the project, putting in place mitigation measures to avoid or minimize the chance of infection, and planning what to do if either project workers become infected or the work force includes workers from proximate communities affected by COVID-19. In many projects, measures to avoid or minimize will need to be implemented at the same time as dealing with sick workers and relations with the community, some of whom may also be ill or concerned about infection. Borrowers should understand the obligations that contractors have under their existing contracts (see Section 3), require contractors to put in place appropriate organizational structures (see Section 4) and develop procedures to address different aspects of COVID-19 (see Section 5).

2. CHALLENGES WITH CONSTRUCTION/CIVIL WORKS

Projects involving construction/civil works frequently involve a large work force, together with suppliers and supporting functions and services. The work force may comprise workers from international, national, regional, and local labor markets. They may need to live in on-site accommodation, lodge within communities close to work sites or return to their homes after work. There may be different contractors

permanently present on site, carrying out different activities, each with their own dedicated workers. Supply chains may involve international, regional and national suppliers facilitating the regular flow of goods and services to the project (including supplies essential to the project such as fuel, food, and water). As such there will also be regular flow of parties entering and exiting the site; support services, such as catering, cleaning services, equipment, material and supply deliveries, and specialist sub-contractors, brought in to deliver specific elements of the works.

Given the complexity and the concentrated number of workers, the potential for the spread of infectious disease in projects involving construction is extremely serious, as are the implications of such a spread. Projects may experience large numbers of the work force becoming ill, which will strain the project's health facilities, have implications for local emergency and health services and may jeopardize the progress of the construction work and the schedule of the project. Such impacts will be exacerbated where a work force is large and/or the project is in remote or under-serviced areas. In such circumstances, relationships with the community can be strained or difficult and conflict can arise, particularly if people feel they are being exposed to disease by the project or are having to compete for scarce resources. The project must also exercise appropriate precautions against introducing the infection to local communities.

3. DOES THE CONSTRUCTION CONTRACT COVER THIS SITUATION?

Given the unprecedented nature of the COVID-19 pandemic, it is unlikely that the existing construction/civil works contracts will cover all the things that a prudent contractor will need to do. Nevertheless, the first place for a Borrower to start is with the contract, determining what a contractor's existing obligations are, and how these relate to the current situation.

The obligations on health and safety will depend on what kind of contract exists (between the Borrower and the main contractor; between the main contractors and the sub-contractors). It will differ if the Borrower used the World Bank's standard procurement documents (SPDs) or used national bidding documents. If a FIDIC document has been used, there will be general provisions relating to health and safety. For example, the standard FIDIC, Conditions of Contract for Construction (Second Edition 2017), which contains no 'ESF enhancements', states (in the General Conditions, clause 6.7) that the Contractor will be required:

- to take all necessary precautions to maintain the health and safety of the Contractor's Personnel
- to appoint a health and safety officer at site, who will have the authority to issue directives for the purpose of maintaining the health and safety of all personnel authorized to enter and or work on the site and to take protective measures to prevent accidents
- to ensure, in collaboration with local health authorities, that medical staff, first aid facilities, sick bay, ambulance services and any other medical services specified are available at all times at the site and at any accommodation
- to ensure suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics

These requirements have been enhanced through the introduction of the ESF into the SPDs (edition dated July 2019). The general FIDIC clause referred to above has been strengthened to reflect the requirements of the ESF. Beyond FIDIC's general requirements discussed above, the Bank's Particular Conditions include a number of relevant requirements on the Contractor, including:

- to provide health and safety training for Contractor's Personnel (which include project workers and all personnel that the Contractor uses on site, including staff and other employees of the Contractor and Subcontractors and any other personnel assisting the Contractor in carrying out project activities)
- to put in place workplace processes for Contractor's Personnel to report work situations that are not safe or healthy
- gives Contractor's Personnel the right to report work situations which they believe are not safe or healthy, and to remove themselves from a work situation which they have a reasonable justification to believe presents an imminent and serious danger to their life or health (with no reprisal for reporting or removing themselves)
- requires measures to be in place to avoid or minimize the spread of diseases including measures to avoid or minimize the transmission of communicable diseases that may be associated with the influx of temporary or permanent contract-related labor
- to provide an easily accessible grievance mechanism to raise workplace concerns

Where the contract form used is FIDIC, the Borrower (as the Employer) will be represented by the Engineer (also referred to in this note as the Supervising Engineer). The Engineer will be authorized to exercise authority specified in or necessarily implied from the construction contract. In such cases, the Engineer (through its staff on site) will be the interface between the PIU and the Contractor. It is important therefore to understand the scope of the Engineer's responsibilities. It is also important to recognize that in the case of infectious diseases such as COVID-19, project management – through the Contractor/subcontractor hierarchy – is only as effective as the weakest link. A thorough review of management procedures/plans as they will be implemented through the entire contractor hierarchy is important. Existing contracts provide the outline of this structure; they form the basis for the Borrower to understand how proposed mitigation measures will be designed and how adaptive management will be implemented, and to start a conversation with the Contractor on measures to address COVID-19 in the project.

4. WHAT PLANNING SHOULD THE BORROWER BE DOING?

Task teams should work with Borrowers (PIUs) to confirm that projects (i) are taking adequate precautions to prevent or minimize an outbreak of COVID-19, and (ii) have identified what to do in the event of an outbreak. Suggestions on how to do this are set out below:

- The PIU, either directly or through the Supervising Engineer, should request details in writing from the main Contractor of the measures being taken to address the risks. As stated in Section 3, the construction contract should include health and safety requirements, and these can be used as the basis for identification of, and requirements to implement, COVID-19 specific measures. The measures may be presented as a contingency plan, as an extension of the existing project emergency and preparedness plan or as standalone procedures. The measures may be reflected in revisions to the project's health and safety manual. This request should be made in writing (following any relevant procedure set out in the contract between the Borrower and the contractor).

- In making the request, it may be helpful for the PIU to specify the areas that should be covered. This should include the items set out in Section 5 below and take into account current and relevant

guidance provided by national authorities, WHO and other organizations. See the list of references in the Annex to this note.

- The PIU should require the Contractor to convene regular meetings with the project health and safety specialists and medical staff (and where appropriate the local health authorities), and to take their advice in designing and implementing the agreed measures.

- Where possible, a senior person should be identified as a focal point to deal with COVID-19 issues. This can be a work supervisor or a health and safety specialist. This person can be responsible for coordinating preparation of the site and making sure that the measures taken are communicated to the workers, those entering the site and the local community. It is also advisable to designate at least one back-up person, in case the focal point becomes ill; that person should be aware of the arrangements that are in place.

- On sites where there are a number of contractors and therefore (in effect) different work forces, the request should emphasize the importance of coordination and communication between the different parties. Where necessary, the PIU should request the main contractor to put in place a protocol for regular meetings of the different contractors, requiring each to appoint a designated staff member (with back up) to attend such meetings. If meetings cannot be held in person, they should be conducted using whatever IT is available. The effectiveness of mitigation measures will depend on the weakest implementation, and therefore it is important that all contractors and sub-contractors understand the risks and the procedure to be followed.

- The PIU, either directly or through the Supervising Engineer, may provide support to projects in identifying appropriate mitigation measures, particularly where these will involve interface with local services, in particular health and emergency services. In many cases, the PIU can play a valuable role in connecting project representatives with local Government agencies, and helping coordinate a strategic response, which takes into account the availability of resources. To be most effective, projects should consult and coordinate with relevant Government agencies and other projects in the vicinity.

- Workers should be encouraged to use the existing project grievance mechanism to report concerns relating to COVID-19, preparations being made by the project to address COVID-19 related issues, how procedures are being implemented, and concerns about the health of their co-workers and other staff.

5. WHAT SHOULD THE CONTRACTOR COVER?

The Contractor should identify measures to address the COVID-19 situation. What will be possible will depend on the context of the project: the location, existing project resources, availability of supplies, capacity of local emergency/health services, the extent to which the virus already exist in the area. A systematic approach to planning, recognizing the challenges associated with rapidly changing circumstances, will help the project put in place the best measures possible to address the situation. As discussed above, measures to address COVID-19 may be presented in different ways (as a contingency plan, as an extension of the existing project emergency and preparedness plan or as standalone procedures). PIUs and contractors should refer to guidance issued by relevant authorities, both national

and international (e.g. WHO), which is regularly updated (see sample References and links provided in the Annex).

Addressing COVID-19 at a project site goes beyond occupational health and safety, and is a broader project issue which will require the involvement of different members of a project management team. In many cases, the most effective approach will be to establish procedures to address the issues, and then to ensure that these procedures are implemented systematically. Where appropriate given the project context, a designated team should be established to address COVID-19 issues, including PIU representatives, the Supervising Engineer, management (e.g. the project manager) of the contractor and sub-contractors, security, and medical and OHS professionals. Procedures should be clear and straightforward, improved as necessary, and supervised and monitored by the COVID-19 focal point(s). Procedures should be documented, distributed to all contractors, and discussed at regular meetings to facilitate adaptive management. The issues set out below include a number that represent expected good workplace management but are especially pertinent in preparing the project response to COVID-19.

(a) ASSESSING WORKFORCE CHARACTERISTICS

Many construction sites will have a mix of workers e.g. workers from the local communities; workers from a different part of the country; workers from another country. Workers will be employed under different terms and conditions and be accommodated in different ways. Assessing these different aspects of the workforce will help in identifying appropriate mitigation measures:

- The Contractor should prepare a detailed profile of the project work force, key work activities, schedule for carrying out such activities, different durations of contract and rotations (e.g. 4 weeks on, 4 weeks off).
- This should include a breakdown of workers who reside at home (i.e. workers from the community), workers who lodge within the local community and workers in on-site accommodation. Where possible, it should also identify workers that may be more at risk from COVID-19, those with underlying health issues or who may be otherwise at risk.
- Consideration should be given to ways in which to minimize movement in and out of site. This could include lengthening the term of existing contracts, to avoid workers returning home to affected areas, or returning to site from affected areas.
- Workers accommodated on site should be required to minimize contact with people near the site, and in certain cases be prohibited from leaving the site for the duration of their contract, so that contact with local communities is avoided.
- Consideration should be given to requiring workers lodging in the local community to move to site accommodation (subject to availability) where they would be subject to the same restrictions.
- Workers from local communities, who return home daily, weekly or monthly, will be more difficult to manage. They should be subject to health checks at entry to the site (as set out above) and at some point, circumstances may make it necessary to require them to either use accommodation on site or not to come to work.

(b) ENTRY/EXIT TO THE WORK SITE AND CHECKS ON COMMENCEMENT OF WORK

Entry/exit to the work site should be controlled and documented for both workers and other parties, including support staff and suppliers. Possible measures may include:

- Establishing a system for controlling entry/exit to the site, securing the boundaries of the site, and establishing designating entry/exit points (if they do not already exist). Entry/exit to the site should be documented.
- Training security staff on the (enhanced) system that has been put in place for securing the site and controlling entry and exit, the behaviors required of them in enforcing such system and any COVID - 19 specific considerations.
- Training staff who will be monitoring entry to the site, providing them with the resources they need to document entry of workers, conducting temperature checks and recording details of any worker that is denied entry.
- Confirming that workers are fit for work before they enter the site or start work. While procedures should already be in place for this, special attention should be paid to workers with underlying health issues or who may be otherwise at risk. Consideration should be given to demobilization of staff with underlying health issues.
- Checking and recording temperatures of workers and other people entering the site or requiring self-reporting prior to or on entering the site.
- Providing daily briefings to workers prior to commencing work, focusing on COVID-19 specific considerations including cough etiquette, hand hygiene and distancing measures, using demonstrations and participatory methods.
- During the daily briefings, reminding workers to self-monitor for possible symptoms (fever, cough) and to report to their supervisor or the COVID-19 focal point if they have symptoms or are feeling unwell.
- Preventing a worker from an affected area or who has been in contact with an infected person from returning to the site for 14 days or (if that is not possible) isolating such worker for 14 days.
- Preventing a sick worker from entering the site, referring them to local health facilities if necessary or requiring them to isolate at home for 14 days.

(c) GENERAL HYGIENE

Requirements on general hygiene should be communicated and monitored, to include:

- Training workers and staff on site on the signs and symptoms of COVID-19, how it is spread, how to protect themselves (including regular handwashing and social distancing) and what to do if they or other people have symptoms (for further information see WHO COVID-19 advice for the public).
- Placing posters and signs around the site, with images and text in local languages.
- Ensuring handwashing facilities supplied with soap, disposable paper towels and closed waste bins exist at key places throughout site, including at entrances/exits to work areas; where there is a toilet, canteen or food distribution, or provision of drinking water; in worker accommodation; at waste stations; at stores; and in common spaces. Where handwashing facilities do not exist or are not adequate, arrangements should be made to set them up. Alcohol based sanitizer (if available, 60-95% alcohol) can also be used.
- Review worker accommodations, and assess them in light of the requirements set out in IFC/EBRD guidance on Workers' Accommodation: processes and standards, which provides valuable guidance as to good practice for accommodation.
- Setting aside part of worker accommodation for precautionary self-quarantine as well as more formal isolation of staff who may be infected (see paragraph (f)).

(d) CLEANING AND WASTE DISPOSAL

Conduct regular and thorough cleaning of all site facilities, including offices, accommodation, canteens, common spaces. Review cleaning protocols for key construction equipment (particularly if it is being operated by different workers). This should include:

- Providing cleaning staff with adequate cleaning equipment, materials and disinfectant.
- Review general cleaning systems, training cleaning staff on appropriate cleaning procedures and appropriate frequency in high use or high-risk areas.
- Where it is anticipated that cleaners will be required to clean areas that have been or are suspected to have been contaminated with COVID-19, providing them with appropriate PPE: gowns or aprons, gloves, eye protection (masks, goggles or face screens) and boots or closed work shoes. If appropriate PPE is not available, cleaners should be provided with best available alternatives.
- Training cleaners in proper hygiene (including handwashing) prior to, during and after conducting cleaning activities; how to safely use PPE (where required); in waste control (including for used PPE and cleaning materials).
- Any medical waste produced during the care of ill workers should be collected safely in designated containers or bags and treated and disposed of following relevant requirements (e.g., national, WHO). If open burning and incineration of medical wastes is necessary, this should be for as limited a duration as possible. Waste should be reduced and segregated, so that only the smallest amount of waste is incinerated (for further information see WHO interim guidance on water, sanitation and waste management for COVID-19).

(e) ADJUSTING WORK PRACTICES

Consider changes to work processes and timings to reduce or minimize contact between workers, recognizing that this is likely to impact the project schedule. Such measures could include:

- Decreasing the size of work teams.
- Limiting the number of workers on site at any one time.
- Changing to a 24-hour work rotation.
- Adapting or redesigning work processes for specific work activities and tasks to enable social distancing, and training workers on these processes.
- Continuing with the usual safety trainings, adding COVID-19 specific considerations. Training should include proper use of normal PPE. While as of the date of this note, general advice is that construction workers do not require COVID-19 specific PPE, this should be kept under review (for further information see WHO interim guidance on rational use of personal protective equipment (PPE) for COVID-19).
- Reviewing work methods to reduce use of construction PPE, in case supplies become scarce or the PPE is needed for medical workers or cleaners. This could include, e.g. trying to reduce the need for dust masks by checking that water sprinkling systems are in good working order and are maintained or reducing the speed limit for haul trucks.
- Arranging (where possible) for work breaks to be taken in outdoor areas within the site.
- Consider changing canteen layouts and phasing meal times to allow for social distancing and phasing access to and/or temporarily restricting access to leisure facilities that may exist on site, including gyms.

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- At some point, it may be necessary to review the overall project schedule, to assess the extent to which it needs to be adjusted (or work stopped completely) to reflect prudent work practices, potential exposure of both workers and the community and availability of supplies, taking into account Government advice and instructions.

(f) PROJECT MEDICAL SERVICES

Consider whether existing project medical services are adequate, taking into account existing infrastructure (size of clinic/medical post, number of beds, isolation facilities), medical staff, equipment and supplies, procedures and training. Where these are not adequate, consider upgrading services where possible, including:

- Expanding medical infrastructure and preparing areas where patients can be isolated. Guidance on setting up isolation facilities is set out in WHO interim guidance on considerations for quarantine of individuals in the context of containment for COVID-19). Isolation facilities should be located away from worker accommodation and ongoing work activities. Where possible, workers should be provided with a single well-ventilated room (open windows and door). Where this is not possible, isolation facilities should allow at least 1 meter between workers in the same room, separating workers with curtains, if possible. Sick workers should limit their movements, avoiding common areas and facilities and not be allowed visitors until they have been clear of symptoms for 14 days. If they need to use common areas and facilities (e.g. kitchens or canteens), they should only do so when unaffected workers are not present and the area/facilities should be cleaned prior to and after such use.
- Training medical staff, which should include current WHO advice on COVID-19 and recommendations on the specifics of COVID-19. Where COVID-19 infection is suspected, medical providers on site should follow WHO interim guidance on infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected.
- Training medical staff in testing, if testing is available.
- Assessing the current stock of equipment, supplies and medicines on site, and obtaining additional stock, where required and possible. This could include medical PPE, such as gowns, aprons, medical masks, gloves, and eye protection. Refer to WHO guidance as to what is advised (for further information see WHO interim guidance on rational use of personal protective equipment (PPE) for COVID-19).
- If PPE items are unavailable due to world-wide shortages, medical staff on the project should agree on alternatives and try to procure them. Alternatives that may commonly be found on constructions sites include dust masks, construction gloves and eye goggles. While these items are not recommended, they should be used as a last resort if no medical PPE is available.
- Ventilators will not normally be available on work sites, and in any event, intubation should only be conducted by experienced medical staff. If a worker is extremely ill and unable to breathe properly on his or her own, they should be referred immediately to the local hospital (see (g) below).
- Review existing methods for dealing with medical waste, including systems for storage and disposal (for further information see WHO interim guidance on water, sanitation and waste management for COVID-19, and WHO guidance on safe management of wastes from health-care activities).

(g) LOCAL MEDICAL AND OTHER SERVICES

Given the limited scope of project medical services, the project may need to refer sick workers to local medical services. Preparation for this includes:

- Obtaining information as to the resources and capacity of local medical services (e.g. number of beds, availability of trained staff and essential supplies).
- Conducting preliminary discussions with specific medical facilities, to agree what should be done in the event of ill workers needing to be referred.
- Considering ways in which the project may be able to support local medical services in preparing for members of the community becoming ill, recognizing that the elderly or those with pre-existing medical conditions require additional support to access appropriate treatment if they become ill.
- Clarifying the way in which an ill worker will be transported to the medical facility, and checking availability of such transportation.
- Establishing an agreed protocol for communications with local emergency/medical services.
- Agreeing with the local medical services/specific medical facilities the scope of services to be provided, the procedure for in-take of patients and (where relevant) any costs or payments that may be involved.
- A procedure should also be prepared so that project management knows what to do in the unfortunate event that a worker ill with COVID-19 dies. While normal project procedures will continue to apply, COVID-19 may raise other issues because of the infectious nature of the disease. The project should liaise with the relevant local authorities to coordinate what should be done, including any reporting or other requirements under national law.

(h) INSTANCES OR SPREAD OF THE VIRUS

WHO provides detailed advice on what should be done to treat a person who becomes sick or displays symptoms that could be associated with the COVID-19 virus (for further information see WHO interim guidance on infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected). The project should set out risk-based procedures to be followed, with differentiated approaches based on case severity (mild, moderate, severe, critical) and risk factors (such as age, hypertension, diabetes) (for further information see WHO interim guidance on operational considerations for case management of COVID-19 in health facility and community). These may include the following:

- If a worker has symptoms of COVID-19 (e.g. fever, dry cough, fatigue) the worker should be removed immediately from work activities and isolated on site.
- If testing is available on site, the worker should be tested on site. If a test is not available at site, the worker should be transported to the local health facilities to be tested (if testing is available).
- If the test is positive for COVID-19 or no testing is available, the worker should continue to be isolated. This will either be at the work site or at home. If at home, the worker should be transported to their home in transportation provided by the project.
- Extensive cleaning procedures with high-alcohol content disinfectant should be undertaken in the area where the worker was present, prior to any further work being undertaken in that area. Tools used by the worker should be cleaned using disinfectant and PPE disposed of.
- Co-workers (i.e. workers with whom the sick worker was in close contact) should be required to stop work, and be required to quarantine themselves for 14 days, even if they have no symptoms.

- Family and other close contacts of the worker should be required to quarantine themselves for 14 days, even if they have no symptoms.
- If a case of COVID-19 is confirmed in a worker on the site, visitors should be restricted from entering the site and worker groups should be isolated from each other as much as possible.
- If workers live at home and has a family member who has a confirmed or suspected case of COVID-19, the worker should quarantine themselves and not be allowed on the project site for 14 days, even if they have no symptoms.
- Workers should continue to be paid throughout periods of illness, isolation or quarantine, or if they are required to stop work, in accordance with national law.
- Medical care (whether on site or in a local hospital or clinic) required by a worker should be paid for by the employer.

(i) CONTINUITY OF SUPPLIES AND PROJECT ACTIVITIES

Where COVID-19 occurs, either in the project site or the community, access to the project site may be restricted, and movement of supplies may be affected.

- Identify back-up individuals, in case key people within the project management team (PIU, Supervising Engineer, Contractor, sub-contractors) become ill, and communicate who these are so that people are aware of the arrangements that have been put in place.
- Document procedures, so that people know what they are, and are not reliant on one person's knowledge.
- Understand the supply chain for necessary supplies of energy, water, food, medical supplies and cleaning equipment, consider how it could be impacted, and what alternatives are available. Early pro-active review of international, regional and national supply chains, especially for those supplies that are critical for the project, is important (e.g. fuel, food, medical, cleaning and other essential supplies). Planning for a 1-2 month interruption of critical goods may be appropriate for projects in more remote areas.
- Place orders for/procure critical supplies. If not available, consider alternatives (where feasible).
- Consider existing security arrangements, and whether these will be adequate in the event of interruption to normal project operations.
- Consider at what point it may become necessary for the project to significantly reduce activities or to stop work completely, and what should be done to prepare for this, and to re-start work when it becomes possible or feasible.

(j) TRAINING AND COMMUNICATION WITH WORKERS

Workers need to be provided with regular opportunities to understand their situation, and how they can best protect themselves, their families and the community. They should be made aware of the procedures that have been put in place by the project, and their own responsibilities in implementing them.

- It is important to be aware that in communities close to the site and amongst workers without access to project management, social media is likely to be a major source of information. This raises the importance of regular information and engagement with workers (e.g. through training, town halls, tool boxes) that emphasizes what management is doing to deal with the risks of COVID-19. Allaying fear is an important aspect of work force peace of mind and business continuity. Workers should be given an opportunity to ask questions, express their concerns, and make suggestions.

- Training of workers should be conducted regularly, as discussed in the sections above, providing workers with a clear understanding of how they are expected to behave and carry out their work duties.
- Training should address issues of discrimination or prejudice if a worker becomes ill and provide an understanding of the trajectory of the virus, where workers return to work.
- Training should cover all issues that would normally be required on the work site, including use of safety procedures, use of construction PPE, occupational health and safety issues, and code of conduct, taking into account that work practices may have been adjusted.
- Communications should be clear, based on fact and designed to be easily understood by workers, for example by displaying posters on handwashing and social distancing, and what to do if a worker displays symptoms.

(k) COMMUNICATION AND CONTACT WITH THE COMMUNITY

Relations with the community should be carefully managed, with a focus on measures that are being implemented to safeguard both workers and the community. The community may be concerned about the presence of non-local workers, or the risks posed to the community by local workers presence on the project site. The project should set out risk-based procedures to be followed , which may reflect WHO guidance (for further information see WHO Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response). The following good practice should be considered:

- Communications should be clear, regular, based on fact and designed to be easily understood by community members.
- Communications should utilize available means. In most cases, face-to-face meetings with the community or community representatives will not be possible. Other forms of communication should be used; posters, pamphlets, radio, text message, electronic meetings. The means used should take into account the ability of different members of the community to access them, to make sure that communication reaches these groups.
- The community should be made aware of procedures put in place at site to address issues related to COVID-19. This should include all measures being implemented to limit or prohibit contact between workers and the community. These need to be communicated clearly, as some measures will have financial implications for the community (e.g. if workers are paying for lodging or using local facilities). The community should be made aware of the procedure for entry/exit to the site, the training being given to workers and the procedure that will be followed by the project if a worker becomes sick.
- If project representatives, contractors or workers are interacting with the community, they should practice social distancing and follow other COVID-19 guidance issued by relevant authorities, both national and international (e.g. WHO).

6. EMERGENCY POWERS AND LEGISLATION

Many Borrowers are enacting emergency legislation. The scope of such legislation, and the way it interacts with other legal requirements, will vary from country to country. Such legislation can cover a range of issues, for example:

- Declaring a public health emergency

- Authorizing the use of police or military in certain activities (e.g. enforcing curfews or restrictions on movement)
- Ordering certain categories of employees to work longer hours, not to take holiday or not to leave their job (e.g. health workers)
- Ordering non-essential workers to stay at home, for reduced pay or compulsory holiday

Except in exceptional circumstances (after referral to the World Bank's Operations Environmental and Social Review Committee (OESRC)), projects will need to follow emergency legislation to the extent that these are mandatory or advisable. It is important that the Borrower understands how mandatory requirements of the legislation will impact the project. Teams should require Borrowers (and in turn, Borrowers should request Contractors) to consider how the emergency legislation will impact the obligations of the Borrower set out in the legal agreement and the obligations set out in the construction contracts. Where the legislation requires a material departure from existing contractual obligations, this should be documented, setting out the relevant provisions.

ANNEX

WHO Guidance

Advice for the public

WHO advice for the public, including on social distancing, respiratory hygiene, self-quarantine, and seeking medical advice, can be consulted on this WHO website:
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

Technical guidance

Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, issued on 19 March 2020

Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health, issued on 18 March 2020

Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response, issued on 16 March 2020

Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19), issued on 19 March 2020

Operational considerations for case management of COVID-19 in health facility and community, issued on 19 March 2020

Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19), issued on 27 February 2020

Getting your workplace ready for COVID-19, issued on 19 March 2020

Water, sanitation, hygiene and waste management for COVID-19, issued on 19 March 2020

Safe management of wastes from health-care activities issued in 2014

Advice on the use of masks in the community, during home care and in healthcare settings in the context of the novel coronavirus (COVID-19) outbreak, issued on March 19, 2020

ILO GUIDANCE

ILO Standards and COVID-19 FAQ, issued on March 23, 2020 (provides a compilation of answers to most frequently asked questions related to international labor standards and COVID-19)

MFI GUIDANCE

IDB Invest Guidance for Infrastructure Projects on COVID-19: A Rapid Risk Profile and Decision Framework

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INTERIM GUIDANCE ON COVID-19 **VERSION 1: APRIL 7, 2020**

KfW DEG COVID-19 Guidance for employers, issued on 31 March 2020

CDC Group COVID-19 Guidance for Employers, issued on 23 March 2020

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