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Agriculture Modernization Project

ENVIRONMENTAL SCREENING REPORT

SUBPROJECT TITLE: CHILLI PRODUCTION & VALUE ADDITION (SAUBAGYA)IN MONERAGALA DISTRICT



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)

Updated: February 2022

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ABBREVIATIONS

ASMP	Agriculture Sector Modernization Project
DSD	Divisional Secretary Division
EMP	Environmental Management Plan
GND	Grama Niladari 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

PROJECT IDENTIFICATION

Project title	Chilli Production & Value Addition (Saubagya) in Moneragala
Project Proponent	Agriculture Sector Modernization Project (ASMP)

PROJECT LOCATION

Location (*Relative to the nearest town, highway*)	Moneragala district located in the middle of the southeast quadrant of Sri Lanka occupies a total land area of 5587 square kilometres (566,000ha) and is the second largest district of the island. The district is located between the northern latitudes 6.17" and 7.2.8" and between eastern longitudes 80.50" and 81.35". The southern part of the district is wider than the rest and district as a whole has an elongated shape (see map 10^ Located in the Uva province, Moneragala is bordered by four districts on each side, namely Ampara district on eastern and northern side. Badulla district on western and northern side, Hambantota district on southern side and Ratnapura District on the southwestern side. The district is accessible by two major trunk roads, one from Colombo via Ratnapura to Potuvil and the other from Colombo via Matara to Wellawaya. Moneragala district is divided into three electoral areas namely Moneragala, Bibile and Wellawaya and 11 Divisional Secretariat (DS) divisions. Topographically Moneragala district is in a transitional zone from central highland to flat lowland. According to the landscape three terrain types could be identified. a) Highly Mountainous terrain which covers the western boundary towards Badulla and Ratnapura districts; the elevation is between 550 to 1,400 meters. The dry zone environment of Moneragala is basically determined by the seasonal spell of rains, resulting in two rainy seasons namely Maha (main) rain season and Yala (minor) rain season. The Physical and human environment of entire dry zone is virtually based on this seasonality of rains. The two rainy seasons extend from early October to late January and from late March to late May respectively, and corresponding to these long and short rainy seasons there is also a long and short dry seasons (June - September and February - March). Total rainfall in the district ranges 1,328 - 1,821 mm (50-72 in) a year. Present land use in the district is a combination of traditional irrigated and rainfed agriculture plus the plantation crops introduced by colonial rule and more recently by government of Sri Lanka. The traditional three phase land use pattern, namely, tank (wewa), homestead (Gewaththa) and rainfed Highland (Chena) changed in to a commercial agriculture, towards the wet zone of the district after introducing tea, rubber, coconut and minor export crops like coffee and cocoa, and within the intermediate and

	dry zone plantation of sugar cane was introduced by the government, which transformed most of the traditional chena areas and scrub jungles into sugar cane estates and out-growers plots. The proposed Chili Cultivation and Value Addition program are scheduled to be implemented in several GN divisions of three DS divisions (Buttala, Moneragala and Siyabalanduwa. Location maps of these farmlands are shown in Annexure 2.
Definition of Project Area *(The geographical extent of the project & areas affected during construction)*	The approximate land extent of Buttala DSD is 68,520ha and per capita land consumption is 1.0ha[1]. The approximate land extent of Moneragala DSD is 28,600ha and per capita land consumption is 1.0. The approximate land extent of Siyabalanduwa DSD is 105,500ha and per capita land consumption is 2.0ha. There are 100 farmers selected as direct beneficiary of this subproject. More than 450 population of 100 farm families will get benefits by the chili production and value addition program. Moneragala is an agricultural economy based district and the cultivation of rice and maize are the main agricultural activity undertaken by farmers on both uplands and lowlands. Almost all farmers have both lowlands and uplands for their livelihood activities. There are no major irrigation schemes to provide water for agricultural purposes but farmers are cultivating the crops using rains (as rain-fed cultivation) during Maha season and using Agro Wells in dry seasons (Yala season). Farmers cultivate one rice cultivation term per year on lowlands during Maha Season and maize and vegetable in lowlands during Yala Season. Farmers have cultivated perennial crops such as coconut, fruits, and timber trees on upland for their household consumption. In addition to that Rubber is grown some selected area as a plantation crop and Pepper is growing as the spice on selected areas.  ***Figure 1: Surrounding land covered with bushes***  ***Figure 2: Farmland-Off cultivation season***
Adjacent land and features	*The predominant land use of the project area is agriculture. The surrounding area consists with several habitat types including Paddy fields, grasslands, cultivated areas and home gardens. Immediate vicinity of the proposed project area is farmlands with Paddy, Cucumber, Peanuts, Maize, Chilli, Onion, etc...*

[1]www .statistics.gov.lk/statistical%20Hbook/2020/Monaragala/3.2.pdf

Figure 3: A Home garden Vegetation

Figure 4: Farm Land under Preparation

Figure 5: Typical cultivation land with a private agro well

Figure 6: : Typical Farmland

Some farmers who don't have much capital to cultivate the vegetable and other cash crops have grown sugarcane on their uplands as a plantation crop. There are two sugar factories located at Pelwatta in Buttala DSD and Higurana in Ampara district. The sugar cane farmers who are in Buttala, Wellawaya, Moneragala, Medagama supply their products to the Pelwatta sugar factory, and the farmers who are in Siyabalanduwa, Bibile, and Madulla area supply their products to the Higurana sugar factory considering the distance for transportation. The sugar factories administration supply planting materials and helps farmers to prepare farmlands using machinery to plant sugarcane free of charge. Labor and other crop management activities are done by the farmer. There is a well-established marketing system for the paddy, vegetables, and other agricultural products based on Buttala town and Wellawaya town located within 20 km away from the Buttala area. Many private sector investors come to the farmlands to buy agricultural products. The home gardens and human settlements are located away from the farmlands. The perennial crops such as Coconut, Mango, Jack, limes, and Guava have been grown in the home gardens of the area.

		
	Figure 7: A Sugarcane Plantation	***Figure 8: Transporting sugarcane to factory***

PROJECT JUSTIFICATION

Need for the project (*What problem is the project going to solve*)	Chili is one of the most important cash crops grown in Sri Lanka. It has become an essential ingredient in Sri Lankan meals. Per capita consumption of Chilli in the form of dry Chilli is estimated 2.84 kg per annum and the national annual requirement of dry Chilli is around 57,400 mt. The annual production of dry Chilli is about 7,500 Mt. Therefore, an amount of 49,928 Mt is imported (Year 2015 figures). Chilli contributes on an average SLRs. 5,000 million to GDP and creates employment of 5.3 million work days annually. Chilli is extensively grown for dry Chilli production, but part of the crop is harvested as green pods. The average extent under Chilli at present is around 13,000 ha, of which 2/3 is cultivated in maha season. Department of Agriculture has recommended 10 Open Pollinated Varieties (OPV) up to now namely MI-1, MI-2, KA-2, Arunalu, MI- Hot, MI Green, Galkiriyagama Selection, MI waraniya 1, MICH 3, MIPC 1. The potential yield of these varieties is 10-15 t/ha as green Chilli, but the national average yields is around 5.13 t/ha. Such low yields are mainly due to high incidences of pest and diseases, moisture stress, use of inferior quality seeds, poor crop management and high input costs. First local Chilli hybrid, MICH HY 1 developed by the Department of Agriculture released in year 2015 with the yield potential of 32t/ha as green Chilli. Chilli is cultivated in large scale in the dry zone especially in north central province and the intermediate zone. At present, major Chilli growing districts are Anuradhapura, Moneragala, Ampara, Putthalama, Vavuniya, Kurunegala, Hambantota and Mahaweli System H. Field Crop Development Institute Maha Illuppallama, has introduced a high yielding Chili variety MICH3 recently apart from Open Pollinate Varieties (OPV) Chili varieties such as MI 1, MI 2, KA 2 and Galkiriyagama introduced by the Department of Agriculture. Furthermore, the Institute has introduced a high yielding Chili verity MICH 1 first time. Research has been proved that approximately 30 mt/ ha of chili yield can be obtained from this local hybrid Chilli variety. This Chilli variety itself has recorded a Chili production of 60 mt/ ha from the Northern Region. This is favourable prospect to the country and will enable to anticipate increase in the Chili production of the country. 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. The technology package of the insect-proof net and poly mulching along with the drip irrigation technology system would overcome the losses caused by biotic and abiotic stresses, especially during drier months. The hybrid chili variety MICHHY1 introduced by the Department of Agriculture is fairly resistant to the leaf curl complex disease which is the major cause for production loss and also other technical constraints encountered in chili production. Further, it provides an enhanced yield of more than two to four times compared to other normal recommended chili varieties. Thus, the project will use this hybrid chili variety for dried chili production to enhance proactivity and reduce losses The new technology package for chili production and value addition is more remunerative than conventional chili production. This will pave way for a chili-based agribusiness to commercialize agriculture in the Moneragala district. However, this new technology package requires a high initial cost and also a farmer group with an entrepreneurship attitude. The project will assist to build up these physical and human capacities for the selected farmer groups for intensive chili cultivation and marketing practices. Currently, selected beneficiaries of three DSDs 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 cultivate the land with efficient water by applying improved technology. All the farmers who have their own water source to irrigate the crops have been selected for this subproject, hence the beneficiary farmers have the opportunity to earn more income through chili production since others cultivate less water-required vegetable crops. Meantime, there will not be a price reduction risk on the chili at the peak period of the cultivation since it will be limited to selected farmers only. Further, all beneficiary farmers have more than 2.5 acres of land plots and they will allocate only 0.5 acres land area for chili cultivation and balance area will be allocated for the other vegetable crops. This cropping pattern will be an added advantage for the farmers when agricultural products' price fluctuation will be happening. Most of the chili cultivated farmers only produce the green chili presently but none of them produce the dried chili at a commercial scale except for their own consumption. Under the value addition process of this cluster program, farmers have the opportunity to produce dried chili and earn more income than green chili production. The main outcomes of this subproject are to enhance the income of beneficiary farmers, contribute to the national dry chili requirement and save the cost for chili imports. The project objectives are as below; a) To expand dried chilli production b) To introduce and demonstrate new technology for enhanced productivity and value addition in dried chilli production

	c) To organize farmers for group marketing and value addition
Purpose of the project (*What is going to be achieved by carrying out the project*)	The purpose of this subproject is to produce dried chili and value addition with Good Agricultural Practices (GAP). The following benefits will be expected by t implementing this subproject; **Project Benefits:** a) Average operational cost of production of 1/2 acre of dried chili is about Rs. 225,000.00 An average of 1,500kg of dried chilli can be harvested from 1/2 acre of chili cultivation deriving a net income of Rs.900,000 from ½ acre at the rate of Rs.600/kg. b) Use of drip irrigation and sprinkler irrigation water will help reduce the use of Irrigation water and fertilizer by more than 50% of the traditional cultivation practice requirement. c) Use of hybrid chili MICHHY1 variety will reduce the cost of chemicals used in controlling leaf curl disease. d) Use of sprinkler irrigation will help farmers to control leaf curl disease. e) Increased productivity due to drip irrigation and mulching f) Most of the inputs provided by the project will last for more than 5 years and adequate for beneficiaries to expand the cultivation further. E.g. Water pump. Further, the farmers are expected to cultivate chili crop once a year and grow another legume crop in the same land during the rest of the period A total of 100 farmers will be directly benefitted from the project and it will cover more than 50 acres (20ha) of uplands. The main cultivation is December/January. However, in the first stage project will commence its cultivation in January 2021 in selected 100 farmers (50 acres) using a modern technology package of drip irrigation, insect-proof net, polythene mulch for half an acre unit under above lift irrigation systems. In the second stage in July 2022, another group of farmers will do cultivation using the same technology package
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. The selected beneficiary farmers have formed the chili producers' societies at each GNDs level to implement the subproject well. In addition, there are well-established farmer organizations already and the production of seasonal crops is available immediately. There are experienced maize, chili, and vegetable farmers and all these upland cultivations rely on water abundance. 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. Introducing new technology for chili production with the support of ASMP and DOA is an efficient agricultural practice for the area. Hence, these technological improvements will result in consistent dry chili production to meet the project objectives.

	The "no-action" alternative would mean that no Dry chili cluster project 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 the area.

PROJECT DESCRIPTION

Proposed start date	January 2022
Proposed completion date	May 2022
Estimated total cost	The subproject cost is detailed as follows;

Table 1: Subproject's activities

Key Activity	Details	Project Cost (Rs. MN)
1. 10 Nos. ½ acre. Demonstration with full Input package		
Drip irrigation system	(10 Nos- ½ acre unit x Rs.250,000/=per unit)	2.5
Water pumps	10 Nos @ Rs.80,000/-	0.8
Hybrid chilli seeds	(80g/ farmer for ½ acre x 10 farmers x Rs.120,000/=per kg)	0.096
Nursery trays	100 trays/ farmer x 10 farmers x Rs.160/-	0.16
Insect proof net	(600 m/farmer x 10 farmers x Rs. 125/= per one metre)	0.75
GI Pipes	(3/4" 38 pipes/farmer x 10 farmers x Rs.3,000/=per pipe)	1.14
Polymulch	(Rs.40,000/= per farmer x 10 farmers)	0.4
Green house profile	10 Nos x Rs.30,000/-	0.3
Awareness, Farmer Training and exposure visits		0.05
Subtotal - subcomponent 1		**6.196**
2. 90 Nos. ½ acre cultivation input package		
Water pump	90 Nos x Rs.80,000/-	7.2
Sprinkler irrigation system	(90 Nos ½ acre units x Rs.100,000/*)	9.0
Hybrid chilli seeds	(80g/ farmer for ½ acre x 90 farmers x Rs.120,000/=per kg)	0.87
Nursery trays	100 trays/ farmer x 90 farmers x Rs.160/-	1.44
Awareness, Farmer Training and exposure visits		0.2
Subtotal - Subcomponent 2		***18.71***
3. Machinery for common use		
Drier (common use) 1		2.0
Multichoppers (4 no.		0.6
Subtotal- Subcomponent 3		**2.6**
Grand Total (All three subcomponents)		**27.506**

The total subproject cost is Rs. 27.506 million.

Present land ownership	Private Farmlands, Lands with deeds and permits
Planned interventions	Planned interventions of the project includes • Installation of drip irrigation systems for 10 farmlands and 90 sprinkler irrigation systems for 90 farmlands • Placing GI pipes and covering whole cultivation plot with insect proof net for 10 farmlands • Supplying polymulch for 10 farmlands • Provide greenhouse profiles for 10 farmlands • Supplying water pumps for 100 farmers • Supplying nursery trays for 100 farmers (by 100 trays per one farmer) • Supply hybrid chili seed for 100 farmers (by 80g of chili seeds per one farmer) • Introduction of quality and Productive enhancing technologies and provide to farmers- 4 electric dryers for 4 chili producers' groups • Conducting Farmer exposure visits to share the knowledge on Cluster post-harvest facilities, organic fertiliser facilities and others • Nursery management • Training, capacity building and extension
Description of the project (*With supporting material such as maps, drawings etc. attached as required*)	Agriculture Sector Modernization Project identified dried chili also one of the market's competitive and remunerative crops with potential for value addition. Chili 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. The cost of annual import amounts to about SLRs. 10 billion. Chili is one of the most important cash crops to farmers. However, farmers' chili cultivation is mainly meant for green chili production, and dried chili production is very much marginal. Thus self-reliance on dried chili production is important for the country. The immediate objectives of modernization are to increase productivity, decrease the cost of production, improve value addition and provide a steady market through buy-back agreement. The ultimate goal is increased income and employment opportunities in production and value addition. 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. The technology package of the insect-proof net and poly mulching along with the drip irrigation technology system would overcome the losses caused by biotic and abiotic stresses, especially during drier months. The hybrid chili variety MICHHY1 introduced by the Department of Agriculture is fairly resistant to the leaf curl complex disease which is the

	major cause for production loss and also other technical constraints encountered in chili production. Further, it provides an enhanced yield of more than two to four times compared to other normal recommended chili varieties. Thus, the project will use this hybrid chili variety for dried chili production to enhance proactivity and reduce losses The new technology package for dried chili production is more remunerative than conventional dried chili production. This will pave way for a chili-based agribusiness to commercialize agriculture in the Moneragala district. However, this new technology package requires a high initial cost and also a farmer group with an entrepreneurship attitude. The project will assist to build up these physical and human capacities for the selected two farmer groups for intensive chili cultivation and marketing practices. There are altogether about 100 leading farmers who 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 – Uva Province** Agriculture Sector Modernization Project Ministry of Agriculture Pothuvil Road, Moneragala **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/ **Nature of Consultations and Inputs Received** Consultations with Environmental and Social Safeguard Specialist/ PMU • Great potential to increase farmers' income with less labour and inputs. • Ability to save ground water table by efficient water usage through the modern technology and minimize water crisis during Yala season. • Effective mechanism to attract young farmers for commercial agriculture.

DESCRIPTION OF THE EXISTING ENVIRONMENT

PHYSICAL FEATURES – ECOSYSTEM COMPONENTS	
Topography and terrain	Topographically Moneragala district is in a transitional zone from central highland to flat lowland. According to the landscape three terrain types could be identified. a) Highly Mountainous terrain which covers the western boundary towards Badulla and Ratnapura districts; the elevation is between 550 to 1,400 meters and the underlain parent rocks belong to highland series (Cooray 1967). b) Hilly, steep and rolling terrain which is situated between the western boundary area (a) and undulating and flat terrain within an elevation range of 160 to 550 meters. c) Undulating and flat terrain, which covers the broad eastern and southern plain occupying about three fourths of the district. The elevation is below 160 meters and this terrain is underlain by Vijayan series according to the geological formation (Cooray 1967). The general gradient of the district thus is from Northwest and West towards north, east, and south. Over 60 percent of the district is less than 30 meters. Slopes are gentle in the north, east and south increasing to the west with increasing elevation. There are isolated pockets of high slopes caused by steep sided mountains particularly in the central position of the western hill country The project site falls into mid country intermediate zone of Sri Lanka and DL1b Agro-ecological zone.
Soil (*type and quality*)	Two distinguishing soil groups can be identified; the reddish brown soil and the red yellow podzolic soil, In addition Low Humic Gley is also present. The depth of top soil is moderate and the possible soil erosion is also low
Surface water (*Sources, distance from the site, local uses and quality*)	There are five river basins that drain the Moneragala districts These Rivers originate in the west-central highlands and flow towards the east, southeast, and south. Most of these rivers originate outside the district boundary and strengthen the volume by five tributaries within the district and then flow outside the district to meet the Indian Ocean. The several drainage basins are; **Heda Oya**- 59,050 hectares which represent 10.4% of the district's land area. This basin has excess water and good soil conditions for paddy cultivation but has other conflicting land uses. **Kumbukkan Oya**- 112,930 hectares representing 20.4% of the district's land area. This is the second-largest river basin in the district and also has excess water and good soils for paddy cultivation but conflicts in its southern reaches with the Yala National Park. **Menik Ganga**- Largest river basin in the district with 117,480 hectares representing 20.8% of the district's land area. This river basin has excess

	water and good soils for lowland cultivation but conflicts in its southern part with the western boundary of the Yala National Park. **Kirindi Oya-** 60,500 hectares representing 10.7% of the district's land area. On the southern boundary of the river, Kirindi Oya has been subjected to a major diversion scheme with a large reservoir. However hydrological studies suggest possible water deficiency restricting the possibility of additional irrigation**.** **Walawe-** 64,500 hectares representing 11.4% of the district land area. This is the third-largest basin in the district. A major reservoir is located in the western boundary of the district. There is a water deficiency: hence additional irrigation projects are not feasible. All of these river basins have annual flows with fluctuation levels and volumes depending on the seasonal rains and dry spells Use: Surface water available is being used for domestic purposes, washing, bathing, irrigation and animal use. Quality- The quality of surface water in the area is in Moderate condition.
Ground water (*Sources, distance from the site, local uses and quality*)	The data on groundwater availability in the project area is very sketchy, but majority of the farmers have constructed individual agro wells or common agro-wells to irrigate their crops. In addition, some farmers have constructed rain water harvest pith (catch pith) to collect water during rainy seasons to use at dry period cultivation activities. According to the visual observations and the experiences of the farmers, the groundwater table is at around 4.0 m -5.0 m depth. The use of groundwater is for domestic purposes, washing/ bathing activities, agricultural activities, and animals. All identified beneficiary farmers have their own perennial water source (mostly agro well) to irrigate their crops. During the beneficiary farmers selection, having an own perennial water source was an important criterion. The photographs of the water sources observed during environmental screening is given below;  


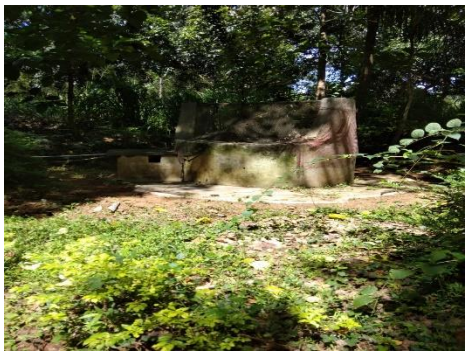

Figure 9: Wells use for Irrigation

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. For more detail please refer: Check the Air Quality in Moneragala, Sri Lanka - BreezoMeter.

ECOLOGICAL FEATURES – ECOSYSTEM COMPONENTS

Vegetation

(*Trees, ground cover, aquatic vegetation*)

The predominant land use type of the project area is agriculture. The identified farm lands are located within the several habitat types including grassland, cultivated area, home gardens and secondary vegetation. The detail and use and share of each category shows in the following Table.

Table 2: Land use of the district

Nature of Land	Area (Hec)	Percentage (%)
Forest	259,844	46
Home gardens	61,392	11
Paddy Lands	32,551	6
Perennial Crops	20,216	4
Plantation Crops (Tea, Rubber, Coconut)	13,997	2
Other Seasonal/Field Crops	67,557	12
Large Inland Water Bodies	25,183	4
Abandon Land	4,119	1
Built Up Areas	959	0
Scrub Lands	61,635	11
Other	16,447	3
Total	**563,900**	**100**

Presence of wetlands

Moneragala district has water bodies covering around 4% of the total land area. But there are no prominent wetlands in the district except a few tanks and streams. There were no Wetlands observed within a 500m radius from the selected locations.

Fish and fish habitats

The streams and the tanks located in the district are ideal fish habitat

Birds

(*waterfowl, migratory birds, others*)

The 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*)	**Flora** Proposed Improvement is already functioning as rainwater harvesting pitches for the farmlands and settlements in the area. There are no considerable habitats found in the immediate vicinity. The small grass species and bushes such as Ratathana, Heen Iramnia, Nidikummba, and some trees Kone, Tekka, Kolong, Milla, Kumbuk, Velang, and Siyambala are observed in the immediate surroundings of the subproject. **Fauna** Very few numbers of domesticated (Neat Cattle, Buffalo, Cats, and Dogs) and very common taxonomical group species such as Monkeys, Lizards, Frogs, Butterflies were recorded during the rapid study. In addition, there were few bird species were observed such as the Crow, Parrot and Eagle, Common mynah, Great Cormorant, and Lesser Whistling Duck. The species were recorded in this habitat are very common for this type of habitat The area has not been identified as a special habitat area. According to the sensitive area map produced by the Central Environment Authority (CEA) other DSDs of the Moneragala district and part of Buttala DSD are considered as sensitive as this particular locality is listed under landslide prone as well as erosion-prone areas but the proposed site is not listed as sensitive for landslides or soil erosion due to flat terrain
5.3 OTHER FEATURES	
Residential/Sensitive Areas (*E.g., Hospitals, Schools*)	The subproject activities will be undertaken on the farmlands, no new lands will be required and existing land use will not be changed. There is no hospitals, schools or any other community gathering places at the vicinity of the farmlands.
Traditional, economic and cultural activities	The total population[2] of Moneragala district is 496,158 comprises 49.7% males and 50.3% females. Per head land use is around 1.0ha and per household land use is 4.7ha. Out of total workforce, 48.6% is employed in agriculture sector activities, 11.1% is engaged with manufacturing sector, and 10.0% is employed in trade and mechanical sectors. Other sector are minor and low contribution to the economy. The average monthly household's income is SLRs. 48,842/= and the average monthly household's expenditure is SLRs.35, 487/-. The community who lives below the poverty line is around 5.8 %-(Statics in 2012/13). There are minor irrigation systems in this area and all farmers cultivate paddy in both cultivation seasons. Many farmers cultivate seasonal crops on uplands during Maha season. Especially, farmers are preferred to cultivate maize on large scale during Maha season on uplands. Cultivation of uplands during Yala season is difficult due to the unavailability of a proper irrigation system. Some large-scale farmers have constructed agro-wells to irrigate their crops and they earn considerable income through off-season farming but marginalized persons who don't have much capital

[2] District Handbook - Population and Population Density by D.S. Division - 2019

	investment to construct the agro-well or any other irrigation source have faced difficulties during the dry period. Hence their family labor is underutilized due to the absence of the irrigation facility. Farmers have constructed their residential houses on upland and timber trees & fruit bearing trees are planted in balance part of the land. During the Maha season (September to March), intercropping is done on upland. The Traditional, economic and cultural activities not observed.
Archaeological resources (*Recorded or potential to exist)*	There is no archaeological or Physical Cultural Resources (PCR) to record or potential to exist within the area identified for the subproject.

DESCRIPTION OF PROPOSED AGRICULTURAL ACTIVITIES

6.1 Cultivation	
Existing Condition of the Crop	The subproject concerns the introduction of new technology for the farmers who are practicing the traditional agricultural activities. The screening revealed that the existing cultivation pattern only gives less profit margin out of their investment. Hence, introducing new technology and enhancement of returns for the investment is an essential factor for the sustainability of the farmlands. Meantime, watering system is a high-cost method and it increases water losses and wastes more time. The selected farmers will be encouraged to obtain high yield with more quality from their cultivations with improved irrigation system and it will be indirectly benefitted for customers too since they have the opportunity to buy high-quality chili products at the local market. Presently, there are some farmers cultivating chili, and used land slots are low compared to the other crops. This is mainly due to the lack of water availability. Farmers were further discouraged due to low yield due to pests and diseases, moisture stress, shortage of availability of quality seeds, high inputs costs, the unstable market situation with the Government import policy. As a result, farmers withdrew themselves from the chili cultivation. Only uplands are used for Chili cultivation and they will be provided the required water with the modern irrigation system. The land area that is being used for chili cultivation in this area is an average of 1/2 acres. Marketing and all other activities related to Chili cultivation are at present attended by farmers individually with no collective bargaining for sales. The closest market for these selected farmers is Wellawaya and Siyabalanduwa and the Price fluctuation is the major issue faced by Farmers. At the present market price of 1 kg of dried chili is about Rs. 550/-. Furthermore, a short supply is direct to the retail market, mainly to the local boutiques. Chili cultivation has always been associated with inappropriate and indiscriminate use of pesticides and high labour input for weed control, both of which have significantly contributed to increasing the cost of cultivation. The continuous and indiscriminate use of pesticides has major drawbacks

	such as adverse effects on human beings and other non-target organisms, development of pest resistance, the outbreak of secondary pests, and environmental pollution. However, agrochemicals have not shown successful results for controlling the leaf curl complex. At present farmers prefer to produce green chili than dry red chili due to high price, ready market, high return, lack of availability of drying facilities, high labour input for drying, etc. For dry chili, production harvesting should be done at the proper stage more than 80% red coloured pods, and the use of tarpaulins when dryers are not available. This sub-project encourages Chili crop production in the dry zone of Sri Lanka. The introduction of a drip/sprinkler irrigation systems will save water and it will be beneficial to conserve the groundwater table of the area. Further, the current watering system (Irrigation) encourages spreading diseases since the irrigated water flows over the total cultivation land.
Polluting Processes (point source)	
In cultivation some key polluting steps, although limited, takes place; mainly in the cultivating and post harvesting phases.	
Land preparation for cultivation	In general, farmers prepare nursery beds width of almost 0.9m (3ft) in well-drained virgin soil. Farmers sterilized soils before sowing by burning the nursery bed with rice husk and rice straw. At present some farmers use seed treatment with fungicides recommended by the DOA or chemical companies. Usually, nursery beds are prepared few days before seeding. Application of compost or any other organic manure is a common practice. In addition, the application of recommended fungicide for control of damping-off and anthracnose is also practice. After seeding seeds are covered with a layer of soil and straw. Thereafter, remove the mulch 7-10 days after sowing before the seedlings overgrow through the mulch. To avoid hot sunlight and heavy rain cover the bed with Cajon leaves or transparent polythene. Then almost one week before transplanting control water application. When the seedlings are ready for transplanting planting will be done with the onset of rain. Land preparation is done by using agricultural machineries such as ploughing or disking for the cultivation of OFCs and vegetables. In general, raised beds are prepared width of 0.9 m (3ft) to facilitate proper drainage due to high clay in paddy soils. Some farmers make farrows without making beds. The majority of farmers make planting holes approximately with the spacing of 50x50cm or 60cm x50cm. In general, compost and chili chemical fertilizer mixture are applied in the hole.

	  *Figure 10: Preparing land for chili cultivation- after 1st ploughing* *Figure 11: Prepared soil beds for planting chili seedlings*
Water requirement[3]	Water is applied immediately after transplanting. After planting, they apply different chemical fertilizers every 3-4 weeks. Though flood irrigation is popular among farmers it has created many problems due to poor drainage of soils found in the area. Excess water use due to flood irrigation could be considered as the main reason for the increase of diseases and subsequent low yield. New low-pressure drip and mini-sprinkler irrigation systems that conserve water and prevent laminar erosion; precise application of fertilizers using the low-pressure irrigation systems and based on soil and foliar analyses.
Use of fertilizer and pesticides and weedicides	Farmers use chemical fertilizer for Chilli cultivation. Urea is used as the nitrogen source, Rock Phosphate and Triple Super Phosphate are used as the phosphate source and Mutreate of Potash is the Potassium source. Leaf Curl Complex (LCC) was identified in the 1980s is considered a major threat for chilli cultivation particularly in the dry zone of Sri Lanka. Chilli leaf curl complex is prominent especially in Yala season than in Maha season. Therefore, the objective of the chilli hybridization and selection programme of the DOA targeted to develop new chilli varieties with tolerance/resistance to leaf curl complex (LCC), Choanephora blight (Choanephora spp.), Anthracnose (Colletotrichum capsica), Leaf spot (Cercospora capsica) etc. In addition, insect pests are also major constraints to the production of chilli in Sri Lanka. It reduces not only the production but also the quality of pods. Important pests reported in chilli are Trips (Scirtothrips dorsalis), Mites (Hemitarsonemous latus), Aphids (Aphis gossypii, Myzus persicae), White fly (Bemisia tabaci), and Pod borer (Spodopetera litura / Helicoverpa armigera) etc. Chilli leaf curl complex identified as due to damage by thrips (Scirtothrips dorsalis), mites (Hemitarsonemous latus) and aphids (Aphis gossypii, Myzus persicae) and viruses transmitted by white fly (Bemisia tabaci). Therefore, farmers apply various agrochemicals available in the market. Chilli cultivation has always been associated with inappropriate and indiscriminate use of pesticides and high labour input for weed control, both of which have significantly contributed to increasing the cost of cultivation. The continuous and indiscriminate use of pesticides has major drawbacks such as adverse effects on human beings and other non-target organisms,

[3] https://doa.gov.lk/FCRDI/index.php/en/crop/42-green chili-e

	development of pest resistance, the outbreak of secondary pests and environmental pollution. To control pest and diseases, there are several crop management methods apart from pesticide application. They are; • Cultivation of resistant or tolerant varieties (Farmers use the Chili varieties which are more resistance to diseases and pest and introduced by DOA) • Use of appropriate nursery management techniques. Nursery trays will be provided to the farmers to produce healthy seedlings for the chili cultivation. • Selection of a suitable nursery site, Proper sterilization of planting media • Use of insecticide(recommended) seed treatment before sowing seeds in the nursery • Correct time of planting • Planting Chili crop as early as possible (April/Early May) is a must. The objective of this strategy is to obtain two or three plucks before thrips population reaches its peak level. In the dry zone, peak population of thrips occurs from July to August which is generally associated with high temperature and low relative humidity. • Use of insect barrier net • Use of recommended fertilizers at correct rate and correct time of application • Use of organic manure before planting. • High amount of nitrogen fertilizer (urea) may increase the susceptibility to pests. Therefore, excessive use of nitrogen fertilizer must be avoided • Foliar liquid fertilizer can be used when Chili plants show deficiency systems • Use of yellow sticky traps for insects • Use of mulches (Straw, Glyricidia, reflective polythene) • Spraying of water under high pressure • Use of sprinkler/drip irrigation methods • Keep the selected field and surroundings free from residues of previous Chili crop • Destruction of alternate host plants • Use of bio pesticides such as neem based pesticides, neem seed kernel extracts Integrated pest management (IPM) is encouraged to control the pest and diseases in the crop management as per the pest management plan (PMP) prepared for ASMP and for both pest and diseases the recommended pesticides and the fungicides are applied by the framers. These agrochemicals are recommended by the Pesticides register of Department of Agriculture and PMP as well.
Harvesting	At present farmers prefer to produce green chilli than dry red chilli due to high price, ready market, high return, lack of availability of drying facilities, high labour input for drying etc. For dry chili, production harvesting should

	be done at the proper stage of more than 80% red coloured pods and the use of tarpaulins when dryers are not available.
Post-harvest storage and transportation	This Chili is mainly used as dry chili and a quality drying process is important. Therefore, the harvest should be transported to the drying centre after harvesting. Grading, drying, and packing of the dried chili is an essential part during the post-harvest period as it helps to cut down the losses and increase the high quality and value. Therefore grading, drying, packing, and transporting should be undertaken with improved technology. These technology facilities will be available for farmers.
Other factors	
Solid waste	The solid organic waste is generated as crop residuals and at the post-harvest period. All the crop residuals and post-harvest waste should be burnt or buried under the soil to keep the hygienic condition of the farmlands. Otherwise crop residual may be a host to maintain the life cycles of many pests in chili cultivation.
Wastewater	Due to the application of an integrated pest management mechanism, soil and ground/surface water pollution will be minimalized. ASMP will conduct awareness creation and training programs for both farmers as well as the officers regarding integrated pest management as per the Pest Management Plan (PMP).

APPLICATION OF AN INTEGRATED PEST MANAGEMENT PRACTICES FOR DRY CHILLI CLUSTER

SN	Crop stages	IPM Practice/ practices	Impacts of IPM Practices	Benefits
1	Pre-Land preparation stage	• Proper removal of debris, residues, and host plants (Buring, dumping, compost making) - Keep land clean. • Deep ploughing during dry seasons • Field disinfection by burning straw or paddy husk or spreading transparent polythene cover	• Fewer incidents of pests, diseases, and weeds • Improvements in aeration in the soils	Farmers maintain pests and disease-free fields
2	Land preparation stage	• Deep ploughing and making soils into fine tilth using a rotavator. • Removal of weeds and their residual parts (tubers and rhizomes etc.) • Sun drying, adding cow dung and compost	• Destructions of pests (eggs and cocoon and adult) • Controlling weeds growth • Improve the drainage	• A low incident of pest attack • Improved drainage leads the healthy plants and minimizes the virus wilt diseases
3	Planting stage	• Growing resistance variety, using disease-free seeds, seed treatments and carrying out good nursery management (Sanitation of nursery by burning of paddy husk and straw). • Removal of unhealthy plants	Healthy planting materials	Low incidents of pest and disease attack
4	Seedling stage/ Planting stage	• Using appropriate spacing and timely planting (Collective planting by all farmers at a particular time frame in early in the season) • Border planting (selecting insect-repelling plants)	Pest and disease-free fields	Low incidents of pest and disease attack
5	Juvenile stage	• Identifying pests, diseases, and proper removal of infected plants. • Controlled watering by using a sprinkler system • Using insect protective nets or clothes • Proper manual weeding	• Pests and disease-free fields • Weeds free fields	Low incidents of pest and disease attack

SN	Crop stages	IPM Practice/ practices	Impacts of IPM Practices	Benefits
6	Flowering stage	• Identifying pests, diseases, and proper removal of infected plants. • Removal of the larva of pests (Manual collection) • Controlled watering by using a sprinkler system	• Pests and disease-free fields • Weeds free fields	Low incidents of pest and disease attack
7	Maturity stage	• Identifying pests, diseases, and proper removal of infected plants. • Controlled watering by using a sprinkler system	• Pests and disease-free fields • Weeds free fields	Low incidents of pest and disease attack
9	Harvesting stage	• Identifying pests, diseases, and proper removal of infected plants. • Controlled watering by using a sprinkler system	• Pest and disease-free fields • No pest and diseases spreading	Low incidents of pest and disease attack
10	Post Harvesting stage	No post-harvest	----------	----------
11	Storage stage	No storage	----------	----------
12	Transport stage	Proper packing in hygienic gunny bags and transport	No pest and diseases spreading	Low incidents of pest and disease attack
13	Marketing stage	No	No	No
14	Any others	Inorganic fertilizer and chemicals are used when there is a necessity only	Pest and disease-free fields	Low incidents of pest and disease attack

PUBLIC CONSULTATION

The consultation was held with the support of the project director, project engineer, and agricultural scientist of the Uva 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.

- **Water availability and accessibility**

All above-selected farmlands consist of the perennial water source for irrigation. Most probably, it is an agro well and it is the main water source for the water. Introducing modern technology for watering saves the water and farmers have a chance to utilize the water for their other crops too. The modern irrigation systems will efficiently utilize the water while saving the groundwater table of the area.

- **Other ASMP projects**

Beneficiaries are well aware that the chili production and value addition (Saubagya) program before commencing the dry chili project. Further, the chili dryers are one of their keen hope to produce high-quality dried chili. 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 Wellawaya and Siyabalanduwa. Market price per 1Kg of dry chili is around Rs. 550/- and farmers looking to have a higher and stable prices 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 3.0-5.0 m below the ground level and it goes somewhat deeper with the dry season.

- **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. Consequently, it should be searched that are there any options available in the local market for excessive production?

- **Infrastructure development**

Some farmers are looking to develop their farmlands with the support of ASMP. Under this cluster program, ASMP will help each beneficiary farmer to develop ½ acre extent land out of their total landholding but some farmers hope to extend the modern techniques for their whole land plot (up to 2.5 acres) and for other field crops in future with own cost.

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 pest management mechanisms 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 12: 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 absence of required agrochemicals in the market. Unavailability of required agrochemicals is a major issue and it will be a constraint for the crop management.

Table 3: Community Consultations' outputs

Name	Details	Matter Discussed/Suggestions
G.M. Dhananjani Dhammika De Silva	Lives with her husband. Both are farmers and have 2.0 acres (0.8ha) farmland. During the Yala season, part of her upland uses for upland paddy cultivation. In addition, they have separate paddy land (0.2ha/0.5acre) too.	Appreciated the cluster program. Mentioned that the initial training program was conducted by the ASMP and the DOA and she faithfully attended the training sessions. They have established a chili producers' society with the participation of identified beneficiary farmers and she has taken the membership in there. Providing of nursery tray was highly appreciated since it makes it easier to manage the nursery with minimum labor input. She has started the production of compost manure at the house level. The technical know-how for producing composts have been given by the ASMP and DOA at the initial training sessions.
Dharmasena	President of the Chili Producers' society at Mahagodayaya. He is a well experienced farmer.	Appreciated the cluster program. He mentioned that ASMP, DOA conducted the initial meeting at the village level with the participation of the majority of the villagers and explained about the program. And selection criteria for the cluster program were introduced at the meeting and negotiated. According to the selection, criterion farmers were transparently selected. No objection was received on the farmers' selection program but ASMP and DOA have allowed other farmers to participate in the training programs if needs. Further, he mentioned that ASMP has planned to supply water pumps to the beneficiary farmers and he requested to supply the other accessories (a foot valve, and 2 inches diameter 400 feet length pipes) together with the pump required to operate the water pump if can.
V.G. Sudarshanie	Her husband is a security officer. She has 3 kids and all of them are schooling. She has 1 ½ acre (0.6ha) extent cultivation land.	The nursery management training (field program) was conducted at her land by the DOA. She cultivates vegetable crops in two seasons per year and the profit margin is less due to the harvesting lays during the peak production period. She was willing to convert her land into a different kind of cultivation but no technical inputs were received. Hence, this is a valuable opportunity for her to convert her cultivation pattern and earn more.
W.B.Nilanka Niroshani	Her husband is a fish seller. She cultivates the land. They have 2 schooling kids.	She got training for chili nursery management. The initial land preparation has been completed. Once the other inputs are received, she will establish the chili cultivation at filed.

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Name	Details	Matter Discussed/Suggestions
G.M. Amila Sujeewani De Silva		She appreciated the program. She asked to initiate the cultivation activities asap.
V.G. Ranjani Pushpalatha	Husband is suffering from kidney failure. This is a vulnerable family. She has cultivated vegetables and most of the consumable crops for their daily consumption at home garden. She has taken the training on home garden cultivation from the DOA previously. She has 2 acres (0.8ha) extent land as the farmland.	She participated in all the sessions conducted at the village by the ASMP and DOA pertaining to the cluster program. She mentioned that field establishment of the chili seedling in early January is essential to get maximum output from the crop. The peak yielding can be expected during the new year festival season (early April)
D.M. Renuka Malkanthi	Her husband is a carpenter. They have 2 kids and one of them is schooling. She has ½ acre (0.2ha) land for the chili cultivation	She has done the initial field preparation already. Nursery management training has been followed by her. She mentioned that chili production can be undertaken by women easily with modern agricultural techniques since it does not require more labor for crop management. Therefore, chili production will be an additional income for their family.
M.M. Balasooriya	Well experienced farmer. He has more than 6 acres (2.4 ha) of land. He extensively cultivates vegetable crops in his land. He lives with his wife and all three kids have been separated from his family after getting marriage.	He appreciated the program. He mentioned that nursery management is easier than previous. He has done initial land preparation for the chili cultivation without hiring the labor. He personally has done all the labor works for preparing ½ acre land for chili cultivation.

ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

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.?)	√		Low-moderate	The existing land preparation and flood irrigation system will be changed. Land preparation techniques will focus on reducing the effects of flood irrigation. No significant disturbances for any existing land use or waterbodies and no negative impact causes are anticipated.
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?	√		Moderate	Pesticides, weedicides, fertilizers, and some additional chemicals will be used and there is a possibility to have chronic impacts due to the long-term usage. However, proposed techniques will reduce the number of chemicals and fertilizers use and modern techniques/methods will be introduced to increase productivity by other means.
3	Will the Project produce solid wastes during construction or operation?	√		Low	Lands clearing and preparation stage there can be an insignificant solid waste generation. During the operation, solid organic waste will be produced as crop residuals.
4	Will the Project release pollutants or any hazardous, toxic or noxious substances to air?		√	Moderate - high	Pesticides, weedicides will be used and released into the air. Possibility to have significant impacts on other flora & fauna.
5	Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	√		Low	There will be an insignificant noise generation from machinery during land preparation and crops transportation.
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?	√		Moderate	All chemicals used, including pesticides and weedicides during cultivation, may contaminate land or water. It will have an impact on the surface and groundwater in surrounding areas if not properly managed.

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
7	Will the project cause localized flooding and poor drainage during construction Is the project area located in a flooding location?		√		The project will not cause localized flooding
8	Will there be any risks and vulnerabilities to public safety due to physical hazards during construction or operation of the Project?		√		No severe health and safety hazard was identified. Better hazard identification and prevention and corrective measures during operation will eliminate the risk associate.
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?		√	Low	Chilli transportation from cultivated lands to drying centres and transportation from drying centres to shipments/or any other location will be taken place. No creation of significant environmental problems.
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 areas 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 zone, mountains, forests which could be affected by the project?		√		No important or sensitive areas on the project location are affected by the project.

	Screening question	Yes	No	Significance of the effect (Low, moderate, high)	Remarks
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?		√		No such impacts are anticipated
14	Is the project located in a previously undeveloped area where there will be loss of green field land		√		No such green fields are encountered.
15	Will the project cause the removal of trees in the locality?		√		No removal of trees is required since the existing cultivation lands are utilised for the chili production.
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?		√		No resources are affected by the project.
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 exceeded or have environmentally polluted.

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 • 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 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.
3	Lack of knowledge on basic harvest and post-harvest practices lead to low quality of product and high amount of waste	• Mechanical scarring and bruising quality defects • Cleaning the selected product	• Maintain good hygiene and good housekeeping • Practical training for the selected farmers on basic harvest and post-harvest practices to protect the quality of the Maintain good hygiene and good housekeeping

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
		• Storing the harvested product before delivery to the drying facility • Discarding poor quality Chili and other waste organic materials in the field	• Practical training for the selected farmers on basic harvest and post-harvest practices to protect the quality of the product and to assure the packing facility receives only clean and viable product • Avoiding mechanical scarring and bruising quality defects • Provide packaging materials and storage facilities
4	Activities related to installation of drip irrigation systems	• Installation of drip/sprinkler irrigation systems • Fixing water pumps and electricity supply • Fixing inset proof net	• Carry out installation works during off cultivation seasons • Solid waste generation during installation should be minimized and disposed generated waste with care • Potential damages to pipe system should be minimized by burying or covering the pipe distribution
5	Spreading of Invasive Alien Species	• Vegetation clearing • Cultivation of Chili	• Provide DOA certified Chilli variety only to farmers • Good housekeeping • Manual and integrated weed control • Prevent weed spreading via organic manure (Compost) by periodic inspection and manual removal after application
6	Noise Pollution & Vibration that can affect nearby structures	• Use of tractors and agricultural equipment/ machineries • Transportation of products from farmlands to drying centres	• Working time for noise/vibration generation activities should be restricted and carried out only from 6 am to 6 pm. • Noise related to all agricultural improvement activities should not exceed 55 dB (daytime) and 45dB (night time) as practicable as possible. • Equipment and machinery should be maintained in good condition. • It is highly recommended to do transportation during daytime only
7	Contamination of water, land and air during usage of chemicals (pesticides, weedicides.)	• Land preparation • Vegetation clearing • Use of fertilisers • Use of chemicals for specific requirements	• Introduce technological methods to reduce dosage amounts • Awareness of usage time, handling, and storage • Guidance on a suitable time for the usage of chemicals • Promote organic fertilizers

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			• Formulation of fertilizer regimes based on complete soil tests and foliar analysis
8	Water Quality	• Cultivation of Chilli	• Excess water extraction is to be cut down to preserve the ground water table • Proper introduction of drip/sprinkler irrigation practices instead of flood irrigation to preserve water and use of modern techniques to reduce water consumption • Proper irrigation practice to avoid excess water extraction from the ground water table
9	Solid Waste Disposal	• Organic materials in the field • Waste from weed control activities	• Burnt to maintain the farmlands' hygienic condition • Use post-harvest waste for compost production
10	Spread of crop related diseases among other flora species	• Throughout the cultivation period	• Provide technical guidance on the application of chemicals including dosage, suitable time, and frequency • Pest population and pest damage surveys to assess pest threshold status for application of pesticides
11	Health hazard	• Use of agrochemicals (fertilizers, pesticides, weedicides etc.)	• Carry out proper hazardous identification and risk assessment of all proposed activities • Training and awareness on safe chemical handling • Implement proper health and safety protocols by elimination, substitution, engineering controls, administrative control, and provide personal protection equipment (PPEs). Provided necessary PPEs (basic should include gloves, goggles, masks, and protective clothing) • A safety inspection checklist should be prepared to take into consideration what the workers are supposed to be wearing and monitored • Pest and disease control according to the international standard and pest management action plan prepared by ASMP

SN	Potential Environmental Impacts and Risk Level	Key project activities causing the impact	Mitigation Measures proposed and action to be implemented by the Contractor
			• Formulation of fertilizer regimes based on complete soil tests and foliar analysis • Pest population and pest damage surveys to assess pest threshold status for application of pesticides
12	Temporary loss of livelihood due to inability to grow crops during Installation works	• Installation of drip/ sprinkler irrigation systems	• Implement project activities during the off-season of upland cultivation. • Carry out sub-project activities to a strict timetable to prevent excessive losses to the farmers

COST OF MITIGATION

SN	Environmental mitigation measure	Cost (LKR)	Remarks
1	Information Boards, leaflets	60,000	Awareness leaflets for organic cultivation practices and pest management
5	Waste removal from site	40,000	Waste from vegetation clearing, site preparation, labour camps
6	Training of Farmers and Village level stakeholders on new technological applications	200,000	Should be scheduled to a few sessions

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[4]
DURING AGRICULTURAL ACTIVITIES		
➢ Land preparation • Fencing (if applicable) • Land preparation • Micro levelling • Drainage Labour • Raised Beds • Preparation of pits & planting • Planting materials • Fertiliser in the planting pit • Planting Tools	Solid waste generation	NS
➢ Introduction of basic flood prevention and drainage field techniques • Quick water evacuation ditches • Surface drainage techniques (removal of wet spots)	Less water consumption, less soil erosion	SP
➢ Use of fertilisers and chemicals • Application of fertilizers • Application of weedicides • Application of pesticides	Land, water an air contamination	NS

[4] 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 place4**
• Other Spray		
➢ Manual weed control	Solid waste generation	NS
➢ New and improved quality enhancing technologies • Introduction of water conserving and drip irrigation systems • Insect proof net • Polythene mulch	• No such harm, less use of water and Less contamination of agro-chemicals on Land, air and water • Less insect impact	SP

EMP IMPLEMENTATION RESPONSIBILITIES AND COSTS

The overall responsibility of ensuring compliance with safeguard requirements rests with the 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. The overall supervision will be carried out by the in-house staff of the PMU supported by the Provincial Project Agro Specialist, who is responsible for the overall design and supervision of the proposed project. Any consequent design modification will be reflected in the project cost.

Environmental & Social monitoring will be carried out largely through visual observations and compliance monitoring using the checklist provided in the EMF & RPF by the Provincial Project Agriculture Specialist of the PMU and the contractor jointly. The Environmental and Social Safeguards Specialist will need to visit the site quarterly and report on issues and performance on ESMP implementation to the PMU.

SCREENING DECISION RECOMMENDATION

This project does not require environmental clearance under national environmental regulations. No other approval is required due to the spread and magnitude of the project. The project will have negligible environmental impacts, mostly limited to the cultivation period. The impacts on the physical and biological environment are virtually none. The majority of the potential adverse effects can be classified as general agricultural-related impacts and can be mitigated on-site with Good Agricultural Practices. These potential impacts are temporary in nature. It is recommended to start the project work in the off-season for paddy cultivation and avoid night-time work. Implementation of the Environmental Management Plan is sufficient to mitigate the identified impacts.

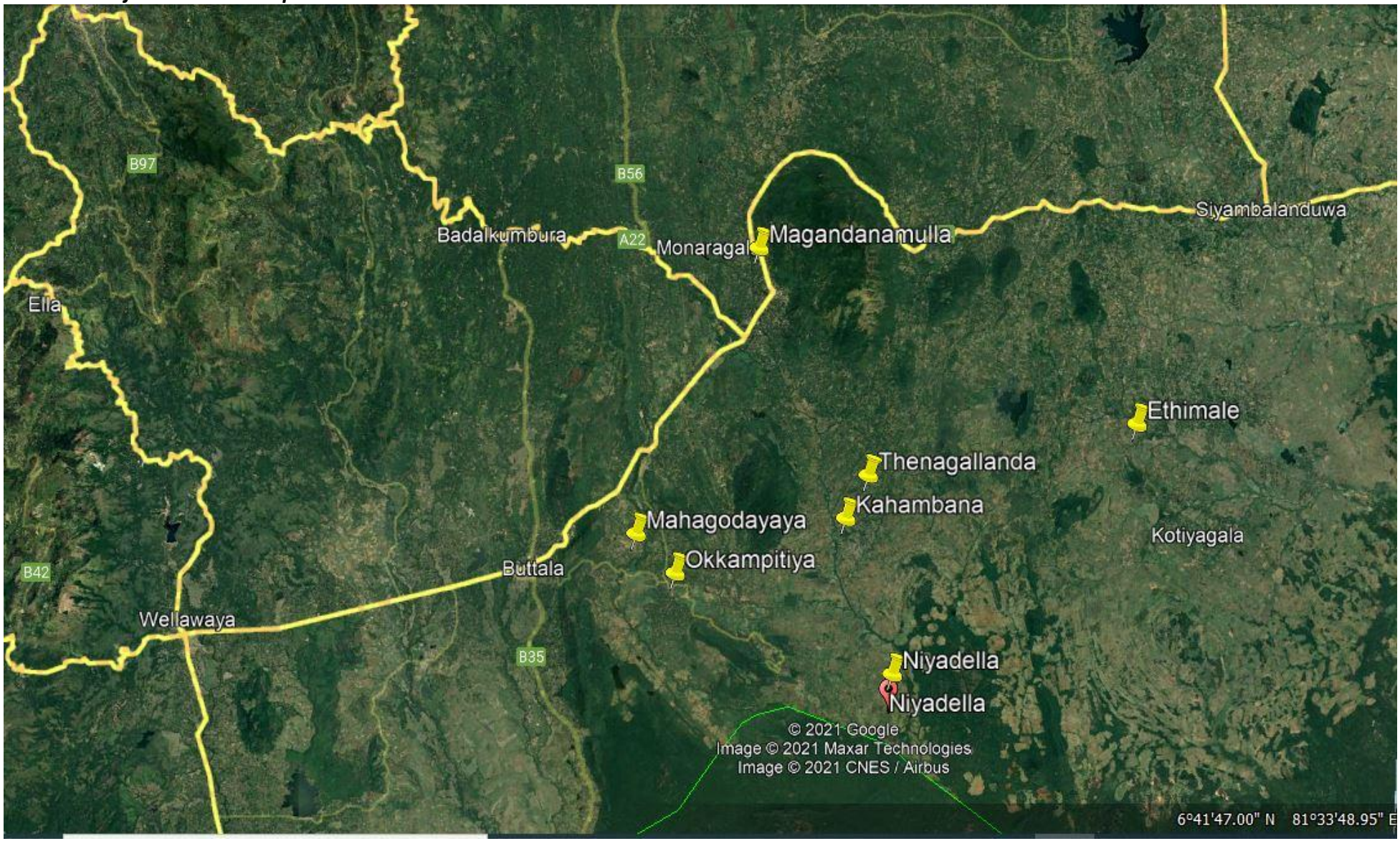
DETAILS OF PERSONS RESPONSIBLE FOR THE ENVIRONMENTAL SCREENING

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**

Annex 1: List of References

1) https://luppd.gov.lk/images/content_image/downloads/pdf/llrc_Moneragala.pdf
2) Natural Resources Management Centre, Department of Agriculture, Peradeniya
3) Department of Census and Statistics
4) Concept paper on chilli production & value addition (Saubagya), Agriculture Sector Modernization Project, Ministry of Agriculture
5) Department of Agriculture Sri Lanka (doa.gov.lk)
6) Check the Air Quality in Moneragala, Sri Lanka - BreezoMeter
7) Source - District Land use Planning Office, Department of Census and Statistics

Annex 2: Project Location Map



Annex 3: Beneficiaries list

SN	Name	Gender	Address	Contact No	ID No	GN Division
1	A.M. Ariyarathne	Male	No.64, Niyadella, Maligavila	0779133662	571010860v	Maligavila
2	A.M. Gunathilake	Male	No.133 Maligavila, Niyadalla	0714888532	BTL/610610/03100	Maligavila
3	R.M. Sahan Priyadharshana	Male	Sahansiri, wewa pradesa, Okkampitiya	0767911551	871510857v	Buruthagolla
4	H.P. Pramalatha Podimenike	Female	3 mile post, Gaminipura, Okkampitiya	0714041892	615261572v	Gaminipura
5	M.M. Balasooriya	Male	Egodawatta, 3 milepost, Buttala	0712901952	5215622264	Mahagodayaya
6	W.A.Wimalasiri Gunawardana	Male	Okkampitiya rd, 3 mile post, Buttala	0766538486	562010815v	Mahagodayaya
7	V.G. Nihal Pushpasiri	Male	13 mile post, Mahagodayaya, Buttala	0704528101	623274403v	Mahagodayaya
8	G.M. Anila Sujeewa da silva	Female	No.22, Mahagodayaya, Buttala	0710176263	677153016v	Mahagodayaya
9	R.M. Heenbanda	Male	Mahagodayaya, Buttala	0770773910	503460840v	Mahagodayaya
10	W.M. Ajith Wasantha Kumara	Male	Mahagodayaya, Buttala	0714885654	743362489v	Mahagodayaya
11	M.A. Kithsiri	Male	No 31/A, Mahagodayaya, Buttala	0715152003	812262645v	Mahagodayaya
12	W.H.Chinthaka Saman Kumara	Male	18/1, Mahagodayaya, Buttala	0715278204	802433603v	Mahagodayaya
13	R.M.Gayan Ranjith Bandara	Male	No.05, Mahagodayaya, Buttala	0712735261	911434032v	Mahagodayaya
14	K.M. Indrani/R.W. Jayawardana	Female	No.03 Wewa rd, Mahagodayaya, Buttala	0769231017	196725810059	Mahagodayaya
15	G.M. D. Dhammika da silva	Female	No.37. Mahagodayaya, Buttala	0713537611	196250404944	Mahagodayaya
16	D.M.Karunapala	Male	No.23 , Mahagodayaya, Buttala		543182770v	Mahagodayaya

SN	Name	Gender	Address	Contact No	ID No	GN Division
17	W.B.Nilanka Niroshani	Female	No.1/3, Mahagodayaya, Buttala	0704528329	198780803393	Mahagodayaya
18	D.M. Dharmasiri Dissanayake	Male	No.1, Mahagodayaya, Buttala	0713774771	792953298v	Mahagodayaya
19	V.G. Ranjani Pushpalatha	Female	No.31, Mahagodayaya, Buttala		628323291v	Mahagodayaya
20	D.M. Renuka Malkanthi	Female	No. 31/1, Mahagodayaya, Buttala	0719975124	876393808v	Mahagodayaya
21	R.W.V. Jennoona	Female	No.20, Mahagodayaya, Buttala	0775494764	607513724v	Mahagodayaya
22	K.Aruni Erandika	Female	Mahagodayaya, Buttala	0712704923	945772786v	Mahagodayaya
23	W.M. Mallika Bandara	Female	Mahagodayaya, Buttala	0712695684	745671268v	Mahagodayaya
24	R.W.V. Maginoona	Female	No.11, Mahagodayaya, Buttala	0702615924	586971743v	Mahagodayaya
25	D.V. Rupasinghe	Male	3Mile post , Gaminipura, Okkampitiya		740024051v	Konketiya
26	D.V. Nandasiri Wijewardana	Male	No.32, mahagodayaya, Buttala	0779890468	680592462v	Mahagodayaya
27	D.M. Sumanarathne	Male	No.43, Mahagodayaya, Buttala	0715888852	632132379v	Mahagodayaya
28	D.M. Bawantha Prasad	Male	No.28/2, Mahagodayaya, Buttala	0716343329	952153927v	Mahagodayaya
29	G.L.Gayani Pushpakumari	Female	No.13, Mahagodayaya, Buttala	0703118109	198471203729	Mahagodayaya
30	L.H. Ganga niroshani	Female	3 mile post, Egodawatta, Buttala	0712493504	785260481v	Mahagodayaya
31	H.Karunapala	Male	No.28, Mahagodayaya, Buttala	0710492624	BTL/540108/02226	Mahagodayaya
32	W.M. Wijesooriya	Male	Mahagodayaya, Buttala	0719274091	670483398v	Mahagodayaya
33	G.M. Gunathilake	Male	Mahagodayaya, Buttala	0771435807	792033555v	Mahagodayaya

SN	Name	Gender	Address	Contact No	ID No	GN Division
34	H.M. Chaminda Pushpakumara	Male	Mahagodayaya, Buttala	0779215368	812311557v	Mahagodayaya
35	H.M. Nilantha Herath	Male	Mahagodayaya, Buttala	0775330028	770410975v	Mahagodayaya
36	P.B.Jagath Hemathilake	Male	Mahagodayaya, Buttala	0716204346	660620818v	Mahagodayaya
37	D.M.Wijepala	Male	3 mile post, Gaminipura, Okkampitiya	0777891490	421943974v	Gaminipura
38	J.V. Kolvin Jayawardana	Male	No.80,Hulandawa south ,Moneragala	0770542530	543471615v	Hulandawa south
39	D.M. Ranjith Dissanayake	Male	Dabeyaya, Pahalagama, Okkampitiya	0787377833	830162933v	Pahalagama
40	P.G. Wasantha Wickramarathne	Male	Dabeyaya, Pahalagama, Okkampitiya	0782872722	732523588v	Pahalagama
41	J.M.Kapila Pushpakumara	Male	107/2, Shama Mawatha, Maligavila	0701909452	812523910v	Maligavila
42	J.M. Indika Sajith Kumara	Male	No. 107/2, Shama Mawatha, Maligavila	719907516	840072495v	Maligavila
43	M.P. Priyantha Sarath Kumara	Male	25/1, Hulandawa south, Moneragala		196722202508	Hulandawa south
44	J.M. Karunadasa	Male	B50, Shama mawatha, Maligavila	0715973545	523074865v	Maligavila
45	B.M. Sumanawathi	Female	Bogashandiya, Okkampitiya	0715859902	687132815v	Pahalagama
46	R.M. Erangani Sadareka	Female	Akkara 50, Gemunupura, Ethimale	0772214972	997992199v	Gemunupura
47	Y.M. Sagarika Yapa	Female	Akkara 50, Gemunupura, Ethimale	0765620506	857410254v	Gemunupura
48	D.M. Chandrasena Dissanayake	Male	Akkara 50, Gemunupura, Ethimale	0703674667	563523646v	Gemunupura
49	S. Kanthi Manel	Female	Akkara 50, Gemunupura, Ethimale	0770041605	807691953v	Guruhela
50	S.M. Gunathilake	Male	Akkara 50, Gemunupura, Ethimale	0718072788	,195120400730	Gemunupura

SN	Name	Gender	Address	Contact No	ID No	GN Division
51	W.M. Wijayangani	Female	Akkara 50, Gemunupura, Ethimale	0787761532	197586602888	Guruhela
52	K.Bandusiri	Male	Gemunupura ,Ethimale, Moneragala	0775188130	580533531v	Ethimale
53	K.D. Kusumawathi	Female	8 Mile post,Wathtegama Kotiyagala	0779710226	786813026v	Wathtegama
54	R.M. Anura Pathmasiri	Male	6 Mile post, Gemunupura, Ethimale	0776924856	842400929v	Vilaoya
55	W.M.Jayawardana	Male	Gemunupura ,Ethimale, Moneragala	0776398914	195811001945	Gemunupura
56	R.M. Sisira Kumara	Male	Gemunupura ,Ethimale, Moneragala	0777400860	822063047v	Gemunupura
57	R.W.V. Sarath kumara	Male	Akkara 50, Gemunupura, Ethimale	0716260616	760743984v	Gemunupura
58	R.W.V.Chaminda saman Kyumara	Male	Gemunupura ,Ethimale, Moneragala	0719173761	810203013v	Gemunupura
59	Y.M. Somasiri	Male	Kubukgeyaya, Etghimale, Moneragala	0770573546	643034255v	Parakumpura
60	K.G. Sagara Pradeep	Male	Ithtakatuwa, Marawa, Moneragala	0779262892	810945710v	Tenagallanda
61	G.W.Sunitha Ranjani	Female	Ithtakatuwa, Marawa, Moneragala	0776785186	198074102604	Tenagallanda
62	S.Sagarika Malkanthi	Female	Tenagllanda, Marawa, Moneragala	0772550285	776342009v	Tenagallanda
63	B.M.Ariyadasa	Male	Weheragala, Wadikubura, Moneragala	0774241722	691604691v	Weheragala
64	R.M. Dharshi Thakshila	Female	Aluthwatta, Wedikubura, Moneragala	0705551722	197854400153	Bopitiya
65	H.G. Susantha weerarathne	Male	Ithtakatuwa, Marawa, Moneragala	0710493096	780514302v	Tenagallanda
66	R.D. Rampala Kularathne	Male	Ithtakatuwa, Marawa, Moneragala	0771831084	620634964v	Tenagallanda
67	I.W.Pathum Senarathne	Male	Ithtakatuwa, Marawa, Moneragala	0761281031	198913700717	Tenagallanda

SN	Name	Gender	Address	Contact No	ID No	GN Division
68	H.P. Chaminda Rathnayake	Male	Ithtakatuwa, Marawa, Moneragala	0760254580	902060774v	Tenagallanda
69	G.G.M. S.Thushara Ranjan	Male	Ithtakatuwa, Marawa, Moneragala	0764271468	942120966v	Tenagallanda
70	K.A. Sashanthika Suwarnamali	Female	Ithtakatuwa, Marawa, Moneragala	0770634053	948590182v	Tenagallanda
71	A.thilakarathne	Male	Ithtakatuwa, Marawa, Moneragala	0778043482	723444233v	Tenagallanda
72	K.M.Jagath Ruwan Kumara	Male	Weheragala, Wadikubura, Moneragala	0775466837	851983651v	Weheragala
73	W.N. Jayasooriya	Male	Tenagllanda, Marawa, Moneragala	0774166844	651442370v	Tenagallanda
74	H.P. Gunathilake	Male	Ithtakatuwa, Marawa, Moneragala		601224879v	Tenagallanda
75	D.M. Ranasinghe	Male	6 Mile post, Gemunupura, Ethimale	0761384978	197204703445	Ethimale
76	E.M. Podi Appuhami	Male	6 Mile post, Gemunupura, Ethimale	0776320895	502940198v	Vilaoya

Annex 4: 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.

- 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

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

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