Operationalizing the SDGs - Disaster Risk Reduction through Climate Change Adaptation for Landslide affected communities in Aranayake – Phase 1

A collaborative activity of Hatton National Bank and Sri Lanka Water Partnership
Report

Report submitted to Hatton National Bank
By
Sri Lanka Water Partnership November 2017

“The tree which moves some to tears of joy is in the eyes of others only a green thing which stands in the way… as a man is, so he sees “William Blake
1. Background

Ma Oya is the most highly industrialized river in Sri Lanka next to the Kelani Ganga. Nevertheless it does not have a secure catchment with protected areas such as has the Kelani. Ma Oya provides water for agriculture, industry and domestic needs from Aranayake in Sabaragamuwa Province to Pallansena, Kochchikade. It provides water for domestic needs and agriculture for approximately 2 million people. Its deposits of river sand adds to the sand budget in the Western Shoreline and is a buffer against coastal erosion.

It has 37 NWSDB water supply intakes and several community water supply schemes. It is also being tapped especially by families and groups of families in the upper catchment which includes sections of Alagalla, Paranapattiya, Galagedara and Gampola (in Central Province). It services a large number of downstream industries including large industrial estates in North Western Province (NWP) as well as the important tourist zone near Negombo. Downstream of Alawwa, it provides water security for an impressive number of industries including Makandura Industrial zone. It is also quite unique in that which it also is home to the largest concentration of tame elephants in Sri Lanka, in Pinnawala Elephant Orphanage, which is one of the highest single income earners for Sri Lankan tourism.

Aranayake off Mawanella, a secluded agricultural area known mainly for tea and spice cultivation, came to the limelight for tragic reasons with the Samasara landslide of May 2015 (the reasons for which are partly climate change driven and partly anthropogenic)
Which occurred following 6 days of constant high intensity rains. It caused the highest number of casualties ever known in a Sri Lankan landslide - 145 persons died. It is ironic that the competitors in the SLWP school art and essay competition held weeks before the landslide in Aranayeke spoke about impending challenges in the basin highlighting manmade causes leading to future disasters.

The NBRO has classified the affected areas as High Risk (sites to be evacuated immediately) and Medium Risk (sites to carry out mitigatory action). Of the 62 GN divisions in Aranayake, 60 were classified as disaster prone. The fear of landslides has not yet left Aranayake citizens. In late October 2017 again with heavy rains, two more minor landslides occurred in Ambalakanda, Aranayake and against risk families have been promptly evacuated by local administrators.

There is a tendency for climate change related high intensity rains to be blamed for landslides which are becoming more frequent so as to become the norm in catchment areas. But a report by the National Building Research Organization (NBRO) mentioned that rampant logging in Elangipitiya in the upper Ma Oya catchment which preceded the landslide too may have been one of the contributory factors. In that case one would assume that catchment conservation and reforestation would become high priority for a government committed to disaster risk reduction (DRR).


Hatton National Bank (HNB) entered into an agreement with Sri Lanka Water Partnership (SLWP) in January 2017 to carry out a Project on Disaster Risk Reduction through Climate Change Adaptation for Landslide Affected Communities in Aranayake with the following objectives

i. Improving school sanitation, renovate school sanitation facilities and supply rain water harvesting tanks and associated activities for Mahanadi, Hathgampola, Debathgama, and Galbokke schools to improve levels of hygiene and community well being

ii. Enhancing awareness and sanitation sensitization of school related community

iii. Improving access to education for health and better living.

SLWP had earlier in 2013 along with the University of Colombo carried out a major activity in Aranayake termed “Water quality distribution and it’s impact on community livelihood development in upper catchment of the Maha Oya river basin” supported by Janashakthi PLC in Aranayake which included reforestation of significant catchments and river banks, support for women programmes as well as construction of RWH systems in Rahala West school and Hemmatagama hospital. These systems are yet functioning well and the MOH has requested for another RWH tank. This activity was organized by SLWP Partner Net Water (NWW) who have experience in also supervising and constructing 26 RWH systems for hospitals (supported by Retours Chip Foundation, NL) and has supervised construction of 17 school RWH and sanitation systems for SLWP (supported by NDB) in Central Province. Therefore SLWP has established considerable experience in Rainwater Harvesting Systems. In addition since 2014 SLWP has also promoted the use of RWH systems for agriculture as part of its climate change adaptation outreach for farmers with the assistance of the Department of Agriculture including the Legume and Oil Crops Research Centre at Angunukolapelessa.

The Ma Oya Area Water Partnership is the first Area Water Partnership (AWP) that was setup by SLWP and has organized and supported the Ma Oya Area Water Partnership from inception in 2001 through local partner organizations. The local partner for the upper Ma Oya area in Aranayake is the Ma Oya-Kuda Oya Surakeeme Vyaparaya (MKSV).
Activities carried out under Disaster Risk Reduction (DRR) Programme – Phase I

Activity A - Reconnaissance survey using RRA

The reconnaissance survey for the activity was carried out in February – March 2017 by the activity leader and research officer. The Research officer made the initial visit followed by a longer stay in the community by both research officer and activity leader. Visits were made to NBRO, both in Colombo and Kegalle, the Zonal Department of education Aranayake, Divisional secretariat Aranayake, Land Use Policy Planning Dept. Kegalle and National Water Supply and Drainage Board Kegalle. This survey and later interaction highlighted the importance of acute sensitivity to caste when working in Aranayake. Caste and class often continue to be the unspoken realities behind decision-making.

Aranayake used to be a fairly self-sufficient community with high income from spices and tea. The landslide stricken in Elagipitiya was called “Salliwatte”. At least 850-1000 kg of tea was collected daily from 30-40 growers at the teashop in Elagipitiya.

Large houses were built with the profits and roads were constructed up using JCBs on very fragile, very steep slopes. This too added to the disturbances of the terrain. Tea lands were opened up even in state owned plots through encroachments. The target was crop management and not landscape management and the run off and soil erosion was accelerated with ad hoc extensions to small holdings. Tea was grown on wholly inappropriate sites, with spices which provide a greater canopy cover being sidelined or replaced. The approved vertical drains from British time were not maintained and in some areas such as Ambalakanda were removed with the stones being used for walls. Buildings came up in the drainage paths thus cleared. Some of these actions contributed to the intensity of damage of the landslide.

There was also reports of heavy illegal logging especially in Ambalakanda and Galbokke which had been noted by NBRO as a contributory factor for landslides. The disturbance to springs and water sources was marked in the Reconnaissance survey. All landslide sites and community groups in the ‘medium-risk’ category were visited and also reported that there is intensive water shortages reported by all communities in the upper catchment following the landslide. The available water in wells and hand pumps in Galbokke in particular were observed to be turbid and undrinkable; therefore poor families had to spend about Rs. 200 per day in dry spells on obtaining water from outside sources. A good trade in hauling water in trishaws had sprung up in Aranayake.
Displaced persons were yet to receive compensation and housing. Aranayake used to be an old style community with some degree of self-sufficiency and self-confidence. The landslide brought in a high degree of insecurity (even in families which were not displaced) and increased dependency on state agencies and external sources is noted after the landslide (especially because of the deluge of aid (mostly inappropriate and underutilized) which came in to the region).

Communities are now reluctant to carry out even minor soil conservation activities on own lands which can be done independently with family labor without some state support. Hence the disaster mitigation effort is proceeding very slowly. This has a detrimental impact on the long term water security of the catchment.

The proposed HNB intervention coming at this juncture was therefore timely. The complexity of this disaster has highlighted the need for speedily operationalizing the SDGs in future activities and moving away from disaster relief to disaster risk reduction. Most areas in and around Aranayake (barring two Grama Niladari divisions) have now been identified as being landslide prone. The high risk families have already been evacuated. The medium risk families have been asked to take reasonable safeguards including soil conservation measures. Yet very few have done so, as yet looking to the state to remedy this situation.

**Water security related challenges in Aranayake**

Aranayake, a significant part of Ma Oya upper catchment is severely, continuously and increasingly being water stressed.

Following the Samasara landslide several significant changes in the hydrological regime have been noted by the community in Aranayake. 2016 also saw very low levels of river flows in areas up to Alawwa.

Severe water stress has also been noted by media reports in downstream areas such as Dunagaha and Katunayake.

An unusual phenomenon has been noticed by the community and the activity team in the upper Ma Oya following the unseasonal rains prevailing in August, September and October 2017. Usually sedimentation occurs only after prolonged period of rain. Visual observation by the activity team indicate that turbidity is very high in the river even after one heavy shower.

This indicates that upstream landscape changes (probably due to expansion of tea cultivation, both legal and illegal) and loss of soil cover is occurring with ever greater intensity. There are reports of landslide prone hillsides being newly opened up for tea.
Even after the landslide near Asupini Ella (this is reported by community sources as about 40 acres but needs physical verification) without adequate soil conservation safeguards. Loss of soil cover will enhance possibility of landslides given the climactic conditions such as preceded the Samasara landslide. The Soil Conservation Act of 2009 seems to be in abeyance in Ma Oya upper catchment.

All landslide sites and community groups in the ‘medium-risk’ category who were visited reported that there is intensive water shortages experienced by all communities in the upper catchment following the landslide.

Water supply in Mawanella was limited in the extreme in March April 2017 and almost ran totally dry. It had suffered an extreme drought in March April 2017 with very low base flows. With increased logging and loss of tree cover the soil erosion increases. Turbidity is thereby increased and water purification for drinking purposes is made more difficult and expensive. This impacts on overall water security of the catchment which is reporting overall water shortages after the landslide.

**Video Link:** [https://www.youtube.com/watch?v=Df9KGoI8KGU](https://www.youtube.com/watch?v=Df9KGoI8KGU)

Sources outside Aranayake from Thulhiriya also report very low flows in mid-2016. Therefore the river is now experiencing overall diminishment of dry season flows.

The available water in wells, springs and hand pumps were observed to be turbid in Galbokke; therefore poor families had to spend about Rs 200 per day in dry spells on obtaining water from outside sources. A lucrative trade in hauling water in trishaws had sprung up in Aranayake.

Aranayake has an abundance of abandoned paddy lands. Constraints to cultivation of fallow fields lands was seen as mainly due to lack of water - Analysis of survey data collected in 52 Grama Niladari divisions in Aranayake DS division for non-cultivation by October2017 highlights the issue of water security as follows
<table>
<thead>
<tr>
<th>Constraints</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of water</td>
<td>51</td>
</tr>
<tr>
<td>Animal damage</td>
<td>25</td>
</tr>
<tr>
<td>Poverty, lack of capital</td>
<td>22</td>
</tr>
<tr>
<td>Shortage of labor</td>
<td>8</td>
</tr>
<tr>
<td>Legal issues</td>
<td>1</td>
</tr>
<tr>
<td>Landslide</td>
<td>1</td>
</tr>
<tr>
<td>Problems related to joint ownership</td>
<td>1</td>
</tr>
<tr>
<td>No road</td>
<td>1</td>
</tr>
<tr>
<td>Damage to anicut</td>
<td>1</td>
</tr>
</tbody>
</table>

### Activity B – CCA for DRR activity cum pre construction RWH maintenance training

CCA for DRR activity cum Construction RWH Maintenance Programme (4 Programmes) this was held in each schools for selected students, parents and teachers with Mr. Hemanta Seneviratne HNB present on 7th April 2017 as part of handing over activity. At every school the students, teachers and parents expressed gratitude for provision of water as they had just been through a major trauma of an extremely dry spell. Existing wells in schools were also inspected to study possibility of ground water recharge.

Afterwards Mr. Lalith Seneviratna, RWH construction specialist, was sent to do a hands on review and revision session individually for two days at each school with a group of parents, prefects and teachers. The objective of this activity was to diversify RWH learning within the school community and to develop a pool of persons who could deal with future maintenance issues.

### Activity C – Construction of RWH systems in selected schools

The schools where RWH systems were installed have been selected from a short list compiled in collaboration with the Ma Oya Kuda Oya Surekime Viyaparaya (MKSV) and the Aranayake Zonal Education office according to perceived needs.

Though many schools were seen to be needy, the selection process also took into consideration the following factors- level of impact of landslide, level of need for water, general level of maintenance of schools and enthusiasm of the school authorities for adoption of new technology. This activity and the ongoing drought also raised awareness of the school community on water.

Especially D.S. Senanayake KV in Galbokke were practically without any water when visited. Families in Galbokke which is the most water short village in Aranayake were then spending up to Rs 1000/- a week in obtaining drinking water. Water for sanitation and health was extremely limited and disease were spreading due to extreme lack of water for hygiene. The same water used for washing rice was reused for washing vegetables, dishes and then for ablutions. Therefore families reported spread of disease. In fact two members of the team caught a particularly virulent form of conjunctivitis working in Galbokke.
Galbokke village also had been given 60 Ferro cement domestic RWH tanks constructed by NADSA, a donation by SANASA Development Bank which only 20 were functional at the time - the rest were abandoned mainly due to lack of proper training and poor maintenance. Schools too had damaged /abandoned Ferro cement tanks.

The selected schools are as follows

Table 2 - Selected RWH schools

<table>
<thead>
<tr>
<th>Name of school</th>
<th>No of students</th>
<th>No of staff</th>
<th>Landslide impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mahanadi KV</td>
<td>561</td>
<td>26</td>
<td>Children displaced by damage to Siripura and Elagipitiya (some living with relatives, some in camps) enrolled in these schools. Deforestation and illicit land use threat to community and water security</td>
</tr>
<tr>
<td>2. Hathgampola KV</td>
<td>220</td>
<td>11</td>
<td>-do-</td>
</tr>
<tr>
<td>3. Debathgompola KV</td>
<td>120</td>
<td>17</td>
<td>-do-</td>
</tr>
<tr>
<td>4. Galbokke KV</td>
<td>220</td>
<td>11</td>
<td>-do_ and extreme water insecurity</td>
</tr>
</tbody>
</table>

The construction of the four rainwater harvesting tanks was carried out concurrently and supervised by the activity leader, the construction was completed and handed over to the Zonal Education Office in the presence of HNB officers on 7th April 2017. (See Annex 6) The tanks were plastishell mounted on a concrete base. Water for construction had to be brought in barrels by lorry from as the neighboring wells and springs were totally dry.

The school DRR RWH training was held on 14th and 15th March for all four schools. Past experience had emphasized the need to have a core group of persons in the school community who are conversant with the RWH technology. So parents too were inducted to this program. The NBRO and NWDB were requested to provide resource persons for these activities to provide awareness on the overall context.
The World Water Day activity was held on the 7th of April and awards given to prizewinners. This activity also received support from local business community.

**Activity D – Display Boards**

MKSV requested for four public message boards on Disaster risk reduction ("Let us overcome Disasters through Preparedness") to be set up in prominent public places. Accordingly four message boards were set up in front of Mahanadi school, Hathgampola School, Rajagiriya School and on the road leading to Galbokke School. The theme and design was carried out by MKVS.
Activity E - World Water Day School Programmes

The Aranayake World Water Day Celebrations and Prize Giving was held in Rajagiriya MV, Dippitiya, Aranayake on April 7th. After (see Annex 2) the Lighting of the Traditional Oil lamp the Welcome address was made by Chair Ma Oya Kuda Oya Surakeeme Sanvidanaya and objectives of workshop Zonal Education Director, Aranayake, the Divisional Secretary, Aranayake, the Chair Sri Lanka Water Partnership also spoke. Several presentations were made most importantly, by Mr Laksiri Indrathileke NBRO on Disaster prevention in Aranayake highlighting the dangers of continued deforestation.

Activity F – Reinforcing and troubleshooting programme

Due to the perceived need for reinforcement of maintenance messages two programs were planned before the monsoons for the school community. Follow-up post construction maintenance visits (pre NW monsoon) were carried out in September along with other Aranayake programs to reinforce the maintenance training given earlier. All tanks were found to be well maintained and in full use. During all school visits a refresher training was given to school community members.

However by this time interaction with the community had indicated the highlighted the urgent need for an integrated response within the officer community. Many of the Divisional officers have never even seen the existent and potential landslide sites in Aranayake and depend on the field officers for information. Their interaction was in the patron/client mode with the displaced (who usually accused officers of negligence) and the Medium risk villagers (who usually expected the state to carry out mitigation). Both these sets of interaction were usually led to very acrimonious discussions and officers therefore shied away from any form of meetings. The NBRO conducted program called “Living with Landslides” which though well intentioned was also not always well received as communities queried their classification of High risk/ Medium risk sites.

As it was evident that there was a need for integrated action among officers, with a great deal of negotiations all environment, community, agriculture and water related officers were brought together. An Officer Round Table was conducted with the support of the Divisional Secretary on the 08th August at 9.00 AM at Lakmina Reception Hall, Gavilipitiya, Aranayaka. This activity was organized under the aegis of the Divisional Secretary Mr Z.A.M. Faizal who made it very clear that the support of the entire division was available to the SLWP endeavor. (See Annex 3) The NBRO and NWSDB sent resource persons whose presentations emphasized the threats to the environment through illicit logging and poor land management in tea areas.
In effect both Phase 1 and Phase 2 were running concurrently at this point in time.

The main points of discussion and decisions at the Officer Roundtable are as follows -There is damage to the upper catchment due to illicit logging and the dismantling of the old colonial drainage systems set up by the British planters. There was consensus that unless immediate measures are not taken to improve soil conservation in relation to tea small holdings and reforestation in the catchment, there is a strong possibility of another landslide.

(in fact there were two small landslides in October 2017)

Therefore the most serious cause for concern discussed was the recent decision of the Forest Dept. to give permits for a total of 27 small mobile saw mills in the upper Ma Oya catchment. Thereby logging is seen as having accelerated to a tremendous level and it has become difficult for Divisional Officers to curb illicit logging. The Forest Dept. officers present claimed that this new set of permits were allowed under the hitherto dormant Gazette Extraordinary of 2014, now being operationalized in 2017. The reasons for this decision are as yet unknown.

Community sources had stated that heavy logging in Elangipitiya preceded the Samsara landslide. As logging is an important part of the rural economy in Aranayake especially for the poorest families any measures to curb illicit logging and reforestation has to have some modicum of community consensus. Thus it is imperative that community awareness programs especially for youth go in tandem with catchment conservation.

The officers suggested that Ambalakanda and Gataberikanda be selected as most appropriate for a community led reforestation, the sites for which were to be decided through transect walks with NBRO and community.
The influx of wild life (monkeys, rock squirrels) to the villages damaging all agricultural crops and home gardens can be curbed by planting fruit trees, mainly guava, Jak and Waldel in the forest reserves.

As this program brought together all the officers related to water, agriculture and environment within the Division there was some trading of blame for the Samasara landslide. It is noteworthy that the officer representing the Tea Small holders Authority sought to justify the role of tea smallholders in precipitating landslides. Poor soil conservation in the landslide area and deforestation has been blamed for the Samasara tragedy. But he did privately admit that the soil conservation systems in small holdings are generally poor and needed urgent attention.

**Activity G – Post Construction maintenance programme**

As stated above the post construction maintenance training was carried out with visits to schools during the ongoing activities of Phase 2.

The threat of another landslide is very possible given similar climactic conditions in Aranayake. Remedial measures call for enhanced community awareness and timely mitigation. Therefore along with the Pre monsoon RWH sensitization a Citizen Science program for empowering community leaders in disaster prone areas in Disaster Risk Reduction was held on the 25th August 2017 at the Dippitiya MOH in collaboration with the Divisional Secretariat Aranayake. *(See Annex 4)*

Participants were contacted in cooperation with the Dept. of Agrarian Services, Aranayake through their field officers. The number of expected participants rose unexpectedly from 150 to 207. However this was a good way of networking with stakeholders for the ongoing Phase 2 micro catchment activity in Getaberikanda and Ambalakanda.

The NBRO and Met Dept. resource persons gave an outline of the climatic conditions to be expected and the impacts that it would have on potential landslide sites in Aranayake. Visuals from the Research officer’s presentation rather dramatically highlighted the damage done to catchments and potential danger points for future landslides. Many of the participants were seeing these places for the first time.

The main talking point raised by the community was the damage being done by the permits given to the 30 mobile saw mills, felling trees big and small, in Aranayake. The Medium risk families stated that they are rapidly becoming high risk families due to this factor. These statements are also captured on video. The permits given to mobile saw mills ( reported by community as 30 in Aranayake, 17 in Mawanella and 6 in Rambukkana) poses a major threat to water security in Ma Oya . It was agreed that there
was a need to urgently take the mobile saw mills issue to the political decision makers through a media awareness program.

**Youth Programme (As a part of Activity G - Post Construction maintenance programme)**

As there is a need to engage youth in the areas in environmental conservation as concerned stakeholders a special program involving more than 75 young persons was held in cooperation of the NYSC at Gavilipitiya Aranayake. On June 24th, Resource persons form NBRO and NWSDB laid out the challenges of the current situation in Aranayake and the consequences of inaction. A special session was conducted on project proposal formulation. *(See Annex 5)*
## Annex 1

### Activity Table

<table>
<thead>
<tr>
<th>Proposed activity</th>
<th>Objective</th>
<th>2017 Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconnaissance visit using RRA and inception report</td>
<td>Finalize sites, build community linkages, identify other requirement in schools - lead NWW and MKSV</td>
<td>February - March</td>
</tr>
<tr>
<td>CCA for DRR activity cum pre construction RWH maintenance training</td>
<td>Build awareness of DRR, importance of water security and CCA (4 programs carried out in two days) Lead NWW MKSV</td>
<td>February</td>
</tr>
<tr>
<td>Construction of 4 RWH tanks in selected schools</td>
<td>Provide water security Lead NWW MKSV</td>
<td>February</td>
</tr>
<tr>
<td>Display boards for building awareness</td>
<td>Reinforce DRR messages Lead MKSV</td>
<td>February - March</td>
</tr>
<tr>
<td>CCA for DRR Sensitization programs for World Water Day</td>
<td>Reinforcement and enhancing school and community support for DRR and CCA (4 programs in 4 schools in three days with final essay and art competition) – Lead SLWP</td>
<td>March - April</td>
</tr>
<tr>
<td>Troubleshooting visit (pre SW monsoon)</td>
<td>Reinforcement for key stakeholders – Lead NWW</td>
<td>May</td>
</tr>
<tr>
<td>Follow up post construction maintenance (pre NE monsoon)</td>
<td>Onsite training before NE monsoon and meeting of key stakeholders – Lead NWW</td>
<td>September</td>
</tr>
</tbody>
</table>
Annex 2

Aranayake World Water Day Celebrations and Prize Giving

Rajagiriya MV, Dippitiya, Aranayake

Date: April 7th 2017

9.00  - Lighting of the Traditional Oil lamp
9.05  - Welcome and objectives of workshop – Chair Ma Oya Kuda Oya Surakeeme Sanvidanaya
9.10  - Speech Zonal Education Director, Aranayake
9.15  - Speech, Divisional Secretary, Aranayake
9.20  - Speech, Chair Sri Lanka Water Partnership
9.30  - Disaster prevention in Aranayake – Representative NBRO
9.45  - Facing water challenges in Aranayake - National Water Supply and Drainage Board
10.00 - Improved soil conservation for landslide mitigation - Land Use Policy Planning Division
10.15 - Health Issues related to Aranayake, Medical Officer of Health
10.30 - Tea break
11.00 - Speech Hatton National Bank
11.10 - Prize giving
12.00 - Vote of thanks – School girl/boy
Annex 3

Officer Roundtable on planning of a Ma Oya – Kuda Oya Watershed Conservation project (Pre SW monsoon)

(Part of Activity F)

Venue: 08th August at 9.00 AM at Lakmina Reception Hall, Gavilipitiya, Aranayaka.

Organized by; Divisional Secretary- Aranayaka,
Ma Oya- Kuda Oya Surakime Sanvidanaya (MKSS),
Sri Lanka Water Partnership (SLWP).

Agenda

9.00 - Opening ceremony
   Welcome & Introduction the objective of discussion – MKSS

9.10 - Speech by Divisional Secretary.

9.30 - Self Introduction, current role, issues and challenges by ALL participants, (written and presented papers to be collected 3-5 min followed by questions)

10.00 - Tea break

10.15 - Disaster aftermath and current situation - Issues challenges and proposed solutions
   Mr Laksiri Indrathilleke NBRO

10.45 - Current status of water security in Ma Oya Mr Rasika Manager Kegalle NWSDB

11.15 - Land use and soil conservation related challenges in Aranayake Mr Dayarante
   LUPPD officer Aranayake

11.45 - Status of the Aranayake catchments and its Social and community impacts
   -Results of site survey in Gataberikanda and Ambalakanda - Ravi Pieris

12.15 - Group work

12.45 - Group Presentation

13.30 - Lunch
Annex 4

Post Construction maintenance program and Citizen Science Program on Disaster Risk Reduction (Pre NE Monsoon)

(Part of Activity G)

Date: 25th August 2017 Venue MOH hall Dippitiya, Aranayake

Agenda

8.30am - Registration

9.00am - Opening ceremony and Welcome Mr C. Seneviratne

9.15am - Preventing another landslide in Aranayake – what can we do?

Mr Laksiri Indrathilleke, NBRO

10.00am - Understanding climate change and disasters - Mr Malith Fernando Dept. of Meteorology

10.30am - Tea break

11.00am - Results of catchment survey and identifying the danger spots in Aranayake Mr Ravi Peiris

11.30am - Soil conservation and planning land use in Aranayake - Designated officer from Aranayake Division

12.30pm - Question time and Vote of thanks

1.00pm - Closure and Lunch
Annex 5 – Youth Programme (part of Activity G)

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ජනවාරි උත්සාහ දැන්වුලේ ආරම්භය සිටිය නිදහස් 08.30 දේ.ව. එකේ කලාභාමය

08.30 දේ.ව. එකේ කලාභාමය

09.00 එකේ කලාභාමය සහ එකේ කලාභාමය ලබාගෙන්නේ

09.20 එකේ කලාභාමය ලබාගෙන්නේ සහ එකේ කලාභාමය ලබාදිය - එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය.

09.20 – 10.40 එක කලාභාමය

10.40 එක කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය.

12.30 එක කලාභාමය

01.00 එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය.

02.00 – 02.20 එක කලාභාමය

02.20 එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය. (Technology tools for networking for environmental monitors) - එකේ කලාභාමය සහ එකේ කලාභාමය.

03.20 එකේ කලාභාමය සහ එකේ කලාභාමය සහ එකේ කලාභාමය.

04.00 එකේ කලාභාමය.
Annex 6 – Handing Over Letters to the 4 Schools
<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>15.00</td>
<td>m</td>
</tr>
<tr>
<td>2.</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Quantity</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>3' 0</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>3' 5</td>
<td>05</td>
<td></td>
</tr>
<tr>
<td>3' x 2'</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>2' 0</td>
<td>02</td>
<td></td>
</tr>
<tr>
<td>2' 0</td>
<td>01</td>
<td></td>
</tr>
</tbody>
</table>

3' x 2' යෝකයන් 1.7
2' x 2' යෝකයන් 1.7

STOP VALVE - 01

වික්මාණ කොටස්
ංග්‍රීසියේ,  
3 මැතිල කුන සැඟිකීම.  
2017.02.23  
වේදීමේ,  

ංජුටික මෙකැල්ලමේ,  
3 මැතිල පුළුල කුන් මැතිල මැතිලක්.  

වේදීමේ,  
3 " අඩු අඩු 01  
3 " කොළුම 02  
3 " වැලික 03  
3 " x 2 " කොළුම 0.1  
2 " කොළුම 0.2  
2 " අඩු 01  

ංජුටික මෙකැල්ලමේ,  
3 මැතිල පුළුල කුන් මැතිල මැතිලක්.  

ංජුටික මෙකැල්ලමේ,  
3 " අඩු අඩු 20  
3 " කොළුම 20  
3 " වැලික 20  
3 " x 2 " කොළුම 20  
2 " කොළුම 20  
2 " අඩු 20  

ංජුටික මෙකැල්ලමේ,  

3 " අඩු අඩු 01  
3 " කොළුම 01  
3 " වැලික 01  
3 " x 2 " කොළුම 0.1  
2 " කොළුම 0.2  
2 " අඩු 0.1  

LION LALITH SURIYAN  
PROJECT CHAIRMAN  
LIONS CLUB OF PRIMATHALAWA

පිංචින් බීඟු  

ංජුටික මෙකැල්ලමේ,  
3 " අඩු අඩු 01  
3 " කොළුම 01  
3 " වැලික 01  
3 " x 2 " කොළුම 0.1  
2 " කොළුම 0.2  
2 " අඩු 0.1  

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පිංචින් බීඟු