ENVIRONMENTAL FOUNDATION
(GUARANTEE) LIMITED

ANDA DOLA MINI HYDRO POWER PROJECT

SITE VIST

05 FEBRUARY 2016

Environmental Foundation (Guarantee) Limited, No. 146/ 34, Havelock Road, Colombo 5, Sri Lanka

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INTRODUCTION

Site Visit Team

- Chamila Weerathunghe (Chief Operations Officer)
- Rishan Yaheya (Projects Assistant)
- Narmada Sittampalam (Projects Assistant)

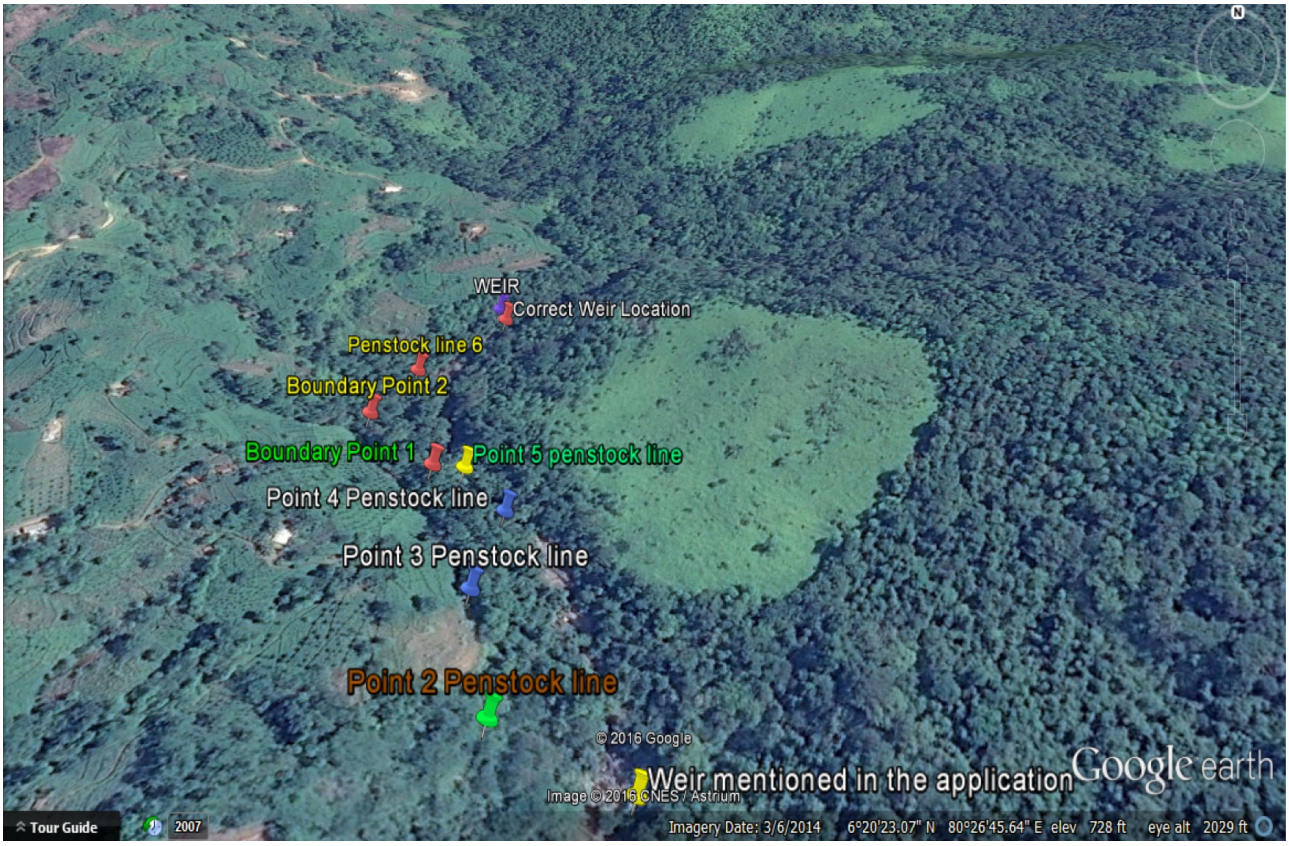
Objectives of the Site Visit

The objective of this visit was to,

1. To confirm the status of the project
2. Assess the environmental impacts of the project
3. Interview local residents on the impacts of the project

CURRENT STATUS OF THE PROJECT

The project is located in the Neluwa Pradeshiya Sabha limits coming under the Divisional Secretariat of Neluwa in the Galle District of the Southern Province. Much of the affected area comes within the village of Dellawa.



Map of project locations within the Dellawa Forest

The Anda Dola is a stream which merges with the Tumbaperiya Dola to form the Dellawa Ela which is a tributary of the Gin Ganga. The weir has been built 2.8Km upstream from the point of confluence of Anda Dola and Tumbaperiya Dola. The construction of the weir is incomplete and the natural flow has not been interrupted yet. The penstock and forebay tank is under construction and steel rods have been placed along its path. However, construction has been halted by an order from the Forest Department.

PROJECT IMPACTS

Biological Impacts

The careless disposal of cement near the river bank has caused an increase in the water snail population in the Anda Dola. The calcium phosphate found in cement stimulates water snails to reproduce more often, resulting in an ecological imbalance as,

1. Water snails consume the eggs of land snails, posing a risk to the land snail population
2. The stone sucker (*Garra ceylonensis)* is a scavenger and the increase in the water snail population increases the competition for food

We observed the presence of the Side Striped Barb (*Systomus pleurotaenia*), which is endemic to Sri Lanka, downstream from the weir. These fish migrate upstream seasonally and the presence of the weir will inhibit this.

A large number of water snails were observed at the weir location

Side Striped Barb observed in the Anda Dola

According to the IUCN Red List Data provided in the IEE,

- 44 species of flora are endemic of which 16 are vulnerable
- 3 species of flora in the region are endangered
- 30 species of endemic fauna were listed of which 6 are vulnerable
- The fauna list also contains five endangered species

Social Impact

Approximately 100 families are directly dependent on the Anda Dola/Dellawa ela. Many of the project components are within the village of Dellawa and the people fear the pollution and/or loss of water due to the construction activity.

Geological Impact

The elevation of the region varies between 100m – 200m above sea level and the soil stability is dependent on the forest cover, vegetation and tea plantations. The landslide hazard prone map published by the National Building Research

Organization (NBRO) for the district of Galle show that the head-race channel and penstock line come under the “modest level of landslide hazard”. However, the deforestation taking place in the region may increase the risk of landslides and soil erosion.

A natural spring in Dellawa village which is a source of water during the dry season

The hilly terrain of the region makes it susceptible to soil erosion

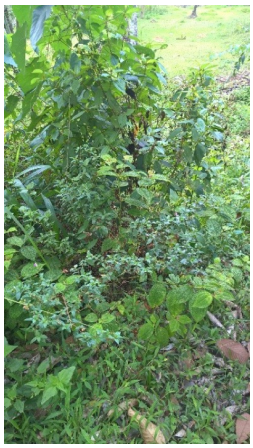
Tea lands on higher elevation have been cut through to construct the penstock

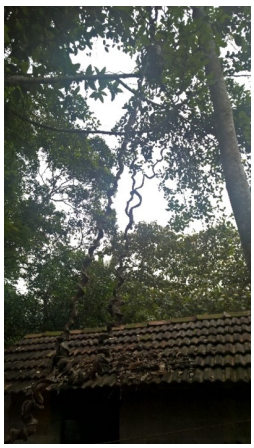
The rock blasting taking place is a threat to soil stability and a disturbance to the fauna

Part of the penstock has been cut along a slope, increasing risk of earth slips

Cultural Impact

Medicinal plants such as the following were observed in the region.





Pus Wel (Entada pursaetha)

DISCREPANCIES WITH THE SITE VISIT AND THE IEE

1. The IEE states that the weir will be located 2.2Km away from the confluence point of the Anda Dola and Tumbaperiya Dola but it was found that the weir is 2.8Km away from the point of confluence

2. The weir length stated in the IEE is 12m however the actual length of the weir across the stream is 16.04 m

3. The site visit report clearly states that the weir location is within the Dellawa Forest, yet it has failed to recognize the ecological value of the forest which is a part of the Sinharaja Forest network

The incomplete weir

LEGAL ANALYSIS

Flora and Fauna

The following table shows the list of fauna in the region which are protected under the Flora and Fauna Protection Ordinance.

Scientific Name	Common Name
Prionailurus viverrinus	Fishing Cat
Loris tardigradus	Slender Loris
Manis crassicaudata	Indian Pangolin
Cervus unicolor	Sambar
Muntiacus muntjak	Barking Deer
Lutra lutra	Eurasian Otter
Loriculus beryllinus	Sri Lankan Hanging Parakeet
Psittacula calthropae	Sri Lankan Layard's Parakeet
Ocyceros gingalensis	Sri Lanka Grey Hornbill
Galloperdix bicalcarata	Sri Lanka Spurfowl
Sicyopus jonklaasi	Lipstick Goby
Devario pathirana	Barred Danio
Lepidocephalichthys jonklaasi	Jonklaas' Loach
Sicyopterus halei	Red-tailed Gobi
Rasbora wilpita	-

The following table shows the list of flora in the region which are protected under the Flora and Fauna Protection Ordinance.

Scientific Name	Common Name
Artabotrys hexapetalus	Yakadawel
Petchea ceylanica	Kukulkaduru, Wal-kaduru
Oncosperma fasciculatum	Katu-kitul
Hoya ovalifolia	Gonika
Garcinia hermonii	Kana Goraka
Shorea stipularis	Nawadun, Nawada, Hulan
Diospyros moonii	Kaluwella, Kadumberiya
Putranjiva zeylanica	Pelan
Adenanthera bicolor	Mas mora
Musa acuminata	Unel, Gal kehel

RECOMMENDATIONS

1. Having visited and analysed the adverse impacts that the project poses at its current construction phase and the anticipated effects of the operational phase, we strongly believe that the project concerned should be stopped. Any damage or disruption to the ecosystem caused by the construction of the project should be identified and restored to its natural state, ensuring that further destruction does not take place.

2. The feasibility of this project is questionable as the natural flow of the Anda Dola is unlikely to sustain a mini hydro plant with a capacity of 0.77Mw. The economic returns of this project in comparison to the financial investment and environmental cost are highly questionable in view of the extensive damage to the environment. Furthermore, as more low cost and environmentally feasible alternatives are available to generate the same amount of energy, a cost benefit analysis internalizing the environmental cost/ benefit should be conducted.

3. As it is clear that the environmental costs of such a project outweigh its economic returns the project approving agencies should conduct a comprehensive re assessment of the project.