



## **Project Proposal for mitigating HEC - in Gonaganara - Buttala Divisional Secretariat**

**All For Nature B. V., Eco Team. Pvt Ltd & Sri Lanka Wilderness Foundation.**

Human-elephant conflict is one of the biggest environmental and socio-economic crises of rural Sri Lanka. Annually elephants cause over \$10 million of crop and property damage and in retaliation, the farmers kill the elephants.

On average 225 elephants have been killed by farmers annually since 2008 and elephants have killed about 60-80 people annually, most in their own villages and fields. The field studies and data gathered over the years by various government and non-government bodies reveals that the problem is only increasing over time. No sustainable approach has been taken so far to mitigate the issues.

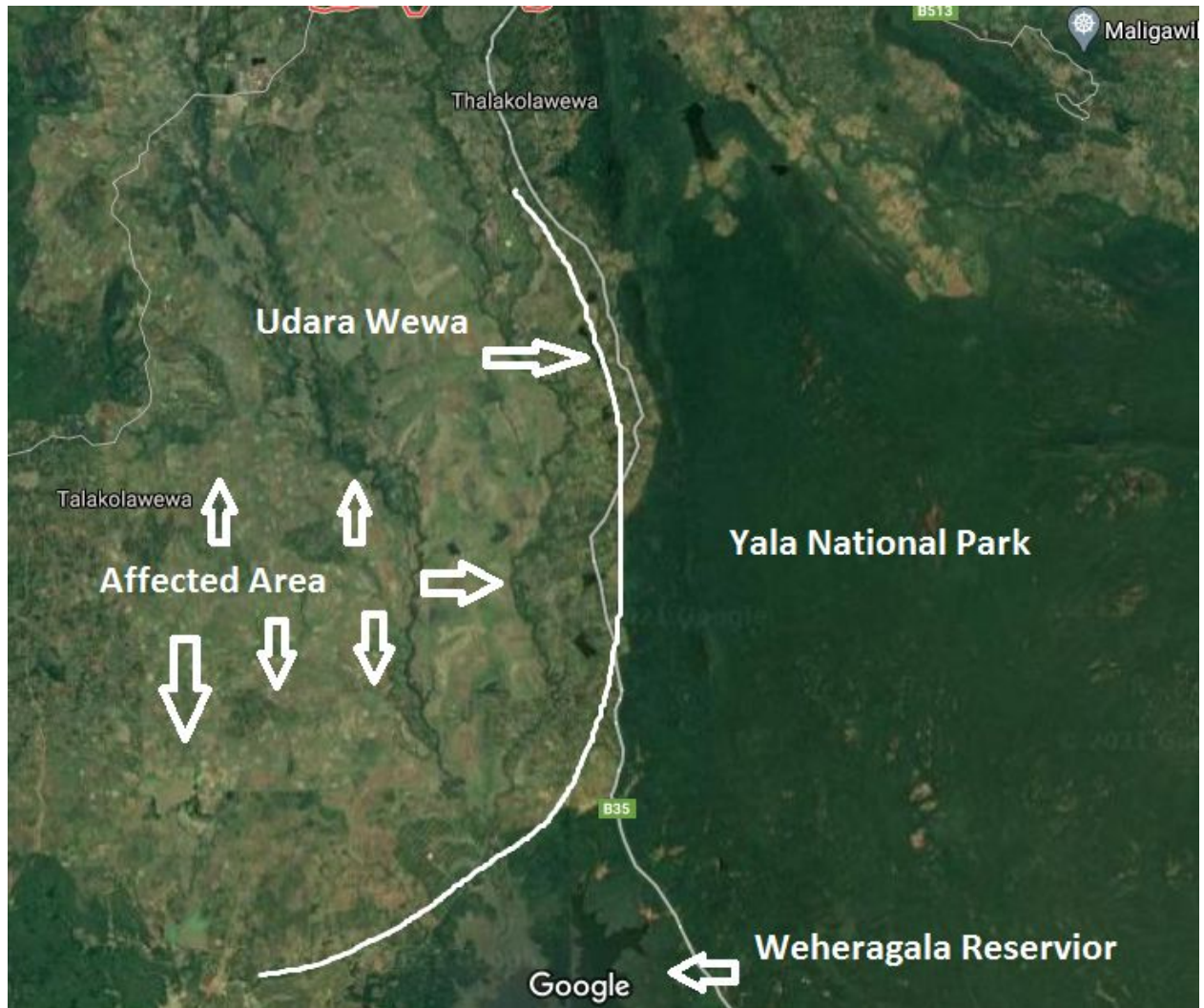
The methods that have been used so far are placed on this area without actually doing any sort of pilot projects. Hence these are failing massively due to the lack of compatibility to the area.

Also, the root cause - reviving the elephant's food source within the National Park area through sustainable forest management - has never been looked at in any of these projects and that has become the main reason for these HEC mitigation projects to fail. Hence, after interviewing the villagers, the Assistant Government Agent for Buttala - Mr R M R S Thilakarathane and the Head Wildlife Officer of Walliamma Ara Office - Mr Chaminda Attanayake and taking all aspects and the recommendations into consideration we are proposing the following to be implemented to prevent the problem once and for all.

**Proposed Pilot Project Area: Gonagahaara - Buttala Divisional Secretariat**

**Number of affected Families - 500**

## Affected Area



Gonaganara is a fourth-order administrative division and is located in Uva Province-Buttala Divisional Secretariat, Sri Lanka. The estimated terrain elevation above seal level is 108 metres.

The above picture shows the aerial view of the affected area. To the right, you can see the Yala National Park and on the left a man-made tank called Udara Wewa. The main pilot project area is in between these two landmarks.



## Current Situation





















## **Current Mitigation Methods**

1. Elephant Watch Tower
2. Road with Mobile Patrol
3. Three Wire Elephant Fence
4. Trench
5. Two-Wire Electric Fence
6. Bio Fence - with flax or linseed plant
7. Hanging Fence

These methods are used to cover an area of 16.5 KM from Manik Ganga ( River ) up to Ayakapolla and to Demodara. Even though all these methods were taken the HEC is still continuing due to the fact that each of these methods isn't foolproof and the elephant is learning as to how to overcome all these obstacles.

### **For example :**

- Watchtowers are set up 1 KM apart and elephants have learned to avoid them and cross in between the towers. Also, avoid Patrol timings. This is despite the fact 6 Modified Tractors, 30 Ground Employees and 20 Security Staff being present to work on this. Watchtowers are also attacked sometimes.





- Elephant Fences and the Electric fences are broken down using dead branches to avoid getting an electric shock.



- Trench sides are broken down and horizontal pathways are constructed to climb up the trench wall.

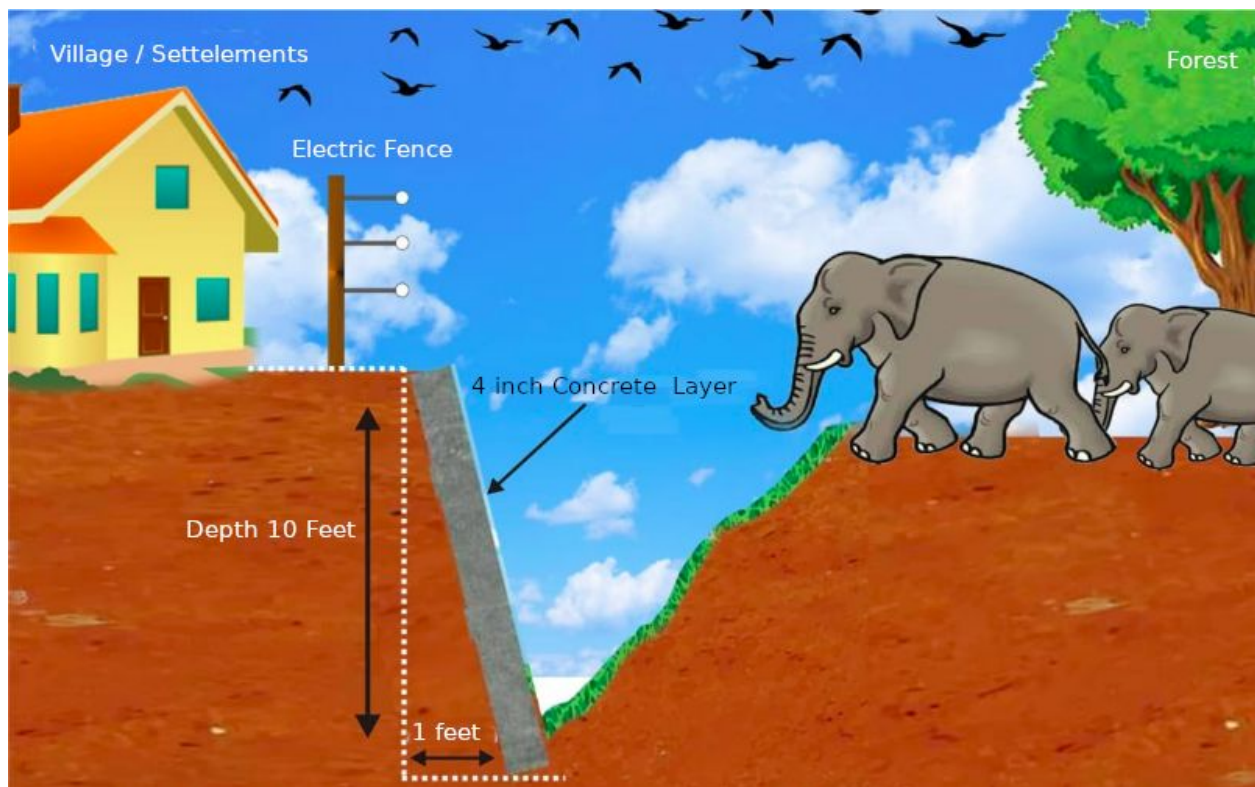




- Bio Fence is being destroyed by the “porcupines” so it is not effective. The citrus plants can only be effective in a small area where you can plant a stretch at least with a width of 100 m, but this is also not possible due to the geography of the area. Plus, as explained before, rodents like porcupines which are abundant in the area tend to destroy plants at young stages. It is impractical to care for these plants on this site.
- The Bee Hives which are introduced to the area, are “sri lankan honey bees” and they are not as aggressive as the african species. So this method has also failed in the area.

**Taking all this information, we are going to propose the following method to stop HEC in the area once and for all. This will run as a pilot project 1st to assess the success and will run with government aid for the rest of the area.**

### **Proposed Method**



The existing trench to be dug to increase the height and the wall towards the village side to be reinforced with a 4-inch concrete to prevent the elephant from climbing up.



The Above method is inspired by the Z-D Canals that are used to irrigate the country. When an elephant falls into one of these canals it cannot get out, without human intervention. Same structure to be followed here, and by only concreting one side of the wall, we are inevitably forcing the elephant to climb the only wall it can which will send it back to the forest side.

Please refer to the below video which showcases the above scenario mentioned. This incident occurred in March 2019

Link : [An elephant stuck in a canal saved by humans](#)

### **Estimated Expenditure for the 1st 100 Meters**

Item	Unit Price	Amount
Trench Digging (Excavator Machine - Machine hours)	25 *5000	125,000.00
Plywood Boards	115*2800	322,000.00
Cement	320*1000	320,000.00
2*2 Mesh Net (Iron)	45*4750	213,750.00
Sand	13*12000	156,000.00
Chip Rock	18*8300	149,400.00
Labour (Human Days)	120*4000	480,000.00
Miscellaneous		100,000.00
<b>Total</b>		<b>1,866,150.00</b>

### **Estimated Expenditure for the 1st 1 Kilometer**

Item	Unit Price	Amount
Trench Digging (Excavator Machine - Machine hours)	210*5000	1,050,000.00
Plywood Boards	250*2800	700,000.00
Cement	3200 x 1000	3,200,000.00
2*2 Mesh Net (Iron)	450 x 4750	2,137,500.00
Sand	130 x 12000	1,560,000.00
Chip Rock	180 x 8300	1,494,000.00
Labour (Human Days)	1200 x 4000	4,800,000.00
Miscellaneous		500,000.00
<b>Total</b>		<b>15,441,500.00</b>



### **Alternative Suggestions for places where digging the trench is not possible**

- Creating Barriers using Iron Spikes.
- Iron rod fencing using repurposed train tracks.
- Night Patrolling.

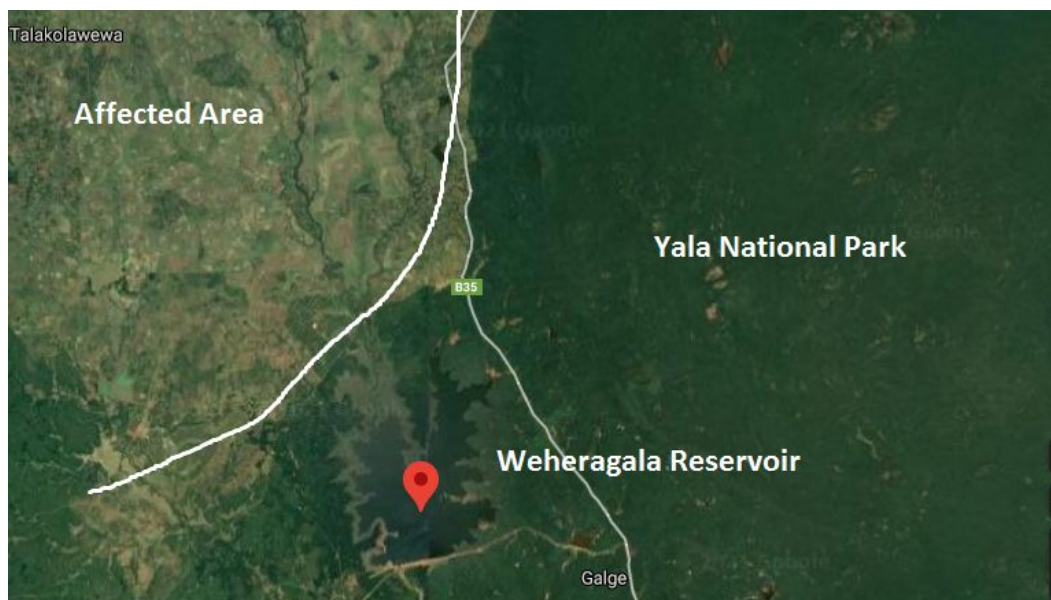
### **Direct advantages of the Project**

1. Reduced maintenance cost since no daily maintenance required. Expenses for elephant repellent, patrols can be minimised.
2. No Crop Damages, Human Lives loss, Property damages - No Government Compensation to be paid.
3. Illegal Poachers and loggers will not be able to enter the forest.
4. Cattle won't be able to enter the forest so food sources for elephants will be protected.
5. Permanent solution for HEC in the area.

### **Sustainable Forest Management - Ensuring the availability of food Sources for Elephants within the Park.**

While securing the borders of the National park, it is paramount that the food and water sources be established for the elephants in the park area. Below steps to be taken to ensure that the above target is met,

- The area around the Weheragala tank to be cleaned and all the invasive species to be removed converted to grassland which will sustain the wild elephant herds.

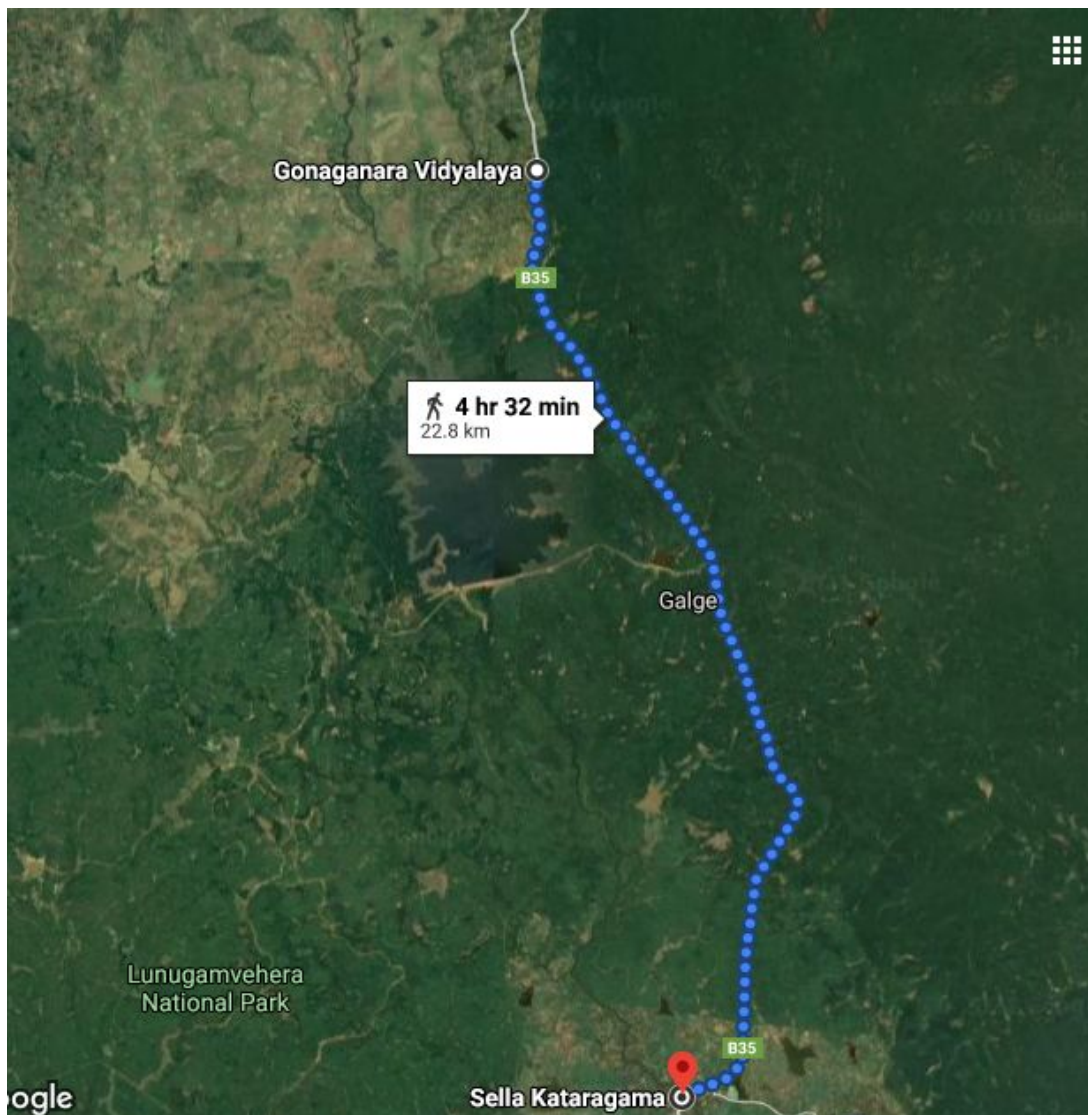




- Invasive species to be removed along the Galge Road for a 22 KM stretch with a width of 50 M from Gonagan Ara RD Junction to Sellakataragama Road and converted to grassland as it was before.

During the Civil War times in 2008, the sides of the roads were cleared as a security measure along the road. During this process the forest around the road was converted to a grassland and elephants started feeding on the new grass. This minimised the HEC in the area significantly. But now since the war is over , the process of clearing the area and removal of invasives has stopped and the elephants have lost their food source once again.

### Road Map





**Difference of the Old Forest and the Cleared Grass Land Along the Road which needs to be restored.**

You can see the difference between the old forest and the new growth.





- The ancient tank system (Ellanga system) of the olden days from Ganaganara to be reconstructed at least 50% of the full capacity.

Each white spot shown in the map is a man made lake and connected to each other through small canals. Restoring these will solve the problem of drinking water of elephants as well as the animals.



- Natural Waterholes to be renovated along the Sellakatatakama Service road to prevent the elephant from coming to the village during the dry season searching for water.





**The above (Sustainable Forest Management) is estimated to cost an additional 1 Million LKR.**

### **Project Plan**

We have received a donation of **610,000 LKR from All for Nature - Netherlands** - to start the project.

To collect the rest of the funds that are required, we are planning on starting an international fundraiser with a trusted website like "Go Fund Me" (still under discussion) and also making use of Social Media.

Awareness Programs to be conducted with local expertise to aid the fun raiser and also to keep the villagers informed and safe until the project is completed.



The Government Officials to be informed and the required permissions to be obtained. Also financial / labour support also to be requested from them.

Collaborations with suitable Wildlife Organisations , University Professionals (local and international) to be made to make this project successful. (Example : WNPSL , University of Sri Jayewardenepura , The Wild Elephant - Sri Lanka )

**The ultimate objective will be to find a permanent solution to the HCE while protecting the Wildlife and not to implement any temporary solutions which have had no effect so far.**

### **Proposed Timeline**

The current plan is to complete this within **6 months**, however this highly depends on the Covid -19 situation and the success of the fundraiser program.

### **Information Source:**

1. Field Visit done on 27/01/2021 by Migara Perera, Nishanthi Kulathunga and Yasantha Kuruwitaarachchi - Employees of ET- Sri Lanka.
2. Preliminary Study done by Mr. Chaminda Attanayake - Assistant DWC Ranger - Walliammarara DWC Office.
3. Divisional Secretariat - Mr R M R S Thilakarathne - AGA -Buttala

Photo Credit: Mr Chaminda Attanayake - Wildlife Officer - Buttala

### **Prepared By :**

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