Green

Hindustan Unilever

Greening Minds and Campus

Proposal for
Biodiversity Enhancement and Natural Resource Management Projects at Hindustan Unilever, Pondicherry Plant

Submitted by:

TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (TIES)
www.ties.org.in

Green

Hindustan Unilever

Greening Minds and Campus

Proposal for
Biodiversity Enhancement and Natural Resource Management
Projects at Hindustan Unilever, Pondicherry Plant

Phase- I

Submitted by:

TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (TIES)
Affiliated Research Centre of Mahatma Gandhi University, Kottayam
Ecological Research Campus, K.K. Road, Velloor P.O.,
Kottayam, 686501. Kerala, India.
Tel- +91 481-2503988; 9497290339;
Email: tropicalschool@gmail.com
www.ties.org.in

December 2016

I. Introduction

Greening campuses is a global need in the current environmental scenario and such movements are getting more acceptance everywhere. Greening of industries is an added responsibility especially in the event of global phenomena like climate change. Greening programmes includes mainly two categories of activities: conservation of existing greenery and enhancement of biodiversity components. Biodiversity enhancement programs are essential in industrial and urban areas to mitigate the negative impacts on biodiversity by conserving and improving existing biological diversity. It not only ensures greenery but also provides habitat to a number of fauna species.

Through the implementation of the biodiversity enhancement project at Hindustan Unilever Ltd, the company will be able to establish a way to integrate biodiversity to the business, thereby providing a mechanism for improving HUL's performance in relation to biodiversity and ecosystem services. Restoring biodiversity also increases the aesthetic beauty of the campus and can provide a blissful environment to the workers as well as to the visitors. To make HUL campus greener and biodiversity friendly, Tropical institute of ecological Science (TIES) proposes a biodiversity enhancement project for HUL.

Tropical Institute of Ecological Sciences (TIES) is a not for profit research organization established in 2004 by a group of experts from the field of education, management and conservation. It is registered as a non profitable organization under the Travancore-Cochin Literary, Scientific Charitable Societies Act, 1955 with 12 A and 80 G status as per the Indian Income Tax Act, 1961. Also, TIES is an affiliated research centre of Mahatma Gandhi University in Environmental and Atmospheric sciences. It is established mainly to promote education and research in the field of science, to diffuse useful knowledge and also for initiating charitable works. The institute is approved by Ministry of Agriculture, MOEFCC and Science and Technology of Government of India and registered under *Niti Aayog*. TIES is a trusted CSR program facilitator of many corporate including Apollo Tyres Ltd, Singinawa Foundation and Tata Chemicals.

II. Objectives

- To create thematic gardens at HUL campus and enhance the aesthetic beauty and the biodiversity inside the HUL campus; especially to promote native flora and biodiversity within the campus
- To improve HUL's image as a green corporate
- To promote eco-friendly practices in natural resource management such as composting for bio-waste management
- A biodiversity resource park at HUL to raise awareness on the importance of biodiversity among employees and community members

III. Philosophy of Biodiversity Gardening

Biodiversity gardening is a unique attempt for biodiversity conservation through simple and low cost methods. Since habitat loss is the major cause for the declination of global biodiversity, effective methods of habitat provision is necessary to enhance biodiversity. Hence, creating biodiversity garden inside HUL will provide much needed habitat for several species right inside the campus. A biodiversity garden creates critical habitat for our native pollinators and a healthy ecosystem for humans. Once the proposed gardens are implemented they can be showcased which will be an educative experience for people.

Thematic biodiversity gardens are based on a theme which will help in creation of micro habitats within townships and institutions which support the native flora and fauna. The aim of such biodiversity gardens is to ensure that the "green area" is not just a patch of exotic ornamental plants which does not provide much eco system services, but it supports and enhances the life around them. Popular biodiversity garden themes are butterfly garden, medicinal garden, fruit tree garden, bird garden, star garden, wild tree garden, bamboo groves, apiary, orchidarium, fernerium, native fish pond *etc*.

The proposed thematic gardens for HUL would consider planting native flora only in the campus. Planting native flora is cost effective in terms of less monetary expenses and less labor intensive maintenance. Also, in the long run it will invite native bird and insect

species by providing shelter and food; thereby making the campus a rich haven of local biodiversity.

IV. Expected outcome

- Establishment of thematic biodiversity gardens inside HUL campuses will lead to improved biodiversity, mainly among flora, but naturally and eventually it leads to improved faunal diversity (birds, insects *etc*.)
- Utilization of nooks and corners of the campus with lots of fauna and flora; offering ecological, aesthetic and economic (honey, fruits, flowers etc.) benefits
- Each tree or habitat (garden) is a good learning centre and relaxation spot; high level learning, especially informal education, with excellent awareness output and good conservation impacts- thus the campus will function as an informal eco-education center
- Reduction of atmospheric carbon level through better carbon sequestration; contribution to mitigation of climate change.
- Eco-friendly practices will promote pollution free environment and provide learning to all stakeholders
- Emergence of Hindustan Unilever Ltd as a green company

V. Projects proposed for HUL

S. No.	Project Title
1.	Butterfly garden (in front of changing room)
2.	Green cover enhancement
3.	Composting

VI. Concept & Method of implementation

1. Butterfly Garden

Butterfly gardening is conservation cum educational programme. Among the various insects found in our surroundings, butterflies have attracted human beings throughout the years. Due to rapid urbanization, nature and its surroundings have become least important to its inhabitants, especially for the new generation. They don't find the need or the importance to conserve and protect the environment. In foreign countries, specially designed cages are used to conserve butterflies. It is a better way of making people understands about the importance of conserving these natural beauties. Recent years, many places in India, 'open' butterfly garden has been started and is found to create a greater impact on people. Moreover, starting butterfly garden in an industrial area is by its own a different idea in the field of environmental conservation efforts.

Butterflies require specific host plants to complete its life cycle. The worms that hatch from the egg need leaves from its favourite plant as food. On reaching the stage of maturity, each butterfly requires certain specific host plants for nectar feeding. When we plant these host plants together in a garden it attracts the butterflies and they come automatically for breeding and to feed themselves. During the blooming of plants, they release special chemical fumes into the atmosphere, which attracts butterflies from faraway places. This is the main principle behind an 'open – butterfly garden'. Normally, places that are peaceful, less polluted and are full of greenery are selected.

Through an initial field investigation of the Hindustan Unilever Ltd, it was found out that more than 20 species of butterflies (Table 1) are already present in the Hindustan Unilever campus. Despite the high butterfly diversity, the population abundance of each butterfly species is very low in the campus. However, it could be replenished with a little effort that is by providing appropriate habitat and breeding ground for them to thrive in.

Sl.No.	Common Name	Scientific Name
1	Common Rose	*Pachliopta aristolochiae*
2	Tailed Jay	*Graphium agamemnon*
3	Common Mormon	*Papilio polytes*
4	Common Emigrant	*Captopsilia pomona*
5	Common Grass Yellow	*Eurema hecabe*
6	Common Jezebel	*Delias eucharis*
7	Psyche	*Leptosia nina*
8	Nigger	*Orsotrioena medus*
9	Tawney Coster	*Acraea violae*
10	Common Leopard	*Phalanta phalantha*
11	Common Castor	*Ariadne merione*
12	Common Sailer	*Neptis hylas*
13	Blue Pancy	*Junonia orithya*
14	Lemon Pancy	*Junonia lemonias*
15	Peacock Pansy	*Junonia almana*
16	Danaid Eggfly	*Hypolimnas misippus*
17	Blue Tiger	*Thirumala limniace*
18	Plain Tiger	*Danaus chrysippus*
19	Striped Tiger	*Danaus genutia*
20	Common Indian Crow	*Euploea core*
21	Pea Blue	*Lampides boeticus*
22	Common Cerulean	*Jamides celeno*
23	Chocolate Pansy	*Junonia iphita*

Table 1: Butterfly species found in HUL area

Creating a butterfly garden would probably be the easiest way to make the campus more eco-friendly. Also, it is the best way to make better use of the nooks and corners of the campus that remains unused as an ideal butterfly garden. Butterflies can be attracted and sustained in the campus by planting about 30-45 species of both nectarine and food plants. Since native butterflies will only be attracted to native garden plants it is vital to plant indigenous garden plants in order to create a butterfly garden. Choosing the plants that caterpillars and butterflies like to feed to be planted in the garden will automatically invite

more butterflies to the campus while complimenting the aesthetic beauty of the campus. Citrus, Cinnamom, Aristolochia, and Mussaenda are some of the common larval host plants that can be introduced for attracting various butterflies. Ixora, Lantana, and Clerodendron are some common nectar plants favored by many species of butterflies.

Methodology

About 3-5 cents of land is necessary for creating a good butterfly garden. Land will be readied and saplings of 20-30 host and nectarian plant species will be planted based on horticultural principles. Also a bio-fencing using native plant species will be done to separate the butterfly garden from the rest of the company garden. Regular maintenance will be carried out with the aid of garden labourers.

After planting host and nectarian plants, it will take at least six months for stabilizing the community as an ecosystem. By that time, the population of already existing species in the area will significantly increase in the campus and 10 more new species will increase in the campus. Depending on the various environmental factors existing at the selected locality the expected output and outcome may change.

Photo: A view of the proposed butterfly garden (Source: TIES file)

2. Green cover enhancement

Green cover on the landscape enhances the beauty of the garden. To enhance the beauty of the garden at HUL, grass turf will be created in the bare garden landscape using buffalo grass. Being a native plant species, it requires low maintenance, less water and no fertilizer

than other exotic grass varieties. Along with shrubs and herbs also will be planted which have an aesthetic beauty.

3. Compost green waste (Pit composting using microbial consortium)

At present most collected waste is disposed of in landfills or discarded improperly. Within the landfills biodegradable waste produces methane, a powerful greenhouse gas. Greenhouse gases play a major role in global warming, and our activities are rapidly increasing the level of greenhouse gases in the atmosphere. Reducing the amount of waste that is send to the landfill will reduce methane release and reduce our contribution to global warming. Hence a composting unit with just a few pits should be needed to fertilize the plants. The plant could be built in the vacant areas near to the backyard so that any difficulty due to the smell emanating from the pit during the bio-waste digestion could be solved. Compost pit units will improve the efficiency of the plant to process all its biodegradable waste, which in turn will be turned to organic manure that could be used in the agro-biodiversity garden to get a better yield.

Location

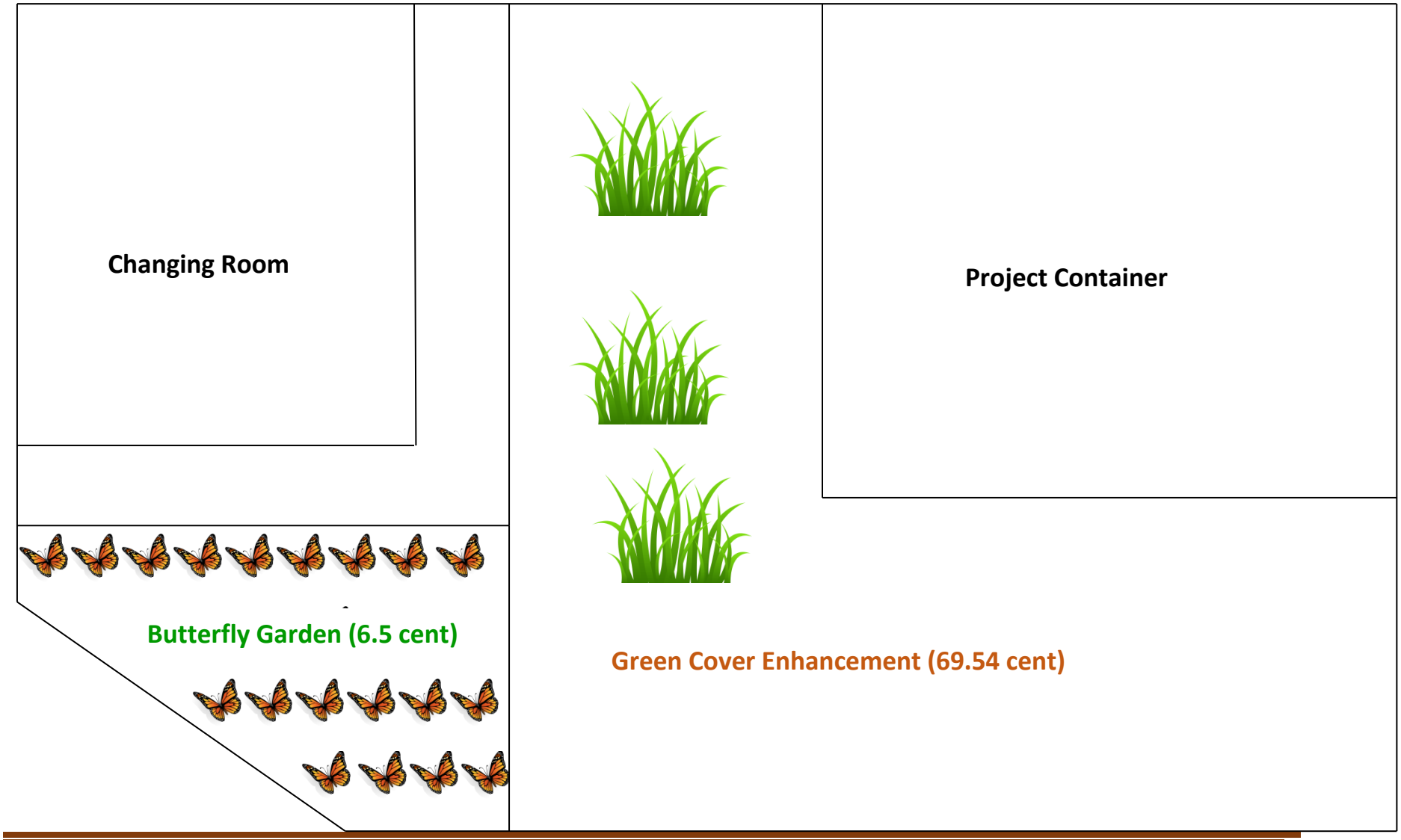
Near backyard area

VII. Project Period

The implementation period of the phase I project will be three months.

S. NO	PROJECT	IMPLEMENTATION PERIOD
1.	Butterfly garden	3 months
2.	Green cover enhancement	3 months
3.	Composting	3 months

VIII. Proposed Project Site



IX. Outputs/Outcomes/Impact

S. No.	Activities	Output	Outcome	Impact
1.	Butterfly Garden	Installation of butterfly garden with 30 – 40 species of host & nectarine plants	Increased number of butterflies species and good aggregation of butterflies in the garden	Conservation of biodiversity inside Hindustan Unilever Ltd campus and make it aesthetically beautiful
2.	Green cover enhancement	grass turf will be created in the bare garden landscape using native grass	Green cover on the landscape enhances the beauty of the garden	
3.	Composting	Biodegradable waste pit of specified size layered with litter and augmented with microbial consortium	Stabilized production of compost and utilization in gardening	

XI. Basic principles, ethics & Guidelines

1. TIES is a not-for-profit organisation with a professional work practices. We will ensure that the green-ethics and policies of the organization is not violated during the implementation of the projects.

2. Proposed projects are eco- restoration and biodiversity enhancement projects which are scientific activities in nature. Climatic variables and factors play major roles in the success of these projects. In case of adverse climatic conditions, outbreak of diseases the success of projects vary. Such factors and incidents will be informed to the company in detailed report.

3. The eco-restoration project at Hindustan Unilever Ltd campus is with a long term vision and we have set yearly milestones (mutually agreed) for the project to ensure that the success is measureable.

4. TIES will use only organic fertilisers, pesticides and do water wise gardening for all projects.

5. TIES will support and promote the efforts of the company in the appropriate platforms to showcase the commitment of the company in biodiversity conservation. We also expect the company to recognize the contribution of the organization in your green process and not just treat the institute as a commercial vendor of services.

6. Current proposal is for the phase –I only and the expansion phase will be discussed an nbd decided after the completion of first phase of the project.

7. TIES will ensure that two selected gardeners assigned by the company are provided with necessary training to manage basic maintenance of the project. However, the scientific knowledge of individual consultants used in this project will be shared only a need to know bases and it will be at the discretion of the person.

TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (TIES)

Ecological Research Campus, K.K.Road, Velloor P.O.,
Kottayam, 686501.Kerala, India.
Tel- +91 481-2503988; 9497290339;
Email: tropicalschool@gmail.com
www.ties.org.in

Affiliated to Mahatma Gandhi University, Kottayam