LIVING LEGACY:
Plant a Tree, FEED Our Future

A Program to Green our Nation & Offset our Carbon (Ecological) Footprints

October 2012
Executive Summary

The “Living Legacy: Plant a Tree, FEED our Future” program was launched by FEED Inc in October 2012 in response to the threats of global warming, climate change, food security and the preservation of biodiversity in the Philippines, all for sustainable development.

The campaign aims to commence with the reforestation of over 8,800 hectares of arable land and indigenous woods in 18 months, with a target to restore indigenous and industrial trees production and the sustainable livelihoods of local communities in Quezon Province, The Philippines.

The Living Legacy: Plant a Tree, FEED our FUTURE invites individuals, corporations and organisations from all walks of life and worldwide to plant a tree in their name - which is why we coined it “Living Legacy”.

People, communities, businesses, industry, civil society organizations and governments are encouraged to enter tree-planting pledges on-line via info@feed.org.ph

Partnership for the Sustainable Development: FEED Links up with UPLB to Collaborate on Land Grant Development Project, Quezon Real, The Philippines

The University of the Philippines (UP) in Los Baños has a long record of mutually beneficial partnerships with various universities, organizations and individuals as it continually seeks to work with faculty and the next generation of scientists, academicians and other stakeholders to ensure UPLB’s continuing successful contributions to the preservation of our natural resources and the protection of our environmental assets.

To date, FEED Inc. has a standing Memorandum of Agreement allocating a portion of its funds to UPLB scholars focusing their degrees on natural sciences, environmental and related studies.

FEED also wishes to co-develop the programs and projects to further support and cultivate collaborative partnerships with industry stakeholders, including student, faculty, and post-doctoral exchanges of best practices, research and other educational activities that encourage continued innovation in our aim to foster education & environment for (sustainable) development.

The Importance of Trees in Sustainable Development

“Sustainable development,” as defined by the World Commission on Environment and Development (the Brundtland Commission) in 1987:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Trees absorb carbon dioxide and turn it into oxygen.
Trees absorb carbon dioxide and give off the oxygen that we breathe.

Trees play a vital role in carbon sequestration and global carbon cycling, thus help mitigate climate change. The carbon dioxide cycle keeps the natural balance of its concentration in our atmosphere. But our actions and behaviours cause changes, which upset this natural balance.

The creation of too many greenhouse gases causes an imbalance with heat being trapped in the Earth's atmosphere, increasing the overall average temperature resulting in global warming.

We produce excessive amount of carbon dioxide by burning coal and petrol (referred to as 'fossil fuel' or fossil energy) in our power plants, factories and cars. The destruction of rainforests and cutting down of other forests also affect the balancing act. By destroying Earth's natural forestation we threaten our existence.

Planting trees greens and beautifies the areas where they are planted. The impact of planting trees is one of the ways of offsetting our carbon emissions. (However we do need to do all we can to reduce our footprint on the planet, and offset that which cannot be reduced by planting trees.) One statistics said that it takes 16 trees to supply the oxygen for one person's life. But other experts say there is no way of measuring this exactly as it depends on the type of tree as well as the lifespan of the tree. Our aim should be to minimise our
footprint and plant as many indigenous trees as possible. Trees play a vital role in rural and urban populations. They are needed to enrich and anchor soil, to maximize water supplies, to beautify and humanise townships and urban areas and to provide shade and shelter. They are also crucial for biodiversity conservation. Products and services from trees include food, timber, fibre, medicines and energy.

**On Climate Change, Food & Water Security**

There is an intrinsic link between the challenge we face to ensure food security through the 21st century and other global issues, most notably climate change, population growth and the need to sustainably manage the world’s rapidly growing demand for energy and water.

It is predicted that by 2030 the world will need to produce 50% more food and energy, with 30% more fresh water, whilst mitigating and adapting to climate change.

This scenario threatens to create a “perfect storm” of global events.

*Source: A “perfect storm” of global events. - John Beddington,  Chief Scientific Adviser to HM Government, Office for Science*

**Overview of Tree Planting Regions, Quezon Real: UP Sierra Madre Land Grants**

UP Los Baños manages 2 land grant areas - collectively referred to as the **UP Sierra Madre Land Grants** - in the southern portion of the Sierra Madre mountain range, namely:

1. **Laguna Quezon Land Grant (LQLG):** 5,729 hectares, given to the University in 1930, administered as a permanent endowment for additional support and maintenance.

2. **Laguna Land Grant (LLG):** 3,355 hectares, originally “Paete Land Reservation”, awarded UP in 1964 for a central experiment station for the research and extension functions of UP, specifically the Colleges of Agriculture, Arts and Sciences, and Veterinary Medicine.

**Focal Areas: UP Sierra Madre Land Grant Management & Development Plan**

a. FEED Inc. proposes to dedicate its efforts to supporting - from the planning to the implementation, monitoring and management in collaboration with UPLB. Once this proposal is approved, FEED Inc. will work with UPLB in a collaborative partnership to identify the relevant project teams and capabilities required to carry out this project.
b. The UPLB & FEED collaboration intends to optimise the plans as laid out in the UP Sierra Madre Management & Development Plan, particularly, to highlight the most feasible, early successes identified in the Plan (ecotourism focus) as noted in the ensuing table.

### Table 3. Interesting ecotourism spots in the Laguna-Quezon Land Grant.

<table>
<thead>
<tr>
<th>SPOTS</th>
<th>CHARACTERISTICS</th>
<th>OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterfalls</td>
<td>Ambon-ambon, Kabise falls, Shower falls, Other unnamed falls</td>
<td>• Ecotourism (water rapids, camping, bird watching)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mini-hydrothermal</td>
</tr>
<tr>
<td>River system</td>
<td>Six river systems (Lalawinan, Tipuan, Pandan, Abong-abong, Makaali, Pinagtablahan)</td>
<td>• Ecotourism (water rapids, camping, bird watching)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Production of aquatic faunal resources (e.g. edible snails, eel)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mini-hydrothermal</td>
</tr>
<tr>
<td>Ravine/Cliff</td>
<td>Approx 20-30 m high</td>
<td>• Rappelling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Canopy walk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Birdwatching</td>
</tr>
<tr>
<td>Lagoon/Pond</td>
<td>Less than 1 ha, flowing all year round from 2 water sources</td>
<td>• Boating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fishing</td>
</tr>
<tr>
<td>Network of Roads and Trails</td>
<td>More than 200km of roads and trails</td>
<td>• Hiking/trekking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Horseback riding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mountain biking</td>
</tr>
</tbody>
</table>

Source: UPLB Sierra Madre Land Grant Management & Development Plan

*LIVING LEGACY: Plant A Tree, FEED Our Future - Project Design*

The Plan proposes three major zone-based program components:

1. Forest Development & Conservation Programs;
2. Social/Community Development Programs; and

The Plan focused only on components of Forest Development & Conservation Programs and Support Programs. Kindly refer to the ensuing table.
Table 4. Potential development opportunities per zone in the UP Land Grant areas.

<table>
<thead>
<tr>
<th>ZONE</th>
<th>CHARACTERISTICS</th>
<th>OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection Forest Zone</td>
<td>Presence of dipterocarps and non dipterocarps; adequately stocked natural forests</td>
<td>• Timber from salvage cutting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Non-timber forest products such as handicraft, honey, production, essential oils</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ecotourism, nature interpretation and appreciation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Laboratory for instruction, research and extension</td>
</tr>
<tr>
<td>Production Forest Zone</td>
<td>Sparse trees of dipterocarps and non-dipterocarps; inadequately stocked forests; open canopy</td>
<td>• Industrial tree plantation using fast-growing species such as Acacia auriculiformis, Gmelina, and Bagalunga</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Plantation for biofuel and energy species</td>
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<tr>
<td></td>
<td></td>
<td>• Rehabilitation/reforestation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Agroforestry, small-holder plantation, orchard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ecotourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Essential oils</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Handicraft</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Laboratory for instruction, research and extension</td>
</tr>
<tr>
<td>Intensive-Use Zone</td>
<td>Abundance of grasses, shrubs with some pioneer species; cultivated areas</td>
<td>• Agroforestry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Propagation of high-value crops, plants of medicinal value, plants for essential oil (e.g. Citronella), edible fern, ornamental plants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cultivation of agronomic crops</td>
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<tr>
<td></td>
<td></td>
<td>• Fodder production</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Settlement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ecotourism infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Intensive development</td>
</tr>
</tbody>
</table>

Source: UP Sierra Madre Land Grant Management & Development Plan

Focal Areas

From the 3 zones mentioned earlier, FEED proposes to focus its efforts on its core competence - reforestation - and thus the first Forest Development & Conservation Programs as its theme. Details are noted below.

A. **Forest Development & Conservation Programs.** The programs lined up under this are Industrial Tree Plantation, Agroforestry, Energy (bio-fuel) Plantation, Non-Timber Forest Products Development, Ecotourism and Outdoor Recreation, Intensive Use Management, and Biodiversity Protection and Conservation.

B. **Industrial Tree Plantation.** This is an enterprise expected to generate revenues from timber harvests starting in Year 11. Targeted under this are 3,000 hectares (1,500 in LQLG and 1,500 in LLG) to be allocated among fast-growing trees (750 hectares for each land grant area), intermediate species (375 hectares for each land grant area), and premium species (375 hectares for each land grant area). While funds will be raised to initially finance tree plantation development for the first 10 blocks from Years 0 to
10, it is envisioned that the enterprise will be able to finance the development of subsequent plantations from the incomes of the plantations that will be harvested first. An indicative forestry enterprise model has been prepared but a comprehensive business plan shall later be developed.

C. **Agroforestry.** This program will seek to grow agricultural crops along with perennial crops. Targeted for this are 120 hectares out of the 150 hectares earmarked as relocation site for informal settlers at LQLG. This area will be developed through the community-based and joint-venture approach where the community and the University would enter into a cost- and benefit-sharing partnership. The major crops to be raised are fruit trees (e.g. mangosteen, durian, coffee, jackfruit). During the initial years, the community shall be encouraged to plant compatible agricultural crops in between the rows of fruit trees and the income from such annual crops shall accrue to them. When the trees begin to fruit, the community shall gradually reduce agricultural production based on the level that are still economical for them because of shading that would occur and shall benefit from the community share from net proceeds.

D. **Energy (bio-fuel) Plantation.** This program seeks to establish 200 hectares of mixed plantations of *bani* (*Pongamia pinnata*) and *tubang-bakod* (*Jatropha curcas*) for biofuel production in support of the government’s thrust of reducing dependence on carbon-based imported fuels. *Bani*, a native tree that is promising as a biofuel energy source, is an alternative crop to *Jatropha* in areas of high elevation and with very high rainfall. The produce will be sold to the Philippine National Oil Company (PNOC) or the government’s Philippine Forest Corporation (PFC).

E. **Non-Timber Forest Products (NTFPs) Development.** The NTFPs (e.g. bamboo, rattan, vines, resins, food plants, edible fungi, medicinal plants) are naturally growing and do not require any form of cultivation in the forested areas of the land grants. Found to have potential for large- or commercial-scale production in the areas are bamboo (various species), vines (various species), citronella/lemon grass, and rattan. People living in or near these areas usually resort to the collection and utilization of NTFPs either for subsistence or for income augmentation while waiting for their crops in their farm lots to be harvested. The University can realize income from the collection and harvest of NTFPs. However, policy and institutional mechanisms that will enable the University to regulate the activities of gatherers and at the same time insure that NTFP resources do not get depleted beyond their capacity to recover over time shall be drawn. At present, LQLG has a 5-hectare citronella plantation ready for harvest. A 100-hectare plantation of various species of bamboo (particularly bolo and *kawayan-kiling*) for the production of poles is targeted to be established through this program. A 20-hectare citronella plantation is also earmarked to be established for the production of citronella oil in addition to the existing 5-hectare plantation.

F. **Ecotourism & Outdoor Recreation.** This program seeks to tap the innate beauty and attraction of the land grants to nature-loving and/or adventure-seeking tourists. The land grants’ potentials for this kind of nature-based tourism are great considering that they are strategically located and near popular tourist sites such as Caliraya Lake, Paete wood-carving shops, Pagsanjan Falls, and the beach resorts in Real and Infanta province of Quezon. The land grants’ unique physiography can be developed for recreational activities like hiking, camping, horseback riding, birding, bird-watching, fishing, canoeing, photography, and educational tours. They have a number of still pristine waterfalls ideal for recreation and nature appreciation. The plan envisions to make operational the Sierra Madre Heritage Eco-Park conceptualized in
2003 as part of UP’s Environmental Heritage for the 21st Century. Part of the plan is to develop portions of the 150-hectare area located near the LQLG Field Office to showcase a collection of indigenous and indigenized plant species; showcase agricultural/environmental technology; and be a venue for instruction, extension and research & development. The proposed eco-park will generate income while at the same time cater to the scientific, educational, social, cultural and aesthetic needs of a wide public.

G. **Intensive Use Management.** The development and management of intensive-use areas in the land grants are the main concern of this program including research and demonstration needs and priorities in the area. Intensive use may include interventions that require appreciable soil movement such as agriculture, agroforestry and infrastructure development. The following initiatives are proposed for this program:

i. 150-hectare relocation area at Sitio Masawa for informal settlers (30-hectare settlement site and 120-hectare agroforestry area);

ii. 100-hectare site for jamborees/camps cum relocation area for the Boy Scouts of the Philippines (BSP) in Los Baños, Laguna;

iii. 150-hectare ecotourism area wherein places of interest like ponds, waterfalls, botanical garden, and natural sceneries will be developed and corresponding infrastructures (e.g. roads, campsite, nature trails, horseback riding oval and trails, canopy walk/monkey trails) will be constructed; and

iv. 200 hectares as campus expansion site.

The proposed plan for the Land Grants once envisioned to make operational the *Sierra Madre Heritage Eco-Park* conceptualized in 2003 as part of UP’s Environmental Heritage for the 21st Century.

H. **Sustainable Management & Development Plan For the UP Sierra Madre Land Grants.** Biodiversity Protection and Conservation. The UP Land Grants, being part of the Sierra Madre mountain range, are known for their biodiversity and have been a focus of studies by different institutions. A recent rapid biodiversity survey shows that the land grants do not only have enormous number of flora and fauna but also have very high biodiversity. More than half (54%) of the plants recorded are endemic (only found in the Philippines).

i. Noteworthy in the list are 8 species of *Dipterocarpaceae*, 6 of which are included in the threatened list of Philippine plants.

ii. A total of 24 species in the land grant are included in the National Red List (list of threatened plants), including 5 critically endangered, 3 endangered 12 vulnerable, 2 other threatened species, and 2 species classified as other wildlife species.

iii. The most critical are two *Dipterocarps* (*manggachapui* and *dalingdingan*), *narra*, *makaasim*, and *malabayabas*, all of which are critically endangered and are among the most sought after species by illegal loggers.

iv. Faunal assessment of the two land grants in 2007 also revealed high endemism of wildlife in the area. Of the wildlife species observed, 12 species of birds, 2 species of mammals, 2 species of reptiles, and 1 species of frog are Philippine endemics.
v. Moreover, three species — the Philippine hanging parakeet or *colasisi* (*Loriculus philippensis*), Philippine serpent eagle (*Spilornis cheela holospilus*) and *tarictic hornbill* (*Penelopides panini manillae*) — are included in the list of threatened wildlife in the Philippines.

Considering the high biodiversity value of the land grants, it is imperative to develop a biodiversity conservation program, putting special priority to endemic, threatened and high-valued species. Among the identified conservation activities are inventory of mother trees for future seed sourcing for mass propagation (sexual and asexual); delineation of protection and conservation zones; regular biodiversity monitoring through establishment of permanent plots; captive breeding for selected threatened wildlife; research and development. Only non-destructive activities will be allowed in the area.

Please refer to the map in the next section.
Figure 1. Map showing the Location of Proposed and Existing Projects at the Sierra Madre Land Grants.

Source: UP Sierra Madre Land Grant Management & Development Plan
UPLB Land Grant Development Project Vision

1. An ecological biologically diverse haven of endemic/indigenous flora and fauna of the region;

2. An ecotourism destination that promotes outdoor recreation and relaxation, environmental consciousness, appreciation and participation;

3. A learning laboratory for visitors that facilitates creativity and knowledge-seeking on various fields in forestry, agriculture and related fields;

4. A unique educational field laboratory for excellent and globally competitive academic programs;

5. An enduring source of university revenues; and

6. A wellspring of benefits that contributes to a higher quality of life.

UPLB Land Grant Development Plan Objectives

As a blueprint for its sustainable management and development, the plan has the following objectives:

1. To promote the integrity and stability of the UP Land Grants’ forests to enhance their ecological functions and services;
2. To increase the productivity and revenue generating capacity of forest production areas on a sustainable basis;

3. To manage more effectively and efficiently intensive-use areas within the land grants;

4. To enhance the meaningful participation of all relevant publics in the sustainable management and development of the land grants; and

5. To develop the land grant areas as field labs & experimental sites for relevant UP academic programs.

UPLB-FEED Collaborative Partnership: Encouraging Social Entrepreneurship

FEED INC. was registered as a non-governmental organization (NGO) in the Philippines, incorporated with the Securities & Exchange Commission. FEED operates as a social enterprise (SE) or as a business with a social objective. We harness market forces to apply business practices in achieving our social mission.

“Social entrepreneurs are not content just to give a fish or teach how to fish. They will not rest until they have revolutionized the fishing industry.”

Source: Bill Drayton, Founder & CEO of Ashoka

Collaborating with select “content” beneficiaries and select short-listed partners worldwide, the project team comprises UPLB as lead, FEED as lead support and 3rd party partners that include academia, project staff and investor relations.

Together they form a qualifying, representative CORE PROJECT TEAM, which is set up to:

- Establish a road map of innovative, pioneering and integrated land, water & environmental initiatives
- Partnering with leading and pioneering individuals and organizations as key agents of change and impact in their respective communities
- Launching multi-disciplinary Lifestyle-focused projects that advocate sustainable development
- Engaging strategic media & communications support to ensure communications & broadcast visibility on the sustainability and value of this collaboration, project and its benefits to all stakeholders.
**LIVING LEGACY: Plant a Tree, FEED Our Future.**

**Adopt a Tree for PHP500!**

All it takes is PHP500 to adopt a tree and become a FEED Patron who supports the “LIVING LEGACY: Plant a Tree, FEED our Future” program. Each contribution of PHP500 (approximately USD10 / EUR 9 / SGD 15) enables FEED to purchase seedlings from sustainable seedling banks, gets a tree planted in your name and supports our social and media campaigns!

FEED Inc. is registered with the Philippine Securities & Exchange Commission (SEC Registration #: CN201119068).

**METRO BANK AURORA ANONAS BRANCH**
Beneficiary: FOSTERING EDUCATION AND ENVIRONMENT FOR DEVELOPMENT, INC.
Savings Account #: 7304509968
SWIFT Code: MBTCPHMM

To indicate your interest, kindly email: info@feed.org.ph

We encourage all individuals and organisations form all walks of life to join us in helping restore Philippine forests, livelihoods and communities to their natural state.

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**Reach out to FEED**

As a Social Enterprise FEED dedicates its core activities and earnings to the facilitation and implementation of scholarships, tree planting, forestry and agricultural development projects in the Philippines. FEED Patrons are meant to help inspire and connect other stakeholders to FEED’s Education & Environment mission by engaging like-minded individuals and organizations with demonstrated leadership and action in support of the sustainable development agenda at large.

For any additional information on the “LIVING LEGACY - Plant a Tree, FEED Our Future” Program, please visit our website or email FEED Inc:

- **Email** info@feed.org.ph
- **Website** www.feed.org.ph