CONCEPT NOTE BY TREE BIOTECHNOLOGY KENYA FOR FUNDING

Project Title: Making the difference in Re-afforestation initiatives in Kenya

1. Identifying the Need/Problem

The East Africa Business Summit (2003) identified massive deforestation as one of the most critical environmental crises facing all East African countries[1] (The East African, Sept 29th – Oct 5th, 2003). For instance, Kenya's forest cover declined from 30% of land area in the 1960s to less than 2% at present. Many factors have contributed to this, including but not limited to: illegal logging to meet huge demands for fuelwood, charcoal, carving, in addition to clearing of land for human settlement and agriculture. The statistics on the rates of tree planting (the supply) and tree consumption (the demand) in Kenya are depressing. For instance, to achieve sustainable supply of tree products and services in Kenya, over 200 million trees should be planted annually but less than 35 million[2] get planted while an estimated 65% of the national demand for wood goes unmet[3]. Current tree planting efforts are severely constrained by a lack of good quality seed and slow, inefficient traditional propagation methods[4] The good news is that the establishment of Tree Biotechnology Project (TBP) in 1997 has gone along way in removing the past barriers of lack of poor quality seedlings and slow, inefficient traditional propagation methods.

2. Needed Intervention/Solution

The major challenge in Kenya is to massively and progressively increase tree planting in a way that is sustainable, supports income generation (wherever possible) for small-scale groups and grass-root communities – with an eye on the long-term vision of increasing the country's forest cover and conserving the environment. Examples of organized, small-scale and grass-root communities that can be supported and empowered to spearhead and expand tree planting include schools, churches, women groups, wood carvers, charcoal makers, etc.

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[1] The East African (2003), Special Report, the second African business summit, Sept 29th-Oct5, 2003

[2] Wakhusama, S. & Kanyi, B., 2002, Biotechnology in Tree Production: Creating a Self-Sustaining Production & Dissemination System in Kenya. ISAAA Briefs No.25, ISAAA: Ithaca, NY

[3] Tree Biotechnology Project Flier/brochure, Nairobi

[4] Wakhusama, S. & Kanyi, B., 2002; Op Cit ref 1

3. How can you get involved and make the difference?

With its leading corporate position and unrivaled branch network, you can provide the much needed leadership and momentum for the envisaged tree planting efforts to take root and achieve the desired growth and impact. The following three (3) approaches are proposed for getting you involved and making the difference:

The Eco-Schools Approach:

There are over 20,000 public primary and secondary schools spread out in all parts of Kenya. A significant number of these schools, particularly secondary schools, have boarding facilities and many more have lunch feeding programmes. Cooking and water heating in all these schools is done using firewood. Most of the firewood is harvested from forest areas within proximity to various schools leading to massive deforestation and in many schools, expenditure on firewood accounts for 20-30% of the total school's kitchen/boarding budget. In 1989, the United Nations Environmental Programme (UNEP)[5] estimated that the total firewood by all institutions/schools in Kenya was approximately **500,000 tonnes** per year. Currently the demand has nearly doubled to 1 million tonnes annually due to increase in population and construction of more schools, particularly with boarding facilities. The ecological damage of harvesting 1 million tonnes of wood for use firewood by schools is equivalent to degrading over **400 hectares** of forest cover annually. Moreover, the ban on harvesting wood from forests in 2000, and the resultant scarcity and high cost of firewood, schools have become highly sensitized and motivated towards tree planting.

The most appropriate and sustainable solution is to support and encourage schools to establish their own tree woodlots, with a view to achieving self-sufficient in firewood supply in 4-5 years when the trees are mature for harvesting. Another major advantage of working with schools in terms of tree planting is that they are permanent institutions with adequate land, labor (especially students), and management capacity from principals and teachers. Tree planting is also a practical way of introducing and integrating **Environmental Education** in schools. Schools in different parts of the country can also be mobilized and trained fairly quickly, with minimal logistical/administrative cost implications. Other value adding activities under the Eco-Schools Approach would include:

[5] United Nations Environment Programme (UNEP), 1989, Technology, markets & people: the use and misuse of fuel saving stoves, Energy Report Series, Vol 18, Nairobi

- **Income generation opportunities** – for Eco-schools that are within proximity to Tea factories, income generation opportunities exist by way of selling surplus wood to the tea factories. There are 45 tea factories in Kenya owned by KTDA[6] and they consume 155,000 tonnes of firewood annually to produce 250 million kilograms of ready-made tea. Like schools, the tea factories are also bearing the brunt of the ban on harvesting wood from the forest in terms of scarcity and increased costs firewood. In addition, there is also a global and national trend towards substituting fossil fuels (e.g., furnace oil) with firewood as the source of energy for running boilers in tea factories. Use of firewood will not only help reduce emissions of carbon dioxide (CO_2) which contribute to climate change, but is also much cheaper and will help save foreign exchange. Moreover, growing trees will create local jobs and improve local environment. The current Energy Policy[7] by the Government envisages and supports fuel substitution from fossil fuel to firewood in the tea industry. The Eco-Schools Project is, therefore, unique and innovative in the sense that participating schools will not only become self-sufficient in their internal firewood needs but they will also become the sustainable and reliable sources of firewood for the numerous tea factories, say in Mt. Kenya Region, in a way that generates income, creates local jobs while protecting both the local and global environment. Without out doubt, the Eco-Schools Project presents a unique opportunity and challenge where you can take the lead and make the difference in reversing deforestation in Kenya.

- **Eco-Schools Trophy** – one unique style of you making the difference is to help schools become **Centres of Excellence** in Tree Planting and Conservation in Kenya; in a scope and magnitude that has not been attempted hitherto. Using a defined grading criteria (to be designed later), an Eco-Schools Trophy can be used for recognizing and rewarding the best performance and creativity in conservation activities. The Eco-Schools Trophy can also be introduced as part of the mainstream **Science Congress Competitions** that take place in secondary schools every year.

- **Conservation Walk** – sponsoring a walk dubbed "Conservation Walk" for Eco-Schools would be another exciting and engaging undertaking for students and teachers. Each year, the Project Steering Team would identify a "**theme**" around

[6] Ministry of Energy, 2002, Study of Kenya's energy demand, supply & policy strategy for households, small-scale industries & service establishments, Final Report, Kamfor Ltd, Nairobi
[7] Republic of Kenya, 2004, Draft National Energy Policy, Ministry of Energy, Nairobi

which the walk would be organized, e.g., “Conservation Walk to Save Mt. Kenya Forest”, Conservation Walk to Save the Kenyan Elephant or Rhino”; Conservation Walk to Save the Kenyan Wetlands or Rivers, Lakes”, etc. The Walk would have the multiple benefits e.g., publicity, inculcating a culture of conservation in the youth, fund-raising for other Eco-schools activities – thereby making their activities sustainable, leveraging additional corporate sponsorship in form books, computers, other learning equipment.

- **Energy-Saving cooking Stoves** – schools in Kenya are not only using firewood but are using it very inefficiently by cooking in the traditional open-fire (three-stone) systems whose energy efficiency is no more than 20%. Energy-saving stoves for schools are designed to deliver 50-70% savings on firewood consumption. The resultant financial savings as a result of reduced firewood consumption can be directed towards the repayment of the improved stoves whose cost range between Ksh80, 000 to Ksh120,000 per stove depending on the design, volume capacity and construction materials used. A typical school with 300-500 students and boarding would require 2-3 stoves to effectively their cooking needs. Introduction of an Improved stoves component within the proposed Eco-schools would be another added advantage.

Women groups Approach

Women groups are another outreach approach through which you can make the difference in the re-afforestation initiatives. Kenyan boasts of a multiplicity of women groups involved in a wide range of self-help activities and initiatives. With proper planning, capacity building and co-ordination, the organized groups can be instrumental in the implementation of tree planting initiatives. Critical factors to take into account in this approach include the traditional/cultural and land tenure issues associated with tree planting in Kenya, land availability, etc.

3.3 Conservation tree planting in degraded hot spots

Another approach for you to spearhead targeted tree planting and rehabilitation in highly degraded hot-spots. Examples of such areas include:

- Karima Hill – Nyeri District
- Mau Forest
- Machakos Hill- Machalos
- Karura Forest- Nairobi
- Koru Hill –Kisumu
- Kaya Forest – Coast

- Nyambene Hills – Meru
- Kakamega Forest – Kakamega
- Ifo UNHCR - Garissa

4.0 Methodology of implementation

We recommend a tripartite partnership involving you, Tree Biotechnology Project (TBP) and RETAP for the successful implementation of the project. The contribution of each partner will be as follows:

For you:

- initial funding and corporate leadership/sponsorship
- publicity & awareness creation
- use your wide branch network as focal points for facilitating regular interactions and visits between you and schools with a view to enhancing and highlighting your corporate & social responsibility

For TBP:

- supply of high quality, fast growing seedlings
- technical support and oversight on tree planting and management
- training of selected women groups and schools
- project design, planning & management
- linkage to other similar projects
- leveraging additional funding from other development partners

5.0 Experience and Track record of TBP in similar proposed project

TBP and RETAP (the winner of the Ashden Award for Renewable Energy in 2001) are currently implementing project funded by UNDP/Global Environmental Facility/Small Grants Programme in the Mt. Kenya Region. The project is working with 50 schools, which have planted trees and installed energy saving stoves.
Find attached RETAP's profile with an outline of projects implemented and project partners.

6.0 Recommendations and way forward:

- Without doubt, the Eco-Schools Project presents a unique opportunity and challenge where you can take the lead and make the difference in reversing deforestation in Kenya. It provides the best entry point for you with a long-term vision for growing and expanding into other approaches as more experience is gained and additional resources leveraged.

- Need to design and develop a full proposal for the project.

7.0 Indicative budget estimates for the Eco-Schools Approach option

7.1 Assumptions

- Project to start off in one region (e.g., Mt. Kenya) and progressively roll out to other regions
- Initial 20 primary and secondary schools to be selected for participation using a defined criteria to be designed as part of the project proposal
- Each school to plant at least 5000 seedlings within a period of 2-3 years

Appendix 1: Budget estimates in Kenya Shillings

Budget item	**Inputs requirements**	**Unit Cost (US$)**	**Total cost (US$)**
1. Base line survey & selection of Eco-schools	- transport costs, consultation with schools and other stakeholders, design of selection criteria, field visits to schools and education offices, data collection and analysis	- costed collectively	50,000
2. Seedlings	- buying seedlings from TBP at Karura Nairobi	Ksh10.00/ seedling x 5000 seedlings/school x 20 schools	1,000,000
3. Transport of seedlings to schools	- delivery of seedlings to schools	Ksh3/seedling x 5000 seedling/school x 20 schools	300,000
4. Training of Eco-schools on tree planting & management	- two seminars (one for 20 head teachers and education officials and one for 20 woodlot managers who are nominated teachers or patrons of student clubs, training materials, resource persons, etc	Ksh200,000 per seminar x 2	400,000
5. Publicity and	- Eco-School Trophy, Conservation	-Costed collectively	300,000

value-adding activities	Walks, education trips for schools, posters, fliers, T-shirts, etc.		
Sub-Total (Project Cost)			**1,750,000**
6. Administrative costs	- Project design, planning & management, field visits, continuous monitoring & evaluation	20% of Sub-Total (project cost)	350,000
Total Cost			**2,400,000**

8.0 CONSERVATION OF 'HOT-SPOTS' DEGRADED BIODIVERSITY SITES

The following sites are recommended for planting indigenous seedling to enhance conservation due to degradation that threatens the important biodiversity.

'Hot spots' – Conservation sites

1) Nyambene - Meru (Eastern Province)
2) Karura Forest - Karura (Nairobi Province)
3) Mau Forest - Rift Valley Province
4) Kakamega Forest - Western Province
5) 'Kaya' Forest - Coast Province
6) Machakos Hills - Machakos (Eastern Province)
7) Karima Hill (Othaya) - Nyeri (Central Province)
8) Koru Hill - Kisumu (Nyanza)
9) Ifo UNHCR - Garissa (North Eastern)

Budget Estimate in Kenya shilling (Kshs.) Per each site subject to distances and other local conditions

Budget item	**Quantity**	**Unit Cost (US$)**	**Total cost (US$)**
Site selection & general administration	1	10,000	10,000
Seedlings	1000	100	10,000
Transportation of seedlings	1000	5	5,000
Planting & launching ceremony	1	20,000	20,000
Miscellaneous &Contingency	At 20%		7,000
Total			**52,000**

NB: The communities and the Forest Department in collaboration with other stakeholders will contribute in planting and maintenance of the sites.