AGROFORESTRY PARTNERSHIP PROJECT
END OF PROJECT REPORT: JUNE 2001 – MAY 2006

Prepared by:
W. Trent Bunderson, Zwide D. Jere and Haig L. Sawasawa
with
A.M. Mpira, M.M. Banda, H.P.P. Chinkhondo, L.C. Banda and J. Chiputu

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Implemented by Washington State University with Total LandCare Malawi under a Memorandum of Agreement
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1 INTRODUCTION

The Agroforestry Partnership Project (APP) was a five-year project funded by Philip Morris, USA and Philip Morris International from June 2001 to May 2006. The project was initiated after several years of consultations with Philip Morris based on high rates of deforestation caused by increasing wood demands for household use and tobacco curing.

The concept involved addressing problems of deforestation and soil degradation in partnership with representative farm communities in Malawi. In response, TLC and International Programs of WSU developed a proposal that outlined a pilot project to achieve this objective. The proposal envisaged a direct partnership agreement between Philip Morris and WSU to fund and implement a 5 year program where support was provided annually based on results. The project was implemented by Total Landcare Malawi under a Memorandum of Agreement with Washington State University.

PM USA and PMI made funds available on an annual basis after a joint review of the previous year's results and workplans for the following year.

2 PROJECT OBJECTIVES

The primary objective of the project was to improve the management and conservation of natural resources in targeted areas leading to sustainable increases in food production, wood, and incomes. This was achieved by providing farmers with proven and practical low-cost alternatives to address the following problems:

- Declining farm productivity due to widespread soil and forestry degradation
- Low soil fertility from continuous cultivation with little or no use of organic and chemical inputs due to their high costs and limited supplies
- Acute wood shortages for basic energy and building needs
- Food insecurity and poor nutrition
- Limited access to cash and capital due to low incomes
- Water borne diseases such as dysentery and cholera due to access to unsafe, contaminated sources of drinking water.

These problems were addressed at the community and household level through the extension of farmer-proven agroforestry, soil conservation, small scale irrigation practices, and the introduction of safe water and ecological sanitation.

The secondary objective of the project was to develop a partnership that mutually benefits Philip Morris, TLC, WSU and local communities, based on the positive results achieved. Potential mechanisms for demonstrating and communicating these benefits were developed over time. Results included:

- Spin-off programs that address issues of mutual interest to TLC, WSU and Philip Morris (natural resource management modules for primary and secondary education, cross-over programs that address youth at risk issues important to Southern Africa, especially child labor, HIV-AIDS, priority community development issues and others).
- Student and faculty volunteer involvement in designing and implementing research to complement the core program.
- Mobilizing buy-in and support from other stakeholders in Malawi and neighboring countries within the Southern African Development Community (SADC).
Expanding, replicating and adapting successes to other areas in Malawi, neighboring countries in the region, and others in which WSU and Philip Morris have interests.

Development of case studies illustrating successes and benefits of the program.

3 TARGETED INTERVENTIONS

The following interventions were targeted during the five-year period of the project:

- Tree planting around homesteads and farms for fuel, poles and other uses. Trees were being planted in form of woodlots, homestead and garden boundaries, along stream/river banks and road sides. A wide range of trees were planted including indigenous and exotic species and fruit trees.
- Planting local bamboo to reduce use of wood for roofing materials, granaries, baskets, mats, fences and other uses.
- Introducing fuel efficient kitchen mud stoves to reduce use of fuel wood by up to 50%.
- Soil and water conservation measures including contour ridging, vetiver hedgerows and rehabilitation of gullies.
- Soil fertility enrichment by interplanting soil improving trees/shrubs such as Faidherbia albida and Tephrosia vogelii with crops.
- Introducing small-scale irrigation systems for producing vegetables, legumes and green maize to improve food security, nutrition and incomes.
- Promoting safe water and eco-friendly pit latrines in villages to reduce risk of water-borne diseases. A secondary aim was to reduce demands for wood used in constructing traditional latrines and to supply decomposed human waste to safely manure crops.

4 PROJECT STRUCTURE AND EXTENSION STRATEGY

TLC operates under the following principles:

◊ Empowering people to become self sufficient - helping them to take initiatives to improve their livelihoods - in times of scarcity as well as in times of abundance.

◊ Mode of operation is demand-driven and entails transferring practical knowledge, skills and tools to increase the productivity, food security, nutrition, health and incomes of rural communities.

◊ Projects formulated specifically seek to promote sustainability and to eliminate dependency on external support – for technology, credit, seeds, fertilizer, fuel, wood, water, and other forms of assistance.

The project used an integrated approach to empower communities to take responsibility for improving their livelihoods through intensive training and extension services. Field staff supported and participated in the establishment and management of all practices with farmers so that activities were conducted correctly and in a timely manner. To realize these opportunities, the project helped to establish market linkages between private firms and local suppliers of products.

The appeal of this approach lies in the synergistic nature of the interventions promoted to increase production on a sustainable basis. In this context, communities and households benefit directly through increased crop and wood yields, more productive use of labor, and opportunities to increase incomes by developing enterprises from agricultural and natural
resource products. The results lead to growing demands among communities within and outside project sites to participate in different components of the program.

The extension strategy involved the following key elements:

- Each site was serviced by one technician initially covering an average of 20 villages. Over time, this grew to over 100 as villages became self-sufficient in the interventions.
- Targeted villages in each site were organized in a clustered concentration to facilitate logistics, training and extension services.
- Intensive support was provided to each village for 2 years with the aim of developing the capacity of communities to become self-sufficient. Thereafter, support was scaled down to an advisory level with communities responsible for maintaining and expanding the program. Support was provided in the form of public awareness campaigns and community mobilization; needs assessment; developing village-based action plans; hands-on training, including training in leadership skills; farmer-farmer extension; provision of equipment and inputs under a cost-sharing arrangement; and regular community-based assessments of project results and impacts.
- Impacts have been greater and more visible due to the synergy produced from the diversity of interventions and the collaboration of many villages and traditional leaders under a common goal.
- Results of the project attracted interest from many other service providers, neighboring communities and donors.

5 PROJECT ADMINISTRATION

As the lead institution, WSU and its Regional Representative, W. Trent Bunderson had overall responsibility for managing and administering the project. This entailed responsibility for technical, logistical and financial matters, including technical and financial reports.

At the country level, TLC was responsible for implementing the project, which involved providing management, financial, and technical support for all field and programmatic elements of the project. This included administering the budget and expenditures, preparing monthly financial returns to WSU for onward transmission to PM USA, producing the bi-annual and annual technical reports, making regular supervisory field visits, and organizing the implementation of a community-based monitoring system to evaluate needs, problems and impacts with appropriate actions.

The arrangement of involving WSU as an off-shore partner with TLC has paid many dividends in addressing the needs of local Malawian farmers. WSU has established and maintained excellent capacity and infrastructure for backstopping, management, and support of development activities. In addition, it has earned an excellent reputation for integrity with sound business ethics, which have instilled a strong sense of confidence among donors. As the local implementing partner, TLC has the staff, resources, experience, and knowledge of government and other institutions with the language and cultural capabilities needed to work with and support small holder farmers. WSU and TLC have now worked together for seven years, which has led to a relationship built on mutual trust and respect in each other’s capabilities.
6  BENEFICIARIES AND TARGET AREAS

The project was implemented in three sites as follows:

1. Ukwe Extension Planning Area (EPA), Lilongwe District
2. Ngwangwa EPA, Lilongwe District
3. Chivala EPA, Dowa District

The project also supported initiatives in small scale irrigation, dam rehabilitation and ecological sanitation in sites under the Community-Based Forestry Project (COBAF) where communities expressed interest in these technologies in addition to tree planting.

Site selection was based on the following criteria:

- Probability of demonstrable success based on the potential to adopt proven agroforestry, soil conservation and irrigation technologies under local farming, agro-ecological and socio-economic conditions, i.e., likelihood of producing high impacts within the project time-frame.
- High potential for agroforestry, soil conservation and irrigation to address priority farmer needs.
- Extent to which the socio-economic and agro-economic characteristics of the sites are representative of target area/populations of the area.
- Significant but manageable scale of environmental degradation.
- Proximity to Lilongwe to facilitate sound technical and logistical support for faster impacts.
- Presence/interest in community-based associations consistent with program objectives.
- Presence of potential “leaders and participants” in the community to facilitate oversight, adoption, feedback and spread.
- Presence/interest and potential commitment (available time, human and other resources) by GOM staff, in particular frontline extension staff.
- Potential for buy-in and spread by government, NGOs, donors and/or other programs.
- Low risk of conflict from other projects/activities with different approaches and agendas.

At the end of the project in May 2006, a total of 318 villages had participated in various project activities, benefiting 7,950 households (approximately 40,000 people based on a household size of 5). Compared with the original target of 6,250 households, the level of achievement was 127%, demonstrating high interest and commitment by the communities.
7 PROJECT RESULTS

Figure 1 and Table 1 show the outcomes of various project activities, with outstanding results on tree planting and irrigation.

Table 1: Project Results by Year

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<td>318</td>
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<td>No. of Households</td>
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<td>Contour Ridging (ha)</td>
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<td>Vetiver Hedges (ha)</td>
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<td>0.96</td>
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<td>421,902</td>
<td>1,396,442</td>
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<td># Trees (all types)</td>
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<td>176,303</td>
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<td>Treadle Pumps (#)</td>
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<td>49</td>
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<td>22</td>
<td>32</td>
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<tr>
<td>Households (#)</td>
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<td></td>
<td></td>
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<td>Length of canal (km)</td>
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<td>24</td>
<td>37</td>
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<tr>
<td>Area Irrigated (ha)</td>
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<td></td>
<td></td>
<td>24</td>
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<td>Improved Stoves</td>
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<td></td>
</tr>
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<td>Villages (#)</td>
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<td>Households using stoves (#)</td>
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<td>Eco-sanitation</td>
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<td>7</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td># Households</td>
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<td>63</td>
<td>207</td>
<td>103</td>
<td></td>
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<tr>
<td># Households using Latrine</td>
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<td>55</td>
<td>140</td>
<td>84</td>
<td></td>
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<tr>
<td># Fruit Trees Planted</td>
<td>0</td>
<td>33</td>
<td>39</td>
<td>0</td>
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</tbody>
</table>
Figure 1: Graphic Representation of 2001-05 Cumulative Results

Note: Columns relate to the Y axis on the left, line graphs to the right.
7.1 Forestry Program

Tree Nurseries

TLC provided hands-on training and basic tools to each participating village to raise an average of 5,000 seedlings per nursery. The objective was to produce quality for good tree growth and survival vs. quantity. During the 5-year period, a total of 3,191,625 seedlings were raised in 868 nurseries. A variety of tree species, both indigenous and exotic were raised. Although the program started on a small scale in 2001/02 (202,171 seedlings in 22 nurseries), planting doubled by year 3, and increased to over 1 million in 2004/05.

Tree Outplanting

A total of 2.62 million trees were out-planted during the project compared with a target of 2.29 million. Trees were planted around homesteads, in communal and/or individual woodlots, along garden/field boundaries, road sides and stream/river banks. It is interesting to note that 74% of the trees were planted in the last 2 years of the project. This signified the increased interest and exposure about the importance of tree planting. It also demonstrated the impact of the project on livelihoods and the great potential for expanding the program.
Bamboo Planting

Bamboo planting was started to provide alternative construction materials for villagers to reduce pressures on trees. Although not originally included as a priority in the program, bamboo was regarded as important in meeting the construction needs of communities. The program started by experimenting with propagation using rhizomes purchased from villagers around Thuma Forest Reserve in Salima. Collecting and transporting rhizomes proved not only difficult, destructive, and expensive (US$200 per 500 rhizomes), but growth and survival were less than satisfactory (only 1,739 plants were established).

To address the problem, TLC conducted research on propagating bamboo from seed. The results proved highly successful with the production of 3000 seedlings from 1 kg of seed at a cost of only US$ 12. This method of planting was promoted during the 5th year of the project when 51,696 seedlings were outplanted with survival rates as high as 95%. This has generated great interest by farmers, although growth rates need to be monitored before scaling up the program.

Fruit Tree Planting

Due to the huge shortage of improved, high yielding varieties of fruit trees, TLC supported villages to establish small blocks of "mother" plants. The aim was that once the trees became mature, villagers would be trained in budding and grafting techniques to raise improved seedlings. TLC provided a limited number of seedlings for each selected village, totalling 3,423 by the end of the project.

Improved wood stoves

[Image of improved wood stoves]
The use of woodfuel in rural areas is by far the largest form of wood consumption. Consequently, a strategy was needed to reduce destructive forms of wood consumption through more efficient methods of using it. The strategy involved introducing simple fuel-efficient stoves into the targeted communities using models that could be made by one adult in 1-2 hours with local materials. The stove recommended reduces fuelwood use by over 50%. This equates to 1.5 m$^2$ per household per annum, equivalent to one and a half 6-year old trees. In terms of labor, this saves half a day per adult every 6 days. This allows women to engage in other more productive chores around the house or farm, and increases school attendance by girls. The program started in 2004/05 with technical support from a GTZ Project (Promotion of Biomass Energy Conservation - PROBEC) and the Department of Energy under the Ministry of Mines, Energy and Natural Resources. By end of May 2006, 432 households had adopted the practice in 70 villages.

7.2 Soil and Water Conservation

Soil and water conservation was promoted in the target sites as a package involving 4 key practices to reduce water runoff and loss of topsoil. The practices included contour ridging tied/box ridges, contour vetiver hedgerows and gully reclamation. Table 1 shows annual achievements with cumulative results in Figure 1.

Although progress was reasonable over the 5-year period, results were affected by the following factors:

- The system of customary land tenure (especially where it involves leases), acts as a disincentive to establish these conservation measures because of the labor demand for establishment and the long timeframe to see results.
- Land-users need more education to understand the importance between land conservation and farm productivity.
- The labor and time needed to establish soil conservation measures often coincides with demands to establish other practices that are more rewarding, at least in the short-term.

7.3 Soil Fertility Improvement

Soil fertility improvement involved systematic interplanting of *Faidherbia albida* and intercropping *Tephrosia* species with maize. Impacts of *Faidherbia albida* on crop yields are yet to be felt by farmers as the tree takes up to 6-8 years to produce a noticeable effect. *Tephrosia* species on the other hand can improve soil fertility and hence crop yields within a period of 2 years. However, only 87 hectares were planted over the entire period. Factors related to this low achievement with *Tephrosia* are as follows:

- Late sowing of *Tephrosia*: This is often done 2 or more weeks after planting maize, which retards the growth and development of the shrub.
- The system of customary land tenure de-motivates land-users from planting *Tephrosia* for reasons explain under soil and water conservation.
- Since *Tephrosia* is vulnerable nematodes, there is fear of nematode attack on tobacco when it is rotated with maize and *Tephrosia*. This risk can be avoided easily through proper rotations.
7.4 Small-scale Irrigation

Although irrigation activities were not part of the original plan for APP, it was felt necessary to address the persistent food and income shortages experienced by many farmers. The program was initiated in 2002/03 and grew over the years. Support included group organization, training, irrigation equipment and inputs, and linking farmers to markets. Two small scale systems of irrigation were implemented, with a 3rd system during the 5th year of the project. These systems are described below.

**Treadle pump irrigation:** A total of 393 households in 33 villages adopted treadle pump irrigation. Over the 4-year period, 174 hectares were irrigated. Most farmers grew 2 crops each season, which included green maize, beans, leafy vegetables, tomatoes, onions and paprika.

**Stream/River diversion:** This irrigation system was introduced in the 2004/05 season to 32 villages, with 512 farmers. By May 2006, a total of 714 farmers from 33 villages had benefitted from the intervention. The sites were served by canals totaling 96 km in length which irrigated 65 hectares. The practice is low cost in terms of equipment and materials, although farmers must invest considerable labor to construct the canals and layout their gardens.

**Drip Irrigation:** Under drip irrigation, water is filtered from a larger mainline pipe through a secondary pipe running parallel with planted crops, and is emitted in minute, precise amounts at pre-calculated intervals. Several forms of drip irrigation exist and trials will define the most appropriate configuration for each crop to be supported. During the 2005/06 workplan, the project evaluated farmer acceptability of the 100 m² drip irrigation system in terms of labour efficiency, durability and yields. This involved 46 households in 11 villages, irrigating
a total of 3 hectares. Preliminary results show high efficiency and good crop response, although more assessments need to be done to determine actual costs.

**Small dams:** TLC provided technical and material support to construct one rain-water harvesting dam in Chiwamba EPA, and rehabilitation of two river dams in Chigonthi EPA, all in Lilongwe district. Rehabilitation of the dams involved rebuilding the dam walls and clearing sediments on the edges of the reservoirs. A total of 147 people in 19 villages were involved and are benefiting from the dams. These dams assist in providing water for irrigation, fish farming and household uses.

*Treadle pump irrigation with Money Maker pump on left and river diversion on right*

*Drip irrigation on left and a small earth dam on right*

**7.5 Revolving fund for Irrigation Development**

In order to improve smallholder access to irrigation equipment and inputs, TLC implemented a community-based credit system since 1999. The system was based on the following guiding principles:

- Non-profit with less transaction costs, improved accessibility and sustainability
- Group-based, relying on joint liability and peer pressure as substitutes for collateral, along with community-delivery systems that seek to exploit the social capital and information advantages of the local communities in screening and monitoring borrowers
- Uses irrigation equipment as collateral with affordable up-front payment and interest rates
- Community ownership resulting into high repayment rates
With a community-managed revolving fund, the program can expand 8-fold over a period of 10 years.

Improved household’s ability to save additional incomes into the community fund or individual account.

The system was implemented based on the following approach:

- Villages formed clubs that met agreed terms for support.
- Clubs established a revolving fund in an interest-bearing account.
- TLC provided a small injection of equipment & inputs with intensive training to each eligible club to kick-start the revolving fund.
- The club provided farmers with loans for an input pack after receiving a deposit into the club fund with agreement to pay off the balance within 12 months.
- The club had authority to confiscate or sell produce and property from defaulters equal to the amount owed.

Results

A total of 399 households had benefited from the scheme in 94 villages. The total investment into the revolving fund was MK5,582,400 (USD40,000 at current exchange rate of Malawi kwacha 139/1 USD). The money generally speaking, the system has been very successful in terms of providing soft loans to participating households who would normally have had cash flow problems and therefore fail to continue with irrigation. Access to cash either through self-financing or soft loans is the most critical factor in sustaining smallholder participation in irrigation development.

Although the system was well received by farmers, the intended purpose of making the program self-sustaining had not been fully achieved. The following shortcomings overshadowed the success of the program:

- The majority of club members consider the revolving fund as an asset for members only and not as a community fund that can be accessed by any interested farmer who meets the set criteria for participation.
- Although the revolving fund has improved farmers’ access to inputs, it has not served the purpose of expanding the program through procurement of irrigation equipment for new farmers. In all cases except 4, TLC has provided irrigation equipment to new farmers even within a community where such a fund exists. Faulty treadle pumps resulting from careless use have also been replaced with new ones in the same way.
TLC continued to subsidize the price of irrigation equipment and inputs despite increasing costs. This meant that the total loan value would not match the investment thereby reducing the potential for expanding the program to new farmers and villages.

In order to address the above shortcomings, TLC has since June 2006 revised its policy on the administration of the credit system and revolving fund. The new policy entails centralizing the administration of the fund. All monies recovered from farmers will be deposited into accounts to be managed by TLC. This policy is meant to improve program delivery and expand outreach. The policy will be regularly reviewed to ensure sustainability which will include a gradual increase of the cost of the irrigation package to reach the full market value and involvement of the private sector to provide services currently being done by TLC.

7.6 Bean Seed Multiplication under Irrigation

Commercial multiplication of Kalima bean seed, a high yielding early maturing variety, was promoted by TLC with smallholder irrigation farmers in the target sites. The program is being implemented with the Bean and Cowpea Collaborative Research Support Program (CRSP) managed by Bunda College and Washington State University with funding from USAID.

Results

A total of 11 farmers were involved in the program with the delivery of 70 kg of basic Kalima seed in 2004/05 season. Farmers produced 907 kg of certified seed from an area of 0.38 hectares, with yields averaging 2400 kg/ha. Gross proceeds were US$848 or US$2,230/ha. The program was scaled up in 2005/06 reaching 88 farmers in the Ukwe and Ngwangwa sites. These farmers produced a total of 4,424 kg of certified seed with total gross proceeds of US$ 4,740. The results have raised great interest and appreciation from farmers, who have expressed strong interest in continuing this and similar multiplication programs.

In order to expand the program, the following recommendations are pertinent:

- Limit the number of farmers involved to improve supervision and quality seed
- Evaluate potential for multiplying other promising varieties
- Increase supply of basic seed for multiplication, and certified seed for grain production
- Provide quality training and extension support to other parties/organizations with regular inspection and seed certification
- Identify local markets for certified seed. The objective should be to encourage local farmers buy certified seed for commercial production of beans instead of relying on NGOs/Govt, or resorting to using unimproved seed.
- Pricing should be based on real market values.
7.7 Safe Water and Ecological Sanitation

Village Water Supply
The poor supply of village water was a major constraint for producing nursery seedlings. In many cases, villagers had to hand-carry water over long distances on a daily basis to water seedlings. This needed to be balanced with the need to fetch water for domestic use, a task that places additional burdens on women and girls who could be engaged in more productive activities. Lack of potable water also poses serious health risks for rural households. In 2001, several villages had outbreaks of cholera that led to multiple deaths. In 2005, Philip Morris officials donated a water pump to one village in the Ukwe site. The pump was successfully installed with a shallow well and is providing water to over 20 households. The need to supply safe supplies of village water will be addressed in the second phase of the project to upgrade the general health standards in the targeted villages.

Ecological Sanitation
Ecological sanitation complements the provision of safe water to reduce health risks from common water-borne diseases such as dysentery and cholera in addition to having the potential of using human waste as manure. Cholera was a serious problem in certain villages during the first and second years of the project. The approach involves training local artisans to build dome-shaped concrete slabs for covering the pits. Villagers pay the artisan for the slab, the cost of which is about US$5. The business generated helps to promote the technology. The pits are used for approximately six months after which they are expected to have been filled and the waste partly decomposed. A fruit tree or other plants may be planted on the abandoned site. Alternatively, the pit can be covered and left to decompose for another 4-6 months, after which it may be used safely as manure.

The technology was started with technical input from Water Aid, a UK-based charity organization. By May 2006, 411 households in 57 villages were involved in the construction
of slabs, 299 of which had started using the latrines. Most farmers interviewed indicate a
dramatic reduction in the outbreak of water-borne diseases since the introduction of the
technology.

8 PROJECT IMPACTS

Tremendous achievements were made in meeting the project’s objectives as shown by results
described above. The interventions have had visible impacts on the livelihoods of the
majority of households who had benefited. The following summarize some of these impacts:

- **Capacity Building:** The project has built local capacity at community level through
  strengthening of village-based institutions such as village natural resources management
  associations, irrigation and other clubs. These institutions have become the driving force
  in sustaining activities initiated through project support. Through transfer of knowledge
  and skills, injection of equipment and establishment of community-managed revolving
  funds, the sustainability of programs is assured. The project has also assisted in building
  the capacity of the Ministry of Agriculture and NGOs through training of their extension
  agents, provision of extension materials and developing models that are replicable to
  different programs and areas.

- **Increased Supply of Construction Materials and Fuel Wood:** The majority of
  households who had planted trees are now harvesting trees for building and fuel wood,
  more especially those that had started participating during the first two years. *Senna*
  species have proved that they can provide these products within a period of 3-4 years.
  Their fast regenerative ability reduces the need for communities to planting new trees
  once they have harvested. These trees also are liked by most communities because of
  their multiple uses.

- **Improved Food Security and Incomes:** One of the great achievements in this project
  was demonstrating how small-scale irrigation can positively impact the livelihoods of
  households within a short period of time. This has improved household food security,
  nutrition and income.

- **Learning Sites:** The target sites for Agroforestry Partnership Project are serving as
  models for both government and NGO partners. The project had demonstrated that results
  can be achieved in a very short period with minimal resources. This had materialised due
  to the high level of commitment by TLC field staff and the timely support provided by the
  donor.

- **Buy-ins from other Donors:** The project has triggered the interest of other collaborating
  partners, such as the French Government and the Food and Agriculture Organization
  (FAO) through buy-ins. These had mainly provided material support in terms of treadle
  pumps and inputs to help scale up the program.

- **New projects and initiatives:** Due to the success of APP, WSU and TLC have attracted
  support from the tobacco industry and other stakeholders which has led to other support:
  - Tobacco Exporter’s Association of Malawi (TEAM) has transferred the
    management of its TEAM-Tree Project in Lilongwe and Blantyre areas to TLC.
  - TLC signed a MoU with Mozambique Leaf Tobacco Company to provide
    technical support in the management of its forestry program in the Tete Province
  - TLC is also providing technical support including supply of tree/bamboo seed to
    Universal Leaf Tobacco Company in Tanzania.
o TLC is part of the consortium implementing the child labour project funded by the Elimination of Child Labour in Tobacco (ECLT) Trust.

o WSU/TLC received funding from USAID through a Global Development Alliance initiative to implement a project on the management of the Chia lagoon watershed in Nkhota-kota district.

o TLC is implementing a water management and irrigation component under the Rural Livelihoods project covering Malawi, Zambia and Mozambique with funding from USAID-Southern Africa.

9 CONCLUSION AND LESSONS LEARNT

The Agroforestry Partnership Project has been successfully concluded. Overall, it has achieved its objectives. Based on results and impacts described above, it has been hailed by most stakeholders as a model for addressing the needs of local smallholder farmers, not only in Malawi but in neighbouring countries as well. WSU and TLC have used the model to attract more funding for other programs implemented in Malawi and neighbouring countries within SADC.

Several lessons were learnt during the past 5 years in relation to project implementation and coordination with partners. The following are some of the key lessons:

➢ Involvement of all partners and farmers in planning yields better cooperation and respect from farmers. Activities coming from the top are normally given only lip service by the community as they view these with suspicion.

➢ Differences in approach need to be resolved early to avoid conflicts at the field level. The issue of incentives needs to be consistent to avoid farmers and cooperating government staff preferring to work with one organization at the expense of others.

➢ Natural resource management interventions require long-term commitment from all stakeholders if meaningful results can be achieved as some of these take a relatively long time to bear fruits.

➢ Focus resources on technologies with widespread adoption potential for national impact.

➢ A combination of food security and environmental management activities have greatly motivated farmers to participate in the program. Small scale irrigation appears to be an important factor in reducing farmers’ never-ending crises of food and cash shortages.

➢ Farmer to Farmer Extension: Speed up the sound adoption of agroforestry and irrigation by focusing extension and training support with new villages/clubs for only the first season. These experienced clubs can then play a critical role as local extension and training agents to meet the demand created among their fellow farmers. This system allows adoption to expand naturally from farmer to farmer, which frees up the limited number of government and NGO extension workers to expand their areas of influence with new clubs.

➢ Market Driven Approach: The success of irrigation and any other intervention depends on a market driven approach with the private sector as the driving force in service delivery. This means no subsidies on equipment. The role of Government/NGO should be limited to facilitating this process.
10 FARMER TESTIMONIES

Transformed through treadle pump irrigation: Petro Mlangali

Petro Mlangali comes from Chimera village in Traditional Authority Kabudula in Lilongwe district. He is a young man of 23 years and a member of Kanthumkhama Irrigation club. He joined the club in 2005 which accorded him the opportunity to access a loan to procure a treadle pump and started input pack. He is now married and has one child. Since he made a decision to go into farming, he has been growing a wide range of irrigated crops which included green maize, tomato, beans and leafy vegetables. He grows the crops on an area covering 0.2 ha which he inherited from his parents two years ago.

His interest to go into farming grew when his village was among those selected by Total Landcare to participate in treadle pump irrigation. During the 2005 irrigation season, he realized MK20,000 from sale of his irrigated produce. However, he realized that he could make more money if he had started growing crops much earlier in the season and followed an irrigated crop calendar which allowed him to harvest up to three crops within the season. Based on this idea, he grew two crops of maize and one crop of tomato in 2006 starting with the first crop in March. He realized a total income of MK32,000 from the two crops of maize and MK25,000.00 from tomato. He also grew Mustard (leafy vegetable) twice and got MK7,900.00 for the first crop and MK8,600.00 for the second crop. This brought his total revenue during the season to MK73,500.
Now he says he is very happy because he has managed to buy what he desired most because of irrigation farming. He said, “I have bought two DVD players, Television screen and a bicycle”. He continued to state that: “I also have an account with one of the banks and I have managed to pay for the treadle pump loan.” He said these things are his achievements and nobody in the village has managed to buy such things even after selling rain-fed crops.

He said he has managed to do all this because of proper scheduling of activities and also use of the treadle lump which has eased watering of the crops as opposed to using watering cans.

When asked about future plans, he said he plans to increase his income to reach a minimum of MK100,000 in the next season, all from irrigation. “To achieve this, I have employed two people to assist in the management of crops”, he said. He also has long term plans to expand the area under irrigation to about 1 ha using the upper land and intends to purchase a motorized pump to supplement the treadle pump.

Mr. Mlangali’s success story is shared by Mr. and Mrs. Hendrix Kunkhanda of Chilombo village and Mr. Christopher Bonongwe of Thiroko village. Mr. Kunkhanda had enough food, and managed to buy nine 50 kg fertilizer bags and a color TV which he always wanted to own. Christopher Bonongwe, a polygamist, realized MK 122,000 from sale of drumhead cabbage, green maize, pumpkins, tomatoes and onions. From this income, he managed to buy ten 50 kg fertilizer bags, one goat, paid school fees for his children at a private secondary school and has employed three permanent laborers. Although Mr. Bonongwe has other enterprises, he regards irrigation as a more stable source of income.
A model villager: Josephine Phiri

Mrs. Josephine Phiri of Kendekeza village, Lilongwe West is a 65-year old widow having lost her husband 9 years ago. She had worked as a teacher for 34 years when she retired in 1992. With 7 children all employed, she is perhaps the happiest of the female headed households in the village. Having inherited a piece of land from her late father and a dimba which the village head apportioned to her, she began serious farming in 1993.

Her interest in tree planting started when she realized that the natural woodlands near the village were being seriously depleted. Using seed of Senna siamea collected from Lilongwe town in 1993, she raised and planted seedlings around her homestead. She recalls that the reception from her neighbors at the time was very hostile, as almost all the trees were uprooted. When TLC introduced the program to the village in 2001, Josephine was one of the first ladies to participate. She says, “I was not shy like the other women. I have planted over 10,000 trees within three years around my homestead and my farm, and have repaid my treadle pump loan. The trees grow fast and I was able to harvest some for tobacco ties, upright poles for a fence and for roofing the livestock shed.” Asked why she constructed eco-sanitation latrines given that she already has the conventional system that works well, she replied “I wanted to show an example to my neighbors, most of who are illiterate and resistant to taking on new ideas, that the practice has great potential to reduce incidence of disease and to provide the much needed manure”.

Josephine Phiri dwarfed by 29-month old Senna spectabilis trees
Mrs. Lesita Weluzani proudly pointing at her woodlot of 18-month old Senna trees

With regard to her position in the village in relation to the program, she says, “I want to provide a good example and to protect the property of my late father by investing in tree planting and irrigation so that no one dares encroach. Furthermore, I want to demonstrate the importance of education as key to development through my full participation in all TLC activities”.

Similar testimonies have been heard from other farmers who have adopted practices promoted by TLC, including Mrs. Lesita Weluzani of Muyande village who has established over 3,000 trees within 2 years.