MANAGEMENT FOR ADAPTATION TO CLIMATE CHANGE

MID-TERM REVIEW OF A PROJECT IMPLEMENTED BY TOTAL LAND CARE, MALAWI

BY FRED H. JOHNSEN, ROBERT KAFAKUMA AND UNNI SILKOSET

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ABBREVIATIONS AND ACRONYMS

ADP	Agriculture Development Programme
ASWAp	Agriculture Sector Wide Approach
CA	Conservation Agriculture
CAADP	Comprehensive Africa Agriculture Development Programme
CFU	Conservation Farming Unit (of ZNFU)
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CISANET	Civil Society Agricultural Network
DCA	Danish Church Aid
DFID	Department for International Development
EPA	Extension Planning Area
FAO	Food and Agriculture Organization
FUM	Farmers' Union of Malawi
GHG	Green House Gases
GoN	Government of Norway
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
LEAD	Leadership for Environment and Development
MACC	Management for Adaptation to Climate Change
MoAFS	Ministry of Agriculture and Food Security
MDG	Millennium Development Goals
MEET	Malawi Environmental Endowment Trust
MGDS	Malawi Growth and Development Strategy
MLBP	Malawi Lake Basin Project
M&E	Monitoring and Evaluation
NAPA	National Adaptation Programme of Action to climate change
NASFAM	National Association of Smallholder Farmers in Malawi
NCA	Norwegian Church Aid
NEPAD	New Partnership for African Development
NGO	Non Government Organization
Norad	Norwegian Agency for Development Cooperation
Noragric	Department of International Environment and Development Studies (at UMB)
NRC	Natural Resource Committee
NRM	Natural Resource Management
SLEMSA	Soil Loss Estimator for Southern Africa
SLM	Sustainable Land Management
SPICE	Spice Promotion In Commercial Enterprises
TLC	Total Land Care
UMB	Norwegian University of Life Sciences
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VFA	Village Forestry Area
VNRMC	Village Natural Resource Management Committee
WESM	Wildlife and Environmental Society of Malawi
WVI	World Vision International
ZNFU	Zambia National Farmers Union

EXECUTIVE SUMMARY

The Management for Adaptation to Climate Change (MACC) project in Malawi is implemented by Total Land Care (TLC) with funding from the Royal Norwegian Embassy in Malawi and with a 5 year time frame from mid 2008 to mid 2013. The key objectives of the project are to reduce deforestation, to improve household food security and incomes, and to develop rural-based enterprises. The project was subject for an external midterm review with field visits made in September 2010.

The review team found that the project is well in line with Malawian policies as well as Norwegian development policy. TLC also has an extensive and good cooperation with Malawian NGOs as well as with international organisations, both those working in Malawi and abroad. In spite of that, it seems that more could be done in order to avoid duplication of efforts.

Under the objective of reduced deforestation, successful efforts are being made in terms of tree planting, sustainable management of woodland and trees, and introduction of energy-saving stoves. Planting of bamboo has not started because of problems with acquiring seeds.

Under the objective of improved household food security, nutrition and incomes, the interventions are focused on crop related activities like conservation agriculture, soil and water conservation including use of organic manure, agroforestry, and crop diversification. Overall, most of these activities perform well.

Under the objective of developing enterprises, the review team found that some of the activities do not perform well. Activities like mushroom production and agro-processing involve only very few potential beneficiaries while activities like beekeeping and mushroom collection may involve a reasonable number of beneficiaries, but yield too little cash to be labelled as enterprise development.

For the successful activities within forestry and agriculture the prospects of sustainability are assessed as good and the risk of failure is low because the project interventions are appreciated by the farmers, the lead farmer system secures that knowledge remains in the villages, the project emphasises training and community empowerment, and the project also contributes actively to the development of local institutions.

The following steps are recommended by the review team:

- Successful activities within forestry and farm production should be scaled up by expanding the number of lead farmers.
- The project management and the donor should consider the possibility of phasing out activities that perform far below target, activities that are not within TLC's core areas of competency, and activities that only benefit a small handful of households. Some of the activities within enterprise development fit into all of the three above-mentioned categories.

- The project needs to include indicators for nutrition and should consider including indicators relating to soil and land for monitoring the impact of the project on deforestation and the effect of conservation agriculture.
- The project should carefully consider the legal and policy implications of registering one association to coordinate both the forestry activities under customary land (VFA and Individual forestry areas) and forests and trees under the parks and wildlife mandate.
- Preparations should be made for a new five years project phase after 2013. This new phase could:

    - Use a comprehensive results framework like the Logical Framework Approach in its design.
    - Have two key objectives; 1) Stop deforestation and 2) Improve farm based livelihoods.
    - Largely upscale successful interventions from the current phase, mainly through the lead farmer system.
    - Only include interventions that have proved successful in the current phase and that are suitable for adoption by a large number of farmers.

It is suggested that efficiency can be enhanced through more specialisation whereby each NGO concentrates on what it is best at. Moreover, it is suggested that more research is needed regarding which out of the different technologies under the label of conservation agriculture should be recommended under which conditions.

1. INTRODUCTION

1.1. TOTAL LAND CARE (TLC)

Total Land Care (TLC) is a non-governmental organisation dedicated to increasing the production and income levels of small-scale Malawian farmers through improved agricultural practices with sustained conservation and management of the resource base. The organisation's core competency and experience is to implement community based agricultural and natural resource management programs (Bunderson and Jere 2008: 43).

The organisation is based in Malawi and has most of its activities within the country, but has expanded its operations to Mozambique, Tanzania and Zambia. Apart from the MACC project TLC currently implements two major natural resource and agriculture related projects in Malawi. These are the Kulera Biodiversity Project and the SPICE project (Spice Promotion In Commercial Enterprises). The Kulera Biodiversity Project includes many similar activities as MACC, but has a geographical focus in communities bordering protected areas. Both projects are funded by USAID and have a time frame from 2009 to 2012 (TLC 2010).

During the period from October 2004 to December 2007 TLC implemented a project known as the Chia Lagoon Watershed Management Project. This project had the following objectives (USAID Malawi / Washington State University 2008:1):

- Increase farm productivity, food security, nutrition, and incomes through sustainable low-cost systems of crop diversification and irrigation linked to good markets.
- Improve the sustainable use and management of natural resources.
- Identify opportunities for developing rural enterprises for producing and marketing agricultural and natural resource products.
- Increase capacity to monitor impacts and environmental change.

The Chia Lagoon Watershed Management Project was perceived as an overall successful project, thus the wish to enter into a new phase and to scale up the interventions beyond the boundaries of the Chia Lagoon watershed. While a new project phase was prepared it became clear that USAID would not be able to continue supporting the activities due to a change in the donor's strategy towards concentrating only on protected areas. Instead, funding was made available from the Royal Norwegian Embassy in Malawi, first for a bridging period of one year and then for the MACC project.

1.2. MANAGEMENT FOR ADAPTATION TO CLIMATE CHANGE (MACC)

The MACC project is funded by Norway with a total grant of NOK 31 mill starting from the financial year 2008/2009 and ending 2012/2013. The project has three key objectives (Bunderson and Jere 2008:10):

1. Reduce deforestation
2. Improve household food security, nutrition and incomes
3. Develop opportunities to establish and operate rural-based enterprises

Reduced deforestation is expected to be achieved through four interventions:

- Tree planting
- Sustainable management of natural woodlands and trees
- Introduction of energy-saving stoves
- Planting local bamboo

Due to the delicate biology of bamboo, where many years pass between each time it flowers and gives seeds, the bamboo seeds have not been available and planting of bamboo has therefore not started.

The second objective is achieved through increasing and diversifying farm production. The main activities as perceived in the project document would be:

- Crop diversification
- Winter irrigation
- Integration of livestock

During the implementation phase, however, Conservation Agriculture has entered as a key activity for increasing farm productivity.

The third objective has resulted into several kinds of enterprises being introduced:

- Beekeeping
- Cage culture, fish farming and fish marketing
- Livestock production
- Mushroom production and collection
- Agro-processing
- Eco-tourism

Most of the above-mentioned activities were also carried out during the Chia Lagoon Watershed Management Project. But while the Chia Lagoon Project was confined to three Extension Planning Areas (EPAs) within the Chia Lagoon Watershed, MACC is implemented in a total of ten EPAs in five districts of Northern and Central Malawi (Bunderson and Jere 2008 p. 11):

- Chintheche and Tukombo EPAs in Nkhata-Bay district
- Chikwatula and Kalira EPAs in Ntchisi District
- Nkhunga, Zidyana, Linga and Mwansambo EPAs in Nkhotakota District
- Khombedza EPA in Salima District
- Mvera EPA in Dowa District

1.3. THE MIDTERM REVIEW

The present midterm review was conducted on request from Norad and the Royal Norwegian Embassy in Lilongwe and is based on field work carried out during 12-25 September 2010. The Terms of Reference (TOR) for the review is availed as Appendix 1 of this report.

The review team comprised:

- Fred H. Johnsen, Department of International Environment and Development Studies (Noragric) at the Norwegian University of Life Sciences (UMB).
- Unni Silkoset, Global Health and AIDS Department, Norwegian Agency for Development Cooperation (Norad).
- Robert Kafakoma, Training Support for Partners, Malawi.

A first draft version of this review report was availed to the Annual Meeting between Total Land Care and the Royal Norwegian Embassy on 29 October 2010. The report has thereby already served its most important purpose.

A second draft was prepared, incorporating several comments and inputs from key stakeholders to the first draft and also incorporating information from MACC's own annual report for the period August 2009 – July 2010 (Bunderson et al. 2010) which was not yet available at the time when the first draft was submitted. The intention was also to incorporate any relevant observations reflected in the minutes from the Annual Meeting between TLC and the Royal Norwegian Embassy on 29 October 2010. After waiting for the minutes for about a year, however, the review team took the non-availability of the minutes to mean that nothing from the Annual Meeting needed to be reflected in the midterm review report. The second draft was therefore submitted to the key stakeholders on 16 November 2012. The team did not receive any substantial comments to the second draft. On 17 February 2012 the review team was informed by the Royal Norwegian Embassy that the second draft had been accepted as the final one, both by the Embassy and TLC.

The present final report is therefore the same as the second draft, except from minor corrections and editing. In spite of the long delays and in spite of the fact that the review already has fulfilled its main purpose, as explained above, it is still considered worthwhile to issue this final version because the report still has two important roles to play. Firstly, it is expected to serve as a benchmark for the final evaluation of the project

after its completion in 2013. Secondly, the reviewers hope that the report will also be used as an input to discussions on a possible new project phase beyond 2013.

1.4. REVIEW METHODOLOGY

Several key documents were obtained and studied by the team before the review mission started. During the first three days of the review mission (13-15 September) the team emphasised interviewing representatives of the most relevant offices in Lilongwe including the Norwegian Embassy and TLC as well as ministries, other donors and NGOs involved in agriculture and natural resources. During the next few days (16-18 September) the team emphasised seeing as many project sites and meeting with as many farmer clubs as possible while also meeting government officials and NGOs at the district level in Nkhotakota. The team then spent a couple of days (20-21 September) specifically visiting project sites and meeting farmers involved in activities which performed below target according to the project management's own reports. Finally, the last days that the team was together in Malawi (22-24 September) were mainly spent on team discussions and writing as well as on debriefing TLC and the Royal Norwegian Embassy separately.

A more detailed record of the team's field work is given in the appended itinerary (Appendix 2). A list of key organisations and individuals who were contacted is given in Appendix 3.

2. RELEVANCE OF THE MACC PROJECT

2.1. MALAWIAN AGRICULTURAL AND ENVIRONMENTAL POLICY

Section 3 subsection 13 of the Malawian Constitution calls for sustainable management of the environment and natural resources. In line with the constitution, the Government in 2000 developed the National Long-term Development Perspective for Malawi called the Vision 2020. Amongst the key focus areas of the Vision 2020 was the development of the agricultural sector. One of the long term visions of the Government was to address the challenges the sector was facing including improving agricultural technologies, preventing land degradation and deforestation, improving agricultural marketing, promoting agricultural diversification, improving agricultural extension and enhancing irrigation.

The long-term vision of the Government is translated into a medium term strategy called the Malawi Growth and Development Strategy (MGDS) which is the overarching strategy for Malawi for the five year period from 2006/07 to 2010/2011 fiscal years. The MGDS has been developed in line with the various sector policies of the Government. The purpose of the MGDS is to serve as a single reference document for policy makers in Government, private sector, civil society organizations, cooperating partners and the general public on socio-economic growth and development priorities. The MGDS identifies nine key priority areas the country intends to implement in order to achieve economic growth and wealth creation which are critical for immediate improvement in the economic well-being of Malawians. These nine priority areas are: agriculture and food security; green-belt irrigation and water development; education, science and technology; transport infrastructure and Nsanje World Inland Port; climate change, natural resources and environmental management; integrated rural development; public health, sanitation, HIV and AIDS management; youth development and empowerment; and, energy, mining and industrial development.

The nine key priority areas in the MGDS have been prioritised in order to accelerate the attainment of the Millennium Development Goals (MDGs), thereby recognizing the importance of sectors such as agriculture and food security, health, education, gender, environment and governance. In the medium term, this is expected to bring about prosperity and reduce poverty to make life better for all Malawians.

Realizing that Malawi is particularly exposed and vulnerable to negative impacts of climate change, the Government through the environmental and natural resource management sector developed its National Adaptation Programmes of Action to climate change (NAPA) based on an evaluation of the impacts of adverse climatic conditions in eight important sectors of the economy namely agriculture, forestry, water, human health, energy, fisheries, wildlife and gender. The NAPA outlines five key priority areas:

- Improving community resilience to climate change through the development of sustainable rural livelihoods;

- Restoring forests in the catchments and valleys;
- Improving agricultural production under erratic rains and changing climatic conditions
- Improving the country's preparedness to cope with droughts and floods
- Improving climate monitoring to enhance the country's early warning capability and decision making and sustainable utilization of the Lake Malawi and lakeshore area's resources

In line with the MGDS, the agriculture sector has developed the ADP (Agriculture Development Programme). The ADP is a Government of Malawi initiative with objectives and areas of focus that have been aligned to the two key African Union strategic frameworks aimed at transforming agricultural development and stimulating economic growth of member states. These are the Comprehensive Africa Agriculture Development Program (CAADP) and the New Partnership for African Development (NEPAD). The overall objective of the ADP is to increase food security at household and national level and to generate agricultural-led economic growth. To effectively implement the ADP, the government through the Ministry of Agriculture and Food Security has developed the Agriculture Sector Wide Approach (ASWAp). The ASWAp has three priority areas namely:

- Food security and risk management
- Agri-business and market development
- Sustainable land and water management

The midterm review found that the MACC project, its activities and approaches are in line with the overall Government of Malawi policy frameworks. Most of the activities in the project are directly supporting implementation of the MGDS, ASWAp, NAPA and other government policies. The project is being implemented within the local government decentralization framework thereby directly strengthening the implementation process of the decentralization process that the Government is facilitating.

Equally important as the alignment with Malawian policy documents is the extent to which the project management interacts with Government institutions. TLC has a strong relationship with the Ministry of Agriculture and Food Security (MoAFS) and is viewed as a key partner in several programmes that are promoted by the Government. Demonstrations of active collaboration include the intention of MoAFS to partner with TLC to scale up the promotion and adoption of conservation agriculture and the involvement of TLC in the Green Belt Initiative of the President. Also, TLC works closely with the Forestry Department at all levels from Headquarter to field extension staff on key activities such as tree planting, natural regeneration of woodlands, demarcation and management of forest areas, and the promotion of fuel efficient cooking stoves.

2.2. NORWEGIAN DEVELOPMENT POLICY

The development policy of Norway is based on five main axes (GoN 2009):

- Strengthen the position of the poor,
- Promote sustainable development,
- Safeguard public goods and strengthen global rule,
- Relationship between development policy and domestic policies
- Focus on areas where Norway has particular expertise.

Norwegian development policy is based on values such as solidarity, compassion and human rights, and on a fundamental conviction that all people are entitled to a life in dignity. The Government budget has since 2009 assigned about one per cent of gross national income to development in poor countries and aid is one important development policy tool.

While the central aim of Norway's foreign policy is to safeguard Norwegian interests, the focus of the development policy is on the interest of poor countries. These interests coincide when it comes to climate policy and addressing the problems caused by climate change is one of the strategic pillars of the development policy.

To be robust, environmental policies must be linked to economic policies that promote employment and growth in income and production. Poor countries with far lower emissions than the rich will not be willing to sacrifice their economic growth for the sake of the global fight against climate change. This is why Norway aims to implement concrete measures that make it attractive for partner countries to choose climate friendly development options to ensure that its climate policy and development policy reinforce one another.

Norway seeks to foster interest in partner countries in sustainable natural resource management, low-carbon energy solutions, halting deforestation, adaptation to climate change and prevention of environmental damage. The severity of the impacts of climate change will depend on societies' and individuals' vulnerabilities and adaptation capacity where adaptation capacity is determined by access to capital, labour, knowledge, health services, transport and communication, social relations and networks. Factors such as good governance, access to resources and an active civil society are important. Measures to strengthen a society's capacity to take joint action will boost its ability to deal with climate change and natural disasters.

The impacts of climate change must be considered in the context of other development processes. Adaptation must be based on countries' own development strategies. Climate change must be taken into account in plans and strategies for agriculture, water resource management, forest management, energy, health, and knowledge and education. The integration of climate change considerations into social planning at national and local level will be a key to successful adaptation.

The MACC project has a strong focus on sustainable development and on income generation and food security for the poor and is therefore well aligned with Norwegian development policy. Moreover, Norway is in the forefront in supporting several global processes related to climate change and it is therefore crucial to gain experiences from projects like MACC on how global goals are translated into action at national and local level leading to concrete results for communities and individuals.

The Norwegian Government through its embassy in Malawi has identified adaptation to climate change as a priority area for financial and technical assistance in Malawi. In line with its focus on climate change, the Norwegian Government has provided support for a number of initiatives including a comprehensive study of the challenges that face Malawi on climate change. The Embassy also provided bridging funds to Total Land Care to continue implementing the Chia Lagoon Watershed Management Project which was previously funded by USAID. In its broader support framework to Malawi the Norwegian Government is also supporting the Lake Chilwa Catchment Climate Change Programme; the Malawi Lake Basin Project (MLBP), which is being implemented by a consortium of four organizations (the Swedish Cooperative Centre, Farmers' Union of Malawi (FUM), National Association of Smallholder Farmers' of Malawi (NASFAM); and the Enhancing Food Security and Developing Sustainable Rural Livelihoods Project implemented by FAO in partnership with the Ministry of Agriculture and Food Security) covering the districts of Machinga, Mangochi and Balaka as well as other initiatives.

The MACC project is within the overall Norwegian Government's Malawi country strategy and is directly supporting its implementation. The project is also consistent with other Norwegian supported climate change initiatives such as the Lake Chilwa Climate Change programme. The review team found that there is good cross fertilization of ideas, sharing of lessons and collaboration between TLC through the MACC project and other organizations receiving support from the Norwegian Government.

2.3. COLLABORATION WITH OTHER MALAWIAN NGOS

The MACC project is being implemented within the local government decentralized structure. The entry point of the project is the local assemblies who have District Development Plans that guide distribution and implementation of development activities in the district. The MACC activities are in line with the needs and aspirations of the local assemblies and local communities in the five districts. There are a number of local NGOs that operate in the target districts of the MACC project including World Vision, CARE International, NASFAM, Wildlife and Environmental Society of Malawi (WESM) and Concern Worldwide. The coordination and collaboration between and amongst these NGOs and TLC through the MACC and other projects was found to be conducive and supportive of the implementation of the project.

More specifically, TLC's cooperation with other NGOs includes:

- National Conservation Agriculture Task Force, where TLC provides leadership on best practices in promoting CA.
- Conservation Farming Unit under the Zambia National Farmers Union, specifically addressing knowledge sharing on CA.
- NASFAM, mainly on promoting CA and improved varieties of crops.
- CISANET (Civil Society Agriculture Network) on policy issues where TLC is particularly active on smallholder irrigation and the spice subsector.

To go deeper into how TLC relates to other NGOs, NASFAM is a particularly interesting organisation to consider because, like TLC, NASFAM has its main emphasis on smallholder agriculture and also has a large project with funding from the Royal Norwegian Embassy. The review team visited NASFAM's head office in Lilongwe as well as the district office in Nkhotakota.

NASFAM is a member based organisation with 42 associations covering 19 out of 28 districts in Malawi. At national level NASFAM has good relations to donors and other NGOs, among them TLC. Specifically, NASFAM mentioned having learned about use of herbicides in conservation farming from TLC. At district level in Nkhotakota NASFAM chairs the committee of Non-State Actors where TLC is also a member.

In spite of generally good communication and smooth collaboration at national and district level, one technical issue was identified in the practice of conservation agriculture: NASFAM promotes conservation agriculture as a minimum tillage system whereby planting basins are dug with a hand hoe and the same basins are used as planting stations every year. This is the same system as Conservation Farming Unit (CFU) of Zambia National Farmers Union (ZNFU) promotes for Zambian smallholder farmers. TLC, however, promotes a zero tillage system whereby planting holes are punched with a dibble stick without any use of the hand hoe. The two systems have their pros and cons and could be suitable under different conditions. It may be confusing to farmers, however, if NASFAM and TLC promote one agronomic system each, both under the label of conservation agriculture, to the same categories of farmers.

Despite the existence of meeting places both on central and local level there seems to be some level of duplication of efforts that may reduce efficiency. For example, TLC and NASFAM may both bring polyethylene tubes for raising tree seedlings to the same villages in the same year. Such observations raise the question of whether efficiency can be enhanced through more specialisation and a clearer specification of responsibilities between NGOs.

2.4. INTERNATIONAL ORGANISATIONS AND PROCESSES

TLC is actively involved with a number of international organisations:

- CGIAR institutions, particularly CIMMYT, World Agroforestry Centre, CIAT and ICRISAT.
- USAID through TLC's position as the lead organisation in three USAID funded projects and as a partner in three other projects.
- World Bank through partnership in several projects
- UN organisations, specifically FAO and IFAD.

The climate change agenda is the most important broad international process of specific relevance to MACC. Currently, there are several international and local organizations involved in climate change and adaptation in Malawi. Notable ones include the UNDP, MEET (Malawi Environmental Endowment Trust), and international NGOs such as Norwegian Church Aid (NCA), DanChurchAid, Oxfam, Action Aid, Concern Universal and World Vision. UNDP is developing the UNDP – Sustainable Land Management (SLM) and Climate Change Adaptation Programme in the Shire River Basin. The programme aims to address Sustainable Land Management and Climate Adaptation through strengthening the adaptive capacity of communities in the Shire Basin. USAID through MEET supports the management of the Nkuwadzi Forestry Reserve in Nkhata Bay District to enhance rural livelihoods and ensure continuous forest cover for carbon conservation, maintenance of biodiversity, protection of watershed and prevention of soil erosion. DFID is supporting the Building Capacity for Climate Change Adaptation in two districts in the southern region of Malawi through LEAD which has as main purpose to ensure that the livelihoods of communities in the target areas are more secure from threats posed by climate change.

The review team found that the MACC project is well placed to participate in the carbon markets. Securing carbon finance requires verification that interventions are reducing emissions of greenhouse gasses (GHG), or that they are removing carbon dioxide (CO_2) from the atmosphere through carbon sequestration. The project is therefore implementing specific interventions such as promoting renewable energy sources, promoting more efficient energy use, reforestation, afforestation and interventions that prevent deforestation. All these interventions have potential to access carbon finance, including participation in voluntary carbon markets for Reducing Emissions from Deforestation and Forest Degradation (REDD) for those practices that store carbon, and those that prevent deforestation.

3. KEY OBJECTIVE 1: REDUCE DEFORESTATION

The main interventions implemented under this key objective are tree planting, sustainable management of woodlands and trees, introduction of energy saving stoves and planting of local bamboo. Table 1 summarizes the level of achievement of each of the planned project interventions during the first two project years. The table shows that the project has largely overachieved its targets on some indicators while very little or nothing has been achieved on other indicators. Very good performance on some of the indicators is explained by:

- Support to the project interventions by the communities and local assemblies
- Capacity of TLC to facilitate such interventions
- Awareness and knowledge amongst the communities on the climate change impacts on their livelihoods
- The favourable policy environment that is promoting security of tenure over trees and forests
- Awareness of the need to increase access to fuelwood sources for women who walk long distances to collect firewood
- Awareness of the need to rehabilitate degraded and bare hills which affect the flow of rivers and streams that contribute to soil erosion

Table 1. Planned performance versus achievements in forest activities 2008-2010. Source: Adapted from Bunderson et al. (2010).

Performance indicator	Baseline	Planned (2008-10)	Achieved (2008-10)	% achieve-ment
Number of villages participating in community based NRM associations	309	1500	175	12
Hectares of forest demarcated for conservation and management	193	400	1726	432
No. of regenerating natural trees	307,630	500,000	1,974,979	395
No. of tree planting clubs	602	2000	1798	90
No. of participating households	22,503	30,000	45,294	151
No. of nurseries established	506	2000	1751	88
No. of tree seedlings raised	4,253,146	5,000,000	5,785,327	116
No. of trees seedlings planted	3,756,173	4,000,000	4,590,914	115
No. of bamboo seedlings raised and planted	29760	100,000	0	0
No. of improved stoves built	535	2000	3691	185

3.1. TREE PLANTING

As shown in Table 1, almost 5.8 million tree seedlings were raised in 1751 tree nurseries by 45,294 households during the first two years of the project period, compared to the target of 5.0 million trees. Out of the 5.8 million trees only 79% were planted due to the late onset and early finishing of the rains. About 44% of the beneficiaries of forestry interventions are women.

The project promotes planting of various tree species but the most common ones are *Sena siamea, Faidherbia albida,* and other indigenous trees that have multipurpose uses for the farmers. The tree species being planted are chosen by the people themselves based on their qualities and uses. For example, a group in Kalira EPA said that they chose *Sena* species because they grow faster and are more suitable than other species for firewood and construction of tobacco curing facilities. A group in Khombedza EPA decided to conserve the already existing *Faidherbia albida* trees in their gardens for soil improvement purposes.

The review team was able to see stands of woodlands and trees planted and managed with guidance from the project in several villages. The team met people in Kalira EPA in Ntchisi who explained that the project has helped them to replant and rehabilitate a bare hill in their area. Extension workers from other organizations and government attest that the activities of TLC in the area have helped to educate the people on the hazards of wanton cutting down of trees and importance of planting trees on degraded hills and on farms.

The project provides seed and polyethylene tubes and other nursery preparation equipment such as wheelbarrows, hoes and panga knives. The project management could consider promoting local seed collection. There are certain tree seeds that can be collected locally and farmers need to be trained on how to select and collect quality seed for planting. The current stands of exotic trees and indigenous woodlands could be a very good source of locally collected seed. This can in future reduce the expenditure on seed by the project and at the same time increase level of sustainability of the project activities.

3.2. SUSTAINABLE MANAGEMENT OF WOODLAND AND TREES

The project is promoting conservation and regeneration of natural woodlands and forest areas. Currently about 1726 hectares of village and individual forest areas have been demarcated for conservation and management against a target of 400 hectares (Table 1). This has resulted in almost two million trees regenerating naturally, which is also almost 4 times the target. A total of 1798 tree planting clubs have been established, which is close to the target of 2000.

The project has also assisted individual farmers and groups to develop management plans and by-laws for their forest areas and woodlands. One interesting feature in this

intervention is the high participation of women as well as the high level of understanding of the linkages between forest and tree conservation on one hand and climate change, food security and livelihoods on the other hand by the people in the village.

During the period under review, the project planned to facilitate formation and registering of 4 Community Natural Resource Management Associations with a total of 1500 participating villages that would enter into collaborative management agreements with the Department of Parks and Wildlife and Department of Forestry through the local assemblies. The target of registering new associations is not relevant anymore because the Government has introduced a new system where only one umbrella association will be registered under each EPA. The existing associations are still functioning, but it may be difficult to expand much in terms of number of participating villages until the new structure with one umbrella association in each EPA is in place.

The local assemblies in the project would want to recognize one association to handle both Forestry and Wildlife issues. There is a need for the project to fully acquaint itself with the policy and legal implications of what the local assemblies are requesting. The legislation under the Parks and Wildlife recognizes Associations while the Forestry registration recognizes the VNRMC and Block as local level entities that can enter into management agreements with the Government.

One farmer in Mkunga EPA said that when he came to settle in 1988, the area was heavily deforested. He tried to conserve and protect trees within his area but it was difficult because people from other villages could easily encroach into his forest area. However, with the coming in of TLC he has been able to regenerate his forest area and demarcate it and people now respect his forest area. A VNRMC in the same EPA experienced that their VFA is now being protected because they have by-laws and all the people are aware of the by-laws. This has helped them to be able to conserve their VFA and they have mechanisms for punishing by-laws breakers.

Information such as sales and income from natural resource products and quantities of harvestable products from the woodland and forest is not being collected because the natural resource assessment has not yet been carried out for the VFAs and individual forest areas. The process of carrying out natural resource assessment in the VFAs and individual woodlands needs to be speeded up so that people can appreciate the economic, ecological and social benefits of their forest areas.

The project planned to continuously monitor runoff and erosion and estimate the level of sedimentation and water quality within the watershed using the SLEMSA model with the aim to demonstrate the impact of poor land use and unsustainable agricultural practices on soil and water productivity in the watershed. It was noted that the monitoring and evaluation framework does not have impact indicators that could allow the project staff to collect information relating to runoff and erosion as well as estimate levels of sedimentation into water courses such as streams and rivers. If specific indicators are articulated and included in the M&E framework it will be possible to assess the impact of the project on soil erosion and water quality.

3.3. INTRODUCTION OF ENERGY-SAVING STOVES

The project planned to facilitate production of 2000 kitchen stoves during the period under review. As of July 2010, 3691 kitchen stoves were produced. This activity was found to be very popular amongst women for a number of reasons. Women themselves testified that when they use the improved kitchen stoves, less firewood is consumed than when using the traditional three stone cooking. Less firewood is wasted when using the improved kitchen stoves because the size of the stove limits the amount of wood one can put per cooking time. Using less firewood means fewer trips to the forest to collect firewood. The reduced number of trips to collect firewood gives women more time to perform other household chores and reduces their burden and hardships of travelling long distances to collect firewood. The improved stoves are also contributing to the improved health of themselves and their households.

3.4. PLANTING LOCAL BAMBOO

This activity has not been implemented because of the non-availability of planting materials and seeds. It was reported that bamboos grow well only if they are produced from a seedling rather than a shoot. Getting planting materials from shoots is also logistically very expensive because planting materials have to be sourced from far away, thereby incurring heavy transport costs. It is also a challenge to raise bamboo seedlings because seeds are not readily available. Most of the bamboo varieties of the country and the region only flower once in every 20 years making it difficult for TLC to promote this activity in the project. The activity has therefore been stopped and resources meant for this activity have been relocated to other activities.

4. KEY OBJECTIVE 2: IMPROVE HOUSEHOLD FOOD SECURITY, NUTRITION AND INCOME

In order to reach the objective of improved household food security, nutrition and income, the project has implemented several activities related to land and water management and crop diversification. Table 2 gives an overview of the performance within these activities during the first two project years.

A specific problem arises regarding the measurement of impacts within this key objective. While indicators on income and food security are included in the project's own M&E system, indicators of nutrition are absent.

Household food security is improved through increased access, economically or physically, to foods whereas nutrition in general is improved when adequate food, health and care are concurring. While it is clear that the project contributes to improved household food security by increasing yields, diversifying crops and generating income, its contribution to improved nutrition is more unclear. A more food secure household is likely to improve nutrition at the individual level but there are risks of the contrary if the distribution of food/meals are unequal within the household and those who need it the most are not benefiting, if income from sales are spent on other things than nutritious foods, if the health of the household members is not adequate, or if children are not adequately cared for. The project does not have any means of capturing how it is impacting nutrition (or health) as there is no nutrition data collected.

To find out whether the project contributes to an improved nutrition and health status at the individual level, the project could in its current form analyse data already collected from surveys and through routine and identify possible trends. It would, however, be difficult to attribute changes to the MACC project alone as there are other on-going health and nutrition interventions in the same areas. Designing randomised controlled trials comparing impact in areas of TLC interventions with similar areas without TLC interventions would not be a feasible option at this stage. It is not recommended that TLC starts collecting their own nutrition and health data as it will duplicate the efforts of the existing health information system. More targeted data from the implementation areas could be collected through specific surveys in coordination with the Ministry of Health. Alternatively, the project could incorporate indicators for nutritional adequacy of the household by including questions related to food variety (a count of food items available in the household at the time of surveying) and dietary diversity (a count of food groups). Yet, establishing a baseline is too late.

Table 2. Planned performance versus achievements in land and water management and crop diversification activities 2008-2010.
Source: Adapted from Bunderson et al. (2010).

Performance indicator	Baseline	Planned (2008-10)	Achieved (2008-10)	% achieve-ment
No. of households participating in CA	1922	4000	4454	111
Area under CA (ha)	495	1200	1352	113
No. of HHs planting improved fruit trees	680	1500	233	16
No of HHs adopting vetiver and silt traps	19160	2000	2579	129
No. of households using organic manure	------	------	4625	------
No. of households intercropping with agroforestry species	2684	1000	2251	225
Area under Kilombero rice (ha)	2610	650	843	130
Area under Kalima and sugar beans (ha)	3130	275	154	56
Area under grain legumes (ha)	16 280	400	265	66
Area under paprika / bird's eye chillies (ha)	796	90	538	598
Area under Sweet Cassava (ha)	6809	350	282	81
Area under irrigated vegetables, spices and cereals (ha)	680	475	541	114

4.1. CONSERVATION AGRICULTURE

TLC is one of the few NGOs that have started promoting conservation agriculture in a systematic manner in Malawi. It was introduced already under the Chia lagoon project, and within the MACC project more than four thousand farmers have already started conservation agriculture on some or most of their farmland under guidance from TLC (see Table 2). The average size of the area for conservation agriculture is only about 0.3 ha per farm, but this was obviously expected by the project management when the targets were set.

The technique promoted by TLC is a zero tillage method where a dibble stick is used to punch planting holes for seeds and fertiliser. The hand hoe is not used at all, which makes the system dependent on herbicides. As explained in section 2.3 this is a different system from the minimum tillage technology that is promoted under the label of conservation agriculture by NASFAM in Malawi and CFU in Zambia. Crop residues, usually from maize, are laid on the soil surface to maintain moisture and improve the soil. Crop rotation and integration of annual or perennial legumes is also promoted to improve soil fertility, control pests, diseases and weeds, increase returns to land and labour as well as contribute to an improved diet of the household.

The main advantages of conservation agriculture as explained by the farmers visited during the review are less labour and higher yields. This view is also supported by the opinions of the project management as well as by evidence from experiments and field measurements.

Discussions with the farmers revealed a typical pattern that when TLC starts advocating for conservation agriculture in a village, only a few early adopters start on parts of their farmland. Normally, TLC also starts a demonstration plot in the village. During the second season, the adoption rate typically increases to about 10 percent of the farmers in the village when introduction is successful. In the introduction stage the receipt of seeds, herbicides and fertiliser seems to be a big pull factor for adoption. When farmers gain experience, however, the increased crop yields and less labour required seem to sustain the conservation agriculture technique.

Though the MACC project document outlines that the presence of TLC in a village reduces after 1-2 years, experience from the Chia lagoon project shows that extension work is still required beyond this period to increase the adoption of the technique to a larger group of farmers. It is thus recommended that TLC continues to support the villages where conservation agriculture is introduced far beyond a two year period to ensure correct use of techniques and sustainability.

4.2. SOIL AND WATER CONSERVATION INCLUDING USE OF ORGANIC MANURE

TLC promotes soil and water conservation, specifically the use of silt traps and vetiver (*Chrysopogon zizanioides*, a tall perennial grass widely used for soil and water conservation in the tropics). As seen is Table 2 the performance after two years is above target for this component, though most of the adoption took place in the first project year. Use of organic manure is also promoted in spite of having no baseline and no target, but turns out to be adopted by a substantial number of farmers.

Low-cost systems of irrigation are promoted using treadle pumps, river or stream diversion and rainwater harvesting where the key elements are practicality, affordability, acceptability, and sustainability. The type of system used depends on local physical and social factors but all incorporate sound ecological principles to maintain the integrity of the resource base - land, soil, water and plant resources.

The review team visited farmers who used the treadle pump technology. Treadle pumps are easy to operate and to move from one area to another and are most suitable for land sizes around 0.5 ha. The technology is however very labour intensive and the review team experienced that farmers with expansion ambitions aimed to move from treadle pumps to diesel fuelled pumps.

The review team visited the dam in Mpamantha which has been rehabilitated under the MACC project. The water channels have been reconstructed and reinforced benefitting

rice fields of about 150 ha where currently 162 farmers grow irrigated rice in the dry season. During the rainy season about 200 farmers grow rain-fed rice in the same area. The repair of the dam has greatly benefitted the surrounding population by re-connecting them to the main road as well as providing fertile grounds for cultivating fruits, mainly bananas.

Dried manure is traditionally spread on farmland by farmers who have livestock. However, since many farmers have few or no livestock, TLC promotes the production of compost by mixing crop residues, grass and small amounts of manure which is then sealed with clay and watered to keep the bacteria production going. After about three months the compost is ready. The review team visited one site where such compost heaps had been prepared and it appears that the technology was appreciated by the farmers in spite of being quite labour intensive. The farmers had experienced the benefit of the technology and seen how it fertilises the soil for higher crop yields.

4.3. AGROFORESTRY

Under the MACC project TLC promotes conservation and planting of *Faidherbia albida*, (winter thorn) and *Tephrosia candida* on the farmland as natural nitrogen supply and soil improvement. Both grow naturally in many areas in Malawi and their usefulness on farmland is well documented. The main benefits are higher soil fertility and a better micro-environment. The review team met a group of farmers who practiced maize cultivation under *Faidherbia albida*, and they explained enthusiastically about good growth and high yields in vicinity of these species. The project achieves far beyond target when it comes to number of households intercropping with agroforestry species (Table 2).

The MACC project also promotes improved fruit trees as one of its activities but the achievements stand at only 16% of the target (Table 2). The impression of the review team is that the lack of success in this activity is not caused by lack of interest from the farmers, but rather that the project lacks capacity to provide enough seedlings.

4.4. CROP DIVERSIFICATION

Crop diversification is important for food security, nutrition and income by diversifying and marketing high value crops thus making the households more resilient to potential crop failures. TLC promotes several annual crops under its crop diversification sub-component:

- Rice (more specifically a variety known as Kilombero)
- Kalima bean (a variety of common bean, *Phaseolus vulgaris*)
- Sugar bean (probably *Phaseolus lunatus*)

- Grain legumes (more than 40 species of grain legumes exist, but soybeans are explicitly mentioned in the project document and were observed during the field visit).
- Paprika (*Capsicum annuum*)
- Bird eye chillies (*Capsicum frutescens*)
- Sweet cassava (*Manihot esculenta*)

The aim is to introduce high yielding, disease resistant varieties of these crops, which are in high demand among communities in the district, and which obtain good prices in local and regional markets. Legume crops have special emphasis because they are being grown in rotation or interplanted with cereals and cassava as soil-improving and nitrogen fixing crops that also have high value for nutrition and income.

As seen in Table 2, performance is on target for rice and irrigated crops, but below target for the beans and the other legumes, allegedly due to shortage of seeds. It would be good if the project management makes a special effort to overcome this problem, since legumes are particularly important crops, both for the soil's nitrogen supply and as a protein source in the human diet.

Paprika and Bird's eye Chillies stands out as a success, with performance in terms of adopting farmers six times as high as targeted (Table 2). From the field visits and reports, the production of paprika seems to be particularly economically favourable. The review team met one farmer who reported a net income of above MK 200,000 for one harvest (1.6 tonnes) of irrigated paprika.

Crop diversification increases the household's food security and has potential to contribute significantly to especially children's nutrition status by making the diet more protein, vitamin and mineral dense. TLC does not implement specific activities related to the use of these products or nutrition education and it would be useful to team up with other organisations promoting these types of activities at the community level, like Save the Children and UNICEF.

5. KEY OBJECTIVE 3: DEVELOPING ENTERPRISES

The MACC project is involved in a variety of enterprise development activities including beekeeping, fish production (in terms of both cage culture and fish ponds), livestock production, mushrooms (both domestic production and collection of wild mushrooms), agro-processing and eco-tourism. To be fully successful, entrepreneurship activities need to bring cash. Thus, numbers for total income within the various types of enterprises are presented in Table 3.

Table 3. Planned performance versus achievements in enterprise development activities 2008-2010. Source: Adapted from Bunderson et al. (2010).

Performance indicator	Baseline (MK)	Planned (2008-10) (MK)	Achieved (2008-10) (MK)	% achieve-ment
Income from bee keeping (honey sales)	390,400	1,327,500	716,799	54
Income from cage culture (fish sales)	27,550	1,325,000	451,606	34
Income from fish ponds (fish sales)	141,650	1,125,000	370,802	33
Income from livestock (sale of animal products)	0	3,000,000	551,315	18
Income from mushroom production (domestic)	109,000	1,620,000	228,345	14
Income from mushroom collection (wild)	109,000	2,160,000	1,774,485	82
Income from agro-processing	0	-----	0	------
Income from eco-tourism	0	-----	44,000	------

5.1. BEEKEEPING

According to the latest annual technical and financial report (Bunderson et al. 2010) 95 beekeeping clubs were established during the first two project years, with a total of 1019 participating households. These numbers are actually slightly above the targets, while the income was only 54% of target (Table 3). Low income in the first year prompted the project management to reduce the target for the next period down to the level that had actually been achieved in 2008/2009. Thus, compared to original targets, the achievement in terms of income is even lower. Moreover, a total income of MK 716,799 (Table 3) divided by 1019 participating households is only MK 703 (about USD 4) on average per household. This is hardly a meaningful outcome of entrepreneurship, even for poor smallholder farmers.

The review team visited Limbikani Club that was involved in beekeeping. The club had received six beehives from TLC after paying a deposit of MK 26,000 and obtaining a loan of MK 72,000. They had made three harvests so far with about 10 kg of honey in

each harvest. With supplementary feeding with sugar in the dry season they expected to make four harvests per year. That would mean about 40 kg of honey per year which would provide a gross income per year at about MK 40,000 which translates to an individual income of about MK 3000 for each of the 14 members. Given the modest income from honey sales the group had not yet been able to pay back most of their loan. Members expressed interest in obtaining more beehives and starting honey production individually rather than as a group.

In spite of many clubs and households being involved and a lot of good extension work being done, the total annual income from beekeeping for the whole project area is less than the annual salary of one field technician. This raises a serious question regarding whether the activity is worthwhile from an efficiency perspective, i.e. whether the relation between resource use and outcome is reasonable.

5.2. FISH FARMING AND FISHERIES MANAGEMENT

Two distinctly different technologies for fish farming have been promoted under the project; these are cage culture (whereby fish are kept in a net within a cage which stays in a lake or a slow flowing river) and fish ponds located on individual farms. As shown in Table 3 the income from these activities over the two first project years stand at 33-34% of target. Even in the case of both types of fish farming activities, the project management has reduced the targets substantially for the second year after seeing the performance in the first year.

At the time of the fieldwork for the review, not a single fish cage was in use, but the team discussed with two farmers who had been involved in cage culture and who both were members of the same club. They had both tried two batches of fish. From the first batch the harvest was much less than expected because fingerlings had somehow escaped from their nets. In the second batch the harvest had been negligible because they had received a new feed type for testing and apparently the feed turned out to be useless. The two farmers were not ready to try again on their own initiative because the feed which had to be transported long distances was too expensive. They were rather hoping for feed to be produced locally at a much lower price before they could consider taking up the cage culture business again.

The project has facilitated the construction of 17 new fish ponds in 2008/2009 and another 21 in 2009/2010. Production and income are far behind target even for the ponds but have improved from 2008/2009 to 2009/2010. The total income of MK 370,802 divided by 38 ponds indicates an average income of about 9758 MK (about USD 60) per family who owns a pond. Since the income is substantially increased from the first to the second year and not all of the ponds were actually in use, it appears that some of the farmers can potentially receive a substantial contribution to their livelihoods from their fish ponds.

We visited a committed farmer who showed us his fish pond at a size of 49m x 27m and 1.5m deep. He had started fish farming in 2008 and so far he had harvested three batches. While he had barter traded the first batch for 10 bags of maize, the second batch had brought MK 20,000 and the third batch MK 13,000 in income. Being probably one of the most successful fish farmers under the program and spending most of his time on his fish pond, his income from fish was not negligible, but fell short of reaching a dollar a day.

The MACC project also supports fisheries management in Chia Lagoon and the running of Chia fish market which was established by the Chia Lagoon Project. According to the progress report (Bunderson et al. 2010 p.9) 841 members are supported through the Fisheries Management Association and 143 fish vendors are involved in the Chia fish market. The average annual income is estimated at MK 26,251 (about USD 169) for the fishers and MK 102,829 (about USD 628) for the fish vendors.

The review team met a group of fish vendors at the Chia Fish Market. They confirmed that they made substantial income from fish vending, but contrary to the above-mentioned report they recorded the number of members as only 53. Most of the vendors had been selling fish at the road side before the fish market was constructed with assistance from Total Land Care. They agreed that the market place was of utmost importance for their business, as they previously might only earn MK 6000 per year on fish sales along the road.

Our observations on the fish related activities under MACC can be summarised as follows:

- Cage culture hardly exists any more within the project and previous attempts to initiate it as a project activity have not been successful.
- Fish ponds have been established by a handful of farmers under the project but production levels and thereby incomes are low.
- Fishermen participating in fishery management activities in the Chia Lagoon earn very modest incomes from fishing and it is unclear whether any substantial part of these incomes can be attributed to the project.
- Vendors at the Chia Fish market have benefited greatly from the establishment and management of the facilities.

5.3. LIVESTOCK PRODUCTION

The livestock sub-component of the project was not started in the first project year, therefore it is not surprising to see that income is far below target (see Table 3). Livestock was however introduced in the second year, but had not yet reached its income potential at the time of the review. The livestock component includes boan meat goats, improved pigs and improved chickens.

The review team met two female farmers who had both got a female and a male pig to produce piglets and a group of farmers who had taken up production of boan goats. The

farmers all appeared enthusiastic about the activity, but the production was in all cases at such an early stage that no income had yet been realised. It is therefore not yet possible for the review team to assess this activity in any meaningful way, but the gut feeling of the review team is that introduction of improved small livestock is a promising way forward for improving smallholder agriculture in Malawi since it can easily be integrated with ongoing farm activities and has the potential of improving household income as well as the quality of the nutrition in farm households.

5.4. MUSHROOM PRODUCTION AND COLLECTION

As shown in Table 3, incomes from domestic mushroom production are only MK 228,345 which is far behind target. As many as 112 farmers are reported to be 'active in mushroom production' but only 15 mushroom buildings had been raised.

The review team met a female farmer in Kachere village who had started mushroom production in addition to having adopted several other activities introduced by TLC. She made about MK 30,000 during her first month of sale. She explained that the local market as well as hotels and guesthouses were interested. Her production went smoothly in spite of the need of about 1200 litres of water per day to control the temperature in the production unit. This particular woman appeared to be the most entrepreneurial farmer the review team met during the whole field work. When comparing her income to the total reported income in the project component, it would appear that she is so far probably the only farmer who makes substantial income from mushroom cultivation under the project.

According to the project's own report (Bunderson et al. 2010 p. 7), 'production and interest is low due to poorly established markets / links to buyers and uncertain prices'. The review team would like to add that the production seems too sophisticated and risky for most smallholder farmers, since e.g. a failure to comply with strict hygienic rules or a shortage of water to cool down the production unit can easily jeopardise the whole enterprise.

Collection of wild mushrooms is much more realistic for a resource poor farmer, but on the other hand the income potential is much more limited. In the first two project years, 3012 farmers collected 157,165 kg of mushrooms giving a total cash income of MK 1,774,485 in spite that much of the mushrooms were consumed in the households. That means, the average amount collected and the average income derived from it per farmer was 52 kg and MK 589 respectively. This appears to be a sensible intervention as a livelihood diversification and food security activity, but an activity that only brings about four dollars of cash per year to the household should hardly be labelled as entrepreneurship even in the context of rural Malawi.

5.5. AGRO-PROCESSING

The agro-processing sub-component comprises the following types of facilities to be distributed on loans:

- Cassava graters
- Cassava chippers
- Grain mills
- Oil seed presses
- Groundnut shellers
- Solar driers

A total of 12 of the above-mentioned processing facilities were distributed during the first project year, but none additional the second year. There is so far no evidence of income being made from this equipment, and during the field work the review team was not shown any agro-processing equipment in operation.

5.6. ECO-TOURISM

Facilities for village based eco-tourism have been constructed and clubs have been established under the MACC program, but as shown in Table 3, income made from eco-tourism is minimal. The review team visited one eco-tourism village in Chinteche EPA where the main facilities were a cultural centre intended for local dances and local food, and a couple of huts where tourists would be invited to stay overnight. The centre had not yet been opened, so no income had yet been made. The club members waited for TLC to put doors and windows in the huts; otherwise the construction work was completed.

The review team does not have specific competency on tourism, but has doubts on whether the facilities are sufficiently attractive for tourists who visit Malawi. In any case, the club will depend completely on partnership with a professional tour operator or hotel for marketing. The fact that ecotourism facilities established a few years ago under the Chia Lagoon project are also not making substantial incomes strengthens the doubts of the review team.

6. SUSTAINABILITY AND RISK MANAGEMENT

6.1. SELECTION AND TARGETING OF PROJECT INTERVENTIONS

The national agenda through the MGDS as well as the district agenda through the District Development Plans prioritize climate change, environment and natural resource management as one of the key development agendas. The project activities fit into the national and district development agendas and therefore have very strong chances of continuing even after the project period. It was noted that most of the MACC project activities are also prioritized in the District Development Plan under the responsibility of TLC.

TLC is working very closely with the District Council to identify project areas and select interventions that suit the problems identified at district and village levels. In each of the EPAs TLC is working very closely with the government extension agents and they are implementing activities together. It will therefore be possible to hand over implementation of the activities to the government extension workers.

The project activities being implemented are directly addressing the felt needs of the communities at village and district levels. Communities in the project area have experienced flooding, dry spells and droughts, and are therefore aware of the challenges and impacts of climate change. Their increased participation in the activities to reduce deforestation is based on their belief that the project activities will help to mitigate the impacts and become more resilient to impacts of climate change.

6.2. USE OF LEAD FARMERS

The use of village based extension workers also referred to as lead farmers is helping the farmers to learn and adopt various technologies including conservation agriculture, improved stoves, tree planting, conservation and management of forest areas and trees on the farm. The awareness and training activities conducted by the lead farmers and project staff has helped the farmers and people in the villages to adopt the technologies the project is introducing in the area. The use of village based lead farmers strengthens the sustainability because these farmers will remain in the villages with the knowledge that they have acquired after the project has left. It was also noted that people outside the project area are adopting the technologies on their own accord. However, the key challenge is that the lead farmers cover many villages and the project should consider recruiting and training more lead farmers.

6.3. TRAINING AND COMMUNITY EMPOWERMENT

The use of the local government decentralized structure in implementing this project is another key feature for sustainability. The project is being implemented using existing decentralized structures such as VNRMC and Natural Resources Committees which are recognized by the Government. Where necessary the project is involved in facilitating formation of new village institutions but guided by the decentralized natural resource management policy frameworks. The institutions being established are already recognized at village and district level and their continuity is ensured.

The review team noted that the community level decision making processes include women and people living with HIV/AIDS. Women participation is high in the project committees and women are represented in decision making positions. People living with HIV/AIDS comprise part of the decision making machinery and participate in the project interventions.

While the project includes female headed households and people living with HIV/AIDS, they are however not specifically targeted. In a start-up phase of introducing new technologies, this is not surprising as vulnerable households might not have much capacity to be in the forefront of taking up new practises and technologies. However, if the activities are scaled up and more households start using the technologies, a more conscious inclusion and targeting of vulnerable households should be incorporated into the project. Plans for this could be explicitly spelt out in the next phase of the project.

The exchange visits, peer to peer learning, training activities and awareness activities are strengthening the understanding amongst people about the linkages of the project activities to their existing community challenges and problems. These activities are also strengthening the people's participation and adoption of MACC project interventions.

6.4. STRENGTHENING SYNERGIES THROUGH INSTITUTIONAL COOPERATION

The natural resource management sector is characterized by the proliferation of many village level institutions such as project based committees which only last the lifetime of projects. They lack coordination and capacity to effectively facilitate and coordinate community based natural resource management activities. Realizing this challenge the MACC project intends to facilitate formation of a Natural Resource Management Association to oversee and coordinate the natural resource management activities in the districts more especially those around the Nkhotakota game reserve. Establishment of an association will help to improve and strengthen coordination amongst the many NRCs and VNRMCs and at the same time continue the natural resource management activities even after the project is phased out. Being a legal entity, the association would be able to enter into collaborative management agreements with government agencies like the Department of National Parks and Game Reserves. Once an agreement is signed, the association will be able to claim and receive gate fees and concession fees from the

Government to continue the natural resource management activities around the game reserves. If the association is also extended to include coordination of VNRMC activities then it will be a key milestone for sustaining NRM activities in the project area.

Synergies between climate change, economic growth, food security, nutrition and health can be further strengthened through a closer collaboration between the Ministry of Agriculture and Food Security and the Ministry of Health. The current District Development Plans incorporate all sectors and to achieve good results, collaboration between the extension workers in health and agriculture is particularly important. With its strong support to the agricultural extension workers TLC can act as an important convener facilitating this type of collaboration and encouraging NGOs working in health and nutrition to improve coordination of activities.

6.5. RISK MANAGEMENT

The project document (Bunderson and Jere 2008:23) claims: 'Given TLC's extensive experience in managing similar projects, risks are low or non-existent in terms of achieving the targeted results and managing the funds with integrity …'

The above-cited claim is a big one, but the reviewers found that the project management has proven its point as long as we only consider project activities where the TLC management actually has extensive experience and competency, like afforestation and smallholder agriculture. When it comes to entrepreneurship activities, the review team is less convinced, as spelt out in Chapter 5. There seems to be a very real risk that some of those activities will be abandoned by the intended beneficiaries because the enterprises fail to yield the expected results. It appeared to the review team that fish production based on cage culture had already been abandoned, and that some of the other activities could easily follow.

7. CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNED

7.1. CONCLUSIONS

- All project activities are well in agreement with Malawian and donor policies.
- Communication with government as well as national and international NGOs is smooth, both at national and local level.
- Very good performance is observed in important project activities within tree planting, forest management and agriculture.
- Participation of local people including women and people living with HIV/ AIDS is high.
- There is high level of understanding of the project and its linkages to climate change by the people at all levels (national, community and district). Because the project addresses key problems and impacts of climate change that most of them have faced, there is willingness and interest amongst them to participate in the project activities.
- The Government is very supportive of the project activities as it is directly supporting implementation of government plans and agendas in agriculture and natural resource management. Due to limited financial and human resources, the Government would not easily achieve what the MACC project has achieved during the last two years.
- There is evidence that the project contributes towards reducing deforestation even though the levels of contribution could not be quantified. People have noticed a big change since the project was introduced in the districts. More trees are being planted and regenerated, a lot of village based natural resource management groups have been revamped and are fully functional, and there are more trees on farms than before.
- There are also strong indications that most of the interventions related to forestry and agriculture (objectives 1 and 2) will be sustained after the project phase. People indicated that the interventions are addressing the critical needs of the rural communities that strive to become resilient to the impacts of climate change.
- The project is a true climate project because it is successful in afforestation activities that will contribute to mitigating climate change, crop diversification and conservation agriculture that will make agriculture more able to adapt to climate changes, and effective social mobilisation that makes communities more capable of dealing with any kind of threat, including climate change.

… but:

- To ensure adoption and sustainability there is a need to stay much longer in each village than the 1-2 years indicated in the project document.
- The project is involved in very many activities and some of them, particularly within enterprise development do not show good performance.

- The project is expected to have positive impact on nutrition, but this is not followed up by relevant indicators.

7.2. RECOMMENDATIONS

- Successful activities within forestry and farm production should be scaled up by expanding the number of lead farmers.
- The project management and the donor should consider the possibility of phasing out activities that perform far below target, activities that are not within TLC's core areas of competency, and activities that only benefit a small handful of households. Some of the activities within enterprise development fit into all the three above-mentioned categories.
- The project needs to include indicators for nutrition if improved nutrition is still going to be part of the project's key objectives. The project should also consider including indicators for soil and land in relation to afforestation activities and conservation agriculture.
- Preparations should be made for a new five years project phase after 2013. The review team suggests that the new phase could:

    - Use a more comprehensive results framework like the Logical Framework Approach in its design.
    - Have two key objectives; 1) Stop deforestation and 2) Improve farm based livelihoods.
    - Largely upscale successful interventions from the current phase, mainly through the lead farmer system.
    - Only include interventions that have proved successful in the current phase and that are suitable for adoption by a large number of farmers.

7.3. LESSONS LEARNED

1) We find many NGOs involved in same types of activities. Efficiency can be enhanced through more specialisation whereby each NGO concentrates on what it is best at.

2) The actual agronomic content of the concept 'Conservation Agriculture' varies. TLC's model is a zero tillage system using a dibble stick to punch planting holes. The model promoted by CFU in Zambia and by NASFAM in Malawi is a minimum tillage system whereby small basins for planting are dug by hand hoe. The two systems have their advantages and disadvantages and more research is needed on which system to recommend under which conditions.

8. REFERENCES

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APPENDIX 1. TERMS OF REFERENCE

Mid Term Review for

Management for Adaptations to Climate Change (MACC)

(Sak: 1000834. MWI-07/021)

1. Background information

Description of the programme to be reviewed

Total Land Care ("TLC"; *http://www.totallandcare.org/)* received initial funding from USAID to implement the Chia Lagoon Watershed Management Project. As US funding came to an end in 2006, a one year extension period was supported by Norway (MWI-07/020). The aim of the project was to address a broad range of inter-related problems, which included, soil degradation, degradation of natural resources, siltation of rivers and lakes, and escalating health risks from the increasing incidence of disease due to environmental degradation.

The Chia Project provided a solid foundation for expansion and replication of the model in other important and environmentally sensitive watersheds along the lake. Building on this model, TLC developed an expanded project, the Management for Adaptation to Climate Change Project ("MACC"; MWI-07/021) designed to build the capacity of communities to adapt to the effect of climate change. The premise for the focus on climate change was the realisation that rural communities face many risks from climate change. The central goal of the project therefore is to build capacity among rural communities to adopt mechanisms for adaptation to climate change that are self-sufficient and sustainable. It is envisioned that the project will lead to reduced risks and vulnerability from erratic and unpredictable changes in climate and improved food security, nutrition, and general well-being of rural communities.

Implementation of the MACC is based on the Ecosystems Approach. The particular approach of MACC regards the areas of intervention as interconnecting systems, where the plains of the plateau link to the forests of the slope down to the plains, the lake and to other water bodies. The people living in these areas depend on the natural resources (lands, trees, water and vegetation) for a living. There is competition to access these scarce resources, as well as pressure from climatic conditions. A successful development would demonstrate the possibility to manage the resources, allowing to harvest sustainably and to adjust to changing conditions, while also increasing the resources for the benefit of present and future generations. Such caring for the nature would allow for economic growth, improved livelihoods and better health and nutrition for all.

The goal of MACC is to improve the livelihoods of rural communities within a context that develops and secures the capacity of rural communities for adaptation to climate change in a manner that is productive and sustainable.

This will be achieved through three objectives:

- Reduce deforestation by improving the economic use and management of natural resources to supply firewood energy and construction materials to meet farm and household needs on a sustainable basis.
- Improve household food security, nutrition, and incomes by increasing and diversifying farm productivity.
- Develop opportunities to establish and operate rural-based enterprises with strong links to sound markets.

These objectives are implemented through the following activities:

- Reduce deforestation by improving the economic use and management of natural resources to supply firewood energy and construction materials to meet farm and household needs on a sustainable basis focusing on the following interventions:
  - Tree planting with a concentration at the household level to build self-sufficiency.
  - Sustainable management of natural woodlands and trees.
  - Introduction of energy-saving stoves to reduce wood use.
- Improve household food security, nutrition, and incomes by increasing and diversifying farm productivity with low input costs through a) crop diversification, b) winter irrigation, and c) integration of livestock.
- Develop opportunities to establish and operate rural-based enterprises with strong links to sound markets to increase opportunities for self-sufficiency and prosperity. All interventions are being implemented using sound land and water management practices to ensure sustainability.

Norway provided the sum of NOK 4.3 mill in support of the extension of the Chia Lagoon Watershed Management Programme through a contract signed on the 23rd Nov 2007. On the 25th July 2008 Norway signed a Contract with TLC for the sum of NOK 31 mill for the implementation of MACC. To date a total of NOK 19.5 mill has been paid by the Norwegian Embassy, which is 55 % of the total for the two contracts, and 50 % of the support to MACC.

Payments and payment plans:

NOK million		**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Chia	Actual	4,0	0,5				
MACC	Actual		5,0	7,5	2,5		
	Plan				3,0	5,5	2,5
Total		**4,0**	**5,5**	**7,5**	**5,5**	**5,5**	**2,5**

Target Areas

The project covers 11 Extension Planning Areas (EPAs) across five districts with diverse farming systems and agro-ecological zones. These are:

- Nkhata-Bay District: Chintheche and Tukombo EPAs.
- Ntchisi District: Malomo and Kalira EPAs.
- Nkhotakota District: Nkhunga, Zidyana, Linga and Mwansambo EPAs.
- Salima District: Khombedza and Mtosa EPAs.
- Dowa District: Nachisaka EPA.

The project is managed and administered through the TLC headquarters in Nkhotakota. Two satellite offices have been set up at EPA centres in Ntchisi and Nkhata Bay to ensure implementation of field operations and related logistical support.

The overall project implementation across all five districts is directed by the Regional Director of TLC and is guided by two major committees; Project Steering Committee and District Management Committee. The overall role of the Steering Committee is to provide policy direction and to ensure that project activities are aligned to needs and priorities of district assemblies and national programmes being implemented in the district, especially the ASWAp and national programmes on climate change (ref.: *http://www.moafsmw.org/*). The District Management Committee cooperate at the field level and its membership include representatives of District Environmental Sub-Committees, the Project Manager, and field coordinators from TLC.

MACC aims to coordinate its programs with other interested parties and organisations to strengthen the respective activities and to share experiences, knowledge and lessons. In order to identify potential collaborators, group and individual meetings are held to determine common areas of interest and to define the specific roles and activities appropriate for each organisation to maximize the resources available.

2. Purpose of the Review

The purpose of this review is to assess whether MACC delivers what it has promised, its achievements of goal, objectives and expected outputs defined, and provide constructive advise, if possible. Additionally, the review shall provide the Norwegian Embassy with information, guidance and analyses focusing on challenges and opportunities for MACC to contribute to the overall mission of Norwegian support to and cooperation with Malawi. Furthermore, the team shall assess:

- MACC in relationship to NAPA, NBSAPs and the new agricultural sector programme (ASWAp) and national plans and programmes on climate change, biodiversity and poverty reduction; its actual integration with the

programmes at local and national levels and its potential to demonstrate the role of public and private sector cooperation;

- Assess the achieved results and relevance to improve livelihoods, food security and adaptation to climate change;
- Identify contributions of the project to the health and nutritional status of the targeted group and assess whether economic growth in the communities leads to a desired improvement in social well being of the most vulnerable members of the communities.

3. Scope of work

The review shall assess the overall performance, efficiency, capacity and the institutional arrangements put in place for planning, management and implementation of the programme, especially focusing on:

- the success in balancing development and sustainable use of natural resources, effectiveness of the TLC in implementation of the programme,
- linkages and cooperation with partners; public and private,
- assessment of constraints faced and measures taken to address them,
- assessment of the possibilities and limitations in integrating with ASWAp and identify any management consequences of ASWAp integration,
- assess the health benefits created by the programme with particular focus on food security and nutrition for vulnerable groups,
- provide any advise on further creation of synthesis between adaptation to climate change, economical growth, food security, health and nutrition.

Besides reviewing the programme on the basis of its plans and objectives, and its relations to partners and new national programmes, the MTR shall also do an in depth study on its effects on health and nutrition as one of the indicators of success. Although health and nutrition is not the main activity for MACC, there is a number of desired crosscutting effects expected as results, which TLC informs on progress in reporting. A successful adaptation to climate change would imply adoption of practices in agriculture and livelihoods robust in encountering more unpredictable and erratic weather conditions, empowerment of women, full participation from all layers of the community, caring for and inclusion of the disabled, the sick, the Hiv/aids infected, the very poorest, as well as providing for food security, good health and appropriate nutrition.

The MTR shall therefore in particular look into the success of adapting to climate change with regard to improvement of health and nutrition in the population targeted. As MACC still is in an early phase of its implementation, any efforts to measure impact would be premature, but the Team shall assess the appropriateness of goals and the methods applied and the probability of improving health and nutrition.

The Team shall also assess and discuss whether

- a development towards a market economy could lead to changes in dietary habits, and evaluate these changes,
- MACC has been innovative to improve conditions by exploiting new resources in sustainable ways,
- health and nutrition can be improved based on better utilisation of local resources
- the basis of information is available, or could be made available to measure impact taking health and nutrition into consideration,
- the practise of MACC intended to lead to better health and nutrition could contribute to ASWAP, seeking to promote the synthesis between the two,
- MACC promotes practices consistent with, and contributing to the national strategies and plans for environmental conservation, biodiversity and climate change,
- MACC promotes practices consistent with, and contributing to the national strategies and plans for poverty alleviation.

4. Other Review Criterias

The assessment may include the following criteria and questions:

Relevance - assess the extent to which the intervention conforms to the existing policies, strategies and programmes.

- Is the intervention consistent with food security and climate change strategies, policies and programmes?
- Is the intervention well in tune with the development policies, like MGDS?
- Do the innovations and intervention have potential for replication and upscaling?

Effectiveness - Using the established set of indicators the review team shall assess the extent to which the programme has achieved its goals and objectives.

- Assess to what extent the programme has contributed to improved food security and capacity in its areas,
- To what extent are the identified outcomes result of the programmes rather than external factors?
- Was the established monitoring and evaluation system effective in directing implementation of the programme components?
- What can be done to make the programme more effective?

Efficiency - The review team shall provide an assessment of the efficiency of output delivery, including assessment of expenditures in relation to activities carried out.

- Has the programme been managed with reasonable regard for efficiency?
- What measures have been taken during the planning and implementation phase to ensure that resources are efficiently used?
- To what extent have the programme activities delivered as agreed?

Impact - The review team shall assess the different types of effects of the programme, positive and negative, intended and unintended.

- Has the programme motivated or improved community and gender participation environmental conservation and climate adaptation?
- What do the beneficiaries and other stakeholders perceive to be the effects of the programme?

Sustainability - The team shall assess the effectiveness of sustainability measures established during the programme implementation.

- To what extent has measures been taken to address the sustainability of the programme activities?
- Is there local ownership of the activities at all levels, institutional and local?

Assessment of risks management - Effective implementation shall depend on how well TLC manages risks and how well programme sustainability was integrated into the design. In this regard, the study shall revise the proposed sustainability and risk elements especially those associated with the following; Policy and framework conditions (incl. corruption), Socio-cultural and gender (incl. Hiv/aids), Economic and financial, Institutional and organisational, and the Environment.

5. Implementation of the review

The review will be undertaken by a team comprising a Team Leader to be recruited by Norad, a consultant to be recruited by the Norwegian Embassy in Malawi, a member from Norad being an advisor on health and nutrition, a member of the Swedish and Norwegian supported advisory team on Hiv/aids in Lusaka, and a member of the Norwegian Embassy in Lilongwe.

In order to undertake the assignment the team shall require one or more of the following qualifications; environment and natural resources management, and climate adaptation, rural development, agriculture, health and nutrition. Those with practical experience on the agricultural situation in Malawi will have an added advantage.

Sources of information and methodology to be employed
The consultant will review background information available at TLC and Norwegian Embassy, Lilongwe and other relevant institutions. Background information available includes web-site, Programme Documents, Minutes of Annual Meetings and Annual Progress Reports.

Implementation of the proposed schedule would be a collaborative effort. Thus the team will seek the opinion and views of the widest spectrum of key stakeholders. The team may divide efforts to concentrate on climate/environment and health/nutrition respectively, while working together to expose the inter-relationship between the two aspects.

Timetable for preparation, field work and finalisation of report

The review will be undertaken during the third quarter of 2010. The review shall be conducted within a period of 22 days; approximately five days planning and preparations, ten days field work, two days for travel and five days report writing, including revision after comments received.

6. Reporting

The Team shall submit a first draft of the report not later than one week after completion of the study and a final report three weeks after the study. Additionally the team will be required to write a preliminary report for presentation and discussion with stakeholders. The Team Leader will be responsible for finalisation of the report, which will be submitted to NORAD within the third quarter of 2010. The report will be prepared using the following tentative structure:

- Executive Summary: Summary of the evaluation (maximum 5 pages), with particular emphasis on main findings, conclusions, lessons learned and recommendations.
- Report: Presentation of the evaluation purpose, questions and methods used to gather required information.
- Lessons learned: Discussion of issues that are likely to have potential for wider application and use.
- Recommendations and conclusions: Assessment of the interventions and its results against given review criteria and proposed questions, including actionable proposals to the evaluation users.

Oslo, 03.06.2010

Bente Herstad

Director

APPENDIX 2. ITINERARY

Date(s)	Activity
12 September	Unni Silkoset and Fred H. Johnsen arrive in Lilongwe
13-15 September	Meetings with relevant offices in Lilongwe
16-21 September	Field visits in the MACC project areas
22 September	Team working on key findings
23 September	Presentation of key findings to TLC Head Office
24 September	Presentation of key findings to the Norwegian Embassy in Lilongwe
25 September	Unni Silkoset and Fred H. Johnsen leave Malawi

APPENDIX 3. LIST OF PEOPLE CONSULTED

Name	Position	Organization
Dr Augustine Chikuni	Programme Officer	Norwegian Embassy
Dr Trent Bunderson	Regional Coordinator	TLC
Mr Zwide Jere	Country Director	TLC
Ms Maurine Kachuma	Monitoring and Evaluation Specialist	TLC
Ms H. Sawasawa	GIS Specialist	TLC
Mr John Mussa	Director	Land Resources Conservation Department
Ms Kamkwamba	Deputy Director-Nutrition	MoAFS
Ms Gloria Kasongo	Programme Officer	NASFAM
Mr Yamikani	District Agriculture Development Officer	Nkhotakota
Mr James Banda	District Forestry Officer	Nkhotakota
Mr E. Chirwa	District Fisheries Officer	Nkhotakota
Richard Museka	Project Manager- Nkhotakota	TLC
Mr Kamanya	Fisheries Specialist- Nkhotakota	TLC
Mr Mwalwanda	Field Coordinator-Mwansambo EPA	TLC
Mr. Godfrey Thumba	Field Coordinator- Chintheche EPA	TLC
Mr J. Kwanjana	Field Coordinator- Mwansambo EPA	TLC
Mr. Mwansambo	Traditional Authority	Nkhotakota
Mr M. Chowe	Field Coordinator Kalira EPA	TLC
Mr Kanyenda	Agriculture Extension Development Coordinator-Mwansambo EPA	MoAFS
Senior Group Patsuda	Local leaders- Kalira EPA	Ntchisi
Mr F. Mainala	Lead farmer- Mwansambo EPA	Nkhotakota
Mr Benson Yosefe	Lead farmer- Mwansambo EPA	Nkhotakota
Mr Kashati	Fish Farmer- Linga EPA	Nkhotakota
Mr L. Manda	Field Coordinator- Linga EPA	TLC
Mr W.Phiri	Field Coordinator- Mkunga 1 EPA	TLC
Mr. F. Chadwala	Ecotourism Specialist	TLC
Mr F. Mtuwa	Livestock Specialist	TLC
Ms Nellie Makonde	Accounts Clerk	TLC
Mr Felix Chadwala	Natural Resources Specialist	TLC
Mr B. Gangata	Agri-Business Specialist	TLC
Mr P. Phiri	Enterprise Development Specialist	TLC

Mr M. Mkandawire	Field Coordinator- Khombedza EPA	TLC
Mr J. Chigandu	Fish Cage Farmer-Linga EPA	Nkhotakota
Mr G. Sadala	Fish Cage Farmer-Linga EPA	Nkhotakota
Mrs Tembo	ADP Manager- WVI	Nkhotakota
Mr M. Kaimira	Programme Officer- WVI	Nkhotakota
Mr. Mchikho	Programme Officer -WVI	Nkhotakota