

United Nations Development Programme



*Empowered lives.
Resilient nations*

Annual Report on INLE Lake Conservation and Rehabilitation Project UNDP-Myanmar

**UNDP-Myanmar
December 2012**

Contents

List of Abbreviations 3

EXECUTIVE SUMMARY 4

Brief Account of the Annual Report of Inle Lake Conservation and Rehabilitation Project..... 6

1. Introduction and Background..... 6

2. Achievement of the Project..... 9

 2.1 Achievement of the project according to the outcome until 31 December 2012: Environmental Conservation and Environmental Friendly Community Based Development activities enhanced..... 9

 2.2 Achievement of the project according to the outcome until 31 December 2012: Technical assessment for Inle Lake to prepare a conservation and management plan..... 11

 2.3 Achievement of the project according to the outcome until 31 December 2012: Small Grant Facility for CBOs and NGOs established with relevant partners to for a “trust fund” for implementation of environmental activities..... 12

 2.4 Achievement of the project according to the outcome until 31 December 2012: Knowledge sharing platform established and information disseminated among relevant stakeholders 19

 2.5 Achievement of the project according to the outcome until 31 December 2012: Environmental activities mainstreamed into the national and regional development plans 22

 2.6 Financial Report 24

3. Way forwards..... 26

4. Conclusions..... 26

Annexes 27

List of Abbreviations

| | |
|--------------|------------------------------------------------------------------|
| ASEAN | Association of South East Asia Nations |
| CBNRM | Community Based Natural Resource Management |
| CBSs | Community Based Organizations |
| CP | Charoean Pokphone Group |
| CSOs | Civil Society Organizations |
| DLCDA | Danu Literature, Culture and Development Association |
| DM | Dear Myanmar |
| ECCDI | Ecosystem Conservation and Community Development Initiative |
| ECODEV | Ecology and Economic Development Co., Ltd |
| EGG | Ever Green Group |
| ETWG | Environmental Thematic Working Group |
| FBD | Farm Business Development Technical Group |
| FOW | Friends of Wildlife |
| GEF | Global Environment Facility |
| GP | Golden Plain Agriculture Products Co. Ltd |
| IDWSO | Inle Drinking Water Supply Organization |
| IID | Institute for International Development |
| ILCDA | Inntha Literature, Culture and Regional Development Association |
| IPCL | International Procurement and Consultancy Pvt. Ltd. |
| MAA | Myanmar Agro Action |
| MCG | Micro Capital Grant |
| MoECAF | Ministry of Environmental Conservation and Forestry |
| NGOs | Non-Government Organizations |
| RECOFTC | Regional Community Forestry Training Centre For Asia and Pacific |
| Thirimay WDC | Thirimay Women Development Cooperative Society |
| UNDP | United Nations Development Programme |
| UNDP CO | United Nations Development Programme Country Office |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UN-HABITAT | The United Nations Human Settlements Programme |
| WHS | World Heritage Sites |

EXECUTIVE SUMMARY

This report covers the progress on implementation of Inle Lake Conservation and Rehabilitation Project activities of UNDP approved and supported by Ministry of Environmental Conservation and Forestry (MoECAF) and mainly funded by Norway (BUR-11/0028) for the period from January 2012 to December 2012 as the first year of the two year project from January 2012 to December 2013. The Norwegian grant was envisaged to contribute to the achievement of project activities which are in line with government 5 year plan of Inle Lake Conservation and Rehabilitation activities. The project has a strategic coverage of Kalaw Chaung Watershed area supporting 71 villages in three main townships: Kalaw, Pindaya and Nyaungshwe townships in three different zones – remote, buffer and core zones of Kalw Chaung Watershed area for Inle Lake conservation.

The project received active participations of local communities and support of different line departments in various types of project activities as the project adopts an integrated, multi-sectoral and demand-driven approach to strengthen the capacity of local communities to participate in conservation activities as well as community development. Assistance to communities includes the provision of business oriented livelihood support, capacity building of community groups, development of water supply system, improvement of hygiene and sanitation facilities, promotion of environmental conservation awareness raising, application of environmentally sound agriculture practice and community based forestry development activities. According to the nature of project, although the targeted beneficiaries are all the communities living in and around the Lake, the primary beneficiaries of the project are mostly from the poor households from project villages.

The project implementation strategy was designed in accordance with Micro Capital Grant (MCG) model of UNDP so as to provide opportunities for local non government organization (LNGOs) and community based organization (CBOs) in order to enhance their capacity in long term operational sustainability for conservation and community development.

Results

For output 1, *Technical assessment report for the preparation of conservation and management plan* has been done and as a result, land use change map (2000-2010), community proposed land use plans for 23 villages were produced and therefore the prioritized activities for each targeted village could be identified and now being implemented with the LNGOs and CBOs. With regards to the attempt on proposing Inle Lake as Biosphere Reserve, the mission of UNESCO regional office was arrived in Myanmar from 1st October 2012 to 6th October 2012 developed necessary planning for proposing the Lake as Biosphere Reserve in 2013. According to the plan of UNESCO, the international technical expert on Biosphere Reserve has already been assigned in UNESCO Yangon Office to intensively implement the plan for developing Biosphere Reserve.

Output 2 aims to achieve *Small Grant Facility for CBOs and NGOs established with relevant partners to form a “trust fund” for implementation of environmental activities*. To be able to achieve the result, the project is prioritized, demonstrated and implemented the conservation agriculture, Integrated Pest Management, soil and water conservation, fishery and livestock, forestry and ecotourism activities by LNGOs and CBOs in collaboration with 17 line technical departments in the project area. Out of the targeted results in October 2012 most of the activities met the target. Out of the target of 500 acres of land covered by Community Based Forest and Conservation Forest, 853 acres of land are planted with the participation of local communities by means of enrichment planting, agroforestry practice and wind break planting with trees species in 17 villages according to the demand and recommendations from communities, sector specialists and line departments. The result of survival percentage of planted trees is satisfactory and is 75% in average. The trainings on participatory forest management were provided to 63 males and 32 females and it is exceeding the target of 30 males and 30 females. Trainings on organic

farming and integrated pest management have provided to 95 males and 68 females until the end of December 2012 and now being applied in 20 acres of vegetable farms. Training as well as education extension of soil and water conservation practices and conservation agriculture practices were provided to 718 farmers, staff from CSOs and line departments. Applications of soil and water conservations were implemented in 51 acres from October 2013 to December 2012. Fishery and livestock management and production trainings have provided to 68 males and 22 females although the target is 15 males and 15 females. At present, 244 households are engaged in livestock development sector of which 50 households are linked to private company and market. The project also supports the community access to improved sanitation for 67 households and safe drinking water for 882 households, 57 households from 9 villages and 882 households from 37 villages were met receptively. Regarding the output 2, basic infrastructure for ecotourism development in four villages are improved and as a consequences of supporting ecotourism development a total number of 487 tourists enjoy their visits and 9 households benefits from the ecotourism development.

In case of output 3 and 4, the major activities such as 2 coordination meetings at National and Regional level and 6 township level coordination meetings have been conducted. The aim of the coordination meetings are information sharing on technical and financial matters and tracking the progress of the project activities among government agencies, local authorities, implementing partners and Community Based Organizations.

Sustainability

Although the project is two year project, it is designed to achieve sustainability by means of developing “Trust Fund” which is also known as “Sustainable Financial Mechanism (SFM)” and upgrade the capacities of the local communities particularly ethnic groups who are depending in the Inle Lake Watershed area so that they will have opportunity to be able to take part with other line departments in managing the Fund for Biodiversity Conservation of Inle Lake in long term. The project team met with Forestry and Mining Minister of Shan State Government dated on 4th September 2012. The Minister agreed to set up the SFM in collaboration with INLE project and reached consensus that 5 representatives of the ethnic groups will accept as member of fund management committee.



Figure 1 Meeting with Forestry and Mining Minister of Shan State and representative from ethnic groups for development of sustainable financial mechanism for biodiversity conservation and community development of Inle Lake Area

The project is now developing the procedure and guideline of the fund management committee. As a result, the community and ethnic group leaders have opportunities to learn and work together with UNDP, NGOs and government agencies not only the preparatory stage but also during the implementing of the project activities and fund management. Providing community access to updated technology, developing institution capacities in development activities and facilitating access to other development organizations for local communities which are precondition to sustainability can be seen in the project area.

In fact, communities are fully aware of what they need and what they should do with what they have. According to the strategy, the community and local organizations obtain the political support, prioritized

strategic sectors, technical support, social adherence and financial provision from the project. The local people are starving for development and longing for the change and the project strategically supports and creates the path to meet this challenge by means of setting up the system leading to sustainability of financial mechanism development for biodiversity conservation and development of community with active participation of ethnic groups.

Brief Account of the Annual Report of Inle Lake Conservation and Rehabilitation Project

This document reports on the progress of Inle Lake Conservation and Rehabilitation project for the project execution phase in 2012. A brief introduction of the Inle Lake Project is given in Chapter 1. Progress of the Project and brief report of financial delivery is described in Chapter 2. The future planned activities are presented in the Chapter 3 and Chapter 4 covers the main conclusions of the Annual Report for 2012.

1. Introduction and Background

Inle Lake, the second largest freshwater lake in Myanmar, has rich historic and cultural values with significant environmental values due to its high biodiversity and invaluable ecosystem services. The lake is a vital part of the broader ecosystem and economy of southern Shan State, providing many goods and services to its surrounding communities. It is an ASEAN heritage site and is also on the tentative list of United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites (WHS). It is acting as a main water resource for Law Pi Ta hydroelectricity power plant, a major tourist attraction upon which many in the local economy rely, providing agricultural products, traditional products such as silk and silver ware, and a habitat for rich biodiversity and traditional culture.

Multiple pressures on the Inle Lake are posing serious threats to its biodiversity and ecosystems. Deforestation and unsustainable land use practices have resulted in shrinkage of lake water surface from 104 sq miles in 1934 to just 63 sq miles by 2007 and there has been a significant decline in water quality. Due to improper farming, shifting cultivation and land use practices the average annual sediment in-flow is currently about 476 m³/ sq km/yr. According to the last 10 year records, the lake bed has silted up by about 2 m. Inle Lake water is now not suitable for drinking due to the residue of chemical fertilizers and pesticides used in the floating garden and agriculture sector. All these compounding factors in turn are major threats to the local economy, and cultural, social and ecological values.

As the country has just come out of over 50 years of isolation, the combined effects of new economic growth and increasing levels of consumption are quickly leading to conflicting land uses that often result in degradation of natural resources. The problem is exacerbated by the weak political commitment and lack of appropriate management under the military regime in the past decades, resulting in low levels of conservation awareness and lack of grassroots support for conservation in a primarily poor rural society and low levels of awareness and capacity within the communities and government. In particular, limited environmental safeguards, lack of sustainable financial mechanisms and inadequate law enforcement present unabated threats. Myanmar has yet to develop comprehensive land-use policies and planning. There is, therefore, an urgent need for concerted interventions to support sound natural resource management and biodiversity conservation before massive overexploitation happens.

Knowing that sustaining the lake is essential to sustaining local communities and sources of income, as well as maintaining Inle Lake as a national asset, the Ministry of Environmental Conservation and Forestry (MoECAFF) has launched two milestone national workshops in Taunggyi and Nay Pyi Taw in 2010, with the participation of line ministries, Universities, UN agencies, NGOs and CSOs for the development of Inle Lake Conservation and Restoration Plan. Based on the recommendations and

outcomes of the two workshops, a series of actions has been taken such as the development of 5-year plan and Inle Lake Sustainability and Conservation Committee were formed in regional, district and township level based on in-depth consultations with 17 ministries and various stakeholders. The committee comprises members from the 17 government agencies.

Inle Lake Conservation and Rehabilitation Project is followed the government led 5 year plan and implemented by United Nations Development Programme with 12 implementing partners including LNGOs and CBOs according to the Micro Capital Grant Model of UNDP with the close cooperation of MoECAF and with the financial support of Norwegian Government and UNDP from January 2012 to December 2013 covering 71 villages particularly 32 villages from three townships in the core, buffer and remote area of Kalaw Chaung sub-watershed areas of Inle Lake. The project was finally born off after a series of discussions and consultations process among the Government, NGOs, local communities and UNDP due to the restricted mandate of UNDP on Myanmar which has a strong impact on other UNDP projects more than a decade leaving the gaps where line departments could cohesively and constructively support the strategies and activities of UNDP's projects. As a consequence, the project becomes the very first project supporting the political transition and development process in Myanmar and becomes the pioneer project on which how the future projects of UNDP to be designed and implemented particularly for the environmental related programmes.

The project covers five major sectors in field implementation: Forestry and Environment, Agriculture, Soil and Water Conservation, Fishery and Livestock and Socio Economic sectors including ecotourism targeted for restoration of Inle Lake and Community Development and the relevant activities were specifically identified according to the demands of community and a thorough review of both the government agencies and UNDP. Learning from the strength and weakness of previous projects implemented by various organizations in Inle Lake, the project is now designed to provide more rooms for local communities while developing their capacities especially for the ethnic groups such as Inntha and Danu to be able to take initiative on conservation and development for their communities where various line departments and UNDP take the leading role in coordination and technical supports.

With the improvement of the quality of life of local communities and the following outputs are necessary to be achieved during and after the implementation of the project.

Output 1: Technical assessment report for the preparation of conservation and management plan

Output 2: Small Grant Facility for CBOs and NGOs established with relevant partners to form a “trust fund” for implementation of environmental activities.

Output 3: Knowledge sharing platform established and information disseminated among relevant stakeholders

Output 4: Mainstreamed environmental activities into the national and regional development plans

The project has prepared its preparatory phase during January to April and followed the trainings and grant activities in August 2012, some of the activities have contributed to meet some indicators of the outcome and outputs as planned due to active cooperation and coordination among the line departments, community based organizations, local non-government organizations, project staff and communities.

At the initial stage of project implementation dated on 25th to 26th September 2012, a review workshop on “Social mobilization and beneficiaries’ identification” was also conducted in Kalaw Township to ensure effective and socially accepted beneficiaries identification for the project activities. UNESCO mission visited in Myanmar from 1 to 6 October 2012 and conducted a series of meetings and consultations with senior officials from Ministry of Environmental Conservation and Forestry, Ministry of Agriculture and

Irrigation, Ministry of Transport and Ministry of Culture in Nay Pyi Taw. The mission also held meetings with International Institute of Development (IID), UN-Habitat and UNDP in Yangon and during field visit to Inle Lake, the mission also made discussion with line departments, implementing partners and local communities. The mission reviewed the current situation of the Lake, project activities, people's participation and coordination of the line departments and developed the required planning and future activities so as to make concrete proposal for Inle Lake to be announced as Biosphere Reserve which is the goal of the project. The mission report is attached in Annex.

All the documented photos and relevant stories of each activity can also be seen in UNDP Myanmar Website.

2. Achievement of the Project

2.1 Achievement of the project according to the outcome until 31 December 2012: Environmental Conservation and Environmental Friendly Community Based Development activities enhanced

| Outcome indicators | Target | Unit | Targeted Date (Mile Stone 1) | Achieved | Unit | Remark |
|--------------------------------------------------------------------------------------------|-----------------------------|------------|------------------------------|-----------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Area of land covered by Community Based Forest and Conservation Forest | 500 | Acres | October 2012 | 853 | Acres | Survival percentage is 75%; Forest management plan for Community Forestry is now formulating with the technical assistance from NGOs and FD to submit management plan to FD to be able to get land lease for 30 years; |
| 2. Number of HH benefitted from environmental friendly community development activities | 800 | Households | December 2012 | 643 | Households | |
| 3. Projected rate of sedimentation to Inle Lake that can be saved | No target Milestone in 2012 | | | | | The result can be measured only after the rainy seasons of 2013 with the support of sector specialist and IP. |
| 4. Number of Households with access to 1) improved sanitation 2) safe drinking water | 1) 60 2) 2500 | Households | October 2012 | 1) 67 2) 882 | Households | |

The indicator *area of land covered by community based forest and conservation forest* includes enhancing the agroforestry practice, enrichment planting, establishment of windbreak plantation with the people participation in some villages of project area with the support of Ecosystem Conservation and Community Development Initiatives (ECCDI) organization closely supervised by Forestry and

Environment Sector specialist from UNDP and officials from Forest Department. The tree species planted are Avocados (*Persea americana*), Danyin (*Abarema bigemina*), Mezali (*Cassia mimosoides*) and Mango (*Mangifera incdia*) and these species are in line with the demand of communities in accordance with the participatory assessment of the EcoDev in project preparation phase (output 1) and recommendation of technical specialist and Forest Department.



Figure 2 Community based nursery, agroforestry and wind break plantation

Regarding to the indicator *number of households benefitted from environmental friendly community development activities*, some of the households are in the stage of preparation for training and application of soil and water conservation activities in their lands and preparatory stage of participatory forest management activities.



Figure 3 Establishment of improved variety of fruit tree nurseries and selling the seedlings

Therefore, at the moment, only 643 households get involved in development of economically, environmentally and socially acceptable tree planting, livestock and fishery sector development in their areas by means of raising Charoean Pokphone-C.P pigs and chicken farms and development of fruit tree nursery and ecotourism practice with the support of Ever Green Group (EGG) and Golden Plain Agricultural Products Co-op Ltd (GP) and Inntha Literature and Cultural Development Association (ILCDA) under the close monitoring of relevant sector specialists from UNDP and officials from line departments.



Figure 4 Distribution of efficient stoves and the use of efficient stove

In addition, the activity for contribution of efficient stoves to villages has also been conducted by EGG and now 4022 efficient stoves are in the hand of communities i.e. 4022 families in 72 villages and fully utilized with the full understanding on the use of stove will reduce family level fuel wood demand, cooking time and particularly support the conservation of remnant forest since at least 35% of fuel wood saving can be made.

The indicator *Projected rate of sedimentation to Inle Lake that can be saved* have not been measured yet since soil and water conservation activities have been applied in the field in November and December 2012 according to the nature of the work. As it is the beginning of the implementation, the result of the projected rate of sedimentation can be measured in November 2013 by Farm Business Development Technical (FBD) Group closely assisted by Soil and Water Sector specialist from UNDP.

With regard to the indicator *Number of Households with access to improved sanitation and safe drinking water*, people are gradually getting more understanding on and access to the improved sanitation which directly related to their health and the access to drinking water due to contribution of improved sewage system and development of water contribution system with the support of Inle Drinking Water Supply Organization (IDWSO), Inntha Literature and Cultural Development Association (ILCDA), Danu Literature, Culture and Development Association (DLCDA), Ever Green Group (EGG) and Myanmar Agro Action (MAA) closely supervised by Socio-economic specialist from UNDP and officials from relevant Department of Development Affairs.

Until now, 67 households and 882 households have access to improved sanitation such as fly proof toilets and bio septic tanks and safe drinking water. Regarding the assistant of project in promotion of access to safe drinking, the Chief Minister from Regional Government assigned Department of Rural Development in Nyaungshwe Township to provide technical assistant as well as required materials which are approximately \$ 15,200 in terms of monetary value in order to set up the transformer in Taung Chae Spring so that it will fully and effectively support the development of pipeline system initiated by UNDP and CBO for distribution of water to targeted villages.

Regarding beneficiaries' selection for fly proof toilets and bio septic tanks, in general, the poor households were primarily targeted but only those who can comply with the procedures of using fly proof toilets and bio septic tanks get the support from the project and the selection process is agreed during mass village meeting.

In case of contribution of water filtration pots and rain water collection tanks the beneficiaries are mainly from the poor households. These facilities have also been provided for primary schools and monasteries. However, the pipe line water supply system covers all the households in targeted 27 villages.

2.2 Achievement of the project according to the outcome until 31 December 2012: Technical assessment for Inle Lake to prepare a conservation and management plan

| Output indicators | Target | Unit | Targeted Date (Mile Stone 1) | Achieved | Unit | Remark |
|----------------------------------------------------------------------------------|---------------|-------------|-------------------------------------|-----------------|-------------|---------------|
| 1. Number of different types of land use change map for project area (2000-2010) | 1 | Number | May 2012 | 1 | Number | |
| 2. Number of Community Based Proposed | 23 | Numbers | May 2012 | 23 | Numbers | |

| | | | | | | |
|----------------------------------------------------------------------------|-----------------------------------|-------|---------------|----------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| land use plan map | | | | | | |
| 3 (a). Number of Community Based Natural Resources Management Plan (CBNRM) | 10 | Plans | December 2012 | Still on-going | Plans | Forest management plan is now formulating with the technical assistance from NGOs and FD and will submit management plan to FD after survival counting to be able to get land lease for 30 years; |
| 3 (b). Acres of community forest (CF) transferred to local community | No target for Milestone 1 in 2012 | | | | | It is targeted to transfer 360 acres for CF in December 2013. |

Before implementing the project in the field, participatory GIS mapping and Land cover change detection for the assessment of opportunities to implement the environmental conservation and livelihood development activities were carried out by Ecology and Economic Development Company Limited (EcoDev).

The output indicators on *Number of different types of land use change map for project area (2000-2010)* and *Number of Community Based Proposed land use plan map* were fully achieved. The other output indicators such as *Number of Community Based Natural Resources Management Plan (CBNRM)* and *Acres of community forest transferred to local community* are being under the process in the field implementation EcoDev and ECCDI closely monitored by Environment and Forestry specialist and officials from Forest Department. The aim of the output is to contribute to better planning by community in sustainable natural resources management.

2.3 Achievement of the project according to the outcome until 31 December 2012: Small Grant Facility for CBOs and NGOs established with relevant partners to for a “trust fund” for implementation of environmental activities

| Output indicators | Target | Unit | Targeted Date (Mile Stone 1) | Achieved | Unit | Remark |
|--------------------------------------------------------------------------------|-------------------------|-------------|-------------------------------------|-------------------------|-------------|---------------|
| 1 (a). Number of people trained in organic farming/ integrated pest management | 30 males and 30 females | person | October 2012 | 95 males and 68 females | person | |

| | | | | | | |
|--------------------------------------------------------------------------------------------------------|---------------------------|------------|---------------|------------------------------|------------|----------------------------------------------------------------------------------------------------------------|
| training | | | | | | |
| 1 (b). Number of acres applied for organic farming and integrated pest management | 14 | Acres | October 2012 | 20 | Acres | Currently Applied only in Vegetable Farms |
| 2 (a). Number of people trained in participatory forest management training | 30 males and 30 females | Person | November 2012 | 63 males and 32 females | Person | RECOFTC participation in this sector is important and a training has been conducted by RECOFTC in mid Nov 2012 |
| 2 (b). Number of households participate in participatory forest management activities | 60 | Households | November 2012 | 270 | Households | |
| 3 (a). Number of people trained in livestock and fishery resource management and production activities | 15 males and 15 females | Person | October 2012 | 68 males and 22 females | Person | |
| 3. (b) Number of households participate in livestock and fishery resource management and production | 168 | Households | October 2012 | 244 | Households | |
| 4 (a). Number of people trained in soil and water conservation activities | 350 males and 240 females | Person | December 2012 | 718 (538 males/ 180 females) | Person | Trainings provided not only to farmers but also to staff from others CSOs and line departments |

| | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------|----------------|--------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 (b). Numbers of acres applied for soil conservation and water harvesting activities | 120 | Acres | December 2012 | 51 | Acres | Implemented in demonstration plots and the intensive implementation in all targeted townships will be carried out in January 2013 |
| 5 (a). Number of water supply systems developed i) rain water collection tank; ii) water filtration pots provided and iii) pipe line system | i) 105 ii) 350 iii) No target for 2012 | Tanks Pots Pipeline | September 2012 | i) 136 ii) 350 iii) No target for 2012 but in progress | Tanks Pots Pipeline | The pipeline system will be completed in March 2013. |
| 5 (b). Number of Households access to safe drinking water | 2500 | Households | September 2012 | 882 | Households | |
| 6 (a). Number of acre access to small scale irrigation | 50 | Acres | December 2012 | 50 | Acres | Site preparation for winter crops cultivation is being started. |
| 6 (b). Percentage of yield per acre increased | 20 | % | December 2012 | - | % | This can be measured only after harvesting time of winter crops from irrigated lands which will have access to water source after the complete renovation of canal and weir |

| | | | | | | |
|--------------------------------------------------------------------------|-----|----------|---------------|-------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------|
| 7 (a). Number of community ecotourism site developed | 2 | sites | December 2012 | Completed in Myay Ni Gone and Taung Gyar Le, Taung Gyar Htet and Than Taung villages in Nyaungshwe Township | | Received technical assistance from Ministry of Ecotourism and private sector; |
| 7 (b). Number of visitors visited to the community based ecotourism site | 150 | visitors | December 2012 | 487 | visitors | 9 HH benefits from development of ecotourism |

Under this output, it is aim to develop the “Trust Fund” in other words “Sustainable Financial Mechanism for Inle Lake Conservation and Rehabilitation with the participation of ethnic groups, regional government and concern ministries”. While attempting to achieve the formation of “Trust Fund”, the president has directed to the regional government and FD to set the “Trust Fund” for the Inle Lake rehabilitation. From the legal perceptive, formation of the Trust Fund is also in line with Environmental Conservation Law (30th March 2012) for effective implementation of environmental conservation work. Inle project team discussed with Regional Minister from Shan State on 4 September 2012 to be able to set the Trust Fund for Inle Lake. The minister agreed the concept and the regional government could contribute around 20% of the fund from entrance fees of the Inle Lake yearly. In addition, the Minister accepted 5 representatives of the ethnic and NGOs are board members of the Trust Fund. According to the discussion with ethnic groups, they will be raised the fund regularly and put in the Trust Fund. In addition, the Minister of Ministry of Environmental Conservation and Forestry visited to the Shan State on 12 September 2012 and met with regional and local authority, line departments, NGOs and CSOs to brief about environment and forestry plan for Shan State. During the meeting, the Minister also highlighted to set up the mechanism for the Trust Fund for Inle Lake conservation.

The indicator *Number of people trained in organic farming/ integrated pest management training* is successfully achieved and now 95 males and 68 females have already received the basic knowledge and applied their knowledge in 20 acres of vegetable farm. This also meets the indicator *Number of acres applied for organic farming and integrated pest management*.



Figure 5 Organic farming practical training and field application

For indicator *Number of people trained in participatory forest management training* the target has been fully reached. The training workshop on enhancing the participatory process in natural resource

management and now 270 households participate in participatory forest management activities particularly in managing and establishing their agroforestry plots so as to meet the indicator *Number of households participate in participatory forest management activities*. In order to more effectively participate in participatory forest management, RECOFTC had provided training workshop on “Enhancing the Participatory Process in Natural Resource Management” from 15 to 16 November 2012.



Figure 6 Participatory Watershed Management Training

With regard to indicator *Number of people trained in livestock and fishery resource management and production activities*, 68 males and 22 females have received basic livestock training and now they can apply their knowledge in managing their livestock and also share the knowledge gained from the training to others to be able manage their livestock supported by the project. Out of the beneficiaries of livestock sectors, 50 households can manage to link with market with the support of project assistance.

Draft Action plan on management of Fishing Free Zone (FFZ) has been developed by Friends of Wildlife (FOW) in December 2012. It had already been reviewed by National Project Manager for further improvement. Thereafter, a review workshop on action plan will be conducted.

The indicators *Number of people trained in soil and water conservation (SWC) activities* is now achieved for 718 famers, staff from CSOs and line department have been provided with soil and water conservation technique and conservation agriculture (CA) practices. In addition, tools for SWC works have been provided to 600 villagers for SWC field implementation.



Figure 7 Soil and Water Conservation Field Training

All the training and extension of the knowledge of SWC and CA practices are immediately applied as the demonstration in 51 acres and now the intensive application of SWC and CA practices in villages are started and these activities partially meet the indicator numbers of acres applied for soil conservation and water harvesting activities in December, 2012.



Figure 8 Conservation Agriculture Demonstration Plots

The indicator *Number of water supply systems developed i) rain water collection tank; ii) water filtration pots provided and; iii) pipe line system* is really important and must be met during and after the project since it is one of the most demanding activities recorded during the baseline assessment done by EcoDev. With the concerted efforts of communities and supports of Local NGOs, CBOs, sector specialist from UNDP and supported by relevant line departments, all the targets set are satisfactorily reached. At present, total beneficiaries households amount to 882 households.



Figure 9 Ye U Water Spring and Construction of Water Pump House in Taungchay Spring for the development of water pipeline system

Regarding the water quality test in National Health Laboratory, the result of water quality in Inle Lake shows “Colour, Turbidity and total iron are more than maximum permissible limit” but in Ye U Water Spring the result of water quality shows “Within maximum permissible limit”. Therefore the project has supported the community to use the water and developed the pipe line system to contribute water to villages from that water source. In each village, village water supply management committee group has been formed with one representative from each village for checking the pipe line and water resources and collection of money for repairing pipe line for sustainability.



Figure 10 Complete construction of 3500 gallon tank and development of access to water by water pipeline system

Regarding the assistance of project in promotion of access to safe drinking, the Chief Minister from Regional Government assigned Department of Rural Development in Nyaungshwe Township to provide technical assistance as well as required materials which are approximately \$ 15,200 in terms of monetary value in order to set up the transformer in Taungchay Spring so that it will fully and effectively support the development of pipeline system initiated by UNDP and CBO for distribution of water to targeted villages.

Regarding the indicators *Number of acre access to small scale irrigation* and *Percentage of yield per acre increased*, the increased in percentage of yield per acre could not be identified yet because the renovation of irrigation canals of Pau Nu Dam and weir of Kywe Phyu Dam just finished and site preparation of winter crops in approximately 50 acres of additional irrigated land is now conducted. The increased in yield production from this irrigated lands can be measured in March and April 2013 when the winter crops can be harvested.



Figure 11 Renovation of sluice gate and weir of dam and newly irrigated farms

With regard to development of ecotourism, the indicator *Number of community ecotourism site developed* is now completed in four villages Myay Ni Gone, Taung Gyar Le, Taung Kyar Htet and Than Taung villages in Nyaungshwe Township. Repairing of trekking road, construction of fly proof toilet, bamboo and wooden huts and promotion of organic farms have already conducted to support the ecotourism programme.



Figure 12 Development of ecotourism site

Sustainable tourism trainings for communities from ecotourism site were conducted two sessions: the first time in Environmental Education Centre, Nyaungshwe Township from 3-12-2012 to 6-12-2012 and the second time in Golden Lily Hotel, Kalaw Township from 8-12-2012 to 9-12-2012. The trainings were conducted with the cooperation among MoECAAF, ILCDA and Tour Company with the facilitation of technical specialist of UNDP. The resource persons are ecotourism consultant from Australia and staff officer from Wildlife and Nature Conservation Division from Forest Department in Nyaungshwe Township.



Figure 13 Training on ecotourism business

The number of tourists coming to the villages related to development of community based ecotourism during November and December 2012 are 487 tourists and currently 9 households from Myay Ni Gone, Than Taung and Taung Gyar Le benefit from the ecotourism activity. This project activity meets the indicator *Number of visitors visited to the community based ecotourism site* which provide the benefit to the community.

2.4 Achievement of the project according to the outcome until 31 December 2012: Knowledge sharing platform established and information disseminated among relevant stakeholders

| Output indicators | Target | Unit | Targeted Date (Mile Stone 1) | Achieved | Unit | Remark |
|---------------------------------------------------|------------|--------------------|------------------------------|--------------------------------------|-----------|--------|
| 1 (a). Inle lake conservation website development | 1 | Website | December 2012 | Developed under UNDP Myanmar Website | | |
| 1 (b). Number of awareness campaign | 15 | Campaigns | December 2012 | 50 | Campaigns | |
| 1 (c) Number of IEC material | 5000/50000 | Posters /pamphlets | December 2012 | 5000 | pamphlets | |

| | | | | | | |
|-----------------------------------------------------------------------------------------------|---|--------------------|----------------|---------------------------------------------------------------------------------------------|---------|-------------------------------------------------------|
| produced | | | | | | |
| 2. Number of trainings for improved media sectors and communication strategies and management | 1 | Session | August 2012 | 1 | Session | Training on communication for sustainable development |
| 3. Number of manuals and technical guidelines | 1 | Number | September 2012 | 1 technical and policy guideline covering all sectors | Number | |
| 4. Research and Publication | 1 | Paper | December 2012 | - | Paper | Will be proceeded after second call for proposal |
| 5. Number of environment and education centre | 1 | Number of Building | December 2012 | Still in Progress (about 90 % completed: only Electrical accessories Installation are left) | Number | |

Under this output, the activities to meet the indicator *Inle lake conservation website development* are now being proceeded with the support of Communication Manager from UNDP Country Office. Although the development of specific website for the project is not fully completed, the information of the project activities is now occasionally prescribed in UNDP Myanmar website.

The activity on increased awareness raising particularly for the students for primary, middle and high school levels are required to be focused and promoted and the activity is strongly suggested and supported by Basic Education Department and communities as well. Up to now, 50 campaigns have been conducted mostly in schools in villages covering more than 4,000 students with the support of headmasters/headmistresses of the state high schools. The indicator *Number of awareness campaign* is obviously successfully achieved than it has been targeted.



Figure 14 Environmental Conservation Awareness Raising Campaign in schools

For the indicator *Number of IEC material produced*, altogether 5000 pamphlets including livestock sector, Agro-forestry, Watershed Management Training text, Climate Change booklet, and Community

Forestry booklets were produced and contributed by GP, EGG and EcoDev. Community Environment Activist Training texts are being developed. During the implementation of the project, training for journalists particularly on environment conservation concepts related to sustainable development was provided in partnership with Pyo Pin Programme and after the training the news on environment related activities widely reported in 8 various journals to raise the peoples' awareness on the important role of environment conservation activities nationwide. The project is consulting with Cherry FM radio, based in Taunggyi, to disseminate INLE project activities. In this regards, the indicator *Number of trainings for improved media sectors and communication strategies and management* is satisfactorily fulfilled.



Figure 15 Meeting between journalists and representatives from Inntha community and line department for explanation on Inle Project as well as environmental conservation activities during the field training for Improved Media Sector and Communication Strategies and Management

All the project activities are being implemented according to the manuals and technical guidelines developed by sector specialists from UNDP to be in line with prioritized activities based on technical guidelines from international organizations and line departments. At present one comprehensive manual and technical guideline is produced but it has been reviewed and improved by national project manager and technical specialists of the project from UNDP. Therefore, the indicator *Number of manuals and technical guidelines* is also met according to the target. Regarding the indicator *Research and Publication*, particular research has not been done during the project period because the qualified research proposals were not available during the first call for proposal and thus now in the second call for proposal, it is highly intended to get the qualified researchers from academic institutions to take part in the research and produce publications. The discussion on development of the research and publication on Inle Lake with the interested professional and researcher from Taunggyi University was made particular for the field of research and the procedure for submitting the proposal.

The indicator *Number of environment and education centre (EEC)* is now almost completed and only painting and installation of electrical devices are left. EEC will include education centre, meteorological and hydrological data and museum for culture and environment. This activity is undertaken by ILCDA and supported by the project and with the partial contribution of the ILCDA itself. The ILCDA is also provided land area which is about (\$230,000) for construction of EEC. Officials from Ministry of Culture and Universities also offer their assistants to support the EEC.



Figure 16 Environmental Education Centre

2.5 Achievement of the project according to the outcome until 31 December 2012: Environmental activities mainstreamed into the national and regional development plans

| Output indicators | Target | Unit | Targeted Date (Mile Stone 1) | Achieved | Unit | Remark |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|------------------------------|----------|-------------------------------------------------|--------|
| 1. Number of national and regional level workshops/advocacy meetings/training in mainstreaming climate change adaptive measures and environment activities | 1 | Workshop/ meetings/ Training | December 2012 | 2 | Inception Workshop /Launching ceremony | |
| 2. Number of coordination meetings in township and regional levels | 5 | meetings | December 2012 | 6 | meetings | |
| 3. Environment and climate change activities included in township and regional development plan | No target for Milestone in 2012 | | | | | |

Mainstreaming environmental activities and budget into the national and regional development plans are one of the outputs of the project. In this project, this output indicator *Number of national and regional level workshops/advocacy meetings/training activities* were achieved because of two important workshops held in Nay Pyi Taw and Taunggyi for National and Regional levels with active participation and contributions from line departments and authorities at national, regional and township levels. However, mainstreaming climate change and environment into regional development plan is still challenging and the project is now initiating with the local authorities through township and regional coordination meetings.



Figure 17 Speech and Suggestions delivered by Chief Minister of Shan State, President and Minister for Intha affairs and Director from Forest Department during Launching Ceremony of the project

The indicator *Number of coordination meetings in township and regional levels* is also somewhat achieved since the coordination meetings at township levels have successfully finished in all project townships: Kalaw, Pindaya and Nyaungshwe resulting in smooth implementations in the field with the support of line departments and concerned authorities.

In all township level monthly coordination meetings, the main topics discussed from the government agencies were that they wanted to know all the activities and difficulties of the project in order to provide permission and technical assistance to the project in the field level. In each coordination meeting, at least 6 participants from township administration and line departments, 10 staff from implementing partners, all the responsible persons from village administration level and representative from project villages participated in the meetings.



Figure 18 Township Monthly Coordination Meetings

Regarding indicator *Environment and climate change activities included in township and regional development plan* the activities of the project are in line with the indicators under the following components according to the Least Developing Country Climate Fund:

- Reduced vulnerability in development sectors;
- Strengthened adaptive capacity to reduce risks to climate-induced economic losses and
- Increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas.

All these indicators and activities will be encouraged to integrate into the township and regional development plan through township coordination meetings, regional and national level workshops in 2013.

2.6. Financial Report

Financial status of the project until 28 Dec 2012

INLE Project

| No | Activities | Based on proposal (dated on 15 Nov 2011) | Actual Plan (dated on 1 July 2012) | Expenditure (up to 28 Dec 2012) | Balance (dated on 28 Dec 2012) | Remark |
|----|-----------------------------------------------------------------------------------------|------------------------------------------|------------------------------------|---------------------------------|--------------------------------|--------------------------------------------------|
| 1 | Technical assessment for Inle Lake to prepare a conservation and management plan | 105,000 | 105,000 | 104,784 | 216 | |
| | 1.1.1. Technical assessment on Biosphere Reserve | 40,000 | 40,000 | 40,000 | 0 | Cash transferred to UNESCO dated on 17 July 2012 |
| | 1.1.2. World Heritage and Culture site formulation | 35,000 | 35,000 | 35,000 | 0 | |
| | 1.1.3. Formulation of detailed project activities at township level | 30,000 | 30,000 | 29,784 | 216 | |
| 2 | Small Grant Facilities | 749,900 | 807,797 | 700,857 | 106,940 | |
| | 2.1. Restoration and Conservation activities | 440,300 | 432,151 | 340,427 | 91,724 | |
| | 2.2. Livelihood support with environmental friendly IGAs | 264,600 | 330,646 | 330,646 | 0 | |
| | 2.3. M&E (5%) | 15,000 | 15,000 | 0 | 15,000 | |
| | 2.3.1. Baseline data collection | 30,000 | 30,000 | 29,784 | 216 | |
| | 2.3.2. Midterm evaluation | 0 | 0 | 0 | 0 | |
| | 2.3.3. Final evaluation (Impact Assessment) | 0 | 0 | 0 | 0 | |
| 3 | Established knowledge sharing platform | 83,000 | 83,000 | 77,745 | 5,255 | |
| | 3.1. Community base knowledge sharing and IEC development | 58,000 | 58,000 | 52,745 | 5,255 | |
| | 3.2. Environmental education for sustainable development | 25,000 | 25,000 | 25,000 | 0 | Cash transferred to UNESCO dated on 17 July 2012 |

| No | Activities | Based on proposal (dated on 15 Nov 2011) | Actual Plan (dated on 1 July 2012) | Expenditure (up to 28 Dec 2012) | Balance (dated on 28 Dec 2012) | Remark |
|----|----------------------------------------------------------|------------------------------------------|------------------------------------|---------------------------------|---------------------------------|--------|
| 4 | Mainstream national and regional development plan | 40,500 | 40,500 | 16,865 | 23,635 | |
| | Total Programme Cost | 978,400 | 1,036,297 | 900,251 | 136,046 | |
| | Total GMS 7% | 95,642 | 72,540 | 63,018 | 9,522 | |
| | Total Cost (Programme and GMS) | 1,074,042 | 1,108,837 | 963,269 | 145,568 | |
| | Fund transfer from Norway (NOK 6,500,000) | | 1,108,837 | 963,269 | 145,568 | |

* UNESCO has spent 1554 USD only out of 100,000, although INLE Project has transferred to UNESCO.

3. Way forwards

The second call for proposal has been prepared based on the first year experience of the project and with the recommendation and suggestion of sector specialists, line departments, community based organization and communities themselves. The proposal is now under reviewed and the announcement of the proposal will be made in the end of January 2013 to cover the crucial activities such as access to rural renewable energy, sub-water management model development, organic farming and research for Inle Lake conservation and rehabilitation activities and community development which is important during the project implementation phase in the second year.

As a close supervision and guidance on quality and performance of the project, national level coordination meetings to review the project activities will be held in Nay Pyi Taw with various line departments, international organizations and UN agencies so as to improve the quality of project.

Field observation trips at the village level for project team will be made from 21st January 2013 to 25th January 2013 to overview and record the current situation in the field and discussion with beneficiaries, implementing partners and line departments of the project for the monitoring purpose.

4. Conclusions

During the implementation of the project in the first year, the active participation of local communities and support of different line departments provide benefits for communities particularly in awareness raising campaign, reforestation, access to safe drinking water and improve sanitation, and monthly coordination meetings. According to the nature of project, although the targeted beneficiaries are all the communities living in and around the Lake, the primary beneficiaries of the project are mostly from the poor households from project villages. In fact, communities are fully aware of what they need and what they should do with what they have although they have limited capacity to run the development and conservation project systematically. However, when they obtain the political support, prioritized strategic sectors, technical support, social adherence and financial provision from the project, they tried their best in implementation of the project with the cooperation with line department, NGOs, UNDP and local authorities. The progress has been accelerated since one month after the project activities implemented in the field. People are starving for development and longing for the change and the project strategically supports and creates the path to meet this challenge by means of setting up the system leading to sustainability of financial mechanism development for biodiversity conservation and development of community with active participation of ethnic groups. The achievement in transparency, mutual respect and cooperation among communities, local authorities, regional government, line department, NGOs and UNDP is attained during the first phase of project implementation.

Annexes

Success Story 1

Recycling the kitchen waste into organic fertilizer

More than 170, 000 people live in and around the Inle Lake. Most of the people dispose their waste directly into the lake. It causes water pollution seriously in Inle Lake. People who live in the lake should be educated to dispose the waste systemically and practice separately waste dispose system which avoid direct disposal of the waste into the lake. Kitchen waste is the largest waste of a household. It can be used to make foliar bio-fertilizer and compost by using beneficial microbes (Effective Microorganisms- EM). In this way, it is no need to throw away the waste into the lake and water pollution can be prevented.

Myanmar Agro Action (MAA) has implemented "Recycling the kitchen waste into organic fertilizer" for 20 trainees from Myay Ni Gone, Than Taung, Taung Gyar (Upper), Taung Gyar (Middle), Taung Gyar



(Lower), Wun Be Inn, Min Chaung (East), Min Chaung (Middle), Kyun Gyi (North) , Kyae Sar (North) villages, Nyaung Shwe Township, core area of Kalaw Chaung watershed area. Selection of the trainees is based on transparent criteria including 1) results of assessment report 2) willingness to participate in project activities 3) gender balance and 4) on ground observation on recycling the kitchen waste training. Community selected 20 trainees (female: 6 and male: 14) attended this training at Than Taung village, project village in core area. Training was conducted mini lecture cum practical including foliar and fertilizer making with effective microorganism.

Training duration is one day on 29th August, 2012 and action plan is implemented on workable and manageable

basis. Training output has continuous process in replication and using of foliar fertilizer & organic fertilizer for their agriculture.

Two sets of kitchen waste composter bins for each trainee, EM concentrate, molasses, rice bran, training manual and other necessities were provided to participants and linkage with Agricultural Department for further inputs and technical support. Follow up action was conducted after 3 weeks. The villagers were actively participated in the activity. They are more interested in foliar fertilizer than compost. The composter bin can produce not only compost but also foliar fertilizer. Most of the participants could catch the technology and continue the activity themselves.

Participants made foliar fertilizers by using composter bin provided by MAA and use the fertilizer in their field. When they used the fertilizer they found that it could not only promote the plant growth but also control the plant diseases. Therefore the farmers liked it very much and neighboring farmers also want to make such kind of fertilizers. Now more than 80 farmers from Min Chaung (East) are requesting MAA to give them technology and composter bin. U San Myint from Min Chaung (East) village strongly stated that the foliar fertilizer could decrease the fungus and bacteria diseases



in his beetle vine farm. Likewise villager Ma Ohnmar Aye from Min Chaung (East) village very actively conducted the kitchen wastes compost making activity and she shared her experiences to other villagers. She diluted 500 ml of foliar fertilizer from kitchen waste with 100 liter of water and sprayed on her tomato farm. After spraying, the plants become healthy and improve plant growth. She strongly believed the effect of the fertilizer she made.

U Aung Soe Lwin, leader of development committee, Min Chaung (East) strongly requested MAA to provide kitchen waste composter bin and technology, if there will be such kind of activity again. The training "Recycling the kitchen waste into organic fertilizer" changes the better use of kitchen waste and underuse of chemical fertilizer. In addition sanitation of village is improved by meaningful utilization of kitchen waste. It is also contribute to household income by underuse of chemical fertilizer, reduction of water pollution in lake area and environmental conservation.

Contact address:

U San Myint, Min Chanung (East), Nyaung Shwe Township

Ma Ohnmar Aye, Min Chanung (East), Nyaung Shwe Township

U Aung Soe Lwin, Leader of Village Development Committee, Min Chanung (East), Nyaung Shwe Township

Success Story 2

Use of bio-septic tank to reduce water contamination and pollution in Inle lake

Nearly 170,000 people live on and around the Inle Lake and more than twenty thousand people visit Inle Lake annually. Many toilets in the area are ground pit latrines, which have bored holes in the back; some have a hole above the lake surface through which excretions are dropped directly into the lake. No wastewater treatment is done, and domestic drainage flows directly into the lake from around the area. It was reported that the water quality has declined at an increasing rate in Inle Lake.

Bio-septic tank is very efficient and safe sewage management system which uses beneficial microbes. It can greatly reduce foul odor and pathogenic microbes in sewage. The tank can be used more than 10 years without discarding the sewage because it can greatly reduce the solid materials of end product of waste. Therefore it is very cost effective.

The training on using and installing the bio-tank, and awareness of hygiene was carried out in Myaenigone village on 1st November, 2012. Twenty five villagers from Myae Ni Gone, Than Taung, Taung Gyar (Upper, Middle, Lower), Wun Be Inn, Min Chaung (East), Min Chaung (Middle), Kyune Gyi (North) were trained in this training. Ten beneficiaries from Min Chaung (East) and Kyune Gyi (North) were provided bio-tanks, latrines, microbe solutions and other necessities and fifteen beneficiaries were



provided concrete tank latrines, microbe solutions and other necessities. Ten bio-septic tanks were installed and used by villagers. Beneficiaries are very pleased and grateful to Ministry of Environmental Conservation and Forestry (MOECFA), Norwegian Government, UNDP and Myanmar Agro Action (MAA). Now they are free from bad smell and unpleasant view of their latrines. Bio-tank activity was 100% successful. Because if it is not successful, the bio-tank will produce very strong bad smell and the villagers will take off the bio-tank immediately. Now all the tank run its microbial

process successfully; there was no smell around the bio-tank. They are very willing to get and maintain bio-tank. All the participants can run the bio-tank very well and successfully. The rest of the villagers are eagerly looking forward to get bio-tank in next project.

The villager U Aung Myint from Min Chaung (East) village, Daw Khin Than Myint and Daw Tin Shwe from Kyun Gyi (North) told that there are now very pleased because of bio-tank. In previous time their families had to use very bad latrine and the feces were always around their house. Now there is no human waste and bad smell around their house as before. Their family is also happy and healthy. Village leader of Kyun Gyi (North) requested MAA to provide them bio-tank for future plan. Moreover, U Hla Htun village leader of Myay Ni Gone told me that latrines constructed by MAA were very good and requested MAA to provide them bio-tank again.

To success this project activity, the villagers must obey the rule of the system. The villagers successfully obey the rule under the guidance of MAA technicians. Therefore this project should continue more widely in this region. Because it is the only system can dispose the human waste safely in Inle Lake.



Contact address: U Aung Myint, Min Chaung (East) village, Nyaung Shwe Township
Daw Tin Shwe and Daw Khin Than Myint, Kyun Gyi (North), Nyaung Shwe
Township
U Hla Htun, Village leader, Myay Ni Gone, Nyaung Shwe Township

Success Story 3

Farmer Field School Activity (FFS)



Siam Weed Foliar Spray Research Trial

Introduction

Many reference materials are available on Siam weed known by various local names such as Bisat, Germanie (*Chromolaena odorata*). Some references are on medicinal values by a well-known Burmese author from Myanmar. Fermented Plant Juice formulation was taken from “Korean Nature Farming” which emphasis is on organic farming. In this book, formulations of foliar solutions are available such as Fermented Plant Juice (FPJ), Fermented Fruit Juice (FFJ) and Fish Amino Acid (FAA). These formulations are also documented in FFS manual distributed to farmers at FFS Concept training of this activity by Inle Lake Conservation and Rehabilitation Project. Based on this reference book, FPJ was produced from Siam weed which is a local weed growing abundantly in the area and tested by Mon and Kachin farmers of an INGO “World Concern Myanmar” during 1998-2000 where this author was working as Technical Advisor. Farmers tested this formulation on peanut, legumes and fruit trees with very effective results. Therefore this formulation was also transferred to FFS farmers from this ongoing Inle Lake project in September 2012.

Results of Siam weed solution on Tomato and Bitter gourd

Township: Nyaung Shwe

Farmer: Ma Ohnmar Lwin

Village: Min Chaung East



Experiment (1)

This farmer says she first heard about this foliar spray at the FFS Concept Training held by FFS trainers during September 11-13, 2012. She decided to test the solution according to the FFS concept of “Seeing is Believing”. She mixed 3 viss (12 lbs) of Siam weed leaves which grows wild in the area of Inlay Lake with 1.5 viss (6 lbs) of sugar cane cake, also a local product from the area. After 5 days a sweet smell emerged and knew the effective micro-organisms were working well and was ready to use. She diluted the resulting plant juice as follows: 1000 ml juice with 20 gallons of water and sprayed on her floating tomato plants. Previously she had already had 8 pickings of tomatoes. After spraying, her plants started fruiting again and at reporting time has had another 2 pickings and is still fruiting, whereas other floating tomatoes nearby have dried up (see pictures).



Experiment (2)

Having seen these results she decided to grow bitter melon on other untreated tomato beds which had already dried up. She sprayed the same solution on these plants and her bitter melon plants are thriving at reporting time and has harvested about 7-8 pickings already (see attached pictures).

Farmers in the area are very excited about this solution as it is inexpensive, locally available, can be produced at any time, have seen results and have believed, that they are eager to apply this solution on floating tomato beds in next coming season.



Success Story 4

Farmer Field School Activity (FFS)

Field Day on Organic Niger Cultivation



Introduction

FFSs were set up during August 2012 in three townships of Inle lake and buffer zones with the objectives of conserving the area by using nature farming techniques, empowering the local farmers to make critical decisions for more productive farming and to become extension agents in their own farming community. According to the concept of FFS, “seeing is believing” and “learning by

doing”, participant farmers set up trials in their own fields and these become sources of primary learning sites. At the end of the crop season, these respective farmers conduct field days and facilitate learning to other village farmers. Hence they enhance their speaking skills as well.

A three day FFS concept training was conducted in Pwe Hla village of Pindaya Township and participant farmers presented their need of wanting to increase Niger yield and to control yellow vine parasitic weed which has become very destructive in Niger fields.

Organic Niger research trial

Township: Pindaya

Village: Pwe Hla

Farmer: Daw Tin Aye



Table 1. Details of Niger Trial Plot

| Farming details | Particulars | |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Sowing date | 27.9.2012 | |
| Seed Rate | 4 pyi | |
| Area | 0.78 acre | |
| Land preparation | Ploughing 2 times, harrowing 2 times After one ploughing, compost & seeds broadcasted | |
| Soil fertility management | One bag of Zwe Myanmar Approx. 322 lbs compost Ywet Seinn Foliar fertilizer 3 times before flowering Total cost : 21200 kyats | |
| Soil test | Before application | After compost application |
| | pH a little acid | Alkaline |
| | N ₂ Medium | Medium |
| | P ₂ O ₅ Medium | Medium |

Table 2. Results of Plant condition

| Particulars | Compost Field | Control Field |
|---------------------|---------------|---------------|
| Sowing date | 27.9.2012 | 27.9.2012 |
| Plant height | 1' 7" | 7" |
| Branching | 11 | 4 |
| No of flowers/plant | 17 | 5 |
| Seeds / flower head | 30 | 19 |



Farmers' comments

- Growing Niger with organic materials increases yield of Niger
- We are convinced of organic farming methods
- We will use Zwe Myanmar compost and foliar sprays for our crops in future
- We want to be able to buy Zwe Myanmar compost at subsidized rates

Methods were researched on controlling parasitic yellow vine weed and results were shared at FFS to participants.

Control measures of parasitic yellow vine

- Do not purchase Niger seeds from retailer shops (Niger seeds are mixed with weed seeds)



- Do not use seeds from infested Niger fields
- Do not sow Niger in previous infested field
- Inspect Niger seeds when purchasing and do not buy if weed seeds are present
- Sieve Niger seeds before sowing
- Test seed viability before purchasing
- Scout Niger fields once a week

Work Plan Leading to the Designation Process of the Inle Lake as a Biosphere Reserve

Step-1 Development of baseline database – November 2012- March 2013

This database will build on the existing reports and analysis on economic, environmental, social and cultural aspects of development in and around the Inle Lake area. It will endeavor to augment the existing data with N, P, K, sediments and BOD sampling at strategic locations in and around the lake.

Step-2 Workshop with key stakeholders on the MAB concept (background ideas are given in Annex-3) – January 2013

Development of Inle Lake Biosphere Management Plan – April-June 2013

The Plan should identify Inle Lake Biosphere values and principles such as:

- sustaining an inclusive, participative and cohesive culture which celebrates diversity, and which is democratic, equitable and accessible to all
- respecting the natural environment by accepting responsibility for the conservation of nature, sustaining biodiversity and openly sharing research and learning;
- maintaining a network of village communities nestled in a network of productive and natural landscapes
- recognition of the importance of a sustainable local economy.
- The Action Plan may outline Themes such as People, Productivity and Planet and Key Strategy Areas.

Consultation and Communication Plan – July 2013

Engaging the Inle Lake Biosphere communities and related agencies (Government and NGO's) to build understanding and ownership is an essential Biosphere function. Key communication means is via projects and their community partnerships. Inle Biosphere should maintain communication channels with Biosphere stakeholder organisations, UNESCO MAB Secretariat and the wider community. An interactive Inle Biosphere website can play a key communication role.

Preparation and Submission of the nomination form – August-September 2013

This will consist of three parts:

Part-1

Part one is a summary indicating how the nominated area responds to the functions and criteria for biosphere reserves set out in the Statutory Framework, and presents the signatures of endorsements for the nomination from the authorities concerned.

Part-2

Part two is more descriptive and detailed, referring to the human, physical and biological characteristics as well as to the institutional aspects.

Part-3

An annex to be used for updating the Directory of Biosphere Reserves on the MABnet, once the site has been approved as a biosphere reserve.

This process will be assisted by hiring of a national staff and expert inputs by UNESCO Jakarta office under the supervision of Mr Shahbaz Khan, Head of Environmental Sciences Unit.

Background Information for Stakeholder Consultation Workshop

What is a Biosphere Reserve?

A biosphere reserve is a unique concept which includes one or more protected areas and surrounding lands that are managed to combine both conservation and sustainable use of natural resources.

Each biosphere reserve conserves examples of characteristic ecosystems of one of the world's natural regions, managed for their protection and study.

- It is a land and/or coastal/marine area in which people are an integral component, and which is managed for objectives ranging from complete protection to intensive yet sustainable production.
- It is a regional centre for monitoring, research, education and training on natural and managed ecosystems.
- It is a place where government decision makers, scientists, managers and local people cooperate in developing a model program for managing land and water to meet human needs while conserving natural processes and biological resources.
- Finally, each biosphere reserve is a symbol of voluntary cooperation to conserve and use resources for the well being of people everywhere.

International Significance

'Biosphere Reserve' is an international designation made by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) on the basis of nominations submitted by countries participating in the Man and the Biosphere Programme (MAB).

MAB was launched in 1971 to catalyse a greater understanding and provision of knowledge and skills to support sustainable relationships between people and their environment. Biosphere Reserves act as a keystone of MAB by providing a global network of sites for cooperative research toward this end. They also aim to demonstrate the sustainable use goals of the World Conservation Strategy.

ABOUT UNESCO BIOSPHERES

UNESCO promotes worldwide cooperation in education, science and culture and its Man and the Biosphere (MAB) program studies. It aims to improve the way people live in their environments, particularly in balancing economic, environmental, social and cultural aspects of development. Biosphere Reserves are areas of terrestrial and/or coastal/marine ecosystems, which are internationally recognized within the framework of UNESCO's Program on Man and the Biosphere (MAB). They are established to promote and demonstrate a balanced relationship between humans and the Biosphere. Biosphere Reserves are designated by the International Coordinating Council of the MAB Program at the request of the country concerned. Individual Biosphere Reserves remain under the sovereign jurisdiction of the countries where they are situated. Collectively, all Biosphere Reserves form a World Network in which participation by countries is voluntary.

The World Network is governed by the Statutory Framework adopted by the UNESCO General Conference in Seville in 1995 that presents the definition, objectives, criteria and the designation procedure for Biosphere Reserves. The actions recommended for the development of Biosphere Reserves are set out in the "Seville Strategy".

Approximately every 5 years the MAB Secretariat holds a congress of the World Network of Biosphere Reserves.

At the congress the representatives of UNESCO Member States, Biosphere reserves, cooperating public and private sector institutions and civil society organizations present adopted the Madrid Declaration on the MAB Program and the accompanying Madrid Action Plan. The purpose of the Plan is to "raise

biospheres to be the principal internationally designated areas dedicated to sustainable development in the 21st Century.”

The World Network of Biosphere Reserves has been established by the United Nations Education, Scientific and Cultural Organisation (UNESCO) as a practical tool to solving one of the most important challenges of our time: “how can we reconcile conservation of biodiversity and biological resources with their sustainable use”.

The Concept of Biosphere Reserves emerged in the early-mid 1970’s as part of the implementation of the fledgling UNESCO Man and the Biosphere (MAB) Program.

Biosphere Reserves are at the core of UNESCO’s Intergovernmental Research program. As the central pillar of the MAB Program Biosphere Reserves are intended to provide testing grounds for actions that contribute towards achieving a sustainable balance between the often conflicting goals of conservation of biological diversity, promoting human development and maintaining cultural values.

Biosphere Reserves are established to achieve three complementary functions. The first function is Conservation – to contribute to the conservation of landscapes, ecosystems, species and genetic variation. The second function is Sustainable Development – to foster economic and human development that is socio-culturally and ecologically sustainable, and therefore compatible with the first function. The third function is Logistic Support (Learning) – to support demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development, in support of the first two functions.

Articles 3, 4 and 5 of the 1995 Statutory Framework of the World Network of Biosphere Reserves, states the designation procedure for biosphere reserves. It reads as follows:

Inle Lake needs to satisfy the following function and criteria as laid out in articles 3 and 4.

Article 3 - Functions

In combining the three functions below, biosphere reserves should strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale:

- (i) conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- (ii) development - foster economic and human development which is socio-culturally and ecologically sustainable;
- (iii) logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

General criteria for an area to be qualified for designation as a biosphere reserve:

1. It should encompass a mosaic of ecological systems representative of major biogeographic regions, including a gradation of human interventions.
2. It should be of significance for biological diversity conservation.
3. It should provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.
4. It should have an appropriate size to serve the three functions of biosphere reserves, as set out in Article 3.

It should include these functions, through appropriate zonation, recognizing:

- a legally constituted core area or areas devoted to long-term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives;
- a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place;
- an outer transition area where sustainable resource management practices are promoted and developed.

Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and carrying out the functions of a biosphere reserve.

In addition, provisions should be made for:

- (a) mechanisms to manage human use and activities in the buffer zone or zones;
- (b) a management policy or plan for the area as a biosphere reserve;
- (c) a designated authority or mechanism to implement this policy or plan;
- (d) programmes for research, monitoring, education and training.

Article 5- Designation Procedure

1. Biosphere reserves are designated for inclusion in the Network by the International Co-ordinating Council (ICC) of the MAB programme in accordance with the following procedure:

- States, through National MAB Committees where appropriate, forward nominations with supporting documentation to the secretariat after having reviewed potential sites, taking into account the criteria as defined in Article 4;
- the secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the secretariat requests the missing information from the nominating State;
- nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC;
- ICC of the MAB programme takes a decision on nominations for designation.
- The Director-General of UNESCO notifies the State concerned of the decision of ICC.

2. States are encouraged to examine and improve the adequacy of any existing biosphere reserve, and to propose extension as appropriate, to enable it to function fully within the Network. Proposals for extension follow the same procedure as described above for new designations.

3. Biosphere reserves which have been designated before the adoption of the present Statutory Framework are considered to be already part of the Network. The provisions of the Statutory Framework therefore apply to them.