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Asia-Pacific Network for Sustainable Forest Management and Rehabilitation

**APFNet-funded Project on Rehabilitation and Management of
Degraded Forest in Miyun Reservoir Watershed, Beijing
[2015P2-BFS]**

May 2017

**Miyun Reservoir Watershed
Beijing
People's Republic of China**

Contents

1	INTRODUCTION AND EVALUATION STUDY APPROACH	4
2	PROJECT MANAGEMENT DESIGN	4
2.1	APFNet requirements	4
2.2	General information - APFNet-funded Project on Rehabilitation and Management of Degraded Forest in Miyun Reservoir Watershed, Beijing [2015P2-BFS].....	5
2.3	Comments on Project Activities.....	6
3	PROJECT IMPLEMENTATION STATUS.....	7
4	DISCUSSION	9
4.1	Sustainable Forest Management	9
4.2	Participatory Forest Management that could enhance livelihood of local community	19
5	EVALUATION	28
5.1	Lessons Learned	28
5.2	Knowledge Management and Dissemination	30
5.3	Replicability.....	29
	MIDTERM EVALUATION PLAN	31

Abbreviations

APFNet	Asia-Pacific Network for Sustainable Forest Management and Rehabilitation
BFS	Beijing Forestry Society
BMBFP	Beijing Municipal Bureau of Forestry and Parks
BFU	Beijing Forestry University
NTFP	Non-Timber Forest Products
SDG	Sustainable Development Goal
UNFF	United Nations Forum on Forests

Plant nomenclature

Pine or Chinese pine	<i>Pinus tabulaeformis</i>
Chinese thuja	<i>Platycladus orientalis</i>
Walnut Tree	Tree of the genus <i>Juglans</i>

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1 INTRODUCTION AND EVALUATION STUDY APPROACH

From May 15th until May 19th the writer carried out a mid-term evaluation of the APFNet-funded Project on Rehabilitation and Management of Degraded Forest in Miyun Reservoir Watershed, Beijing [2015P2-BFS]. This Project is being a project under the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet). Five days were spent on the project location at Miyun Reservoir Watershed, Beijing. During this time the following activities were carried out:

- Site visits and discussion on representative forest management demonstration sites.
- Discussing with officials from Beijing Municipal Bureau of Forestry and Parks (BMBFP), Beijing Forestry Society (BFS), and Beijing Forestry University (BFU) involved in project activities.
- Visits and discussions with project management team involved in silvicultural practice
- Inspection of non-timber forest product (NTFP) and discussion on possibility to develop into the market.
- Inspection of project documents and presentation.
- Discussions with project managers on their project implementation experience and plans for the remaining project period.

The approach to assessing the activity aspects of the project was to conduct key informant discussion and make a study visit to the project implementation sites. The time available was not sufficient to allow extensive data collection and analysis especially for key stakeholder interviews. Therefore the observations and conclusions in this report are more informed subjective rather than objective.

Based on the information gained through this information gathering process, this report and assessment is presented. The Mid Terms Evaluation (MTE) Plan is included as Annex 1.

2 PROJECT MANAGEMENT DESIGN

2.1 APFNET REQUIREMENTS

Formation of *The Asia-Pacific Network for Sustainable Forest Management and Rehabilitation* was proposed by China at the 15th APEC Economic Leaders Meeting in Sydney, Australia in September 2007, and was formally launched in September 2008 with the following aims:

*Mission*¹

The mission of APFNet is to help promote and improve sustainable forest management and rehabilitation.

Objectives

The objectives of APFNet are to:

- a) Contribute to the achievement of the aspirational goal of increasing forest cover in the APEC region by at least 20 million hectares of all types of forests by 2020;
- b) Help to enhance forest carbon stocks and improve forest quality and productivity by promoting rehabilitation of existing but degraded forests and reforestation and afforestation of suitable cleared lands in the region;
- c) Help to reduce forest loss and degradation and their associated emissions of greenhouse gases by strengthening sustainable forest management and enhancing biodiversity conservation; and
- d) Help to increase the socio-economic benefits of forests in the region.

More specifically:

¹ APFNet Strategic Plan 2011 – 2015, APFNet 2011

Goals and Objectives of APFNet Projects²

APFNet projects aim to summarize, demonstrate and disseminate best practices in sustainable forest management and rehabilitation in the Asia-Pacific region to fulfil the three main objectives of APFNet as follows:

- to promote forest rehabilitation, reforestation and afforestation to help to achieve the goal of *increasing forest coverage in the APEC regions by 20 million hectares of all types of forests by 2020*.
- to strengthen sustainable forest management, improve forest quality, increase carbon sequestration, and mitigate climate change.
- to enhance biodiversity conservation and improve the productivity and socio-economic benefits of forest ecosystems.

2.2 GENERAL INFORMATION - APFNET-FUNDED PROJECT ON REHABILITATION AND MANAGEMENT OF DEGRADED FOREST IN MIYUN RESERVIOR WATERSHED, BEIJING [2015P2-BFS]

The general information outlined here is given in the Project Progress Report submitted to APFNet Secretariat for the first half year of the 2nd year of operation (07/2016-12/2016). The Report is also based on Project proposal agreed in the Project Agreement between APFNet and Beijing Forestry Society (BFS). The project will run for two years period. The project design is presented here in summary only and more fully elaborated, as appropriate, in later sections of this report. For the reference document see "Project Progress Report submitted to APFNet Secretariat for the first half year of the 2nd year of operation (07/2016-12/2016)".

Overall objective

The overall objective of the project is to build a pilot and demonstration of sustainable forest management for China and Asian-Pacific Region with orientation of multi-function forest combing economic, ecological and social benefits together, and make a contribution to the sustainable forest management in Asia Pacific Region.

Specific Objectives

- To improve the water conservation capacity of the forests in three sites of the project by applying close-to-nature management approach
- To reduce water pollution caused by fertilizer application in the orchard selected;
- To improve the livelihood of the local community selected by promoting the development of forest recreation
- To enhance the capacity of relevant stakeholders in forest management in environment-friendly manner
- To produce best practice models for a better long-term forest management in the watershed.

Activities

- Monoculture plantations of *Pinus tabuliformis* and *Platycladus orientalis* (Linn.) Franco of 280 hectares in three project sites are managed in a close-to-nature approach
- The livelihood of local community improved by promoting eco-tourism
- Capacity of relevant stakeholders in managing forest and eco-tourism improved, and
- Experience and lessons learned summarized and disseminated.

² Guidelines for Project Management, APFNet 26 February 2012

Expected Outputs

Output 1: Construct monoculture plantations of *Pinus tabuliformis* and *Platycladus orientalis* of 280 ha in three project sites (Shitanglu, Schichangyu, and Shidongzi)

- **Activity 1.1:** Development of 5 year forest management plan of project sites
- **Activity 1.2:** Transform monoculture plantation of *Pinus tabuliformis* and *Platycladus orientalis* into mixed forests with broad-leaves species

Output 2: Improve the livelihood of local community by promoting eco-tourism

- **Activity 2.1:** Formulate an eco- tourism plan
- **Activity 2.2:** Development of tourism infrastructure

Output 3: Improve capacity of relevant stakeholders in managing forest and eco-tourism

- **Activity 3.2:** Set up on-site training and guidance of forest management for local forest practitioners for implementation of Long-term Forest Management Plan
- **Activity 3.3:** Organize training program for local farmers involved in eco-tourism
- **Activity 3.4:** Arrange domestic and international study tours

Output 4: Experience and lessons learned summarized and disseminated

- **Activity 4.1:** Establish knowledge hub for supporting forest tourism promotion
- **Activity 4.2:** Organize workshop
- **Activity 4.4:** Prepare and submit of policy recommendations to local and Beijing Municipal government agencies

Finances

The overall investment is USD 491,100 is provided as a grant by the APFNet; USD 165,000 is granted to spend within the project year.

2.3 COMMENTS ON PROJECT ACTIVITIES

The design of project activities could be expected to cover the main elements of the overall objective and specific objectives of APFNet projects (see Section 3) with particular emphasis being placed on the following aspects:

- **Forest rehabilitation** through sustainable forest management. Close-to-nature management has been introduced through training and field demonstration in three project sites: Shicahngyu, Shitanglu, and shidongzi project sites,
- **Improved forest quality** will result from the application of close-to-nature management and associated silvicultural system,
- **Increased water quality** through development of multi-layered and mixed stand of forests cover. The retaining of water will gradually supply water into reservoir,

- **Enhanced biodiversity** through encouragement of natural regeneration, enrichment planting, and mixed stand with more broad leaves species
- **Improved productivity** through multiple species and age class development combined with increased management of non-timber forest products,
- **Socio-economic benefits** are flowing from the villagers greater use of non-timber forest products and the increased employment resulting from forest management, and eco-tourism promotion,

The formulation of project activities has multiple elements the major aspects of which are:

- Formulation, training and implementation of a forest management system new to local practitioners
- Development of sustainable forest management plan
- Investigation and introduction of non-timber forest products including medicinal plants and other potential species.
- Development of participatory forest management and related activities to secure household revenue and quality of life
- Introduction and training on eco-tourism management and promotion
- Facilities development and upgrading of accommodation standard to support eco-tourism program
- Capacity building through staff training regarding to forest management and eco-tourism promotion
- Construction and renovation activities knowledge hub, recreation facilities, and eco-tourism instruction.
- Associated management aspects such as reporting, publications, training and hosting of both national and international workshop/meeting.

Overall, this project has is a wide range of activities giving quite a challenge for the project managers and staff to implement in a two-year period. Development of sustainable management plan, design and implementation of the eco-tourism promotion, identification of potential non-timber forest products, particularly medicinal plants, have been largely implemented within the project sites. In this regard the close-to-nature interventions need some years ahead to yield benefits.

Implementation of a forestry project over a two-year period gives insufficient time for full consolidation and realisation of the impact of the forest management aspects. A periodic monitoring and evaluation or follow-up phases would allow further development of most initiatives commenced in this project.

In case of the target groups, the local practitioners and villagers who are dealing and subsistence with forest resource are identified as the key stakeholders. The project has concerned on benefit sharing to those stakeholders. Further details are provided later in this report.

3 PROJECT IMPLEMENTATION STATUS

This section follows the outline presented in the Project Logical Framework which is a summary of the overall project objectives, specific objectives, and activities. The Framework as presented in the MTE is reproduced in Appendix 1.

According to the Project Progress Report submitted to APFNet Secretariat for the first half year of the 2nd year of operation (07/2016-12/2016), it is found that the Project Managers have made very considerable implementation progress as summarised in Table 1. They are on track to complete implementation by the end of Year 2.

Table 1 Project progress summary to mid of Project Year 2

Output/Activities	Percentage implemented	Planned completion date	Estimated Completion Date	Comment
Output 1: Construct monoculture plantations of <i>Pinus tabuliformis</i> and <i>Platycladus orientalis</i> of 280 ha in three project sites (Shitanglu, Schichangyu, and Shidongzi)				
Activity 1.1: Development of 5 year forest management plan of project sites	100%			
Activity 1.2: Transform monoculture plantation of <i>Pinus tabuliformis</i> and <i>Platycladus orientalis</i> into mixed forests with broad-leaves species	100%			
Output 2: Improve the livelihood of local community by promoting eco-tourism				
Activity 2.1: Formulate an eco-tourism plan	100%			
Activity 2.2: Development of tourism infrastructure	60%	June 2017	June 2017	Forest trail has completed Forest cultural center is estimated to be completed in 2017
Output 3: Improve capacity of relevant stakeholders in managing forest and eco-tourism				
Activity 3.2: Set up on-site training and guidance of forest management for local forest practitioners for implementation of Long-term Forest Management Plan	100%			
Activity 3.3: Organize training program for local farmers involved in eco-tourism	100%			

Activity 3.4: Arrange domestic and international study tours	100%			
Output 4: Experience and lessons learned summarized and disseminated				
Activity 4.1: Establish knowledge hub for supporting forest tourism promotion	80%	March 2017	June 2017	Waiting for moving of the English website into online outreach
Activity 4.2: Organize workshop	100%			
Activity 4.4: Prepare and submit of policy recommendations to local and Beijing Municipal government agencies	100%			

Finances

Based on the Project Progress Report submitted to APFNet Secretariat for the first half year of the 2nd year of operation (07/2016-12/2016), it is shown that the cumulative expenditure has been spent up to USD 141,900 or equal to approximately 86% of expenditure rate. This may reveal that the project would be completed according to the schedule.

4. DISCUSSION

4.1 SUSTAINABLE FOREST MANAGEMENT

Background

Sustainable Forest Management is one of two major focuses of this project. The other focuses being the involvement of the local community in forest management through participatory management of eco-tourism and NTFPs development. The silvicultural system has chosen to focus on the close-to-nature forest management concept to manage the forest resource. This is appropriate given the goals of the APFNet programme as discussed in Section 3.

Close-to-nature forest management aims to use various interventions to steer simple forests, mainly monoculture plantations, towards a natural forest state using the power of nature, whilst still achieving useful forest production. The main intervention appropriate in this project is selective harvesting. To a lesser extent biodiversity enrichment is appropriate through introduction of useful species which would not be expected to occur naturally and by creating gaps to facilitate improved establishment of natural regeneration.

This management approach is biologically sound to enhance function of forest resource especially for watershed management. In particular, it is also appropriate for multiple use management by catering to forest product production, soil stability and catchment protection, as well as providing an aesthetically attractive forest suited to recreation and tourist uses. Significant results can take considerable time to achieve and will occur well outside the project period. Although in the conditions of the three project sites, it may need more than a decade to gain obvious outcome of the

activity for both aesthetic and environmental functions yielding.

The three project sites have considerable change in landscaping based on planted forests of *Pinus tabuliformis* and *Platycladus orientalis* as well as some broadleaves tree species which have been established for over a considerable period and therefore are in various staged of development. Some are already close-to-nature through good establishment of natural regeneration, some still have a long way to go.

Every situation is different. There are sites with different circumstances, different site capacity, and different potential in natural regeneration. This gives a problem in that one rule may not apply on every site. But the principles apply everywhere. So now that these are understood by local practitioners that the specific plans should be made for each site. Given the long history of establishment and protection, the managers must keep tight control of the forests to avoid disturbing from human activities as well as from natural disaster such as forest fire.

Comments

The design of activities within three project sites; Shitanglu, Schichangyu, and Shidongzi meets project requirement and the implementation to the present has been done well. The detailed site of silvicultural practice, followed by international consultation from experts has resulted in a successful of implementation. The broadleaves tree species which have been planted on the sites have mostly followed the requirements and the forest plantations are now gradually transformed from monoculture plantations of *Pinus tabuliformis* and *Platycladus orientalis* to be mixed stands with other broadleaves species such as Mongolian oak, *Cotinus coggygia*, *Acer truncatum*, walnut trees, chestnut trees, etc.



Figure 1 Monoculture stand of *Pinus tabuliformis* mixed with young broadleaves tree species

Project Sites specific comments

1. *Pinus tabuliformis* plantation in Schichangyu project site

On this site, *Pinus tabuliformis* has been planted with good and a dense stand. Neat management for individual tree can be seen within the plantation (**Figure 2** Neat management for the stand of *Pinus tabuliformis*)



Figure 3 Resin covers the surface of stump of *Pinus tabuliformis*

Within the natural area of Schichangyu project site where enrichment planting has been applied, some broadleaves species such as Mongolian oak have been growing very well and showing a good sign to reclaim the area back to be lush forest in the future (Figure 4 and 5).



Figure 4 Enrichment planting of Mongolian oak within Schichangyu project site



Figure 5 Endeavour for enrichment planting would rehabilitate the area to become dense forest

At present there has applied thinning practice to open gap for giving opportunity for natural regeneration to establish or for enrichment planting in the future. Saplings of some broadleaves species can be seen growing very well within the spacing of rows of trees. However, stumps of *tabuliformis* have left over after thinning and resin can be seen coming out to cover the surface of those stumps (Figure 3). Research should be conducted to find potential for developing resin into local product or enhance local communities from selling resin into market. This may be better than to leave the resin unused within the area. Some example can be seen from many pine plantations in Yunnan Province where resin of *Pinus kesiya* has been collected in large amount and yields a lot of money to local communities over there.



Figure 2 Neat management for the stand of *Pinus tabuliformis*



Figure 3 Resin covers the surface of stump of *Pinus tabuliformis*

Within the natural area of Schichangyu project site where enrichment planting has been applied, some broadleaves species such as Mongolian oak have been growing very well and showing a good sign to reclaim the area back to be lush forest in the future (Figure 4 and 5).



Figure 4 Enrichment planting of Mongolian oak within Schichangyu project site



Figure 5 Endeavour for enrichment planting would rehabilitate the area to become dense forest

2. *Pinus tabuliformis* plantation in Shitanglu project site

The current state of forest development on this site is very similar to the Schichangyu project site that has previously discussed. The planted trees have been growing very well and silvicultural practice has also well managed within this site (Figure 6). Also noted on the site were covered with shrub species. This has resulted in a biodiversity within the tree stand and made the stand looks like natural forest. However, large amount of ground litter which may prone to forest ground fire (Figure 7). Prevention of forest fire should be aware and managed beforehand in this case.



Figure 6 Monoculture stand of *Pinus tabuliformis* in Shitanglu project site



Figure 7 Ground litter covering floor under *Pinus tabuliformis* stand

Recommendation. At the time for thinning, it is suggested that significant gaps be made to give new enrichment planting include regeneration of natural species. This would be a good opportunity to transform monoculture plantation to become establishment of more diversity forest stand in the future (Figure 8).



Figure 8 Gap opening after thinning and pruning of major trees

3. *Platycladus orientalis* plantation in Shidongzi project site

Although more than 30 years old of age, the *Platycladus orientalis* has rather small in diameter and very little appearance regarding to natural regeneration (Figure 9). Silvicultural practice such as pruning have been conducted and made the trees have good form (Figure 10). Although this may be influenced by its morphological aspect, a sparse shade from its needle leaves is noted and this would contribute low shading as well as capacity in retaining moisture within soil texture. Although

needle decomposition is slow but it is also prone to forest fire. Enrichment planting of broadleaves tree species would be help to mitigate the problem in the long-term (Figure 11).



Figure 9 Small diameter size of *Platyclusus orientalis*



Figure 10 Low shading of *Platyclusus orientalis*



Figure 10 Enrichment planting of broadleaves tree species within Shidongzi project site

Recommendation. 1. Filling up the gaps by applying enrichment planting will be necessary to commence the close-to-nature process in this forest. It would not only to enhance capacity in soil moisture retention but also add more biodiversity within the forest stand.

2. Due to Shidongzi project site has a major objective to rehabilitate forest cover and landscape the area to be recreation ground, more colourful broadleaves tree species should be introduced to enhance aesthetic scene around Miyun Reservoir to attract tourists (Figure 11). Colourful broadleaves tree species when blooming during the spring season will serve the objective in this case.

3. Tree species which may have capacity in moisture absorption should be introduce to grow within headwater area to ensure of more soil moisture water retention as well as to supply good quality of water to Miyun reservoir for the whole year.

4. To add more leisure into the area, some fruit tree species should be added to attract more bird species into the area. This might add more interesting into the site for bird watcher and enjoy bird singing.



Figure 11 More colourful broadleaf tree species should be added to enhance scenic view

Overall comments for three project sites

Thinning and pruning practices

During the field visit, branches and fallen trees could be seen within the plantation. It is said by the Project Manager that all residues will be removed from the forest later.

Recommendation. Removal of branches and parts of trees might prevent forest fire during the fire prone season. In contrary, it means that the opportunity of decaying to of those litters to become nutrition release might be disappeared. Dry grass or manure should be applied to cover around trees for keeping soil moisture during dry season and becoming source of nutrition after decaying (Figure 12).



Figure 12 Dry grass or manure should be covered around seedling to ensure soil moisture retention
Enrichment planting

After completion of conducting silvicultural practices to monoculture stands of trees, the main activity remaining for project implementation is enrichment planting. Research-based for appropriated species selection should be concerned in order to meet the specific requirement of each project site.

Apart from choosing appropriate species as ready mentioned above, success of enrichment planting depends very much on having an adequate gap size as well as doing follow up weeding or liberation of the planted seedlings. Choosing between the use of shade tolerant and light demanding species is also important. From the forests visited during this evaluation, they still have more opportunities to add more species into the gap in both under monoculture stands and also secondary forest.

Recommendations. To maximise the chance of success in the long term:

- Keep data on gap sizes at the time of planting to allow follow-up evaluation and to learn what minimum size gap is needed for future success in different project site and with different species. Photographs of gaps and seedling quality at the time of planting give a good record.
- Ensure weeding or liberation of the planted seedlings is done regularly as the already established shrubs and grasses will give significant competition to the planted seedlings.
- After enrichment planting was conducted, forest fire protection and prevention should be considered in order to avoid seedling from forest fire burning.

Pruning and thinning

Pruning has been done with three project sites according to the plan. In particular, pruning to improve final wood quality might allow to gain more value when selling into the market. However, If pruning for economic return is to be done, as well as meeting the mentioned conditions it must also be done:

- timely i.e. at small stem sizes.
- progressively to a suitable height as the tree grows without affecting the growth rate.
- only on straight stems.
- accurately i.e. close to the stem without causing stem damage which would allow insect and disease attack.

Recommendation. Unless the market offers a premium price for pruned stems, pruning should not be done except for access in very dense stands, fire protection or other reasons not connected with improved stem value. The project might consider to make value-added for the residue of branches after pruning. For example, premium charcoal might be produced from such residue by improving quality of kiln and sell into BBQ restaurant, etc.

Tree improvement

A programme of genetic improvement, other than introducing new species or better quality seed, is also included as part of this project. Some grafted *Pinus sylvestris* var. *mongolica* seedlings were seen in the planted area during the trip to Shichangyu Project site (Figure 13). The use of this technique might increase ability to survive and growth rate comparing to use the local species solely.



Figure 13 Grafted seedling of *Pinus sylvestris* var. *mongolica* in Shichangyu Project site

Recommendation. A simple tree genetic improvement programme would be a good investment for the future forest plantation. Some capacity building program regarding to tree improvement techniques for the important species may be needed for the future work within the project sites.

Sample plots

Many plots established as part of the Project activity (Figure 14). Useful data have been regular collected for research conducting and baseline data for management planning

Recommendation. For those characteristics not being regularly measured in the sample plots, the plots in the forest management demonstration areas should be continued to be measured to record the longer term changes resulting from the close-to-nature management. Regeneration could be assessed regularly with growth measurements at a longer interval depending on purpose of the research that may be conducted..



Figure 14 Sample plot has been set up within Shitanglu Project Site

Opportunity for animal raising

As part of the involvement of the villagers in the use of the forest resource, it might be a good opportunity for using part of tree species as fodder to feed cattle of the villagers.

Recommendation. More investigation or research should be conducted to find appropriate species for using as fodder for animal husbandry.

Agroforestry practice

Agroforestry practice can be integrated within the project site by planting some agricultural species within the gap between spacing of the tree row. There still have plenty rooms for planting cash crop and would yield extra revenue to the household of communities (Figure 15).

Recommendation. Appropriate agricultural species should be recommended by the Project management team. In particular, planted species should not make any conflict with above or below ground with the forest tree species.



Figure 15 Plenty rooms for agroforestry practice in Shichangyu project area

4.2 PARTICIPATORY FOREST MANAGEMENT THAT COULD ENHANCE LIVELIHOOD OF LOCAL COMMUNITY

Participatory within local forest resource management

As mentioned in Section 1, the approach to assessing the participatory forest management aspects of the project is informed subjective rather than strictly objective.

The arrangement has seen through project progress report, resulted in a good relationship between the project management team and the local community. According to the discussion with the Project Manager, it is found that the village people have good perception about the project implementation for a good environment and being potential of a source of household income. Therefore, it could be said that the aim of having the villagers involved in protecting ‘their’ forests might achieved. This successful story might be used as a model for other communities to apply for their forest resource management

Forest Working Employment

According to the presentation and discussion with Project Manager, it reveals that this project initiative to involve local villages into the project activities is working well. The Project has hired local villagers for silvicultural work in the three project sites. This provides a good opportunity for employment for workers who, for various reasons, are not able to migrate for work.

Recommendation. According to the principle of people participatory technique, the incentive to encourage people participatory within natural resources management should highlight the following principles:

- Fulfilments of the basic needs such as food, fuelwood, fodder, water and employment, etc.
- Equal participation of the people especially the women and the disadvantaged.
- Equitable distribution of benefits from natural resources
- Sustainability in the use of resources
- Self-reliance

However, although the project could provide some employments to local villagers, but there might have some problem in the future when project funding is ended. Some people may feel uncomfortable to participate according to no financial support. In this regard, some recommendation might include:

1. Enhance more sense of ownership of local villagers for their local natural resources. Opportunity to participate in management planning, practicing, as well as benefit sharing from forest products

- harvesting might enhance their perception on sense of belonging and may come out to participate voluntarily although there have no financial support to pay for their work.
2. Secure financial support by encouraging local administration organization to responsible for managing natural forest resource. The local administration organization may set up budget according to each fiscal year to guarantee for long term financial security.
 3. Establish local curriculum within local schools to ensure perception of young generation regarding to the significant of their local forest resource as well as enhance people mind set on sense of ownership. In particular, at least 2-3 hours per week might be devoted for learning on local natural resources within the area.
 4. Set up equitable benefit sharing on local resources to ensure that everyone could receive benefits from participating with forest resource management.
 5. As a major aim of the project, obtaining self-sufficiency and self-reliance on a sustainable basis by the villagers of the project areas will be crucial. In the longer term, no migration from an area means that the area has met with the livelihood needs of the people. Similarly, the project should lead to self-sufficiency in water, food grain, fodder and fuelwood, etc. Another indicator can be the decrease in the amount of import of basic food which should be gathered from the forest. Furthermore, achievement of self-reliance in case of sustainable forest management programme is a necessary condition for project implementation. The resources should be secured and taken care by the village committees themselves and the work should be in progress even after the Project Implementation Agency has phased out of the area.
 6. Encourage business sector in Beijing to conduct the program for the public called Social Cooperate Responsibility (CSR) program. The Program will be supported by business companies to take care environment within the project areas. Moreover, local communities will get financial support in term of employing to conduct activities such as tree planting, forest fire control, patrolling, etc.

Non-Timber Forest Products

An important part of this project as it is related to the success of livelihood enhancement of local villagers is the identification and development of NTFPs in order to encourage them to involve in forest management and utilization. This strategy would be not only to increase their income but also enhance sense of ownership of their local forest resource.

Recommendation. As well as the fodder and resin collection from the forest plantations initiatives mentioned, medicinal plants would be much potential to develop as an important sources of alternative income for local villagers. Medicinal might be collected from under the forest canopy while some potential can be promoted to grow within household backyards..

Another NTFP which can be made as value –added product is the cone of *Pinus tabuliformis*. On the ground of *Pinus tabuliformis* in Schicahngyu and Shitanglu project areas, plenty of clones fallen from the trees can be seen elsewhere. The cone may be burn down to be charcoal called “Biocahar” and sell within the market as product from the nature. The charcoal can be used to absorb bad smell within cupboard, refrigerator, and other storage items. This would be chemical-free better than using naphthalene which may cause allergic to some people. Example of this kind of charcoal is shown in Figure 16.



Figure 16 Example of Biochar produced from cone of pine

However, not only the cone of *Pinus tabuliformis*, but many of agricultural products can also be used to produce biochar. Figure 17 shows variety of agricultural products after producing to be biochar. The local factory is able to process and sell all the available products and still has capacity for expansion. The local villagers may help with provision of raw materials for producing.



Figure 17 Example of biochar produced from variety of agricultural products

In case of resin collection that may collect from *Pinus tabuliformis*, the Project may conduct more research how to process and sell all the available resin to the market. Study trip may be organized to go to Yunnan province where resin collected from *Pinus kesiya* has developed to be a big business and the factories over there have purchased many tons of resin from local communities (Figure 18 and 19). With the suggestion and technical support that may come from the project in the future, local businessmen would establish factories for production of resin.



Figure 18 Resin collected from *Pinus kesiya* in Kunming Province



Figure 19 Large amount of resin collected from *Pinus kesiya*

Walnut tree provides good ground cover and also produces an edible nut which can be collected and sold. The local villagers could develop varieties of recipe like desert and snack from walnut. More detail of walnut promotion will be discussed more within the next topic of eco-tourism promotion.

Eco-tourism Promotion

According to Output 2: The livelihood of local community improved by promoting eco-tourism, the improvement of eco-tourism plan has been conducted within Schichangyu project area. Facilities and infrastructure development such as 8 km of forest trail and 200 m² of forest cultural center have been provided under the project (Figure 20-22). Furthermore, with closely collaboration with international experts in eco-tourism management from Canadian Forest Service and Yale University, the project could acquire recommendations from those experts to develop facilities and infrastructure to meet international standard of eco-tourism management.



Figure 20 Facility such as clear route map has ready set up

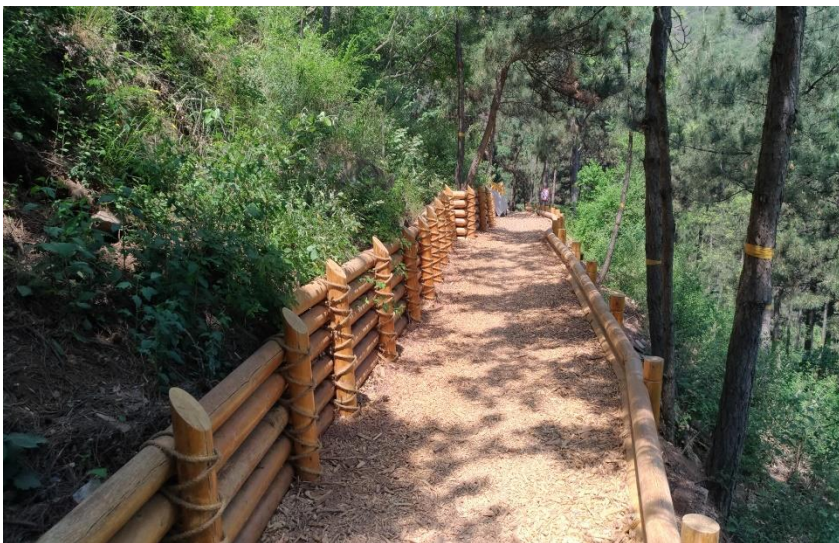


Figure 21 Eight km of forest trail is now completed

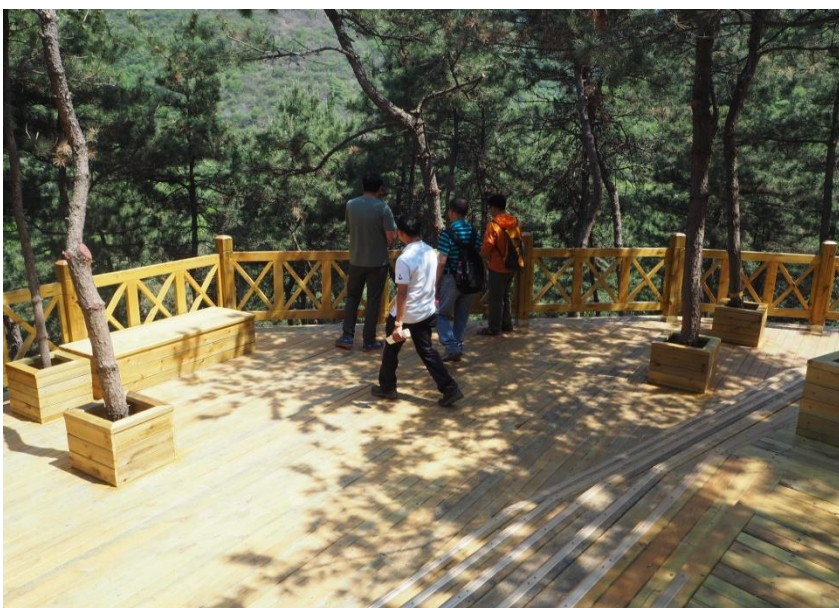


Figure 22 Facilities along the forest trail has been provided

Information given by the Project management team reveals that, local farmers have participated within this activity by employing them to manage recreation infrastructure (Figure 23), doing patrol to take care of infrastructure and environment as well as to provide accommodation as home stay for tourists. This involvement of local people could be a major factor to secure the eco-tourism program within the area after the project is ended.



Figure 23 Local villagers have been employed to manage infrastructure

Recommendation. Eco-tourism might be one of potential activities which can secure the sustainability of the project. Eco-tourism itself deals with the niche market where quality and affordable tourists prefer to enjoy their life through natural and cultural activities. However, readiness to support the needs of those quality tourists should be concerned. Suggestions for improving eco-tourism within the area are listed as follows.

1. Learning signboards within Forest Cultural Center of Schichangyu project area should be clear and more attractive to read. Less text and more photos would be preferable by the tourists. English caption is necessary for international tourists when coming to visit the site.
2. The project should train local guides especially from the youth within the communities. Young students within the local schools may be suitable to be trained for explaining key messages which are displayed within the center.
3. If the eco-tourism program has a plan to collect the entrance fee before entering the forest trail, benefit sharing from the fee collection should be clear. For example, proportion of collected money should be divided into certain percentages to communities, local administration organizations, the Center itself, and local villagers individually. The revenue from equal benefit sharing would be an incentive for all stakeholders to support the long-term running of the project.
4. Accommodations to support overnight-stay of tourists should meet the standard of accommodation. Some aspects of accommodation such as homestay might be suitable for those natural and cultural-loving tourists. However, homestay should have its own standard so that the tourist may prefer to come back again and also pay more money for their leisure time.
5. Some suggestions on interpretative signs on the forest trail should contain English descriptions (Figure 24). Furthermore, properties of medicinal plant species should be given to enhance awareness of the significance of those species for the communities (Figure 25).



Figure 24 Short English description should be provided for international tourists



Figure 25 properties of medicinal plant species should be added within interpretative signs

6. Due to eco-tourism may mainly focus on ecosystem and cultural aspects, the communities should find some relevant activities that might align with the concept of eco-tourism. Some program such as traditional music and dancing might be added into homestay package while mini-workshop for making soap or shampoo from local herbs might be arranged. This should be included into marketing plan of eco-tourism promotion.
7. For attracting more tourists to the site, special event such as cultural week should be organized. In particular, as mentioned in NTFPs section, some potential NTFPs such as walnut can be used to attract tourists by organizing walnut harvesting week. Within the festival, variety of products made from walnut can be displayed, tested, and consume freshly. Some medicinal and edible plants might be promoted for organic products and sold as healthy products to the tourists. This promotion would encourage farmers to stop applying chemical with their fresh products. The less chemical application, the more quality of water would be improved within the reservoir.
8. Local schools should have more active participation within this program. Local school curriculum might be formulated with coordination made by the Project management team. This program may produce successors of the eco-tourism business for conducting in the long run.
9. Some outdoor activities such as cross-country mountain biking should be considered. The area seems to be so appropriated to establish biking track for mountain biker. The area might be able to attract a lot of bikers into the area (Figure 26). If the site is starting to become well known,

mountain biking contest could be organized. However, the Project management team should coordinate with professional and specialists in this case.



Figure 26 Example of mountain bike track

Capacity Building

Training local forest practitioners for implementation of long-term Forest Management Plan

Five times on-site training have been conducted and seem to be being well used. The training are based on marking of target and disturb trees, logging of disturb trees, pruning trees, etc. The Project management team did the training and had a great successful tin training

Training on eco-tourism management

Training is a very important part of any project particularly with emphasis on capacity building. The project has coordinated with local, national, and international specialists to lead and advising on various disciplines. These specialists had provided valuable training to local staff and farmers during the training period. In addition, the project staff has conducted training sessions for villagers and forest workers to introduce them to the new methods and techniques introduced through the project. In particular, capacity enhancement regarding to infrastructure maitainence, regulation and rule for ecotourism management, risk and hazard prevention for tourists, etc. were provided during the training program.

International study tour

A staff of BFS had an opportunity to visit Canada for 70 days. She has gain more experiences in forest management, water protection, ecological tourism and other experiences which may be useful for managing the project in the future.

Recommendation. Project management team and local villagers need to continue development of an overall plan for conducting activities under the project as well as public accommodation set up and other appropriate aspects. A further plan to support long-term management plan especially funding provision should be concerned for sustainable management.

Lesson learned and experience summarized and disseminated

Knowledge hub establishment

Fortunately for the project that, there have international specialist from Canadian Forest Service and Yale University to formulate English website for the project areas. This should be an appropriate channel to disseminate information into worldwide perception.

Organization of the workshop

The Project organized the 6th Beijing Forest Forum in October 2016 where some output of the project was presented. For example, forest therapy function on the Chinese medical culture, rehabilitation landscape, etc. Experts from international also shared experiences within the Forum.

Recommendation. The Project should have more opportunity to make lesson learned with other international projects supported by APFNet that have conducted similar programs or activities. Taking turn of study visit in both levels of Project management team and community to other project sites such as Bang Kachao in Thailand (Figure 27) would inspire and broaden the perspective in particular such as eco-tourism management for all related sites.



Figure 27 Eco-tourism management activity within Bang Kachao of Thailand supported by APFNet

Submission of policy recommendations to local and Beijing municipal government agencies

The Project management team with supported by international experts is now on the process to draft policy recommendation to submit to authorized agencies such as Beijing municipal government agencies regarding to forest and water conservation. This would be a good sign to make political commitment for long term project area management security.

Recommendation. In order to enhance worldwide recognition on project management, the Project should make a linkage to global issues regarding to forest and water conservation. For example, Item 6 (Clean water sanitation) and Item 15 (Life on land) under Sustainable Development Goals (SDGs) should be integrated into the Project objectives while part of activities under the Project can be made a reference to forests management and forestry development according to the United Nations Strategic Plan for Forests 2017-2030 implemented by United Nations Forum on Forests (UNFF). Successful of activities under the Project may be included into part of achievement regarding to the UN Strategic Plan for Forests 2017-2030 which might be reported to UNFF Forum that will be organized annually at the UN Forum.

Monitoring and Evaluation

Mid-term progress report has ready submitted to APFNet outlining the progress of the project. This report is a part of the M&E process before the project is terminated at the end of 2017.

Recommendations. An evaluation of the project by international specialist would be very necessary and helpful in formulating further projects. This evaluation might be useful to guide and modify if necessary, for the implementation over the remaining project period. However as only half year of

implementation now remains and progress of the project achievement is now over 86%, this should be done again as part of the final evaluation of the project.

5. EVALUATION

In summary:

Project evaluation – assessed as meeting APFNet requirements and is appropriate for the situation at Miyun Reservoir Watershed. No major recommendations are made for Project modification.

Implementation – To date, implementation is in line with the Project design, on time and to a high standard. Only one major element, the preparation of eco-tourism promotion and management including associated facilities and accommodation are causing concern, primarily through the local villagers having to prepare their readiness for this component. The Project management team have made progress in developing a suitable site and are developing a staged approach in an overall plan to allow use of available and potential infrastructures and facilities to support the activities in order to meet the project time schedule.

5.1 LESSONS LEARNED

Those responsible for implementing the project are best placed to assess the lessons learned. To this end, people participatory from major stakeholders would be useful at the completion of the project to define the lessons learned and their potential for dissemination and introduction elsewhere.

Some general observations of lessons learned at this stage of the project follow:

Close-to-nature forest management

This component has been accepted by local practitioners and a competent start has been made to its implementation. The technical issues are to some extent site specific as regards species, timing of interventions etc. But the principles of close-to-nature forest management have been well demonstrated in this project and will serve to be a useful training demonstration for other forest management professionals.

Participatory within forest resource management

The successful introduction of the initiatives and the satisfaction of the villagers and forest practitioners indicate success in this component. The participatory in forest management is resulting in better forest protection which is of great value to the forest practitioners and increased income through labour and NTFPs collection is being obtained by the villagers.

Non-Timber Forest Products

The use of national specialists for the identification of potential products (medicinal plants, resin, walnut, etc.) with subsequent promotion and development at local level may increase household income to the villagers. Development of small scale enterprise for NTFPs, resin from *Pinus tabuliformis* and some biochar from its cone might have other potential to make value-added to the products from NTFPs which would be of interest nationally and internationally.

5.2 KNOWLEDGE MANAGEMENT AND DISSEMINATION

Knowledge hub establishment

Establishment of knowledge hub would provide a very comprehensive information of project activities and results, both physical and necessary information. The English website will allow efficient access internationally to most project activities especially eco-tourism promotion. This comprehensive information will allow the details of project activities to be accessed for further use and dissemination.

Project staff and forest practitioners development

An important element of the projects has been the emphasis placed capacity building program and development. Considerable resources from international experts have been impacted directly to knowledge and experience acquisition for project staff and beneficiaries for local villagers and forest practitioners through variety of training programs

Study tours for a project staff to aboard as well as the experience sharing from international experts to Project management team have enhance perspective in forest management to them.

Dissemination

Forest policy. Close-to-nature forest management necessitates departures from the standard forest policy and quotas systems. If the close-to-nature management method is to be expanded to other areas, some modification of current policy is necessary. With guidance from the BFS and BFU, the project managers should commence preparation of documentation for proposing such policy changes committed by authorized agencies. Furthermore, integration of global policy such as SDGs, the UN Strategic Plan for Forests 2017-2030, etc. would enhance international perceptions.

The aspects outlined herewith are all worthy of dissemination at provincial, national and international level. i.e.

- Close-to-nature forest management
- Participatory forest management
- Development of NTFPs
- Promotion of eco-tourism
- Etc.

While close-to-nature forest management is being practiced in various forms in China, the participatory forest management lessons learned in this project are particularly useful for forest managers elsewhere. Forest protection, particularly fire protection is an increasingly worrying issue for forest managers. The process of involving local villagers in forest protection through participatory forest management, eco-tourism promotion, and NTFPs development would be of interest to many forest managers.

Through their website, journal articles, tours, visitors, the APFNet and their proposed training centre, the project has mechanisms for dissemination of the results of their project success. Exchange program among similar project under support of APFNet might be another option to disseminate lesson learned and also create network of learning platform internationally.

5.3 REPLICABILITY

Close-to-nature forest management principles can be applied to any managed forest and have application wherever a forest is managed for multiple uses including wood production. Whilst the species combinations and procedures are specific to the conditions existing in the Miyun Reservoir Watershed, the methodology can be applied in other projects.

Similarly the participatory forest management and eco-tourism promotion approaches will be very useful for replication in other projects and areas but the local situation may dictate modified approaches to suit in any local circumstances.

Particular NTFPs are location specific. But the approach and idea to their development and exploitation as implemented in this project can be replicated elsewhere.

Mid-Term Evaluation Plan

For

APFNet-funded Project on Rehabilitation and Management of Degraded Forest in Miyun Reservoir Watershed, Beijing [2015P2-BFS]

(05/05/2017)

Introduction

This evaluation is designed to provide an overall assessment of project progress to date and identify and recommend on management and technical issues which may be hindering progress towards attaining the project's goals. The limited time available will restrict the extent or depth to which the details of implementation can be evaluated. Whilst the evaluation will be based primarily on the goals, objectives and expected outputs outlined in the Project Proposal, the opportunity will be taken to comment as appropriate on the overall project design in relation to the aims of the APFNet as outlined in the APFNet Manual for Project Identification, Implementation and Management (PIIM) (July 2013) as follows:

Objectives of APFNet Projects

APFNet projects aim to summarize, demonstrate and disseminate best practices in sustainable forest management and rehabilitation in the Asia-Pacific region to fulfill the three main objectives of APFNet as follows:

- to promote forest rehabilitation, reforestation and afforestation to help to achieve the goal of *increasing forest coverage in the APEC regions by 20 million hectares of all types of forests by 2020*
- to strengthen sustainable forest management, improve forest quality, increase carbon sequestration, and mitigate climate change
- to enhance biodiversity conservation and improve the productivity and socio-economic benefits of forest ecosystems.

Summarised Objectives of the Project title "Rehabilitation and Management of Degraded Forests in Miyun Reservoir Watershed, Beijing [2015P2-BFS]" are listed below:

- To improve the water conservation capacity of the forests in three sites of the project by applying close-to-nature management approach
- To reduce water pollution caused by fertilizer application in the orchard selected;
- To improve the livelihood of the local community selected by promoting the development of forest recreation
- To enhance the capacity of relevant stakeholders in forest management in environment-friendly manner
- To produce best practice models for a better long-term forest management in the watershed.

Activities:

- Monoculture plantations of *Pinus tabulaeformis* and *Platycladus orientalis* (Linn.) Franco of 280 hectares in three project sites are managed in a close-to-nature approach
- The livelihood of local community improved by promoting eco-tourism
- Capacity of relevant stakeholders in managing forest and eco-tourism improved, and
- Experience and lessons learned summarized and disseminated.

For more detailed of project evaluation see the attachment of Terms of Reference for Project Evaluation.

Methodology of Project Evaluation

In order to meet the requirements of the Terms of Reference, the evaluation will be based on:

- Assess project progress to date against objectives and indicators agreed for the project and likeliness to achieve project objectives
- Figure out problems/challenges, corrective actions and give recommendations to the remaining project activities to ensure project goal and objectives achieved, and
- Share evaluation findings among stakeholders to make any necessary adjustments in the project follow-ups.

The Logical Framework of the project evaluation gives the detailed breakdown of required project activities monitoring and evaluation. The project evaluation will be based on assessing progress of the individual elements listed. Logical Frameworks for project evaluation are listed within Appendix A.

Administration

Assessment of this aspect will be based on an inspection of facilities and documentation as well as interviews with key personnel.

Evaluation of forest resource participation components

Project success will depend on achieving both technical and socio-economic success. If funding is adequate and execution efficient and based on sound scientific principles, technical success, at least to an acceptable level, should be achieved.

Achievement of acceptable socio-economic success may be more difficult for the project managers and staff who are generally trained in aspects of technical forestry. Success and sustainable management of the project will depend heavily on their being able to develop and encourage people participatory within the project management. A key to this will be gaining the trust and consequently the enthusiasm of the community beneficiaries to the point that they accept their 'sense of ownership' of their aspects of the project. Some activity such as eco-tourism promotion and non-timber forest products (NTWFPs) development would be the key factors to achieve the success of socio-economic promotion in this case.

The success of this aspect will be assessed using elements of Rapid Rural Appraisal plus field visit to the project site as appropriate given the limited time available and the scale of the operations. A short discussion with project management team and local authorized agencies will be conducted to understand circumstance of the project site regarding to problems and challenges such as silvicultural system, NTFPs harvesting, benefit sharing among stakeholders, provision of services for eco-tourism promotion, training and extension as provided by the project. By necessity, summary assessments and recommendations are expected to be qualitative rather than quantitative given the very limited time available for meaningful data gathering.

Technical Aspects

Assessment of these aspects will be based on examination of forest inspections at the project sites and interviews of with project management team and local authorized agencies.

Appropriateness of project design

Using the scope of evaluation described within Terms of Reference for Project Evaluation as a guide, the project evaluator will give their comments on the appropriateness of the project design adjustment to meet the project's objectives.

Consultants' responsibilities The project evaluator will be primarily responsible for assessing the technical aspects of the project including the management planning, information systems, silvicultural practice, facilities arrangement for eco-tourism promotion, NTFPs potential for development, participatory forest management, etc. as it might appropriate to the project management adjustment to achieve its objectives. Consultant may comment on management, administrative and financial issues of the project.

Programme

A suggested draft itinerary is appended as Appendix B.

Project Management Team meeting/discussion with Supervisory and Implementing agencies during the filed visit

The intent of this meeting and discussion is for the consultants to obtain a clearer view of the requirements of the evaluation and to obtain reports and other documentation as well as opinions on specific issues. More specifically:

- To give the consultant a brief introduction to the project and its achievements to date of the project activities.
- Provide copies of related documents and other information about the project site
- To inform the requirements of the evaluation to the stakeholders.
- To discuss the appropriation of programme and itinerary for the evaluation to stakeholders.

Items for introduction and discussion would include but are not limited to those listed here as most will be more fully elaborated during the mission.

Administration Issues

- Finances – mechanisms and timely availability of funds.
- Forestry Experience/Training Centre
- Project and activities outreach
- Extension of eco-tourism promotion
- Capacity Building
- Administrative support for long-term management

Forest resource participatory Issues

- Possibility to apply people participatory in forest resource management
- Results from the baseline survey
- Readiness preparation for stakeholders – stakeholders education program
- Forest legislation suitability for managing the project site
- Benefit sharing issues - allocation of benefits from forest products, participatory management and planning
- Financing of inputs
- Labour inputs – payment, volunteer, etc.
- Management and protection responsibilities – NTFPs harvesting, fire control, cutting trees, etc.
- Formal agreements for long term management - community, individual, local organization administration
- Knowledge hub for information distribution and related eco-tourism infrastructure and management
- Development of NTFPs products
- Organizing some special event to attract tourists

Post-project planning

- Project sustainability including future funding, extension and technical support
- Project impact
- Up-scaling and mainstreaming
- Markets and marketing arrangements

Technical issues

- Forest management plan situation
- Multi-function forest management
- Demonstration site for best practice promotion such as knowledge hub – progress and details.
- Development of eco-tourism. Facilities and accommodation arrangement
- Water quality monitoring issue
- Silvicultural system
- Equipment availability and suitability
- Tree planting evaluation
- Field visit evaluation. Eco-tourism promotion, NTFPs development, biodiversity enhancement, water resource conservation, etc.

Appendix A – Logical Framework

(Terms Reproducing from Terms of Reference for Project Evaluation)

	Measures	Objective assessment index for achieved results	Sources and methods of Assessment	Assumed condition
Overall objectives	<ul style="list-style-type: none"> Build a pilot and demonstration for best practice of sustainable forest management for China and Asian-Pacific Region with orientation of multi-function forest rehabilitation for water quality improvement and conservation as well as eco-tourism management. The project will combine economic, ecological and social benefits together, and make contribution to the sustainable forest management in Asia Pacific Region. Achievement of self-resilience on sustainable management and development 	<ul style="list-style-type: none"> Build demonstration forest of different types of multi-function management; Stimulate participatory forest management mechanism with communities and local authorities No out migration, access to forest and water resource as well as proper maintenance of water and forest resource 	<ul style="list-style-type: none"> Briefing documents from Project Management Team Meeting reports Project progress report Field visit Discussion with Project Management Team 	<ul style="list-style-type: none"> Project funds and supporting measures put in place Supporting and cooperation with local government and communities Willingness of villagers to participate within the program in the future

<p>Specific objectives</p>	<ul style="list-style-type: none"> • To improve the water conservation capacity of the forests in three sites of the project by applying close-to-nature management approach • To reduce water pollution caused by fertilizer application in the orchard selected; • To improve the livelihood of the local community selected by promoting the development of forest recreation • To enhance the capacity of relevant stakeholders in forest management in environment-friendly manner • To produce best practice models for a better long-term forest management in the watershed 	<ul style="list-style-type: none"> • Submission of multi-function forest management planning; water conservation and eco-tourism promotion • Demonstration forest recreation program through eco-tourism management • NTFPs development • set up knowledge hub for information and lesson learnt sharing • Upgrade public outreach program by building forest resources MIS, run web-sites of the project and eco-tourism program; conduct training on natural-friendly development and management programs. • Complete investment on eco-tourism facilities and infrastructure • Improvement of water quality by rehabilitation of forest land • Participatory level of local communities within the project activities 	<ul style="list-style-type: none"> • Project progress report • Training program regarding to multi-function forest management • Facilities and equipment provision and arrangement under the project contract • Community participatory agreement • Eco-tourism management plan • Infrastructure and accommodation related to eco-tourism promotion • Tree planting evaluation 	<ul style="list-style-type: none"> • Project funds and supporting measures put in place • Supporting and cooperation with local government and communities. • Favourable socio-cultural conditions at the communities
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Project activities	<p>Project activity 1 Monoculture plantations of <i>Pinus tabuliformis</i> and <i>Platycladus orientalis</i> (Linn.) of 280 hectares in three project sites are managed in a close-to-nature approach</p> <ul style="list-style-type: none"> • Monitor and evaluate of <i>Pinus tabuliformis</i> and <i>Platycladus orientalis</i>: plantations according to close-to-nature approach • Establishment of demonstration forest: Transformation of natural secondary forest for close-to-nature harvesting and tending for regeneration for water quality improvement • Enhance more biodiversity by adding more tree and above ground varieties • Enhance more capacity in soil and water conservation 	<ul style="list-style-type: none"> • Field survey details of those two tree species close-to-nature transformation • Field survey details of close-to-nature transformation of forest plantation • Forest nursery monitoring 	<ul style="list-style-type: none"> • Check up with Project Progress Report and on-the-spot review <p>On-the-spot review on nursery management</p>	<ul style="list-style-type: none"> • Access to the use of appropriate silvicultural practice
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	<p>Project Activity 2 The livelihood of local community improved by promoting eco-tourism</p> <ul style="list-style-type: none"> • Eco-tourism promotion and management • Thematic training of eco-tourism promotion and management • Pilot demonstration of eco-tourism management, facilities, accommodation, etc. • RRA on social, resources and economic situation to the communities after implementation of eco-tourism program 	<ul style="list-style-type: none"> • Project Progress Report of eco-tourism promotion and management, resources utilization planning, facilities and accommodation arrangement, etc. • Training report of eco-tourism promotion and management • Summary report of eco-tourism management, facilities and accommodation establishments • RRA survey and monitoring of the circumstance of communities 	<ul style="list-style-type: none"> • Check up with Project Progress Report and on-the-spot review 	<ul style="list-style-type: none"> • Project funds and supporting measures put in place • Supporting and cooperation with local government and communities.
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	<p>Project Activity 3</p> <p>Capacity of relevant stakeholders in managing forest and eco-tourism improved</p> <ul style="list-style-type: none"> • Comprehensive report on pilot demonstration of the participatory management mechanism for forest resources management and eco-tourism promotion between the forests and the communities • Community mobilization to promote eco-tourism activity • Formation of community level to support eco-tourism • Increasing of job and labour opportunities from forest plantations and eco-tourism program 	<ul style="list-style-type: none"> • Mechanism application within the communities to promote participatory under the project • name list of members of participated communities, forest participatory management mechanism explicit within Project Progress Report • Employment agreement, training record, income record of the operation team 	<ul style="list-style-type: none"> • Check up with Project Progress Report and on-the-spot review 	<ul style="list-style-type: none"> • Application of local knowledge within activities • technical guidance and funds support • Support of growing on availability of jobs and labour demand
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	<p>Project Activity 4</p> <p>Experience and lessons learned summarized and disseminated</p> <ul style="list-style-type: none"> • Improvement of the hub of multi-function forestry managing station and establishment of the supporting facility • Training and study tour for staff in multi-functional forestry extension and knowledge centre • Establishment of forest-based eco-tourism demonstration base • Set up multi-function forest resource management information system, participatory forest management system for the interested groups • Set up the linkage for the project and the activities into global outreach 	<ul style="list-style-type: none"> • Providing enough space for knowledge hub and related facilities, equipment, signboards establishment • training record, study tour summery • Eco-tourism information signboards; publicity films • Number of volunteer and nature lover group set up within communities • Make link to global policy such as SDGs including finding platform to share information international 	<ul style="list-style-type: none"> • Check up with Project Progress Report and on-the-spot review • Check training record and study tour summery • On-the-spot review • RRA • Global strategies publications 	<ul style="list-style-type: none"> • Facilities and accommodation of eco-tourism promotion • Standard guide for eco-tourism management and promotion
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	<ul style="list-style-type: none"> • Invite experts for technical training <p>Project Activity 5 Monitoring and evaluation for the project implementation</p> <ul style="list-style-type: none"> • Monitoring and evaluation of multi-function forest management result • Monitoring of facilitating community development • Monitoring and evaluation of social benefits by the project to forest-based eco-tourism and forest education 	<ul style="list-style-type: none"> • A set of training material of certificate and report multi-function forestry, close-to-nature forest management, community participatory management, submit national and international study tour report, etc. • Submit investigation report on related activities such as timber production, bio-diversity, water source conservation, eco-tourism management, NTFPs development, etc. • submit investigation report of the project leading the social and economic development • submit investigation report on the contribution made by the project to forest tourism and education 	<ul style="list-style-type: none"> • check training material, training report and other certificate • Check up with Project Progress Report and on-the-spot review • Check report and site of community participatory management 	<ul style="list-style-type: none"> • support from expert of forest management, community forestry, and eco-tourism promotion
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Appendix B

ITINERARY

15 May 2017	1010	- Depart for Beijing by TG614 BKKPEK 1010 1550
	1700	- Stay at International Bamboo and Rattan Hotel, Beijing
16 May 2017	0700	- Visit APFNet Secretariat for briefing the MTE plan and meet officials of APFNet Secretariat
	1800	- Reception dinner
17 May 2017	0900	- Arrive in Schichangyu Village, Dongshaoqu Town
		- Visit the forest management site&eco-tourism construction site in Schiangyu project area
	1130	- Lunch
	1330	- Arrive in Shitanglu Village, Shicheng Town
		- Visit the forest management site in Shitanglu project area
	1600	- Arrive in Shidongzi Village, Fengjiayu Town
		- Visit the forest management site in Shidongzi project area
	1630	- Back to International Bamboo and Rattan Hotel, Beijing
18 May 2017	AM	Indoor discussion and summarize the tentative findings
19 May 2017	1000	Briefing the tentative MTE findings and discuss the follow ups
	1705	Depart for Bangkok with TG615