

Document No.: 2012P/2-THA-CP

Receiving Date:

(For APFNet Secretariat)



*Asia-Pacific Network for Sustainable Forest Management
and Rehabilitation*

COMPLETION REPORT

[Strengthening Urban Forestry Demonstration
Site of Bang Kachao (Thailand) for Biodiversity
Conservation and Natural Learning Center (2012P1/2-
THA)]

[2 Years]

Royal Forest Department (RFD) of Thailand

11 February 2019

BASIC INFORMATION

Project Title(ID)	Strengthening Urban Forestry Demonstration Site of Bang Kachao (Thailand) for Biodiversity Conservation and Natural Learning Center [2012P1/2-THA]		
Executing Agency	Royal Forest Department (RFD) of Thailand		
Date of Project Agreement: [08/March/2013]			
Duration of implementation: May/2013-April/2015, <u>24</u> months as planned, extended to December 2018			
Total project budget(in USD)	300,900	APFNet assured Grant (in USD)	128,600
Actual project cost(in USD)		APFNet disbursed Grant(in USD)	97,880
Disbursement Status		Date of disbursement	Amount(in USD)
1 st instalment		June 2013	46,440
2 nd instalment		November 2016	51,440
Balance to be disbursed			0
Reporting Status		Schedule ¹ implementation	Project progress status ²
[05/2013 to 10/2014], Project Year 1		Behind	Satisfactory
[10/2014 to 10/2015], Project Year 2		Behind	Satisfactory
[05/2013 to 02/2019], Project Completion		Track	Satisfactory

¹ Schedule ¹implementation status could be on track/behind/ahead of schedule

² Project progress status could be ranked as satisfactory, dissatisfactory, moderately satisfactory, moderately dissatisfactory

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Ms. Saichon Mutarapat Assistant Project Manager,	Administration	Documentation and filing management as well as day-to-day coordination between the project and other organizations.	

Executive Summary

The small island called “Bang Kachao” covers approximately 2,000 ha and is surrounded by a 15 km length of the Chao Phraya River. The island is located in Samut Prakarn province which is approximately 10 km from Bangkok. The combination of fresh, salt and brackish water has created a unique ecosystem which is one of the largest and richest areas of biodiversity in the last lowland area of the central plain. Bang Kachao is a strategic location for biodiversity conservation. Therefore, the management and local engagement of this important Urban Forestry site is crucial.

Since 2013, APFNet launched the project ***Strengthening Urban Forestry Demonstration site for Bang Kachao (Thailand) for Biodiversity Conservation and Natural Learning Center*** with the overall goal to maximize conservation of biodiversity and to strengthen the urban forestry program through the establishment of a demonstration site and a learning center. Benefits arising from these and from ecotourism promotion will flow to local communities.

The project was originally expected to be finished within two years (May 2013 to April 2015), but due to various reasons, the project duration was suspended and expended till December, with 3 years and 8 months extension in total. Overall, it could be concluded that the project objectives outlined in the proposal namely: 1) Establishment of demonstration and learning site for interested groups and visitors; 2) Establishment of biodiversity conservation area and development of this through ecotourism channels to achieve an increase in visitor numbers as well as in the flow of income benefiting local people; 3) Maximizing the site’s ecotourism potential by improving the area’s habitat of dependent flora and fauna were successfully achieved with deliverable on-ground outcomes through almost 6 years project implementation.

The main achievements of this project could be highlighted as follow:

- **An exhibition and interpretative center** was established in the PA-KET Urban Forestry Community (UFC) which is now served as a platform to promote community-based-ecotourism development and biodiversity conservation in Bangkachao area. Appropriate facilities for promoting ecotourism were built and well maintained in the community.
- **A natural conservation and urban forestry program** was developed, include a cartoon manual and a curriculum guideline developed under project support. The program includes 15 different outdoor activities to help explore the children’s learning potential and encourage students getting close to nature. It is expected that students will gain more knowledge and understanding of the value of the environment, natural resources, local wisdom, and products local to their area. Students will also benefit from raised awareness of the value of contributing to nature conservation.
- **Community-based-ecotourism experience model** was developed in PA-KET UFC.

A woman working group which has been working closely with the APFNet project is considered as a key change agent to be a community-based conservation and tourism model of Bang Kachao. All effort has been focusing into this group for enhancing its capacity to convey the activities of the area in the future. For instant, developing skill of the woman working group in initiating their own program for their operation and product development has been set up. This initiative would able to encourage the promotion of conservation and economic contribution to community and the area as a whole. Related marketing activities were conducted. Tour guides were trained under project support.

- **Conservation site and bird watching site** were established in the PA-KET UFC. Inventory of the plants and birds in this area was conducted.
- **Project publication**
 - 1) A biodiversity survey guidebook– Cartoon Book
 - 2) A Local curriculum handbook for Children
 - 3) Videos of local curriculum. 3 episodes for 3 minutes each.
 - Episode 1 - “Active Learning” New Approach for Learning Bang Kachao
 - Episode 2 – Know how the process – Children is the Center
 - Episode 3 – What Bang Kachao gives to us?
 - 4) A tourist map of attractions and bicycle routes in Bang Kachao
 - 5) Bang Kachao Poster, Badge, and T-Shirt for Branding promote
 - 6) A plant species and bird survey report

The initial impacts of this project have been appeared:

Overall, the project has achieved its objectives and generates a huge impact to the area in term of urban forestry demonstration site.

- **Awareness of nature conservation increased**

This Project has major focused in public participatory involvement which aims to increasing awareness of nature conservation in all level of stakeholders. In particular, access to biological resources through ecotourism would be beneficial to enhance economic status of communities within the project site. Policies, strategies, planning and implementation regarding to forest management within the project sites have shown the great impact form the project implementation.
- **Benefiting the local community**

In the aspect of economic benefit, the community-based-ecotourism tour program and community local products (Handmade) enhanced the attraction of day trip and overnight trip in Bang Kachao which can bring revenue for tourist service (Day trip charged 850 Baht per head, overnight with dinner charged 1,800 Baht per head) as well as related areas in Bang Kachao. It is estimated that visitors will spend at least 1,000-1,500 Baht per day, both buying tour program and their other shopping.

Challenges

Despite lots of positive results achieved by project implementation, there were also challenges and barriers during project implementation.

- **The new National Procurement Act caused project delay** and made a huge complicated for mobilizing the activity of the project due to most of the activities needed to procure materials for implementation. This incident has caused the project delay in implementation. Although most of the activities have been halted according to unable to procure most of materials, the other activities regarding to promote people participatory, capacity building, and other public outreach activities have been carried out.
- Considering the available project grant, also to avoid overlapping with other project conducted in Bang Kachao area, **the project has to adjust and narrow down the scope of activities**. The focusing area was made by selecting one potential area rather than working with six sub-districts. Such change has filled the gap that the community demonstration level has not been established. This demonstration site would be an exhibition & information center to facilitate tourist and to give new experience for their visits.

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1. BACKGROUND AND INTRODUCTION

1.1 Project context

The small island called “Bang Kachao” covers approximately 2,000 ha and is surrounded by a 15 km length of the Chao Phraya River. The island is located in Samut Prakarn province which is approximately 10 km from Bangkok. The combination of fresh, salt and brackish water has created a unique ecosystem which is one of the largest and richest areas of biodiversity in the last lowland area of the central plain. Although more than 20,000 inhabitants have been living within the area, 80% of the area is still covered by vegetation. In 1987, the government purchased approximately 10% (200 ha) of the area from local inhabitants to maintain a green area on government-owned land. The area has gained a reputation with the public for its natural beauty and the well-preserved traditional and normal way of life of the local people. Ecotourism is a popular activity. As a result, the area was recognized by Time Magazine as the “Best Urban Oasis of Asia” in 2006. The area has also been nominated as the major site for demonstrating the urban forestry program of the Royal Forest Department (RFD) to interested groups since 2008.

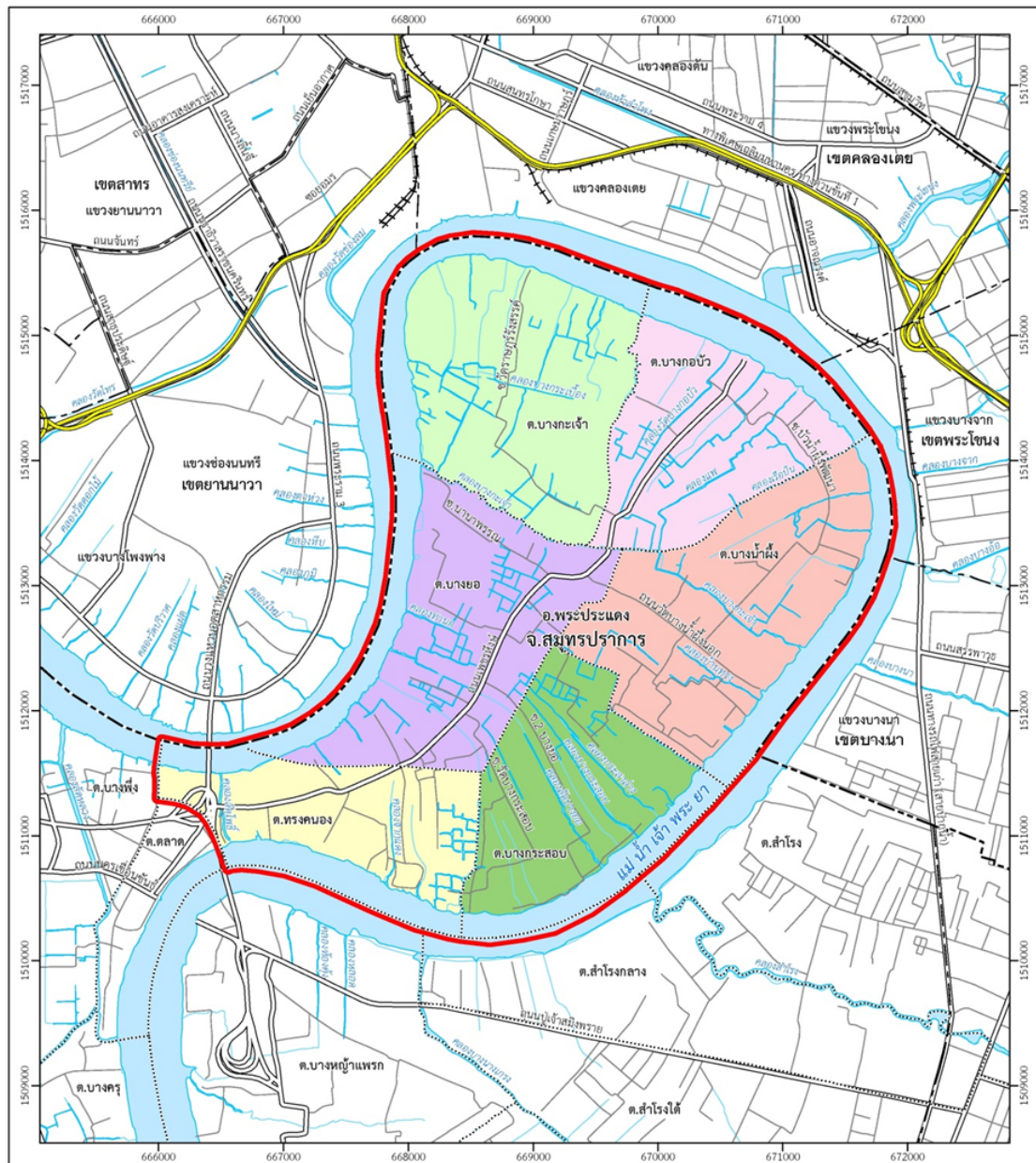
Although the area is now under the management of RFD in terms of the urban forestry program, some relevant problems have been identified from lessons learned to date. As urban forestry is a rather new discipline that requires the integration of various disciplines and approaches, there is currently weak capacity in the managerial agencies (i.e. RFD, local administration organizations, etc.). Furthermore, the lack of sufficient and effective baseline data to use in the application of management and planning is also apparent, while insufficient interpretation signboards of relevant activities and natural processes do not provide enough information to attract, inform and educate the tourists. The learning and information centre that will also address the three goals of attracting, informing and educating the tourists has not yet been established due to the lack of exhibition skills of officials and the financial constraints.

The current overall management need is to secure long-term future conservation of Bang Kachao in the face of increasing pressure by using of other purposes rather than keeping it as a green area. This cannot be achieved by excluding the local inhabitants because the policy is not to purchase the remaining 90% of the land area that is held as private property. Securing the long-term conservation of this area can be best achieved by developing and implementing programs that generate broad local support for biodiversity and green area conservation. This can be accomplished by developing projects and programs that provide direct tangible benefits derived from conservation to the stakeholders, especially the local community. The project will therefore seek to directly engage all stakeholders (i.e. officials from responsible agencies, groups, academics, professional groups, women’s groups, youth group, tourists, interest groups, and ethnic groups) in the running of the site through a series of measures

focusing on ecotourism that will target naturalists and those interested in the traditional culture. To underpin this approach, a Sri Nakhon Khuan Khan Green Area and Eco-Management Center is required to function as an administrative center for managing the area under the RFD, to achieve the aims including conservation of biodiversity, eco-tourism promotion, as well as to maintain the green area through the provision of training to create awareness of the value of the area to all stakeholders. However, such activities are currently limited by the existing on-site facilities that do not maximize the potential of the area as an attraction or provide the revenue that could benefit the local inhabitants. If these problems can be addressed, stakeholders can be more fully engaged through different activities including the production and sale of local goods at the demonstration center and guiding tourists within the different attractions including the development of local volunteers to support the establishment and maintenance of new facilities and attractions. Furthermore, a campaign to raise awareness will be launched among the local community to boost their appreciation of the value of the biodiversity of the natural resources in the area and the links between continued conservation of biodiversity and improved benefits to the local people. This will ensure the conservation of green cover on the remaining 90% that is private property on the island.

In term of ecotourism promotion, success will also be depend on providing a site and attractions that visitors want to come and see. The current site as well as being an attractive landscape, is well endowed in terms of biodiversity with rare species of flora and fauna that once used to be richly available within the area. This project will seek to provide better all-year-round attractions for tourists through a number of measures. Access to attractions will be improved by providing information and maps at the Nakhon Khuan Khan Green Area and Eco-Management Center while interpretation signboards with bilingual (Thai and English) information will be set up along walkways and at other sites. Planting of trees that can attract bird species and small mammals will be conducted in order to provide new habitats for them. This would also be part of a strategy to attract more visiting fauna species that are particularly attractive to nature-lovers.

Capacity building programs and ecotourism promotion through links to education can provide skills development and jobs with biodiversity conservation. The long-term result will focus on helping the local inhabitants who depend on the conservation of biodiversity and the green area for their income and who are equipped with the knowledge, motivation and means to sustainably utilize and conserve the natural resources on which they depend.



1.2 Project goal and objectives

The overall goal of this project is to maximize biodiversity conservation and strengthen the urban forestry program through a demonstration site and learning center establishment including ecotourism promotion and benefits flowing to local communities. In order to achieve this goal, the project addressed the following specific objectives:

- **Objective 1.** *To establish a demonstration and learning site for interested groups and visitors.*
- **Objective 2.** *To develop and promote biodiversity conservation which will increase*

the number of visitors as well as the income flow to the local people.

- **Objective 3.** *To maximize the potential of the area as an ecotourism attraction by improving the habitat for dependent flora and fauna species.*

1.3 Project expected outputs and outcomes

Output 1 Establishment of demonstration and learning site for interested groups and visitors

Activity 1.1 Establishing an exhibition and interpretative center

Activity 1.2 Maintaining the character and value of the project site to help develop ecotourism

Activity 1.3 Implementing a natural conservation and urban forestry program as part of the curriculum of local schoolchildren

Activity 1.4 Encouraging local volunteers and youth groups to become involved in education programs

Output 2 Establishment of biodiversity conservation area and development of this through ecotourism channels to achieve an increase in visitor numbers as well as in the flow of income benefiting local people

Activity 2.1 Developing project site facilities to provide visitors with a more immersive experience

Activity 2.2 Marketing the Bang Kachao site to potential visitors

Activity 2.3 Training local people as tour guides

Output 3 Maximizing the site's ecotourism potential by improving the area's habitat of dependent flora and fauna

Activity 3.1 Developing conservation sites to support endemic fauna

Activity 3.2 Maximizing the biodiversity of the project site through scientific management

Output 4: Increasing public outreach through developing project information

Activity 4.1 Documenting project information.

Activity 4.2 Reporting

2. PROJECT IMPLEMENTATION

2.1 Project schedule and implementation arrangements

The Project Agreement was signed between the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet) and Royal Forest Department of Thailand in March 2013, with a 2-year implementation duration from May 2013 to April 2015. Due to political instability and management reasons, the project has been extended three times till the end of 2018.

Overall in Year 1, the project was achieved in an average progress during the activities implementation. The project is estimated to achieve approximately 70% complete with regard to tasks specified for year 1. The project focused on information survey and assessment for issues identification and strategic planning in each outputs in order to design proper activities with key stakeholders from six sub-districts.

Outcome 1: Establishment of demonstration and learning site for interested groups and visitors.

- An assessment of site potential and its natural assets as a demonstration site and learning center.
- Set up working groups for each potential areas
- Develop design and planning process for 3 key potential areas including Nakorn Khun Khan Green Area and Eco-Management Center, Canal Routing at Bang Korbua, and Pagade Nomglao urban forestry community conservation center.

Outcome 2: Establishment of biodiversity conservation area and development of this through ecotourism channels to achieve an increase in visitor numbers as well as in the flow of income benefiting local people.

- An overview of existing visitor activities and market behavior trend.
- A survey of tourism routing in 6 sub-districts and its linkage.
- Develop capacity building programs for working group including field trip to

Outcome 3: Maximizing the site's ecotourism potential by improving the area's habitat of dependent flora and fauna.

- Contribute the update information of land use survey of the RFD protected plots and its key issues identification (Report)
- Develop capacity building programs for working group including Biodiversity survey training for the locals and children for sampling plots in six sub-districts.

Outcome 4: Increasing public outreach through developing project information.

- A biodiversity survey guidebook. This is a training manual for local communities and schools.
- A tourist map of attractions and bicycle routes in Bang Kachao. This is aimed at tourists and local guides. The survey of the route conducted, data collected, organized photography and are in the process of developing content and artwork.

In continuing to year 2, there was about two year gap of delayed period, the problem came from the implementation of National Procurement Act. The new Act made a huge complicated for mobilizing the activity of the project due to most of the activities

needed to procure materials for implementation. This incident has caused the project delay in implementation according to the work plan of the project.

As a consequence of the project delay, all resource person who have been assigned to work under the project, have not available, the local working team in each key areas of Bang Kachao have lost confidence of project drive. Furthermore, after problem on procurement process was resolved, there has obvious seen that the circumstance within the project site has been changing a lot. The area has been catching the interests from many private business companies and government agencies. As a consequence, influx of financial and technical support has poured down into the area.

Strategies to cope the problem were then revised. The project has to adjust and narrow down the scope of activities by avoiding to be overlapping with other activities or works of those sectors.

During the 2nd project year operation, the project was implemented according to the project work plan and expected targets were well achieving. Overall, the project has achieved average/good progress during 2nd year implementation with more than 98% achievement.

- The demonstration and interpretative facilities has been set up to be the main activity space for Pa Gade Nom Klao Community Forest Group including outdoor exhibition space.
- Local plant species have been planted to maintain habitats on the plot along the nature trail
- Education programs related to local curriculum practices has been developed with training camps and activities with local teachers and children, involving local communities in six sub-districts.
- Develop project site facilities including workshop and training center, and community based tourism services.
- Organised 2 days event in Bang Kachao. (7-8 March 2015). The event is to invite everyone who has a love of sketching, photography or biking come to discover and appreciate their artistic side to share the hidden treasures of the Bang Kra Chao. Introduction to an amazing biodiversity, traditional culture, and a small community lifestyle through community storytelling to be shared and remembered by all visitors for example, boat ride activity with the Love/Preserve the River and Khlongs Group to discover local community lifestyle, biking around in the Bang Krachao neighborhood.
- Several trainings and 3 field trip local people capacity building as tour guides was conducted. Community based tourism business model, as a start-up guide to manage expenditure and income as well as sustaining the financial status of the group, was developed and applied. There are already group visits.
- There are a selected plots to rehabilitate bird species sites involving locals,

- students and CSR volunteers for supporting.
- Project Information has been developed into effective media and publications.

Detailed implementation progress and arrangements refer to Annex A

2.2 Project resources and costs

The total budget for the project was USD 128,600, which APFNet assured grant was USD 128,600 (including USD 10,000 for external evaluation which will be retained by APFNet) and the counterpart contribution was USD 183,226.62. USD 97,880 (USD 35 different from actual received amount is because of the bank changes) was disbursed by APFNet in two times. All the project activities have been completed using the proceeded fund, no additional payment needed for this project.

Despite the delay of project disbursement, the budget allocated in each activity has been strictly contributed to the implementation teams according to its budget scope. There are 4 teams running for specific tasks and all teams manage to use the budget effectively according to their work plan. Procedures for procurement is relatively slow than a schedule but transparent, each team has to write a detailed project proposal indicated objectives, target groups, action plan and budget plan for the director and RFD administrative for their approval. Also project manager and project coordinator will follow up and provide suggestions for the execution of the activities.

The project financial details are shown in Annex B.

2.3 Procurement and consultant recruitment

Procurement

There are no fixed assets purchased with APFNet grant.

Service contracted under approved work plans

The management team

1. Project Manager, Miss Pariyaporn Sukgul, was hired since the first implementation of the project. She has responsibility for managing the project, cooperating with project partners and stakeholders, and implementing all activities within the project.
2. Assistant Project Manager, Ms. Saichon Mutarapat was hired during the extension period (July – December 2018). She responsible for documentation and filing management as well as day-to-day coordination between the project and other organizations.
3. Local Project Coordinator (Vacant)
4. Project Coordinator, Mr Preecha Ongprasert organizes the work of the project

management team and steering committees, local and international partners. He also supervises budget disbursement and project activities at the project sites.

Consultants with in-kind support from RFD

1. Urban forester 1, Mr. Preecha Ongprasert undertakes urban ecological planning and scientific management of the site, and oversees development of the urban biodiversity education program at the demonstration site.
2. Urban Forester 2, Mr. Montri Intasane has responsibility for the site survey and education and training.
3. Silviculture expert, Ms. Rabieb Srigongpan provides technical support regarding to urban forest ecological and structure.
4. Economic expert, Ms. Sasima Aree provided technical support regarding to ecotourism management and promotion.
5. Ms. Panali Mungkornsakshithi, Forest Officer, Forest Resource Management Center 10 (Rachaburi) is responsible to develop planting program and training.

Local consultant(s) hired to fulfill specific tasks

1. Dr. Aroonsri Auesriwong, Eco-tourism Specialist, Rajabhat Udonthani University.
2. Ms. Prempree Harntanong, Education expert, the head teacher of Roong Aroon School.

2.4 Monitoring & evaluation and reporting

There is a regular monitoring and evaluation led by APFNet with a valuable recommendation for project strategy development. The APFNet staff always gives advices as soon as we have some enquiries and need any support.

Internal monitor was conducted by international Forestry Cooperation Office through project activities, collaborating with the officials of Nakhon Khuan Khan Green Area and Eco-Management Center. In follow up the progress, RFD has the task to evaluate situation and adjust the approach or activities to fix the problems.

1. During 21-25 April 2017, the project site was received a group led by:
 1. Mr.Dongsheng Liu Vice Minister, State Forestry Administration of China
 2. Mr.Yanxiang Hao Director General, Department of Forest Resources Management, State Forestry Administration of China
 3. Mr. Shixue Pan Director General, Coordinate Office of Forest Management Unit, State Forestry Administration of China

- | | |
|----------------------|---|
| 4. Mr. De Lu | Assistant Executive Director, APFNet
(Now APFNet Executive Director) |
| 5. Mr. Minglei Shang | Assistant to the Vice Minister, State
Forestry Administration of China |
| 6. Ms. Wei Liu | Director, Communication and
Outreach Department, APFNet |

The team went to visit the project site and join the activities organized by the Project and Expert Teams at Suan Pa Ket Nom Klao UCF.



Executive officials from State Forestry Administration (SFA) of China and APFNet visited the project site

2. During 9-11 June 2017, the monitor and review team from APFNet Secretariat to interview and do filming within the Project site. Collective stakeholders such as head of villages, professional group, and principal of local primary school were interviewed to acquire their perception and activities regarding to the project and APFNet.

2.5 Dissemination and knowledge sharing

1. The project has informed outputs and return data survey (for example; a survey data of bird and plant species) to communities.
2. The project disseminates information and data collected through various tools such as brochure, guidelines, Facebook to reach to potential visitors.
3. The project had participated in related events, meeting, and seminar of both domestic and international if time and schedule were allowed to make the project known to the public and extend networking.
4. The project has developed Facebook to promote our activities at <https://www.facebook.com/APFNetBangKachao>
5. Other social media application such as Line and Facebook messenger has been created to communicate among the project team and communities.



Miss Panali, our project forester gave the Handbook of Bird species identification to the Head of Pagade Nom Klao community working group.

3. PROJECT PARTNERES' PERFORMANCE

3.1 Performance of Executing Agency

The Executing Agency (EA), which was Royal Forestry Department, performed well. It had responsibility to regularly prepare and get approved all documents of the annual work plans, progress reports, financial report, technical reports and completion report to APFNet to meet the specified schedule.

Most staffs who work in the project are already employed by the RFD and some staffs were recruited particularly for specific proposes. The Director and PSC would ensure that the activities of the various stakeholders involved are coordinated, with active participation and no duplication.

Project staff manage the project plan for the urban forestry demonstration and learning site in coordination with the Nakhon Khuan Khan Green Area and Eco-Management Center. Local stakeholders and consultants will ensure execution of activities and outcomes in compliance with the project's objectives.

The project coordinator (Mr. Preecha Ongprasert) attended many seminars and workshops in both domestic and international level in order to disseminate information of Bang Kachoa into nationwide and worldwide.

3.2 Performance of consultants (technical assistants), contractors, and suppliers

1. Dr. Aroonsri Auesriwong, Eco-tourism Specialist, Rajabhat Udonthani University, is specialize in eco-tourism planning and community-based tourism program and development. She responsible to provide knowhow and for the Suan Pa Ket Nom Klao woman group to set up the program, develop their own local products in terms of design and production. She has a high drive to motivate the group for moving forward.

- give advice for community to Identify key areas in Bang Kachao for biodiversity conservation and ecotourism development.
- Develop program to create more interesting activities to provide visitors with a more extensive experience.
- Consult for management plan, Price setting, Service standard, and marketing.
- Tour guide trainings and organize field trip.



Hands-on training to produce local-made tea from natural resource



Survey of green area to understand the issues

2. Ms. Prempree Harntanong, Education expert, the head teacher of Roong Aroon School. She is responsible for education program development, organize learning activities for local school children, and organize knowledge management sessions for teacher. 3. With the helping hand from the specialists and consultants from many education institutions, conceptual for

nature trail and interpretative facilities have been made. Participatory surveys and investigation were conducted among specialists, community members, young students from local schools, local wisdoms, as well as government officials.

3.4 Performance of APFNet

From the experience working with APFNet, APFNet Staff has performed highly effective to support advices and has provided a clear guidance for project planning, implementation and management, especially on report manual. The Project grant from APFNet is timely disbursement. The procedures of budget management are relative flexible which allow agility for project activities undertaking.

4. PROJECT PERFORMANCE

4.1 Project achievements

Output 1 Establishment of demonstration and learning site for interested groups and visitors

Activity 1.1 Establishing an exhibition and interpretative center

The exhibition and interpretative center is firmly established in Suan Pa Ket Nom Klua UCF as an activity base of the community to organize field trips for children and organizations, community eco-tourism program for Bangkok day trippers and visitors.



The exhibition and interpretative center sign

Activity 1.2 Maintaining the character and value of the project site to help develop ecotourism

Facilities which were built under the support of the project would be mainly located within Suan Pa Ket Nom Klua Urban Community Forest. According to the Royal Thought of the HRH Princess Sirindhorn and regulation of the Royal Forest Department, only semi-permanent facilities and construction will be allowed to set up within Bang Kachao in order to preserve and harmonize with nature as much as possible. List of the facilities built under support of this project as follow.

1. A 200-meter long of stepping footpath made from concrete leading into community forest.

2. A 100-meter bamboo boardwalk within the community forest.
3. A wooden hut hatching with nypa palm leaves using for natural dye learning station.
4. An Information Center which all information boards were placed inside (with APFNet logo printed in each board)
5. A 2-meter Project sign with APFNet logo and title of the Project (using for group photo taking spot of all visitors)
6. A 4-sq. meter of community forest nurse



A 100-meter bamboo boardwalk within the community forest and community forest nursery

Activity 1.3 Implementing a natural conservation and urban forestry program as part of the curriculum of local schoolchildren

The natural conservation and urban forestry program has been developed, in collaboration with Roong Aroon School, based on the concept of the holistic learning process. It aims to promote creative practices that help encourage children at each age level to attain their own learning potential. This program is developed through a series of 15 outdoor learning activities using learning resource and places around Bang Kachao for local school children and school from outsides. The curriculum guidelines were made to be an example of applying natural and learning resouces in design active learning process for children.

- 1) Hands-on activities in the real situation - The children have learned to used technology to gather the information for example: Using google map and GPS to know their location which make this place unique in ecosystem, Use thermometer to measure temperature with a change in place with trees and without tree.

PRACTICES activity-based, problem-based, project-based., and research-based through learning unit integrated with real life experiences.

- ✓ Activity 1: Experience coolness from trees - feeling.
- ✓ Activity 2: Cool temperature from plants dehydration.
- ✓ Activity 3: The importance of green area in Bang Kachao.
- ✓ Activity 4: Three water garden



2) Develop social engagement and relationship with adults in communities and exchange knowledge from their experiences of conservation and how to make a benefit from their own natural resources.

PRACTICES community sharing, group meeting, people mapping. Adults can be a good example in public volunteer services.

- ✓ Activity 5: Farmers has garden to feed them throughout the year.
- ✓ Activity 6: Follow the track of coconut sugar - the last sugar stove of Uncle Pongsak
- ✓ Activity 7: Learning Urban community Forestry- Suan Pa Gafe Nom Glao with Auntie Toy - How to increase green area.
- ✓ Activity 8: Follow Auntie Peud to local market



Community sharing, group meeting, people mapping

3) Learn how ecosystem and natural resources provide food for us

PRACTICES analytical skills, understand the value system of ecosystem and natural resources.

- ✓ Activity 9: edible products from nature.
- ✓ Activity 10: group learning, discussion, dialogue, knowledge management.
- ✓ Activity 11: Glucose from natural products
- ✓ Activity 12: How do we get palm sugar?



Teach the young children with active learning approach

4) What green area in Bang Kachao give us?

PRACTICES understanding of the theme from a variety of perspectives emphasizing the interrelationship of knowledge through the process of investigation.

- ✓ Activity 13 Benefit from urban forest
- ✓ Activity 14 Firefly - key indicator of fertility
- ✓ Activity 15 Bang Nampeung Local Market



Roong Aroon student is recording video during their survey to produce their learning materials

Activity 1.4 Encouraging local volunteers and youth groups to become involved in education programs

In year 1, the process of local curriculum development and implementation has 12 months in organizing collaborative workshops, classroom observations, and documentation. It will be working together and exchange knowledge and experience between the management team, curriculum experts, local school head teachers, volunteer teachers and students. The objective is to encourage and guide teachers to seek the proper and effective way to manage their own teaching and learning methods that fit to urban forestry and biodiversity in Bang Kachao environment.

1. Organize 5 education programs activities related to curriculum practices to a number of 150s local school children from 12 schools in 6 tambons (Year 1)

1) Fire flies day camp – Learning the basic knowledge of ecology system in Fire flies conservation site – Lampoo Bangkasob

2) Local wisdom learning Camp – Learning cultural assets of their local communities by spend their 2 days staying in local wisdom persons in Bang Nampeung.

3) Art Camp- Practice to make their journal or diary with sketching their environment and surrounding of everyday life

4) Social Camp – Meet Uncle Pad and visit Mon village and of Prapadeang historical area.

5) Sport Day- Active activities for project to develop relationship with children and school.



Fire flies day camp



Local wisdom learning Camp



Art Camp



Social Camp



Sport Day

In year 2, Organized program activities for young children from school in Bangkok (Secondary school) to practice a specific tasks for conservation and fieldtrip activities so that they can learn to contribute themselves in helping, for example, tree plantings, Handmade from natural product, share their learnings with small children (Primary School) or develop their own medias to inspire another young children in social media.



Field trip for conservation activities

Output 2 Establishment of biodiversity conservation area and development of this through ecotourism channels to achieve an increase in visitor numbers as well

as in the flow of income benefiting local people

Activity 2.1 Developing project site facilities to provide visitors with a more immersive experience

Develop routings which link to the program of Suan Pa Ket Nom Glao UFC with the support of local community. Community networks also developed to work on selected sites for ecotourism promotion. In addition, focus group meetings were organized to connect routing development and visitor management. The 3 successful routing are identified as followed:

- ✓ Canal routing in Bang Kor Bua Sub-district.
- ✓ Routing for visiting traditional mixed orchard in Bang Kasob Sub-district, Bang Kor Bua Sub-district and Bang Yor Sub-district (Promote learning and buying fruits and vegetables at site visit)
- ✓ Bike routing network.



Local Business Model	
Small Boat Trip 2 persons tourists Income 500 B	Cost Boat rental 100 B Local rower + guide 200 B OTOP products 40 B
	Revenue Management 100 B Conservation fund 60 B
Large Boat Trip 4 persons tourists Income 800 B	Cost Boat rental 200 B Local rower 150 B Local guide 150 B OTOP products 60 B
	Revenue Management 140 B Conservation fund 100 B

In year 2, the woman group of Suan Pa Gade Nom Glao UFC was selected to be trained for capacity building to run for community eco-tourism based on the consultation of project consultants.

- Settle the ecotourism community program for 1 day trip and 2 days 1 night trip with a theme “Follow the track of Ardisia”. The plants that we can find them grow everywhere in Suan Pa Gade UCF. This flowering plant has a lot of benefits

both for local use and medicine. As a result, the consultant bring each element of the plant to use in developing local products for example; leaves can be extract to make dye, young leaves can make tea, its seeds can be food ingredient ,etc.

- Settle process, standard of services and tourist management.
- Run the program to experiment.
- Settle home stay with standards.
- Develop QR code to make information available on social online

แผนที่ป่าเอดน้อยเกล้า

วันที่สอง
 07.00 น. ตักบาตรเช้า
 08.00 น. อาหารเช้า
 09.00 น. กระจกเทียน
 10.00 น. รับประทานอาหารว่างชนบทไทย

สถานที่ตั้ง: หมู่ 2 บ้านใหม่ ตำบลหนองแขม อำเภอหนองเสือ จังหวัดปทุมธานี

ที่อยู่ : สวนป่าเอดน้อยเกล้า ตำบลทรงคนอง อำเภอลำลูกกา จังหวัดปทุมธานี 10130

ติดต่อ : มร.ปริยัติ ไตรรัตน์ : 0861010704
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 รติมา ปังเออรัตนศิริ : 0811369183

ป่าชุมชนเมือง
 “สวนป่าเอดน้อยเกล้า”

โครงการอนุรักษ์พื้นที่สีเขียว
 ตามแนวพระราชดำริของพระบาทสมเด็จพระเจ้าอยู่หัว
 รัชกาลที่ 9

โปรแกรมการท่องเที่ยว

วันที่ 1
 08.30
 Welcome drink มอนฟักลือใจ
 09.30 น.
 ตาบรอยฟักกลาส
 11.30 น.
 รับประทานอาหารกลางวัน
 13.00 น. กิจกรรมกลุ่ม ย้อนฟักทำลูกประคบ
 15.00 น.
 สบาย 3 น้ำสมุนไพรพื้นถิ่น
 17.00 น. พักผ่อนตามอัธยาศัย
 18.00 น. รับประทานอาหารเย็น

สวนป่าเอดน้อยเกล้า
 ชาวชุมชนบ้านใหม่ มีความมุ่งมั่นในการอนุรักษ์ทรัพยากรและสิ่งแวดล้อมในพื้นที่ จึงรวมกลุ่มกับในนาม “สวนป่าชุมชนเมือง สวนป่าเอดน้อยเกล้า” ตั้งแต่ปี 2550 โดยชักชวนผู้คนที่ต่าง ๆ ให้นำช่วยกันปลูกต้นไม้ในพื้นที่ และนำร่องดูแลต้นไม้ที่ปลูกบนพื้นที่ 60 ไร่ ซึ่งเป็นพื้นที่อยู่ในเขตโครงการสวนกลางมหาชน ตำบลทรงคนอง จนกลายเป็นห้องเรียนธรรมชาติ และแหล่งท่องเที่ยวเชิงนิเวศที่สำคัญอีกแห่งหนึ่ง

Leaflet to promoting a daytrip program in Suan Pagade Nomglao urban forest community

Activity 2.2 Marketing the Bang Kachao site to potential visitors.

Year 1: Create awareness to public - Target to the new generation and working groups

with active activities

- Develop program for organizing marketing event.
- Develop list and making invitation of selected groups of specific interest and media – Cycling group, Sketching group, and Photographer group
- Organize 2 days event in Bang Kachao (7-8 March 2015)
- The event was aimed to invite everyone who has a love of sketching, photography or biking come to discover and appreciate their artistic side to share the hidden treasures of the Bang Kra Chao. Community storytelling was shared and remembered by all visitors for example, boat ride activity with the Love/Preserve the River and Khlongs Group to discover local community lifestyle, biking around in the Bang Krachao neighborhood.



Create one-day visiting program with a shuttle



Canal routing trip experiment



Bicycle routing trip experiment



Sketching Activities



Starting Point

Year 2: Create community eco-tourism products - for Senior Citizens, Organization's field trip



Visitor experiencing the massage provided by the communities

Activity 2 3 Training local people as tour guides

Year 1: Training key stakeholders from 6 Tambons to understand how to create network of all identified tourist sites, tours, attractions and activities in Bang Kachao.

- Organized study trip to learn ecotourism product/tour program development, price setting and local touring as well as natural resource management with the model community in Krabi Province (29-31 August 2014). Continue a workshop when come back to develop community relationship and started to work together as a network on selected sites for biodiversity conservation and ecotourism promotion.
- Co-working to organize the Bang Kachao sketch & Snap event.



Learn how to use plant to create local product

Year 2: Focus on learning how to design community/natural based tourism product and operation

1. Bring the woman group members of Suan Pa Ket Nom Klao UCF to the study trip at Khemarat District, Ubon Ratchathani Province, the role model of community based tourism situated by the Khong river along Laos PDR border.

- - Training of Identification key areas for tourism product development and quality control. The Suan Pa Ket Nom Klao UCF members have learned from a model community to initiate and establish standards of service and quality control for aspects of the Community Based Tourism (CBT) operation that delivers to visitors.



2. Conduct workshops for training skills and experience to run/maintain key areas for CBT include: facilities, accommodation, catering, local products.

- Design programs of Suan Pa Ket Nom Klao UCF and set the price
- Capacity building in local product design and development with natural resource base.
- Practice standard of service and hospitality.
- Train to promote content with QR code.

3. makes optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.

- Hands-on training to develop local product such as tea, soap, local recipes, scarfs, made of different pieces of Ardesia plants.





Hands-on training to develop local product such as tea, soap, local recipes, scarfs, made of different pieces of *Ardesia* plants.

Output 3 Maximizing the site's ecotourism potential by improving the area's habitat of dependent flora and fauna

Activity 3.1 Developing conservation sites to support endemic fauna.

- 1) Develop planting program for selected conservation sites
 - Conduct a survey - 8 of 13 royal plots that look after by the conservation group of Suan Pa Ket Nom Klao UCF was selected to do a plant species survey and bird species identification. The survey was carried out by RFD officials, local community in studied area, and children from Pa Ket Nom Glao local school. According to the small area of the project site (approximately 2,000 ha) so that

the vegetative structure and composition have been assumed to be similar. The expert team from the Royal Forest Department trained the local community members to participate in the survey in order to raise their awareness as well as to enhance sense of ownership of their local resources. The survey was conducted 5 times in order to ensure the entire natural resource would be investigated within the approximately 10 ha of Suan Pa Ket Nom Klao UCF.

- There are 47 plants species consisting of 28 local plants, for example, *Manikara hexandra* Dub., *Bruguiera sexangula* (Lour.) Poir., *Dolichandrone spathacea* (L.f.) K. Schum., *Cerbera odollam* Gaertn., etc. and 19 non-native plants species, for example, *Morinda citrifolia* L., *Cocos nucifera* L., *Tamarindus indica* Linn., etc.
- According to the survey, there are 49 bird species found in the area of survey plot divided into 40 native species such as Coppersmith Barbet, Collared Kingfisher, White-breasted waterhen, and 9 migratory species such as Open-billed Stork, Black-naped Oriole, Taica Flycatcher.
- The report of diversity of forest structure and species composition in Suan Pa Ket Nom Klao UCF and its relationship to the nature trail development and eco-tourism activity program.
- Information sharing and planting activities with local community.
- Based on the survey result, the bird watching sites have been developed by planting appropriate trees within the designed areas. For examples, some local fruit species such as *Syzygium cumini*, *Flacourtia rukam*, *Lepisanthes fruticosa*, *Mangifera pentandra*, *Artocarpus heterophyllus*, etc. have been planting continuously within the areas to attract fruit-eating birds while local flowering species such as *Hibiscus schizopetalus*, *Barringtonia acutangula*, *Hopea odorata*, *Sonneratia caseolaris*, *Rhizophora apiculata*, etc. have been planting to attract insect-feeding birds. Moreover, the designed bird watching sites have been cleaning up to ensure clean water for attracting birds. Weeds and residues have been removed from the sites while sediment at the bottom of waterways has also been dug up. Local fishes species with are supported by Department of fisheries *Channa striata*, *Barbonymus gonionotus*, *Notopterus notopterus*, *Rasbora tornieri*, etc. have been releasing to the sites for being fed by fish-eating birds. Details of the birds species and their feeding habit are shown within the report attached in the annex of this report.



Survey sites



Local community involving in survey

2) Establish bird watching site.

- on potential conservation flora and fauna species were made by the expert team in parallel with Activity 3.1 in order to establish baseline information for conservation sites for feeding endemic fauna within Pa Ket Nom Klao UCF. The

survey composes with:

- Ecological survey process and results. The surveying team was made temporary sample plots across the area of the community forest in order to investigate floral biodiversity. Surveyed vegetation was then recorded as vascular and non-vascular vegetation while locations of large trees as well as diameter at breast height were then recorded. Lay out of vegetative structure and composition was drawn (see Activity 3.1). All surveyed vegetation was identified according to botanical aspects by following plant systematical nomenclature.
- Bang Kachao is found to have at least 98 bird species, while Suan Pa Ket Nom Klua has 49 bird species consisting of 10 herbivorous bird species, 29 insectivorous birds species, and 10 omnivorous birds species. It is considered that this site is relatively ecological rich.
- Identification of relationship between plants species and birds species surveyed Suan Pa Ket Nom Klua found that there are only 12 plants species for bird feeding.
- Selected potential plant species for planting to improve and make enrichment as habitats for dependent flora and fauna species which would be able to link with ecological rehabilitation as well as ecotourism promotion. The selection was made among the consultation between expert team and local communities in this case. According to the survey, it is found that 12 out of 49 surveyed species contain potential for providing feeding ground for fauna especially for birds. Some potential species such as *Streblus asper* Lour., *Lepisanthes fruticosa* Leenh., *Lepisanthes rubiginosa* (Roxb.) Leenh., *Antidesma ghaesembilla* Gaertn, etc. have been recommended and planted within the community area in order to attract bird species to feed.



Activity 3.2 Maximizing the biodiversity of the project site through scientific management

1. Organize 2 workshops for information sharing and conduct planting.
2. Planting 500 trees (8 plants species) to Expand ecological conditions and habitats for bird feeding within 8 surveyed plots of Suan Pa Ket Nom Klua UCF.
3. Provide Bird watching guideline book and training to children in local school.
 - Set up operating management for volunteer group from the community in order to promote long term sustainable ecosystem management. Potential species as mentioned above have been selected for ex-situ conservation. Those collective species have been propagated within the forest nursery of both Suan Sri Nakhon Khuan Khan City Park and Suan Pa Ket Nom Klua UCF. Youth volunteer group have been trained to perceive biodiversity of their local resources while collective potential species have been planted by visitors and volunteers within the designed areas. The guideline which was using to train the youth and other volunteers was developed by the consultant team and is shown in Biodiversity survey cartoon manual.
 - Establish collaboration with Faculty of Forestry, Kasetsart University to continue scientific researches and implementation within the designed area. For example, the enrichment planting for maximize biodiversity within the project site have been using “Miyawaki Planting Model” in order to create ‘dense forest’ for environmental protection instead of ‘planting a tree’. This Model is popular across the world for of environment forest plantation. It was developed by Professor Akira Miyawaki, Prof Emeritus in Yokohama National

University of Japan. It is a form of dense plantation to recreate dense native forests. This 'dense plantation model' has been conceived and perfected in Japan and the model is used today around the world for creating dense environment protection forests. It helps to rehabilitate and generate and enhance ecological wealth out of native natural resources and in attaining a stable ecosystem. Meanwhile, some permanent plots have been establishing by graduated students for measuring biomass production and measuring carbon sequestration while standing tree species have been tagged for creating database of biodiversity composition. This approach could help to ensure the sustainability of long-term management under the collaboration between scientific institutes and local communities.



Outcome 4 Increasing public outreach through developing project information.

Activity 4.1 Documenting project information.

Project materials were developed to cover the diversified groups including, class materials, guidelines, video clip, display board, etc.

1. Produce Local curriculum handbook for Children.
2. Biodiversity survey Guidelines – Cartoon Book
3. Produce Bang Kachao Routing Brochure for tourists
4. Bang Kachao Poster, Badge, and T-Shirt for Branding promote



5. Disseminate information on Facebook: <https://www.facebook.com/APFNetBangKachao>

Activity 4.2 Reporting

1. Plant species and bird survey report
2. Produce Clip Video of local curriculum development process. 3 episodes for 3 minutes each.

Episode 1 - “Active Learning” New Approach for Learning Bang Kachao

Episode 2 – Know how the process – Children is the Center

Episode 3 – What Bang Kachao gives to us?

4.2 Project Impacts

This Project has major focused in public participatory involvement which aims to increasing awareness of nature conservation in all level of stakeholders. In particular, access to biological resources through ecotourism would be beneficial to enhance economic status of communities within the project site. Policies, strategies, planning and implementation regarding to forest management within the project sites have shown the great impact form the project implementation. For examples, more public involvements (i.e. communities, business sector, education institute, religious institute, etc.) have been clearly seen from many activity implementations while relevant rules and regulations have been more strictly

controlled by local administration organizations such as not allow to disturb biodiversity in the public areas. Suan Pa Ket Nom Klao Urban Community Forest- a major implementation site of the project has proposed sets of guidelines for sustainable biodiversity conservation ecotourism development under the guidance from RFD. The guideline is listed below.

Items	Approaches
1.Using natural resources sustainably	The conservation and sustainable use of natural resources –natural including social and cultural, - is crucial for long-term development by using resources sustainably:
2. Reducing over consumption and waste	consumption and waste Reduction of over-consumption and waste avoids the costs of restoring long-term environmental damage and contributes to the quality of tourism
3. Maintaining Biodiversity	Maintaining and promoting natural, social, and cultural diversity is essential for long-term sustainable ecotourism
4.Integrating ecotourism into planning of community development	Ecotourism development which is integrated into local strategic planning framework would increase the long-term viability of tourism
5. Supporting local economies via ecotourism development and promotion	Ecotourism that supports a wide range of local economic activities and which takes environment and its values into account, both protects these economies and avoids environmental damage
6. Involving local communities	The full involvement of local communities into the biodiversity conservation and ecotourism would not only benefits them and the environment but also improves the quality livelihood
7. Consulting stakeholders and the public	Consultation between the government agencies and local communities as well as outside institutions is essential when working alongside each other and resolving potential conflicts of interest
8. Capacity building	Capacity building program for stakeholders which integrates sustainable forest management into work practices, along with recruitment of potential participants, would help to improve the quality of management skill of all stakeholders
9. Marketing ecotourism responsibly	Marketing that provides tourists with full and

	responsible information increases respect for the natural, social and cultural environments of destination areas would enhance customer satisfaction and appreciation
10. Undertaking research	Conduct of research and monitoring by the educational institutes would be essential to conduct sustainable planning, help to solve problems, and bring long-term benefits to communities and the Project area as a whole.

In the aspect of economic benefit, create tour program and community local products (Handmade) will enhance the attraction of day trip and overnight trip in Bang Kachao which can bring revenue for tourist service (Day trip charged 850 Baht per head, overnight with dinner charged 1,800 Baht per head) as well as related areas in Bang Kachao. After finish the program, they can continue their journey to visit fruit and vegetable farms around or Bang Nampeung local market. It is estimated that visitors will spend at least 1,000-1,500 Baht per day, both buying tour program and their other shoppings. There will be improvement of incomes for farmers and woman group and the ambition to return farmland to Bang Kachao by using marketing mechanism.

4.3 Sustainability

- The community group like Suan Pa Ket Nom Glao UFC are becoming self-reliant for implementing this initiative on their own and they are arranging per request field trip program from many organization for their fields trips, seminar, education camp. Moreover, The Suan Pa Ket Nom Glao UFC model will gradually changing the mindset of other group regarding the way that they manage their natural resources.
- There is a market demand for a developed tour program. A health tourism sector and the senior citizen is a growing trend and is a major driver in the growth in the wellness tourism which is the theme of our community based program.
- People in the target community are well aware of environmental protection as they recognize the value added of their natural resources.
- Education Program involves local wisdom to provide knowledge for children. The school children and teachers now know about the learning places in each tambon and have program guidelines to conduct their outdoor learning in the future.

5. CONCLUSION, LESSONS LEARNED AND RECOMMENDATIONS

5.1 Conclusion

Overall, the project has achieved its objectives and generates a huge impact to the area in term of urban forestry demonstration site. The project had been implemented based on the proposal and annual work plans. The main findings are listed below.

In maximising conservation of biodiversity and strengthening the urban forestry program, Bang Kachao is needed to identify strategic locations that could serve as information center for Biodiversity, Conservation work, ecotourism information as well as local the training center. At the end of investigation and survey, the project found that Suan Pa Ket Nom Klao Urban Community Forest (UCF) would be a good site to serve for this objective. The strong point of the site comes from the strong collaboration of local communities and other partners in society while rich of biodiversity of urban community forest where communities play a vital role in conservation and management have been accounted.

The main issues of biodiversity conservation are that Bang Kachao has protected conservation areas only 10 % of the total land and they are scattered. The largest piece of land has been developed to The Sri Nakhon Khuan Khan City Park, which the place can ideally function as Green mentioned above, however, with its weak location and limited human resource, our propose is to establish a small-scale eco-learning center in strategic conservation area of Bangk Kachao that has site characteristics and value for biodiversity, easily access by visitors and run by local working groups. As a result, local demonstration and learning site at the community level as been established at Suan Pa Ket Nom Klao Urban Community Forest.

In terms of related local benefit increase, Bang Kachao needs a creative economy approach, systematic linkage of eco-tourism activities and services of local working groups in six sub-districts, promotion value of Bangkachao natural and cultural biodiversity to public outreach. Pilot professional groups have been established in order to develop products, production process, facility development, marketing channel establishment, etc.

5.2 Lessons learned and recommendations

There have been certain challenges rather than obstacles while implementation this project. The project had to encounter a tough process from new National Procurement Act, activities came from the disbursement of the project has to be based on disbursement rules and regulations of the new National Procurement Act which the Royal Forestry Department has to follow. The procedures is very complicated until unable to make procurement including appoint the expert teams to work under the project activities on time. But the activity was carried out with deliverables output. After careful consideration, the new learning center component (Activity 1.1 and 1.2) which is originally designed to be located at Suan Sri Nakhon Khuan City Park has them

relocated to be Suan Pa Ket Nom Klao Community Forest in order to avoid overlapping with the learning center supported by business sector in the park. The new community level have established as a natural ecosystem learning center.

Some expenses of the project cannot be disbursed because of the above mentioned process. For example, the project had previously encountered the problems of getting budget to use for materials and equipment purchasing as well as hiring expert teams to work under the project activities. However, this problem has been mitigated so far. In order to get budget to run each activity, the project manager need to write proposal with details and process of the planed activity as well as cost estimation each item that will be occurred in proposed activity. However, with the red tape, the process seems to be back and forth and takes long.

The solution: The project sent the officers under the International Forestry Cooperation Office to work closely with Internal Audit Division in order to ensure the correctly running the procurement process. Meanwhile, decentralization has been made by the Project Director (i.e. Deputy Director General of RFD) regarding to routine documentation approval to Deputy Project Director (i.e. Director of International Cooperation Office) in order to mobilize the documentation process faster.

In aspect of Local curriculum development, Instead of relying on head teachers and teachers, which supposed to change in every 2 years, we moved to design the education program by using children and community as a center and develop methodology guidelines for teachers to practice and share in order to facilitate school children to learn

Uncontrolled environment such as frequent heavy rains and storms during rainy season in June to October has some effects on our delay on survey schedules. Also September is the month of ending the government budget year, government officials, local government organizations and local communities as well as some expert teams were very busy with organizing their own meetings, events, and seminars in order to close their budgets properly.

The Solutions: The project provided flexibility period of working time for them including moved some activities to conduct within the dryer season in order to avoid effect from raining as well as busiest time of other facilitators in this case.

Influx of financial from business sector into Bang Kachao. As already mentioned before, Bang Kachao has been becoming the well-known nationwide for the largest urban green area close to Bangkok so that the helping hands from other parts of the society such as business companies and volunteers have been increasing. Many offers are always translated into facilities improvement, planting tree campaigns, professional group capacity building programs, etc.

The Solutions: In order to avoid overlapping of activities between the activities under the project and offers from business sector, the project decided to downscale by focusing on community level rather than taking the whole area. Some conceptual designs such as interpretation signboards, tourism route maps, ecological rehabilitation, etc, have been transferred to Nakhon Khuan Khan Green Area and Ecomnagement Center – a responsible management unit of Bang Kachao area to continue the works of facility improvement. Meanwhile, nich activities such as ecotourism and local school curriculum improvement have been promoted instead.

Recommendations

- Since the project implementation is delayed, there is no sufficient time to collect some results, for example, the increase visitor number and revenue, an increase of endemic bird species. In order to expand result into link areas, the members of the Suan Pa Ket Nom Klua UFC should keep record about the data of changes in number of visitor and their revenues according to the project inputs.
- Many research from Universities recommend the use of technology and innovation for adding value in natural based community product, but need more budget to invest in production

Annex A Implementation status (scheduled versus actual)

Project Objective/Outputs/ Activities (in line with PD/AWPs)	Indicators (in line with PD/AWPs)	Baseline of activities	Progress made (%completion of activities and degree of output/objective achievement)	Appraisal time	Actual time
Objective 1. To establish a demonstration and learning site for interested groups and visitors.					
Output 1: Establishment of demonstration and learning site for interested groups and visitors.					
Activity 1.1 Establishing an exhibition and interpretative center	The establishment of attractive demonstration and learning site.	key activities such as 1) Establishing the exhibition and interpretative center, 2) The site characteristics and value for biodiversity has been promoted.	At least 10% improvement in the biodiversity of the area would be found by the second year of project implementation. Direct benefits start flowing to local communities by the first year of project implementation	2 years	5 years
Activity 1.2. Maintaining the character and value of the project site for ecotourism.	Improvement of biodiversity of the area can be gradually seen.			2 years	5 years

Activity 1.3. Implementing a natural conservation and urban forestry program as part of the curriculum for local school children.				2 years	5 years
Activity 1.4. Encouraging local volunteers and youth groups involve the education				2 years	5 years
Objective 2. To develop and promote biodiversity conservation which will increase the number of visitors as well as the income flow to the local people.					
Output2 Establishment of biodiversity conservation area through ecotourism channels to achieve	More ecotourism activities to offer can attract more number of tourist, more time spend		An increase of 25% in the income from visitors flowing to local communities after the end of the project compared to current status.	2 years	5 years

an increase in visitor numbers as well as in the income flow to the local people.	and more spending to the area.				
Activity 2.1 Developing facilities of the project site to provide more extensive experience to visitors.		<ul style="list-style-type: none"> - Developing facilities to provide more extensive experience to visitor, - The biodiversity based economic development activities of biodiversity based resource, souvenir, local product development etc. 	Existing of new interpretation signboards and new facilities.	2 years	5 years
Activity 2.2. Marketing the Bang Kachao site to		Ecotourism marketing corporation with travel agents and tour operators.	An increase of 10% in number of eco-tourists and interested visitors within after year 2 of the project implementation,	2 years	5 years

potential visitors			compared to the previous year period.		
Activity 2. 3. Training the local people as tour guides.			Development of new local enterprises as a result of this project. Business Cluster development has been initiated.	2 years	5 years
Objective 3. To maximize the potential of the area as an ecotourism attraction by improving the habitat for dependent flora and fauna species.					
Output 3: The maximized ecotourism attraction of the project site by improving the habitat for dependent flora and fauna species.	1) An increase of green area, conservation sites and biodiversity of the area has been rehabilitated. 2) Working group support of planting program.	1) The management of the site to maximize biodiversity 2) Establishing and functioning collaborative working groups to support in conservation and planting program.	At least 10% of endangered flora and fauna will be conserved and enhanced in number.	2 year	5 years
Activity 3.1	3) Close	3) Education programs	Increase number of new birds	2 years	5 years

Developing conservation sites for feeding endemic fauna	supervision of the Nakhon Khuan Khan Green Area and Eco-Management Center	and training provided to related stakeholders.	and other wild animal species found within the area. Number of bird watchers increases by 50% compared to visits in the year prior to completion.		
Activity 3.2 Maximizing the biodiversity of the project site by scientific management.			Urban forestry and green area conservation of Bang Kachao continues. Increased support for Bang Kachao conservation by local communities.	2 years	5 years
Output 4. The available project information for the public outreach.	Detailed information of all aspects of the demonstration and learning site	Collecting all related researches and baseline data of Bang Kachao biodiversity and of	Number of requests for information increases by at least 25% compared to the year before project implementation.	2 years	5 years

Activity 4.1 Documenting the project information.	project made available for implementation at other sites	demonstration and learning sites in order to improve information system.	The availability documents and other information will via the RFD website and other public places within Bang Kachao. Hard (paper) copies of reports can be downloaded from the RFD website.	2 years	5 years
Activity 4.2 Reporting		Creating database of details of the natural conservation and urban forestry program including the curriculum for local school children to use for ecotourism promotion and for the public outreach.		2 years	5 years

Annex C. Project audit report

Annex D. Project outputs

D1. Curriculum Guidelines for Local Students

D2. Biodiversity Survey Cartoon Guidebook

D3. Survey Report of Plant and Bird Species

Annex E. Feature Stories

Feature Story 1: Fifty years old Cork Tree in Bang Kachao

I am a some-fifty years old Cork Tree standing on the bank of Chao Phraya River, called Bang Kachao. My trunks stretched over 20 meters around my body and my aerial roots occupied a room on the ground beneath my shadow. I always watch how things change day-by-day... year-by-year, and I am concerned...

People may say “Bang Kachao is the city lung” and I saw how the area went decline environmentally through times. City is swallowing from the outer side while our communities conserve less from our inner heart. Many friends of mine – Fireflies, who used to live by my bush left away. My cork tree friends were cut down when people neglected the former orchards and converted their lands into property development. I am worried about the future of the area if we could ever loose the biodiversity richness, forever. I hope some ones might be trained or educated to save us.

People may say, “Kids are the future of our nation”, and I saw those kids playing around our area of Bang Kachao. Children are likenew-white clothes, where you could paint them to be either good or bad – through our tools. I am excited to see the outcome of them. I hope that, by our environmental concern we taught, they could grow up to be fine men who will watch over their homeland and conserve well the local and natural uniqueness.



Recently, I stand here looking at those Bang Kachao seeds – the youths, exposed their potential through the Firefly Camp activities. Following the demonstration of the local curriculum, which aimed at (1) encouraging them to acknowledge the value of biodiversity in Bang Kachao, (2) Embedding sense of belonging and local conservation mind-set, and (3) as a demonstration program to be expand broadly in the future, I saw how they learnt by taking and drawing pictures, survey and recognising characteristics of native trees and plants. They found a chance to know about firefly's habit and its dwelling which is very sensitive and vulnerable. They learnt and understood the significance of environmental quality of bang Kachao. I realised that when I saw their eyes shone as if they see the significance of our ecological identity. Their enjoyment implied that they were delighted with the “treasure” they have had. They have good pieces of land where they can grow fresh orange, coconut, other fruits

and vegetables. They have good quality of air produced by trees around. They have bunches of fireflies and monitor lizards who indicated that the quality of water is still high. They have wonderful teachers who have strong motivation in guiding them in the conservation way, working with them and supporting each other. I hope they would be passed the crucial knowledge through this local curriculum.



PS. Message written from the concern of an old Local Cork Tree, standing still while things rise and fall generation-by-generation... and still have hope...

Featured story 2 A Great Story of Little Lady Who has Preserved Green Breath of Bang Kachao

If you had a short time for escaping from rushing life in a big city, a 2,000 ha of Bang Kachao, Phra Pradaeng District of Samut Prakarn Province will be one of among the first recommended choices to visit. Rich area of biodiversity, culture, and norms of people as well as traditional way of living among fruit orchards of those locals can purify the breath of visitors when visiting the “Best Urban Oasis of Asia” addressed by Time Magazine in 2006.

Ms. Prempreet Trirat, Chirman of Suan Pa Ket Nom Klao Urban Community Forest within Bang Kachao reminded the old days of Bang Kachao... “In 1991, the Government on that day would like to conserve this green area by purchasing approximately 200 ha of lands from local inhabitants. After purchasing, those lands were abandoned and not allowed the locals to use the lands for public purposes. The lands became to be dense jungles and dumping sites for garbage which causing harmful from mosquitoes and some poisonous snakes. As a consequence, Ms. Prempreet realized that the problem will getting worse if no one paying attention to solve such problems, she then asked collaboration from her community to tidy the purchased areas that belong to the government including plant more trees to increase biodiversity.

Until 2007, when the Royal Forest Department (RFD) started urban community forestry program within Bang Kachao, she then volunteered to help in conserving and proposed to establish this area to be a pilot site for urban community forestry program. Her proposal was approved by RFD afterward and that pilot site was named as “Suan Pa Ket Nom Klao Urban Community Forest”, the first urban forest community of the country with approximately 10 ha of total area. She has got a trust from her community to be a Chairman of that Urban Community Forest since then.

Nowadays, she has been devoting herself as a leader of volunteer group along with members of the community to look after this urban community forest through variety of activities. For examples, conserving rare species of local flora and fauna, providing seedlings for visitors to plant within the community, encourage young generation to form youth group for continuing of conservation from generation to generation, establishing forum as a center for all members of local communities within Bang Kachao to discuss about the conservation of this area, etc. This urban community forest has been well-known not only national level but also international level. Visitors from all ages come to visit this area as a place for relaxation, outdoor learning for environment, testing authentic Thai dishes from local professional women group. The area has also famous as a site for conducting activities of many business companies under Corporate Responsibility Program (CSR) so far.

In 2012, APFNet launched an urban community demonstration project in Thailand and the project was commenced within the following year, this urban community forest has chosen as a major site for establishing learning sites for both members of community and visitors. Various activities have been implemented such as, interpretation signboards, tracking routes for biking, enrichment planting for enhancement of biodiversity, promoting eco-tourism, etc. Successful can be observed from numbers of visitors into the urban community forest that have been increasing more than 10 times comparing to the year before the project commenced. Those visitors coming to visit, plant trees, relax, and enjoy nature within this urban forest and also mentioned about how to perceive the information from social media that have been sharing among the users lately about this site. The increasing numbers of visitors also help to enhance revenue of women professional group to prepare authentic Thai dishes to welcome all visitors. Those local menu is now becoming a famous story for this area and also recommended by many authors of articles and social media regarding to recommend others to make a weekend trip to Bang Kachao.

Although the interpretation of signboards implementation are now under development, but Ms. Prempree and her colleagues are willingly to take the visitors to tour around the this urban forest and never get boring to inform them about the background and information about this forest.

Although it seems to be a very hard work for her as a chairmen of this urban community, but Ms. Prempree is so proud of herself and other members of community a part of helping hands to preserve this area. Her proud can be found from her words as *"It is a delightful for a little lady who has an opportunity to be a small part of conserving this green area for delivering pure air to more than ten thousands outside for breathing.....it is my duty to do this job"*



Ms. Prempree Trirat



Her visitors



Famous local Thai desert



Increasing numbers of visitors during the weekend days



Planting trees from volunteers



Eco-tourism program



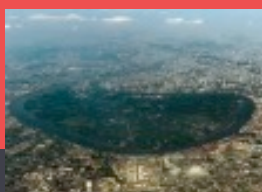
Bird eyes view of Bang Kachao

Annex F. Videos_Natural Education_3 Episodes

Annex G.

G1. Bang Kachao Project Timeline

Timeline of Project Implementation



03 May 2012-31 October 2013

Year 1 Implementation

The Project was kicked off and implemented.

November 2013- October 2014

Project Suspended and Restarted

The Project was suspended due to the political turmoil in Bangkok from November 2013 to October 2014. However, the Project was restarted during the short period (1 August 2014 and 31 October 2014) but situation was not recovered so that the Project had to be halted again afterward.

1 February 2017- 31 January 2018

Project Restarted and Suspended Again

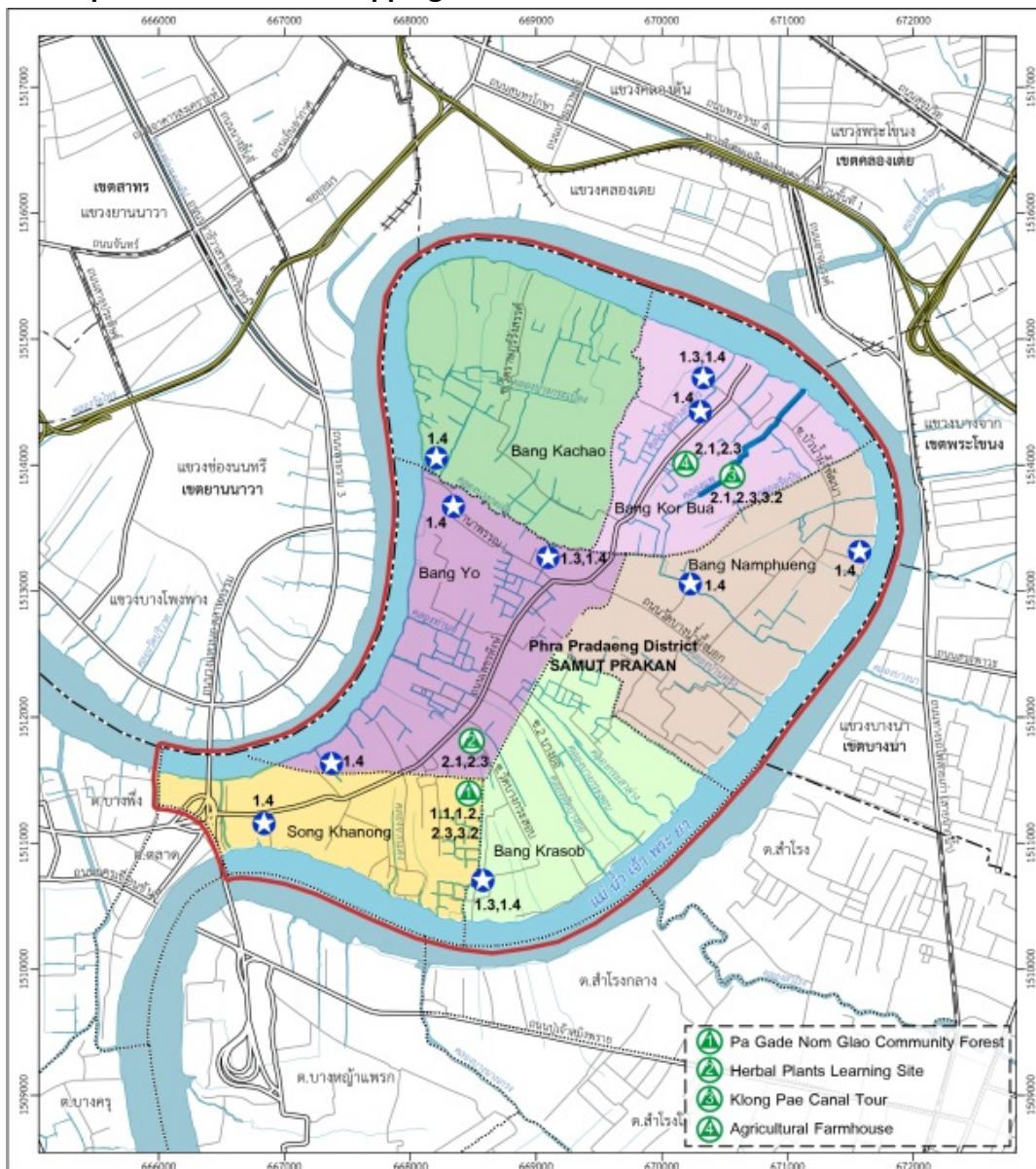
The Project started its implementation again from 1 February 2016 to 31 January 2017. After nearly four months of the project resuming, the new National Procurement Act was implemented and came into force. It made uncertain for decision making officials to sign all documents so that the Project came to be suspended stage again.

1 July 2018- 31 December 2018

Project Completion

With continue support from APFNet, the Project was started again and went smoothly to complete all activities at the end of 2018.

G2. Implementation Site Mapping



Strengthening Urban Forestry Demonstration Site of Bang Kachao (Thailand) for Biodiversity Conservation and Natural Learning Center

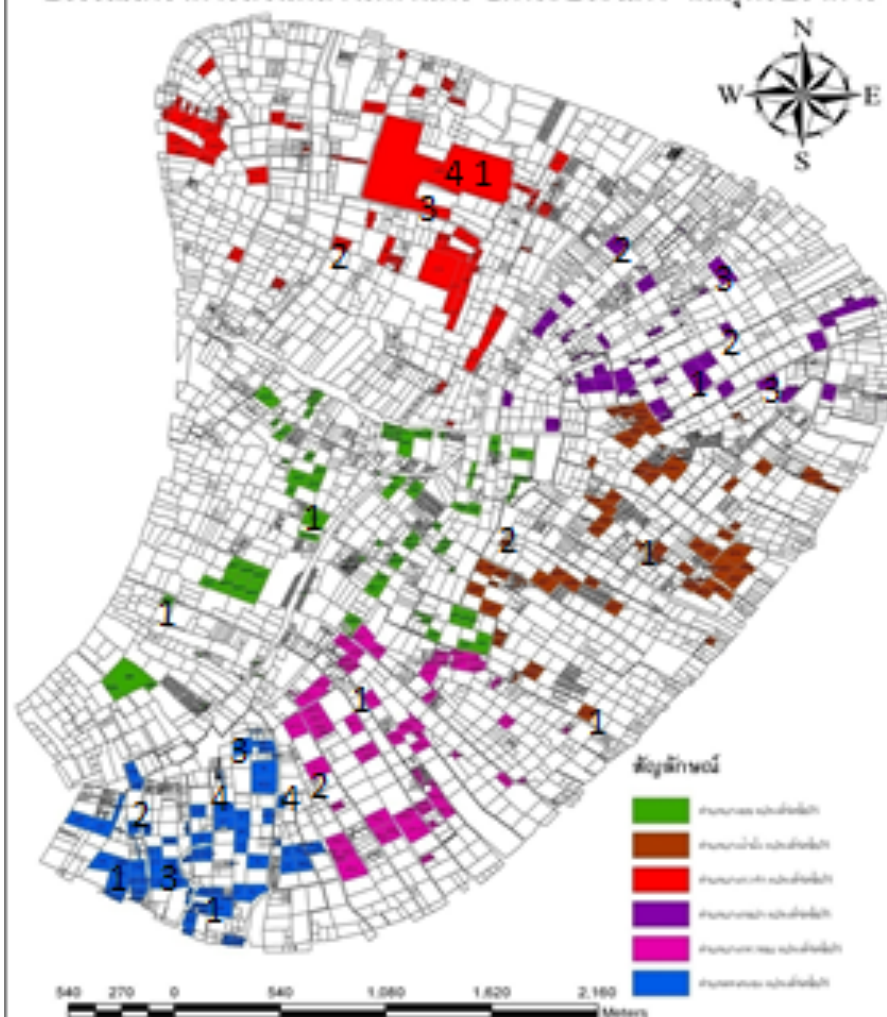
LEGENDS

- 1.1 Establishing an exhibition and interpretative center
- 1.2 Maintaining the character and value of the project site for ecotourism
- 1.3 Implementing a natural conservation and urban forestry program as part of the curriculum for local school children
- 1.4 Encouraging local volunteers and youth groups involve the education programs
- 2.1 Developing facilities of the project site to provide more extensive experience to visitors
- 2.2 Marketing the Bang Kachao site to potential visitors
- 2.3 Training the local people as tour guides
- 3.1 Developing conservation sites for feeding endemic fauna
- 3.2 Maximizing the biodiversity of the project site by scientific management

★ SCHOOLS

▲ DEMONSTRATION SITES

แปลงที่ราชพัสดุที่อยู่ในความดูแลของกรมป่าไม้
บริเวณโครงการสวนกลางมหานคร อ.พระประแดง จ.สมุทรปราการ



1 = Rehabilitation sites during
03 May 2012-31 October 2013

2 = Rehabilitation sites during
November 2013- October 2014

3 = Conservation sites during
1 February 2017- 31 December 2018

4 = Bird watching sites during
1 February 2017- 31 December 2018