

An Appropriate Model of Conservation Revival and Develop the Cultural Forest of Temples in Northeastern Thailand by Community Participation

¹Ladda Hongsuraphong, ¹Phra Sumaeteesuthaporn and ²Subunn Ieamvijarn

¹Research Institute of Northeastern Arts and Culture, Mahasarakham University,
Muang District, Mahasarakham 44000, Thailand

²Faculty of Accountancy and Management, Mahasarakham University,
Kantharawichai District, Mahasarakham 44150, Thailand

Abstract: The appropriate model of rehabilitation and conservation of cultural forest by community participation in forest temples focuses on developing and constructing cultural forests within the temples to be public areas that the community can fully utilize and in accordance to the way of life of Thai Buddhists. The concept of Baworn (house, temple, school) is applied to the conservation and development of forests in forest temples by dividing the area of the temple into three areas called Buddhawat (temple), Dharmawa (tower school) and Sangkawat (Monk's house). Each of the three zones are divided into 6 areas, which include Sehnahsana (temple grounds), Afforestation area, reservoir, parking lot, public parks or gardens and roads. The trees and vegetation to be planted are selected to those that are suitable to the local climate, terrain and appropriate to the benefits in each of the three zones. Afforestation sustain ability in forest temples requires cooperation from all sectors in the community, including clergy people and government sectors.

Key words: Cultural forest, forest temple, afforestation, conservation, Northeast Thailand, Isan

INTRODUCTION

Northeast Thailand or Isan is a land rich in natural resources, history and the home of many ethnic groups (Chonpairot *et al.*, 2009). The region is also very rich in natural resources filled with wildlife, fertile soil, water, forest and minerals. The region is abundant in biodiversity and has many varieties of species of animals and vegetation. Human community lifestyle's in the past were dependant and engaged in exploitation of natural resources from the land. The richness of natural resources has created a learning process and local indigenous knowledge creating a unique culture where, the people live off the land. The culture created is one that humans and nature depends on nature and each other. As a self sufficient and independent society, there was no need to save for future needs because there was strong belief in the richness of resources where, there was fish in the water and rice in the fields. This is a reflection of the abundance of natural resources and healthy environment that Thailand had. The wealth in natural resources and environment in the past was the original strength of the country. But that strength is facing a serious crisis in the modern world. The problem was started when Thailand initiated a national economic and social development plan.

The guidelines of the plan were created and agreed by the planning group and developers, was a policy, which copied the strategies of developed countries of the west and focused primarily on promoting macro economics. The policy changed a traditional agricultural society into an industrialized one.

The rapid development caused changes in the livelihood of the people. Development plans created material advancements while, destroying natural resources and destroying the integrity of the environment. Spacious forests were especially affected. But the change and deforestation was regarded as necessary and considered the fundamental basis of modern developments such as the building of dams, reservoirs, roads, houses, buildings, factories and industrial complexes. Land that had been fertile was allocated for increasing agricultural production and golf courses. The contest of natural resources revolved around villagers, capitalists and the state agencies. These conditions severely affected the forests natural ecosystem. The balance of capital resources and environmental sustain ability are directly associated with economic development and fundamental livelihood of normal life and happiness of society as a whole community (Chamarik, 1993).

The current status and conditions of the environment and natural resources today are problematic and is a weakness to maintaining Thailand's manufacturing base, public services and sustainable livelihood in urban and rural areas. During the past 40 years, Thai forests have been destroyed totaling an area of 67 million Rai (1 Rai = 1600 m²). Currently, forest areas remain at 31.92%. Forest areas in each region of Thailand is separated as follows:

- Northern forest areas remaining = 55.16%
- Northeastern region or Isan remaining = 14.80%
- Eastern forest area remaining = 21.47%
- The central forest area remaining = 30.03%
- Southern areas remaining = 24.26%

Attempts to afforestation to expand national forest levels in Thailand, back to 40% has not been successful. About 40% forest area is a level that is crucial to maintain a healthy and fertile ecosystem. When comparing fertile forest areas to other countries, Thailand has a very low ratio, while country such as Japan has 68% and Vietnam has 40%. Especially in Northeast Thailand forests were once fertile with many varieties of trees and once a significant source of timber. The Northeastern region or Isan in Thailand is a plateau, making it convenient to cut and transport timber. The rate of deforestation increased dramatically when the trends of cash crops were introduced. From the above reasons, it persuaded many people in rural areas to change their livelihood from depending on the land to seek economic prosperity by clearing fields and forests for agricultural commerce. They also embraced popular western culture of consumption. These changes have caused severe social and environmental problems. It has also altered traditions and beliefs, deteriorating the basic principles and relationship between humans and nature.

By the middle of the 1980s, deforestation was perceived as a problem for the first time by the wider public in Thailand (Kymlicka and Baogang, 2005). The loss of forest area is due to the economic, social and technological change in Thailand and modernization. The factors that cause deforestation include forestry concessions, which lack control, increasing population, infrastructure development and creation of new forestry reserve areas, proliferation of mechanical power saw, tractor, agricultural commerce and land speculation. When science and technology flourishes, it will also increase the destruction of the natural environment. Because, it responds to the greed, rampage and grabbing of unnecessary levels of happiness and convenience of people at levels, which are more than needed. This trend

is the cause of many social problems such as stress, moral degeneracy, human slaughter, striving for material wealth, property and resources. These social problems are especially evident in the Isan, where traditional customs, faith, rituals and moral beliefs in managing a sustained ecosystem have been changed and in some areas completely disappeared (Thepwethi, 1997). The destruction of nature is majority caused by human actions that lack knowledge. The destruction of natural resources and the environment has caused the shortages of the 4 basic factors required for human existence, which are food, home, clothing and medicine. Therefore, humans should be a good friend of nature and the environment. The most important thing right now is to preserve, rehabilitate and develop the remaining forests to last so that the natural resources can be sustained and be depended upon in the future.

The purpose of this research is to study, the history and development of cultural forest in Northeastern Thailand or Isan. To study, the current state of conservation, reconstruction and development of cultural forests in the northeast forest by community participation and to study, the appropriate model of conservation and rehabilitation of cultural forests in forest monasteries or temples in Northeast Thailand by community participation.

MATERIALS AND METHODS

This research is a qualitative research, which was conducted from July 7th, 2007 to October 30th, 2008. Research area included 7 forest temples located in the provinces Udon Thani, Ubon Ratchathani, Chaiyapum and Nakorn Ratchasima in Northeast Thailand or Isan. The temples included in the research include Wat Khiri Wan Temple, Wat Tam Sap Meud Temple, Wat Theppitak Punarama temple, Wat Lertsawat or Wat Kao Chan Ngam temple, Wat Chai Pumi Pitak temple, Wat Kasornsri Khun temple and Wat Pah Nana Chat or International forest temple. A total of 164 individuals participated as the sampling group, which were made up of knowledgeable experts and the general public. Research data was collected from document analysis and field data that was collected from interviews, questionnaires and workshops.

RESULTS AND DISCUSSION

History and development of cultural forest in forest temples in Northeast Thailand

Wat Khiri Wan temple: The temple is located on a plateau in the province of Nakorn Ratchasima with an area approximately 1,200 Rai. In the past, the forest was fertile and rich. Forest areas consisted of many wood varieties

and considered a rainforest on the mountains in Khao Yai national park. The temple was constructed in the year 1985 as place of Buddhist worship and pilgrimage. The condition of the forest, when the temple was constructed by that time had deteriorated and deforestation was rampant by villagers who cleared fertile forests to grow cash crops. The temple utilized the area of 15 Rai to construct buildings to hold religious activities, accommodations and roads. The remaining areas were conserved and afforested with new trees and vegetation in the model of forest gardens and forest conservation parks.

Wat Tam Sap Meud temple: The temple is situated on a plateau in the province of Nakorn Ratchasima with an area of 168 Rai. Originally, the forest was a mixed fertile forest. In 1957 the temple was faced with a water shortage caused by deforestation, which affected the natural water flow. The stream that used to flow through the temple evaporated and the trees deprived from water. After Buddhists monks moved in they started conservation programs, which were respected by the villages and gradually restored the forest and the wildlife returned to the area.

Wat Theppitak Punarama temple: The area of the temple is located on a plain adjacent to the mountains in the province of Nakorn Ratchasima. The temple area is approximately 73 Rai, which is comprised of flat areas and mountains. The flat areas were utilized as temple buildings while, the mountain areas of the temple was conserved as a dry tropical forest, mixed forest and rocky terrain in which the forests received permission from the department of natural resources and environmental to implement conservation measures, rehabilitation and development projects.

Wat Lertsawat or Wat Kao Chan Ngam temple: The temple is situated in rocky terrain on the mountain in the Province of Nakorn Ratchasima. Originally, the forests in the area were degraded, but conservation and afforestation efforts were initiated when pilgrimage monks choose the destination to build a temple. The forests gradually returned and development continued. Currently, the temple area is about 500 Rai, but the abbot and monks can only take care of 268 Rai. Conservation efforts that the temple has undertaken include afforestation of destroyed forest areas by wildfire, development of water reservoirs with dikes and dams within the temple, which have provided the surround forests with an abundant water source, wildlife and fertility.

Wat Chai Pumi Pitak temple: The temple is located on mountains of Phu Lan Kha mountain range in the Province of Chaiyapum. The forest surroundings of the temple were originally a fertile Rainforest. The rich ecosystems had many varieties of trees, herbs, wild mushrooms, flowers and native wood types. There are also 2 ponds located within the temple area, which receives water from the Phu Lan Kha Mountains. The large ponds are utilized to rearing fish and other aquatic animals such as soft-shelled turtles, which the villagers bring to release for merit making.

Wat Kasornsri Khun temple: The temple is located in the Province of Udon Thani, situated in lowland valleys, which used to be the community's old cemetery. The forest is a mix of miscellaneous trees and forests. The temple area is about 163 Rai, which is made of original woodlands and afforested areas. Temple buildings were limited and only built to support religious activities because the temple is heavily engaged in afforestation and wildlife conservation. Temple grounds are fertile and full of shade providing a fertile environment for trees, vegetation and wildlife. Within the temple grounds there are many wildlife species such as birds, lizards, squirrels and peacocks that the temple Raises with projects in afforestation, conservation and developing cultural forests.

Wat Pah Nana Chat or international forest temple: The temple is located in the Basin area in the province of Ubon Ratchatani and was reconstructed from a deserted temple, which was an old abandoned cemetery. The temple was eventually developed into a modern temple and residence of Buddhist monks from foreign countries. The area of the temple is approximately 356 Rai and surround by mixed forests that were original woodlands and forests that have been afforested. Currently, forest conservation and rehabilitation projects are undertaken and managed by foreign Buddhist monks.

Current conservation status, rehabilitation and development of cultural forests in forest temples in Northeast Thailand: From the sample group of the 7 forest temples, the process that was undertaken to successfully conserve and rehabilitate cultural forests in forest temples in Northeast Thailand include initiation, cooperative thinking, operation, control measures, evaluation and mutual benefits.

Initiation: Analysis of the research results conclude that the Buddhist abbot is the most important and single person in initiating conservation, rehabilitation and development of afforestation in temple forests. This is

mostly due to the fact that the Buddhist abbots were ordained and cultured from their teachers in the concept of developing forest temples by developing the surroundings into a forest or jungle. Which, coincides with the truth that Buddha during his lifetime lodged, gained faith and reached en-lightment within the forests by the teachings of his teachers? Therefore, Buddhist monks mainly from forest monasteries are nurtured with the belief and ideology in creating their temple surroundings to duplicate the fertile forests just like during Buddha's era.

Cooperative thinking: Results from the discipline of Buddhist monks and their daily routines have made people to believe in the monk's behavior, especially, the temple's abbot. The good behavior and sincerity of the abbot has unified the people in the model of joint consultation meetings, encourage the exchange of learning within the community and brainstorming in activities promoting the rehabilitation and maintenance of forests and support measures that the temple should receive from the community.

Operation: The temple is a place of worship, which involves community activities conducted within the temple. The abbot of the temple must receive support from the community to ensure the success of the activities. Such as conservation, rehabilitation, development and forest management within the temple. Forest conservation projects must have cooperation from the community in the form of participation in the operations. Especially, the labor contributed by the locals, students and private agencies. Government agencies provided budget and funds for purchasing tree sprouts.

Control measures: Supervision is required from all parties to collaborate with each other. Government department and the community must cooperate in joint operations to the reconstruction and development of cultural forest conservation in the forest temple and make sure that all activities are just and carried out accordingly.

Evaluation: Assessment is the responsibility of all parties to participate in a joint evaluation. Everyone should suggest improvements and solutions to resolve defective measures for improvement and provide a sustainable development.

Mutual benefits: The surrounding community receives direct and indirect benefits from the cultural forests such as food, herbal medicines, clothing and materials to build homes.

The 3 main elements of conservation, rehabilitation and development of cultural forests in forest temples by community participation.

All sectors within the community must be involved from the start of the project, until completion. All parties must cooperate in a joint initiative, brainstorming, proposing ideas, manage the operations and evaluate the benefits. The temple must also persuade the general public to acknowledge and respect the temple grounds as a wildlife sanctuary for all wildlife and promote the preservation of animals and nature. Promoting public awareness towards protecting nature should be included on occasions such as traditional festivals and during sermons given by the abbot and monks. Signs to remind people to refrain from acts against nature and wildlife and to conduct moral acts should be visible throughout the temple grounds.

The abbot of the temple is the primary initiator in efforts in afforestation, prevent forest destruction from wildfires and invasions from capitalists. Important elements of the research of restoring the forest temple must rely on the abbot of the temple with collaboration with the community working together to restore the forest. The abbot and community must use all measures of promotion and kaise public awareness and be diligent in their tasks because restoring the forest back to fertile environment will take many years.

To ensure a sustainable cultural forest development requires all sectors of the community, private groups and the clergy to create a model of forest conservations in forest temples and they should create an organization or network on forest protection. The network when established should be elevated to national level with support from the central government in budget and funds. Many temples in Thailand currently do not organize or plan their temple grounds to support forest and wildlife conservation. A model or plan in organizing appropriate areas for cultural forest conservation within forest temples from the 7 temples from this research can provide a blueprint for other temples to follow.

Model for the conservation and rehabilitation and development of cultural forests in forest temples in Isan by community participation: The appropriate model of rehabilitation and conservation of cultural forest by community participation in the 7 forest temples included in the sample group is a model, which focuses on developing and constructing cultural forests within the temples to be public areas that the community can fully utilize and in accordance to the way of life of Thai Buddhists. The way of life of Thai Buddhist is referred to the Thai word Baworn meaning house, temple and

school, which support and patronize each other. Baworn is applied to cultural forests in forest temples by dividing the area of the temple into three areas called Buddhawat (Temple), Dharmawat (tower school) and Sangkawat (Monk's house). Each of the three zones are divided into 6 areas, which include Sehnahsana (temple grounds), afforestation area, reservoir, parking lot, public parks or gardens and roads. Planting trees in each of the areas must be supported by all parties within the community, private sector and state in cooperation to protect remaining forest and trees from being destroyed. Planted tree species in each area should be planned and according to diagrams consulted and designed by expert gardeners. The trees and vegetation to be planted should be selected to those that are suitable to the local climate and terrain. Other considerations include blooming seasons, fruit bearing season, benefits and meaning of the trees according to different areas of the temple.

'Sehnahsana' (temple grounds): Sehnahsana is the entire area of the temple grounds, which include structures such as the temple, shrine, pavillion, Monk's and Nun's accommodation, chedi, bell tower, drum tower, trai pitaka tower and sermon hall. The trees planted should be considered accordingly to their meaning, life cycle, Thai tradition and appropriate to the structure, which it surrounds and to make it as natural as possible. Trees planted around temples, monasteries and shrines should highlight the types of trees in Buddhist history. For example, Bohdi tree or Pipal tree where the Buddha gained his en-lightment. Other appropriate trees include Banyan tree. Traditional Thai trees include white and yellow champaka and *Marraya paniculata*. Monk's and Nun's lodging and areas for the general public should plant a mixed varieties of trees, which emphasize holy grounds, honor, peace and trees that provide shade and cool atmosphere.

Reservoir, water well, pond or dam: These reservoirs are created to retain water collected from natural sources for use within the temple. The reservoirs help to create an atmosphere of a fertile wet forest and also a barrier against wildfire. The reservoirs should be adequate to support different kinds of fish and reptiles. Such as various fish species, frogs, bullfrogs and turtles. Other animals should also be able to benefit from the water source and all wildlife should be protected from poachers. The trees and vegetation planted within the reservoir areas should be types that are able to protect the banks of the reservoirs. Trees and vegetation grown within the water should be moss, thallophytic plant, lichen, willows, elephant grass,

bamboo variants and water lotus in various genera and colors. Buddhists refer the lotus to the meaning of worship.

Parking lot: Measures should be provided so that the general public and pilgrims have convenience in merit making and worship. Trees planted in these areas should be those that can provide an abundance of shade, a lot of leaves and the branches must not be a danger to vehicles. The trees appropriate for the parking lot include *Bauhinia purpurea* Linn, Banyan tree, *Cassia fistula* Linn, *Lagerstroemia speciosa* Pers, *Lagerstroemia loudonii* Teijsm and Binn, rain-tree, Saman and Indian coral.

Public garden or park: The garden and park are important areas, which the temple should provide as rest areas to those who have come to pilgrimage and make merit. The garden should be arranged as a cultural terrace with items of worship constructed within the grounds such as Buddha statues, monuments, pavilions and rest halls. The area should be planted with tree species that provide shade and fragrance. The garden should also be populated with forest herbs. Flowers and trees planted around the base and around pedestals or benches such as *Crinum asiaticum* Linn, Araceae and Banana trees. Park benches and stools should be made from natural materials such as tree stumps, logs and boulders to maintain a natural atmosphere. Objects made from concrete should be made in the form that resembles natural substances such as wood and rocks. The flowers planted within the garden should be varieties that are easy to grow, easy to maintain and have long life cycles. The names of the trees, herbs and flowers should be affixed on or near the trees in Thai and English. The trees usefulness and benefits should also be provided on the signs to use as a source of education for students to learn.

Roads and streets: Roads within the temple should be divided into main roads, secondary roads and small roads. Trees should be planted on both sides of roads. Trees should be the type of perennial plant species and flowers in a variety of colors and aromatic genera should be considered. Secondary roads or small paths linking various parts within the temples should be constructed and maintained as a foot path. The small roads and paths should not be used as a route for vehicles. Small or miniature gardens should be created alongside these small roads and paths. The paths should be accompanied by small herbal gardens and spices such as Lotuses and *Achasma sphaerocephalum* Holtt.

CONCLUSION

Model of rehabilitation, conservation and development of cultural forest in Northeast Thailand by community participation requires core beliefs and faith in Buddhism. Buddhist monks since ancient times have been leaders in faith and also in community activities (Chitakohb, 2006). The faith and belief in Buddhism allows the people to develop knowledge so that they know what actions should be and shouldn't be allowed, understanding and recognize the value of conserving natural resources and wildlife by promoting activities and publicity so that the local people living around the temple have faith and belief in the monks and their conservation efforts. Buddhist monks must conduct themselves as an example for others to follow in their fair discipline. A good example of initiatives to conserve nature can be started by creating and maintaining the temple grounds to be cool, clean, tranquil and creating a natural environment, which promotes spiritual and physical development in the model that is appropriate to ethical and traditional goodness. The teachings from Buddhism should be practiced through rituals and beliefs of Northeast Thailand traditions. The basic principles of Buddhism is the emphasis of knowledge, which is derived from the principles of not easily believing without proving by yourself (Ratchawithayalai, 1992). The belief in religion of the people in Northeast Thailand is deeply rooted in Buddhism in all aspects, which includes Buddhism teachings, believe in the rituals and believe in those who conduct the rituals who are monks. When monks initiate forest conservation and rehabilitation activities, the people react and cooperate accordingly in belief. In the end both clergy and community, benefit from their combined efforts.

The appropriate model within the landscape metrics are divided into 3 zones, which are Buddhawat, Dharmawat and Sangkawat. Each of the zones must plant tree and vegetation that are consistent with the utilization each area and reflect the relation to Buddhist history.

SUGGESTIONS AND RECOMMENDATIONS

Relevant government agencies should support forest conservation projects with budget, allocation of funds, provide consultation in managing the cultural forest in forest temples. The local community must always be involved and also the local municipality organization, which is the closest state administration to the temple.

The municipality should include the forest conservation and development plans into the organizations policy so that funds and budget can be allocated to support environmental projects and develop the landscape within the temple.

Local communities must cooperate in the monitoring and prevention of forest destruction. They must also help each other in preventing capitalist investors from encroaching and destroying the forest. They must also provide labor and participate in conservation and rehabilitation activities do their best effort.

Private organizations are an important source to combat and develop forest conservation activities by providing funds and budgets in support of the needed activities.

Further research should be conducted to study the rehabilitation and development of forest conservation in other areas such as government agencies, educational institutions, churches and mosque and at local residential homes because it will provide the community with more green areas.

Research into the rehabilitation and conservation of cultural forest in other regions should be conducted and compared to the results in Northeast Thailand to enhance conservation and rehabilitation activities so that development plans are efficient and whether the results from Isan can be applied to other areas in Thailand.

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