

## Use of Indigenous Knowledge for Conservation and Development of Fishing Career at the Lampao Dam in Northeast

<sup>1</sup>Budsakorn Saenyabud, <sup>1</sup>Songkoon Chantachon, <sup>1</sup>Phisit Boonchai and <sup>2</sup>Niwat Thongwol

<sup>1</sup>The Research Institute of Northeastern Art and Culture,  
Mahasarakham University, Thailand

<sup>2</sup>Department of Philosophy and Religion, Faculty of Humanities and Social Science,  
Rajabhat University, Nakhon Ratchasima, Thailand

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**Abstract: Problem statement:** The problem of examining this title was caused by building the Lampao Dam. It was the important cause which threatened the ecosystem. Biological diversities and the quantity of water animals decreased, impacting the way of life of fishermen at Ban Sa-at Na Thom, who had to face poverty and had to struggle hard. This was because the resources in water sources were snatched for uses by villagers. The study purposes were to examine the background of building the Lampao Dam and the use of indigenous knowledge for conservation and development of the fishermen's career. **Approach:** The case study area was Ban Sa-at Na Thom, Tambon Lamkhlong, Amphoe Muang, Changwat Kalasin. The study procedure was the qualitative research methodology. Data were collected from related literature and field data were collected using structured- and unstructured-interview forms and focused group discussion from 32 informants. The study finding were presented by means of a descriptive analysis. **Results:** The findings revealed that, for the background of building the Lampao Dam, the construction began in 1963 and completed in 1968. The construction purposes were for flood relief, for agriculture and for recreation. The use of indigenous knowledge relied on the traditional concept by believing in the powers of Phi Pu Ta Phon Phraison (the spirits of villagers' ancestors who guard the forest). They used the belief as the rule to control fishermen not to catch fish in the forbidden area of forgiveness of Chao Pu spirit called "forgiveness water area" of the ancestors' spirit. They used indigenous knowledge of new concept for conservation of fish breeds. This was generated from cooperation in building homes for fish to live in, called "hoe pla" making. Development of fishing career was generated from the use of indigenous knowledge of the new concept of performing activities on the national fishery day. They performed the ritual of life lengthening and activities for the short-term fishing career from nurturing water animals together with the long-term fishing career from conservation tourism by fishing. **Conclusion:** The fishermen used indigenous knowledge for conserving fish resources using the traditional concept of believing in the powers of Phi Pu Ta and they used indigenous knowledge in the new concept of relying on the state sector and self-reliance and participation of everyone in retaining the fishing career in a short term and a long term. It could reflect building the dam and household economic development which could exist using self-reliant and market system-reliant economy.

**Key words:** Indigenous knowledge, the use of indigenous knowledge for conservation of fishing career, development of the fishing career, the Lampao dam area, northeast Thailand

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### INTRODUCTION

The Lampao Dam is the largest soil dam in northeast Thailand under the irrigation project for agriculture. There is no electricity production. It was built in 1963 and completed in 1968 to bar the Lampao River and Huai Yang Canal at Ban Nong Song Hong,

Tambon Lampao, Amphoe Mueang Kalasin. Building the Lampao Dam could impact the way of life of the villagers around the dam. There were changes in being land ownerships because the government purchased the lands from the villagers to build the dam and the government asked for the public lands. The villagers had to change their occupation from rice farming to

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**Corresponding Author:** Niwat Thongwol, Department of Philosophy and Religion, Faculty of Humanities and Social Science, Rajabhat University, Nakhon Ratchasima, Thailand Tel: +668-0177-0746 Fax: +66-43-754316

fishing career because they had no lands for living-making and they could not gather food from natural forests (Mibun *et al.*, 2007). This cause study of Ban Sa-at Na Thom, Tambon Lamkhlong, Amphoe Mueang, Changwat Kalasin examined the background of building of the dam and changes in careers of the villagers at Ban Sa-at Na Thom from rice farming the chief career to be fishermen. This was generated from the villagers' way of thinking: What causes can connect to the use of water source from the dam? And how does the water from the dam play its role in the way of life of Ban Sa-at Na Thom villagers?

## MATERIALS AND METHODS

The qualitative research methodology was used. Data were collected from related literature and field data were collected using structured- and unstructured-interview forms and focused group discussion from groups of informants: 15 fishermen, 3 fishmongers, 5 fish buyers, 3 owners of fishing tool shops, 3 fishery officials and 3 community leaders, totally 32 informants. The finding were presented by means of a descriptive analysis.

## RESULTS

The importance of building the dam to the way of life of Ban Sa-at Na Thom villagers. The Lampao Dam was built according to the government policy as related to the way of life of Ban Sa-at Na Thom villagers because the area of this village is in the area of the Lampao Dam. The building of the dam appears as in the following details.

**The background of building the Lampao Dam Changwat Kalasin:** In Changwat Kalasin there are 2 major origins of rivers flowing through this area. A large quantity of rain water in the flooding season have impacts on people in the Lampao basin. They face the problems of natural danger of floods. This generated the project of building the Lampao Dam from the Lampao River which is the branch of the Chi River. Its origin is in Nong Han, Amphoe Kumphawapi, Changwat Udon Thani. It runs through Amphoe Wang Sam Mo of Udon Thani; Amphoe Sahatsakhan, Amphoe Mueang Kalasin, Amphoe Nong Kung Si, Amphoe Huai Mekand Amphoe Yang Talat; then it runs to join the Chi River in Amphoe Kamalasai of Changwat Kalasin. The Lampao River is totally 250 kilometers long. The area of this river basin is 5,960 square kilometers. The Irrigation Department began this project in 1956 by building the large reservoir to keep

water in the north of the dam. It was used for irrigation and for relieving floods and preventing floods. The building of the dam began in 1963 in 3 phases: building water channels, water-draining canals, dikes and complementary buildings in a total area of approximately 110,000 rai (2.5 rai = 1 acre). The construction began in 1963 and completed in 1968. From the Lampao dam construction, there were many villages through which the Pao River ran. Ban Sa-at Na Thom is the village in the area near the Lampao Dam involving the building of the Lampao Dam. For its background of community establishment, people moved to settle down from the long past from the Kingdom of Lan Chang Thai-Laos about 200 years ago. Archeological evidence still appears at present. There are dikes and canals and swamps around the village, namely Nong Waeng Swamp, ancient moats around the village in the area of Mueang Siang Som. These things show that people in the ancient community of Sa-at Na Thom were in the agricultural society. They adjusted themselves to rely on natural resources in the community because there are dikes and canals from water sources around the village for them to seek natural food for living on.

In 1892 a group of Thai-Laos moved from Ban Kham Mak Mai, Ban Kham Bonand Ban Nong Son in Amphoe Yang Talat, Changwat Kalasin. This group traveled along the Yang River in the south of Amphoe Yang Talat. Then they established the village near Nong Waeng. There are low plains for cultivating crops. Next to Khok Ngu highland were abundant natural forests. Their settlement during the year 1926 had a small population, only 10-15 households. The village was called Ban Sa-at Na Thom (Sata *et al.*, 2008).

**The impacts of building the Lampao Dam on the way of life of Ban Sa-at Na Thom villagers:** From the building of the Lampao Dam which was completed in 1968, Sa-at Na Thom community lost its land for living-making and public land which community people used to use together. Forest areas and forests of mushrooms were widely destroyed in the area of the origin of the Lampao River. The lands in the community area near the dam were expensive. Poor people had limited opportunity to own the land for living-making. Approximately 4,000 rice farming households lost their lands for living-making. The government declared that the public lands and people's lands had to be surrendered to the government. It took a long time to pay compensations. The money they received could not buy new lands because the lands prices increased. People in Sa-at Na Thom community

lost their own lands for living-making and Khok Ngu natural forest to the government to build the dam. Of all the 100 households only 10 households did not lost the lands. In 1963 many families refused to move away. They still lived there and made their livings in the area around dam where there were no floods. For the impacts while the Lampao Dam was being built, the villagers moved to look for new places for living-making. In some places they protested the government because they did not receive compensations for their lands, or they did not receive the exact amount of money. The officials paid the money to wrong people by paying to the old land owners. Moreover, the allotted lands were inappropriate for crop cultivation. It appeared that the number of villagers who were moved from the Lampao Dam to the area allotted by government was smaller than the number of people who moved from other places.

**Changes in the way of life of Ban Sa-at Na Thom villagers from rice farmers to become fishermen:** Sa-at Na Thom community is near the edge of the Lampao Dam. It does not receive benefits from the dam for agriculture because the community is located on the highland which is the origin of river. It costs too much money from the government to take water from the Lampao basin to this highland. Therefore, this community is not under the Lampao irrigation project. The community people use the Lampao Dam for earning living by fishing. After losing their lands, about 50% of the population catch fish from the Lampao Dam water to exchange with rice. About 10% of the population still have rice farming. The other 40% move away to live in other places. The building of the dam caused them to change the name Na Tham (rich rice field) to be Na Thom (sad rice field) because the lost their lands and the land prices were expensive. The villagers make living by fishing without modern fishing tools. They still used fish nets, cooping nets, hooks and small boats. The caught fish is used to make fermented fish and dried fish. Then they sell the fish to buy rice. For community economic development of Ban Sa-at Na Thom villagers, after the building of the Lampao Dam, their chief career is fishing. Few villagers make their living by rice farming, showing adaptation of community people to the social context. When there is a water source and there is water all the year round, the villagers can catch fish and other water animals and do not think any longer that the dam is the problem of living. Instead, they adjust the way of life from rice farmers to become fishermen. The production has changed from substantial production to commercial production in rapidity. They use modern fishing tools,

large-sized boats, large pulling nets. Due to the lack of rice without rice farming, they must make living by fishing for money to buy rice. Barter trade is at the relatives level. In addition, they sell fish in the market system for money.

**The use of indigenous knowledge for conservation of the fishing career:** The fishermen at Ban Sa-at Na Thom adjust themselves to have the fishery career by using indigenous knowledge in 2 types: indigenous knowledge from traditional concept generated from beliefs in phi pu ta of Siang Som, called Chao Pu Phon Phraison. These villagers believe that phi put a are spirits of their ancestors who built Ban Sa-at Na Thom in an ancient community. When they moved here they built this village. Thus there is the holy house of Phi Pu Ta Phon Phraison as a place of worship for the community people. In the sixth lunar month the villagers perform the ritual of worship for the community to be peaceful and to be able to catch a large number of water animals. From the belief in powers of Phi Pu Ta, they have occurred the regulations for societal control. There are the following regulations to prohibit fish catching: The area of forgiveness of Phi Pu Ta (spirits of ancestors of Siang Som). For the beliefs in powers of Phi Pu Ta Phon Phraison, there are common regulations in the area of the village landing place. Fishing is prohibited. A larger number of fish can breed rapidly. The fishermen in Ban Sa-at Na Thom and nearby villages rely on water animals for the living. This is promotion of conserving the fishing career to be in existence because there are several kinds of fish to catch all the year round and because there are water source for fish to breed in the reservation area due to the belief in their ancestors' spirits.

**Building home for fish to live in:** Ban Sa-at Na Thom villagers have cooperation in conservation of fish from the use of indigenous knowledge of the new concept. They use natural tree branches and weeds of various kinds to make "hoe pla" or fish homes called "luang pla" for fish to live in. The fishermen go together to catch fish from "hoe pla" without destruction of them and weeds. It is the same as building homes for fish to live in for a period of time. Fish can be caught all the year round. This shows that household economy of the fishermen at this village can occur with incomes every day. It is because there are water sources for fish to breed and places for fish to live in. Thus they have fish as natural resources for use in consumption and sale as goods together with conservation fish breeds (Ubonlert *et al.*, 2009).

**The use of indigenous knowledge for development of the fishing career of Ban Sa-at Na Thom villagers:**

The fishing career at Ban Sa-at Na Thom has been adhered to after the building of the Lampao Dam during 1968-2009 due to the supporting factors in the following details:

**The national fishery day to perform the ritual of life lengthening:**

For the development of the fishing career, the state policy has declared that the first of April every year is the national fishery day. There are activities for freeing fish into the water of many dams. The Lampao Dam has the activity for freeing fish and on this particular day fishing is prohibited. It is the same as development of water, not allowing people to disturb or to destroy natural resources of water animals of different kinds. As results, the number of fish increases due to freeing fish into water sources and the fishermen stop fishing. Indirect benefits are: It is development of the fishing career to have time for relaxation and to make merits by freeing water animals for life lengthening to have happy life according to the belief I Buddhism of northeastern people. There are rituals of freeing animals to enhance life fate. The activities on the National Fishery Day are related to the way of life of the fishermen at Ban Sa-at Na Thom such as people in general participate in the activities for freeing fish, they stop fishing in the Lampao Dam, causing the fishermen at this village to have time for relaxation with their families for only a shot time. However, it is development of their own minds not to kill water animals for one day. It seems like purifying the mind not to be against the precept according the principles of Buddhism (Tambiah, 1970).

**Short-term fishing career for nurturing water animals:**

To follow the awareness of the importance of the fishing career at Ban Sa- at Na Thom, the villagers cooperate with the state in developing fish raising under the project for nurturing fish breeds from nurturing small fish in the nets. They use their own areas of water landing places by diving the water area for members of the Future Fund Project from nurturing water animals. The state provides promotion of fish feed and fish breeds for catching fish to sell without using fishing tools. It is like decreasing the cost of production because they do not need to buy such tools as fishing nets of different kinds and boats. Raising fish in the nets is to save the cost of fishing tools. The fishing career occurs in their own households by using labor to look after their fish, feed the fish and prevent fish pets. The villagers participating in the project are like making the fishing career which the state promotes,

gives knowledge of fish raising but relying on their self-reliant labor. Then they pay back the cost to the state in the form of soft loan. This is like the fund for enhancing incomes savings in their households by raising fish in the nets in a short time by relying on the state and themselves. It is community economic development with the production unit and consumption unit in their own households. That is, it is production for consumption and sale to make incomes based on the sufficiency economy principle (Ravipolsadtanan *et al.*, 2009).

**The long-term fishing career, conservative tourism and fishing:**

From the purposes of building the Lampao Dam to use water for agriculture and to use the sources of natural resources of the dam as places of recreation and relaxation of tourists, Ban Sa-at Na Thom villagers have formed a group to make the project for fishing conservative tourism in the area of Nong Waeng Swamp. The members of the project have released many kinds of fish into this swamp which is a large-sized water source. In the area around Nong Waeng Swamp they grew several kinds of ornamental plants to make the climate shady and pleasantly cool. It is a community tourist attraction. There is a fishing activity as a pleasant hobby. However, each tourist must pay for hiring a fish rod and buying fish feed. It is beneficial to the fishermen at Ban Sa-at Na Thom in community economic development by community participation in origination of this activity for building incomes to rotate within their own community. They do not have to make their living by direct fishing. Instead, they use the way of thinking to culture fish breeds, increasing fish breeds from natural water sources and to add the values. They have incomes at the production group level. It is development of the fishing career using several activities, but they use fish as a median for tourists who visit the Lampao Dam in all seasons from a long-term fishing career, fishing to relaxation all the time (Kaewthep, 2004).

## DISCUSSION

The findings revealed that in the way of life of Ban Sa-at Na Thom villagers they used water to make their livings by fishing, causing the way of life to exist because they used indigenous knowledge of the community people to keep and extend the fish breeds. They used water resources together by believing in powers of Phi Pu Ta Chao Pu Phon Phraison and also used indigenous knowledge in relying on state powers to participate in the project for nurturing fish in the nets. They had activities for organization of fishing

conservative tourism. Thus the building of the Lampao Dam in the way of thinking of these fishermen was like large rice fields of all of them because they made their livings chiefly by fishing instead of rice farming. They earned regular incomes. The use of indigenous knowledge of conservation and development of the fishing career in the area around the Lampao Dam caused these fishermen to had methods of adapting themselves to the fishing career using activities for using water resources as places for seeking food and relaxation. They had fish and water as very important resources for human beings. It is in accordance with their saying: "The dam is the large rice field" of everyone at Ban Sa-at Na Thom because there are no droughts and no floods. The fishermen earned incomes in all seasons. It was because short-term and long-term fishing career was promoted according to the activities generated from their belief in powers of the spirit and state reliance.

### CONCLUSION

In this study of the use of indigenous knowledge for conservation and development of the fishing career in the area around the Lampao Dam in northeast Thailand: a case study of the fishermen at Ban Sa-at Na Thom, from compilation of knowledge obtained from collecting field data in supplement to synthesis of related literature, it was found that the Lampao Dam is a large rice field of fishermen at Ban Sa-at Na Thom. It was because they could make living by fishing in all seasons. There were no droughts and no floods because these fishermen used indigenous knowledge for conservation fish resource using traditional conception of believing in Phi Pu Ta and new concept of relying on the state and on themselves. Participation of everyone could retain the fishing career in the short-term and the long-term reflected the building of the Lampao Dam and household economic development. The change from rice farming to the fishing career could exist by the way of life as adapted to the ecosystem of the building of the dam generated from the state policy. The fishermen could exist by the self-reliant economy and the market-reliant system. Various fishing activities were useful to conserving fish breeds and developing the fishing career. It could be the model of the way of life of fishermen depending on the changing ecosystem. The study findings could be use as information for conservation and development fishing career in other dam areas with similar context in the future (Rithidej *et al.*, 2005).

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