

# The Development of Local Authority Personnel for Vision Forming and Sustainable Conservation Strategic Planning in Bangpakong River, Thailand

Phussadee Phummara<sup>a</sup>, Supaporn Songpracha<sup>b</sup>, <sup>a,b</sup>Faculty of Social Sciences and Humanities, Mahidol University, Thailand. Email: <sup>a</sup>ultra7white@hotmail.com, <sup>b</sup>supaporn.sog@mahidol.ac.th

This study aims to develop the local authority personnel for visionary forming and strategic planning on Bangpakong River's sustainable conservation. The mixed-method research was used, both qualitative method – in-depth interview, focus group discussion and future search conference (FSC) – and quantitative method – survey research through the questionnaires. Data were analysed through descriptive statistics including percentage, mean, standard deviation, paired T-test and content analysis. According to the results of this research, it is found that the procedural model can develop local authority personnel to create visions and strategy plan on the Bangpakong River's sustainable conservation. Furthermore, the procedural model consists of the three significant components to be connected together: the first component - the current situations and the Bangpakong River's conservation problem; the second component – the knowledge and understanding about Bangpakong river's conservation; and the third component – the potential of local government organisations. Based on the results, these three significant components are the factors affecting the development of a local authority personnel to create visions and strategy plan on Bangpakong River's sustainable conservation. Considering the aforementioned factors, the research and development on environmental education was used to mobilize the local authority personnel in order to create visions and strategy plan on Bangpakong River's sustainable conservation.

**Key words:** *Development of local authority personnel, Visionary forming, Sustainable conservation, Strategic planning, Bangpakong River*



---

## Introduction

Thailand is focusing on the nation's development in every dimension, that is, economics, society, natural resources with environments and stability in a holistic way. This focus takes a pivotal role in contributing to the stability, wealthiness and durability of development in the near future. Similarly, according to the dimension of natural resources and the environment's development with the 12th National Economics and Social Development Plan (2017- 2021), importance has been given to sustainable natural resources management and environments. Additionally, the growth strategy, with its consideration of the environment, focuses on the restoring and maintaining of natural resources within sustainable development, including the fairness needed for stability in the country and effective natural resource management.

The Thai government has given the roles and the important tasks concerning local natural resources and environmental management to local government organisations, such as the Provincial Administrative Organisation, the Municipality, the Sub-district Municipality and the Sub-district Administration Organisation. With the local government organisations still having a significant participatory role in decision making, including looking after, watching out for and agreeing with their power as law regulators, the visions of the personnel of local government organisations contribute to suitable and fair natural resources management in local areas.

Chachoengsao Province is a large province in eastern Thailand. Chachoengsao's Bangpakong River, with a total length of 122 kilometres, is an important river to people's lives, from the past until the present day. There are several biomass resources in the Bangpakong River that are applicable for both consumption and use, such as shrimps, shellfish and several kinds of fish. Thus, it can be accounted for as having important food resources for people to consume in their households and to sell to increase their incomes, supporting families and good economics in the communities. Additionally, Bangpakong River still has good advantages in supporting agriculture, irrigation, fishing, tourism and industry (being the raw water source for manufacturing), as well as connecting communities and taking the waste water from communities.

In the Chachoengsao Province, six of eleven districts in the government area are in proximity to the Bangpakong River: Bangnampraew District, Khlongkleun District, Bangkhla District, Mueang District, Banpho District and Bangpakong District. Incidentally, there were 38 local government organizations of Chachoengsao Province has jurisdiction of the government area surrounding Bangpakong River. In 2017, the water quality in Bangpakong River at 14 stations (those shown in figure 1) that each station has total 5 parameters, such as dissolved oxygen, biochemical oxygen demand, total coliform bacteria, Fecal coliform bacteria and ammonia-nitrogen quantity. Comparison with the quality water standard in the surface water. It was found that the water quality of Bangpakong River was in the average standard with seven (7) stations





The main objective of this research therefore is to develop, in the local authority personnel in the local area, the vision forming and setting up of the strategic plan for Bangpakong River's conservation in a sustainable way.

## **Methodology**

### ***Research design***

This research has used the mixed-method approach. This is a combination of quantitative research – documentary research and action research with the method of in-depth interview, including setting up for focus group discussion and future search conference (FSC) – and qualitative research – survey research using questionnaires.

### ***Research process***

This research consists of three steps as follows:

- 1) Study the current conditions and conservation problems with the use of the Bangpakong River, using in-depth interview and the focus group discussion.
- 2) Studying the knowledge and understanding of Bangpakong River's conservation and the requirements of local authority personnel for personnel development, by survey.
- 3) Develop the local authority personnel for setting up the strategic plan of Bangpakong River's sustainable conservation, using the future search conference technique which is the way for a community to create a shared vision for the future. This technique involves a large group of relevant people who take part in a highly structured process.

### ***Target group of the research***

In this research, the researcher has determined the target group and the selection standard of the participants with the methods in steps as follows:

- 1) In-depth interview: The researcher has constructed the research by using of purposive sampling with the key informants who have work experience of at least three (3) years in Chachoengsao Province, Thailand. The key informants consist of: two (2) executives of the local government organisation, two (2) staff of the environmental official agency, two (2) staff of the environmental non-government organisation, two (2) policy and environmental planning staff, two (2) fishermen who access the water from Bangpakong River, and two (2) stakeholders utilising the Bangpakong River.

2) Focus group discussion: The focus group discussions were divided into three for each 10 – 15 people of the local authority personnel of the local government organisation in Chachoengsao Province. The first group included the local authority personnel in Bangnampraew District and Khlongkhleun District. The second, the local authority personnel in Bangkhla District and Mueang Chachoengsao District. The third group included the local authority personnel in Banpho District and Bangpakong District.

3) The study of the knowledge and understanding of the Bangpakong River's conservation and the requirements of personnel development.

The population used in this research are the personnel at the executive level of the organisation or the representatives of the organisation working within the environment from the local government organisation in Chachoengsao Province. From this group, it then consists of the personnel of the Provincial Administrative Organisation, Municipality, Sub-district Municipality and Sub-district Administration Organisation, with a total of 109 locations from each of which come three (3) people, with a total of 327 participants.

In this case, the staff were selected from the local government organisation located near to the Bangpakong River; 38 locations from each of which came three (3) people, with the group sampling as the total of 114 participants.

According to the selection standard of the participants, this was determined by the attributions of personnel in the Provincial Administrative Organisation, the Municipality, Sub-district Municipality and Sub-district Administration Organisation. Accordingly, the participants should be the staff in those organisations from the executive level or those working in the environment or else being from the relevant agencies.

4) The conference, using the technique of the Future Search Conference (FSC): The conference is focussed on operational training management, the knowledge of Bangpakong River's conservation and the joining of it into the creation of vision and strategy plans of the Bangpakong River's conservation, in a sustainable way. In this instance, the participants are the personnel at the level of executives for the organisation, or the representatives of the organisation working with the environment, such as from the Provincial Administrative Organisation, the Municipality, Sub-district Municipality or Sub-district Administration Organisation located near Bangpakong River, with a total of 38 locations from each of which one (1) person is chosen, making the sum total of participants as 38 people.

### ***Research tools***

The tools used in this research are represented by four (4) sets of tools as follows:

- 1) In-depth interview for using with the key informant of the research
- 2) Focus group discussion for using with the local authority personnel for a total of three times
- 3) Questionnaires concerning knowledge and understanding about conservation of the Bangpakong River and the requirements of personnel development. Moreover, this questionnaire is used in the step of surveying in the area of the local government organisations with a total of 38 locations. There after it can be applied to explore, with the acquired level of knowledge and understanding, issues relating to the Bangpakong River's conservation and the development requirements of the local authority personnel.
- 4) Questionnaires of perception and vision about Bangpakong River's sustainable conservation. This questionnaire is applied during the operational training for local authority personnel's development in creating the vision and strategic plan for the sustainable conservation of Bangpakong River. Furthermore, it can be brought into measurement of the conception level and vision-forming for the conservation of the Bangpakong River by the local authority personnel, prior to and after the training.

### ***Data analysis***

The analysis of information consists of these details:

- 1) For the quantitative data, all collected information needed to be checked for its correctness and completeness, and then specified with codes in each subject prior to recording into the computer program for analysing data, as follows:
  - 1.1 General data of the group sampling, the information used to make the descriptive statistics, the information used to present in the form of frequency distribution table and the information used to describe the statistics, such as percentages, means and standard deviation;
  - 1.2 Data about the levels of knowledge and understanding of the Bangpakong River's conservation, to interpret the score values compared with the different means prior and after are integrated with the personnel development using the statistic of the Paired t-test.
- 2) For the qualitative data, the data used was that gained from the in-depth interview including the focus group discussion, the meeting using the FSC procedure technique and the behaviour noticed during each encounter. The data was subsequently checked for correctness and the completeness of information, prior to separating into categories as the problem subjects, and afterwards interpreted for meaning, according to the informant acknowledge. As the result shows, all information is coming from the content analysis of the informants by connecting the relationships and the reasons in each studied subject with the problems.

---

## Results

### *Current situation and conservation problems with the utilisation of Bangpakong River, Thailand*

The current condition of the Bangpakong River at the river's source is at an average standard when compared with the past water condition. Moreover, it was found that biodiversity and biomass resources numbers are declining. Similarly, upstream in the Bangpakong River, the problem of water hyacinth obstructing the water route remains and also results in an unimpressive view. At the midstream and downstream it contains bad quality water that is in an average to low level condition, coming from three sources of released waste water: the community source, industrial factories and agriculture areas.

Incidentally, it can be concluded for the current situation and the conservation problems with the utilisation of the Bangpakong River as follows:

- Bangpakong River has the problem of the worst water quality in some routes and the seasonal problem of water hyacinth obstructing the water routes.
- The quantities of aquatic animals are in decline, affecting the livelihood and income of fishermen.
- There is still no network between or participation by local government organisations to the Bangpakong's conservation.

According to the information about the current situation and the conservation problems associated with the utilisation of the Bangpakong River in the education area, the researcher has instigated this project to plan for the operational training for personnel development in local government organisations. Thus, it can create and further the visions and strategic plan for the Bangpakong River's sustainable conservation.

### *Knowledge and understanding about Bangpakong River's conservation and requirements for personnel development in the local government organisation*

According to the number of respondents to the questionnaires, the study has explored the knowledge and understanding of the conservation of the Bangpakong River and requirements for personnel development in the local government organisation, with 114 personnel from government organisations. From this, a total of 102 respondents completely filled in the questionnaires, consisting of 30 questions, prior to analysing the information concerning the knowledge level for Bangpakong River's conservation. In addition, it was found that the scores ranged between 9-21, which, when calculated to percentage scores received values between of 30% and 70%. Similarly, when translating according to the standard of Bloom (1968) it was found that there were no any respondents gaining of the high level of knowledge. On the other hand, the respondents had the moderate level for 13 people (12.75%) and the low level for 89

people (87.25%), presented in detail in Table 1. Most of the respondents (77.45%) were interested in joining the project of personnel development.

**Table 1** Knowledge level of Bangpakong River's conservation

Result Interpretation of Knowledge Level		Number (People)	Percentage
Percentage Values of Scores	Interpretation of Score Level		
80-100 %	High level	-	-
Percentages of 60-79 %	Moderate level	13	12.75
Less than 60 %	Low level	89	87.25
<b>Total</b>		<b>102</b>	<b>100.00</b>

***The personnel development project of the local government organisation for visionary forming and strategic plan of Bangpakong River's sustainable conservation***

The researcher has set up for the operational training project for the personnel development of the local government organisation. In addition, it has the objective to create visions and a strategic plan for the Bangpakong River's sustainable conservation. In this case, the technique of Future Search Conference (FSC) was used, set up on 28 March, 2019 at Rajabhat Rajanagarindra University, Chachoengsao Province, Thailand. In addition, the respondents are the local authority personnel from the local government organisation in Chacheongsao province. Therefore, the organisation is located nearby Bangpakong River with 38 people. In this case, prior to and after the training has explored for the acknowledging level and visions about Bangpakong River's sustainable conservation.

Thus, the knowledge and understanding level of Bangpakong River's conservation for the respondents in the project can be measured.

In this case, it has been represented that almost all of respondents with 84.21 percentages: indicating that the visionary forming of Bangpakong River's conservation is really significant.

Furthermore, the respondents have given the opinions about the factors influencing the Bangpakong River's sustainable conservation, being that the developed local authority personnel have created the strategic plan of Bangpakong River's sustainable conservation with 92.11%, 76.32% and 81.58%, respectively, as represented in the detail of Table 2.

**Table 2** Opinions about factors contributing to Bangpakong River's conservation

Subject	Number (People)	Percentage
Personnel of the Local Government for the Personnel Development		
Selected	35	92.11
Not Selected	3	7.89
<b>Total</b>	<b>38</b>	<b>100.00</b>
Have the strategic plan of Bangpakong River's Conservation		
Selected	29	76.32
Not Selected	9	23.68
<b>Total</b>	<b>38</b>	<b>100.00</b>
Have the networks of the local authority personnel for Bangpakong River's Sustainable conservation		
Selected	31	81.58
Not Selected	7	18.42
<b>Total</b>	<b>38</b>	<b>100.00</b>

According to the result of acknowledging the level for Bangpakong River's conservation and strategic plan for Bangpakong River's conservation, it is concerned with the respondents of the operational training project for the personnel development of the local government organisation. Thus, for 38 people it is possible to create visions and strategic planning for Bangpakong River's sustainable conservation after doing the pre-test and the post-test. In this case, according to the result it was found that the result of the means for pre-test was equal to 7.08 and the means for post-test was equal to 12.26. Subsequently, it represents a high level of increasing with 41.65% to be 72.12%, as shown in Table 3.

In addition, the comparison with the differences of the statistic values of t-test to be equal to 14.42,  $df = 37$ . That refers to the acknowledgement level prior to and after the training. Therefore, this represents the differences to the level of the statistic significances with the reliability level of .05. This result represents the operational training for the acknowledgement level development of Bangpakong River's conservation for the local authority personnel.

**Table 3** Comparison of means ( $\bar{X}$ ) from the recognition level testing about Bangpakong River’s conservation and strategic plan of Bangpakong River before and after training.

Testing Result	Number (People)	Means Value ( $\bar{X}$ )	Percent ages	SD	t	df	Sig.
Before the Training (Pre-Test)	38	7.08	41.65	1.71	14.42	37	0.00
After the Training (Post-Test)	38	12.26	72.12	1.69			

***Setting up of a strategic plan for Bangpakong River’s sustainable conservation***

The setup of a strategic plan for Bangpakong River’s sustainable conservation occurred during the operational training of the personnel development to the local authority staff. In addition, this strategic plan was setup on 28th March, 2019 at Rajabhat Rajanagarindra University with the respondents of the local authority personnel from the local government organisations of Chachoengsao Province. Therefore, the organisations are located nearby the Bangpakong River, and there are 38 staff in these organisations to join in the project. After that, the researcher has described the contents for the setup of the strategic plan, beginning with the creation of procedure to set up for the strategic plan. Afterwards, the chance was given for the respondents in this stage to join the conference together. In this instance, they joined for the analysing of the current situation and problems of the Bangpakong River that their organisations are located in the area of Bangpakong River.

Later, the respondents in the conference made conclusion to each other about the analysis of the strengths, weaknesses, opportunities and threats (SWOT Analysis) of the local government organisations. After that, the researcher urged all respondents to give their opinions concerning the strengths, weaknesses, opportunities and threats related to the Bangpakong River’s conservation.

The information was then analysed with SWOT and SWOT Matrix for making the relationship. Next, the respondents together analysed the current problem situations in the area of Bangpakong River of Chacheongsao province, as well as analysing with SWOT and SWOT Matrix. The researcher then applied the technique of FSC to encourage the respondents for imagine together an impressive image of the Bangpakong River prior to making a conclusion for the visions in the last step, as follows:



---

**“Bangpakong River is a life source, with an abundant ecological system, that unites people for sustainable conservation”**

According to the details of the strategic plan for Bangpakong River’s conservation, it is involving with the visions, the obligations, the objectives and SO strategy as these ways:

*Vision*

“Bangpakong River is a life source with an abundant ecological system and a great unity of the people”

*Mission*

- 1) Support, with the natural resources and environment, development in the area of Bangpakong River so as to remain sustainable.
- 2) Develop laws between the local government organisations and the network partners of every section of the river, from the top route to the end route.
- 3) Develop the participation networks in every section for Bangpakong River’s sustainable conservation.

*Goals*

- 1) Campaign for the support, follow up, warning about and protecting of the Bangpakong River against environmental pollution as well as encouraging good participation in the conservation and rehabilitation of ecological systems in the area.
- 2) Have laws between the local government organisations and the network partners in every section for Bangpakong River’s conservation that encourage good participation.
- 3) Have the networks of the local government organisations and the network partners in every section for Bangpakong River’s conservation.
- 4) Encourage the local authority personnel and the network partners of conservation to have the realisation and good consciousness toward the conservation of the Bangpakong River in every section.

**Strength and Opportunity Strategy**

- 1) Promote for the management by local government organisations of the natural resources and environments in Bangpakong River. To be successfully achieved its goal, it needs follow to the below steps:

- Encourage local government organisations and network partners in every section to develop laws together for the management of natural resources and the environment in the area of the Bangpakong River.
- Strictly enforce the laws for natural resources and environments management in the area of the Bangpakong River.

2) Develop the participations between the local government organisations and other networks for working with conservation in the area. To be successfully achieved its goal, it needs follow to the below steps:

- Sign with the participation between the networks of the local government organisations and the network partners in every section for Bangpakong River's conservation.
- Promote and support with the local government organisations and the network partners in every section the management of the projects or activities of Bangpakong River's conservation together, with continuity.

According to the above, it is shown that the visions and strategic plan of local authority personnel should be developed for Bangpakong River's sustainable conservation. Then, one of all respondents has said in the conference that apart from determining with the visions of Bangpakong River with sustainment it should regulate for the visions of the local government organisations in local area with completeness as well.

Therefore, according to the strategic plan of Bangpakong River's sustainable conservation, the respondents have together made an analysis in this conference. The researcher has made the proposal of this project in the title of "the local government organisations of Chachoengsao Province are all together to make the conservation of Bangpakong River" which conforms with the above strategic plan.

***The personnel development project of the local government organisation for visionary forming and strategic plan of Bangpakong River's sustainable conservation***

According to the method in this research, it has used for in-depth interview, Focus group discussion, Future Search Conference (FSC) and the exploration of questionnaires with the local authority personnel. Then, the researcher has searched for the significant procedure pattern to develop for the local authority personnel. Thus, it can create visions and strategic plan of Bangpakong River's sustainable conservation shown as the figure 2. The procedure pattern for the local authority personnel development to create visions and the strategic plan of Bangpakong River's conservation consists of three components to be connected together as follows:



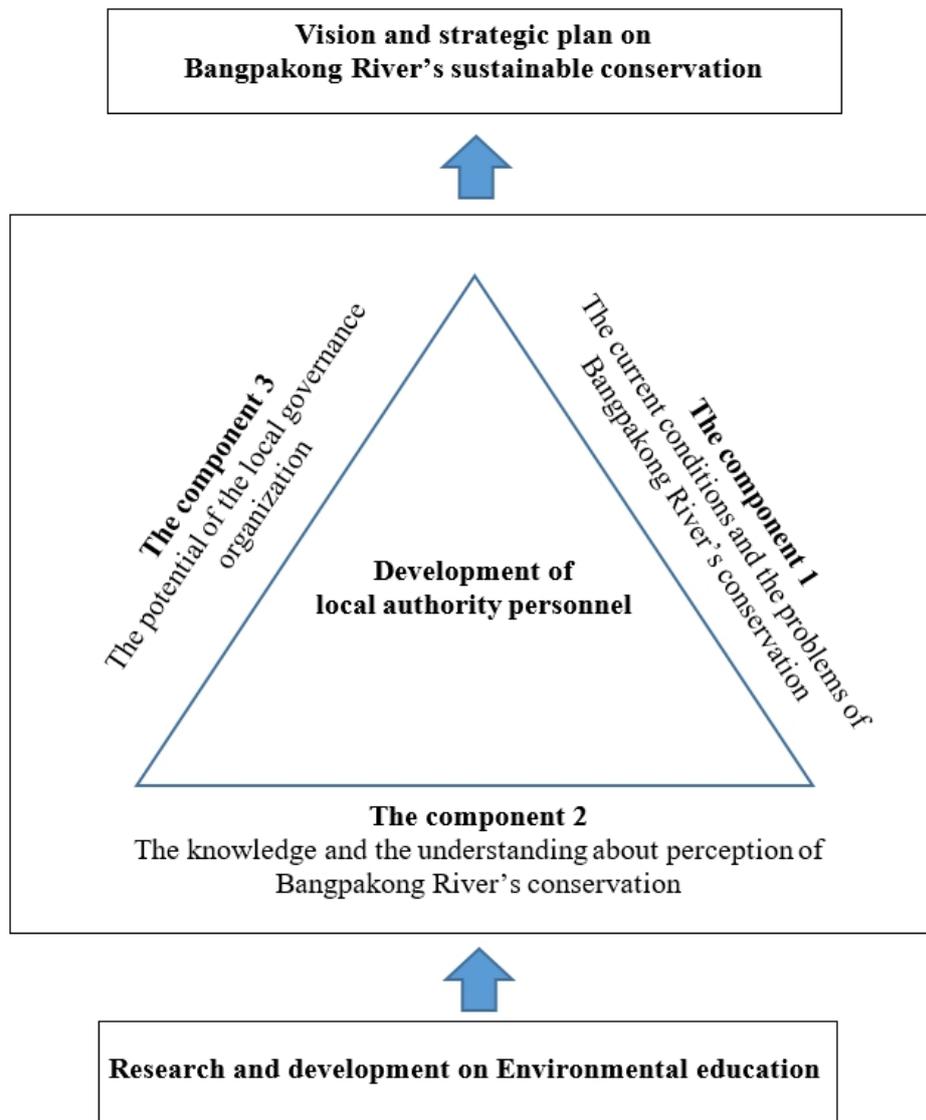
---

The component 1: the current situations and the problems of Bangpakong River's conservation about the water quality problems, biodiversity, the utilisation and the gaining with the effects to the life quality nearby Bangpakong River.

The component 2: the knowledge and the understanding about perception of Bangpakong River's conservation, awareness to the problem, knowledge with the understanding about Bangpakong River's conservation to be remained with the sustainable utilisation.

The component 3: the potential of the local government organisation in the subject of the authorization with the good responsibility as the determined law including of the analysis of SWOT Analysis and the potential of the local government organisation to achieve with active plan to gain good vision.

According to these three components, they are the significant factors to the local authority personnel development to create vision and the strategic plan of Bangpakong River's sustainable conservation. It has applied the methods and the environment study development in both quantity and quality research as the movement. Thus, it can aid the local authority personnel in local areas to develop themselves for gaining good vision and the strategic plan of Bangpakong River's sustainable conservation.



**Figure 2** The procedural model of local authority personnel development for visionary forming and strategic plan of Bangpakong River's sustainable conservation

## Discussion

According to the result, it was found that there are three components affecting the local authority personnel development for visionary forming and the strategic plan of Bangpakong River's sustainable conservation as follows:

The component 1: the current situations and the problems of Bangpakong River's conservation including of the study to inform about the basic information as the studied subjects to find the discovery with the problem subjects bringing into the education guidelines to solve the problems.

In this research it has studied about the current situations and the problems of Bangpakong River's conservation.

Moreover, it has found that it has the studied area or in Bangpakong River which still has the problem of the water quality as well as the problems of the reducing biomass diversity from both of the quantities and the quality. Then, this method is one of all guidelines to solve the problems involving with the development of the enforcement in terms of using with the environmental study. It is the origin of the research to develop the local authority personnel's vision and setup of the strategic plan for Bangpakong River's sustainable conservation. In addition, there are several research papers to study for the current situations and the research problems, such as the concept idea of Phiraya Chuichareon (2015). Then, in this subject it has studied of the current situations and the problems with the guidelines of the government teacher's capability in the section of the provincial administration organisation in Ubonratchathani Province. Subsequently, they have studied for the current situations with the government teacher problems prior to make analysis with the government teacher's capability as being the guideline's analysis to gain the better capability. Furthermore, according to the concept idea of Prince Yaw Owusu Amoako, et. al. (2013) it has studied about the student's capability in computer programing: the origins, the fields and the learning paradigms. After that, it is involving with the study about the current situations and the student problems prior to do the research for setting up the suitable learning to students with higher effectiveness. Similarly, according to the concept idea of Stacy Jupiter, Sangeeta Mangubhai and Richad T. Kingsford, 2014, it is concerned with the study in the title of the conservation with the biology diversity in Pacific Islands of Oceania: Challenging and Opportunities. Then, it is relevantly with the study about the conservation of the biology diversity for Pacific Islands in Oceania with the challenging and the opportunities as the current situations prior to study for gaining the guidelines of the diversity and others. As the result, these are the examples of the research to represent that the study of the current situations with the problems is one of all significant components for the research.

The component 2: the knowledge and the understanding about Bangpakong River's conservation with the study to gain the knowledge and the understanding of knowing about some parts which the respondents have been lacked of by letting the researcher to fulfill those part of knowledge for the respondents to gain more knowledge and understanding for developing themselves and the organisation.

Therefore, in this research it has studied for the knowledge of the local authority personnel prior and after joining in the workshop project. Then, the study of the knowledge level prior to join in the project can inform that the local authority personnel still have been lacked of the knowledge and the understanding for Bangpakong River's conservation. Later, the researcher has given the knowledge to the local authority personnel through the workshop project pattern



in short term emphasizing on the local authority personnel to receive the knowledge and the understanding of Bangpakong River's conservation.

There are several of the researches to give the knowledge and the understanding through the training affecting for the respondents to obtain the increasing knowledge conforming to the concept idea in the research of Suttipat Kongpetch. Thus, it is relevantly with the study to gain the knowledge about the natural attribution source of the national park volunteer for Phang Nga Bay. Later, it has created and tested to apply the environment study training for the knowledge development for natural attribution sources. Additionally, after the training it has found that the respondents have the knowledge and the good attitudes to the natural attribute sources with the increasing level as the statistical significance of .05.

According to the concept of Ebru Z. Mugaloglu and Zerrin Doganca it has studied of the environment knowledge level for the primary science teachers in Turkey. After that, it has setup for the environmental learning problem to teachers with three times. As the result, it was found that the teachers passing to the learning program have the increasing knowledge level with statistical significance of .05 with the better environmental attitudes.

The component 3: the potential of the local government organisations by studying the potential of these organisations with making the analysis of strengths, weaknesses, opportunities and threats as the SWOT Analysis in terms of using the guidelines to develop with the responsible authority of the law for take caring, watching out and reserving of the natural resources with environments in local area.

Consequently, the study of the potential for the local government organisations is conforming to the concept idea in the research of Getha-Taylor and Heather, Morse and Ricardo S., 2013 for studying about the potential of these organisations with the suitable methods to gain the participation for the development.

According to the above result of these three components, it has represented to the contribution factors of the local authority personnel development in local area to the visionary forming and the strategic plan of Bangpakong River's sustainable conservation. Finally, it can aid the local authority personnel to make the development for visionary forming and the strategic plan of this sustainable conservation.

## **Conclusion**

### ***Current situations and conservation problems and utilisation of Bangpakong River***

The current problem situations in Bangpakong River are involving with the changed water quality from the past that is to get worse. It is including with the biomass resources in

Bangpakong River to be reduced for both of species and quantities comparing to the past. The worse water qualities in some routes have affected to gain the reduced aquatic animals and the jobs with the incomes of the fishermen. Therefore, nowadays it still has no network or the participation between the local government organisations for Bangpakong River's conservation.

### ***Knowledge and understanding about Bangpakong River's conservation and requirements of local authority personnel development***

According to the knowledge level about Bangpakong River's conservation, it is related to the respondents for 102 people with the moderate level of the knowledge level with 13 respondents and the low knowledge level with 89 respondents. As a result, the researcher has setup for the operational training project with the local authority personnel development. Then, it can create for visions and strategic plan of Bangpakong River's sustainable conservation. By this, it is involving with the applying for the Future Search Conference (FSC)

The researcher has setup for the operational training project with the local authority personnel development. Then, it can create for visions and strategic plan of Bangpakong River's sustainable conservation. It is involving with the applying for the Future Search Conference; F.S.C. According to the result, it is related to the acknowledgement level about Bangpakong River's conservation and strategic plan of Bangpakong River's conservation. The Mean of Post-test was found that increasing than Pre-test from 7.08 to 12.26 when comparing to the differences of the statistics of t-test values. It was found that the acknowledgement level prior the training and after the training of the respondents had the differences with statistical significance of .05. Thus, it has shown that the operational training is capable to develop for the acknowledgement level about Bangpakong River's conservation for the local authority personnel joining in this project.

### ***Result of the local authority personnel development for visionary forming and the strategic planning for Bangpakong River's sustainable conservation***

According to the result, it was found that there are three components affecting to the local authority personnel development to create visions and strategic plan of Bangpakong River's sustainable conservation by consisting of:

The component 1: Current situations with Bangpakong River's conservation

The component 2: Knowledge and understanding about Bangpakong River's conservation

The component 3: The potential of the local government organisations



## **Acknowledgments**

This research has been supported by the graduate scholarship from The National Research Council of Thailand (NRCT) in the year 2019. It has been completed with well-done level from the assisting from the advisory committee. Therefore, I would like to express my sincere gratitude to Asst. Prof. Dr. Supaporn Songpracha, Assoc. Prof. Dr. Rachanont Supamongpichate, Asst. Prof. Dr. Kanang Kantamaturapoj, Assoc. Prof. Wg. Cder. Dr. Sumit Suwan and Dr. Wee Rawang for all supporting me to do the research until receiving the achievement.



---

## REFERENCES

- Bloom, B. S. (1968). Learning for Mastery. Instruction and Curriculum. Regional Education Laboratory for the Carolinas and Virginia, Topical Papers and Reprints, Number 1.
- Ebru Z. Mugaloglu and Zerrin Doganca. (2009). Environmental experiments at the Primary school level. *Umwelt und Gesundheit Online*, 2009; 2, 3-7. [Online] Retrieved from [https://www.researchgate.net/publication/236969562\\_Environmental\\_experiments\\_at\\_the\\_Primary\\_school\\_level](https://www.researchgate.net/publication/236969562_Environmental_experiments_at_the_Primary_school_level).
- Getha-Taylor and Heather, Morse and Ricardo S. (2013). Collaborative Leadership Development for Local Government Officials: Exploring Competencies and Program Impact. *Public Administration Quarterly* 37(1):71-102. [Online] Retrieved from <https://www.questia.com/library/journal/1G1-336602961/collaborative-leadership-development-for-local-government>
- Jupiter Stacy, Mangubhai Sangeeta Kingsford Richard T (2014) Conservation of Biodiversity in the Pacific Islands of Oceania: Challenges and Opportunities. *Pacific Conservation Biology* 20, 206-220.
- Phiraya Chuichareon. (2015). The guideline for teachers competency development of local government organisation. Master's Thesis (Educational Administration). Faculty of Education. Ubon Ratchathani Rajabhat University, Ubon Ratchathani Province, Thailand.
- Prince Yaw Owusu Amoako, et. al. (2013). Performance of Students in Computer Programming: Background, Field of Study and Learning Approach Paradigm. *International Journal of Computer Applications*. Volume 77 – No.12, September 2013.
- Regional Environment Office 13, Chonburi, Thailand). Surface water quality monitoring report (Rivers and Canals) Eastern Thailand area No. 2/2018. Ministry of Natural Resources and Environment.
- Suttiapat Kongpetch. (2005). Formulation of environmental education training curriculum on tourist natural resources conservation for Ao Phang-Nga National Park voluntary rangers. Master's Thesis (Environmental Education). Mahidol University, Nakhon Prathom, Thailand.
- Water Quality Management Office, Pollution Control Department, Thailand. Checking point in Bangpakong River, Chachoengsao Province, Thailand. [Online]. Retrieved from <http://iwis.pcd.go.th/index.php>