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## A Model of Health Impact Assessment for the Sub District Municipality: A case study of the Songkhla Lake Basin.

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### Abstract

The objective of this study was to develop a health impact assessment model for the sub district municipality in the Songkhla Lake Basin. This qualitative research consists of 3 phases as follows. The first phase was documentary research, where the objective was to examine the HIA model. The second phase was to modify the model, and the objective was to develop and refine the model of the HIA by specialists. The final phase was participatory action research, and here the aim was to develop and improve the appropriate model for the sub district municipality. The study areas comprised of 21 sub district municipalities in the Songkhla Lake Basin. The study data collected by using participatory observation, in-depth interview, and focus group discussion, all of which finally analyzed using the content analysis method.

The results of the first phase revealed that a possible model for the HIA for the subdistrict municipality in Songkhla Lake Basin was as follows. The first model was the model of the HIA for integrating the HIA process regarding policy or project development. The second model was the model of the HIA for the subdistrict municipality, where there were serious health impacts or community conflicts, or there were uncertain health impacts from project implementation. The third model was the community health impact assessment model [CHIA]. The results of this study will improve the subdistrict municipality in terms of applying or conducting the HIA for the importance of public health policy and the people's well being.

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## 1 Introduction

Health Impact Assessment (HIA) is based on a holistic approach to well-being and used to reduce inequalities in health. It can also be used as a way of highlighting the effects that the wider determinants of health have on people's well-being [1]. Improvements in the health of the population cannot be achieved by health services alone. Health influenced by activities in many other sectors [1]. The policies, programmes, and projects in many sectors affect health. In The National Health Act B.E.2550 Section 3 defines health as *"the state of a human being which is perfect in physical, mental, spiritual and social aspects, all of which are holistic in balance"* [2]. Health Impact Assessment is a tool as a way to predict health Impacts in order to recommend or improve policies, programmes, and projects to improve health. It is an assessment of the health effects, positive and negative, of projects, plans, or policies. HIA has been defined as *"a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population"* [2][3][4][5][6].

For Thailand, The National Health Commission Office has been defined as *"a joint learning process of society to analyze and anticipate both positive and negative impacts on the health of the people that may result from one of, or a combination of, policies, programs or projects when implemented at the same time, or in the same area, by applying various tools and appropriate participatory processes in order to support the decision making that will benefit the health of the people, in both the short and the long term"* [7]. The Thai Constitution 2007, Section 67 Paragraph 2, states that any project or activity which may seriously affect the quality of the environment, natural resources or health shall not be permitted, unless its impacts on the quality of the environment and on the health of the people in affected communities have been studied and evaluated, and consultation with the public and interested parties has been organized [8]. Local decision makers must think about the effect which their policies may have on health, and in particular how they can reduce negative health impact and health inequality. The process of HIA comprises five main stages [2].

- Screening: It is not possible to carry out an HIA on every project, policy, or programme. Therefore screening is used to systematically decide when to do an HIA[2].
- Scoping: Scoping sets the boundaries for HIA, and considers how the HIA appraisal stage should be undertaken.
- Appraisal: Identifying health hazards and considering the evidence of impact.
- Reporting: Developing recommendations to reduce hazards and/or improve of health.
- Monitoring: Evaluating whether the HIA has influenced the decision-making process (and the subsequent proposal) is an important component of HIA[2].

There are various HIA models, both in Thailand and in other countries. If an institute wants to conduct HIA, what is the appropriate model to be used? In each model there are different forms, processes, tools, and methods

for identification of health impact and HIA focus. The objective of this study was to develop HIA Model for local authorities, especially the sub district municipality in Songkhla Lake Basin.

## 2 Materials and Methods

This research consists of 3 phases as follows.

- **Phase I: Documentary Research.** The objective of this phase was to explore the model of HIA, which is published worldwide. A systematic literature search was conducted using search engines such as Google, splinker link, science direct, PubMed, and others. The data analysis was content analysis. The output of the first phase was the First Model (HIA Model draft I)
- **Phase II: Modify the Model.** The objective of this phase was to modify and improve the first HIA model by HIA experts. The method used in this phase was in-depth interview HIA experts, 12 persons. The focus group of stakeholders that were HIA specialists, representing the local administrative or sub district municipality, was set to discuss and improve the first HIA model. The data analysis consisted of content analysis and observation. The output of this phase was the second HIA model (HIA Model draft II).
- **Phase III: Participatory Action Research.** The objective of this phase was to propose and improve the second model (HIA Model II) with participatory action research. This phase was conducted in the 21 sub-district municipalities selected for this study.

## 3 Results

The result of the first phase, documentary research, found the following: a model of health impact assessment for the sub district municipality may be conducted using the 3 models. The possible model of health impact assessment in the sub-district Municipality is as follows:

3.1 The first model was the HIA model as an integral part of planning. It should be a prospective model, conducted before the implementation of a policy proposal. The process of this model consists of 7 stages, as can be seen in the figure 1 as following.

- **Set steering committee**

The members of the steering committee were comprised of approximately 10-12 persons, consisting of the public health workers, policy creators, HIA assessors, evaluation personnel, community group, researchers, development officers, councilors, and others.

- **Screening**

Screening is conducted by the steering committee to consider whether to do an HIA or not. They will use the screening tools specified by the steering committee.

- **Public scoping**

In the public stage in Thailand was regulated by the law. It must be the public scoping. Community

participation is the most important method for this stage. The people should provide recommendations regarding their concern about the health effect of policies, plans, and projects.

- **Appraisal**

This means assessing the identified impacts in order to provide recommendations to improve the health consequences. Rapid appraisal is a type of appraisal conducted by the HIA assessor. This stage may use both qualitative and quantitative methods.

- **Public review**

This means setting the boundaries of the HIA: the geographical scope, the population groups whose health is considered, and the timescale over which to predict impacts. It should be conducted by the public method, and the people whose health might be effected should participate in this process.

- **Recommendations and decision making**

The HIA should include recommendations to adjust the proposal to maximize positive and minimize negative health impacts.

- **Monitoring and evaluation**

Once the proposal is implemented, the health impacts that arise in practice should be monitored.

3.2 The second model was the model that was conducted to predict or to assess the impact of concurrent plans, projects, and activities in order to minimize the negative health impact and maximize the positive health impact. The type of this model may be a concurrent or retrospective HIA. The process consists of 6 stages, as exhibited in figure 2.

- Screening
- Public scoping
- Appraisal, the step of appraisal is as follows:
  - Profiling
  - Identify health impact
  - Set priority of impact
  - Recommendations and development
  - Report
- Public review
- Implementation
- Monitoring and evaluation

3.3 The third model was the community health impact assessment model (CHIA). Community health impact assessment is a way to bring the health concern of the community forwards in the discussion of public policy. CHIA allows communities to:

- Estimate the effect that a particular activity (a policy, program, project, or service) will have on the health and the well being of the community.
- Identify things to do that will maximize the benefits (the positive effects) and minimize the harm (the negative effects) of that activity. The process of the CHIA consists of 6 stages, as shown in figure 3.  
Step 1 Answer the question “What does it take to make and keep our community healthy?”  
Step 2 Develop a version of a Healthy Community.  
Step 3 Design the community health impact assessment tool (CHIAT)  
Step 4 Test the tool.  
Step 5 Make a plan to use the CHIAT.

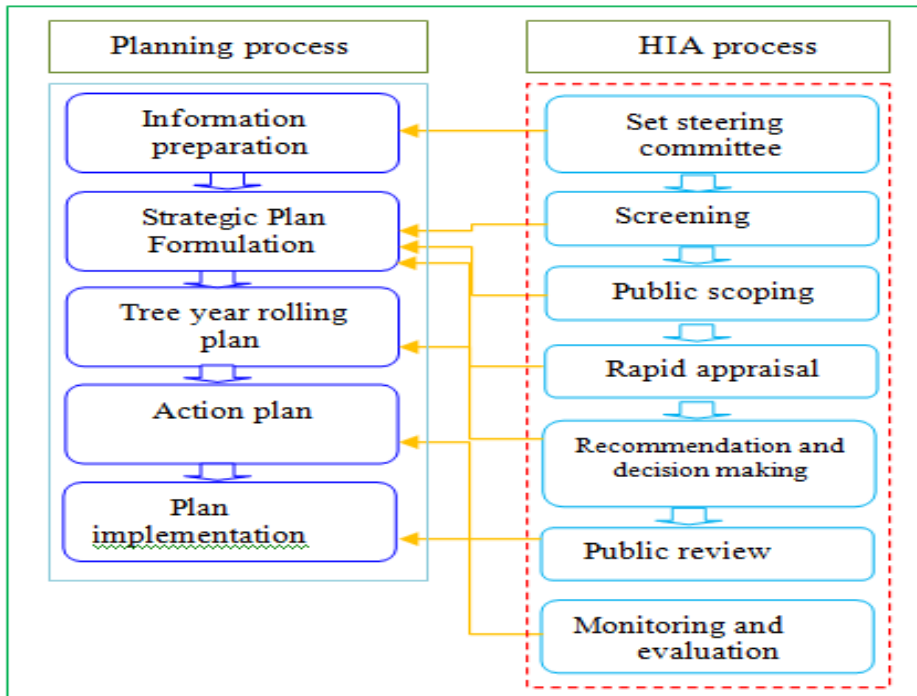
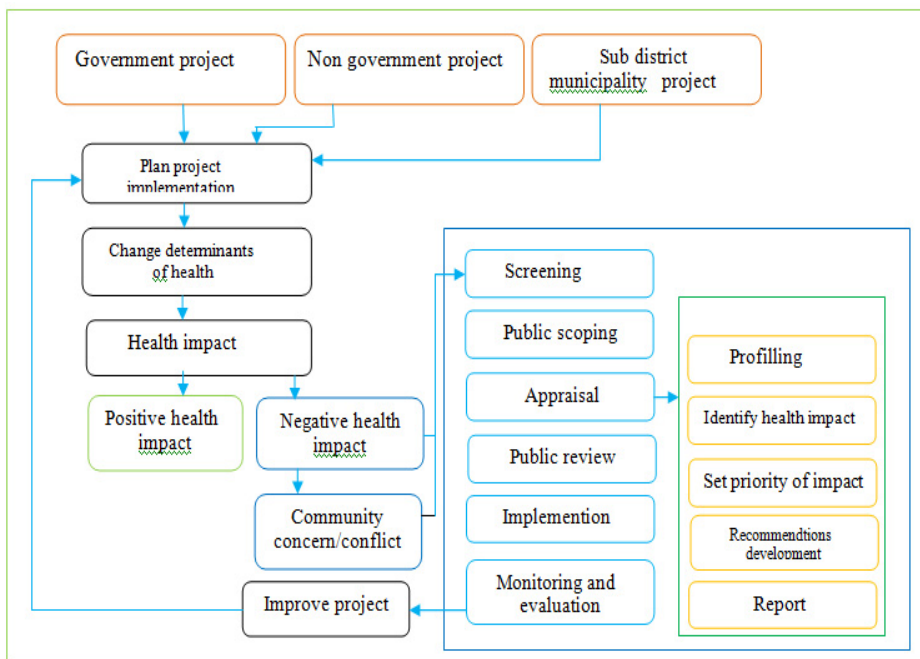
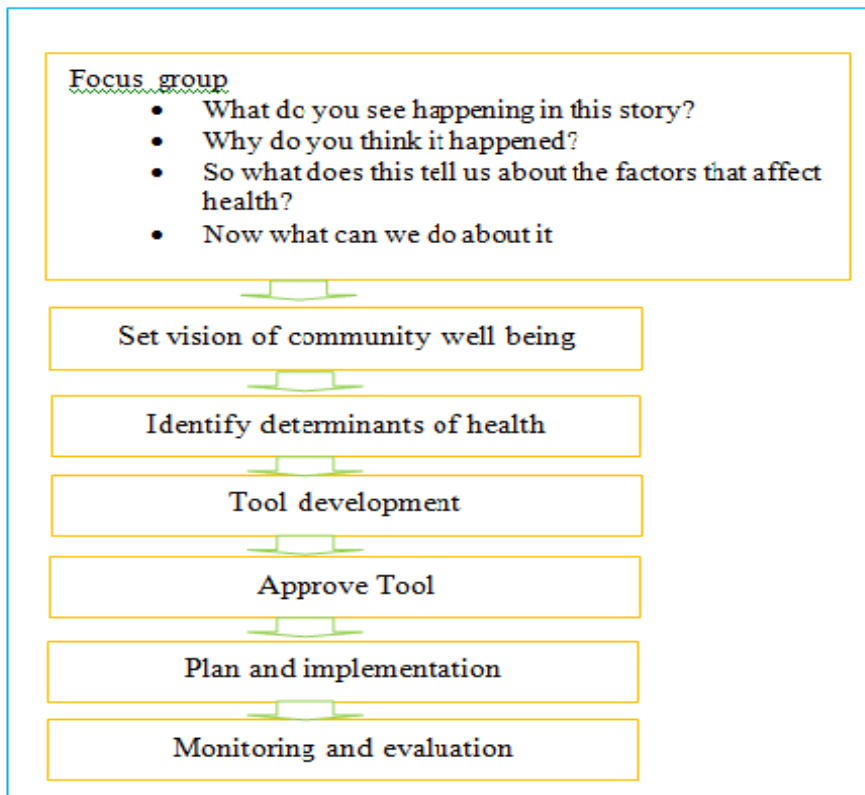


Figure 1: Model of Health Impact Assessment 1 (HIA Model 1)



**Figure 2: Model of Health Impact Assessment 2 (HIA Model II)****Figure 3: Model of Health Impact Assessment 3 (CHIA Model)**

#### 4 Conclusion

Health impact assessment is an importance tool which local authorities conduct for healthy public policy. In Thailand, in the past decade there were many case studies about HIA at the local level. The key point of successful HIA development at this local level is the involvement of all stakeholders beginning from the initiation process of health impact assessment. The resources available, such as time, expertise, data availability, and finances, will all influence the quality of the health impact assessment model constructed. Health impact assessment might also be only one of several factors that underpin the development of evidence-based health policy.

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