



The Development of a Rapid Health Impact Assessment Model for Songkhla Special Economic Zone (SEZ) Policy in Southern Thailand

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Abstract

Background: Rapid Health Impact Assessment (Rapid HIA) for Special Economic Zone (SEZ) has not been undertaken in Thailand. We aimed to develop a Rapid HIA model for policymaking by using Songkhla SEZ as a study model.

Methods: Four-stage of the research and development based on HIA process were used: 1) drafting the model using literature reviews and focus group discussions, 2) collecting additional information from 24 stakeholders, and conducting an in-depth interview with six informants, 3) verifying the model by drawing agreements on the model from 17 related agencies and experts, and 4) confirming the validity of the final model using seven experts. The study were conducted from Jan 2018 to Feb 2019. Content analysis and constant comparison were used to analyze the data.

Results: A four-step assessment model was obtained. They included public screening, scoping, assessing, and reviewing and influencing. Public screening is deduced from a meeting with organizations and related personnel. Public scoping is an outcome of literature reviewing and meeting with stakeholders and academics. The assessment step focuses on secondary data from related agencies and a participatory workshop with stakeholders and academics. Finally, a meeting with stakeholders and academics, including internet broadcasting, is the reviewing and influencing process.

Conclusion: This Rapid HIA model was specifically developed for SEZ policy. Reviewing and influencing steps were combined, whereas the monitoring and evaluation step was removed for further operations. This model depends on the official appointment of the steering committee. HIA practitioners should be experienced academics from higher educational institutions.

Keywords: Impact assessment; Health; Special economic zone; Policy; Thailand

Introduction

Special Economic Zones (SEZs) are geographical areas with explicitly defined boundaries, privileges, laws, or special economic policies (1, 2). These zones are located near borders or harbors, dedicated to promoting investments, per-

suading international investors, and increasing opportunities for industrial competitions. SEZ establishment is determined as a beneficial tool that helps stimulate the overall national economic growth (1, 3). Operations of SEZs in several countries display both positive and negative im-



pacts on local communities. The positive effects include increases in investments and economic activities and promote industrial and technological skills (4, 5). On the contrary, the negative impacts are losses of residential and agricultural land (6, 7), rises of water and air pollution, and industrial waste (6). Weighing both pros and cons, the Thai government has emphasized and considered the development of SEZs as a pivotal policy to enhance and support economic expansion while distributing economic values to local regions without any assessment of impacts in its operational policy.

Songkhla SEZ was established in southern Thailand in 2015. The SEZ consists mainly of an industrial estate, whereas other parallel developments were implemented as supporting infrastructures. However, only the industrial estate project was approved by the committee of Environmental Impact Assessment (EIA) experts (8). The impact of the SEZ was high for economic, social, environmental, and security aspects (9). Another assessment, e.g., health impact assessment (HIA), concerning those impacts, is essential.

HIA is a tool for assessing impacts based on health determinants – covering the environmental, social, economic, and institutional (10). Rapid HIA is a type of HIA widely used for time-limited scenarios (11,12). It is performed when an urgent decision is required (13). It helps inform the decision-maker in policy discussion about urgent matters such as Songkhla SEZ. However, Rapid HIA for SEZ has not been undertaken in Thailand. Therefore, a tentative framework of the Rapid HIA model for SEZ is essential for constructing a blueprint model for future rapid assessment.

In this work, we performed four actions to form a blueprint model for a Rapid HIA using Songkhla SEZ as a case study. Unlike typical Rapid HIA, we emphasize public participation in the process. This approach includes local context into account that should provide sustainable development of the SEZ within the community.

Methods

Research Ethics

Research ethics approval was obtained from Health System Management Institute, Prince of Songkla University.

The research and development were conducted from Jan 2018 to Feb 2019. Participants were recruited from all stakeholders. The committee approach and interview were adopted for data collection. Content analysis and constant comparison were performed for all stages as the following (Fig. 1).

Stage 1: Drafting the Rapid HIA model

The first draft of the Rapid HIA model was developed using literature review and focus group discussions. The extensive literature review related to rapid HIA during 2007-2018 was conducted in four databases, i.e., Science direct, Scopus, PubMed, and Google Scholar. Thirty-one documents were used to draft the Rapid HIA model consisting of six steps - public screening, public scoping, assessing, public reviewing, influencing, and monitoring and evaluation.

Four focus group discussions were performed in four sub-districts in the areas of Songkhla SEZ. Each group comprised five to fifteen affected people, one to two local government staffs, and none to two civil society officers. Data from focus group discussions was analysed.

Stage 2: Collecting additional information from local stakeholders

We brought forth the first drafted model (resulting from the first stage) to stakeholders through a meeting and in-depth interview. This process makes the drafted model congruent with the local context. Stakeholders from five officers from the public health and environment office, eight local government staff, nine affected people, and two civil society officers of four sub-districts in the SEZ areas were invited.

An in-depth interview was undertaken with six informants comprising three government officers from the provincial public health office, provin-

cial office for natural resources and environment, and regional environmental office, an executive from a local government organization, one representative from a non-government organization,

and one HIA expert. The interview questions were about methods, activities, and processes in each step of the proposed model.

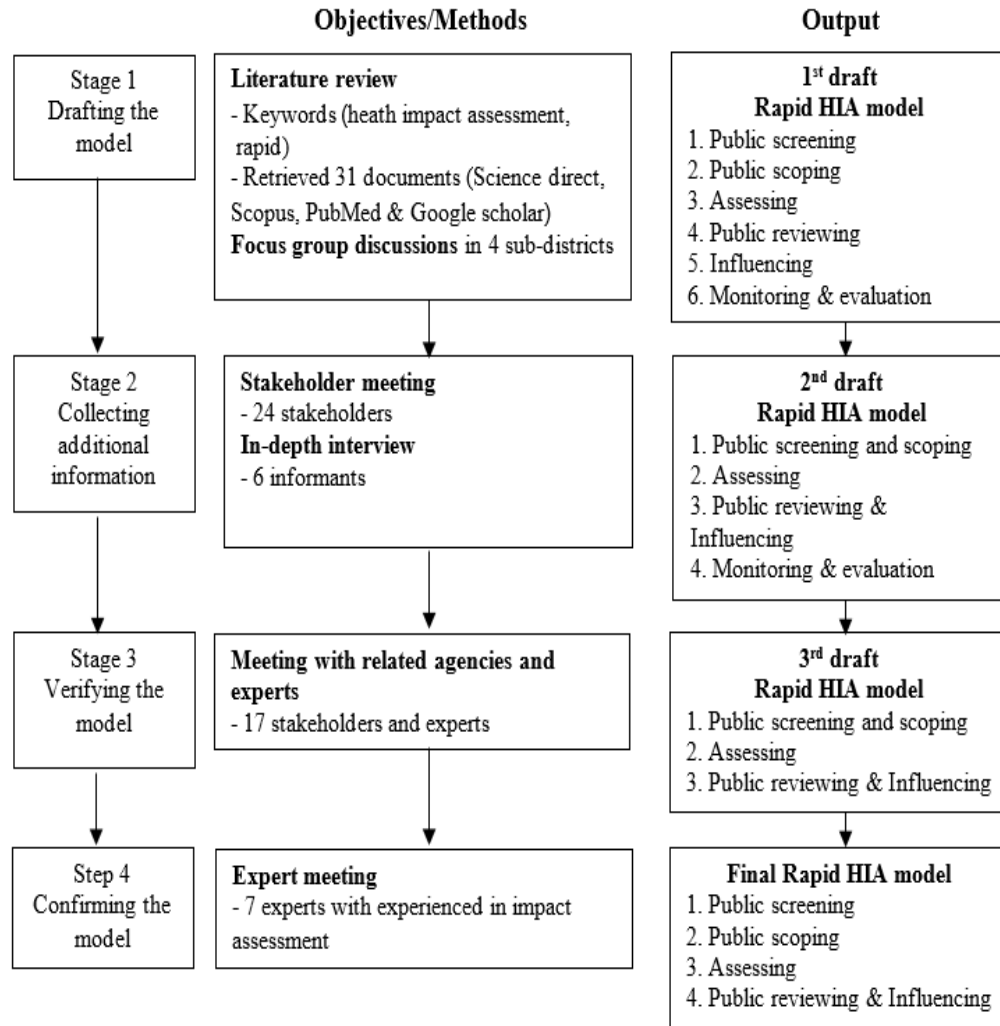


Fig. 1: Stages of Rapid HIA model development

Data from the stakeholder meeting and in-depth interviews were analyzed. The output from this stage was the second draft of the Rapid HIA model described four steps, which steps of public screening and scoping, public reviewing and influencing were merged.

Stage 3: Verifying the Rapid HIA model

The second draft of the Rapid HIA model (obtained after Stage 2) was verified by meeting with

related official agencies and impact assessment experts. Participants were divided into six groups. The first group included the vice governor of Songkhla Province, two members from the committee of the Songkhla SEZ board. The second group comprised three officers from the regional environmental office, the provincial industrial office, and Songkhla provincial office. These offices also have roles in approving and monitoring the SEZ policy. The third group has four of-

ficers from the provincial public health office, southern region industrial estate, the provincial office for natural resources and environment, and the Sa Dao district office. The fourth group included two local government offices, Songkhla provincial administrative organization and Samnak Kham subdistrict municipality. The fifth group has only one member from Songkhla chamber of commerce, a private organization. The last group contains three experts, one from Prince of Songkla University and two from the committee of EIA experts for Songkhla SEZ. Opinions and suggestions from these groups were taken into account for the third draft of the model composed of three steps--public screening and scoping, assessing, and public reviewing and influencing. The monitoring and evaluation step was removed since it requires a significant duration for implementation.

Stage 4: Confirming the validity of the Rapid HIA model

The third draft of the Rapid HIA model was again reviewed and confirmed by consulting with seven impact assessment experts. They were four experts from Prince of Songkla University (two from HIA research center, one from Faculty of Environmental Management, and one from Faculty of Nursing), one expert from Naresuan University, and two experts from the sixth group stated in Stage 3. Their opinions and suggestions were analyzed to form the final model having four steps, i.e., public screening, public scoping, assessing, and public reviewing and influencing. Here, public screening and public scoping were separated, unlike that in Stage 3.

Results

The Rapid HIA model for Songkhla SEZ was developed based on **HIA** procedure. Reviewing and influencing steps were combined which become the final step of the model. Therefore, the monitoring and evaluation step was removed for further operations. Both actions helped reduce time consumption. The proposed model was finalized into four steps of assessment: public

screening, public scoping, assessing, and public reviewing and influencing. These assessing processes can be finished within 4-6 months. The assessing plans are displayed as a flowchart in Fig. 2. The details are the following:

Step 1: Public Screening

The screening step aims to determine the necessity of an HIA for the Songkhla SEZ policy and preliminary set for the scope of the impact assessment. The steering committee and HIA team are formally established to conduct the assessment. The method involves a meeting among organizations and related personnel. Songkhla Provincial Office is mainly responsible for the screening step, whereas the HIA academics conduct the meeting. All participants contribute to considering the necessity of the HIA implementation for this policy, the list of the steering committee members and the HIA team, and the primary scopes of the assessment, including issues to be assessed, the scope of the area, population, and duration.

Two reports are established. The first report is the result of the screening process that provides the supporting reasons for the requirement of the Rapid HIA. The second report provides the primary scoping and the appointment of the steering committee and HIA team. This step should be completed within two to four weeks.

Step 2: Public Scoping

This step aims to specify content scoping, i.e., providing indicators, method and tools for assessment, plans for the Rapid HIA implementation, and selecting the representatives. This scoping process consists of technical scoping and community scoping

The technical scoping is operated by reviewing relevant literature, including basic information of the area, the content of Songkhla SEZ policy, and SEZ impacts in other countries. The data from the literature review and preliminary scoping report are the input in community scoping.

They are documented and distributed to participants before the meeting.

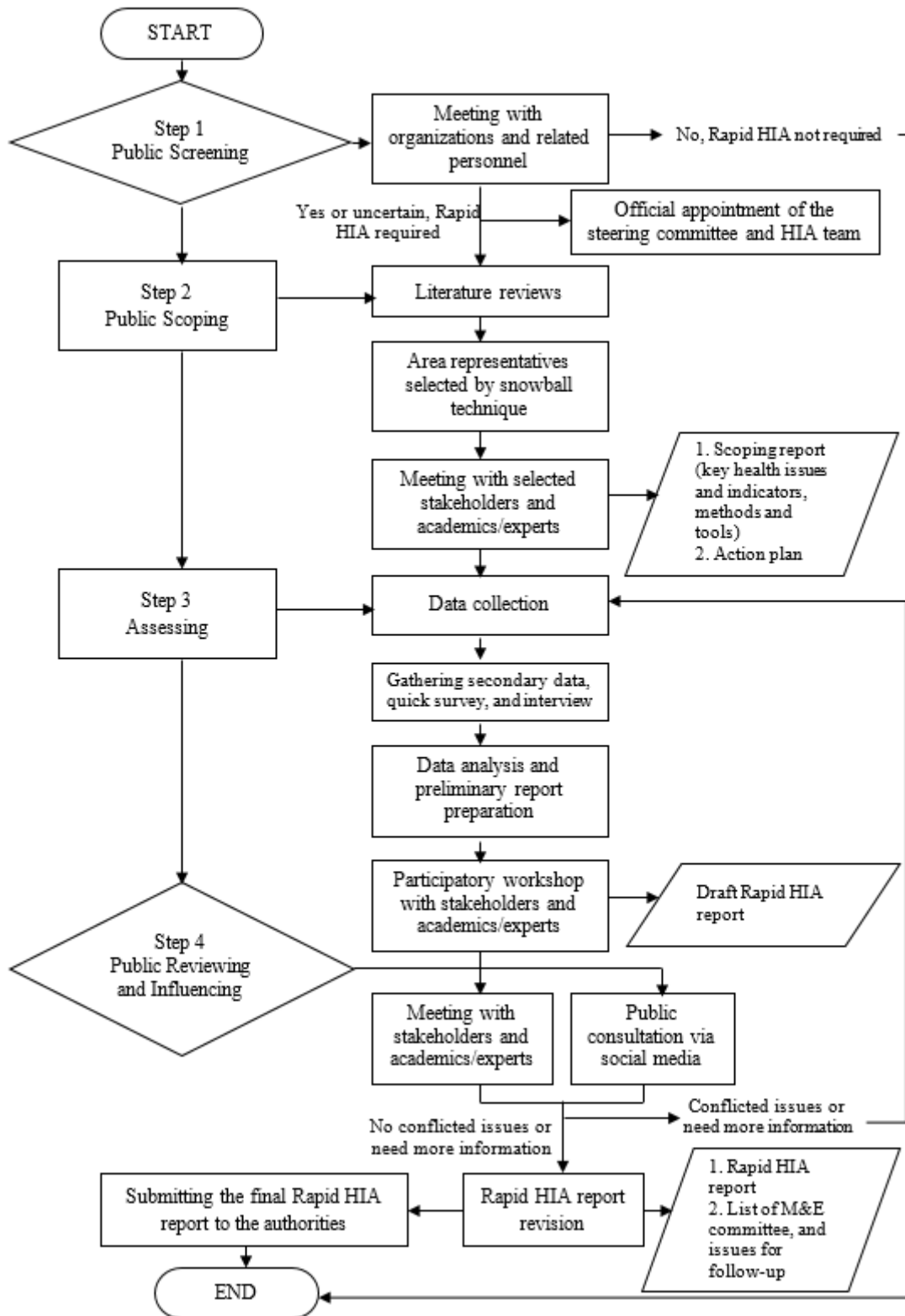


Fig. 2: Rapid HIA model for Songkhla Special Economic Zone Policy

The community scoping is determined through a meeting between the selected stakeholders and the academics/experts. The local representatives who participate in this assessment are selected by using the snowball sampling technique. This meeting follows protocols such as contained subgroup meetings, discussion methods, and the World Café technique, where all participants are allowed to express ideas and opinions about any related issues. A problem prioritization method is also utilized to choose the essential and appropriate indicators for the Rapid HIA. The criteria for prioritizing are the size of the problem, severity of the problem, ease of management, and community concerns.

The findings of the scoping step display important indicators, proper tools/methods for data collection for each of the indicators, and ultimately the Rapid HIA action plan. The duration of this step is around four to six weeks

Step 3: Assessing

This step aims to investigate the health impact resulting from Songkhla SEZ operations and to draft measurements that maximize positive impacts while minimizing negative ones. This step includes data collection for each indicator using available information, quick survey, and interview only on serious issues. These data are preliminarily analyzed to serve as inputs for the participatory workshop between the stakeholders and the academics/experts. The participants receive them before the workshop. Thus, they can share their opinions and take part in an impact prediction discussion. Finally, all participants take part in developing a draft of measurements for the impact management.

The output from this step is a draft report of the Rapid HIA for Songkhla SEZ. The duration of this step is four to six weeks.

Step 4: Public Reviewing and Influencing

This step aims to ensure completeness and correctness of the result of the Rapid HIA for Songkhla SEZ, to propose the measurements to

manage both positive and negative impacts, to identify issues and indicators to be followed up, and to appoint the monitoring and evaluation committee officially. The methods involve meeting and social media publicity. The meeting takes place between the stakeholders and the academics/experts to consider the completeness of the assessment, the alternatives for any decision on the operation, the measurement of potential impacts, and issues and indicators to be followed up and evaluated. This meeting also includes the appointment of the monitoring and evaluation committee, who are responsible for the follow-up process. Meanwhile, the study results are internet broadcasted via social media such as LINE and Facebook to obtain public opinions. In case of a conflict or need for more information, we can repeat data collection in step 3.

Finally, a complete report of Rapid HIA is ready to be proposed to the authorities for final approval, along with some issues and indicators to be followed up and the list of officially appointed monitoring and evaluation committee members. The duration of this step is four to six weeks.

Discussion

The Rapid HIA model is developed as a tool to promote public engagement on the Songkhla SEZ policy. Its processes were constructed to comply with the local context, as suggested by Damari and colleagues (14). Public participation was required for this model to build trust and acceptance from all stakeholders. Thus, the active representatives from the local population were recruited in the early step of assessment to set up the scope of impact assessment with HIA academics/experts. This process is contrary to that of the typical rapid assessment, which has less public participation (15). However, it is unable to comply with the WHO, stakeholders should participate in every step (16). The newly developed model starts taking public participation at the second step - public scoping until the end -public reviewing and influencing. The representative group would consider the overall health impacts and other potential impacts with the academics.

Their participation helps minimize inequality, increase health equity (17), and ensure community empowerment in a democratic society (18,19). The model also helps identify the responsible organization and create a partnership of multiple organizations/agencies to enhance effective management. Thus, the newly developed model requires an officially formulated structure of the provincial government to work as a steering committee. Songkhla Provincial Governor (or a representative) is the chairman of the steering committee to secure government support and collaboration. Songkhla Provincial Office, responsible for provincial policies, serves as a secretary in charge of coordinating with related organizations and providing information to policy authorities. The above procedures are consistent with HIA for the SEZ in the Greater Mekong Subregion by Asian Development Bank (20) which concluded that HIA would be achieved if there was support from every responsible government organization and an official agreement of participation and support.

The model also proposes that the local action team or HIA operation team should be the academics from higher educational institutions specialized in HIA. The experts help in ensuring the results of impact assessment to be reliable and impartial. They are expected to conduct rapid HIA with local people and related organizations with the facilitation from Songkhla Provincial Office. The selection of the appropriate HIA team is considered as one of the most important factors to increase success in HIA implementation (21). A skilled facilitator was essential in the public process (22).

The process and methods used in each step of this model focus on compact operation with a few resources used, such as the literature reviews, secondary data analysis, stakeholder meetings, and workshops. These methods follow standard Rapid HIA processes in which literature reviews and existing data were employed (15,23), while participatory workshop is a popular method (22). Some techniques are also applied in this model--subgroup meetings, World Café technique, and

problem prioritization method. However, other techniques/methods were also found in previous studies, for instance, SWOT and future search model (22), the decision matrix (24), and indicators selection based on size, scale, nature of the proposal, and characteristics of the affected population (25).

The steps for this Rapid HIA model for Songkhla SEZ take around 4-6 months due to prioritizing public participation, whereas general Rapid HIA typically lasts only weeks (15). However, some handbooks stated that Rapid HIA could last 3-6 months (23).

Conclusion

Implementing the newly developed rapid HIA model depends on the involvement of provincial government officers and the structure of the appointed steering committee from Songkhla provincial office. At a provincial level, the government organization is the key coordinator of logistics and financial support for this assessment. There were three groups involving in this model. With the Songkhla governor or his/her representative as a leader, the steering committee is responsible for setting the direction, framework, and impact assessment guidelines. HIA academics from higher educational institutions form a local action team, an HIA teamwork. The active representatives of local communities are involved as stakeholders who provide actual impacts of the SEZ in the area. All processes focus on public participation--a brief operating procedures/methods--including secondary data analysis, group meetings, and participatory workshops. The overall period of this assessment model is approximately four to six months, which is feasible for the Songkhla SEZ situation.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission,

redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that there is no conflict of interest.

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