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## **Planning for Development using Social Impact**

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## **Planning for Development Using Social Impact**

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### **A Work-in-Progress Paper**

#### **Abstract**

Economic development activities change the physical and social environments in which individuals live. For planners, it is important to anticipate the types of changes that might occur, and to put measures in place that mitigate negative impacts and promote positive impacts on people and communities. Social Impact Assessment (SIA) was introduced as a tool for understanding the social impacts of development. There are three factors, however, that limit the use of SIA in developing countries. First, the original SIA tool was designed in a developed country, and as such the list of indicators developed may not be suitable for local conditions. Second, there is no specific theoretical underpinning of the SIA tool, and thus no link between the SIA tool and particular theories of social behaviour. Third, there is no particular link between what SIA measures, and what should be done to mitigate the effects of development activities. The purpose of this paper is to address these three issues and in doing so, provide a SIA tool that can be applied usefully and practically in a developing country. The theoretical basis of SIA used in the paper is Actor-Network Theory (ANT). The tool, which was developed using ANT, principles consists of five stages of analysis: identification of principal actors (human and non-human) and the changes due to development; exploration of the ownership of resources (capital) that enables principle actors to change; identification of change agents attached to the capital of principal actors; tracing which interests of actors are aligned to deal with the development; and an analysis of the social change platform (mobilization of actors) based on connections of all principal actors with other actors. Each of these stages provides the basis for determining what should be assessed in SIA, how to structure the assessment, and how to interpret the results of a SIA.

**Keywords:** Social Impact Assessment (SIA), Actor-Network Theory (ANT), development impact.

#### **Introduction**

Sarawak is one of the world's oldest terrestrial ecosystems and is rich in tropical rainforest biodiversity with an abundance of different types of flora and fauna species that cannot be found elsewhere. A total of 27 ethnic groups with a variety of multicultural backgrounds live in Sarawak, including Malay, Chinese, Iban, Bidayuh, Melanau, Kayan, Kelabit, Penan, and Punan (Sarawak Government Official Portal, retrieved 2011). These groups have their own language and practice a variety of religions. They maintain their ethnic heritage, culture and beliefs. This is especially the case with the Penan community, one of the very last nomadic

indigenous peoples. The unique background setting has made Sarawak a focus of attention regarding the social impact of development.

Just like other developing regions, Sarawak has been rapidly developing, particularly with regard to the expansion of oil palm and forest plantations, and logging activities. Logging and plantation activities are generally carried out in rural areas of Sarawak. Many other kinds of development projects, such as infrastructure, facilities and services have been established to support the operations of the activities in rural areas. Although these kinds of development activities are normally part of the development planned by the government of Sarawak, the plantation and logging activity is actually a strong driving force that accelerates the rate of development. Consequently, these developments have brought accelerated changes to the people and the environment in Sarawak.

Although the issue of development in Sarawak is related to people in both urban and rural areas, foreign observers are more concerned about social impacts on rural people as most of developments related to logging and plantation activities are happening in rural areas. Previous work shows that social impacts of rural economic development appear to change people's lives. The young and educated one has moved to work or further study in urban centres, and they will only come back during holidays or festival seasons, as stated in most of the field survey findings that have been reported in EIA reports done in Sarawak. Those who remain are mainly involved in agriculture or fishing activities, and some are still rely on forest products like wildlife, wild vegetables, raw materials, and herbs. When development progresses in the vicinity of rural settlements, the clearing of cultivated lands, old settlements and forest gardens to meet development concerns has led to a destruction of traditional livelihoods and of associated ecological and cultural values. At the same time, development has created a new living environment, pushing the people to change their ways of working and living.

The magnitude and pace of change due to development is a major source of concern to most government agencies. In particular, government agencies desire to ensure that development activities are properly structured and carried out so that negative impacts are minimised, and positive impacts are strengthened. Social Impact Assessment (SIA) is one way to find out what happens to people due to development. The history of SIA began in the early 1970s in the USA as an applied environmental social science field. Its purpose was to understand the social impact faced by people in the wake of natural resource development and environmental policy alternatives. The process started with the enforcement of the Environmental Impact Statement (EIS) by the United States when the National Environmental Policy Act (NEPA) was signed by then US President, Richard Nixon in 1969. Following the implementation of NEPA, SIA was first used as a specific concept when the importance of the social dimension in development studies became apparent (Taylor, Bryan and Goodrich, 2008).

Many scholars believe that the SIA can be used to assess the source and implications of social impacts created by present, past and future developments (Becker, 1997; Burdge and Johnson, 1998; Barrow, 2000; Baines, McClintock, Taylor and Buckenham, 2003). The Interorganizational Committee on Principles and Guidelines for SIA (2003) pointed out that the SIA report is supposed to be presented in a manner that is understood by all the

stakeholders. It brings information and messages of social change to the developer, the government, the contractor and the engineer, but also to affected people and other interested parties. For planners, it is important to anticipate the types of changes that might occur, and to put measures in place that mitigate negative impacts and enhance positive impacts on people and communities. However, issues have arisen in the application of SIA in developing countries.

### **Social Impact Assessment in Developing Countries**

So far, developed countries have witnessed great success in utilizing SIA for planning development. For example, many development projects carried out in Australia have incorporated SIA: the Water Corporation Project at the South West Yarragadee Aquifer (Synnott Mulholland Management Services Pty Ltd, 2005), the Wallarah 2 Coal Project (Martin & Associates Pty Ltd, 2009) and the Proposed Liquefied Natural Gas Hub Precinct at James Prices Point, North of Broome (Kimberley Land Council, 2010). The practice of SIA has been transferred to developing countries through the enforcement of related policies by multinational companies such as the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development. As such, SIA is not a new concept to the planners from developing countries, but the application of SIA in developing countries is not seen as a useful and practical tool in the way that is accepted by the people in developed countries. There are a number of reasons for this perception.

First, the original SIA tool was designed in a developed country, and as such, the list of indicators developed may not be suitable or specific enough to identify, analyse and explain exactly what has happened to people in developing countries. For example, in developed countries, property rights on land can be easily recognized by studying the land title to find out who is the owner, the size of the land or the exact location of land belonging to a person. However, a land title is not always a means to identify a land owner in developing countries, such as Sarawak. In developing countries, the indigenous people typically have their own local management system for land rights. The community has certain agreements about how to decide rights to land. In Sarawak, this is called Native Customary Right (NCR). The headman has the final say on the land right and keeps the relevant record. Not all of these records are officially kept by the relevant authorities. So, if the indicator for land rights is based on the official record of the land title, this indicator will not be accepted by the local people.

For example, an assessor who is not aware of the existence of different land tenure systems enforced in East and West Malaysia might not notice the lifestyles of different ethnic groups, especially those living in the rural areas of Malaysia, and how they are affected by their and other ethnic groups' rights in law.

In his study of Penan communities and their responses to development, Langub (2003), addressed the impact of the land tenure system of Sarawak, Malaysia, on the way these people react to changes happening in their surrounding environment. He explained why the Penan people were not involved actively in agricultural activities when even the government had implemented agricultural projects for them. Their limited land rights distracted them from learning how to farm and work the farm for a living. Why did the Penan people not

settle down in an area allocated by the government? They moved to other areas as the land allocated to them was no longer big enough for their increasing population. They could not expand their settlement areas as the rest of the land in the immediate surrounding area was owned and occupied by other ethnic groups. Langup was able to pin down this message as he had a strong background knowledge of the history of Sarawak and the people. An inexperienced SIA assessor who just follows directly on from what is said by others, may miss these subtle points as he or she cannot make full use of the assessment done to identify social changes and relevant social impacts found in the study. As such, it would be very difficult for such an assessor to trace the complicated connections that exist among the people, the land tenure system, the history, the social structure, the norms and other elements. It is also a problem for them to determine which main local factors should be focused on within a study.

Second, there is no specific theoretical underpinning of the SIA tool, and thus no link between the SIA tool and particular theories of social behaviour. Studies may explain social impacts in general, but explaining the actual social change situations happening under specific local conditions or circumstances is unclear and/or absent. Rossouw and Malan (2007) commented that it is important to have a clear theoretical framework as a foundation for carrying out studies related to social impacts as it helps to bring out more holistic and meaningful results. Without a specific theory, there is no clear picture of how social impacts are being created by development-led change. As such, any SIA that is carried out is less convincing as a tool for studying the actual social impact faced by the people affected by development.

Third, there is no particular link between what SIA measures, and what should be done to mitigate the effects of development activities. It is the nature of SIA studies carried out for development projects, to predict potential significant social impacts that may be faced by people due to development. But not many SIA studies suggest relevant mitigation measures, or at least not in relation to every impact identified in the study. Less discussion is provided about the things to be done to make the change. Hence, the discussion in such SIA studies is not detailed enough to deal with the impact. Sometimes, the suggested mitigation measures might not be the solutions desired by the people, and the measures might result in other kinds of changes which in turn further impact on people and communities.

As a result of these three factors, SIA has been less significant for studying changes caused by development and as such, have limited the application of SIA in developing countries. The purpose of this study is to develop a conceptual framework for SIA that can be used to identify the correct and specific indicators for investigating the social impacts faced by people, provide a clear message as to how these impacts are occurring, and what can be done to respond to changes. To do so, it is necessary to explore the existing theories of social change, and through an understanding of the concept of social change, identify a theoretical framework to study what, why and how development impacts on people.

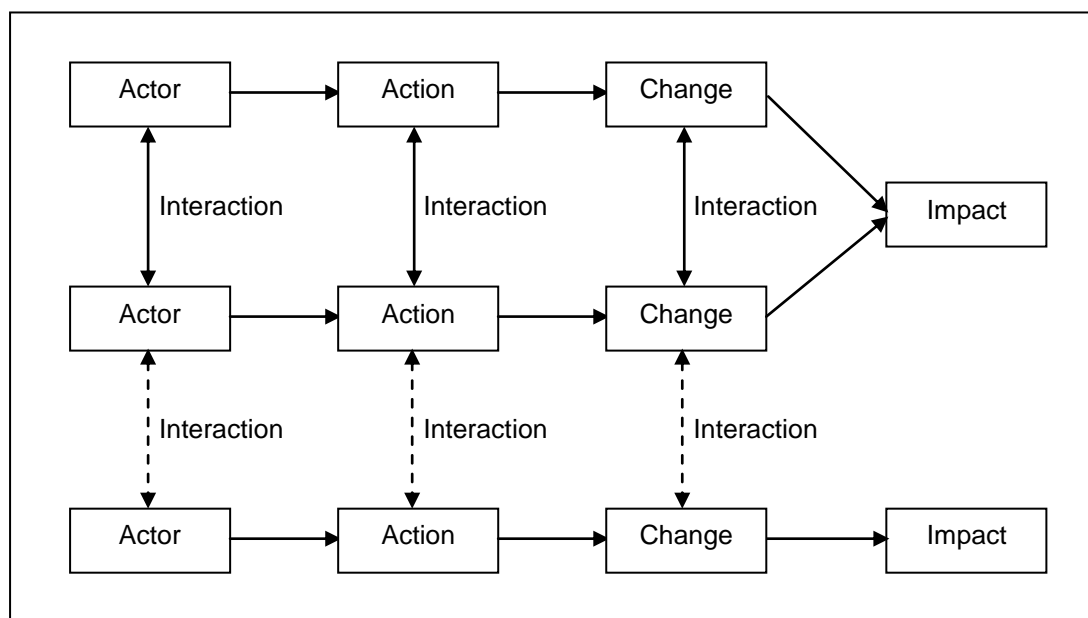
### **Conceptual framework for studying social impact**

A review of the literature shows that there are many theories of social change. In earlier social theories, scholars linked the issue of social change solely to human actions - between

people and with their environments. Social changes are seen to be due to human-centred activities. But what if social change is happening for reasons not solely related to human actions, and what if this affects the whole process of social change? There are factors other than ‘humans’ that contribute to social changes in an area. The recent Christchurch earthquake is an example. A non-human event – a major seismological incident - forces people to change their usual lives. It is thus essential to include non-human factors when dealing with the issue of social change.

For this study, the theoretical basis of SIA is Actor-Network Theory (ANT). This theory is chosen as it guides the identification of actors in social change and describes associations of actors that lead to social changes. Most importantly, the theory concerns human and also non-human elements as actors of social change. The recognition of non-human elements as actors of social change is very useful in a developing country context where there are other local factors besides human ones that contribute to social impacts of development projects. The ANT theory helps identify specific indicators that are able to capture the transformation of human and non-human local actors’ actions into social changes and that lead to traceable social impacts due to development. The theory tells the story of how the way that SIA is conducted helps the assessor and other stakeholders to understand the reason why such kinds of social impacts are faced by people, and presents solutions that are feasible ‘on the ground’. Based on interpretation of ANT theory, a basic model of Actor-Network Theory that links actors and their relevant associations in terms of actions, changes and impacts has been developed (Figure 1).

**Figure 1: A Basic Model of ANT**



As shown in Figure 1, actors, either human or non-human, create actions that bring changes leading to impacts. There are two possible trends in generating changes by these actors. The

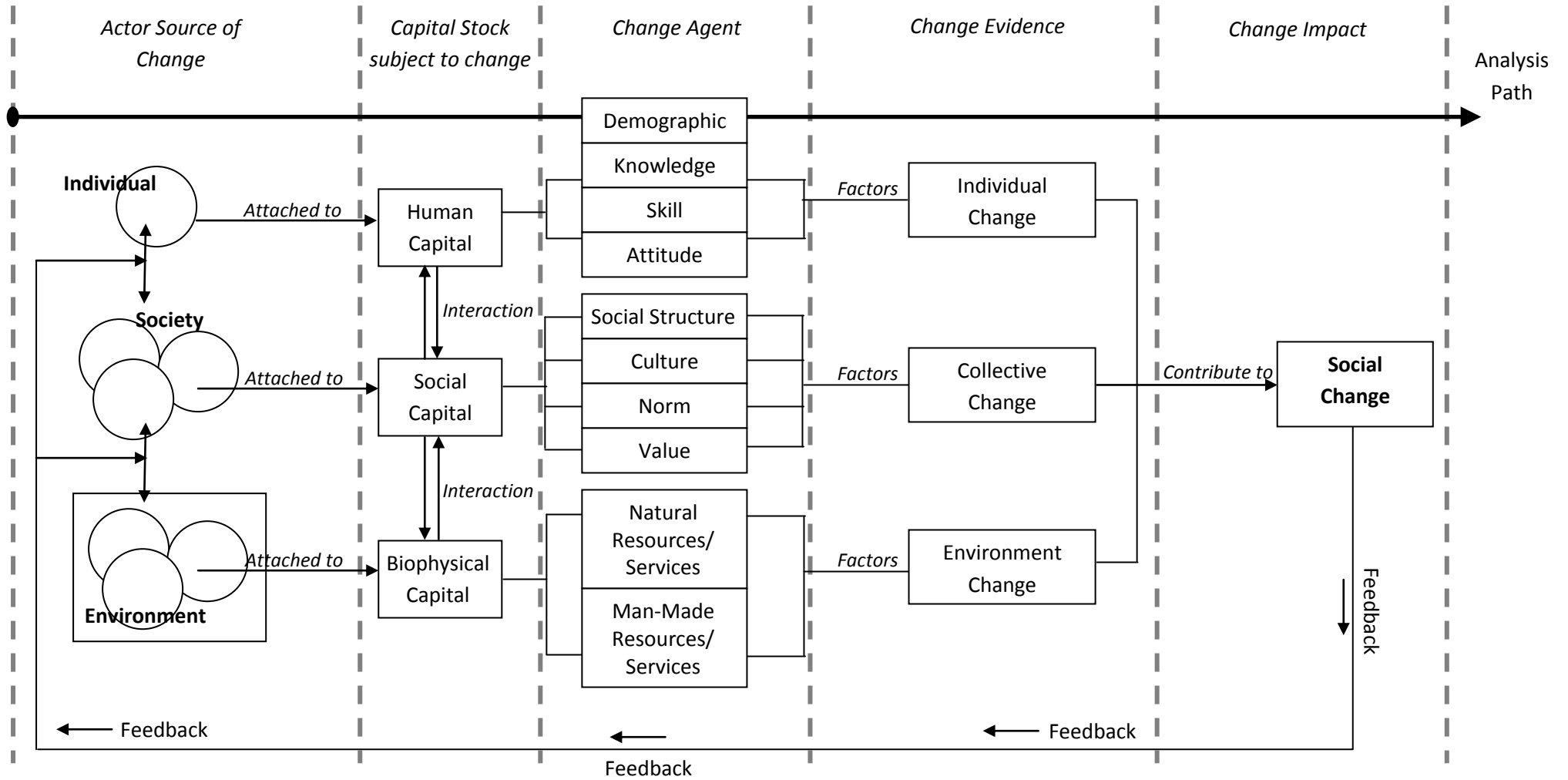
first possible trend is that an actor starts an action and influences others to act similarly. Their actions and the changes created tend to be interconnected. This kind of actor is seen as a 'principal actor' that has the ability to lead the direction of change. The accumulation of these actions and aligned changes will then lead to the same impacts. The second possible trend is that although an actor starts an action, others might or might not act the same. Hence, the change and impact created may be different.

ANT shows that human and non-human actors stimulate change in this world. Through studying connections and interactions of actors, ANT gives a picture of how things work together as a whole, by combining significant contributions of each actor (Guggenheim, 2010). Latour (2005) stated that the theory discovers the freedom of associations such as movements, displacements, transformations, translations and enrolments of human and non-human actors. Smith (2007), and J. M. Bryson, Crosby and J. K. Bryson (2009) added that the theory links actors and materials for a particular issue. It describes humans' reaction towards non-human elements and non-human elements' influence on humans. The theory attempts to put the social world together by discovering actions, contributions and interactions of human and non-human actors. All the principles of the theory suggest a systematic approach to explore the study of SIA in developing countries.

In the conceptual framework, an analysis path of the SIA has been developed that consists of five steps: actors; capital stocks; change agents; change evidence; and change impact analysis. Figure 2 shows the conceptual framework used in the study. Each of these components provides the basis for determining what should be assessed in the SIA, how to structure the assessment, and how to interpret the results of an SIA study. The framework starts with the identification of actors (human and non-human elements) and their initial actions that slowly transform into changes due to development. "Actors" refers to those agents who are capable of creating actions and making changes to other actors and their environment. They are agents who create social impacts. To be more specific, the agents' can be divided into three groups: individual, society and environment. In a field study, the first step is thus to identify all potential agents, and use them as the starting point for investigating social impacts.

When the principal human and non-human agents have been identified, the next step is to explore the specific characteristics under each type of capital stocks that is attached to each agent. The specific characteristics are the factors that make it possible for the agent to react to and make changes to people's lives and the environment in responding to the development that has occurred. The changes then determine what kind of social impacts are faced by the people due to development. Through the understanding of specific characteristics of each agent, an assessor can identify indicators that can be used to measure social impacts in the area.

Figure 2: The Conceptual Framework of SIA



The resource attributes or capital stocks that actors or agents possess, and the links between human and non-human capital stocks are used to find out which are the principal agents for the individual, society and environment groups in the issue of development. In the conceptual framework, the capital stock subject to change to be used as the key to trace the links between agents, since the capital stock can show the ability of each agent to make change. The assumption is that the agents with stronger capital stocks are able to affect changes made by other agents and as such, they become the principal agents. The links is assessed according to three types of capital stocks: human capital, social capital and natural capital. Each type of the capital stocks has connection with other capital stocks.

For every type of capital stock, there are different features that reflect their function and importance to people. The specific features under 'human capital' are things like demographic background, knowledge, skills and attitude – features that affect an individual's ability to perform. An assumption is that a person with a strong human capital background is more likely to convince or make other agents contribute to similar changes. The social structure, culture, norm and value are used to define the specific criteria for social capital. Similarly, it is assumed that a society which consists of a rich social structure and organisation, and with deep attachments to culture and traditions, has stronger opinions or reactions towards a particular development. As for biophysical capital (resources or services), it is separated into two different forms: natural or man-made. The assumption is that a background setting with rich resources and services has a stronger effect on change when development happens.

Assessment of the specific capital characteristics then leads to the process of tracing the connections and interactions of change evidence, which is referred to as types of change created by agents from three different sources: individual, society and environment. The individual agent is predicted to create individual changes while the society agent is predicted to create collective changes. The agent coming from the environment group is creates environment changes. All these changes will then interact and contribute to social change. The last step in the framework is to analyse the contribution of social change arising from a development project to the whole social impact faced by individuals and communities. The results of the social impact on people then become the feedback for suggesting mitigation measures that can be put in place to minimize the negative impacts and enhance the positive impacts from development. With the framework used, it is easy for an assessor to produce a detailed plan to guide the planners on carrying out the mitigation measures. Because the framework shows the strength and weakness of each type of agent, an assessor is able to point out which agents need to change, what kinds of changes are needed by the particular agents and how to encourage agents to change.

### **A Case Study at Beliong, Sarawak, Malaysia**

A case study was carried out to test the conceptual framework. The study site is located in a rural area called Beliong in Sarawak, Malaysia. Geographically, the location of Beliong is very unique as it is not connected to the mainland of Sarawak. Beliong is surrounded by rivers and the sea. It is located approximately 10 km away to the north-east of the city of Kuching, and there is currently no road access. For the purpose of the study, the focus was on three

villages found in the southern part of Beliong, each occupied by three different ethnic groups of Malay, Chinese and Iban, with a total population of approximately 856 persons.

A survey was conducted at all three villages. As suggested in the framework, the study started by first checking on the biophysical environment of the case study site, and determining all potential agents to be studied. This was done by interviewing the headman, the local leaders and also representatives from local authorities. With the list of potential agents, 30 individual interviews conducted with local people to find out the kinds of capital stocks and specific characteristics that are attached to each agent. It was not necessary for these individuals to be the principal agents. They were selected for interviews on the basis that they had knowledge about the agents. In addition, group interviews were held with five groups of people with different backgrounds, to identify specific social capital features that exist in each village. The groups of people interviewed consisted of seniors, youths, women, permanent villagers and temporary villagers. Observation and document analysis were undertaken to understand the specific characteristics of the natural and man-made background setting for the villages studied.

## **Results**

This paper presents preliminary results showing how the SIA framework can be used to structure the analysis of social impacts from development. In general, the infrastructure development happening in the vicinity of Beliong has created different social impacts for different ethnic groups. In particular, the improvement of the road network within and outside of the Beliong, and development of the perimeter bund has led to various changes in peoples' lives. The Malay, Chinese and Iban respond differently to the new environment created by the development. The response depends on the strengths and weaknesses that each ethnic group has in controlling the type of capital stocks that enable them to change. In addition, there are different types of capital stocks owned by each individual in every ethnic group.

The specific characteristics attached to individuals and communities from these three villages are different, and this has led people to react in different way to the development. For example, the Malay people generally reside within the village land reserves established for communal use by the government. Their houses are so close that there is nearly no empty space left between houses. In contrast, the Chinese reside apart from each other in their own farm compounds. It can take 1-2 hours walking to travel from one house to another. For the Iban, their houses are also built within the village land reserves established for them by the government, but the housing is not as congested as in the Malay village. To some extent, this is because the Iban population at Beliong is relatively smaller compared to the Malays.

Figure 2 outlines a number of components that are necessary to carry out the SIA, including identification of actors, identification of capital stocks, key change agents, evidence of change, and change impacts. Table 1 shows the preliminary result using this approach for the case study site. Since the purpose of this paper is to illustrate the use of the model, the discussion here focuses mostly on the Malay community.

**Table 1: Preliminary Results from the Case Study**

Stage	Malay	Chinese	Iban
1 - Actors' Sources	<ul style="list-style-type: none"> <li>• resident</li> <li>• non-resident</li> <li>• middlemen</li> <li>• boat operator</li> <li>• van operator</li> <li>• labour/farmer</li> <li>• transport</li> <li>• land</li> <li>• .....</li> </ul>	<ul style="list-style-type: none"> <li>• resident</li> <li>• non-resident</li> <li>• coconut farm owner</li> <li>• oil palm farm owner</li> <li>• second home</li> <li>• Chinese temple</li> <li>• transport</li> <li>• land</li> <li>• .....</li> </ul>	<ul style="list-style-type: none"> <li>• resident</li> <li>• non-resident</li> <li>• labour/farmer</li> <li>• oil palm farm</li> <li>• coconut farm</li> <li>• transport</li> <li>• land</li> <li>• .....</li> </ul>
2 - Capital Stock	<ul style="list-style-type: none"> <li>• age</li> <li>• gender</li> <li>• education level</li> <li>• attachment feeling to home</li> <li>• kinship</li> <li>• friendship</li> <li>• Malay culture</li> <li>• Religious beliefs</li> <li>• Society value/norm</li> <li>• River</li> <li>• Farm/village land</li> <li>• transport</li> <li>• .....</li> </ul>	<ul style="list-style-type: none"> <li>• age</li> <li>• gender</li> <li>• education level</li> <li>• Chinese culture</li> <li>• education value</li> <li>• ownership of farm</li> <li>• road</li> <li>• .....</li> </ul>	<ul style="list-style-type: none"> <li>• age</li> <li>• gender</li> <li>• education level</li> <li>• Iban culture</li> <li>• ownership of farm</li> <li>• road</li> <li>• .....</li> </ul>
3 - Change Agent	<ul style="list-style-type: none"> <li>• Source of manpower</li> <li>• Farming system</li> <li>• Size of farm land</li> <li>• Ownership of land pattern</li> <li>• Choices of crop planted</li> <li>• Utilize of village land</li> <li>• Access to utilities</li> <li>• Perimeter bund</li> <li>• Drainage system</li> <li>• Direct access road</li> <li>• .....</li> </ul>	<ul style="list-style-type: none"> <li>• Source of manpower</li> <li>• Farming system</li> <li>• Size of farm land</li> <li>• Ownership of land pattern</li> <li>• Choice of crop planted</li> <li>• Perimeter bund</li> <li>• Drainage system</li> <li>• Direct access road</li> <li>• .....</li> </ul>	<ul style="list-style-type: none"> <li>• Source of manpower</li> <li>• Farming system</li> <li>• Size of farm land</li> <li>• Ownership of land pattern</li> <li>• Choice of crop planted</li> <li>• Perimeter bund</li> <li>• Drainage system</li> <li>• Direct access road</li> <li>• .....</li> </ul>

**Step 1 – Actors**

The first requirement of the process is to identify all of the potential agents to be investigated further at a later stage of the study. As mentioned above, there are three different ethnic groups living in three different communities. For every ethnic group, three filters for determining the source of actors were developed: a person, a group of people, and a place or thing. The filter was used to categorize the potential actor/agent into three different components: individual, society or environment. The actors in Table 1 were extracted from interviews with the village headman or local leaders, and also representatives from local authorities.

A person's position or role in the community was used as a way of identifying whether the person is a potential individual change agent. For the Malays, the individual agents identified were identified are old residents, new-residents (those who moved there through marriage), non-residents, middlemen (traders who purchase farm output), boat operators, van operators (local transport to outside areas), farmers and hired labour. Agents for the society component were identified by determining existing social organisations in the community. Four society agents were identified in the Malay community: the JKKK (village development and safety committee), the Women Organisation, the RELA (People's Vigilante Corps) and the Religious Organisation. For the environment component, the importance of the living and working environment to people was used to identify which aspects of the environment are potential agents for changing people's lives. In the Malay community, four environment agents were found: transport, village land, farms and roads.

## Step 2 – Capital Stock

In the second step, the capital stocks for each actor identified in Step 1 and the important links between these capital stocks needed to be identified. The capital stocks are necessary as the analysis determines the specific change agents attached to each stock and the relative power of the stock to lead the direction of changes of other agents. An agent with strong capital stock is then identified as a principal agent.

In the case study site, age, gender, education level, attachment feeling to home, kinship, friendship and life satisfaction are capital stocks, or personal attributes that were found to affect the Malay people's decision to change in response to development. The Malay community's movements or actions towards developments are determined by assessing their culture, religion, beliefs, and societal values and norms. It was found that the Malay community has a very strong adherence to their spiritual and political leaders. As such, people tend to follow the decision or action made by their local leaders. The framework suggests that the specific characteristics used to identify the possible change created by the environment agent are capital from natural and man-made resources or services. Things like river, farm land, village land and transport are the specific biophysical capital stocks that can affect the livelihood of the Malay community.

In this framework, it is assumed that the links among agents of social change are found in a variety of forms and scales. The changes made in either one of the links could bring changes to other links. For the Malay community, some of the links identified are: the link between residents and new residents; the link between residents and boat operators; the link between farmers and middlemen; the link between farmers and farm land; the link between the non-residents and the village land; the link between the village and the river; and, the link between the road and non-residents. The links are established because of the of the capital stocks attached to each agent. For example, the link between residents and new residents of the Malay community is created when there is a new marriage between residents and non-residents from other places. Mostly, the Malay population consists of young people with at least secondary school background. They settle in this area as there are job opportunities and it is convenient for them to go to work. At the same time, they can take care of the elderly in their family.

### Step 3 – Change agent

The identification of the principal agents in step 2 leads to the analysis of possible change elements. These are the key elements in an area undergoing development that could change in response to a new environment. The status of these key elements determines and explains the social issues arising from development that need more attention. For example, the understanding of the current demographic pattern in the area reflects the pool and demand for manpower in the area. In the case study, the manpower required for the full-time traditional agricultural activity in the Chinese coconut farms mainly comes from the Malay community aged above 40 years old. As the Malay community has now started to work in their own land allocated by the government, there is a shortage of manpower to work in the Chinese farms. This shows that the source of manpower is one of the key change elements for an individual agent.

### Summary

The conceptual framework for SIA provides a systematic analysis path to trace the local human and non-human factors that affect the social impact faced by individuals and communities. It helps the assessor of SIA to identify the possible indicators that could be used to study social impacts by capturing the specific change agents. The framework also tells the story of the connection between the actor-network theory and the method used for conducting the study. It explains why different types and sources of data and information are needed to analyse the issue of social impact. Lastly, there is a clear picture of the link between measures and mitigation plans. For example, the measurement of manpower is needed for suggesting a mitigation plan for solving the problem of the shortage of manpower. Only with the understanding of the pool of the manpower, it gives an idea of the amount and kind of manpower required for fulfilling the predicted demand of manpower.

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