

Participatory Design of Policies for Sustainable Coastal Zone Development in Subang Regency

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Abstract

This research aims at designing policies for a sustainable coastal zone development due to stakeholder preferences in Subang Regency. Thus, mapping of every stakeholder's importance and influence is a specific goal to describe. All methods in this research were taken from stakeholders analysis, which follow these steps: identification of stakeholder, making stakeholders Table, analysis of importance and influence, and categorizing them in a grid which were based on those importances and influences. Analysis results were used to design a participatory policy. In this case, stakeholders have taken priority of criteria as follows: economy, ecology, and socio-culture.

Keywords: Subang, policy, Sustainable development, Stakeholder, Coastal zone

1. Introduction

Coastal region is one of the productive and complex ecosystems, either in its dynamics of ecological systems or in socio-economic system of society. Such characteristics are the main attractive point to study, especially in the context of sustainable development of coastal areas.

Subang Regency is one of the regions in West Java that has relatively high potential of coastal areas. The coastline length is approximately 68 kms with waters that are directly connecting Java Sea. Coastal land area is 13,682.88 ha, in which mangrove forest consists of 5,328.60 ha (38.94%), and fish-pond of 8,354.28 ha (61.06%) (Subang Regional Development Planning Board, 2002). Productivity is relatively high in Subang coastal areas. Aquaculture results in the production of shrimp and milkfish amounting to 7,158.3 tons in 2001. This in turn encourages the growth rate of aquaculture areas hitting the Figure of 50 percent from 1988 to 1995. Marine fishery production reached 14,070 tons / year which almost reached its potential of sustainability around 15,667 tons per year (Saridewi, 2003). In addition to the fishery production activities, this region also has extensive mangrove forest areas of highly economic and ecological value.

Subang Regency Government has set the agricultural development policies that include fishery subsector. Targets to be developed are: (1) to increase the intensification and extension of aquaculture and expand the development of fishery (2) to develop public fisheries as a breakthrough in boosting economic growth for fishermen, to improve the welfare of fishermen, and optimize the procurement of excellent seed, and (3) to develop agribusiness commodity by: encouraging self-sufficiency of fishermen through entrepreneurship training of dynamic group management, institutional strengthening of fishery cultivators as well as fishermen, improving fishery infrastructure, fishing, fishery cultivation, processing to marketing.

However, the potential of the region and of local government policy is still unable to make the fishery sub-sector as a prime mover in Subang economy, even it contradicts the socio-economic conditions of the society. Fishing communities in coastal areas mostly live in poverty with low education levels, and are limited in the control of capital and enterprise information access; technology adoption is low, and economic institutions have not been optimal yet (Saridewi, 2003). Ecologically, coastal ecosystem in Subang Regency is also under increasingly complex and threatening pressure towards its sustainability (Kawaroe, 2000; Fahrudin, 1996).

Based on the data and information from various research outputs, it can identified a number of problems related to the costal and marine resource developments in Subang Regency (see Figure 1). Being improperly managed, those problems will result on negative impact which in turn will put all parties into loss.

Stakeholders attitudes, resulting in the damage of natural resources, clearly have caused the degrading quality of society living condition, in terms of social, economic, political and cultural points-of-view; whereas the people are highly dependable to natural resources around them. Therefore, there should be transparent, participatory and comprehensive policy development accommodating the interests of all stakeholders and the long-term oriented of resource utility.

We have a variety of institutions today, both the central and local governments and private institutions that manage parts of the coastal area of Subang Regency individually under the overlapping mechanisms. Existing activities such as agriculture, industrial development, tourism, fisheries, housing and so on are yet to show the integration as required by the sustainable development of coastal areas.

In the process of development planning of coastal areas there are two important things namely: (1) determining the desired condition in the future and (2) thinking strategies and actions to achieve such condition (Lawrence, 1998). The nature of the coastal region of the multi-objective, multi-stakeholders, and various conflicts of interest lead to a dilemma in decision-making process (Brown et al., 2001b). This means that the focus of the development of coastal areas is based on human activity in utilizing the coastal resources. Utilization issue is then has triggered conflicts among stakeholders both vertically and horizontally.

One of the approaches that can accommodate various interests and overcome the conflicts that may occur is a trade-off analysis. Such an analysis integrates ecological, economic and social factors simultaneously by involving all stakeholders in the process of regional development. In addition, it can also be a tool that might help policy makers understand the conflicts in utilizing resources and the preferences of stakeholders in management, by means of which it is also known as a decision support system to quantify the trade-offs among the key indicators of sustainability in the alternative policy scenario.

This research aims at designing the development policy of sustainable coastal region of Subang Regency based on stakeholder preferences. In particular, the purposes of the study are: (1) to map the importance and influence of each stakeholder in the coastal area development of Subang Regency, and (2) to set up an alternative development policy priority for sustainable coastal area of Subang regency.

The novelty of this research is to analyze the stakeholders in determining the criteria, indicators and policy scenarios of the regional development. The main stakeholders are determined from the results of the analysis involved in the decision-making process, so that it will ensure continuity and ease of implementation of agreed policies.

2. Research Method

2.1 Place and Time Research

The research was conducted in Subang Regency, West Java Province. The object of this study focused on the coastal area of Subang Regency. Administratively, this coastal area covers 4 villages namely Pamanukan, Pusakanagara, Legonkulon and Blanakan. Research activities were carried out from April to October 2005.

2.2 Research Stages

This research aims at producing policies and strategies for the sustainable coastal area development of Subang Regency. To formulate those policies and strategies, we make use of a participatory approach involving all stakeholders in determining the criteria, indicators and the future condition of the desired coastal areas of Subang Regency. Stages of this research are presented in detail in Figure 2.

2.3 Data Collection Method

The data gathered consists of primary and secondary ones. Primary data is obtained from direct observation in study sites, while secondary data is obtained from related institutions. Data collected includes statistical data, the potential of the region, research results, spatial planning, policy and other processed data. The primary data is collected through interviews, questionnaires and discussions with experts, key stakeholders and society.

2.3.1 Stakeholder Analysis Techniques

Stakeholder analysis is a system for collecting information on groups or related individuals, for categorizing information, and explaining the possible conflict between groups, and conditions allowing for the trade-offs (Brown et al, 2001). The process of determining stakeholders is conducted by:

(1) Shelf-identify based on experience in the field of regional development (related to policy planning) and based on statistical records and reports of research. The result of this identification is in the form of a long list of individuals and groups associated with the development of coastal areas.

(2) Identification of stakeholders using participatory approaches with snowball technique in which every stakeholder identifies one and other. Discussion with stakeholders being first identified to express their views about the existence of other important stakeholders associated with them. This method can also help a deeper understanding of the importance and relevance of stakeholders.

To facilitate analysis of the stakeholders in this research, each stakeholder is categorized into five categories namely the government (policy makers and legislative bodies), private (business and donor agencies), community leaders, NGOs and other social organizations, as well as experts and professionals. Brown (2001) had divided this category into four levels of stakeholders (the level of continuum), i.e., national and international, regional, local off-site, and local on-site. The identification results were included in the stakeholders' Table.

Based on such a Table 1 the importance and influence analysis of each stakeholder in relation to coastal development policy of Subang Regency is held. The importance refers to the role of a stakeholder in the achievement of outputs and objectives, and the influence [refers] to the power of a stakeholder to control the process and outcome of a policy (IIED, 2001; Mardle, 2003). This activity is carried out by direct interviews and questionnaires to the representatives of all stakeholders being identified from the results of stakeholder analysis. The result of this activity is in the form of a score of importance and influence of the stakeholders based on five categories where 1 = very low interest/influence and 5 = very high. Indicators used in assessing the level of importance are: (1) the interests to natural, human and financial resources, (2) the interests to information, (3) the interests to intermediation, and (4) the interests to the forum, while the indicators in assessing the influence of stakeholders are presented in Table 1.

Scores obtained from each respondent were analyzed with descriptive statistics namely the mode (for each questioned item) and the average for the total score. Results of determination of interest and influence of each stakeholder on activities will be presented in graphical form of the relationship between the level of interest and the influence of the so-called stakeholder grid. Stakeholder grid graph shows the position of stakeholders in policy development of coastal areas of Subang Regency.

3. Results And Discussion

Identification of stakeholders is conducted using the method already described previously. The identified stakeholders are categorized into groups of government institutions, communities, social organizations, non-governmental organizations, and business realm. In addition it is also distinguished by means of level continuum ranging from local, regional, to the central levels. The identification results are presented in Table 2.

Table 2 indicates that the concerned and influential stakeholders to coastal development of Subang Regency vary according to the motive, area coverage, and orientation of development objectives. With regard to the interests of development objectives, in principle, each stakeholder has a particular motive that becomes the focus of such development management (Service-related and educational institutions), ecology motive (NGOs, environmental institutions, tourists), economic motives (employers, professional organizations, district heads and community), and social motives (social organizations and NGOs). Stakeholder groups that are not found in Subang district are donor agencies and international NGOs. The absence of these stakeholders is an indication of a lack of communication and information about the importance of coastal resources of Subang Regency.

To see how big is the importance and influence of each stakeholder to the development of coastal areas of Subang Regency, an analysis tool implemented is the "stakeholder grid" that categorizes stakeholders according to importance and influence on coastal development policies. Distributions according to the position of stakeholder interests and influence are illustrated in Figure 3.

Box A (subject) consists of fishermen, the informal sector, and businessmen. This stakeholder group has high interest to activities having low impacts, including individuals and groups conducting and responsive to the implementation of activities but not the decision maker. This means that they are the important stakeholders but need empowerment in planning the coastal area development.

Box B (players) is the groups of stakeholders who have high degree of influence and interests to the success of activities. Stakeholders classified in this group are Subang Regional Controlling Body, Environment Ministry, DKP (Regional Tourism Board), Subang Spatial Office, Subang House of Representatives, Regional Controlling Body of West Java Province. These stakeholders are the most critical as they have high interests and influence. They generally have high interests with regard to aspects of coastal management which is a major stakeholders' competence. Similarly, the influence of stakeholders is high because it is they who organize development activities undertaken in coastal areas of Subang. The higher the quality of existing management the higher the impact on increasing the quality of regional development will be. Furthermore, the Office which is a direct

extension of local government has high authority in connection with the policy formulation. Meanwhile, the central NGOs have a central high influence due to the ability to play their roles in the functioning of the intermediation and dissemination of information together with other stakeholders. Thus, they are the most appropriate parties to facilitate the formulation of decisions and opinions of stakeholders.

Box C (the audience) represents the low influence of stakeholder groups and interests. Stakeholders belong to this group are researchers, entrepreneurs, local NGOs, professional organizations, and tourists. Their interests are required to ensure: (a) their interests are unaffected, and (b) that the interests and influence do not change condition.

Box D (actors) are the stakeholders that are affected but of low importance in achieving the objectives and policy outcomes. The stakeholders of this group are Subang Cultural and Tourism Office, Subang Forestry Office, DKP of Subang and Subang Regional Environment Controlling Body. They have high degree of influence with respect to the realization of working program since this institution plays its role in policy implementation. In addition, they can play an intermediary role with other stakeholders including the local community.

The governments, communities, and employers are important stakeholders in policy formulation Subang Regency coastal development. In this regard the government is important in relation to the role of regional development authority it has; and employers and the public are important due to regional economic development and community welfare. In the context of participatory planning, the government and businessmen can be the capable pioneers to invite and embrace the other stakeholders to participate actively; they are integrated in the same vision in planning for the development of coastal areas for the common interest. Thus the sustainability of coastal resources and of the benefits that can be provided to all stakeholders, especially local communities at the forefront can be performed well in the context of justice and equity.

As an illustration, this research makes use of participatory mechanisms in the process of coastal development policy criteria of sustainable Subang Regency. The criteria determinations for the coastal development policies involve all stakeholders. Stakeholders are involved by offering them the opportunity to choose the criteria used in the development and determine the weight of each criteria as agreed. Criteria for development of coastal areas of Subang Regency are grouped based on three pillars of sustainable development ecologically, economically and socially. Economic indicators agreed upon are an increase in local revenue, community income and the informal sector. Ecological indicators are mangrove areas, water quality, bottom substrate, and the benefits of tourism, while social indicators are local labor, community access, consumption patterns and skills of the society.

The method used in determining the weight of each criteria is the method of paired comparisons. Judgments of all stakeholders are calculated and combined using the software Expert Choice 2000. Results of analysis are presented in Figure 4.

The results suggest that the economic criteria be the top priority in policy development for the coastal areas of Subang Regency. This means that economic considerations are preferred by most stakeholders. Such results are in line with coastal conditions of people who are generally classified as poor and hard to improve their welfare level. In addition, efforts to improve environmental quality and standard of living are significantly associated with economic problems. The analysis results are then made use in the determination of policy alternatives, which is the priority in the development of coastal areas of Subang Regency. This process involves all major stakeholders and a participatory model of policy determination.

4. Conclusion

Based on the analysis and discussion with all stakeholders it can be concluded that: (1) stakeholder analysis is a system implemenTable to map the importance and influence of each stakeholder related to regional development policy, (2) the stakeholder involvement in decision-making will ensure the sustainability and ease of implementation of agreed policies, and (3) The process is also an effective learning strategy in a participatory decision-making for society and government.

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Table 1. Indicators of stakeholders' influence to the development of coastal areas

Stakeholders' Influence	
Formal organization	Informal groups
Official hierarchy (command and control, budget holders)	Social, economic, and political status
The authority of leadership (formal and informal, charisma, political, familial)	Level of organization, consensus, and leadership within groups
Control of strategic resources in regional development	Level of control over strategic resources
The mastery of the knowledge / special skills	Informal influence through relationships with other stakeholders
Negotiating position (influencing power towards other stakeholders)	Level of dependence on other stakeholders

Table 2. Stakeholder development of coastal areas of Subang Regency

Levels	Stakeholders	Interests
National	Ministry of Maritime Affairs	Developments of fisheries management and of inter-regional integration
	Forestry Ministry	Development of forest management and forest preservation
	Environment Ministry	National Management Coordination
	NGOs (LPP Mangrove and WALHI)	Environmental sustainability and community care
	Researchers (IPB, UNPAD and LIPI)	Conservation and public education
Regional	Provincial Coordinating Development Body	Regional development coordination
	Subang Forestry Public Corporation	Mangrove forest sustainability
	Subang Marine and Fishery Office	Management development of fishery resources and development strategy of coastal areas
	Subang Regional Environment Controlling Body	Conservation of natural resources, control area, the preservation of ecosystems
	Subang Spatial Office	Coordination of land use, spatial planning
	Subang Forestry and Plantation Office	Development of forestry management
	Subang Tourism and Cultural Office	Development of tourism management
	Subang Regional Development Controlling Body	Planning, development integration and money
	Subang Regional House of Representatives	Stability and supervision
Local	District heads of (Pamanukan, Pusakanegara, Legonkulon, Blanakan)	Regional income, public welfare and tranquility
	Professional organizations	Membership welfare and business sustainability
	Businessmen	Income and business sustainability
	Informal sector traders	Income
	Fishermen	Income and sustainability
	Tourists	Landscape beauty and safety
	Local NGOs	Society empowerment
	Social organization	Participation and human resources development

Source: Field Survey Outputs (2003)

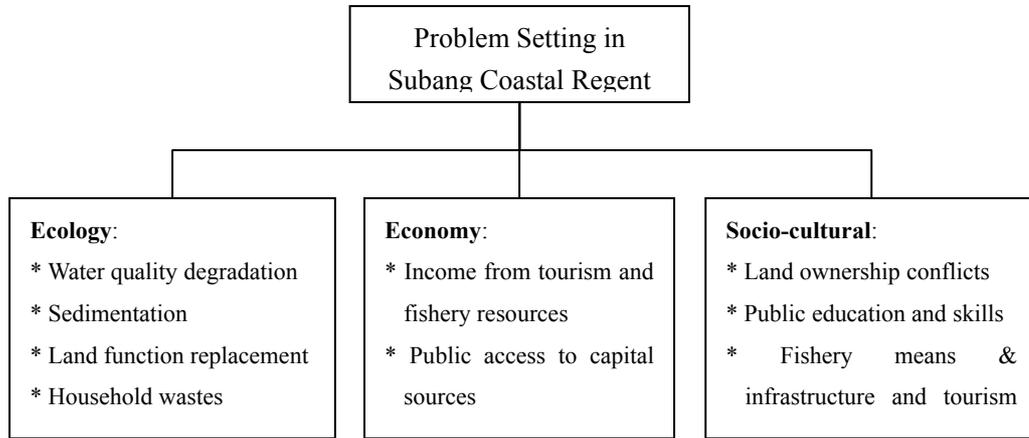


Figure 1. Coastal area development problems of Subang Regency

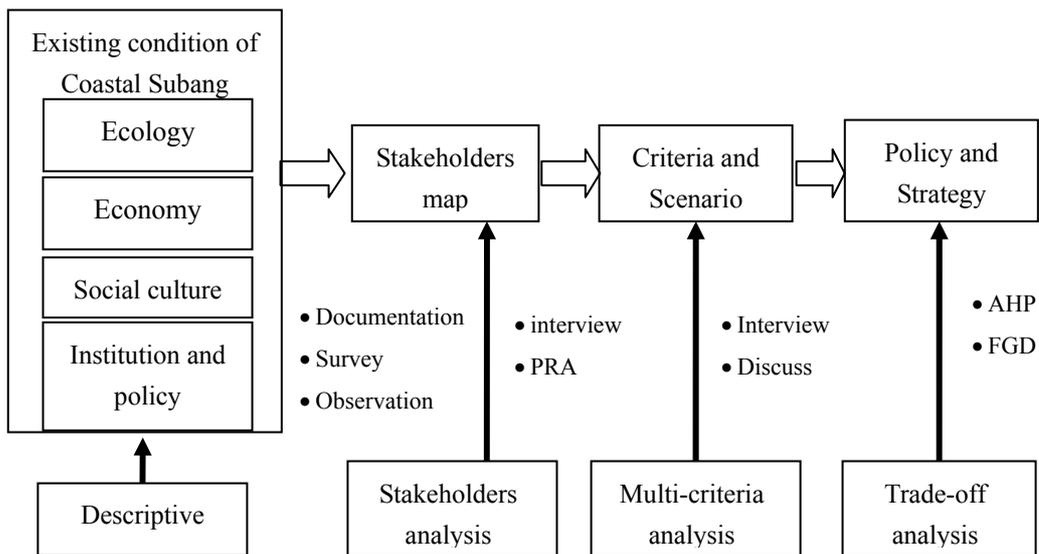


Figure 2. Phase of the research

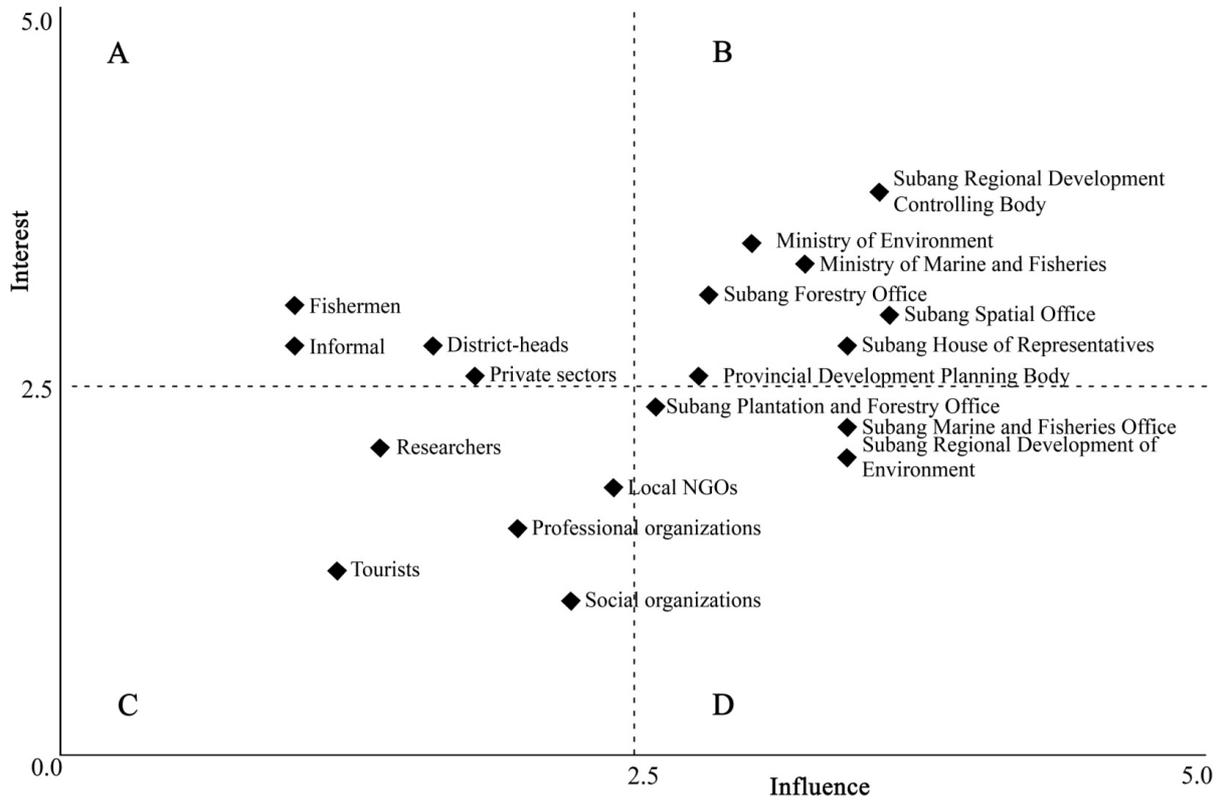


Figure 3. Analysis output resultant matrix of the stakeholders of coastal area development of Subang Regency

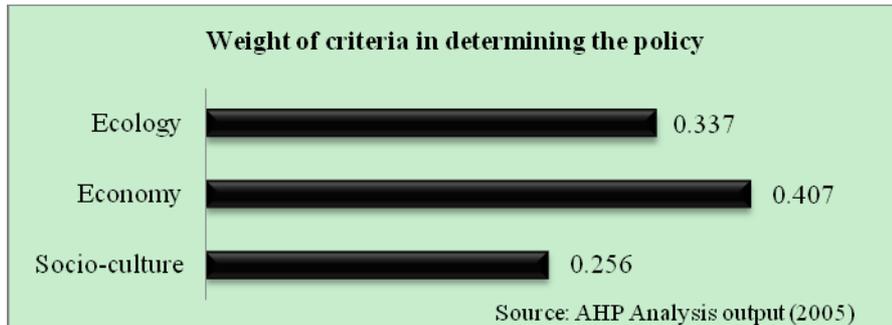


Figure 4. Weight of criteria in determining the policy of coastal areas development of Subang Regency