

The Policy and Strategy to Empower the Management of Mahakam Delta

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ABSTRACT

This paper intended to investigate the rule or laws that can be well going on and to be obeyed by the society. In addition, there were policy and strategy that was needed to empower the management of Mahakam Delta. Data collecting was carried out by using the techniques of observation, interview, and documenting. The methodology consisted of AHP (Analytical Hierarchy Process) analysis. Result can be used as the policy making base of stakeholder in managing the Mahakam Delta.

Keywords: policy, strategy, AHP, Mahakam Delta

INTRODUCTION

Until the beginning of 20th century, Mahakam Delta region is still as mangrove forest and there is no human residence [1]. Human residences are between the mangrove forest in coastal region and mountainous. The pioneers cropped paddy, developed the coconut plantation, shrub, pepper, and breeding fish in this region. In mangrove forest region where was far from the mountainous area, there is only small residence and distributed by the fishermen composition which are come from Bajo and Bugis that are operated in rivers of Mahakam Delta. Besides catching fish, the fishermen also open the shrub coconut plantation and rattan. Social aspect in environmental management mainly in the using of natural resources was less attended [2]. Social problem which was related with life environmental management was especially conflict and friction that was related with the conflict of some interests. Gap of access on natural resources using caused the impact of environmental damage.

Mahakam Delta has experienced in deforestation and has impacted to the base change of micro climate change mainly in fast change on temperature, salinity, wind, and eaporation. The power of catching and filtering from opened area due to the pollutant material and mud became low. In addition, it was also susceptible to the erosion and abrasion of coast. Therefore, the turbidity in surrounded region became very high that was marked by the shallowing in water traffic gully and in the end it would decrease the mangrove function as nursery ground, feeding ground, fishing ground, etc.

The conversion of mangrove forest to the area of dyke, agriculture, plantation, gasoline as well as residence will give negative impact on the regeneration stock of fish and shrimp resources. In addition, it can cause the destruction on ecological functions of mangrove forest as the place for finding food, fish, or the other organism. This problem will cause the missing on the variety of flora and fauna species that is related with mangrove ecosystem and in long term it will disturb the coastal ecosystem balance. The more potency in Mahakam Delta was not supported by the clear available institution for the management, so there is often happened the conflict of interest in using the region. This research intended to determine the policy and strategy in making effort to empower the management of Mahakam Delta.

MATERIALS AND METHODS

Mahakam Delta is administrative region part of Kutai Kartanegara Regency which has relatively high economic activity in some sectors like gasoline, fishery, junction, and business. This research was conducted from March until July 2011 in Mahakam Delta region. Selection of location was based on the involved institutions which were involved in managing Mahakam Delta. This research conducted in 3 districts such as Muara Badak, Anggana, and Jawa, Kutai Kartanegara Regency. Location of the research was as a region that had direct access to the usage and management of Mahakam Delta. Map of location was as in Figure 1.

Technique of data collecting was carried out by using some manners as follow: 1) technique of observation; 2) technique of interview; 3) technique of document; and 4) technique of questionnaire

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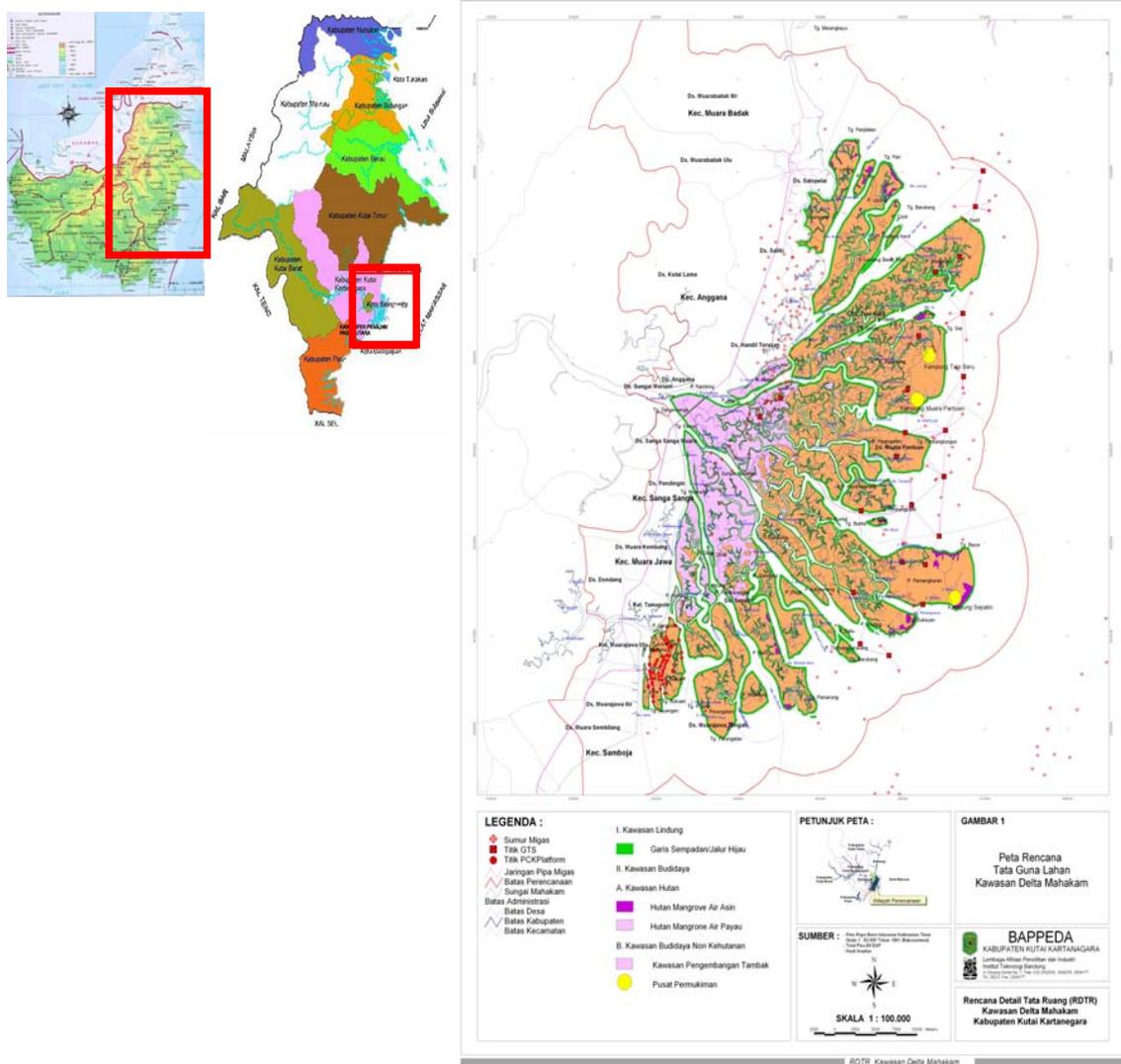


Figure 1 Map of Location

Analytical Hierarchy Process (AHP)

Analytical Hierarchy Process is as a compatible model that gives a chance to someone or group for building ideas and defining the problem by using their assumption each themselves and getting the willing solution. Analytical Hierarchy Process is as a strategic process for controlling some political and social-economic complex problems [3]. The aim of applying AHP in this research was to observe the involved institution in managing Mahakam Delta by considering the factors which were assumed to effect the decision with following the steps as follow:

1. The first step was to determine the aim such as the management institution of Mahakam Delta.
2. The second step was to determine the obtained aspect of discussion result from the key-person who had competency on the management of Mahakam Delta.
3. The third step was to determine the alternative that was obtained from the key-person who had competency on the management of Mahakam Delta.

Figure 2 presented the aspect and alternative in managing Mahakam Delta

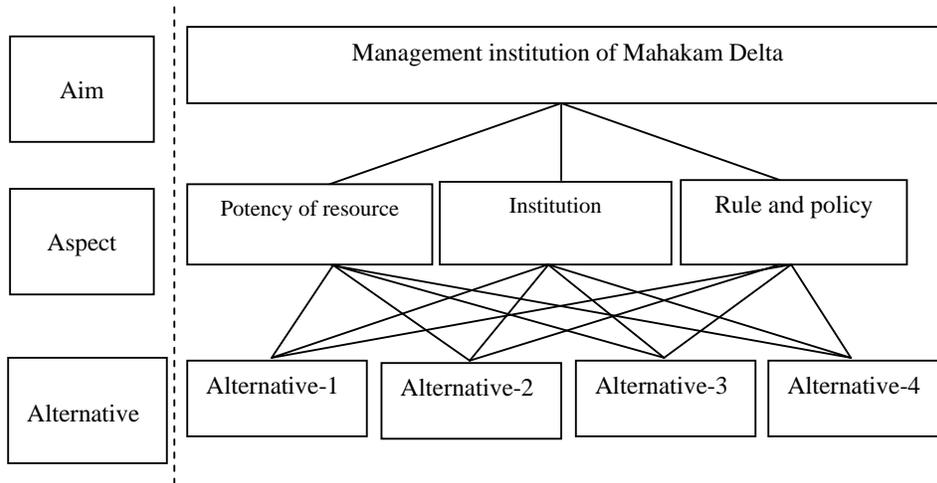


Figure 2 The aspect and alternative for analysing the institution in managing Mahakam Delta

4. The fourth step was to distribute questionnaire to the key-person respondents who had competency in management institution of Mahakam Delta which consisted of the unsures on society, government, public, academic, expert, and society institution.
5. The fifth step was to set the matrix which was obtained from key-person respondent

Method of Analytical Hierarchy Process (AHP) has been developed in the beginning of 1970 by Dr. Thomas L. Saaty and it has been used for helping the decision makers from many countries and companies. By using AHP, there was obtained the seeing way in organized idea scheme so it was allowed to be made the effective decision [4]. Generally, AHP is used by the aim to set the priority of some available alternatives or choices and the choices are complex and multi-aspects. By using AHP, the resulted priority will be consistent with the theory, logic, transparant, and participative. By the higher demand related to the transparency and participation, AHP will be very suitable to be used for setting the priority of public policy that demands the transparency and participation.

According to Saaty [3], AHP was as a analysis which was used in the decision making by system approach which the decision maker made an effort to understand a system condition and helping to carry out a prediction in making decision. In AHP, the determination of policy priority is carried out by rationally catching human perception, then to converse the intangible factors into general rule so it can be compared. The steps of data analysis were as follow [3]:

1. To identify the system such as to identify the problems and to determine the willing solution. Identification of system was carried out by using the way to study the reference and to discuss with the expert who understands the problem, so there is obtained the relevan concept due to the problem.
2. Setting the hierarchy structure that starting by general aim, then it is continued with sub-aim, aspect, and the possibility of alternatives on the lowest aspect level
3. Pairwise comparison illustrates the relative effect of every element due to each aim or aspect with a level over it.

Technique of pairwise comparison in AHP is based on the judgement or the opinion of key-person respondent. They can consist of: 1) the decision maker; 2) the expert; 3) the involved person who understand the problem. Determination of interest level on every level of hierarchy due to the opinion is carried out by using the pairwise comparison. Technique of pairwise comparison is carried out by comparing between an element with the other one in a level of hierarchy pairwise so it is obtained the interest value of each element. The evaluation is carried out by giving the numerical percentage on every element which compares with the result of direct interview to the respondents.

The formulation of management strategy

Strategy was a tool for reaching the company aim related with the long term aim, the continued action program, and the priority of resources allocation [5]. It was developed as a tool for creating the competitor specialty [5] and then it became a dynamic action for giving the response due to the internal and external strengths [5] until it became as a tool for giving the motivation strength to the stakeholder so the company could give the optimal contribution.

The formulation of a strategy of an organization needs the environmental analysis such as the internal environment as well as the external one. The analysis can give the illustration about strength, weakness, possibility, and threat which are faced by the company [5]. The formulated strategy is intended to be able to support the development of an industry, so the strategy has to be developed in real actions. This level is mentioned as the strategic implementation. The strategic implementation makes a condition of the company determining the annual aim, making policy, motivating the employers, and allocating the resources, so the formulated strategy can be going on [6].

RESULTS AND DISCUSSION

Alternative formulation of strategy

A. Internal Factor Evaluation (IFE) Matrics

Internal Factor Evaluation (IFE) Matrics was used for evaluating the internal factors on the management of Mahakam Delta. Determination of the percentage and rating value become as the strength and weakness which was carried out by using the method of pairwise comparison, so it would obtain the percentage of each internal variable and the rating value to the factor. However, evaluation of the internal factors were based on the interview result to some stakeholders that was presented as in Table 1.

Table 1. Matrics of Internal Factor Evaluation on the Management of Mahakam Delta

Internal strategic factors		Percentage (A)	Rating (B)	A x B
Strength				
S1	Potency of gasoline and non-gasoline resources that were surplus and as the supporting for supplying the society life demand on the Mahakam Delta	0.15	4	0.6
S2	The institution that had an authority to organize the coastal region	0.1	4	0.4
S3	The regulation and rule which organize the management of coastal region	0.1	3	0.3
S4	Government attention in regulating the management of Mahakam Delta	0.1	3	0.3
S5	The population increasing of citizen on Mahakam Delta was as the strength in developing the region of Mahakam Delta	0.05	2	0.1
S6	Increasing of the facility in Mahakam Delta	0.05	2	0.1
		0.55		1.8
Weakness				
W1	The happened degradation of life resources in Mahakam Delta	-0.1	4	-0.4
W2	Conflict of space usage	-0.1	4	-0.4
W3	Accessibility that is difficult enough because of geographic condition	-0.05	4	-0.2
W4	Conflic of institution function and authority	-0.1	4	-0.4
W5	The increasing of population has not been balanced by the suitable quality of human resources	-0.05	2	-0.1
W6	The usage of coastal resources has not been optimal	-0.05	2	-0.1
		-0.45		-1.6
Total		-1	38	-3.4

Source: analyzed data, 2013

Based on the analysis as in Table 1, there was shown that strategic factor was as the strength with the score of 1.8 and the weakness was 1.6. It indicated that Mahakam Delta had good enough potency to be managed. The main strength of Mahakam Delta was on the potency of overflowed gasoline and non gasoline resource which was as the supporting for supplying the life demand of Mahakam delta society (with the score of 0.15) such as there was the gasoline stock, the potency of economic biota that was as the fishery product, and the beauty of nypa and mangrove forest as the tourism interested power.

However, the greatest strength factor was the happened degradation of life resources on Mahakam Delta (with the score of 0.1) and the conflict of space usage (with the score of 0.1) among the resources users in Mahakam Delta. However, conflict of space usage in Mahakam Delta region was appeared because there has not been space setting of Mahakam Delta as a strategic region in Kutai Kartanegara Regency and East Borneo Province too which was written in the Laws No 26 (2007) about the Space Setting and the Laws No 27 (2007) about the management of coastal region and small islands that was as the law base which regulated the usage interest of Mahakam Delta. However, there was as well as the strength factor on the conflict of institutional function and authority (with the score of 0.1) because the authority base in each institution was sectorally regulated on life resources sector as well as gasoline sector, watering sector. Government sector, etc. Therefore, it was often found the overlap authority of the institutions.

B. External Factor Evaluation (EFE) Matrics

EFE matric was used for evaluating and analyzing the possibility or threat on the management of Mahakam Delta. By the same method with IFE matric, there was obtained the percentage of each external variable and the rating value to the factor. The giving of percentage and rating on each variable gave the percentage score that indicated the level of possibility and threat of external factor on the management of Mahakam Delta. The external evaluation based on the interview result with stakeholder was presented as in Table 2. It indicated that external strategic factor was as the chance for Mahakam Delta management and had the score of 1.85. External factor which had significant enough factor was local government commitment in management of Mahakan Delta region (with the score of 0.15) which could be seen by being carried out some meetings among the stakeholders for formulating the management of Mahakam Delta. Then, the external factor of the local public institutional cooperation due to the strange public in fishery commodity business of Mahakam Delta had the score of 0.1. International cooperation of Syam Surya Company with some strange company mainly in the development of organic shrimp has reached until the system building of well environmental dyke and socialization on Mahakam Delta society.

Table 2 External factor evaluation matric on the management of Mahakam Delta

External strategic factors		Percentage (A)	Rating (B)	A x B
Opportunity				
O1	Mahakam Delta as the international attention through the publication inside or outside country about the potency of life or non life resources.	0.1	4	0.4
O2	The policy of carbon trading was suitable with the Kyoto protocol	0.1	3	0.3
O3	The commitment of center government in the management of Mahakam Delta region	0.15	4	0.6
O4	The cooperation of local public institution with strange public institution in commodity business of Mahakam Delta fishery	0.2	3	0.6
		0.55		1.9
Threat				
T1	The being weak of rupiah kurs to the dollar caused the increasing of selling rate on fishery commodity to outside country. It could stimulate the increasing of area usage in Mahakam Delta for the activity of fishery commodity product especially shrimp	-0.1	2	-0.2
T2	International world light due to thr drgradation of coastal environment	-0.1	2	-0.2
T3	The collision against the going on rules and laws.	-0.25	3	-0.75
		0.45		-1.15
Total		1	1	21

Source: analysed data, 2013

External factor as the threat in management of Mahakam Delta was the collision against the going on rules and laws (with the score of 0.25) which has been described above. One of the problems was the regulation about space setting that has not been definitive from the government could be defined as the righter for using the space for anyone as the name of economic activity. If it did not responded by the center government, it could become as the threat of safety stability in Mahakam Delta. The selection of management strategy in Mahakam Delta was formulated based on the FGD, depth interview with key-person, and the result of AHP (Analysis Hierarchy Process). The aim, alternative, and criteria of management strategy in Mahakam Delta which was used in FGD and AHP was formulated from the result of pre-survey and discussion with key-person.

According to the result of FGD and depth interview with some competent stakeholders, it indicated that management strategy of Mahakam Delta was very related with four main aspects such as economy, technis, social-cultural, and environmental ecology. Due to the result of FGD and depth review, there were 4 amin aspects that became as the strategic hierarchi which was very nccessary to be carried out such as the aspects of ecology, social-cultural, technis, and economy. Then, after having been carried out the quantitative verification, analysis result on the united opinion of respondents indicated that the highest hierarchy was institution aspect (with the percentage score of 0.415), the next aspect that was necessary to be attended was ecology aspect (with the percentage score of 0.218), law aspect (with the percentage score of 0.189), and economy aspect (with the percentage score of 0.178). The inconsistency ratio was 0.03. less than 0.01 (maximum condition). It meant that the analysis result could be accepted. Every considered aspect in management strategy of Mahakam Delta and the percentage score was presented as in Figure 2. The selected institution aspect was as the main priority which had to be attended in management strategy of Mahakam Delta refelected that every management of Mahakam Delta had to attend the sincronization of some stakeholders that were functioned in management and resources usage in Mahakam Delta.

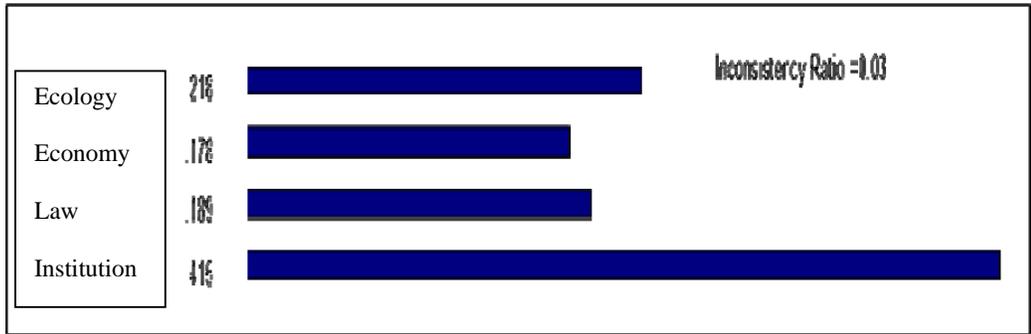


Figure 2 Criteria on management of Mahakam Delta
Source: Analyzed primary data, 2013

Note:
 Ecology = aspect of ecology
 Economy = aspect of economy
 Law = aspect of law (rules and laws)
 Institution = aspect of environment

Then, the overall analysis result indicated that scale of criteria priority and alternative on the management of Mahakam Delta by using Analysis Hierarchy Process (AHP) showed that the main three priorities in management of Mahakam Delta by looking the overall aspects and alternatives was as follow: 1) The building of special institution as the authority bridge of every sector which was handled by the available government institution (with the percentage score of 0.205); 2) To carry out the straight law through the controlling and giving sanksi for the law collision (with the percentage score of 0.118); and 3) To be immediately determined the space setting of East Borneo Province region (with the percentage score of 0.107). The inconsistency ratio of overall analysis was 0.03, less than 0.01 (maximum condition). It meant that the analysis result could be accepted. The priority of criteria and alternative was presented as in Figure 3.

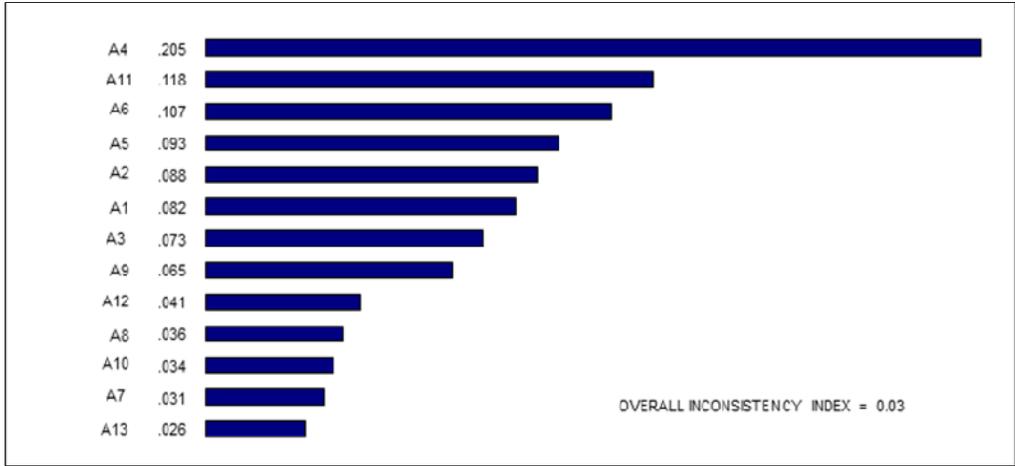


Figure 3 Priority of criteria and alternative on management strategy of Mahakam Delta

- Note:
- To carry out the cooperation of multi stakeholder in formulating the management policy of Mahakam Delta
 - To increase the facility in Mahakam Delta
 - To formulate the model of sustainable resources usage
 - Building of special institution as the authorization bridge of each sector which was handled by the available government institution
 - Optimization of rehabilitation effort in opened area of Mahakam Delta
 - To be immediately determined the region space setting in East Borneo Province
 - To cooperate with the third side (public) in increasing human resources in Mahakam Delta
 - Optimization of resources usage effort in Mahakam Delta by building industry from upstream to downstream
 - To build the regulation which limited the area opening in Mahakam Delta
 - To increase the facility in each village of Mahakam Delta
 - To carry out the law strightening through the controlling and giving sanksi for the law collisor
 - The quality increasing on human resources of Mahakam delta society
 - The increasing of conciousness and understanding on the going on rule

CONCLUSION

Based on the analysis as above, the strategy and policy which was carried out for managing Mahakam Delta was as follow:

1. To carry out the cooperation of multi-stakeholder in formulating the management policy of Mahakam Delta
2. To increase the facilities in Mahakam Delta
3. To formulate the model of sustainable natural resources usage
4. The building of special institution as the authorization bridge of each sector which was handled by the available government institution

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