Analytic Hierarchy Process Method In Arranging Grand Design Of Food Estate In The Development Of Fishing Industry In Southeast Sulawesi

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Abstract: *This study aimed to arrange grand design of food estate industry processing fishery based in the principles of integrated among the sectors of the fishing industry through trades and services sectors. The method used to construct the grand design food estate is Analytic Hierarchy Process (AHP). Policies Hierarchy that could be concluded of this study include: (a) to develop food estate in Southeast Sulawesi, the early policy should be done is to conquer obstacles of investment followed by policies to invite investors that, and the third is preparing development policy strategy; (B) investment climate is the most dominant factor potentially to be a problem; (C) facilities and infrastructures aspect has the highest value of the degree of consideration especially for energy availability of investors. (D) Enlarge and invest promotional strategy activities and investment cooperation has the highest value to be prioritized as the main strategy in the development of food estate in Southeast.*

Keywords - *Hierarchy Process Method, Grand Design, Development*

I. Introduction

Despite of fishery potential opportunities in Sulawesi Economic Corridor is very large, there are some challenges need to be addressed to achieve the development of fisheries sector. Thus, it can improve the contribution of this sector to the GDP of Indonesia and particularly in region. Based on the distribution of fish production in Indonesia, it shows that the Sulawesi Economic Corridor is a region which has the largest marine fish production in Indonesia.

Intended for Sulawesi Economic Corridor, fishing activity is focused on the waters of Southeast Sulawesi and South Sulawesi since it has great potential. Therefore, these two areas are set to be the Natioal Fish Granary Area while other areas in Sulawesi have no fishery potential as big as Southeast Sulawesi and South Sulawesi. Fisheries development in both two areas will be initiated to develop Mega Minapolitan even as other areas are only cover small fishing activities. Consequently, the development of fishery should be encouraged in accordance with the existing potential.

Coming from these conditions, it needs a grand design of food estate industry processing fishery based on the principles of integrated among the sectors of the fishing industry with trades and services sectors. By having food estate integrated with fishing industry with trades and services sectors, it is expected to create production efficiencies and fisheries sector accelerated growth. The concept is trusted to be an effort to make Southeast Sulawesi as the National Fish Granary and food estate of East Indonesia as well as the Regional Development Acceleration and Expansion of Sulawesi.

II. Methodology

Hierarchy Analytic Process Concept (AHP)

Hierarchy Analytic Process is one method to help in decision-making problems. This method is used to solve problems that require multiple criteria decision making (there are many criteria and alternatives). AHP analysis can be done in two ways: manually (count) and analytical tools of Expert Choice program. These are some steps of manually AHP analysis:

1. Composing Decision Structure

Composing decision structure to prioritize on an issue done by the decomposition of the existing problems, so as to be figured the factors influence and alternatives decision specified in the form of a hierarchy in which all elements of the decision structure.

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2. Composing Opinion Matrix

Composing opinion matrix is to determine the value of the interests of each element in decision structure. In determining the scale of interest, it refers to the comparative Saaty scale. Priorities scale is done in order to facilitate understanding of the use of level analysis decision methods. Opinion matrix is created based on the degree of each level factor.

3. Priority Elements of Each Level

Elements priority determining on each level can be found by searching for the pair wise comparison value. This value can be obtained by normalization of the weight of priority from opinions matrix. Normal weight of matrix pair wise comparisons of each level in the decision structure is the average of the value of each row. Normal weighting indicates the priority of each element in decision structure level. Based on the normal weight, it would be obtained Eigen values vector and consistency index. These three steps are repeated to gain the weight of each element on each level.

4. Joint Opinion Matrix

To acquire joint opinion matrix is first to determine the relative importance of scale and weighs of two elements in one level (level II) in coincidence with elements on the next higher level (level I). Determination of the interest scale repeated on all elements in one level of each level above.

5. Decision Making Priority

Decision making priority that will be taken to be developed in an area should be determined by the synthesis of the weight priority in all variables that exist on each level in the decision structure. If the overall consistency of the matrix composite <10% then the priority has been consistent.

III.   Result And Discussion

In the effort to construct grand design of food estate fishery industry integrated with the fishing industry, trade, and services-based fishery in Southeast Sulawesi, conducted using Analysis Hierarchy Process (AHP). AHP is a method organizing the problem in the form of hierarchy and incorporate considerations to produce a relative priority scale. Analysis Hierarchy Process could also resolve the problem with the principle of preparing hierarchy, principles in setting priorities, and logical principles in making decision.

3.1. Policy Approach Structural

The structure built to determine grand design of food estate fishing industry development in Southeast Sulawesi is as follows:
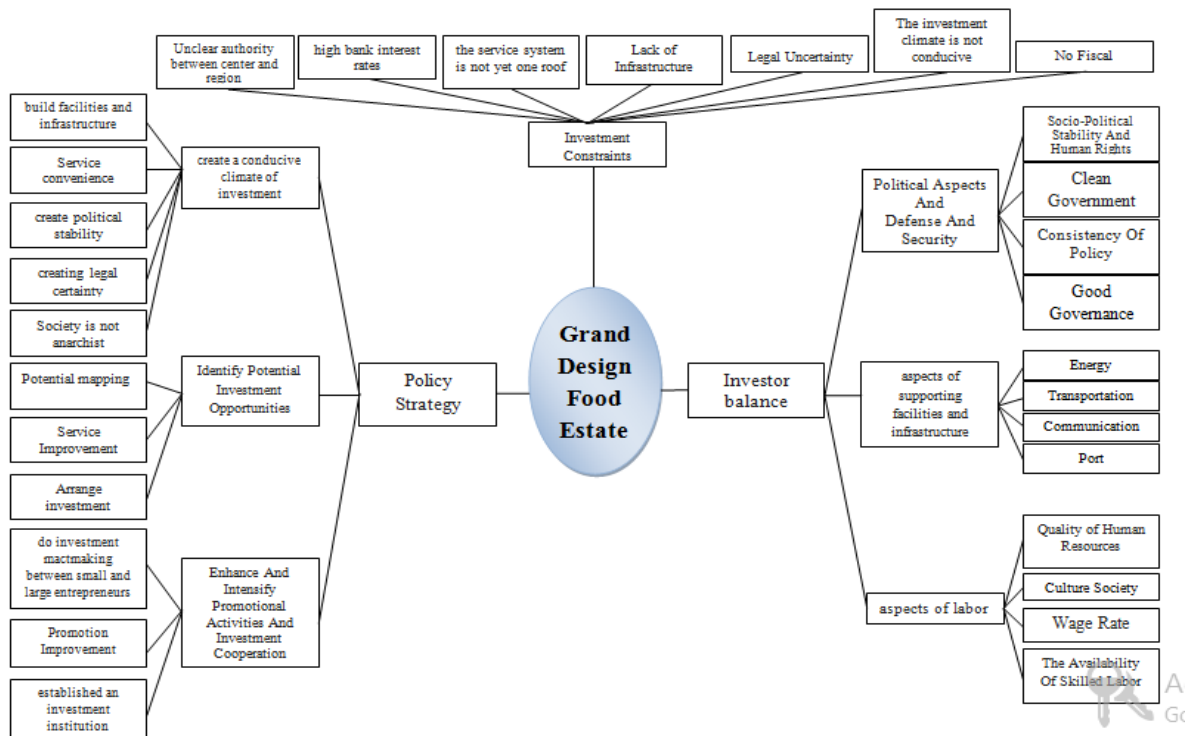

Figure 1. Hierarchy Structure Grand Design Food Estate Fisheries Based

Grand design food estate fishery based in Southeast Sulawesi will use three main policy approaches, namely: (a) investment constrain approach; This approach will identify some obstacles will arise to develop food estate; (B) investor considerations approach; This approach will identify any factors taken as investors consideration; and (c) strategy and policy approach, which identify priority strategies that will be used for the development of food estate in the Southeast Sulawesi.

The result of determinants calculation used to develop food estate in grand design in Southeast Sulawesi quarter based on Hierarchy Analysis Process (AHP), showed that from those three approaches turned out that the degree of interest were almost similar. It meant that the need of the three approaches relatively equal to develop food estate. This could be seen from the point of the interest degree from the three approaches used, it showed that the investment constraint approach has the highest degree of interest of 39.83 percent, while the investor consideration approach has the highest degree of interest of 33.05 percent. In addition, strategies and policies approach has the highest degree of interest of 27.11 percent. Thus, it can be concluded that to develop food estate in Southeast Sulawesi, early policy should be completed was to overcome obstacles to investment, followed by policies to invite new investors and the third policy was to prepare a new strategy of development policy.

3.2. Investment Constraints Approach Analysis

Investment constraints approach identified several problems that will arise in food estate development such as: (a) Obscurity authority within central and region; (B) The high level of bank interest rates; (C) There was no one-stop service system; (D) Inadequate infrastructure; (E) The lack of legal trust; (F) Unbeneficial investment climate; and (G) No fiscal incentives.

The below table illustrated the results of degree constraint value of each investment constraints factor that will arise in the development of food estate in the Southeast.

Table 1. Value of Constraints Investment Degrees

| No.	criterion I	value of Interest
1	Obscurity authority within central and region	10.85
2	The high level of bank interest rates	12.79
3	There was no one-stop service system	15.89
4	Inadequate infrastructure	08:52
5	The lack of legal trust	07:36
6	Unbeneficial investment climate	17.82
7	No fiscal incentives	12:40

From those seven criteria of constraints investment that will arise in the development of real food was unbeneficial investment climate factor. This factor has an interest value of 17.82 percent that needed to be solved to reduce investment constrains. The next was one-stop public service which has an interest degree of 15.89 percent.

3.3. Hierarchy Analysis of Investors Considerations Approach

Investor considerations approach was an approach identified any hierarchy factors taken as consideration for investors, as follows: (a) Political and Security Defense Aspects; (B) Supporting Facilities and Infrastructures Aspects; and (c) Labor Aspects.
Here was an overview of the results of the consideration degree value of each factor as consideration in the development of food estate in the Southeast.

Figure 2. Hierarchy Structure of Policy of Investors Considerations Approach
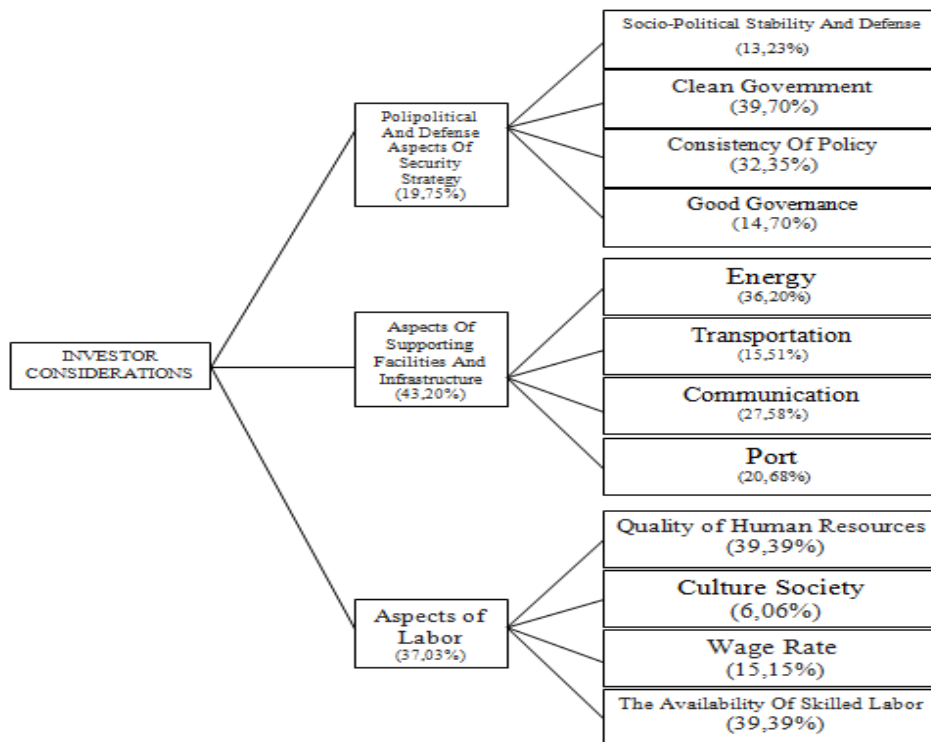
The above figure showed that the political and security defense aspects has the interest degree of value of 19.75%, while supporting investment facilities and infrastructure aspects has the interest degree of value of 43.20%. In addition, labor aspect has the interest degree of value of 37.03%. Thus, Southeast Sulawesi government needed to prioritize investment facilities and infrastructure aspects in developing food estate since this aspect has the highest degree of value as investor to consideration, followed by aspects of political and security defense.

The most dominant factor needed in supporting facilities and infrastructure aspects of food estate development was the availability of energy, particularly in electricity and fuel. This factor has the degree of interest value of 36.20%, followed by communication facilities, ports, and transport.

The most dominant factor from the dominant needed related to the aspect of labor in the development of food estate was the availability of skilled and qualified labor. Both of those factors had the same degree of interest of 39.39%, followed by wages rate and local culture.

The most dominant factor from the dominant needed regarding the political and security defense aspects in the development of food estate was a factor of good governance. This factor has a value of the degree of interest of 39.70%, followed by policy consistency factor of 32.35% and good governance factor and also political and social stability and security.

3.4. Hierarchy Analysis of Strategy and Policy Approach

Strategies and policies approach was an approach identified priority strategies would be used for the development of food estate in Southeast Sulawesi. Strategies and policies used as follows: (a) Creating conducive investment climate; (B) Identifying potential and investment opportunities; and (c) Improving and intensifying promotion activities and cooperation invests.

Here was an overview of the results of consideration degree from each strategies and government policies as consideration in the development of food estate in the Southeast Sulawesi.

Figure 3. Hierarchy Structure of Strategy Policy and Policy Approach
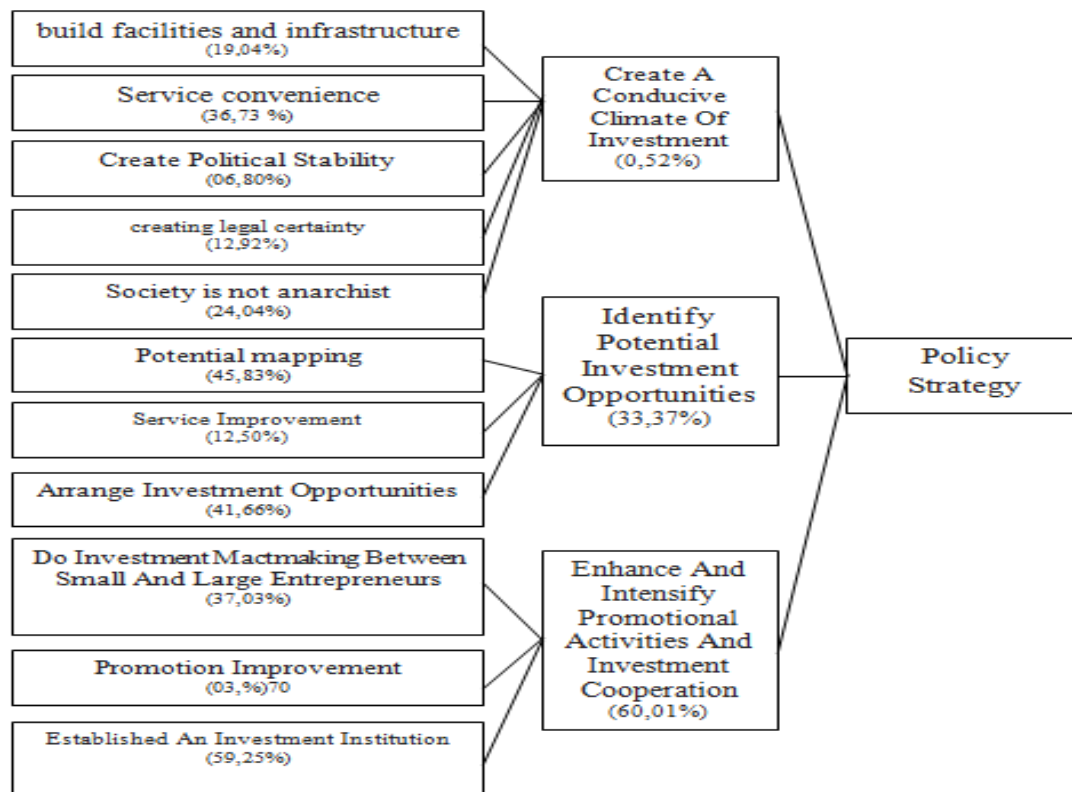
From the above figure showed that the strategy of creating conducive investment climate to have the highest degree of interest by 0:52%, while the strategy to identify potential and investment opportunities have the highest degree of interest of 332.37%. In addition, strategy to improve and intensify promotional activities and investment cooperation has a value of the degree of interest of 60.01%. Thus, the government of Southeast Sulawesi needed to prioritize strategies to increase and intensify promotional activities and investment cooperation in the development of real food since this aspect has the highest degree of value, followed by the strategy to identify potential and investment opportunities as well as creating a conducive investment climate.

The dominant factor needed as strategy to improve and intensify promotional activities and investment cooperation in the development of food estate was established capital investment organization particularly the development of the food estate. This factor has a value of the degree of interest of 59.25% followed by strategies for matchmaking investment between small and large businesses (37.03%) and increasing sale (03.70%).

The dominant factor needed as a strategy to identify the potential and investment opportunities in the development of food estate was particular potential food estate mapping development. This factor has a value of the degree of interest (45.83%) followed by opportunities develop strategies inv. (41.66%) and improving service (12:50%).

The most dominant factor needed as a strategy to build conducive investment climate in the development of the food estate was a special straightforward service of food estate development. This factor has a value of the degree of interest (36.73%) followed by strategy Masya, not anarchist (24.4%); Constructing facilities/infrastructure (19:04%); Creating authority belief (12.92%); Creating stability and political (06.80%).

IV. Conclusion

Based on the analysis and research findings, it can be concluded several result as follows: (a) to develop food estate in Southeast Sulawesi, early policy should be done is to overcome investment obstacles followed by policies to invite new investors and the last is to construct development policy strategy; (B) unbeneficial investment climate factor is the most dominant factor potentially to become the problem for investment; (C) supporting facilities and infrastructure investment aspects has the highest degree of consideration value especially the energy availability of investors. (D) strategy to improve and intensify promotional activities and investment cooperation has the highest value of priority degree becoming the main strategy in the development of food estate in the Southeast Sulawesi.

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