

Scenarios and Actions of Sustainable Development in Coastal Rural Areas Policy



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ABSTRACT: Development that focuses more on economic growth will cause ongoing natural damage. As a result, the concept of sustainable development that is more environmentally friendly has emerged. To realize sustainable development, scenarios and actions from policies are needed. This study aims to analyze scenarios and actions that can accelerate the achievement of sustainable development policies in coastal villages. The data were obtained from experts in the field of coastal rural development. The data includes expert judgments related to criteria, scenarios, policies and actions. Data analysis using Multi Policy software. The results of the research and suggestions indicate that the demand site scenario can be pursued through a policy of cultural tourism of natural resources and multi-function fisheries. The supply site scenario can be pursued with the smart village and integrated village policies. Actions for ecotourism and fisheries-based tourism to support natural resource cultural tourism policies. Actions on formal education and ICT to implement multi-function fisheries policies. Product quality action and training for smart village policies. Action to improve infrastructure for the implementation of the integrated village policy.

KEYWORDS: policies; scenarios; actions; sustainable development

I. INTRODUCTION

Sustainable Development is a concept that is continuously voiced by the UN (United Nations) world institutions to this day, various kinds of important issues that are developing today have become a challenge to be solved in achieving sustainable development goals. Indonesia through its delegation has approved the sustainable development goals or SDGs (Sustainable Development Goals) as a common goal of all countries, whether developed countries, developing countries, developing small countries or developing small island countries to achieve prosperity together. In the SDGs there are 17 goals and 169 targets to be achieved, all of these goals and targets outline issues related to social inequality, poverty, health and environmental management as well as other important issues. Indonesia as a developing country and experiencing a rapidly increasing population, is experiencing problems with social, economic and environmental conditions. It was recorded that in 2016 the Indonesian population of approximately 265 million people became an inseparable part of this problem. Economic problems, social inequality and environmental damage are problems faced by various elements and regional levels, one of which is the coastal village. Indonesia as one of the largest archipelagic countries in the world has coastal villages totaling about 8,090 villages spread across all islands in Indonesia, both large islands and small islands and the existing community is around 16 million people with various fishing backgrounds, fish cultivators, traders and others and of the 16 million people living in coastal areas, there are about 5.2 million people categorized as poor [1].

The coastal area is defined as a transitional area between the sea and land, towards the sea covering the continental shelf area and towards the land covering areas that are still affected by the influence of sea water splashes or tides [2]. A number of critical issues developed related to coastal rural development including ecological, political, social and economic issues, ecological damage in coastal villages can be divided into two, namely natural damage and damage made by human hands, this natural damage includes various natural disasters that occur in coastal areas and coastal villages such as tidal floods, hurricanes, El Nino, tsunamis, and earthquakes. This natural damage is beyond human control and global warming has contributed to changes in coastal ecology. While the damage caused by humans includes coastal and marine pollution, accumulation of garbage, use of fish bombs and chemicals, Use of environmentally unfriendly fishing gear, destruction of mangroves, and conversion of land.

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Then the socio-economic issues of coastal rural communities are generally related to the level of education, employment and income sources of people who depend on coastal resources. The socio-economic activities of coastal communities include processing, trading, aquaculture, fishing, tourism, salt industry, ports and sea transportation, but because of government policies that have not been fully in favor of developing coastal and marine resources-based economies, there are still opportunities for the welfare of coastal communities. has not been realized. In terms of education, coastal communities in general who work as fishermen have a low level of education and only a small proportion have higher education. In general, activities and activities that run in coastal areas are almost entirely utilized from land land, water land to the open sea, but every activity carried out by humans has an influence on the environment and the activities carried out determine the sustainability of environmental conditions. Lack of public awareness and understanding of policies related to the coast, low levels of education and community character coupled with the pressure on the living cost causes people to easily do damage to the environment [3].

The vast potential of coastal natural wealth has resulted in a variety of environmental issues, including overfishing in the fisheries sector, destruction of mangrove forests, coral reefs, and seagrass beds, as well as coastal abrasion and tidal waves, as well as issues of damage caused by natural disasters such as tsunamis. This issue is either directly or indirectly related to the poverty of coastal communities, inappropriate policies, insufficient law enforcement, and inadequate human capacity..

Based on the existing problems, it is necessary to have a policy direction and the placement of appropriate programs so that sustainable coastal rural development can be achieved. By using multi-policy analysis with expert opinions, it is hoped that it can provide recommendations that are in accordance with the existing problems.

II. METHODOLOGY

The type of research used in this research is quantitative research. Data collection is done by taking a questionnaire. In this study, questionnaires were filled out by experts in the field of fisheries policy in Indonesia

Data analysis using MUTLIPOL. This method involves evaluating actions or strategies based on criteria and policies, while taking the consensus of a group of experts into account. In this study, the relationship between variables was determined by analyzing those outlined in the strategic plan in light of the criteria and policies established on the basis of references and expert opinion [4]. In general, MULTIPOL aims to facilitate decision-making by developing a simple and dynamic analytical grid of the diverse actions or solutions available to decision-makers [5].

MULTIPOL, evaluation of the choice of actions (actions) or alternative programs is not only against the criteria used but also the interaction of three components, namely actions, policies and scenarios [6].

- Evaluation criteria: defined as "... measurable aspects of the assessment by which the dimensions of the various possible options considered can be characterized." All evaluation processes for assessing the performance of alternative scenarios, policies, and policy actions included in the MULTIPOL evaluation process are based on criteria.
- Scenario: Defined as a structured future development in which the goals and objectives established for the system/problem at hand are met.
- Policy: a strategy for achieving objectives in a specific planning exercise, pertaining to the political, social, economic, and physical context of the evaluation.
- Action (action): pertaining to potential interventions aimed at implementing diverse policies.

The MULTIPOL principle adheres to the multicriteria rule, in which scores and weights are used to determine the hierarchy and options. MULTIPOL integrates participatory criteria evaluation through stakeholder participation. Evaluation of the choice of actions (actions) or alternative programs in MULTIPOL is based not only on the criteria employed, but also on the interaction of three components, namely actions, policies, and scenarios [7]. It is understood that the objective of sustainable coastal rural development is to strike a balance between economic, social, environmental, accessibility, and cultural preservation [8]. Where these goals will be classified into criteria, scenarios, policies and actions.

A. **Criteria:** *What are the objectives and criteria for achieving sustainable development of coastal villages*

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Table 1. Criteria

Purpose	Criteria	Description
Economic Development	Income	Increased income
	Competitiveness	Increasing competitiveness
Social Cohesion	Employment	Labor absorption
	New Business	New business growth
Environmental protection	Pollution	Environmental Pollution Reduction
	Mangrove	Mangrove Logging Prevention
Accessibility	Connective	Infrastructure Network Improvement
Cultural preservation	Culturefes	Cultural festival activities

The criteria used are of equal weight – (weight=1).

B. **Scenario** : Vision, approach, conditions or assumptions that may be applied or may occur in the future.

- DS: Demand Side
- SS: Supply Side

The weights used are of equal weight – (weight=1).

C. **Action** : Ways to implement policies

Table II. Actions

Action	Keterangan
Fishtourism	Development of fisheries-based tourism in coastal villages
Infrast	Infrastructure development and strengthening
ProdKual	Development and improvement of the quality of fishery products and coastal villages
ICT	Development and improvement of information, communication and technology networks
Ecotourism	Development of ecotourism based on local natural resources
Training	Increasing the capacity and knowledge of rural communities
Formal education	Improving the formal education of coastal rural communities

D. **Policy** : the policy or direction to be implemented to support the scenario.

- Multifish: Multifunctional fishery
- SDAWisBud: Natural Resources and Cultural Tourism
- SmartVill: Smart Coastal Villages
- Integrvill: Integrated Coastal Village

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- SDAWisbud: Natural Resources and Cultural Tourism
The weights used are of equal weight – (weight=1).

III. RESULT AND DISCUSSION

The research data was obtained from related experts through the Discussion Group Forum. The data that has been obtained is then analyzed using MULTIPOL.

E. Evaluation of actions in respect of policies

The results of the performance evaluation of each Action in relation to each particular Policy will be presented in Table 3. Further explanations can be seen in more detail in Figure 1 and Figure 2.

Table 3. Actions related to Policy

	Multifish	SDAWisbu	SmartVill	IntegrVill	Moy.	Ec. Ty	Number
Fishtouris	12	12,1	12	12	12	0	2
Infrast	12,8	12,6	12,9	12,9	12,8	0,1	5
Prodqual	12,4	12,2	12,6	12,5	12,4	0,1	3
ICT	12,7	12,6	12,9	12,8	12,8	0,1	4
Ekowisata	14	14,1	14	14	14	0,1	7
Diklat	11,9	11,8	12	11,9	11,9	0,1	1
Pddformal	13	13	13,1	13	13	0,1	6

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On the basis of the mean value (Moy) and the standard deviation (Ec. Ty) above, it is known that Ecotourism is an Action with the highest hierarchical position (number), which means that Ecotourism Action has the highest influence among other fields with an average value (Moy).) is 14 and the standard deviation (Ec. Ty) is 0.1. The action with the lowest performance is Education and Training with an average value (Moy) of 11.9 and a standard deviation value (Ec. Ty) of 0.1.

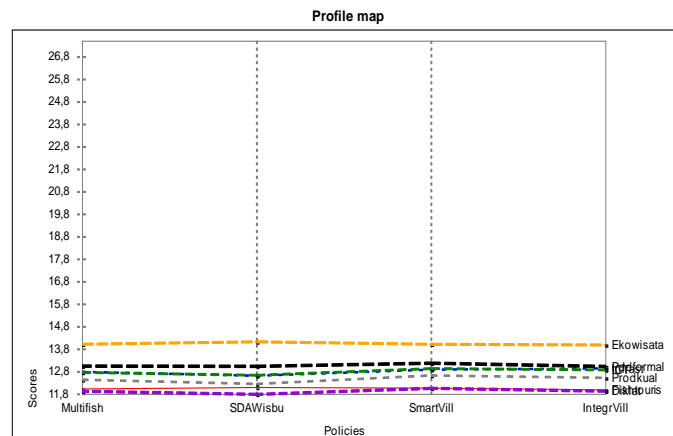


Fig. 1. Profil Map Action-Policy

Figure 1 explains that,

- Action Ecotourism (Development of ecotourism based on local natural resources) and Fishtourism (Development of fisheries-based tourism in coastal villages) are the most superior in the SDAWisbud Policy (SDA and Cultural Tourism).
- Action Formal Education (Pdd-formal), Diklat (Improvement of skills and knowledge of rural communities), ICT (Development and improvement of information, communication and technology networks) and ProdQual (Development and improvement of the quality of fishery products and coastal rural areas) are the most superior in the SmartVill (Smart Coastal Villages).
- Action Infrast (Infrastructure development and strengthening) is superior to the SmartVill (Smart Coastal Villages) and IntegrVill (Integrated Coastal Village) policies.

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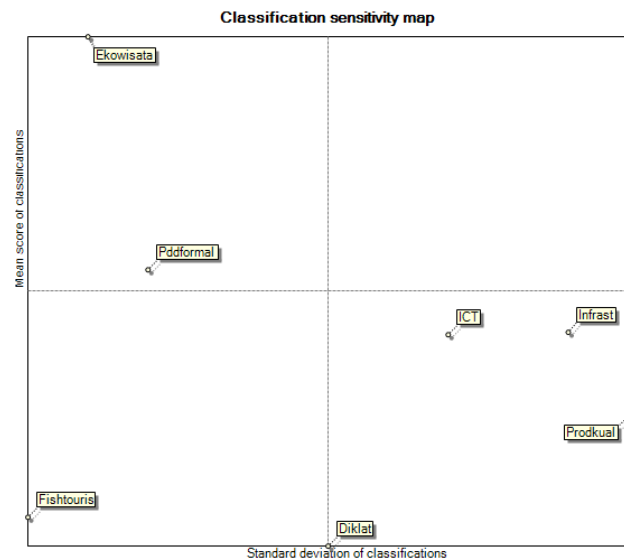


Fig. 2. Sensitivity Map Action-Policy

Fig.2 shows an The (X) axis represents the standard deviation, while the (Y) axis represents the performance of an Action in relation to the Policy, measured by the average value. The explanation of each Action can be seen as follows.

- Action Ecotourism shows the highest performance for almost all policies (Policy).
- Formal Education Action is suitable for all policies, as it exhibits high mean scores and very low standard deviations.
- Actions ICT, Infrastructure, Productivity and Fishtourism show a medium standard deviation and therefore they do not perform well for all policies, only fitting certain policies.
- Action Training shows the lowest performance compared to other Actions

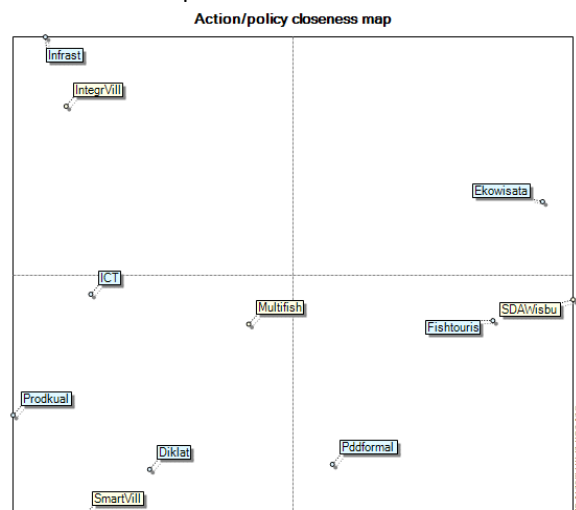


Fig. 3. Closeness Map Action-Policy

Fig. 3 shows the appropriate Action-Policy groups in terms of proximity. Policy IntegrVill (Integrated Coastal Village) will be in accordance with Action Infrastructure (Development and strengthening of infrastructure), Policy SDAWisbud (SDA and Cultural Tourism) will be in accordance with Action Ecotourism (Development of ecotourism based on local natural resources) and Fishtourism (Development of fisheries-based tourism in coastal villages) , Policy Multifish (Multifunctional Fisheries) will be in accordance with the actions of Formal Education (PddfORMAL) and ICT and the SmartVill (Smart Coastal Villages) policy will be in accordance with Education and Training (Improving skills and knowledge of rural communities) and Product Quality (Development and improvement of the quality of fishery products and coastal rural areas).

Based on table 3, Fig.1, Fig. 2 and Fig.3 it is known that the most superior Action in carrying out the existing policy (Policy) is the Ecotourism Action.

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F. Evaluation of policies in respect of scenarios

In addition to evaluating the relevant action against the policy, there is also a policy evaluation of the scenario. The results obtained from the evaluation of The Policy regarding the proposed scenarios is presented in the section below (Table 4 and Figures 4, 5 and 6).

Table 4. Policy related to Scenario

	Demandside	Supplyside	Moy.	Ec. Ty	Number
Multifish	12,6	12,6	12,6	0	3
SDAWisbu	12,7	12,5	12,6	0,1	1
SmartVill	12,6	12,8	12,7	0,1	4
IntegrVill	12,5	12,7	12,6	0,1	2

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More complete details can be seen in the following figure.

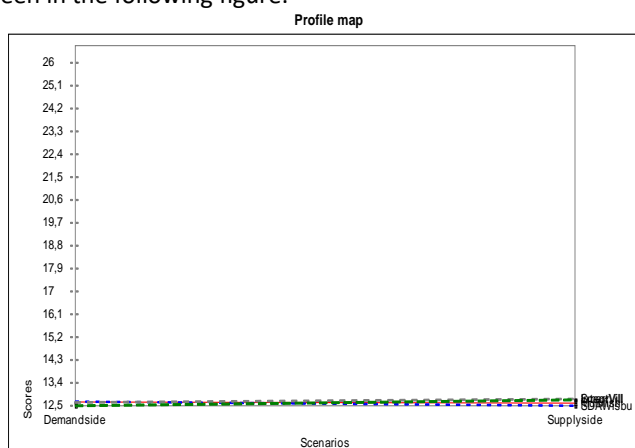


Fig. 4. Profil Map Policy-Scenario

Based on fig.4 it is known that the relationship between Policy and Scenario can be characterized as follows.

- For the Demand side scenario (increase from the demand side), the most appropriate policy is SDAWisBud (SDA and Cultural Tourism), followed by Multifish (Multifunctional Fisheries) and SmartVill (Smart Coastal Villages), while the last one is IntegrVill (Integrated Coastal Villages).
- For the Supply side scenario (increase from the supply side), the most appropriate policy is SmartVill (Smart Coastal Villages), followed by IntegrVill (Integrated Coastal Village), Multifish (Multifunctional Fisheries), while the last one is SDAWisBud (SDA and Tourism Culture).

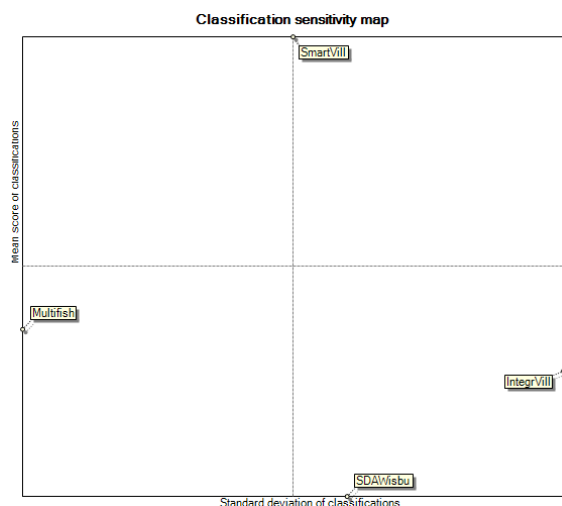


Fig. 5. Sensitivity Map Policy-Scenario

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Figure 5 explains that,

- Policy SmartVill (Smart Coastal Villages) showed the highest performance for almost all policies (Policy).
- Policy Multifish (Multifunctional Fisheries) and IntegrVill (Integrated Coastal Villages) show a medium standard deviation and therefore they do not perform well for all policies, only fit in certain policies.
- SDAWisBud Policy (SDA and Cultural Tourism) shows the lowest performance compared to other Actions.

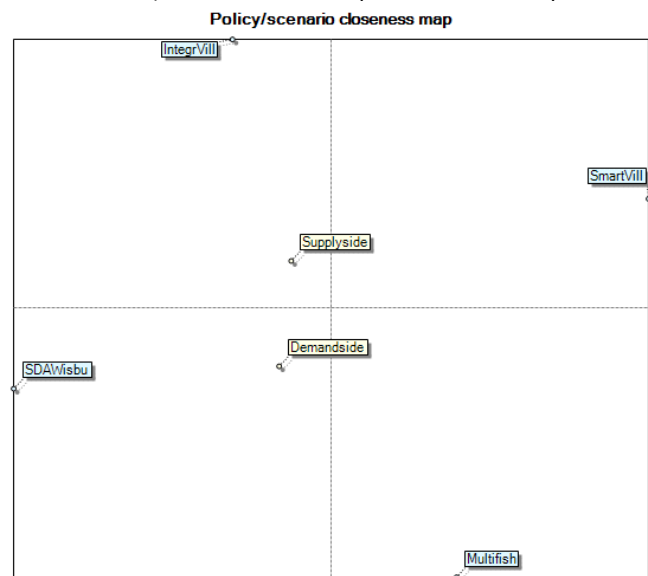


Fig. 6. Closeness Map Policy-Scenario

Fig.6 shows policies and scenarios that are closely related so that policy steps can be made that are relevant to the existing scenario. Based on the closeness map above, that in order to achieve the supplieside scenario, the policies that should be implemented are the first integrated village or integrated coastal village and smart village or smart coastal village, while if applying the demandside scenario, what must be applied is the first to develop natural resources and cultural tourism. and the second is multifunctional fisheries.

IV. CONCLUSION

The results of the research and suggestions indicate that the demand site scenario can be pursued through a policy of cultural tourism of natural resources and multi-function fisheries. The supply site scenario can be pursued with the smart village and integrated village policies. Actions for ecotourism and fisheries-based tourism to support natural resource cultural tourism policies. Actions on formal education and ICT to implement multi-function fisheries policies. Product quality action and training for smart village policies. Action to improve infrastructure for the implementation of the integrated village policy.

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