Rural development strategies in Indonesia: Managing villages to achieve sustainable development

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Abstract. Rural development is an appealing phenomenon to be explored. After the Village Law was established in 2014, each village must manage its own village funds. This significantly impacts the spatial and a-spatial aspects of rural development, either creating opportunities in rural areas or even creating new problems. Currently, many villages carry out development without prudently considering spatial aspects. Villages as the main suppliers of various staple foods are unable to achieve self-sufficiency as part of sustainable development. Therefore, it is important to discuss governance aspects. This paper explains rural issues and problems and relates these to the development management framework. The paper uses a literature review and secondary data to identify issues and problems in villages. The paper found that each village can formulate strategic solutions by planning to increase information and public communication, organizing to strengthen systems and internal supervision, acting to optimize the role of Village-Owned Enterprises (BUMDes) as well as controlling to strengthen spatial control.

1. Introduction
The village is the lowest government level that has the authority to manage its own budget. The Village Law No. 6/2014 stipulates that villages have a unique role and village governance must follow the principles of recognition, subsidiary, diversity, kinship, cooperation, deliberation, democracy, independence, participation, equality, empowerment, and sustainability. In addition, Law No. 23/2014 concerning Regional Government, details the distribution of authority from the national government to regional governments. Rural areas are homogeneous in nature and have an emphasis on cooperation in agricultural activities and these areas have a strong kinship factor[1]. Generally, rural communities work in the field of agriculture which is influenced by natural and weather factors[2]. Villages have two conceptual functions, i.e., executing the village government (local self-government) and handling local community affairs following the rights of origin and traditional rights (self-governing community).

In the context of the rural-urban linkage, villages produce vegetable and animal food products and raw materials and work in villages is in the agricultural, manufacturing, industrial and other sectors [3]. As a result, rural areas are made up of a collection of villages with similar characteristics. Rural and urban concepts refer to the characteristics of the community, while villages and cities are the administrative or territorial units that are the settlements of farmers [4].

There are two main approaches to the concept of rural development, i.e. development from above and development from below [5]. Development from above is associated with external supervision
such as formal directives from higher hierarchy governments. These directives hold great control over the administrative system of the villages. Whereas development from below is initiated by individuals and groups of community members who come up with innovative solutions and have indigenous design and construction methods [6]. Based on the concept of rural development, there are two major paradigms in Indonesia’s village development: ‘Membangun Desa’ and ‘Desa Membangun’.

Villages should adhere to the principles of rural development. These principles are that 1) development should improve the conditions of most local residents; 2) more people should benefit from development than those who are negatively impacted by it; 3) development should ensure the basic needs of the community are fulfilled; 4) development must be conform people’s needs; 5) development should encourage self-sufficiency; 6) development should bring continuous improvement; and 7) development should not damage the environment [7]. Continuous participatory meetings are important tools of rural development that allow the sharing of information to increase the ability of local communities to improve their own lives. Through the participatory rural appraisal (PRA) method, the community can carry out its own analysis to plan and take beneficial actions in line with their abilities [8]. In the development planning process, villagers must strive to be more creative, dynamic and flexible in dealing with the difficulties they face, so that they could further boost development[9].

Sustainable development is a principle orientation for the world to follow. In a rural context, sustainable development relates to poverty eradication, zero hunger, healthy living and welfare, quality education, gender equality, and decent work and economic growth. However, the world would face a disaster when people would not understand the importance of environmental issues [10]. Therefore, [11] urged the implementation of policies for strengthening sustainable forms of agriculture. This could be done by shifting from conventional practices to sustainable activities, replacing industrial farming practices with systems that preserve biodiversity, upgrading soil fertility, and ensuring safe and nutritious food for all humans. Compared to the urban context, the rural environment offers greater natural diversity, healthier areas, cultural habitude, nurtured traditions, traditional values, and affluent heritage [12].

This paper aims to uncover the characteristics of village development within the Indonesian governance framework. The main objective of this paper is to identify the issues and problems of rural development. The paper seeks to provide alternative strategic solutions in responding to in village and rural development governance.

2. Methods
This paper follows a deductive approach, establishing elaboration from an assumption or speculation towards finding the data that will be explained [13]. This research is also aided by a descriptive-qualitative analysis of information found in the literature. Qualitative research emphasizes the reality and social phenomena as holistic, complex and dynamic[14]. The paper uses a literature review to find secondary data to identify rural issues and problems. The data is taken from SUSENAS (national survey), BPS (Statistics Indonesia) and from the Ministry of Villages, Disadvantaged Regions and Transmigration for the past five years.

The paper analyzes the obtained data based on the principles of management: planning, organizing, actuating and controlling [15]. As such, the paper classifies all of the problems according to the management framework and describes the data based on literature. Then, all the stages are combined using Logical Framework Analysis (LFA) for a deeper understanding of the real conditions, and to build a logical hierarchy based on goals, to identify potentials and risks. Lastly, the paper proposes solutions to the problems in village and rural development governance[16]. This research follows the stages of analysis below:

a. Identifying issues and problems based on a synthesis of various literature. This data originates from scientific papers and reports by relevant government agencies.
b. Formulating strategies. Villages face many problems. Therefore, it is essential to formulate strategies to deal with the main problem that has the greatest impact on village development. The use of problem trees or problem tables facilitates the identification of these problems.

c. Formulating the best solution to these strategic issues. By referring to the problem table or problem tree, the study develops general solutions.

d. Formulating a strategy based on the management framework. In doing so, the paper follows the stages of planning, organizing, actuating and controlling.

3. An overview of rural development in Indonesia

The Village Law gives villages the authority to develop all of its service sectors independently. To monitor the development of the villages, the Ministry of Villages, Disadvantaged Regions and Transmigration uses five indicators to calculate the Village Development Index (Index Pembangunan Desa - IPD). These five indicators are basic services, infrastructure conditions, transportation, public services, and village government administration. Table 1 presents the growth rate of the IPD and compares the index between the years 2014 and 2018. Table 1 show that the average growth rate of Indonesian IPD is 6% with the greatest improvements in the aspects of village government administration and in village infrastructure conditions. This proves that Village Funds have a positive impact on solving rural problems. However, villages still face many problems, especially in alleviating poverty and reducing unemployment in rural communities.

| Factors of IPD       | IPD 2014 (%) | IPD 2018 (%) | Increase (%) | Growth Rate |
|----------------------|--------------|--------------|--------------|-------------|
| Basic public Services| 56.73        | 57.65        | 0.92         | 0.02        |
| Infrastructure Quality| 39.21       | 44.63        | 5.42         | 0.12        |
| Transportation Quality| 73.5        | 77           | 3.5          | 0.05        |
| General public service| 51.72       | 53.6         | 1.88         | 0.04        |
| Village Government   | 61.59        | 71.4         | 9.81         | 0.14        |
| **National Average** | **55.71**    | **59.36**    | **3.65**     | **0.06**    |

4. Identification of issues and problems

After the issuance of the Village Law, Village Funds became an important topic. Amid the complex problems faced by rural communities, the village government must take strategic steps in dealing with village problems. This highlights the importance of the governance of villages and rural areas. There are seven main factors that cause problems in rural areas, as described in the following section.

4.1 The readiness of government agencies

Knowledge and technological capacity are basic capitals that governments require to be able to offer excellent public services and aid the progress of the village. The Village Head election is one of the strategic efforts to improve the performance of village officials. This is related to leadership factors, which are found to be crucial determinants for the success of development efforts in the village [17,18]. The village leadership plays a significant role in realizing trust-based community development because these developments increase honesty. Notable, the greatest improvements occur when more village meetings are organized[19].

There are some legal requirements to become a village leader, i.e. the Village Head and official employees must have attained senior high school diploma. The Village Law also demands villages to implement orderly administration and careful planning. The village leader must have these skills so that he can influence the community’s thinking patterns. Conversely, village governments that are led
by people with low levels of education and lack of experience will potentially allocate their budget for the wrong things.

4.2 Low participation in the village society
Community participation in village development is an important factor to ensure that development programs target community needs effectively. However, many village communities do not take this opportunity to influence infrastructure development programs and rural community empowerment programs. Generally, the level of community participation in village development affairs remains low [20][21][22][23].

4.3 Low productivity of human capital
Most people living in rural areas work in the agricultural sector. This sector provides work and income during specific seasons. However, outside the harvesting season, farmers’ income becomes uncertain. In 2015, only 35% was absorbed in the agriculture sector which caused low investment in human capital and decreased entrepreneurial activity [24]. The unemployment rate rose from 4.01% to 4.04% in 2018. Unemployment is a joint challenge as the efforts to create jobs in rural areas through Village Funds are currently ineffective[25]. Lacking human capital and the inability to access workplaces are the main causes of poverty; smart growth increases property values and makes it difficult to live near areas that are developing economically [26].

Table 2. Poverty rates in Indonesia. Modified from Statistics Indonesia, 2018.

| Level          | Percentage (%) |
|----------------|----------------|
|                | 2000 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
| National Poverty | 19.1 | 13.3 | 12.5 | 12   | 11.4 | 11.3 | 11.2 | 10.9 | 10.6 |
| Urban Poverty   | 14.6 | 9.9  | 9.2  | 8.8  | 8.4  | 8.3  | 8.3  | 7.8  | 7.7  |
| Rural Poverty   | 22.4 | 16.6 | 15.7 | 15.1 | 14.3 | 14.2 | 14.2 | 14.1 | 13.9 |

Poverty rates in Indonesia show a reduction in poverty levels, but poverty in villages is still double that of urban areas. Besides the high unemployment rate, education is a major concern, especially vocational education and entrepreneurship which allows the youth to be absorbed in the labor force.

4.4 Conversion of agricultural land
The rapid growth of the population working in urban areas has increased the need for housing. Since land in urban areas is limited, housing is constructed in the hinterlands of cities where land is still cheap and there is still a trade-off with transportation costs. These problems originate from the unbalanced development between current land functions and human needs. Market conflicts between rural residential land functions even hamper land use management in rural areas [27]. This phenomenon is known as urban sprawl. The impact of urban sprawl on the rural environment is quite serious, especially for the productivity of the land and the level of agricultural production. Regardless of promises of investments in infrastructure and reduced transportation costs, rural areas rarely notice these infrastructure improvements [26]. Based on Indonesia’s Sustainable Food Agricultural Land (Lahan Pertanian Pangan Berkelanjutan - LP2B) regulation, the government protects food agriculture as farmers have the right to receive government assistance to ensure that their land remains to be used for agricultural purposes.
Table 3. Urbanization vs employment in agriculture. Modified from Statistics Indonesia, 2018.

| Types of Disaster | Villages Impacted (%) |
|-------------------|-----------------------|
| Floods            | 19.675                |
| Landslides        | 10.246                |
| Aridity           | 8.587                 |

4.5 The intensity of disasters

In villages located in the upstream area of rivers, a strong conversion from forest land to horticultural agriculture occurs. This is directly related to the many disasters that occur in rural areas, especially those caused by the behavior of rural communities in the highlands. If these disasters are not supported by mitigation efforts, the material and non-material losses will increase and affect the most vulnerable groups in rural areas.

Table 4. Types of village disasters. Modified from Statistics Indonesia, 2018.

4.6 A lack of funds for economic development

The Village Law provides great opportunities for the people of Indonesia, especially to improve the economic level of the village community. In accordance with the directives for rural and underdeveloped regions, villages are encouraged to establish Village-Owned Enterprises (BUMDes) that are mostly funded from Village Funds. These BUMDes are expected to encourage the creation of new jobs and increase village income. However, the implementation of BUMDes still needs improvements. Although the fact that their budget is limited to 30% of Village Funds (Village Law No. 6 of 2014), many Village Funds are corrupted by village governments. Corruption, low levels of education, lack of awareness, and various regulations make investors unable to contribute to real participation [28].

Based on data from the Ministry of Villages, Disadvantaged Regions and Transmigration, sixty-one percent of villages in Indonesia have established BUMDes (a total of 45,549 enterprises). This is a sharp increase from 2017 when only 24.62% of villages had established BUMDes. Moreover, only 11.63% of villages have been successful in managing goods and services in 2017. Evidently, the presence of BUMDes has not significantly improved the local economic situation of rural communities.

4.7 The utilization of migrant workers

A lack of jobs in growing villages to accommodate the economic needs of its communities is the main reason for people to leave their villages[29][30]. They move to become unskilled laborers in urban areas, while most mothers prefer to stay at home and some become abroad housemaid. However, a study found that once mothers leave their husbands and children, this will improve their financial
situation but it causes a poor perception especially towards children[31]. Based on data from[32] in 2035-2045, Indonesia will experience a demographic bonus (Working-Age Population) but children and the younger generation must be educated and prepared to make an impact in this situation.

5. The implication of the sustainable development goals (SDGs)
The Sustainable Developments Goals directed countries to resolve a set of development issues, which are translated into eighteen SDG's pillars. Six of these pillars strongly affect the development of villages and rural areas. Table 5 provides an overview of the pillars that are relevant to rural development.

| SDG Pillar                  | Consequences for Rural Areas                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------|
| No Poverty                  | No unemployment, people's income above $1/day/household (World Bank).                       |
| Zero Hunger                 | The food supply from villages must be maintained. Thus, the certification of Sustainable Food Agricultural Land (LP2B) needs special attention from the government. |
| Good Health and Well-Being  | There is a need for the prevention of activities that endanger public health in villages such as cigarettes. |
| Quality Education           | No children should drop-out of school because of the costs of education and all members of village communities have the opportunity to go to school. |
| Gender Equality             | Women must be involved in the decision-making process in villages and the Family Welfare Program (PKK) must be strengthened and easily accessible. |
| Decent Work and Economic Growth | The expertise of the village community is needed in accordance with village development or market demand for jobs. |

Disaster risk reduction strategies must also be improved. This is in accordance with goal 13 target 3, i.e. improving education, raising awareness and human and institutional capacity related to disasters, adaptation, impact reduction and early warning systems.

6. Strategic solutions
A number of strategic actions are needed to deal with the problems presented in the previous section, especially those related to the governance of rural villages and rural development. This study develops strategic solutions using the POAC approach [15], where each problem can be responded to by positioning it in the development management framework.

6.1 Planning: increased access to information and improving public communication
Indonesia ranks 88th on the global gender disparity index [33]. In answering the aspirations of low-income villagers, each village must provide information either on request or through another form of aspiration. To achieve equitable information provision, village governments can communicate through online media channels, local mass media, and routine information dissemination by villagers. In the context of village development, the leadership of the village head is needed to make this program succeed[20]. In addition, specific policies that are affirmative and inclusive must support the vulnerable groups in society such as mothers, special needs groups, and the homeless. Women's access to development can be strengthened through the community of Family Welfare Program PKK mothers, communities and other natural leaders or influencers.

Regarding disasters, villages must optimize access to information and increase institutional and community capacity. In 2018, only eleven percent of villages had an early warning system to detect disasters while seven percent of villages had new evacuation routes[34]. Therefore, the Medium-Term Village Development Plan (RPJMDes) must include aspects of disaster management to better anticipate disasters through mitigation and adaptation.
Table 6. Solutions to problems of village and rural governance.

| Statement | Village and Rural Development Governance |
|-----------|------------------------------------------|
| Planning  | Organizing                                |
| Problems  | Village corruption                       |
| Main Causes | Unemployment, poverty, and lack of capital |
| Solution Statement | Out-migration from villages, environmental degradation |
| Strengthening access to information and improving public communication | Strengthening internal control systems |
| | Optimizing the role of BUMDes |
| | Strengthening spatial development control (Perdes), Accelerating LP2B certification (District Authority) |

6.2 Organizing: Strengthening systems and internal supervision

It is a challenge for villages to manage their Village Funds. In 2017, the Corruption Eradication Commission (KPK) caught 900 village officials on corruption charges with Village Funds [35]. Factors of political interest and administrative and system preparedness did not deter the village heads and their teams from committing corruption. Therefore, the strategic steps that can be taken are to strengthen the system in the form of the Regional Consultative Body (BPD), special task forces, and drafting SOPs that support transparency and accountability in the village government.

Community participation and initiatives are needed to oversee the village government’s performance in using Village Funds and the monopoly of the private sector that sets up private businesses in the village. The community can also report to a higher government at the local level. Applying Industry 4.0 can aid the information system to become more effective and efficient.

6.3 Actuating: Optimizing the role of village-owned enterprises

Productivity, agency, and connectivity form the foundation for rural economic development [36]. Village-Owned Enterprises (BUMDes) must implement these concepts to increase their productivity and rural income. The Ministry of Villages, Disadvantaged Regions and Transmigration has strengthened the role of BUMDes in village development for the 2014-2019. BUMDes have the potential to improve the socio-economic well-being of rural communities and village governments. In addition, they can improve skills and knowledge related to BUMDes governance and those needed by raw material suppliers [37]. If BUMDes can be optimized by increasing capital from the community, then this effective governance will significantly reduce poverty and unemployment through the creation of new jobs. Training vulnerable groups of people and using BUMDes to employ them can bridge the gap between HR competency needs for jobs and, as such, reduce inequality in rural areas.

Villages can strengthen their BUMDes by focusing on the production and sale of village products that could become the villages’ leading sector. Moreover, the villages can focus on creating a product diversification map, compiling BUMDes business plans and offering human resources training so the BUMDes can manage and utilize superior village products through administrative and marketing management. Furthermore, each village can increase the coverage of BUMDes services by establishing Joint BUMDes so village products can be utilized by the surrounding villages.
6.4 Controlling: strengthening spatial control

The Spatial Planning Document (RTR) requires a series of careful considerations in terms of provision for natural and environmental resources (sustainability) in each region. However, it should be noted that the scale of the spatial plan map must be sufficiently detailed so that the village block and its zones are visible on the map. One important aspect of this document is that spatial planning in the village cannot be fully conducted according to the plan without the participation of the local community. Village regulations (Perdes) must reduce and regulate certain specifics of the spatial documents, albeit not spatially. In relation to protecting agricultural land for food needs, village governments should urge their higher-level regional government to issue LP2B certification to control the conversion of agricultural land into housing or other functions.

In a broader context, the local government needs to be sensitive and anticipate the directions for the use of Village Funds, especially with regard to basic infrastructure which is a project that is vulnerable to elite interests. Some regency that has detailed spatial plans will find it easier to regulate zoning in rural areas. Moreover, green infrastructure should replace conventional infrastructure because green infrastructure can greatly contribute to the social, environmental, and economic sectors.

7. Conclusion

The governance of village and rural development is a process that is improved continuously starting from planning, organizing, actuating and controlling. Various sources of literature show that the major issues and problems that occur in a village environment are the readiness of government agencies, low participation by the village society, low productivity of human capital, the conversion of agricultural land, the intensity of disasters, a lack of capital for economic development and the utilization of migrant workers. Using the management framework, this paper concludes that each village should formulate the following strategic solutions: planning to increase access to information and improving public communication; organizing to strengthen systems and internal supervision; actuating to optimize the role of Village-Owned Enterprises; and controlling and strengthening spatial control.

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