Analysis of environmental resilience index due to realization of village funds in the Bangka Belitung Islands Province

E Rosalina and Sucipto

1Department of Accounting, Faculty of Economics, Universitas Bangka Belitung, Bangka, Indonesia
2Department of Civil Engineering, Faculty of Engineering, Universitas Negeri Semarang, Indonesia

Abstract. The government has provided funds to villages. Use of that fund to develop villages status from underdeveloped become independent villages. This goal is in the strategic plan of the Republic of Indonesia from 2015-2019. Improved village status can be seen from the village index builds (IDM). IDM consists of social (IKS), economic (IKE), environmental (IKL). The IKL index is very important but is not a priority in village development. The aims of the research is to examine how much the use of village funds in the index of environmental resilience in five villages. The research in West Bangka with the status of developing villages. This research uses a mixed method. By distributing questionnaires to the community and interviews with village officials. They are some results of this study. First, from interviu the result that village do not allocated fun for improve environmental resilience. Second, the village is indeed not to divide village funds to overcome the potential/prone to natural disasters. Village officials realize that each village has the potential for natural disasters. The condition of the villages that are close to the coast. They hope next year, the government has a regulation. The questionnaire obtained from the results showed that the use of village funds for infrastructure. The use of village funds for infrasucpito28@gmail.com

1. Introduction
The government has a strategic program from 2015-2019. The program carried out is to change the status of underdeveloped villages to become independent villages. Independent villages are villages that can get their own income. Independent villages are expected to become new trading areas. This requires governance that is different from the previous condition [1]. The government prepares village funds to support the programs in the strategic plan. It is hoped that the use of village funds can change the status of the village from its previous condition. The following is in figure 1 in the form of the allocation of village funds given to the Bangka Belitung Islands Province.
Based on figure, the village funds that have been provided by the government each year have increased. The increasing of village funds is in various districts in the Bangka Belitung Islands. The government has very high hopes for the village. The village uses these funds to improve the village status. Increasing village status will improve community welfare [2]. The village can develop their village. The development that expects participation from the community [3]. Development based on community needs that pay attention to the Building Village Index (IDM). The classification of the status can be improved from the village development index (IDM). IDM consists of three indexes. Such as the economic resilience index (IKE), the environmental resilience index (IKL), the social resilience index (IKS) [4]. Each index has an indicator.

Nowadays, it happens rapid climate change in various parts of the world [5]. It requires us to pay more attention to environmental resilience. Especially in the geographical and condition of the Bangka Belitung Islands Province. The condition of the former tin mine which left large pools of water on the mainland. It damages the environment. So to do environmental resilience, it needs the allocation form village funds. All these funds are managed by the village government with accountability and transparent. Village fund management is made in an annual program which involves community participation [6,7]. For the allocation/realization of village funds in environmental resilience contained in the annual program. The study is needed on the level of community satisfaction with the use of these funds. Also the physical that has been built. For this reason, this research to analyze the environmental resilience index. That due to the realization of village funds in the Bangka Belitung Islands Province.

2. Literature Review
2.1. Village Fund Budget
Village Funds are funds sourced from the State Revenue and Expenditure Budget which are intended for villages that are transferred through the Regency/City Regional Revenue and Expenditure Budget used to finance government administration, development implementation, community development and community empowerment. Village funds as referred to in their use are prioritized for expenditure expenditure in the field of implementation of village development and community empowerment.

The village is obliged to support and participate in implementing the mandate of the Law. One of the mandates includes implementing village community empowerment. Empowerment of village communities is an effort to improve the independence and welfare of the community by increasing knowledge, attitudes, skills, behavior, and being able to manage existing resources through policies and programs that are in accordance with the needs of the village community.

IDM value indicators consist of three indexes. The index is IKS, IKE, IKL. IKS is the social security index. The economic resilience index is IKE. The ecological/environmental resilience index is IKL. The ecological/environmental resilience index (IKL) consists of two variables. They are environmental quality and the potential for natural disaster-prone. Indicators of environmental quality divided two sections. They are the presence or absence of water, soil, and air pollution; and some rivers are affected by waste. Indicators of potential/natural disaster-prone divided four. Such as water, soil and air...
pollution; natural disaster events; efforts towards potential natural disasters; anticipatory efforts to mitigate natural disasters in the village.

3. Research Method
This study was designed to be a mixed-method. The data collection techniques in this study used interviews. Such as the village of Kayuarang, Air Belo Sinar Surya, Mislik, and Sekar Biru. Each village get five-person village officials. The information about the use of village funds in environmental security (IKL). Data collection also uses questionnaires distributed to the community of 100 people. We use SPSS 20 to analyze the data.

4. Result and Discussion
4.1 Result
The results of the questionnaire were distributed to the public. It was of two types of questions. The first question is about the physical form or realization of the environmental resilience index (IKL). The second question is about community perceptions of receiving the benefits of village funds. It is increasing environmental resilience (IKL) in the village. The following are the tabulated results:

**Table 1. Physical Forms/infrastructure of Development**

| Alternative         | Frequency | Percent |
|---------------------|-----------|---------|
| Valid               |           |         |
| Bridge              | 44        | 44.0    |
| Embung              | 1         | 1.0     |
| Irrigation          | 2         | 2.0     |
| Avalanche brace     | 0         | 0.0     |
| Drainage            | 9         | 9.0     |
| Other               | 44        | 44.0    |
| Total               | 100       | 100.0   |

**Table 2. Scale of benefits in Preventing Water Pollution**

| Alternative            | Frequency | Percent |
|------------------------|-----------|---------|
| Valid                  |           |         |
| Do Not Receive Benefits| 10        | 10.0    |
| Less Useful            | 7         | 7.0     |
| Useful                 | 55        | 55.0    |
| Very Useful            | 28        | 28.0    |
| Total                  | 100       | 100.0   |

**Table 3. Scale of benefits in Preventing Land Pollution**

| Alternative            | Frequency | Percent |
|------------------------|-----------|---------|
| Valid                  |           |         |
| Do Not Receive Benefits| 27        | 27.0    |
| Less Useful            | 10        | 10.0    |
| Useful                 | 42        | 42.0    |
| Very Useful            | 21        | 21.0    |
| Total                  | 100       | 100.0   |

Table 1 shows that respondents answered the physical form of development carried out by the village in the environmental resilience index (IKL), namely bridge 44%, embung 1%, irrigation 2%, avalanche brace 0%, drainage 9% the remaining 44% answered other physical forms.
Based on Table 2 shows that the community in the scale received benefits in preventing water pollution 10 percent did not receive benefits, 7 percent were less useful, 55 percent felt the benefits, and 28 percent felt very beneficial. This implies that the community has received many benefits from the contribution of village funds allocated in preventing water pollution.

In addition, Table 3 shows that the community in the scale received benefits in preventing land pollution, 27 percent did not receive benefits, 10 percent were less useful, 42 percent felt the benefits, and 21 percent felt very beneficial. This implies that the community has received many benefits from the contribution of village funds allocated to preventing land pollution.

| Alternative          | Frequency | Percent |
|----------------------|-----------|---------|
| Do Not Receive Benefits | 30        | 30.0    |
| Less Usefull         | 19        | 19.0    |
| Usefull              | 30        | 30.0    |
| Very Usefull         | 21        | 21.0    |
| Total                | 100       | 100.0   |

Table 4. Scale of benefits in Preventing Air Pollution

From Table 4 shows that the people on a scale received benefits in preventing air pollution 30 percent did not receive benefits, 19 percent were less useful, 30 percent felt the benefits, and 21 percent felt very beneficial. This implies that the community has not felt many benefits.

| Alternative          | Frequency | Percent |
|----------------------|-----------|---------|
| Do Not Receive Benefits | 34        | 34.0    |
| Less Usefull         | 18        | 18.0    |
| Usefull              | 31        | 31.0    |
| Very Usefull         | 17        | 17.0    |
| Total                | 100       | 100.0   |

Table 5. Scale of benefits in tackling landslides

Table 5 shows that the people on a scale received benefits in dealing with landslides, 34 percent did not receive benefits, 18 percent were less useful, 31 percent felt the benefits, and 17 percent felt very useful. This implies that the community has not felt the contribution of village funds.

| Alternative          | Frequency | Percent |
|----------------------|-----------|---------|
| Do Not Receive Benefits | 19        | 19.0    |
| Less Usefull         | 1         | 1.0     |
| Usefull              | 47        | 47.0    |
| Very Usefull         | 33        | 33.0    |
| Total                | 100       | 100.0   |

Table 6. Scale of benefits in tackling drought

From Table 6 shows that the community in the scale of receiving benefits in dealing with drought, 19 percent did not receive benefits, 1 percent less useful, 47 percent felt the benefits, and 33 percent felt very useful. This implies that the community felt the contribution of village funds in the effort to overcome drought in the village.

From interviews with 25 respondents from village officials. It can be concluded that water pollution, land and air pollution in the village. It has decreased due to the reduced number of residents' mining. There is a potential for natural disasters. Such as landslides, floods, forest fires in Air Bello. It due to the mining of residents' tin. From the results of the interview that there is no contribution of village funds in allocated to the environmental resilience index. Because it is not yet a priority in that year.
4.2 Discussion

4.2.1 Physical Forms/infrastructure of Development

The physical form of development that has been carried out by the village. Such as the bridge, embung, irrigation, avalanche brace, drainage, and others. The physical form of this development is the agreed-upon result of the development meetings. Existing village funds are allocated for many activities. So that, not all proposals from Musrembang can be accommodated. The program comes from community to government [8,9]. So the physical form of development to support the indicator of environmental resilience index (IKL) is not implemented. The form of village fund allocation is only maintenance of the existing infrastructure and is precautionary.

4.2.2 Benefit Scale received by the Community in the Environmental Sustainability Index

Based on the results of the questionnaire. It can be concluded that the village is very concerned. It is preventing water pollution and handling drought. In the prevention of water pollution due to tin mining owned by residents is very large. Where the village carried out socialization to the local community. It to immediately stop tin mining activities in private. And this also violates local regulations that have been made. The village made a well excavation as a source of clean water. To overcome the polluted water and overcome drought.

In an effort to pollute village land, many have conducted socialization to the community. Such as not to throw garbage into the beach or river. As a form of prevention efforts is to make a trash box in each house. Based on the indicator of the Prevention of air pollution, tackling landslides in the five sample villages are not good. Which on the whole the average community did not receive more benefits. This is due to the geographical conditions of the sample villages that far from urban [10]. From the data of the Central Statistics Agency (2019), the village in West Bangka has a geographical condition of 105° to 106° east longitude and 1° to 2° south latitude. The river functions as a means of transportation and is not yet beneficial for agriculture and fisheries [4]. The village does not have a factory which indeed contributes to the largest air pollution. So that the natural and geographical conditions are not a priority. In the use of village funds for the environmental resilience index (IKL).

4.2.3 Village Fund Contribution to Environmental Sustainability Index

From interviews with village officials in five villages. It was found that the contribution of village funds to environmental resilience has not been a priority. The allocation of village funds is limit in IKL. This is because of the direction of the Village Fund's policy in 2018. The government regulates the use of village funds through various policies [11]. The direction is to sharpen the priorities of the Village Fund in two activities. Such as management for community development and empowerment. The development priorities in the strategic plan from 2015-2019 have three goals. They are empowering the local economy, creating access to local transportation to growth areas, and accelerating the fulfillment of basic infrastructure.

Legislation that is higher than the Village Regulation. It is related to the use of Village Funds. Village funds are used to finance government administration, development, community empowerment, and society. The priority are finance development and community empowerment. Thus, activities that are prioritized to be funded by the Village Fund. It must meet the development and empowerment objectives of the Village community. That is mandated by the Village Law.

The existing regulations do not consider all indicators in IDM. It is only concentrating on a few indicators. So that indicators for environmental resilience have not become a top priority. The implications of village funds for poverty are still small. This is because the use of village funds still tends to be used. It use for the construction of physical facilities and infrastructure. That does not have a multiplier effect on improving the village economy.

The new village maps the potential of the village which can improve the welfare of the community. It has less attention to environmental security. The village officials hope that the government can make
regulations [12]. The regulation can improve environmental resilience (IKL). The regulation can be by village conditions so that it becomes a priority in the use of village funds.

5. Conclusion

There has been a physical form/infrastructure of the development of the environmental resilience index (IKL). Such as bridges, embung, irrigation, avalanche brace, drainage and other. Measurement of community perceptions measured on the scale of receiving village fund benefits. More people feel the IKL on three indicators. The biggest value is the prevention of water pollution, soil, and drought. From interviews with village officials have the result. The result is the environmental resilience index (IKL) has not been a priority. Villages do not allocate village funds for environmental resilience (IKL) activities. Village do not built infrastruce, they only make cost maintenace. The priorities in the development of village funds in 2018 are community development and empowerment. This research still has many limitations in all fields of method and discussion. But the researcher is convinced that the results of this study. It can provide an overview of policies on village fund management in the following year. Which is more concerned with the environmental resilience index.

References

[1] Boyd E and Juhola S 2014 Urban Studies pp 1-3
[2] Santi B, Rukmana D, Abdireviane I T 2019 The analysis on village fund use allocation in promoting social resilience, economic resilience and enviromental resilience at Jeneponto regency Global Scientific Journals 7
[3] Hardoy J, Gencer E and Winograd M 2020 Environment & Urbanization pp 1-20
[4] Hein C and Schubert D 2020 Journal of Urban History pp 1-15
[5] Woodruff S C, Meeroow S, Stuls M and Wilkins C 2018 Journal of Planning and Research pp 1-12
[6] Cox R S and Hamlen M 2015 American Behavioral Scientist pp 220-237
[7] Zhao L, He F and Zhao C 2020 Sustainability 12 4979
[8] Goldstein B E, Wessells A T, Lejano R and Butler W 2013 Urban Studies pp 1-19
[9] Kwok A H, Becker J, Paton D, Hudson-Doyle E and Johnston D 2019 Journal of Applied Social Science pp 1-32
[10] Colding J, Colding M and Barthel S 2018 Environment and Planning B: Urban Analytics and City Science pp 1-9
[11] Xu J and Shao Y 2019 Urban Studies pp 1-21
[12] Hordijk M, Sara L M and Sutherland C 2014 Environment and Urbanization

Acknowledgment

We would like to thank you to the Village Ministry for the research funding. This research is the result of cooperation between Ministry of Village, PDT and Transmigration (KEMENDES) with the University of Bangka Belitung in 2018.