

The Evaluation of Disaster Resilient Village Program to Support National Security (Case Study: Tanjung Benoa Village, Badung District, Bali Province)

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Abstract

Disaster Resilient Village (Desa Tangguh Bencana/DESTANA) is a village that has an ability to independently adapt and deal with the threat of disaster, and recover quickly from the adverse effect of disaster. This research is a qualitative descriptive study using the CIPP (Context, Input, Process, and Product) evaluation model to evaluate the Disaster Resilient Village program in Tanjung Benoa Village. The results of the research with the CIPP method shows that it is appropriate and refers to Regulation of the Head of the National Disaster Management Agency Number 2 of 2012. The Input aspect, Tanjung Benoa Village has also formed a disaster risk reduction forum which is representative of the local community. The Process aspect, Tanjung Benoa Village has developed formation of communities and Safe School Disaster, while in the implementation of Tanjung Benoa Village routinely conducts simulations on the 26th of each month and has collaborated with the hospitality as an evacuation site in the event of a tsunami disaster. The Product aspect, which is community capacity building and community participation that is followed by community groups, while the results of side achievements are in the form of increasing trust among domestic and foreign tourist and improving the welfare of the people of Tanjung Benoa Village. The results of this study indicate that the Disaster Resilient Village program in Tanjung Benoa Village using the CIPP method has been going well with some input so that it can conduct training specifically for the community in Tanjung Benoa Village.

Keywords: Disaster Resilient Village, Coastal Area, Disaster

I. Introduction

Disaster Resilient Village (Desa Tangguh Bencana/DESTANA) is a village that has an ability to independently adapt and deal with the threat of disaster, and recover quickly from the adverse effect of disaster [1]. This capability means a series of self-made efforts by empowering and mobilizing the resources of the village community to recognize the threats and disaster risks they face, including evaluating and monitoring their capacity.

Until the end of 2017 in Indonesia, there were 524 Disaster Resilient Villages/Sub-Districts, one of which was the Disaster Resilient Village Program implemented by the Badung Regency Government. Based on the mapping, Badung Regency is included in an area that is at high risk of natural disasters. According to the Earthquake and Tsunami Contingency Plan document, the potential disasters in Badung Regency include earthquakes, tsunamis, hurricanes, and landslides. The history of disasters that have occurred in Badung Regency is a historical summary of all disaster events including natural, non-natural and social disasters which are divided into geological, hydrometeorological, biological and social conflict disaster groups.

The Regional Government of Badung Regency through the Regional Disaster Management Agency, from 62 villages/sub-districts in Badung Regency has formed a disaster risk reduction forum in 21 villages/sub-districts. The Disaster Resilient Village/Village Program in Badung Regency has been running as an annual activity, but development efforts are still being carried out, while program implementation evaluation activities have never been carried out. One of the villages that formed Disaster Resilient Village is Tanjung Bena Village. Tanjung Bena Village is an area that is prone to earthquakes and tsunamis because it is located in a coastal and bay area. The formation of a Tanjung Bena Disaster Resilient Village is the forerunner to the formation of a Tsunami Ready Community from UNESCO (The United Nations Educational, Scientific and Cultural Organization). In May 2022, Tanjung Bena Village was ratified and awarded the International Tsunami Ready Community certificate from UNESCO – IOC (The Intergovernmental Oceanographic Commission) [2].

Tanjung Bena Village has indicators that are divided into three broad categories, namely assessment, readiness, and good response, each of which is [3]: a). Mapping and determination of tsunami hazard zones; b). Estimated number of people at risk in the tsunami hazard zone; c). Identification of economic, infrastructure, political, and social resources; d). Easy-to-understand tsunami evacuation maps; e). Tsunami information includes publicly displayed signs; f). Availability of availability and distribution of public awareness and education resources; g). Socialization or education activities are held at least three times a year; h). Community tsunami drills are conducted at least every two years; i). There is a community tsunami emergency response plan; j). Availability of capacity to manage emergency response operations during a tsunami; k). There is a redundant and reliable means of receiving an official 24-hour tsunami warning in a timely manner; and l). There are redundant and reliable means to disseminate official 24-hour tsunami warnings to the public in a timely manner.

The success of the Tanjung Bena Disaster Resilient Village should be analyzed using the evaluation method. One of the most widely known and applied program evaluation models is the CIPP program evaluation model (context, input, process, and product) [4]. This model views the program as a system. The CIPP evaluation model can be used for summative evaluation (carried out at the end of the program) which aims to obtain information about the quality and values as well as the benefits/significance of a program. The information obtained

from the evaluation results is useful as consideration for decision makers in making further decisions or policies. Hence, this research will analyse the evaluation of Tanjung Bena Disaster Resilient Village to support national security using CIPP method.

II. Theoretical Framework

The study of the concept of program evaluation is based on several concepts which are theoretical studies, namely the concept of evaluation, the concept of program evaluation and evaluation models.

II.1. Evaluation Concept

Evaluation is a systematic process of providing information that can be used as consideration to determine the value and benefits of the goals achieved, design, implementation, and impact to help make decisions, assist accountability and increase understanding of phenomena [5]. In other words, the essence of evaluation is the provision of information that can be used as consideration in making decisions.

II.2. Disaster Resilient Village Concept

In disaster risk reduction efforts, people living in disaster-prone areas are placed as the main actors (subjects) who participate and not objects, which will be more sustainable and efficient [6]. Communities that have reached a level of resilience to disasters will be able to maintain their structure and function to a certain level if affected by a disaster. Disaster Resilient Village is a village or sub-district that has the ability to recognize threats in its area and is able to organize community resources to reduce vulnerability and at the same time increase capacity to reduce disaster risk [7]. This capability is manifested in development planning that includes efforts for prevention, preparedness, disaster risk reduction and capacity building for post-disaster recovery [8]. In Disaster Resilient Village program, the community is actively involved in assessing, analysing, managing, monitoring, evaluating and reducing disaster risks that exist in their area, especially by utilizing local resources to ensure sustainability [9].

II.3. CIPP Evaluation Model

Evaluation essentially needs to be done gradually and thoroughly to obtain the data needed to assess the quality of a program. As an evaluator, it is necessary to use a program evaluation model that can assist in assessing the quality of the program. Each dimension from the CIPP evaluation model has the following meanings: (1) context evaluation is related to the assessment of the situation or background that affect the types of goals to be achieved; (2) input evaluation is related to the assessment of planning and resource aspects resources used to implement policies; (3) process evaluation is related to the assessment of aspects implementation or implementation of policies, capital, or materials in real activities in the field; and (4) evaluation of results (product) is related to the assessment of the results achieved both during as well as at the end of the implementation of the evaluated policy [10].

The CIPP evaluation model (context, input, process, and product) is the most widely applied model. The CIPP model views the program being evaluated as a system. The research uses the CIPP evaluation model because this model is considered to be able to analyze the success of the Destana program achievement and then the evaluation results are expected to be used as considerations for stakeholders in decision making.

III. Research Methodology

This research method is descriptive qualitative that is describing the Disaster Resilient Village program in Tanjung Bena Village. This research was conducted in Tanjung Bena Village on the grounds that Badung Regency Bali Province based on mapping is included in an area that is at high risk of natural disasters. There are three natural disasters that are very vulnerable in this area, namely landslides, strong winds, and floods/tsunami and there is no research on program evaluation that comprehensively knows in depth the level of success of program achievements.

In this study, the CIPP evaluation model will be used to evaluate the Disaster Resilient Village program in Tanjung Bena Village. The results obtained will be assessed and studied in order to improve the implementation of programs or activities in the future. The purpose of the evaluation in this study was to gain an in-depth understanding of the background of the program, program inputs, program implementation, and the results of the Disaster Resilient Village program in Badung Regency, Bali Province which has been set. Research data will be obtained from the results of interviews, observations in the field and the results of documentation studies.

IV. Results And Discussion

Local Disaster Management Agency (Badan Penanggulangan Bencana Daerah/BPBD) of Bali Province realized that a number of areas on the island of Bali are prone to disasters. Potential tsunami-prone areas are located on the southern and northern coasts of Bali Province, one of which is Badung Regency. This condition pushed Bali Province Government to form a disaster resilient village. Tanjung Bena Village as one of the disaster resilient villages has the capacity to minimize disaster risk. The capacity in terms of facilities and infrastructure in Tanjung Bena Village are as follows:

- a. Several schools in Tanjung Bena Village have become Disaster Safe Schools including SDN 1 Tanjung Bena, SDN 2 Tanjung Bena, and SMP N 3 Kuta Selatan.
- b. Evacuation routes related to tsunami and earthquake warnings are widely spread across Tanjung Bena Village roads, coastal areas, and around hotels.
- c. Currently, there are 5 early warning system (EWS) units installed throughout Badung Regency, such as Tanjung Bena Beach, Kedongan Beach, Kuta Beach, and Double Six Beach Seminyak.
- d. Several hotels have an agreement with the Tanjung Bena Village Government as a tsunami shelter, including the Grand Mirage Resort, Ion Bali Hotel, The Bali Khama, Sakala Hotel, Paninsula Bay Resort, Novotel Hotel, and The Segara Hotel.
- e. Health facilities such as local public health centre and integrated healthcare centre.
- f. In the social field, there are several community communities that participate in disaster mitigation efforts such as the Mangrove Care Community, Garbage Care Community, and other communities.
- g. There is a long-established disaster risk reduction forum.

Local wisdom in Bali Province is also integrated in efforts to improve the community's economy and disaster mitigation in Bali Province. Sad Kerthih are six noble things that must be done to build nature and humans. The essence of Sad Kerthih is Atma, Ocean, Wana, Danu, Jagat, and Jana Kertih. This Sad Kertih principle in Balinese culture also contributes to the

creation of Balinese attitudes to protect the natural environment so that it is considered to be one of the mitigation factors for Balinese people from natural disasters.

The results of the analysis of the Destana program evaluation in Tanjung Bena Village using the CIPP model cover several aspects, including:

1. **Input Aspect:** The input aspect includes the problem of the condition of the location of Tanjung Bena Village, namely as a tourist village as well as its position close to the sea so that it is prone to tsunamis, namely the background for the establishment of the village and the purpose of the village program.
2. **Context Aspect:** The background of the establishment of the Disaster Resilient Village program in Tanjung Bena Village is related to the Regulation of the Head of the National Disaster Management Agency Number 2 of 2012. Local Disaster Management Agency of Bali Province chose Tanjung Bena Village because it has disaster vulnerability in areas that have a tsunami threat in coastal areas. The Tanjung Bena area currently has developed coastal tourism facilities. The development of an area must of course be followed by disaster management efforts that threaten the area. In 2010 the Disaster Resilient Village program was established in Tanjung Bena village. The policy of the Bali Provincial Government in implementing Disaster Resilient Village is carried out according to Regulation of the Head of the National Disaster Management Agency Number 2 of 2012. After the establishment of the disaster risk reduction forum, the next step is to draw up a disaster management plan that adapts to the types of threats (hazards) that exist in the village and then map them out. The results of the plan include plans for economic, social, community programs, and so on that are agreed upon by the village and legalized by the village. After there is a disaster management plan, a contingency plan is drawn up. Disaster risk reduction policy efforts in Tanjung Bena Village have been planned by the Tanjung Bena Village Government. The disaster risk reduction policy in Tanjung Bena Village was prepared together with the Tanjung Bena village community and Tanjung Bena village officials such as the Indonesian Army, schools, private companies, hotels, and the community. Tanjung Bena Village has established a disaster risk reduction forum which is representative of the local community. The Disaster Resilient Village Program in Tanjung Bena Village was formed chaired by the Head of Tanjung Bena Village and subsequently Tanjung Bena Disaster Resilient Village's membership in Tanjung Bena consisted of a secretary, treasurer, and members consisting of 21 members. The disaster risk reduction forum in Tanjung Bena Village that has been formed consists of community representatives, such as women's groups from the Tanjung Bena Village Empowerment and Family Welfare. In addition, Tanjung Bena Village has also formed a team of volunteers such as the Mangrove Care Community and the Garbage Care Community. The source of funding for the Destana program in Tanjung Bena Village is the BNPB budget and also comes from non-governmental organizations. Tanjung Bena Village has not allocated special funds to be used for emergency response efforts.
3. **Process Aspect:** Process aspects include analysis related to the implementation or sustainability of a program. Program aspects that will be evaluated in the Disaster Resilient Village program include capacity building, disaster management implementation. The capacity building of the Tanjung Bena Village community is routinely carried out every 26th of every month. In addition, there are also efforts to disseminate information through evacuation routes, leaflets, and also danger warning signs around the Tanjung Bena area. The implementation of Disaster Resilient Village

- in Tanjung Bena Village has carried out mapping and threat analysis that has been made by Local Disaster Management Agency of Badung Regency. The implementation of disaster management in Tanjung Bena Village has made maps and evacuation routes that are integrated with hotels in collaboration with Tanjung Bena Village. The hotel as an evacuation site has been equipped with medicines and emergency lighting.
4. **Product Aspect:** Product aspects include analysis related to all program achievements, with product aspects, it can be seen what is produced by a program. In the Disaster Resilient Village program in Tanjung Bena Village, the product aspects that will be evaluated are the results and by-products of Tanjung Bena Disaster Resilient Village. The results of the program achievements from the establishment of the Tanjung Bena Disaster Resilient Village are the formation of the Tanjung Bena Village community who are ready to face the threat of disasters and the private sector that participates in disaster risk reduction efforts by providing shelter. In addition to the program achievements, there is also a by-product of the Disaster Resilient Village program in Tanjung Bena Village, namely an increase in the regional economy through the tourism sector that is ready to face disasters. This goes hand in hand so as to improve the welfare of the community.

The vision and mission of Bali Province, namely "Nangun Sat Kerthi Loka Bali" is related to the teachings to protect natural ecosystems so that they can be an effort to mitigate disasters. The subject of Sad Kerthi is formulated in the Balinese Puranic ejection which consists of Atma Kerthi, Samudra Kerthi, Wana Kertih, Danu Kertih, Jagat Kertih and Jana Kertih. Atma Kerthi and Samudra Kerthi are related to the teachings of using the sea as a place of cleansing the mind and heart. This allows the Balinese people to always keep the sea clean.

The next principle is Wana Kerthi, namely efforts to conserve forests. Danu Kerthi is an effort to preserve fresh water sources in the lake. This principle is related to the teachings of Hinduism to preserve lake water. Another principle is Jagat Kerthi which is an effort to preserve the harmony of social relations in society. This effort is carried out by building Pekraman Village which is characterized by Tri Kahyangan. The last Kerthi is Jana Kerthi, which is an effort to build humans to have sensitivity and awareness in caring for the environment. The Sad Kerthi concept is considered to be the forerunner in realizing a Disaster Resilient Village in Bali Province.

V. Conclusion

Based on the results of the research that has been done, a conclusion can be formulated regarding the evaluation of Disaster Resilient Village program in Tanjung Bena Village using the CIPP method. The conclusions drawn are:

- a. The context aspect, namely the background of the Destana program in Tanjung Bena Village, is in accordance with the objectives of Regulation of the Head of the National Disaster Management Agency Number 2 of 2012 namely Tanjung Bena Village as a tourist village and prone to tsunamis requiring high capacity from the community. The program objectives that have been set have been in line with the program targets, namely to increase community capacity and as an effort to reduce community-based disaster risk.
- b. The input aspects, include planning, institutional, and funding. In good terms, it involves many parties including the Indonesian Army, schools, the private sector,

- hotels, and the community. Tanjung Bena Village has also established a disaster risk reduction forum which is representative of the local community.
- c. The process aspect includes capacity building and disaster management implementation. Capacity building in Tanjung Bena village has been followed by the people of Tanjung Bena village. This can be seen from the existence of community communities such as the Mangrove Care Community, the Garbage Care Community, the formation of 3 Disaster Safe Schools, and several hotels that have collaborated with the Tanjung Bena Village Government as evacuation shelters. The implementation of disaster management has been routinely carried out by the Badung Regency BPBD, namely disaster response simulations that have been carried out every 26th of each month. However, it is still necessary to increase regional capacity in Tanjung Bena village which is routinely carried out.
 - d. The product aspect includes the results of program achievements and by-products. The overall achievement of the Tanjung Bena Village program has been very good. The results of the implementation of the Tanjung Bena Disaster Resilient Village program are community capacity building and community participation, which is followed by community groups. In addition to the program results, the implementation of the Disaster Resilient Village program in Tanjung Bena Village also has a positive impact on other aspects. This also supports the tourism sector, where domestic and foreign tourists have a sense of security to visit the village of Tanjung Bena and simultaneously this improves the welfare of the people of Tanjung Bena.

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