A Model of Village Government System Based on System Thinking

A Study in Kairane Village, Indonesia

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Abstract—The purpose of this study was to construct a model of village government performance system in order to realize the community prosperity. This research used system thinking approach and dynamic system as tool analysis. Based on the research results indicates that village government performance is not optimal currently because of the low level of public services and dependence to central government grants. It is resulting in artificial poverty. Furthermore, the basic structure of village government in Kairane village as a system consist of 14 sub system and interact each other such as public service, complaint, community empowering, poverty, support of local government, support of central government, community trust, support of indigenous community, role of NGO, support of village apparatus, support of village council, support of facilities and infrastructure, and support of village finance. Among those elements is leverage that is able to maximize the performance of village government as a system.

Keywords: dynamic system; rural; public administration; poverty

I. INTRODUCTION

The percentage of poor people in urban areas in September 2016 was 7.73 percent, while in rural areas 13.96 percent [1]. This data could be many interpreted such us ineffectiveness of village government, or poverty. In addition, considering the majority of Indonesia's population living in the rural areas, it is important to conduct research related to the performance of village government in order to achieve community prosperity.

Many previous researches on village has been done before with different purpose. Indonesian Public Administration Agency/LAN [2], focus on improvement of village government capacity while BAPPENAS [3], as National Development Planning Agency focus on village development. The same object study but differences in focus and analysis tool imply to problem-solving. Nevertheless there must be a connection between one element with another to form a cycle. Thus it can be said that every element able to be causes and effect at once. This forms complexity.

II. RESEARCH METHOD

This research uses systems thinking approach. Systems thinking is conceptual framework, a body of knowledge and tools to make the full patterns clearer, and to help us see how to change them effectively [5]. The performance of village government in order to achieve prosperity community is not a simple problem that is easily solved. The operational definition of village government performance is result from public services activity and village community empowering.

The performance as an object study and system too, while the elements call sub systems consist i.e.: public services, complaint, community empowering, poverty, support of local government, support of central government, role of NGO, role of missionary, community trust, indigenous community, support of village apparatus, support of village council, support of facility, support of finance, farming, income, basic need services, and support of infrastructure. All those sub sub sytems interact each other and making feedback loop such as balancing or reinforcing. Furthermore, forming behavior over time. The system need limitation to cut many sub systems. Border is limitation of system. The border of this system is Kairane village environment. Last but not the least the goal of this system is to acheive prosperity community.
Type of research is combine quantitative and qualitative paradigm based on "the dominant-less dominant design" [6].

Research location in Kairane village Kupang district East Nusa Tenggara. Data collection technique are in-depth interviews with villager in Kairane, village head, village secretary, other apparatus dan village council. In addition, local officer from BPMPD (agency of community empowering and village Government), village government division of kupang district secretariat and secretary of Amabi Oefeto sub district. Focus group discussions, also conducted with the villagers, Kairane village government such as chief of village council call BPD (Badan Permusyawaratan Desa), chief of hamlet, PKK as local village organization for woman, Bengkel APPeK as local NGO and Policeman who fostering public security and order in Kairane village call Bhabinkamtibmas. Tool analysis using dynamic system [7] consist of five-stage i.e. (1) Problem recognition; (2) Problem understanding & system description; (3) Qualitative analysis; (4) Simulation Modelling (special computer simulation languages by Powers software) and (5) Policy Testing and Design. This research is actually designed up to five stages, but technical constraints make it cannot be displayed, so it only stops at the 4th stage. Hopefully this research can be continued again until the last stage. Tend to use indigenous rule rather than positive law.

III. RESULT AND DISCUSSION

Based on analysis setting location, Kairane village located in the middle of industrial plant forest belong to central government and has limited infrastructure. This village is part of the administrative area of Amabi oefeto sub district and Kupang district. The dominant characteristic of the villager is relying on agricultural products, plantations and livestock, especially cattle. Nature of kinship, cooperation and honesty villagers are strong. Reject the outsider influences that are not appropriate with the indigenous community and local wisdom, except they bring positive influence for their prosperity. On the other hand, the community tend to use indigenous rule rather than positive law.

Kairane village is a forest village. It has two dominant institutional structures, namely indigenous community and village government. This village is the result of the formation of the government called by the term new style village (desa gaya baru). It is quite different with the characteristic of javanese village because original came from community. In social life, the role of indigenous communities is very strong and able to influence the village government decisions related to the performance of village government, especially in the field of public services and community empowering. Likewise, with people who have high confidence with indigenous rules issued by indigenous communities. Characteristic of village is similar to the Gemeinschaft as conveyed by Tonnies, translated by Loomis [8] to "Community and Society". Another side, village government as an organization consisting of village head, village secretary, apparatus implementer, assisted by head of hamlet and village council as a partner to control of the implementation of village government. Kairane similar with local democracy model principal. what is described above is an overview of the Kairane.

Here this is the current condition of village government performance and the constructed model:

A. The Performance of Kairane Village Government Currently

The Performance of village government system to achieve community prosperity consist of two main inflow and outflow. There are public service activity and community empowering as inflow while complaint and poverty as outflow. Every stream has different feedback loop such as reinforcing, balancing or S curve. The current of Kairane village government performance as follows:

- **Input**: support of central government; local government support, role of ngo, community trust, support of indigenous community, village apparatus, village council, facilities, village finance and infrastructure.

- **Process**: giving public services such as local administrative and services but not able to empower village community itself and fulfill the basic need. Local and central government and has dominant role for empowering. Actually, local government has role to support public services on basic need, but the fact is less of local government support stop in sub district.

- **Output**: the villager accepts all the type of local administrative & services, except services that requiring of local government support. Basic need services especially basic education required more attention from upper government because this is important for community knowledge are enabled to become one of the causes of poverty. Education is another major service where issues of the effects of poverty are important, particularly interns of achievement [9]. Greenstein, Gentilini & Summer [10], also said that education discourages coordinated needed sustainable improvement. Back to the research of result in kairane on community empowering: the target group accept all empowering program from local as revolving fund and central government as rural community empowering national program call PNPM including NGO giving farming assistance on elderly (lansia) garden. This garden empowering

- **Outcome**: local administrative & services are satisfied except basic need services because requiring local government support, the villager tend to dependent with local and central government grants as the way to alleviate poverty. Even though as statistical the poor people more less than before, but other social problem comes. It is dependent mental. They prefer being recorded as poor er than non-poor, because if they are honest then aid will be withdrawn and they cannot enjoy it anymore.

B. A model of Village Government System based on Systems Thinking

The Performance of Kairane village government system to achieve community prosperity has 14 sub systems. There is sub system of support of central government; local government support, role of NGO, public service, complain, community empowering, poverty, support of community trust, support of indigenous community, support of village apparatus, support of
village council, support of facilities, support of finance and, support of infrastructure.

1) Dynamic Causal Loop Diagram

Dynamic causal loop diagram is the dynamic structure of the relationships affect each other and interact between each element or sub system. Dynamic meaning, because the structure is more flexible not detail, it can be developed based on facts in the field that often differ from one location to another even between one event with others. Those elements interact and has inter relation. It calls causal loop diagram. It is provide a framework for seeing interrelationships rather than things, for seeing patterns of change rather than snapshot \(^{11}\). This causal loop diagram prepared using the entity / state / transition method. This method identifies all entities that exist in a system and then mapping the transition from a state entity to another condition. Selection of this method is based on the excess in describing the following flow type and strength which control the flow. There are several steps involved in using this method. First, identify all entities or actors that are within the scope of the problem. Second, identify the condition (state) that allows for every existing entity. Third, identify the flow that can cause changes in the condition. Fourth, check the connection between the flow, including the possibility of delay time. Fifth, identify the controlling flow that affect the system. Sixth, identify the effect of the information and action influences of the flow control above.

Those interaction form feedback loop, and then each sub systems have behavior over time (BOT). Based on feedback loop, it can determine the BOT, of course after running the data. The type of BOT are exponential growth, goal seeking, collapse and decay. Here is a depiction of dynamic causal loop diagram

Fig 1. Dynamic of causal loop diagram of Kairane village government performance

2) Detail Complexity of Causal Loop Diagram

Based on the figure 2, the level of public services can be optimized with local government support and supporting from the role of the village secretaries (civil servant status). The level of self-reliance can be optimized with the existing program (revolving funds) accompanied by substance of grant assistance rather than administrative that has been done. Income optimized through empowerment programs and improvements in village infrastructure to reduce dependent mental to central government grants.

Fig 2. Detail complexity of close loop diagram of village government performance system.

All sub system on reality model above appropriate with previous researches will be like following the Figure 3:

Fig 3. Causal loop diagram on village government system based on previous studies \(^{12}\)

The previous studies have differences in the methods and outcomes generated by the researches. The result of this research with dynamic system method produce output in the form of policy scenario to optimize the performance of village government. The scenario is based on leverage derived from one sub system that has great value to the performance of village government, with a little treatment can improve performance.

This research has limitations mainly in the fifth stage of design and simulation policy. This stage has not been completed, so leverage cannot be ascertained its existence, but can be assumed by looking at the number of inflow and outflow to the one of the sub system in close loop diagram above.
IV. CONCLUSION

A model of village government system has three types, i.e. first, theoretical model, existing model and recommended model. All model based on system thinking, with causal loop characteristic. Theoretical model compiled based on previous study while existing model based on problem recognition and understanding from reality in research location, last recommended model is existing model with new treatment.

Inland villages tend to experience limited infrastructure and access to information, so that public services are mainly basic needs are not optimal and cause culturally poverty. The lack of understanding of the structure on poverty problem will lead to new problems, namely dependence such as happen in Kairane village. Village government as a system cannot optimize its performance without support from supra structure i.e. local and central government also third-party support. This reinforces the results of previous studies [13][14][15] and local government theory that village government is a sub-system of local government[16][17].

The scenario of optimizing the performance of Kairane village government in order to realize the welfare of the village community can be done in the following way: first improving the degree of public services through the role of village secretaries with status of civil servant and local government support; second, increasing the self-reliance of rural communities through intensive revolving fund and assistance programs related to the problems faced by villagers; third, increasing the development of village infrastructure. It can be a increasing the community income through the activities of information mainly related to education.

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REFERENCES

[12] Previous study:

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