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The Dilemma of Implementing Rice Land Restoration Post the 2018 Earthquake and Liquefaction in Sigi Regency

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Abstract

This study aims to reveal the discrepancy among supporting information and realization of human resources, the readiness of Deep Ground Irrigation Pump (DGIP) infrastructure, and the budget. This research used qualitative descriptive with an evidence-based data approach through observation, interview, and documentation. The data analysis was carried out through data collection, data condensation, data display, and drawing conclusion. Applying the Van Metter and Van Horn implementation model, which emphasized the aspects of information resources, human resources, infrastructures, and budgets. The results showed that the DGIP infrastructure support and output targets were poorly realized. The unpredictable ineffectiveness of the realization provided a theoretical contribution. Firstly, the presence of the physical environmental aspect of the earthquake, liquefaction, and the social pandemic in 2019 precisely determined the inefficacy of obtaining the implementation of rice field restoration. Subsequently, the limitation of the research analytically not to insert the theory of News Institutionalism, the aspect of rational choices, the rules, and the calculative options. Practically, the government of Sigi regency should not only depend on the success of the previous DGIP, however, they must re-analyze the problems and the alternatives for determining DGIP. Refocusing the budget should be calculated carefully and based on priorities, seeing that between the impact of the earthquake and liquefaction and the Covid-19 pandemic, both are included on a heavy scale and have extraordinary impacts.

Keywords: *Implementation, Rice land Restoration, Earthquake And Liquefaction.*

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Introduction

The resource aspect in policy implementation is crucial since, aside from being able to succeed, it can also thwart achieving policy goals and objectives. The consequences of public policy thus demand the ability of public organizations to arrange the programs, projects, or activities and prepare resources, both in terms of adequacy, explication, and exactitude of resource allocation, as conveyed (for example, Van Metter and Van Horn, Mazmanian and Sabatier, Hoog Wood and Gun, Grindle, Thomas R, Dye dan George Edwards III. Moreover, Grindle argued that without the proper instruction of resources, the policy would only become a vision, a slogan, and a mere political document. The implementation model of Van Metter and Van Horn is utilized by emphasizing information resources, humans, infrastructures, and budgets. The result shows that information on human resource support targets, DGIP framework, and funds were not translated suitably. Impromptu, the ineffectiveness of realization on the use of DGIP, which should be able to irrigate two planting seasons, turns out to be only once a year, as an impact of physical environmental aspects from earthquakes and liquefaction. Meanwhile, the social environment's ineffectiveness due to the budget's refocusing, where most of the budget was deflected to renew from the Covid-19 pandemic and aid for the safety of economically weak communities, leading to a low achievement of recovery implementation. Hence, to see the relationship between research aspects, it is stated:

The proposition is that even though the data regarding target information for human resource support, DGIP infrastructure, and a good budget nevertheless is not bolstered in the form of realization of the availability of DGIP infrastructure and optimal estimates support, then the implementation of post-earthquake and liquefaction restoration of rice fields is not effective.

There are various results of studies concerning policy implementation in Indonesia, for instance, Jeremias T. Keban 2008, only 40 to 50% of the policy implementation is done triumph. Some of them are frail in resource preparation. Bozz Allen and Hamilton (in Keban 2008), the principles of Good Governance in ASEAN, wherein placing Indonesia in the lowest order, among other things, due to budget inefficiency, after that the Philippines, Thailand, Malaysia, and Singapore in the highest thread. The outcome of enforcement research related to disasters, by (Diah et al. (2017), Bakti Heru Kusuma et al. (2018), Dewi Kartika Sari (2012), Gunanda Arkha Dhemas et al. (2018), Saut Sagala et al. (2013). Apart from the failure, this study also propounds a successful policy implementation, which has inspired many authors, starting from the results of research flows, propositions, and contributions. Derived from Bert George (2021), Effectual Implementation of Strategic Plans in Flemish Municipalities: binding People, Processes and Projects. The result indicated that fruitfulness was influenced by people, processes, and plans, which were the basis of the planning strategy.

Location or Research Analysis Unit in the Regional Spatial Planning Coordination Forum (RSPCF), comprised of various departments and agencies, were assigned to compile agendas and activities or project and financing preparedness. This study utilized a descriptive qualitative method with an evidence-based data approach through observation, interview, and documentation. Data analysis included data collection, condensation, display, and drawing conclusion. In this case, the key, leading, and supporting informants were The Head of the Land Expansion and Irrigation Division of the Agriculture Service, the Head of the Spatial Planning and Irrigation Division, and the Head of the Development and Research Division of the Regional Planning Agency (Bappeda). The major consideration for electing those three people was based on the deliberation of their abilities to respond to the suitability and adequacy of the data requisite. On the other hand, in many cases, the heads of the division are allowed to reinforce the argument of the service chief both in conceptual or decision-making. Afterwards, technically, they provided comprehensions operationally toward the section chief regarding the mechanism for implementing Technical Operational Instructions for Activities. In collecting evidence-based data by means of observation, interview, and documentation, it gained data on the irrigation damage and the area of rice fields that was 30 km with an extensive of 8880 hectares. According to the authority, 3000 hectares of rice paddy were affected; it was an authorization of the central government and provincial and less than 3000 hectares belonged to the district government/city. The competence of Sigi Regency, which had 2826 hectares with the number of equipment exertions for Deep Soil Irrigation Pumps (DSIP) was 91 units, with a budget of Rp. 12366459660 (billion). Other crucial data were the allocation of Regency Regional Space, geographic and topographic physical environment, socio-demographic, education, and health. In the economic scope, it is related to Farmer Groups and their income levels. At the same time, politics are connected to Regional Regulations (Perda), Regent Ordinances (Perbup), existing laws and arrangements. In the context of the dynamics of the utilization, data regarding the conversion of rice fields to other land uses and their impact on production, irrigation, and sub-district paddy areas that were damaged by earthquakes and liquefaction, both on a heavy scale and permanent. Hence, it is declared as a red zone.

Method

This study utilized a descriptive qualitative method with evidence-based data through observation, interview, and documentation. The inspection of the used of DSIP infrastructure for the 2020 and 2021 fiscal years was about ineffective achievement. in this case, for the second season, the inefficient parts are applied to plant vegetables and beans, which did not require a lot of air. The secondary data was numeric and obtained Gumbasa irrigation from upstream to downstream along 30 km, with an affected rice field area of 8880 hectares. Based on authority, the Central/Provincial Governments gained above 3000 hectares and Districts/Cities under 3000. Sigi Regency received 2826 hectares with DSIP infrastructure,

91 units, with a total budget of IDR 12,366459660. In the 2020 fiscal year, the target of DSIP was 50 units, and 37 units were realized. in another matter, in 2012, the goal was 41; however, only 4 units were accomplished. Regarding Law No. 21 of 2008 concerning disaster countermeasures. No. 41 of 2009, on the protection of sustainable food agricultural land, receives government regulation in lieu of law No. 1 year 2011. Instructions of the President Republic Indonesia No. 10 year 2018 concerning the acceleration of rehabilitation and reconstruction after the earthquake, liquefaction and tsunami in central Sulawesi province and other affected areas**.** PNPB regulation No. 2 of 2019 regarding the utilization of grants from the central to regional governments for rehabilitation and reconstruction assistance. Governor ordinance No. 10 year 2019 pertaining to rehabilitation plan and reconstruction post-disasters. Other crucial data was intended for regency regional space, geographic and topographic physical environment, Socio-demographic surroundings, education and health, economic growth, equal distribution of farmer groups and income levels. Meanwhile, interviews were entrenched in the suitability and adequacy of conversation results from informants by using an evidence-based data approach. The focus of the debriefing was on planning and implementation, which unexpectedly turned out to be sourced from the contribution of physical and social environmental factors that had character of disrupting resource availability, DSIP infrastructure targets, and budgets.

Result And Discussion

Interrelationship of Research Focus Aspects

Availability of resources in applying paddy area restoration emphasizes facets of human recourses, information support, DSIP infrastructure, and budget. In this case, the need for linkages between sides of research can be noticed in the midst of supporting data/targets, realization, existence of human capital, DSIP equipment, and calculation support, which were not predicted previously; therefore, the finding of this study was the contribution of physical and social environmental factors in rice fields.

Aspects of Human Resources Availability

In this matter, people who work, including top leadership, middle, low, and staff at Bappeda, the PUPR and the Agriculture Service, became the factors in this implementation of land restitution. A summary of the interviews with the Head of Development and Research at Bappeda, the Head of Land Expansion and Irrigation, the Department of Agriculture and Horticulture, and the Head of Spatial Planning and Irrigation, the PUPR Service of Sigi Regency stated:

discerned from various aspects, those all were fine, wherefore Echelon officials II, III and IV had an average education level of at least a Bachelor's Degree, with more than ten years of work experience. This condition bolstered activities from planning to execution and valuation. Thereupon, by means of impression, they can determine the realization of assistance for the achievements of rice field restoration. They have handled much disaster work, such as floods, landslides, forest fires, and other disasters.

Several research outputs showed that the reconstruction process after natural disasters, the aid of human capital with educational setting and work experience has the potential to contribute to calamity handling, (Diah et al. (2017), Kusuma et al. (2018), Sari (2012), Gunanda Arkha Dhemas et al. (2018), Sagala et al. (2013). In theory, adequate and qualified resources will deliver performance in implementing appropriate and effective policies. (George Edward III, Van Metter and Van Horn and Grindle,)

The proposition is formulated :

The first theorem regarding the availability of human resources was good already. However, the realization of DSIP equipment and budget support was insufficient. Consequently, the restoration of rice fields after the earthquake, liquefaction, and Covid-19 was poorly implemented.

Realization of DSIP Infrastructure and the Linkage of the Physical and Social Environment

DSIP infrastructure is a pump that does not use a machine to move water in the soil to the surface to fulfill the needs of rice fields. The studies related to this were, (Diah et al. (2017), Bakti Kusuma et al. (2018), Sari (2012), Dhemas et al (2018), Sagala et al (2013). Theoretically, several experts agree that ample and qualified infrastructure will bear appropriate and efficacious performance in adjusting policies. (George Edward III, Van Metter and Van Horn dan Grindle,)

The summary of interviews from informants, namely:

the awareness of DSIP targets was low since the effectiveness of achieving DSIP goals was different before the disaster, wherein the DSIP can be applied potentially twice in a growing season; nevertheless, the practice post-earthquake and liquefaction was only done once. The determination of DSIP simply considered the experience factors before the disaster without examining the subsidence of the land surface by dint of the influence of the physical environment. The lack of DSIP realization was also due to the refocusing of the budget above 50% for handling the Covid-19 pandemic as a result of the social environmental invoice.

The utility of purely experiential considerations, by Nigro and Gerald E Caiden (1971) speculated it as a mistake and insufficiency of knowledge of policymakers that will influence the effectiveness in gaining goals and objectives in order not to become an error, Nigro and Nigro (1980), stated it is necessary to re-analyze issues, causative factors, and alternative solutions. It should be emphasized clearly and measuredly that physical environmental factors with a large and extraordinary impact are the main sphere that influences Public Administration, especially in general policy dimensions.

Budget Realization and the Relationship between the Social and Physical Environment

Reconstruction to restore the irrigation function of paddy fields required the local government's commitment to provide a budget to return it as land that is ready for planting. The summary of interviews from informants, namely:

In this case, the estimates were very restricted, resulting in the DSIP purchases being adjusted to availability, not requirement. this matter was caused by the available budget being diverted to dealing with Covid-19. Therefore, the yield of land that has been reconstructed is still below 50%.

The problem of budget shortages becomes a reason for the lack of effective policy implementation, especially concerning disasters. Reported by, (Kusuma et al. (2020), Demos et al. (2018), and Cholis (2018). Theoretically, several experts agree that available and appropriate fund resources will produce proper and effectual performance in running wisdom. (Maxmanian and Sabatir, Van Metter and Van Horn and Grindle,). The result indicated the element of the physical and social environment, which had a severe and extraordinary impact, should be accentuated lest the calamity and social with great character became major surroundings that influenced Public Administration, especially in the dimensions of public discretion. Propositions II and III are proposed to see the relationship between research aspects.

Proposition II: The awareness of DSIP infrastructure is relatively low as a result of the unpredictable physical and social environment; the effectiveness of rice field restoration cannot be implemented properly.

Proposition III. Budget realization is comparatively poor due to the unforetoldable sociological and bodily surroundings; hence, it cannot be applied duly.

To find out how propositions II and III contribute to physical/geographical and topographical, social, cultural, economic and political aspects, as well as the relationship between resources and environmental characteristics in terms of Turbulence and Manifestation, explained by: Maxmanian and Sabatir 19983, Metter and Horn, Anderson, Robbins 1991, Chemma and Rodonenll 1983, Bryant and White (1987), Cetro and Peter. 1991), Katz and Kahn, 1978; March and Simon, 1958; Thompson, 1967, and Keban, Gregory G. Dess and Donald W. Beard). *Turbulence* pertains to the nature of the environment that experiences chaotic changes or remains stable, whereas *munificence* is undergoing a degree of dearth or abundance an important resource. In this instance, experts' understanding is more on the physical, geographic, and

topographic environmental damage and natural disasters such as floods, landslides, earthquakes, tsunamis, and liquefaction, and not on the heavy scale, permanent, and extraordinary as though red zone area that was utilized as rice field, housing, office, and other infrastructures which are prohibited to rebuilt, then the reduction in soil structure, the DSIP target which should be for two planting seasons become only once. The whole units for the 2020 and 2021 fiscal years were 91. In 2020, there were 50 targets; however, 27 were realized, and for 2021, there were 41 goals; nevertheless, only 4 be translated. The ineffectiveness of materialization in terms of the regulatory constitution, which was stated no later than two years post-disaster, rehabilitation and reconstruction of heavy and light damage constructed the same as before. Somehow, in reality, it was not implemented properly. Based on this incident, researchers assumed something was unpredictable, which became a finding supported by an evidence-based approach, as well as chaos due to political crises, foods, vandalism, quality of education, health, economic recession, etc, that were not specifically pressured in a social environment such as Covid-19 pandemic, which drained the resources of state institutions and other governments to overcome the financing above 50% of the budget and economic assistance for economically weak communities. This contrivance makes it even more convincing that social environmental factors with a large and extraordinary effect must be emphasized clearly and measurably, whereupon the physical and social disasters are the main surroundings that influence Public Administration, especially in the dimension of public policy. The theoretical contributions are presented in Figure 1 to see the relationship between research aspects.

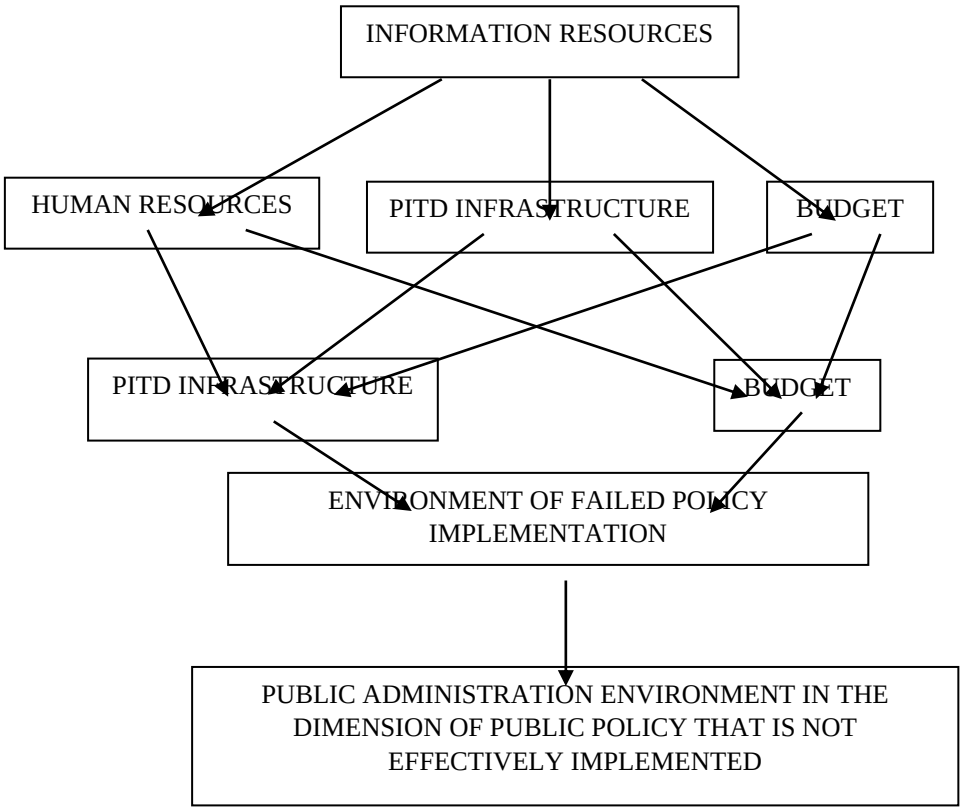

Figure 1. Theoretical Van Metter and Van Horn, Manian & Sabatier

Observations were carried out by directly monitoring the use of DSIP infrastructure for the 2020 and 2021 fiscal years. Furthermore, the secondary data showed that the failure of Gumbas irrigation was 30 km, with an area of rice fields affected of 8,880 hectares. The central and provincial governments had authority over 3000 hectares and the regency/city under 3000 hectares. Sigi received a paddy site extent of 2826 hectares with DSIP facilities were 91 units and the total estimate was IDR 12,366459660. In 2020, DSIP goals were 50; however, 37 were realized. Moreover, in 2012, the goal was 41, and only 4 units were accomplished. Regarding legal documents of disaster management, protection of sustainable

food agricultural land, and government regulations in lieu of laws on presidential instructions concerning the acceleration of rehabilitation and reconstruction after disasters in central Sulawesi province and other affected areas. PNPB ordinance No. 2 year 2019, pertaining to the utilization of grants from the central government to regional ministries for rehabilitation and reconstruction assistance. Governor ordinance No. 10 year 2019 concerning rehabilitation plan and reconstruction post-disasters. Other important data was consigned for regency regional space, geographic and topographic physical environment, Socio-demographic surroundings, education and health, in the economic field, referred to farmer groups and profit levels. Other crucial data was intended for regency regional space, geographic and topographic physical environment, Socio-demographic surroundings, education and health, economic growth, and equal distribution of farmer groups and income levels, whilst the interview was embedded in conformity and sufficiency of the conversation yields from the informants through evidence-based data. The focus of the debriefing was on planning and implementation, which unexpectedly turned out to be sourced from the contribution of physical and social environmental factors that had character of disrupting resources. availability, DSIP infrastructure targets, and budgets.

The realization of this research showed that aspects of DSIP infrastructure and budget are relatively low. Due to the realization of DSIP, the effectiveness of accomplishing DSIP targets is distinctive before the disaster, where DSIP can be utilized effectively twice within the planting season. Practice can be utilized once throughout the growing season after the earthquake and liquefaction. The error in determining DSIP is that it only considers the experience of implementing DSIP before the earthquake and liquefaction without taking into consideration the subsidence of the land as a result of physical environmental influences. This lack of realization of DSIP is caused by refocusing more than 50% of the money on dealing with the COVID-19 societal pandemic as a consequence of social circumstances. Propositions II and III are presented here to demonstrate the theoretical and practical contributions of this research, as follows;

Proposition II. The realization of PITD infrastructure is generally low, and the effectiveness of rice field restoration cannot be done efficiently due to the unpredictable physical and social environment.

Proposition III. Budget realization is relatively low because of the unpredictability of the social and physical environments, so the success of the rice field cannot be appropriately performed.

To see how Proposal II and III contribute to the physical and social environmental connections, such as physical/geographic and topographic, social, cultural, economic, and political, as well as the relationship of resources and the character of the environmental nature of turbulence and munificence, are described by: Maxmanian and Sabatir 1993, Van Metter and Van Horn, James Anderson, Robbins 1991, Chemma and Rodonenll 1983, Bryant and White (1987), Cetro and Peter. (1991), Katz and Kahn, 1978; March and Simon, 1958; Thompson, 1967; and Keban, Gregory G. Dess and Donald W. Beard). Turbulence refers to the character of the environment that suffers chaotic or stable changes. In contrast, munificence refers to the nature of the environment that experiences a degree of shortage or excess of crucial resources. Experts' understanding who study the physical environment focuses on the problems caused by human actions and natural events. These problems include geography and topography, natural disasters like floods, landslides, earthquakes, tsunamis, and liquefaction, and they tend to overlook the enduring consequences of these catastrophes like the red zone territory where it is forbidden to rebuild rice fields, houses, offices, and other buildings. Researchers assume there is something unpredictable since there is a lack of emphasis on the impact of large-scale and severe physical disasters, which becomes a finding supported by evidence-based approaches that gave contributions both theoretically and practically. The environment and availability of resources can affect how we respond to our surroundings. Turbulence and munificence to social environmental factors such as the global chaos caused by political crises, food, vandalism, quality education, quality health, economic recession, and other factors do not explicitly emphasize the social environment, which has a vast and extraordinary impact, such as the pandemic COVID 19, which drains the resources of the state and other government institutions to deal with the financing of COVID 19 pandemics. This finding makes it even more convincing that social and

environmental factors play a significant role and should be clearly measured. Natural and social disasters have a significant influence on public administration, especially in public policy. To better understand the connected parts of the research, a practical contribution is presented in the following figure 2:

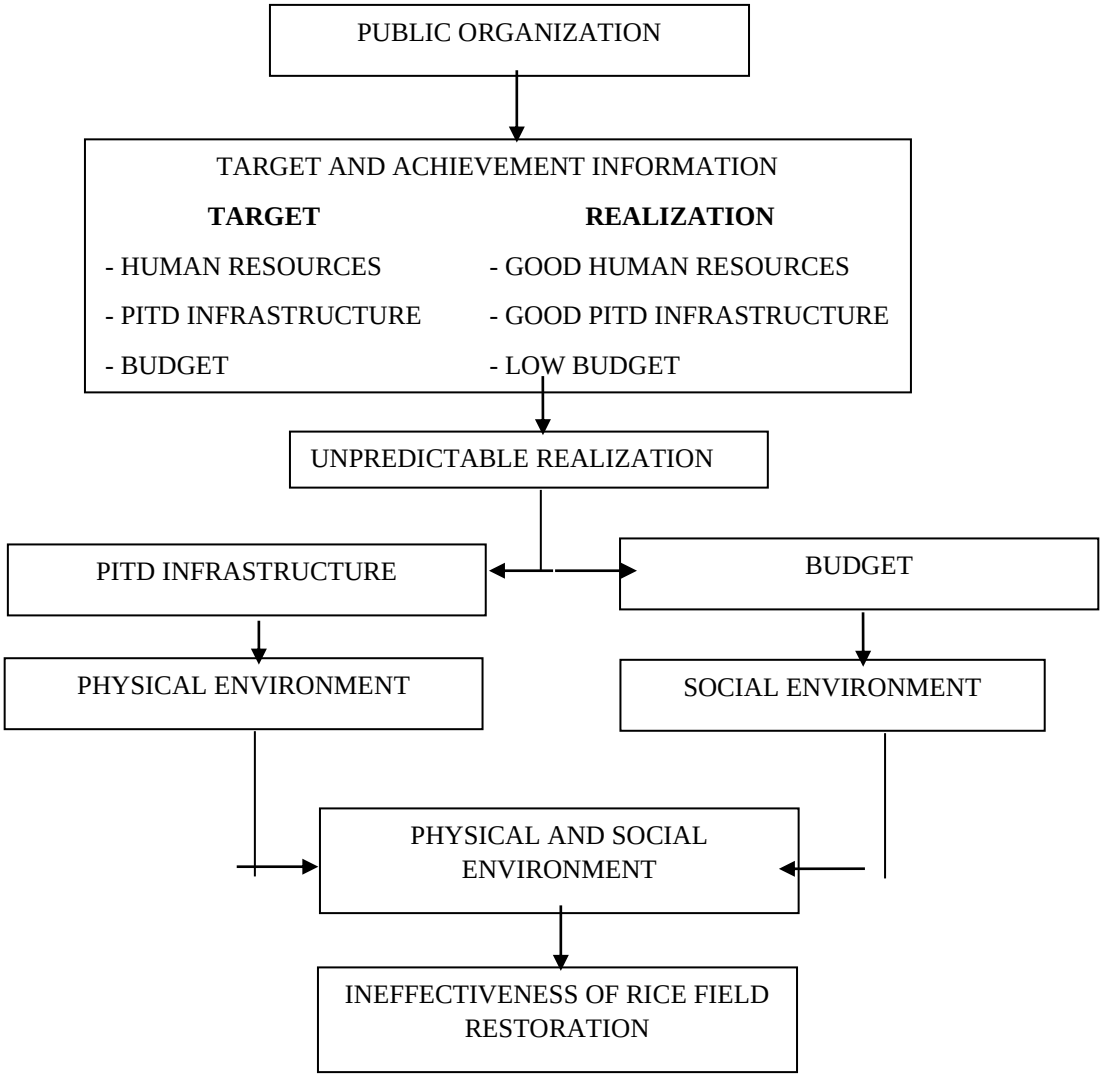

Figure 2. Realization between aspects of Resources & Environment

Conclusion

The research shows that the information provided by human resources is helpful, but it needs to be supported by DSIP infrastructure and optimal budget. Unpredictable ineffectiveness of implementation is providing theoretical and practical contributions.

First, the physical aspects such as earthquakes and liquefaction, along with the COVID-19 pandemic, precisely indicate the inefficiency of recovering and fixing the land properly. Second, the limitation of the research analytically excludes the theory of news intuitionalism from the perspectives of rational choice, rule of the game, and calculative choice. In practice, the Sigi District Government should not only depend on previous successful experiences with DSIP but also conduct a re-analysis of the difficulties and alternatives for determining DSIP. Refocusing the budget is best done carefully and on the basis of priorities because the impact of the earthquake and liquefaction, combined with the COVID-19 pandemic, are both on a large scale and have a huge impact.

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