Implementation of Irrigation Policy in the Decentralized Government: A Case Study of West Java, Indonesia

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Abstract:

The damage on irrigation networks has a substantial effect on the declining in the productivity of farming, which further implies the farmers' welfare. One of the possible causes of such problem is related to the implementation of irrigation policy. This paper tries to analyze existing model and provide the alternative model of irrigation implementation in Indonesia through qualitative approach with a case study on West Java. In general, the existing model of irrigation implementation is still territorial based on government affairs. Therefore, the alternative model should adopt a collaborative one.

JEL Classification: H830; O170; O210; Q180

Introduction

The principle of local governance through local autonomy and decentralization is a strategic step of the central government in realizing the welfare of society. Such principle positions local governments as having the authority to regulate and to manage their own affairs and the interests of local communities in the Unitary State System of the Republic of Indonesia, as stipulated in the 1945 Constitution as well as Law No. 23/2014 on Local Government.

Through local autonomy, each local government has the ability to carry out development activities more independently in order to improve the distribution of citizens' income and employment opportunities. In addition, it can increase access and quality of life and can raise participation in development and competition through the support of potential resources and empowerment. Thus, the essence of autonomy can be understood not only to manage their own households, but also to manage the potential of existing resources, to improve services, community empowerment and participation in development, and to increase local governments' capacity in developing the competitiveness of resources.

The implementation of local autonomy is closely related to the decentralization policy. Here, decentralization is a matter entitled to be held by the local government in the context of implementation of its autonomous rights. In other words, it can occur only if the region has autonomy. In Indonesia, the concept of decentralization refers more to administrative decentralization (Hidayat, 2008). In the

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administrative aspect, decentralization is interpreted as a means to improve management efficiency for the provision of public services. This includes devolution that contains the transfer of authority amongst levels of government. The approach model is more based on a formal approach that emphasizes the governance system characterized by the division of tasks and authority.

In line with the implementation of local autonomy, the central government has also implemented a fiscal decentralization policy to carry out the affairs that have become the authority at each level of government. The concept of fiscal decentralization, as defined by De Mello (2000), is a tool for transferring or delivering sources of income and expenditure factors to every regions by reducing government bureaucracy. By bringing government closer to society, as revealed by some first-generation fiscal federalism experts in Hayek (1945) and Tiebout (1956), it is expected to promote efficiency, accountability, and transparency in the provision of public services.

The attention of the first generation theory, does not emphasize the ability of local governments to generate their own-source of income in financing expenditure. The pattern is similar to the devolution concept of administrative decentralization. Ideally, the provision of financial resources to local government should be balanced with government affairs submitted to the region. When the regions have insufficient financial capacity to finance their affairs, the central government may use other transfer instruments such as specific allocation fund (*Dana Alokasi Khusus – DAK*) to assist the region in accordance with the national priorities. This view is in line with second-generation fiscal federalism experts, such as Musgrave (1959) and Oates (1972), which shed some lights on the importance of revenue and expenditure assignment to reduce horizontal fiscal gap amongst local governments and to lower vertical fiscal gap between central government and local government.

With the support of the own-source revenue (*Pendapatan Asli Daerah – PAD*), intergovernmental transfers grants by central government, and even fund transfers that come from the Ministry / Institution expenditure (deconcentration fund), it is expected that those revenues of local government can endorse the target of food sovereignty in the national medium-term development plan (*Rencana Pembangunan Jangka Menengah Nasional – RPJMN*), especially for increasing rice production to 82 million tons in 2019. According to Irawan (2005), there are two main strategies for improving rice productivity, namely: 1). Increasing area of paddy fields. For now, the strategy is constrained by the widespread conversion of agricultural land, especially on the island of Java; 2). Optimizing irrigation networks. Currently, irrigation that becomes the central authority reaches 32% of total irrigation in Indonesia, and the rest becomes the local authority. Approximately, 46%, 61%, and 52% of the conditions of irrigation network under the authority of central, provincial, and district/city, respectively are in damaged condition (BPS, 2014).

Starting from the complexity of the problem, there are 2 (two) research questions, namely: 1) What is the existing model of irrigation implementation in the decentralized government? 2) How is the alternative model of irrigation implementation in the decentralized government?

1. Literature Review

Based on explanation above, it is necessary to manage the irrigation area effectively and efficiently so that water can be distributed fairly and equitably. Of course, such action involves several institutions starting from the central government, local governments, to the group of farmers (*Perkumpulan Petani Pemakai Air – P3A/GP3A/IP3A*). The development of irrigation institutions has colored the shift of the institutional system and the socio-economic dynamics of rural communities. According to Bromley (1989), institutional analysis needs to be directed at three levels: 1) Policy level; 2) Organizational level; and 3) Operational level. At the policy level, community aspirations are formulated into policy. At the institutional level, aspirations and policies are translated into organizational, program and activity. While at the operational level, institutional action is directed at achieving output and outcome. Based on these conditions, there is a possibility that problems at the policy level, organizational level and operational level might occur.

At the policy level, the deliberation of development planning (*Musyawarah Perencanaan Pembangunan - Musrenbang*), started from the lowest level of government to the top, is a means to meet the so-called top - down approach (a technical assessment that brings together the political and technocratic aspects in development planning) with the so-called bottom - up approach (the needs and assessment of community at the lowest level of government). In fact, Wibowo (2009) argues that *Musrenbang* at the local level is still dominated by the direct policy of the local government heads, the

“intervention” from the national (*Dewan Perwakilan Rakyat - DPR*) and local (*Dewan Perwakilan Rakyat Daerah* - DPRD) parliament, and the “unrealistic” program from the line agency (*Satuan Kerja Perangkat Daerah - SKPD*). Such condition will accumulate the disappointment of community at the village and sub-district levels that have fulfilled the obligation to make the plan but the realization is very minimal.

At the organizational level, the commission of irrigation management (*Komisi Pengelolaan Irigasi - KPI*) is one of the instruments in irrigation system, besides infrastructure, water, management, and human resources. However, *KPI* cannot run optimally when there is no synchronization on the program / activity between water resources management and irrigation. In this case, the regional water resources council (*Dewan Sumber Daya Air - DSDA*) and the regional irrigation commission (*Komisi Irigasi - Komir*) both serve as the feeders for the local government in formulating the policy. In addition, line agencies in charge of water resources and irrigation (*Dinas Pengelolaan Sumber Daya Air – DPSDA*), and institutions in charge of agriculture (*Dinas Pertanian*) are both members of *Komir* and *DSDA*. However, the lack of clarity on the structure, the organization and the working procedure among these institutions often leads to duplication / overlap of activities, which ultimately leads to stagnation of specific irrigation activities.

Moving to the operational level, although institutional arrangements have been issued by the Minister of Public Works, the facts in the fieldwork show the opposite condition (Kahfi, 2012). The local public works agency (*Dinas Pekerjaan Umum – DPU*) was more dominantly directing their programs on the physical construction of new irrigation networks or on the upgrading of current irrigation networks. Therefore, a collaborative management of an irrigation network should be pursued to enhance the sense of ownership and responsibility on irrigation areas, which should be handed over to *P3A/GP3A/IP3A*. In the context of human resources development, Kahfi believes that farmers face a dilemmatic condition because they must equally stand on *Dinas Pertanian* and *Dinas Pekerjaan Umum*. In reality, they are closer to *Dinas Pertanian*, so that irrigation infrastructure programs implemented by *Dinas Pekerjaan Umum* are often not well appreciated by them. Sometimes, through incentive mechanisms such as Donor loans, *P3A/GP3A/IP3A* are often established without considering the aspirations and needs of farmers, so that the benefit of these associations is not understood correctly by the members. The hasty formation of *P3A/GP3A/IP3A* also affects the work programs in an unstructured manner.

In addition, the implementation of *P3A/GP3A/IP3A* program needs to be guided by the Technical and Institutional Social Economic Profile (*Profil Sosial Ekonomi Teknis dan Kelembangaan – PSETK*). The absence of *PSETK* may cause some problems on *P3A/GP3A/IP3A* in identifying and formulating the needs for operational, maintenance and rehabilitation of irrigation networks. In addition, they will find it difficult to identify the extent of *P3A/GP3A/IP3A*'s contribution to repair irrigation network. Also, the absence of PSETK will create new problems of *P3A/GP3A/IP3A* in mapping out economic issues covering planting area, type of cropping, and planting plan.

Moving to the previous studies, clearly, the theme of irrigation in Indonesia has been discussed and each of these studies are taking a different focus with diverse perspectives. Bakar (2008) in his dissertation entitled "Model of Local Strategy Policy in Sustainable Irrigation Management", explores several aspects related to sustainable irrigation from the determinants of local policy strategy in irrigation management, synthesis of assumptions in irrigation policy, and finally to the proposed model in sustainable irrigation policies.

This study leads to the conclusion that irrigation management requires an integrated policy model, involving all stakeholders, and strengthened by regional irrigation institutions integrated with regional planning documents. Fuel at a glance shows that irrigation management in a decentralized system of government is handled by various actors, whose existence is recognized by Law No. 7/2004 on Water Resources.

Furthermore, Maksum (2007) in his dissertation entitled "Decentralization in Tertiary Irrigation Water Management" describes the practice of tertiary irrigation management by non-governmental institutions such as Subak and Dharma Tirta irrigation organizations. These practices are basically an anomaly of territorial decentralization whose actors are central government and local governments with rigid borders. He concludes that the weakness of irrigation management during his period of survey is because the withdrawal of irrigation authority in boundary is done by the logic border of administrative area. Such condition in turn creates weak institutions.

In this study, the decentralization model used is administrative decentralization, in which the authority of irrigation management is viewed as a power sharing between central, provincial and district/city governments. However, we focus on the management of irrigation with a special case of irrigation managed by the government, not the grassroots organization.

Indonesia's reform movement that marked the end of the new order regime, brought the ideals of political change toward the democratic system. According to Hermawan (2013), radical changes in the political system are not balanced with the reform of public administration. The behavior of the political bureaucracy is still stronger than the service bureaucracy. In principle, the paradigm of bureaucratic reform in Indonesia is basically an effort to implement new public management (NPM), which was developed in the early 90s. The term used is also very diverse, ranging from managerialism, market-based public administration, and entrepreneurial government.

According to Osborne and Gaebler (1992), in the concept of entrepreneurial government as applied in the United States, governments must implement several things, namely: (a). increasing competition among providers; (b). empower communities through strengthening community communities; (c). a more output-based bureaucratic performance in assessment; (d). treat the community as a customer and provide a number of alternative options that can be taken; (e). prioritizing problems; (f). focus more on increasing state revenues; (g). strengthening the decentralization of authority and encouraging community participation; (h). promoting market mechanisms rather than bureaucratic mechanisms; (i). oriented towards the achievement of objectives rather than adherence to the system and bureaucratic procedures; (j). serve as an organ that encourages all sectors of the private sector, civil servants and NGOs; and (k). solve their community problems.

Here, NPM emerges as a dialectic against rigid classical bureaucracy, which is categorized as having too hierarchical, complex and top-down in decision making. Basically, such model is increasingly distanced the administration and bureaucracy from the welfare of citizens. What is revealed by Osborne and Gaebler above actually describes the main principles and at the same time the form of change that is directed through NPM. Therefore, NPM is often associated with anti-bureaucratic and anti-procedural movements. However, NPM also did not escape from the criticism. One of the drawbacks of NPM for example is loudly thrown by Lapsley (2009) which actually assesses NPM as the harshest discovery of human civilization. This cruel criticism emerged on his analysis of e-government practice in Britain that failed to produce the expected impact.

An alternative model of NPM then emerged from the early 2000s, which can be broadly grouped into three models, as follows (Greve, 2015): (a). the digital era government (DEG) era; (b). the public value management (PVM); and (c). collaborative governance, also known as New Public Governance (NPG). Greve categorizes them by summarizing DEG as an alternative model that places more emphasis on transparency, social media, and public services. While PVM is more emphasis on the preparation of strategies, performance-based governance, innovation, and human resources management. While the NPG prioritizes networking and collaboration, public-private partnerships, and emphasis on new ways of engaging the public in governance and public services.

Despite the fact that each model has its own influence, the collaboration between government and non-government in providing public services is now an integral part of the government. In this context, NPG model will increasingly gain a place. It emerged as a necessity to transform the government. Currently, challenges of public policy faced by governments can not only be resolved by one institution, but collaboration is needed from various sectors (Greve, 2015).

In line with the ideas of Greve, Wanna (2008) classifies the factors driving the collaboration into three, namely: (a). external factors (such as the pressure of globalization, international relations and conditions, information technology, knowledge and economic development); (b). internal factors (such as political strategies to create responsive and accountable governance, and to raise the effectiveness in the delivery of public services); and (c). the will to run the government (such as political will in order to carry out the duties and functions inherently).

Such factors will make the form of collaboration more diverse. NPG bearers, however, group these forms of collaboration into at least some form of cooperation, as follows: (a). within the internal government environment (involving multiple components and individuals); (b). inter-government (involving

government agencies at several levels); (c). government and private third parties; and (d). government and individual communities (Wanna, 2008).

Collaboration is a very important entity in running public management, especially to sharpen the policy formulation (Wanna, 2008). However, it is only the first step towards achieving policy objectives. The main process is the implementation of policies that determine the success of a policy.

In public policy discourse, experts have mixed opinions about public policy process. Anderson (1990) divides the public policy process into five stages, as follows: (a). policy agenda; (b). policy formulation; (c). policy adoption; (d). policy implementation; and (e). policy evaluation. Anderson's opinion is almost identical to that of Dunn (2002) who sees that a public policy has different stages comprising of agenda formulation, policy formulation, policy adoption, policy implementation, and policy evaluation. Beyond all the disagreements concerning the public policy process, the above experts agree that it runs from formulation to implementation and then on policy performance (Nugroho, 2012).

From the process of formulation, implementation and performance of policies to evaluation, the stages of policy implementation play a major role in determining the success of a policy. Even according to Nugroho (2012), planning only determines 20% of success, while 60% of policy achievement is determined by implementation. This is because the implementation of the policy is the most severe process, in which a variety of problems that are not formulated at the concept level will be found. In addition, the main problem in implementation is consistency.

There are various models of policy implementation, namely: 1). Model failure analysis; 2). Top-down model; 3). Bottom-up model; and 4). Model synthesis. The first model is developed by Pressman and Wildavsky (1973). In this model, policy implementation is seen as an interaction between goals and actions. Another model is a top-down one that focuses on looking at what factors influence the success of policy implementation. This model was developed by Van Meter and Van Horn (1975). The third model developed by Edwards (1980) is a bottom-up model that focuses on the interaction between countries and citizens so that the process of policy implementation is seen as a process of conflict and bargaining. The last model is a synthesis one developed by Nakamura and Smallwood (1980), which emphasizes leadership in coordinating formulations, implementations and evaluations.

In the analysis, we use a top-down model as it provides an overview of the determinants of policy implementation. In addition, for the purposes of analysis in policy implementation, it provides a strong insight to identify failures or successful implementation of policies. In principle, many factors influence the success of policy implementation. According to Van Meter and Van Horn (1975), there are six variables that affect the implementation of the policy, namely: 1). Standard and policy goals; 2). Resource; 3). Communication between organizations and the strengthening of activities; 4). Characteristics of implementing agents; 5). Social, economic and political conditions; and 6). Disposition of implementation.

In the context of Indonesia, the probabality for having implementation gaps where programs and activities between levels of government are not aligned are greater. Moreover, in implementing the concurrent affairs, there is a division of authority between the central, provincial and district / city governments. In other words, some Van Meter and Van Horn’s indicators such as policy objectives and cooperation amongst organizations (level of government) become very important.

2. Methodology

Looking at the characteristics of the phenomenon, our research will use a qualitative approach with case study. This model prefers the use of inductive logic where categorization is produced by the researcher's encounter with the informant in the field or when the data are found (Yin, 2009). The information in the form of contextual ties will lead to patterns or theories that will explain social phenomena. Instrumental case study is used to seek more deeply at the problems of irrigation implementation in a decentralized system, and to look at phenomena in a real-life context where there is no strict boundary between phenomena and the context so that the sources used must vary.

Based on the 2014 WISMP report, this study takes case in West Java Province, Cianjur Regency, Tasikmalaya Regency, and Bogor Regency. There are several problems related to irrigation implementation in the area of West Java, such as :

1. At the policy level, *Musrenbang* process on several sub-districts only exposes the programs from the line agencies such as the local development planning agency (*Badan Perencanaan*

Pembangunan Daerah - Bappeda), *Dinas Pertanian* and *Dinas Pekerjaan Umum*. Participants also do not have complete data in preparing *Musrenbang* so that the dominant actors in the policy formulation at districts and sub-districts level are executives or local government, not the community. In addition, although our case studies have established local regulations (*Peraturan Daerah – Perda*) on Irrigation, such regulations do not correspond with conditions, potentials, and actual problems of irrigation areas. Moreover, our units of analysis have not yet internalized the operation and maintenance (O & M) program of irrigation networks, as set forth in the irrigation regulation, into planning and budgeting documents;

2. At the level of the organization of natural resources management, none of the study areas establish *DSDA* as stipulated on Government Regulation No. 38/2007 on Public Works. In addition, at the level of irrigation management, local governments have not undertaken concrete efforts in revitalizing *Komir*. From the aspect of executing agency of irrigation area, there is no effort made by local government to adjust the organizational structure and the working arrangement of line agency which handles irrigation affairs with the present needs of the local community;
3. At the operational level, some regions have established and legalized *P3A/GP3A/IP3A*. Such condition can provide a pattern of interaction of natural resource management, mainly irrigation, to the improvement of policies and organization, which in turn can formulate the ideal pattern of institutional arrangements. However, the absence of *PSETK* leads to the different interpretation of *P3A/GP3A/IP3A* in each locus. The condition is exacerbated by the relatively minimal service of *P3A/GP3A/IP3A* in determining the ownership rights of water, and they did not accommodate the aspiration of the farmer in setting water management tariff (*Iuran Pengelolaan Air – IPAIR*).

Now to the degree of irrigation networks, West Java Province as a whole has 39% of irrigation networks that are in damaged condition (see Table 1). Less favorable condition was also shown by Regency of Cianjur (43%). Meanwhile, both districts of Tasikmalaya and Bogor are regions with a relatively good in terms of feasibility irrigation network, which takes into account for 64% and 84% respectively.

Table 1. Damaged Condition on Irrigation Network in West Java, 2014

Area	Area of Irrigation (ha)	Damaged Condition on Irrigation Network (ha)	% Damaged (ha)
West Java Province	113.845	44.474	39
Regency of Cianjur	7.336	3.159	43
Regency of Tasikmalaya	10.731	3.908	36
Regency of Bogor	6.532	2.214	16

Source : Ministry of Public Works, 2016

In general, our qualitative method began with literature study by studying the findings on literatures and regulations. From here, the interviews were carried out with a number of informants such as *Bappeda*, *Dinas Pertanian*, *Dinas Pekerjaan Umum*, and *P3A/GP3A/IP3A* at the provincial level and 3 (three) selected districts (Cianjur, Tasikmalaya and Bogor) within West Java province. The results of these interviews are then confirmed through direct observation by visiting irrigation areas as the starting point of the irrigation planning process. The final step of a case study is the Focus Group Discussions (FGDs) involving all stakeholders related to irrigation planning from villages, sub-districts, districts and provinces to clarify the findings at the irrigation networks. We are already conducted such process from the beginning of January 2018 to the late of February 2018 and developed the preliminary model.

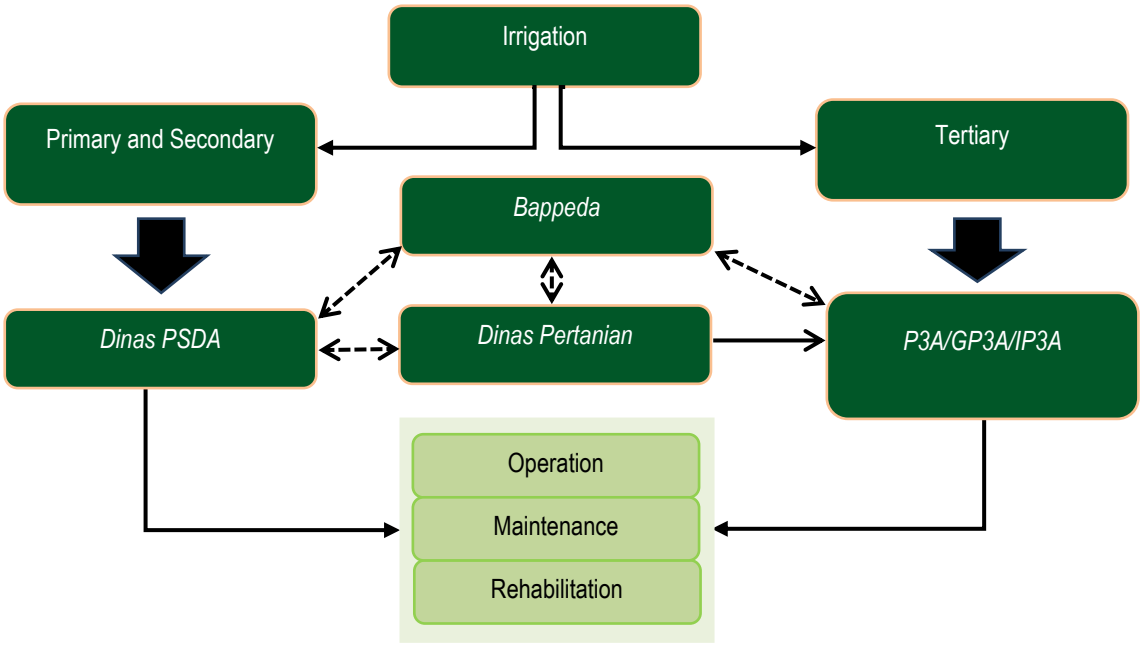
Our early model is then validated through FGDs with expert judgment technique, held in Jakarta on the midst of March 2018. This technique involves experts to identify problems of analysis, to determine problem-solving methods, and to propose problem-solving alternatives. Invited experts came from academicians, professionals, non-governmental organizations, and government bureaucracies, related to the implementation of irrigation.

3. Results

3.1. Existing Model of Irrigation Implementation

On the organizational side, irrigation management at the main network is specifically handled by *Dinas Pengelolaan Sumber Daya Air*. Such line agency are specifically tasked to implement irrigation management (operation, maintenance, and rehabilitation) at the primary and secondary irrigation networks. Meanwhile, tertiary irrigation networks that directly touch agricultural land become the authority of *P3A/GP3A/IP3A* directly guided by *Dinas Pertanian*. Specifically, this agency acts as a leading sector in the empowerment process of *P3A/GP3A/IP3A*. Meanwhile, *Bappeda* has a role in coordinating each line agency and *P3A/GP3A/IP3A* in the implementation process of irrigation in accordance with their authority (see Figure 1).

Figure 1 : Institutional Arrangement of Irrigation in the area of West Java



Implementation of irrigation amongst government levels is divided by the extent of the irrigation area. Such division essentially follows the distribution of authority in the decentralized irrigation. For an area above 3000 hectares, it becomes the authority of central government. Likewise with provinces that have authority for irrigated areas between 1000 and 3000 hectares. For districts and municipalities, their authority lies in irrigated areas of less than 1000 hectares.

According to our observations in the field, the actual management of irrigation networks is still highly fragmented. For primary and secondary irrigation networks that are part of the public works affairs, the management institution is determined by the extent of the irrigation area. In this condition, it is possible that one district has irrigation area above 3000 hectare, but its management is handled by the central government, because such area is still under the authority of central government. For tertiary irrigation networks that go directly to the agricultural areas, their management becomes part of agricultural affairs.

The overall management of irrigation networks is basically categorized into operation, maintenance (O & M) and rehabilitation. The operational level constitutes all of water regulatory efforts on irrigation networks ranging from water supply, distribution, grant, to the use and disposal, including closing the doors of irrigation buildings, preparing planting plans, classifying systems, as well as preparing water distribution plans, calibration, data collection, monitoring and evaluation. On the other hand, maintenance of irrigation networks includes efforts to secure irrigation networks and to facilitate the implementation of operations. While rehabilitation is closely related to the reparation activity of irrigation network to restore function and service of irrigation.

Operation and maintenance activities as well as rehabilitation of irrigation networks, at both primary, secondary, and tertiary level, are essentially based on the authority of government. However, we found that the operational model has been categorized into three forms, namely : (a). self-managed model; (b). contractual model, and (c). cooperative management model.

In the contractual model, the government cooperates with the business sector through a public-private-partnership scheme. This contractual model is generally performed for physical activities of irrigation such as the construction of new networks, and the foundry of irrigation networks. In this contractual scheme, a third party (business sector) works with the specifications and conditions set by the local government, represented by the commitment officer (*Pejabat Pembuat Komitmen – PPK*).

The self-managed model on the other hand, carried out by the local government itself. Such model is generally used for non-physical activities such as monitoring and evaluation. With the availability of resources owned by the service, the self-managed model generally can not be done optimally. The third model is cooperation. In this model, local governments work together with community groups. Such groups that are partners of the government are represented by *P3A/GP3A/IP3A*. Cooperation with farmer group is done primarily for maintenance aspect of irrigation network.

Limitations of funds and lack of local governments' apparatus capacity on managing the functions of irrigation network, if not supported by the community, have the potential to reduce the condition of irrigation networks. At the advanced levels, they may disrupt irrigation network functions in distributing irrigation water.

One of the elements that play an active role in the operation and maintenance of irrigation network activities is the water users (farmers) who got benefit from the existence of irrigation networks. Basically, each farmer is coordinated by *P3A/GP3A/IP3A* in collaboration with *DPSDA*. Farmers' participation is carried out to improve ownership and sense of responsibility as well as to raise the ability of *P3A/GP3A/IP3A* in a bid to realize the efficiency, effectiveness and sustainability of the irrigation system.

Participation of farmer groups in the O & M of irrigation networks includes :

1. Proposal submission on the planting pattern plan

   Farmers through *P3A/GP3A/IP3A* play a role in planning the next planting season by providing inputs, suggestions, ideas and thoughts to *Komir*, tailored to the needs, socio-cultural characteristics and economic capacity of the farmers community.

   Form of participation of *P3A/GP3A/IP3A* includes proposed planting plan, cropping pattern, planting schedule and water supply, as well as proposed changes during the planting season. The *Komir* will consider such proposals, inputs, suggestions and ideas based on technical aspects (such as water availability, irrigation network capability, etc.) and government targets.

2. Maintain effectiveness and efficiency, as well as monitor the order of operation of irrigation network at primary and secondary level

   P3A/GP3A/IP3A is basically a coordinating forum to maintain and to monitor the order of operation of irrigation networks. They can play an active role in solving problems and breaches of irrigation operations that have been planned and agreed upon. These *P3A/GP3A/IP3A* also play a major role in fostering a sense of belonging and spirit of mutual cooperation, deliberation, and consensus related to the implementation of irrigation network operations.

   P3A/GP3A/IP3A also play a crucial role in preventing illegal water harvesting at primary and secondary networks, because distribution of the discharged water cannot be monitored and measured properly. In addition, *P3A/GP3A/IP3A* has assisted to maintain the existence of water structures from the effort of vandalism or theft.

3. Provide input to improve tertiary irrigation systems

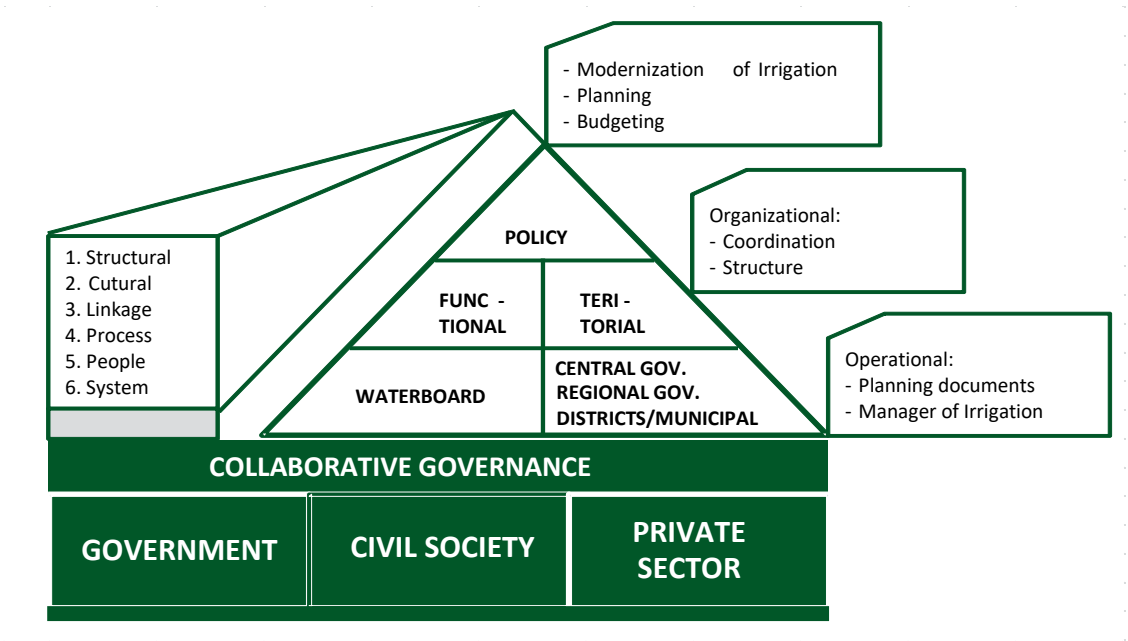
   Farmers through *P3A/GP3A/IP3A* coordination can change, build, and equip irrigation networks to increase the distribution of irrigation water by first notifying officer at *DPSDA*. In the absence of *P3A/GP3A/IP3A* to carry out the construction of a tertiary irrigation network, the central government, provincial, and or district/city government may assist such construction based on a request from *P3A/GP3A/IP3A*.

3.2. Alternative Model of Irrigation Planning

There are several factors that determine the development of alternative models in the research process. The determinants of the model in this study consist of several important factors, as follows: a). Instrument coordination. Irrigation implementation as a cross-sector and cross-border sector requires a coordination framework that becomes an instrument for all stakeholders; b). Integration. Irrigation implementation is not built and developed partially but it is integrated with spatial and territorial plans. The spatial aspect becomes one of the most important parts of local development implementation; c). Time scale. The implementation of irrigation should be arranged on a long-term scale; d). Base culture. Water resources management must be balanced with cultural change in the community; and e). Institution. The existence of institutions in the irrigation implementation plays a major role in establishing institutional structures and in managing coordination amongst relevant stakeholders. Institutions can be built functionally and territorially in accordance with the role and the importance of each institution in the irrigation implementation. Existing functional institutions related to irrigation implementation in Indonesia are *DSDA*, *Komir*, and *P3A/GP3A/IP3A* at the irrigation network level. The territorial institution is attached to the hierarchy of governance related to irrigation implementation. For example, at the level of central government, there are National Development Planning Agency, Ministry of Home Affairs, Ministry of Public Works, and Ministry of Agriculture. While at the level of local government, both provincial and district/city include *Bappeda*, *DPSDA*, *DPU*, and *Dinas Pertanian*. Such institutions play a substantive role in accordance with their respective duties and functions.

The above determinants influence the alternative model compiled in this research through a collaborative model of government system between civil society and private sector. This model is known as collaborative governance (see Figure 2). A dialogical government as one form of collaborative governance needs to be adopted in Indonesia. Here, the community's legitimacy over water resources management can be built through a process of dialogue with the community.

Figure 2 : Collaborative Governance Model in Irrigation Implementation



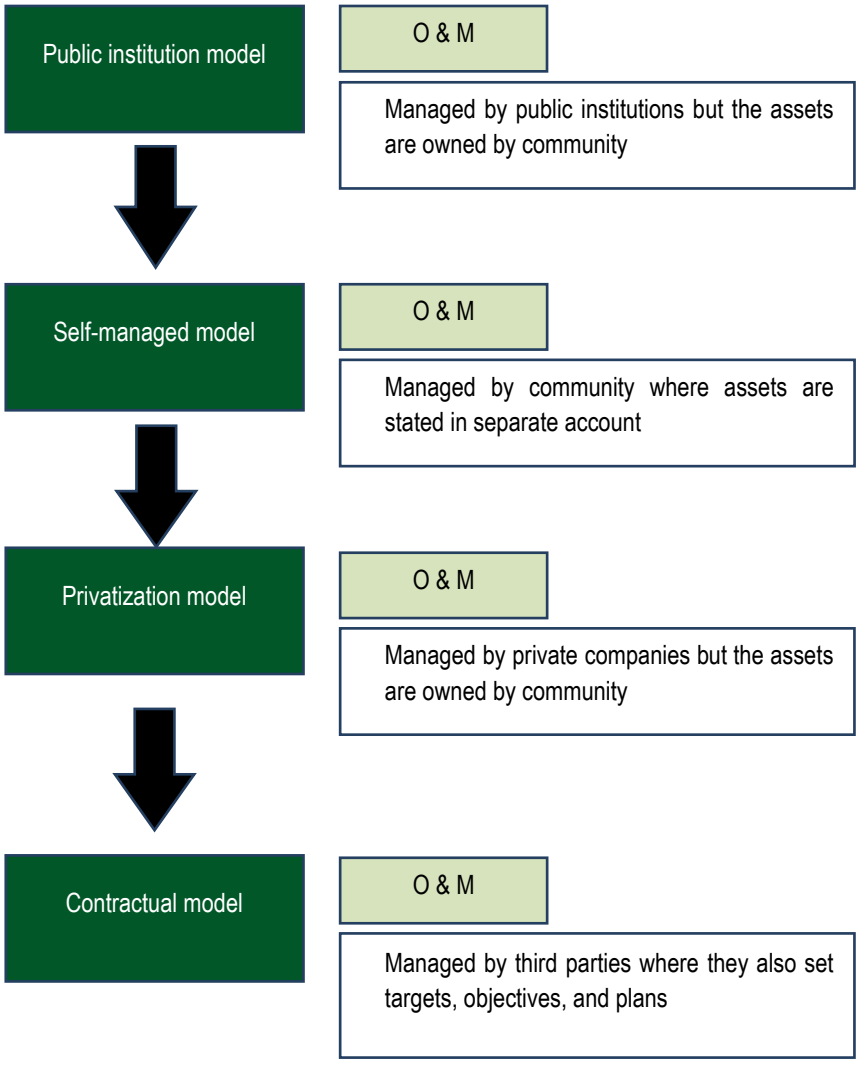
Irrigation management in Indonesia does not really depend on the knowledge of irrigation areas, as well as the characteristics of irrigation areas. In Germany, community-based management becomes the main character in its water resource management model (see Figure 3).[2] In the context of operationalization and maintenance (O & M) and rehabilitation of irrigation networks in Indonesia, the expansion of farmer groups, represented by *P3A/GP3A/IP3A*, is considered as important. The involvement

[2] Findings on expert judgment

of *P3A/GP3A/IP3A* does not stay at the maintenance phase but also they become a partner of the government in every model of implementation, whether self-management, contractual or cooperation.

Community participation has been hinted in Law No. 7/2004 article 64 clause 5 on Water Resources. Although the law has been canceled through the decision of the Constitutional Court, but institutional farmer groups have been formed in the community. The fact that the implementation cannot run optimally should be generalized as a strong view in the community that the government is the only actor in the development of irrigation. As the community is the object of development, then community's participation should be improved. As a basis of participation, irrigation implementation should be done by the community itself under the guidance of government. The rest, which cannot be implemented by the community, is handled by the government.

Figure 3 : Alternative Model of Water Resources Management on Community Basis



Institutional farmers have a strategic point in moving the agribusiness system in the countryside. Therefore, all resources in rural areas need to be prioritized in order to improve the professionalism and bargaining position of farmers. In another aspect, the Minister of Public Works Regulation No.33 / PRT / M / 2007 on Guidelines for Empowerment of *P3A/GP3A/IP3A* states that the participation of *P3A/GP3A/IP3A* in their implementation involves planning, development, upgrading, operation, maintenance and rehabilitation of the economic system. However, the irrigation management system only covers two main activities, namely the operation and maintenance (O & M) of the irrigation network. Operational activities, defined as the means of arranging (planning and executing) the distribution of water throughout the year in

an efficient and effective way with a precise timing that corresponds to the needs of crops grown in each irrigated area. Meanwhile maintenance activities primarily serves to maintain the physical condition of irrigation networks. This can be a means of supporting the operations.

Conclusion

The irrigation management in Indonesia has not been able to optimally achieve the policy objectives. Law No. 7/2004 requires irrigation as an instrument to create people's welfare, which is managed in an integrated and sustainable manner. However, the condition of irrigation networks is mostly in damaged condition. This condition has affected the decline in agricultural productivity, and in turn leads to a decrease in the welfare of farmers, especially for *P3A/GP3A/IP3A* as a production unit.

At the organizational level, irrigation management in government policy is directed at improving food sovereignty and energy security. In Indonesia's decentralized system, it is split into two government affairs, public works affairs and agricultural affairs. Agricultural Affairs represented by *Dinas Pertanian* handle tertiary irrigation which directly touches the agricultural land of the community. Primary and secondary irrigation, on the other hand, is managed by all levels of government whose division is based on the extent of the irrigation area.

At the operational level, irrigation network management focuses on three aspects, namely: Operation, Maintenance and Rehabilitation. With the limited number of human resources in the government and the lack of budget that can finance for the irrigation sector, participation in the community becomes very important. Operation and maintenance of irrigation networks is mostly done by *P3A/GP3A/IP3A*.

This community-based model on water resource management is similar to that in European countries (eg, Germany). In the country, the community plays an important role in water management at the catchment of the water area. The assumption is that it should be based on local knowledge of catchment water areas, and those with such knowledge are local communities.

With a number of limitations in the ongoing irrigation system, the existing irrigation implementation needs to be improved. The enhancements must in line with Indonesia's decentralization framework, as well as the relevant regulations at the central and local governments. Implementation of irrigation in Indonesia needs to be approached with integrated water management model where water is placed as a single entity, whose management is synergized with consideration of sustainability of water for future generations.

In this aspect, irrigation as a shared responsibility between government, community and the business sectors needs to be implemented in a collaborative way. The involvement of *P3A/GP3A/IP3A* is a form of collaborative implementation. However, the involvement of local communities is still based on the assumption that irrigation is basically the responsibility of the government, not as a collective responsibility.

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