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Irrigation Planning in the Era of Local Autonomy: An Analysis of Existing and Alternative Model*

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Abstract

The damage on irrigation networks has a massive impact on the decreasing quality of irrigation, which in turn has serious implications for the deceleration of farm productivity. One of the possible causes of such problem is related to the planning process in irrigation policy. This paper attempts to analyze existing model and provide the alternative model of irrigation planning in Indonesia through a qualitative approach in the area of West Java. In general, the existing model of irrigation planning is still territorial based on government affairs. For that, the alternative model should adopt a collaborative and spatial one.

Keywords: Planning; Irrigation; West Java.

JEL Classification: H83; O17; O21; Q18.

Introduction

According to Government Regulation No. 38/2007, irrigation affairs are a type of joint affairs in the field of public works and more specifically, at the sub-field of water resources. In order to execute these affairs, the central government prepares the Norms, Standards, Procedures and Criteria (NSPK) which serves as guidelines for both central and local government. Nationally, the policy of irrigation management is regulated by the Law No. 7/2004 regarding on Water Resources and Government Regulation No. 20/2006 on Irrigation. Through such legal products, the provision of water for the daily basic needs and irrigation for smallholder agriculture in existing irrigation systems is a top priority for providing water resources. The Law No. 7/2004 also provides the role of irrigation management to each level of government through the arrangement of primary and secondary irrigation systems.

In line with the establishment of local autonomy, 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 means for transferring or delivering sources of income and expenditure to every regions by reducing government bureaucracy. This pattern is similar to the concept of devolution in administrative decentralization. Ideally, the provision of financial resources to the region should be balanced with governmental affairs. When the regions have the insufficient financial capacity to finance such affairs, central government may use other transfer instruments such as the special allocation fund (DAK) or any type of intergovernmental transfers grants to achieve national priorities.

With the support of the own-source revenue (PAD) in the local budget (APBD), intergovernmental transfers grants by central government, and even fund transfers that come from the Ministry/Institution expenditure (deconcentration fund), it is expected that every local government can support national priorities in the food security sector, especially related to the efforts to increase the national rice production (P2BN). Such condition can be achieved through rehabilitation of irrigation networks, although recent data showed that the condition of irrigation network has not improved significantly (Ministry of Public Works 2016). Currently, irrigation that becomes the central government' authority reaches 32% of total irrigation in Indonesia, and the rest becomes the authority of local government. Approximately 46%, 61%, and 52% of the conditions of each irrigation network under the authority of central, provincial, and district/city respectively are in a damaged condition.

The damage on irrigation networks has a tremendous impact on the declining of irrigation quality, which in turn has negative implications in the productivity of paddy farming. Therefore, it is necessary to manage the irrigation area effectively and efficiently so that water can be distributed fairly and equitably. Of course, such water management involves several institutions starting from the central government, local government, to farmer groups and other related elements. The development of irrigation institutions has colored the shift of the institutional system and the socio-economic dynamics of rural communities, and such phenomenon will continue to rise. According to Bromley (1989), institutional analysis needs to be directed at three levels, namely: (1) policy level; (2) organizational level; and (3) operational level.

In principle, irrigation is a collaborative effort of many stakeholders to regulate and to dispose irrigation water. Such water basically can be distinguished by several sources, such as surface irrigation, swamp, underground water, pump, and pond, where all of them have specific effect in assisting the productivity of agriculture sector. In order to drain irrigation water to the irrigated areas, irrigation networks are a basic prerequisite, and therefore, agricultural activities are inseparable from the planning aspect. However, there are several problems at the policy level, organizational level and operational level.

At the policy level, most of problems take place at the process in the policy making. The deliberation of development planning (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 'local capture' intervention of the national (DPR) and local (DPRD) parliament, and the 'unrealistic' program of local government unit (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, irrigation management institution (KPI) is one of the instruments in irrigation system, besides infrastructure, water, management, and human resources. However, KPI can not run optimally when there is a synchronization of the program / activity of water resources management with irrigation. In this case, the regional water resources council (DSDA) and the regional irrigation commission (Komir) both serve as the feeders for the local government in formulating the policy, although the rules related to the institution have been established. Agencies in charge of water resources and irrigation (Dinas PU or Dinas SDA), 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 (SOTK) 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 was more dominantly directing their programs on the physical construction of new irrigation networks or on upgrading of irrigation networks. Therefore, a collaborative management of an irrigation network (KSP) should be pursued to enhance the sense of ownership and responsibility on irrigation areas, which should be handed over to the association of water user farming (P3A/GP3A).

Starting from the complexity of the problem, there are 2 (two) formulations of research questions, namely: (1) How is the existing model of irrigation planning in the era of local autonomy? (2) How is the alternative model of irrigation planning in the era of local autonomy?

1. Literature Review

1.1. Previous Research

The theme of irrigation has been discussed in several previous studies 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. This condition in turn creates weak institutions.

In this study, the decentralization model that we propose is a typical of political decentralization, in which the authority of irrigation management is seen as a power sharing between central, provincial and district / city governments. However, we focus on the management of irrigation with special case of irrigation managed by the government, not the grass root organization.

1.2. New Public Management (NPM) and Collaborative Governance

The movement in Indonesia's reform 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 followed by the reform of public administration and bureaucracy. Thus, the behavior of the political bureaucracy is still stronger than the service bureaucracy. However, there is a political will to implement the paradigm of new public management in the context of bureaucracy reform.

New Public Management (NPM) 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 which is adopted by the United States, government should: (a) encourage competition among service providers; (b) empower communities through strengthening community communities; (c) adopt a more output-based bureaucratic performance assessment; (d) treat the community as a customer and provide a number of alternative options that can be taken; (e) put forward the anticipation of the problem; (f) focus more on increasing state revenues; (g) strengthen the decentralization of authority and encourage community participation; (h) put forward market mechanisms rather than bureaucratic mechanisms; (i) focus on more goal-oriented than compliance with the system and bureaucratic procedures; (j) encourage all sectors of the private sector, civil servants and NGOs and volunteers to jointly solve their community problems, instead of focussing on the provision of goods and services.

Here, NPM emerges as a discourse against rigid classical bureaucracy, which is characterized as too hierarchical and complex, as well as advocating a top-down approach in the decision-making. This classical bureaucratic model has 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 criticism. One criticism of NPM is loudly leveled by Irvine Lapsley (2009), whose actually assesses NPM as the cruelest invention of human civilization. This harsh criticism emerged in his analysis of the 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 (Greve 2013), the digital era government (DEG); public value management (PVM); and collaborative

governance, also known as New Public Governance (NPG). Three alternative variants of this NPM can be briefly distinguished on the emphasis of issues and the concentration of public management models developed. He then summarizes DEG as an alternative model that places more focus on transparency, social media, and public services. While, PVM put more emphasis on the preparation of strategies, performance-based governance, and innovation as well as human resources management strategies. In contrast, the NPG prioritizes networking and collaboration, as well as public-private partnerships. Such approach explains new ways of engaging the public on various issues of governance and public services.

Despite the fact that each model has its own influence, the government – nongovernmental collaboration in providing public services is now an integral part of each level of government. In this context, the collaborative governance (NPG) model will increasingly gain a place. NPG emerged as a necessity to transform the government. Currently, challenges in public policy faced by governments can not only be resolved by one institution, but cooperation and collaboration amongst various institutions are also needed (Greve 2013).

In line with Greeve's thinking, Wanna (2008) classifies collaborative drivers into three, as follows: (1) external factors (e.g. globalization pressures, international relations and conditions, information technology, knowledge development, and economics); (2) internal factors (e.g. political strategies to create responsive and accountable governance, and more effective delivery of public services); and (3) the will to run the government effectively and efficiently (e.g. political will in order to carry out the duties and functions inherently).

These three driving factors will make the form of collaboration becomes more diverse. Here, NPG will be classified into several forms of collaboration that constitute: (1) cooperation within the internal government environment (involving multiple components and individuals); (2) inter-governmental (involving government institutions at several levels); (3) government and private third parties; as well as (4) government and individual communities (Wanna 2008).

1.3. Planning and Hierarchy of Public Policy Process

Wanna (2008) states that collaboration is a very important entity applied to run public management, especially to sharpen the formulation of policy. In line with this argument, Gulick and Urwick (2003) describe the process of public administration in various aspects, namely planning, organizing, directing, staffing, coordinating, reporting, budgeting. From these aspects, planning is an important and the first part of the public administration process. In further examination, the policy formulation summarized in the planning process is an important step.

Basically, there are fourteen kinds of policy formulation models, and these models are grouped into two models: the elite model and the pluralist model (Nugroho 2012). The elite model is a continental-influenced model consisting of institutional model, process model, group model, elite model, rational model, incremental model and integrated observation model (mixed scanning). While the plural model is a model influenced by Anglo-Saxons that is game theory model, public choice model, system model, democratic model, deliberative model, strategic model, and garbage can model. One of the most influential models in policy formulation is the system model developed by David Easton (1965).

Such model is often stated as an appropriate model to see the process of policy making in developing countries. The system model itself begins with the assumption that a policy is a form of political system that gives response to the influence of the so-called 'surrounding environment'. The political system is interpreted as an institution and interrelated activities, which gives influence that binds on people's lives. Furthermore, Easton explained that the environment provides input for the policy-making process. Here, the inputs are the demands and the support that can affect the overall system derived from interests outside the political system, such as interest groups and / or citizens. This input is then responded by the political system into policy output.

The concept of Easton's system model is based on studies conducted in developed countries, which are still debated when applied in developing countries. According to Osman (2002), this simple Easton's policy-making process is not easy to implement in developing countries. There are several issues as to why the system model is not yet optimal to be applied in those countries. First, the feedback stage after a policy is taken rarely. Second, input from the community that is the starting point of change is rare. Thus, Osman holds that developing countries in policy making are unresponsive to input from external political systems.

Apart from this debate, the policies related to government programs and activities are set out in the planning process. Brickner and Cope (1977) point out that planning can be seen as an effort to link current policy with the goals of the future. Furthermore Brickner and Cope present a number of objectives of the plan which include: a. finding opportunities and problems; b. improving policy-making processes; c. determining future direction and goals; d. creating means to achieve change; and e. assisting the sustainability of the organization.

In line with Brickner and Cope' thinking, Faludi (1973) states that the planning process itself is a rational process, in which planning is a process of constructing arguments that leads to one conclusion. As a rational process, there are aspects of the planning process that determine the success of planning in general. These aspects consist of several variables such as: (1) concepts and strategies; (2) goals and objectives; (3) planning time; (4) stakeholders' involvement in planning; as well as (5) the goals and objectives of planning (Brickner and Cope 1977).

Planning plays a very important role in institutional contexts related to organizational, program and activity. Here, Bromley (1989) explains that public policy must be approached from three levels: policy; organization; and operational. Each level is bridged by the institutional arrangement, which is the boundary of an authority and rules of the game. In this context, the executive and legislature play a role in the policy level. Meanwhile, the organizational level is carried out by the ministry/institution, and the technical implementation unit of a policy runs the operational level. In addition to these three levels of policy, Bromley (1989) also asserts that achievement of outcomes is determined by the pattern of interaction between implementers, and between implementers and stakeholders (including communities).

2. Data and Methodology

In this research, the method used is a case study with instrumental model. The selection of this method aims to deeply understand the irrigation planning issues associated with the context of the decentralization system in Indonesia. Creswell (1994) reveals that there is no clear boundary between phenomena and the context, so that the sources used must vary. In this situation, case studies become the most capable option to answer the researcher's question.

Case studies in area of West Java (West Java province, as well as regency of Cianjur, Tasikmalaya and Bogor) are based on two considerations. Specifically, the province of West Java and its regencies / cities are the region with the second largest irrigation area, after North Sumatra. Also, the proximity of study sites with the researchers take into consideration in the selection of samples purposively.

In general, each autonomous region has the right to plan irrigation, in accordance with the authorized authority. Therefore, the in-depth review of irrigation planning should be undertaken at the local level, based on several factors such as social, economic, institutional, technical and potential conditions, as well as technical irrigation. In addition, the authors would like to see the role of West Java Province as the 'elder member' of the regency / city in its working area to implement the coordination of the planning of the national irrigation policy, as mandated in Article 6 paragraph (1), Government Regulation No. 23/2011 on Amendment to Government Regulation No. 19/2010 on the Procedures for Implementation of Duties and Authorities and the Governor's Financial Position as a Government Representative in the Provincial Region.

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.

Based on the data, the condition of irrigation networks in West Java is relatively quite worrisome (see Table 1). West Java Province as a whole has 39% of irrigation networks that are in damaged condition. Less favorable conditions were also shown by Regency of Cianjur (43%). Meanwhile, both districts of Tasikmalaya and Bogor are areas with a relatively good in terms of feasibility irrigation network, which takes into account for 64% and 84% respectively.

The research process is examined through a qualitative approach that begins with the fundamental thoughts on the essence of reality that are found in a dynamic life (Moleong 2007). This basic thought develops through an inductive mindset, discovery, over events that are seen naturally and give a certain meaning. One characteristic of this research process is that its research design continues to grow in line with empirical findings

in the field, so that the research instrument also becomes dynamic, supported by data analysis since the beginning of data collection.

In general, this qualitative research process is conducted at three stages, as follows:

(a) Stage I: Research in West Java Area, Indonesia;

Research in the area of West Java began with literature study by deepening the regulations and studies. Subsequently, the interviews were carried out with a number of informants such as Bappeda, Public Works Department, Agriculture Agency, and water user farmer groups both at the provincial level and 3 (three) selected districts (Cianjur, Tasikmalaya and Bogor). The results of these interviews are then confirmed through direct observation by visiting irrigation areas as the starting point of the irrigation planning process in the region. The final step of a case study is the Focus Group Discussion (FGD) involving all stakeholders related to irrigation planning from villages, districts, districts and provinces to verify, deepen and integrate problems found at the level of irrigation networks. All of research processes in stage I are conducted from the beginning of April, 2017 to the late of July, 2017.

(b) Stage II: Analysis;

In the second phase, the analysis is done to find out the existing model of irrigation planning and to build the alternative design model of irrigation.

(c) Stage III: Validation of Design Model.

Model validation through Focus Group Discussion (FGD) with expert judgment technique is conducted in Jakarta around the mid of September, 2017. The FGD in the context of qualitative research is a process of discussion that involves experts to identify problems of analysis, determine problem-solving methods, and propose problem-solving alternatives. Such discussion considers the resources available in the group that open the bulk space opinions (brain storming) among experts. Here, the validation process of the designed models, especially related to irrigation planning, starts to develop. Invited experts are from universities, professionals, non-governmental organizations, and government bureaucracies, related to the irrigation planning process.

3. Results

3.1. Existing Model of Irrigation Planning

The current irrigation-planning model is based on several complementary approaches. In general, the approach of irrigation planning at the sub-national level can be categorized into two main aspects consisting of the planning substance and the planning process. In the former, both the logic and inference approach are used to prepare the programs and activities contained in the planning documents. While, in the latter, a technocratic approach, a political approach, a participatory approach, as well as the bottom-up and the top down approach are investigated. Our main focus is to find the most effective and efficient solution to solve the current irrigation problems faced by local government.

The technocratic approach is defined as a logical framework model that uses scientifically sound methods to achieve local development objectives and targets. Here, the objective conditions can be analyzed by considering several development scenarios during the next planning period. The technocratic approach in the formulation of irrigation development programs and activities is done through several stages, consisting of:

- (a) reviewing the overall achievements of performance targets for the implementation of regional irrigation over the past period as material for the formulation of regional development issues;
- (b) projecting regional financial capabilities and other resources based on the development of macroeconomic conditions;
- (c) establishing regional strategic issues related to irrigation management;
- (d) setting up future performance targets for irrigation management;
- (e) formulating opportunities and challenges that affect the achievement of irrigation management objectives;
- (f) establishing the objectives, targets, strategies and direction of irrigation management policy;
- (g) setting up priorities for irrigation management;
- (h) formulating programs and activities based on performance management irrigation;
- (i) establishing benchmarks and performance targets of outputs and outcomes, locations and target groups of irrigation management programs / activities;
- (j) projecting indicative budget ceilings of programs and activities in the planned year, as well as forward forecasts for the next year; and

(k) establishing the local apparatus responsible for implementing, controlling, and evaluating irrigation management.

In addition to the technocratic approach, the preparation of irrigation programs and activities also uses a political approach. With this approach, both the vision and mission of the newly-elected local government heads are used as a reference for formulating development programs and activities. This political approach is commonly used to formulate development programs and activities in the document of the local medium-term development plan (RPJMD), which has a five-year period in accordance with the elected leader of the head of local government.

Meanwhile, the participatory approach is implemented by involving various stakeholders by considering:

- (a) the relevance of stakeholders involved in the decision-making process, at each stage of the preparation of regional development planning documents;
- (b) equality between stakeholders from government and non-government elements in decision-making;
- (c) the existence of transparency and accountability in planning process and mass media involvement;
- (d) representation of all segments of society, including marginalized vulnerable groups and gender mainstreaming;
- (e) the creation of a sense of ownership of the regional development planning documents.

In contrast, the bottom-up approach is done by aligning the results of the development planning consultation from the lowest level to the national level, starting from the Village, District, District/Town Region, Provincial Region, to National. While the top-down approach is conducted by harmonizing national development policies, provinces, districts / cities and villages.

With these five approaches, there are several aspects to be realized through planning documents, namely:

- (a) integration, synchronization and harmonization, as well as good synergy between regions, interspace, inter-time, inter-governmental;
- (b) coordination among actors;
- (c) linkages and consistency between planning, budgeting, implementation and oversight;
- (d) optimization of community participation; and
- (e) efficient, effective, equitable, and sustainable use of resources.

In the context of Indonesia's decentralization, the pattern of intergovernmental relations in irrigation planning is represented by the necessity of consistency and synchronization of inter-time, inter-regional and intergovernmental planning. This pattern of relationships between levels of government is also reflected in the relationship pattern between planning documents as follows (Figure 1).



Figure 1. Pattern Relationship Intergovernmental Planning Document

In the relationship between these planning documents, the local planning documents, especially the local medium-term development plan (RPJMD) and the local annual work plan (RKPD), are prepared by taking into account the medium-term and the annual planning documents prepared by the central government, RPJMN and RKP respectively. With this model, it is expected that national development policies, including irrigation, can be implemented and supported by local governments.

Consistency of inter-time planning can be realized through a retention system between planning documents. From the planning pattern as illustrated above, the 20-year planning document serves as a guide for the five-year plan. The five-year plans contained in the medium-term planning documents are outlined in the annual plan. With this pattern, continuity of irrigation development from the lowest level of government to the top is expected to be implemented.



Figure 2. Intergovernmental Existing Model of Irrigation Planning

Moving to the irrigation management, clearly irrigation planning between government levels is divided by the extent of the irrigation area. The division by the extent of the area essentially follows the distribution of decentralized irrigation management authority. For an area over 3000 ha, it becomes the central authority, meaning that the irrigation programs and activities with such extent will only be included in the five-year strategic plan (Renstra K/L) and the annual work plan (Renja K/L) of each ministry and or institution at the central level that handles irrigation. Similar to central level, provinces have authority for irrigated areas between 1000 and 3000 hectares, and that will be stated in the local public works/irrigation agency' strategic plan (Renstra SKPD) and work plan (renja SKPD). For districts and municipalities, their authority exists in irrigated areas of less than 1000 hectares and the same implementation is applied as the province level. The model of irrigation planning between levels of government is as follows (Figure 2):

In the process of drafting the planning documents, the entire planning process in the region tracks six main plot planning. The six plots are started with preparation, drafting of initial drafts, drafting of planning documents, deliberation of local development planning, final drafting, and ending with the drafting of local planning documents with local regulations. Meanwhile, Irrigation planning basically follows the general model and the six stages determined by the Minister of Home Affairs Ordinance No. 54/2010. However, in the process of collecting community aspirations through Musrenbang, the community is represented by a group of Farmers called P3A/GP3A. This group is voicing local aspirations related to irrigation management in the village and sub-districts. The existing model of irrigation planning is stated in Figure 3.



Figure 3. Existing Model of Irrigation Planning

In this model, the proposed water user farmers are accommodated by farmer groups to be voiced through the deliberation of development planning (Musrenbang) at village level. This proposal becomes the basis for local development planning agency (Bappeda) to develop RKPD and at the same time gives a reference for local irrigation agency (Dinas Pengairan). Furthermore, in the process of participatory approach undertaken by the Dinas Pengairan, major stakeholders such as the Irrigation Commission get their own portion to provide input related to the proposed irrigation management activities in the districts and municipalities.

Musrenbang forums conducted at the local government level have been the main process to synchronize community aspirations with national policy and regional priorities. This forum agrees on what needs can be accommodated in the development plan by taking into account the availability of local budget (APBD). Another tool of synchronization process is SKPD forum. In this forum, the local irrigation agency and any local stakeholder of the agencies, that are related to irrigation and water resources management in the area, will discuss and expose their planned programs and activities. Bappeda will conduct a synchronization process to see how far the programs and activities are cross-affairs and cross-cutting and how they can synergize one and another for the same output.

3.2. Alternative Model of Irrigation Planning

3.2.1. Model Assumption

The framework of thinking in building and developing models in this study uses several assumptions to support the determination of policy or hierarchy policy framework from Bromley (1989). Assumptions are empirically verifiable based on prior inventions, observations and experimental studies. The things to consider in making assumptions are as follows (Usman and Purnomo 2008):

- (a) Assumptions must be operational and are the basis for theoretical assessment;
- (b) The assumption must state the actual state, not the predicted or supposed circumstances;
- (c) Researchers should be familiar with the assumptions used in developing the frame of thought. Different assumptions, then different theory also used; and
- (d) Assumptions must be expressed, since implied assumptions are sometimes misleading and lead to different interpretations.

Based on this understanding, the model assumption used in this study is that all provinces in the administrative regions of Indonesia use the same planning system with reference to Government Regulation No. 8/2008 on Stages, Procedures for Formulating, Controlling, and Evaluating the Implementation of Regional Development Plans, and Regulation of the Minister of Home Affairs No. 54/2010 on the Implementation of Government Regulation No. 8/2008.

The assumption is also applicable in using the principles of local development planning, namely:

- (a) A unity in the national development planning system;
- (b) Conducted by the local government together with the stakeholders based on their respective roles and authorities;
- (c) Integrating spatial plans with regional development plans; and
- (d) Conducted based on the conditions and potentials of each region according to the dynamics of regional and national development.

3.2.2. Determinant of the Model

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 planning as a cross-sector and cross-border sector requires a coordination framework that becomes an instrument for all stakeholders;

(b) Integration;

Irrigation planning and implementation is not built and developed partially but is integrated with spatial and regional plans. The spatial aspect itself becomes one of the most important parts of the principle of local development planning;

(c) Time Scale;

The planning and 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;

(e) Institution.

The existence of institutions in the irrigation planning process plays a very important role in establishing institutional structures and in managing coordination among relevant stakeholders. Institutions can be built functionally and territorially in accordance with the role and the importance of each institution in the irrigation planning process. Existing functional institutions related to irrigation planning in Indonesia today are the Water Resources (SDA) Council, the Water Resources Management Coordination Team, the Irrigation Commission (Komir), and water user farmer associations (P3A/GP3A) at the irrigation network level. The territorial institution is attached to the hierarchy of governance related to irrigation planning. 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 the Local Development Planning Agency, Local Public Works Agency, and Local Agriculture and Irrigation Agency. The institution plays an important role in accordance with their respective duties and functions.

The determinant factor of the model influences the alternative model compiled in this research through collaborative government system model with civil society and private sector through collaborative governance model (Figure 4).



Figure 4. Collaborative Governance Model in Irrigation Planning in Indonesia

A dialogical government as one form of the embedded collaborative governance system needs to be adopted in Indonesia. Here, the community's legitimacy of planning and implementation of water resources management can be built through a process of dialogue with the community.

3.2.3. Implementation of Collaborative Planning Model

There are at least two fundamental weaknesses in the existing irrigation planning model in Indonesia. First, the lack of collaborative processes in irrigation planning. Cross-sector and multi-stakeholder irrigation characteristics are not reflected in the planning process. In Indonesia's irrigation planning system, irrigation is treated as an unrelated sector. In fact, the quality of irrigation management depends on the overall quality of water resources management. Furthermore, multi-stakeholder and multi-actor characteristics in irrigation management have not

been strongly reflected in existing planning models. Irrigation management divided by the extent of the irrigation area essentially requires the integration of inter-governmental planning and the integration between government and community. Such prerequisite has not been well accommodated in the existing planning model. As a result, there is miscoordination in the construction of tertiary irrigation networks that are not connected with secondary and primary irrigation networks.Second, the existing planning model does not provide a portion for spatial planning of water management. Although normatively the requirement refers to the spatial document, but in planning practice, the aspect of space development is often not a concern.

Collaborative planning is a decision-making process where multiple stakeholders, looking at issues from different angles, sit together to explore their differences constructively, then find solutions, and to get more out of what is gained if only looking for individual solutions. The essence of collaborative planning lies in the collaborative process undertaken in the preparation of the plan.

A collaborative process is a process in which there is a dialogue that requires the participation of stakeholders, which ultimately results in a mutually agreed decision. Ansell and Gash (2008) identify collaborative processes as cycles that include: face to face dialogue, trust-building, commitment to commitment to process processes, shared understanding, and interim results intermediate outcomes). Face-to-face dialogue is a negotiation with a good faith that is expected to build trust. Next, build a commitment to the process, demonstrated by the competitiveness, the sense of ownership of the process, and the openness to explore things that are mutually beneficial. Shared understanding is reflected in the presence of a clear mission, a common understanding of the problem, and the identification of shared values. Preliminary results are expected to be achieved through 'small win' strategic planning, as well as merging common facts.

In the context of Indonesia's planning, the direction towards information disclosure in planning is not something that is outside the regulatory system. Law No. 23 of 2014 on Local Government in articles 392 up to article 394 specifically gives orders to local governments to provide the widest possible information on development planning to the community. In the aspect of irrigation planning, the collaborative process should basically be the main logic in several stages of preparation of planning documents, started from the deliberation of development planning at village level. In this process, the ongoing dialogue needs to be directed towards reaching a common consensus. Technically, although the collaborative process colored all phases of preparation of planning documents, but in order to realize the integrate of planning between levels of government, it is necessary to establish a separate stage that brings stakeholders between levels of government, inter-regional, inter-governmental affairs, and between communities and governments.

One aspect that is not less important is that all development plans related to water resources from various stakeholders are consolidated in an integrated water spatial plan. This integrated water spatial plan becomes the basis for the implementation of water resources management activities. At the same time, it can also serve as the mechanism of control and coordination. In the context of irrigation management, water spatial planning is key to synchronizing various irrigation management activities between functions, and between levels of government. That way, overlapping irrigation management activities can be avoided by confirming the site activity and the network plan that needs to be addressed.

The integration of the irrigation management plan with the actual spatial layout is already contained in Law No. 7/2004 Chapter VI Article 59 paragraph 4 and it states that 'water resources management plan is one element in the preparation, review, and / or the improvement of the spatial plan of the territory'. And the derivation of such regulation stipulated in Government Regulation No. 42/2008 on Water Resources Management in Chapter III article 39 paragraph 2a states that 'water resources management plan that has been established as input in the preparation, review, and / or improvement of the regional spatial plan concerned'. The problem is that most of local governments have few Water Resources Management Patterns (PSDA).

Conclusions

The existing irrigation-planning model has not been able to represent the irrigation character (primary, secondary and tertiary) as a network entity across the administrative boundaries of the autonomous region. In other words, the aspect of integration and inter-governmental level and inter-governmental affairs in irrigation planning is still not strong. The existing model of irrigation planning is still territorial based on government affairs. The planning approach uses a technocratic, participatory, political, bottom up and top down approach. The whole process, based on these five approaches, has not been able to adequately accommodate dialogue between government and society, as well as the need for integration of inter-governmental and inter-governmental planning.

With a number of limitations in the ongoing irrigation planning system, the existing irrigation planning system needs to be refined. The improvement must be concerned with Indonesia's decentralization framework,

as well as regulations related to the prevailing planning system at the central and local level. Irrigation planning in Indonesia needs to be approached with an integrated water management approach where water is placed as a single entity, whose management is synergized with consideration of sustainability of water for future generations.

In order to support such approach, the irrigation-planning model needs to adopt collaborative and spatial models. With a collaborative model, all stakeholders in the collaborative process jointly formulate integrated programs and activities of irrigation management. Stakeholders in this process include government agencies managing irrigation at all levels of government and all government affairs related to irrigation, society, business world. On the other hand, the integration between planning and space is a must. The space of irrigation networks is a means to harmonize various action plans from all stakeholders. In principle, water spatial and irrigation networks are the basis for regulating the quantity of water in agricultural land, as well as community control instruments on water management by the government.

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