

Irrigation Management Supporting Food Self-Sufficiency in Indonesia

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INTRODUCTION

As a part of Self-Sufficiency policy, the Government of Indonesia has declared to develop and rehabilitate irrigation infrastructure massively during the period of 2015-2019. In addition to physical infrastructure development, the improvement of the management system is also needed.

Improvement on the irrigation management system is highly affected by water resource policy because irrigation is a part of water resource management system. Decree of the Constitutional Court (MK) No.85/PUU-XI/2013 on cancellation of the Law No.7/2004 and reenactment of Law No.11/1974 on Irrigation affects irrigation management seriously. The Law No.11/1974 indicates more state's authority to control water resources than that of the Law No.7/2004 and it is also more conducive for farmers in exercising water right.

This note will review the impact of irrigation management policy, especially the MK Decree No.85/PUU-XI/2013 on irrigation management system.

Characteristics of irrigation system

There are two irrigation systems, government irrigation and community irrigation. According to technical qualifications, the irrigation systems consist of: (a) technical/semi-technical irrigation; (b) simple irrigation; and (c) rainfed irrigation. According to the Government Regulation (PP) No.20/2006 on Irrigation, the distinction refers to the combination of water acquisition, irrigation techniques, and its ecosystem. Based on this concept, the irrigation system is categorized into: (i) surface water; (ii) swamp and tidal irrigation; (iii) ground water irrigation; (iv) pump irrigation; and (v) pond irrigation.

In 2015 total irrigation in Indonesia was around 8.3 million hectares. To enhance its capacity, the government decides to develop 1 million hectares of new irrigation area and rehabilitate 3 million hectares in 2015-2019. The new construction includes surface irrigation (0.58 million hectares), swamp irrigation (0.35 hectares), pond irrigation (0.043 million hectares), and ground water irrigation (0.028 million hectares) including 65 dams.

Management system

Institutional set up of the large-scale technical irrigation management is more complicated. It is related to the effort on harmonizing both technical and socio-economic aspects. Determinant of the technical aspects is related to the characteristics of water resources system, while jurisdiction boundary of social economic institution refers to administrative aspects.

Irrigation management is an integral part of water resource management. It requires inter-sectoral coordination. Therefore, a forum of inter-ministerial representatives was established, i.e.

Irrigation Committee (*Panitia Irigasi*), chaired by the Governor and Mayor in the provincial and regency/municipality level, respectively.

Distribution mechanism of irrigation water from water source to the farm is as follows. Water flows from reservoir to the farm (tertiary blocks) through primary, secondary and tertiary canals. The size of tertiary blocks varies from 10 to 300 hectares depends on topography and irrigation discharge at the tertiary canals.

Irrigation management of the technical irrigation systems makes use of the combination between top down and bottom up approaches. *Panitia Irigasi* plans and implements the program at the beginning of the planting seasons. The input used in the planning includes food production target of the government, precipitation prediction, and the available water projection, as well as expected farmers' cropping systems.

The cropping pattern is planned by the collaboration between irrigation officers and Water User Association (WUAs). *Panitia Irigasi* takes into account irrigation water quota per season which includes its volume and schedule of irrigation water that will be distributed to the tertiary blocks under command area. To minimize supply and demand gap, the water supply planned put into recommended cropping pattern.

Farmers use collective irrigation management. The smallest group of farm management is Farmers' Group (*Kelompok Tani*). Pursuing both technical and economic feasibility of irrigation system, the groups are joined into WUA. In general, work area of the WUAs involves one tertiary block. Core activity of irrigation management is operation and maintenance (O&M) of irrigation. The O&M is a set of activities including supply, proceed, convey, distribute, and drainage, as well as maintaining physical infrastructures of irrigation.

CONCLUSIONS

Based on current set up of the irrigation management system, there are some critical points which should be addressed for improvement. First, issues on decentralization of irrigation management system should be addressed. Second, there are some difficulties related to water conflict due to sociological bias. Third, there is a need on article dealing with enforcing water use efficiency. Fourth, reinforcing conducive articles for maintenance of irrigation infrastructures. Fifth, reinforcing conducive articles for catchment area conservation.

Related to policy development there are six areas which need further consideration, namely: (a) consistency between policy formulation and its implementation; (b) law enforcement; (c) limited data and information on water and land resources; (d) approach and strategy on water resource development; (e) budget for investment and O&M of irrigation system

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