

# PERFORMANCE OF RIVER BASIN ORGANIZATIONS

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## ABSTRACT

This paper will evaluate performance of river basin organization. This article reviews the role of institutions and organizations, focusing on their strengths and weaknesses, and to address the basin-wide issues of water, poverty, and livelihoods. Indonesia has five classifications of river basins with a total number of 133 river basins and 850 watersheds. Hydrological, administrative, and coordinated are three models operation of RBOs. Balai Besar Wilayah Sungai (BBWS), Balai Wilayah Sungai (BWS), Perum Jasa Tirta (PJT) and Balai Pengelolaan Sumber Daya Air (BPSDA) are types of River Basin Organizations in Indonesia. Public participation is required in the area of operation and maintenance budget for infrastructure management. Performance assessments for basin organizations need to be conducted periodically for improving quality of river basin management. Balanced Scorecard approach was originally designed for commercial businesses. It can be introduced as a tool for self-performance of RBOs.

*Keywords: Water Resources Management, River Basin Management, River Basin Organization.*

## 1. INTRODUCTION

Interactions between Water, food, livelihoods and development are important aspects to maintain sustainability of a river basin (Myles et al., 2011). Degradation of water resources both quantity and quality of water, increase of sedimentation rate, poor performance of water resources condition and irrigation infrastructures, increase on flood and drought intensities, lack of beneficiaries role and community participation, and low performance of river basin organization are main important issues in Indonesian water resources management. An integrated water resources management (IWRM) in a river basin is a complicated method for managing floods, droughts, erosion, and water distribution. River basin organizations (RBOs) cover a wide range of organizations activities that may have very different tasks, functions, and responsibilities in integrated water resources management for river basins. As technical implementation unit of river basins, RBOs in Indonesia have function to carry out planning activities of river basins, infrastructure constructions and supervisions, operation, and maintenance of water resources infrastructures in river basins. Figure 1 shows cycle steps in implementation of IWRM to gain regional and national goal for each river basin in Indonesia. Therefore, main functions of Indonesia river basin organizations are regulation, coordination, participation, water information, river basin planning, construction, and operation (Taylor,

2009). Degraded condition of river basins may easily happen due to inappropriate implementation of river basin management (Sayaka and Pasandaran, 2006).

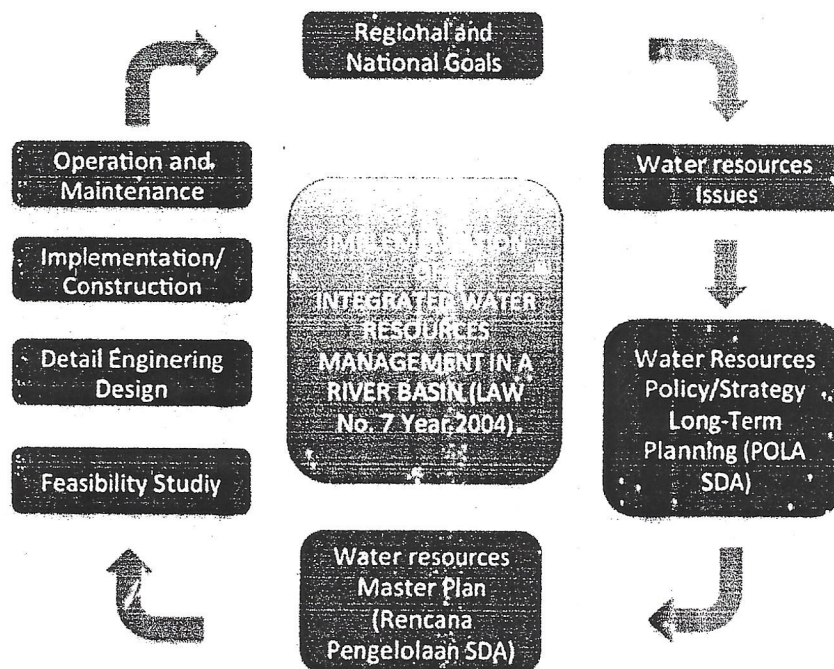


Figure 1. Cycle of implementation IWRM in a river basin.

River basins are a practical hydrological unit for water resources management. Some disciplines and some countries may have different terms, such as basin, catchment and watershed. However, the term of river basin in this paper is a river area for a water resources management area unit, that may consist of one catchment area or more catchment areas or a small island with a total area of less than or equivalent to 2,000 sq.km. According to Indonesian water resources law No.7 year 2007, planning (policy setting), constructing (implementation policy and resources use), and controlling (evaluation and monitoring) are major steps for managing a river basin. Some formal and informal institutions or river basins organizations should involve for implementing concept of IWRM in a river basin.

The main objective of this paper is to elaborate or to discuss Indonesian River Basin Organizations for the purpose of evaluating of river basin organization performance based on academic perspective. Performance of RBO is degree to which RBO operation according to expectations, or achievement results in accordance with stated goals or plans. Performance gap is the shortfall in performance when comparing with 'best practice'. Performance indicator is a variable that allows for verification of changes in the performance of the RBOs, or shows results relative to what was planned. In this paper,

'RBOs' will refer to commissions, authorities, agencies, and partnerships for both a functional as well as a legal characterization of the river basin term.

## 2. INDONESIAN RIVER BASIN ORGANIZATIONS.

This section discusses condition on river basin organizations for more conventional nature by first presenting a very brief picture of issues in water resources management of river basins. Balai Besar Wilayah Sungai (BBWS), Balai Wilayah Sungai (BWS) and Perum Jasa Tirta (PJT) are types of technical implementation unit from central government of Indonesia or RBOs for conducting water resources management in river basins. BBWS or BWS is a River Basin Development Agency. Their tasks are undertaking basin-level water resources planning, and related tasks. PJT is Public Corporation that has task for operating and maintaining the basin's water infrastructure, as well as flood management, river basin management, morphological management, and water quality monitoring.

The government in accordance with good national housekeeping funds the public RBO. The corporate RBO is funded independently (but the government can contribute). Revenue streams may come from taxes (including green taxes); fees (water, sewage disposal, electricity, various services and resource utilization); subsidies and cross-subsidies; and performance-based contracts with the government, linked to actual services. The corporate RBO may share a part of its revenue with the state, for example if it manages a large hydropower potential.

Another type of river basin organization at provincial level in Indonesia is Balai Pengelolaan Sumber Daya Air (BPSDA) (Taylor, 2009; Isnugroho, 2010). BPSDA roles and responsibilities cover water allocation for several users, management of rivers, reservoirs, lakes and ponds, flood control and drought management, swamps, in-stream pollution control, rivermouth maintenance, and inter-district irrigation systems (World Bank, 2006). They have only limited budget, because funded by the provincial government budget (Isnugroho, 2010). Mindset orientation for managing water resources of the technical institutions should be changed from constructing infrastructure orientation to public serving orientation for a particular river basin.

According to the Regulation of Minister of Public Works Number 11A/PRT/M/2006, Indonesia has five classifications of river basins with a total number of 133 river basins and 850 watersheds as seen in Table 1. Since expansions of regency/municipal and provincial areas, some rivers, which were previously located within one province, regency or

municipality, to become rivers that cross several provinces or regency/municipalities. Therefore in accordance with this condition, the Presidential Decree Number 12/2012 was issued in order to rearrange the classification of River Basin as seen in Table 1.

**Tabel 1. Number of River Basins and Watersheds in Indonesia**

No.	Regulation of Minister of Public Works		Regulation of Minister of Public Works Number 11A of 2006		Presidential Decree Number 12 of 2012	
	Total River Basins	Total Watersheds	River Basin Classification	Total River Basins	Total River Basins	Total Watersheds
1	90	668	Cross-country	5	2	304
2			Cross-provincial	27	29	859
3			National Strategic	37	29	3137
4			Cross-Regency/ Municipal	51	53	3168
5			Within One Regency/ Municipality	13	15	504
	90	668	TOTAL	133	131	7972

Source: Sukardi et al., 2013

Other river basin management problems in Indonesia after project had been completed are lack of institution responsible in managing finished infra structures, lack of qualified staffs, and lack of budget to manage the infra structures. The operation of the Council uses budget from the central government via the budget of BBWS-BWS and particularly comes from local government. Budget allocation from the Government of Indonesian is very limited and less than standard requirement for operation and maintenance of water resources infrastructures that will cause decreasing in performance and function of Water resources infrastructures.

Public participation is one pillar from five pillars in Indonesian water resources law. Thus, RBOs may start to use public participation budget as additional budget for financing operation and maintenance of water resources infrastructures.

### 3. DISCUSSIONS

Character and function of RBOs are very interesting topic for discussion, since RBOs are a central component in the institutional framework for integrated water resources management. Periodic organization assessments are an important task since that required for evaluating and improving performance of river basin organization in order to achieve river basin management goals. Types and problems of river basin organization will also be discussed in this section.

### 3.1 TYPES OF RIVER BASIN ORGANIZATIONS

Some different criteria may be used to distinguish between different types of RBOs. There are three types of RBOs by distinguishing the basis on which these organizations operate: hydrological, administrative, and coordinated (Tylor, 2008). The hydrological model implies that water management works on the bases of hydrological boundaries and there is extensive river basin planning. In the administrative model water management becomes part of environmental management and is conducted by entities operating on administrative boundaries (such as municipalities and provinces). The coordinated model can be placed in between the hydrological and administrative models. Type of RBOs in Indonesia can be categories as river basin organization that operated using hydrological model.

### 3.2 PROBLEMS FOR RIVER BASIN ORGANIZATIONS

In managing water resources in a particular river basin, each RBO will face different problems that relevant to the condition of a particular river basin. General problems that can be found in river basins include: water pollution, sediment build-up, degradation of wetlands, inundation by flood, and water scarcity issues (leading to water allocation problems). Different basins in different countries may have their own priority to solve their problems for managing water resources. They are two different pictures of river basin organizations in developed countries and those managing river basin in developing countries (Shah et al., 2001). RBOs in Indonesia will give more attention as top priorities to mitigate river flood and drought or water scarcity for river basins management. To mitigate water pollution, sediment buildup in rivers and the degradation in wetlands are not the top priorities for policy makers and people in developing country. The roles and functions of basin organizations are usually indicative of the way the organization was formed. Mature RBOs are likely to be considered as “high achievers in integrated water resources management” (Hooper, 2006).

### 3.3 PERFORMANCE OF RIVER BASIN ORGANIZATIONS

Recently, RBOs are becoming more and more important in the area of water resources or river basins management. Therefore, performance of RBOs seems to be primarily focused

on issues of transposing river basin management institutions (Shah et al. 2001) or takes a more process-oriented approach to performance (Hooper, 2006). Many researchers and practitioners have suggested that indicator of effectiveness and success of river basin depends on (Taylor, 2008; Taylor, 2009):

- The human and institutional capacity of the civil society
- The strength of the drivers for change
- The degree to which water resources are developed
- The climatic variability (arid versus temperate river basins, for example)
- The political will for a workable framework and willingness to reconcile multiple interests
- The degree of administrative and financial autonomy
- The legal base, and degree of community awareness and participation
- The level of water scarcity.

Performance assessment often has three distinct emphases, performance of policies and programmed (which often incorporate efforts of multiple organizations), organizational performance and individual performance (Taylor, 2008). These three levels are intertwined; meaning that one level of performance can influence the next level (and vice-versa). Focus of this paper is mainly on organizational performance and also gave limited extent on the performance of policies and programmed.

Although acknowledging the diverse landscape of RBOs and the problems that they face, existing approaches to performance management from public and business administration literature and approaches developed by academics and professionals in the water resources sector may be of value when trying to evaluate the performance of RBOs. A number of different approaches are presented and discussed in the section below. Though the list of approaches is not exhaustive, they do provide a broad overview of the different ways of approaching the issue of performance of RBOs. The first of the approaches relates to the 'traditional' focus on efficiency and effectiveness of organizations. The second approach looks at performance from the perspective of the user/stakeholder. The third approach concerns key performance indicators for river basin organizations developed by Hooper (2006). The fourth approach concerns a benchmarking exercise developed by the Network of Asian River Basin Organizations (NARBO). NARBO's approach is based on Kaplan's and Norton's (1992) Balanced Scorecard approach, which was originally designed for

commercial businesses. The fifth approach adheres to using the Dublin principles as a benchmark for performance.

However in all cases the lack of specific indicators of sustainable management of water resources or IWRM makes assessment of the performance of RBOs problematic. Frequently, efficiency and effectiveness of the organization are utilized to assess the performance of a river basin organization. Realizations of its goals or objectives are used to measure the degree of actual effectiveness of a specific organization. The efficiency of an organization is measured by the amount of resources used to produce an output (Lane 2000). Figure 2 provides an overview of how effectiveness and efficiency relate to the objectives of organizations and the resources, activities, outputs, and the effects of the organization.

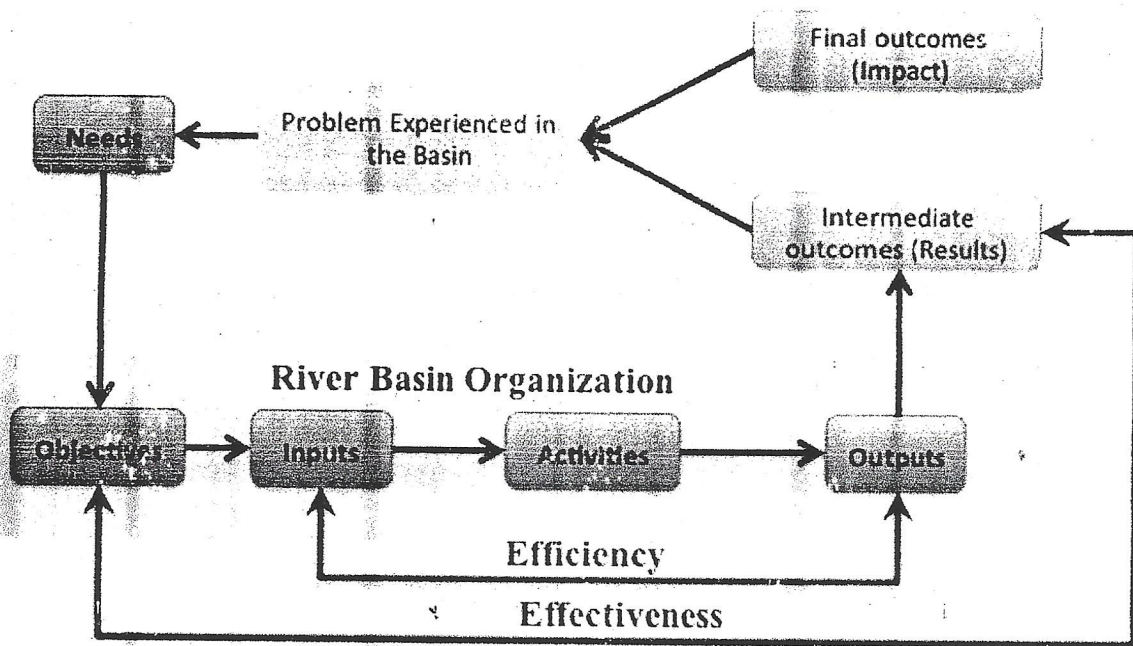


Figure 2. Efficiency and Effectiveness

#### 4. CONCLUSION

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