Measuring Results of Irrigation Projects: Lessons from the Adoption of Rapid Irrigation Project Performance Assessment Framework

Rudini T. Baoy
M&E Specialist

Abstract

This paper discusses some of the knowledge and learning from the adoption of the Rapid Irrigation Project Performance Assessment (RIPPA) framework in an ad-hoc evaluation study of six completed foreign-assisted irrigation projects in the Philippines.

Apart from rapid measurement of project performance, the study has proven the effectiveness of the RIPPA framework for assessing outcomes accruing from completed projects whose findings could feed into the periodic and more formalized evaluations conducted by funding agencies. Premised on a results-based evaluation framework, the study demonstrated the importance of stakeholder participation in project evaluation through participatory methodologies commonly used in rapid rural appraisal such as structured problem analysis, focus group discussions, transects, among others.

Moreover, the study has shown that less formal evaluation approaches such as RIPPA are useful in analyzing project issues and identifying solutions to improve project performance. In the course of the study, stakeholders gained valuable insights on how to analyze problems in a logical manner using structured problem analysis, suggest solutions to problems using structured objectives analysis and formulate action plans for improving irrigation system performance.

Based on findings from RIPPA, the study recommended measures for addressing post-project completion issues and sustaining project benefits over the long-term. Insights on measuring results of irrigation projects using rapid and participatory methods were drawn at the end of the study.

Keywords: results-based evaluation, rapid irrigation project performance assessment, stakeholder participation

1 The author is a development management specialist with agricultural engineering background and over 15 years of experience in planning, monitoring and evaluation of agriculture and rural development projects in the Philippines and Southeast Asia.
Introduction

The Philippine irrigation sector has benefited from various official development assistance (ODA) schemes since the late sixties. Through the years, ODA loans and grants contributed to a significant increase in irrigated area through rehabilitation and expansion of national irrigation systems benefiting thousands of poor farmers in the rural areas. Despite the substantial ODA investments poured into the irrigation sector, the gap between actual irrigated area and planned irrigation service area continued to widen over the years owing to various factors, foremost among which, is the inability of the government to provide adequate operation and maintenance (O&M) support to built-up systems. Improving the performance of irrigation systems particularly those assisted by ODA has become imperative not only in the context of optimizing the benefits from infrastructure investments but also in view of the need to maximize the contribution of irrigation development to rural productivity and poverty reduction.

Towards the aim of improving the capacity of irrigation systems to generate their desired results, a rapid assessment study of six completed irrigation projects funded by ODA was conducted from October 2010 to February 2011. This paper seeks to present the major findings of the study including the benefits, challenges and lessons learned from the rapid irrigation project performance assessment framework adopted by the study.

Measuring Irrigation Performance: Context, Objectives and Approach

With a view towards improving the capacity of ODA-supported irrigation projects to increase agricultural productivity and reduce poverty in the rural areas, the rapid assessment study aimed to:

(i) examine the performance of completed irrigation projects funded by ODA;
(ii) identify issues that need to be addressed to improve project performance; and
(iii) suggest measures to enhance project effectiveness, impact and sustainability.

The study covered six ODA-supported irrigation projects in the Philippines whose aggregate area (145,000 hectares) represents 21 percent of total service area of national irrigation systems (NIS)\(^2\) benefiting some 300,000 rice farmers (see project profile in Annex 1). Using a results-based approach for evaluating performance of irrigation projects, the study sought to find answers to the following key questions:

(i) Were the projects able to increase the irrigated rice area?
(ii) Were the projects able to increase rice production in target areas?
(iii) Did the projects contribute to the increase in farmers' income?

\(^2\) NISs are national irrigation systems with total service area of least 1,000 hectares operated and managed by the National Irrigation Administration (NIA). There are about 205 NIS systems managed by NIA.
In seeking answers to these questions, the study adopted the rapid irrigation project performance assessment (RIPPA) framework utilizing practical and simple methods that have been proven to be effective in M&E studies that require quick results and certain amount participation from project beneficiaries and stakeholders (see Figure 1).

**Figure 1: RIPPA Framework**

The RIPPA framework involves three major phases, namely: (a) preparation phase; (b) assessment phase; and (c) action planning and reporting phase. During the preparation phase, the evaluation team reviewed all available project-related documents in order to grasp the project’s results framework, appreciate the project’s operational performance and formulate a rapid project assessment plan. In the absence of logical frameworks, the team formulated a results chain based on the project’s objective statements found in feasibility studies and project loan documents (see Figure 2). Based on the results chain, a rapid assessment plan was formulated taking into consideration the time and resources available to the evaluation team.

**Figure 2: Typical Results Chain of Irrigation Projects**

Most of the field-based activities were done during the assessment phase starting with consultations with project stakeholders aimed at soliciting their cooperation and participation in the assessment activities and validating the data collected in the previous phase. Field data collection involved the use of participatory tools such as transect walk, mapping, focus group discussions, semi-structured interviews, ranking and diagramming (e.g., time line, cropping
pattern, etc.). Subsequently, data collected from the field were analyzed taking into account trends and gaps in system performance.

A key feature of RIPP A is the use of structured problem analysis wherein identified issues and constraints affecting irrigation system performance are systematically assessed and validated in small group workshops participated in by key representatives of irrigators’ associations and system management officers. The output of this exercise which takes the form of a “problem tree” serves as the take-off point for the final stage of RIPP A which is action planning.

The action planning phase begins with a presentation of RIPP A findings to project stakeholders. Based on the “problem tree”, a project-specific “action plan” is formulated with the primary objective of addressing key issues affecting irrigation system performance. Action plans contain specific actions needed to address identified issues, financial resources required to execute suggested actions and measurable indicators that would describe achievement of desired results.

Findings from the RIPP A activities are summarized in a study report highlighting the performance of the project in terms of achieving its objectives as defined by the project’s results chain and key factors affecting project performance. Recommendations to improve project performance are summarized and substantiated by the project-specific action plans annexed to the RIPP A report. Moreover, the evaluation team makes value judgments about the project’s effectiveness, impact and sustainability as input to future ex-post project evaluations.

**Rapid Irrigation Performance Assessment: Findings and Insights**

**Findings from RIPA: Results against targets**

With the use of the RIPP A framework, the study has shown that irrigation projects supported by ODA have contributed significantly to the expansion of irrigated rice areas in the Philippines thereby generating far-reaching impact on the agriculture sector in terms of increasing rice production and improving farmers’ incomes.

Based on official reports of irrigation system performance and validation made by the evaluation team through the RIPP A, the six ODA-supported projects contributed to the increase in the irrigation service area by as much as 46,000 hectares or about 7 percent of total area of national irrigation systems as of 2009. In terms of rice output, the same projects covered by the study produced about 368,000 metric tons accounting for about 2.3 percent of the country’s aggregate rice production in 2009.

Assessment of results achievement at the outcome and impact level revealed that the ODA-supported projects contributed to the improvement of irrigation service and increasing average yields of irrigated rice production as indicated by official system operations reports and results of RIPP A surveys (see Annex 2 for RIPP A survey results). However, system performance as measured by cropping
intensity in five out of six projects covered by the study did not meet the original project targets. Participatory methods adopted during RIPPA such as focus group discussions, structured problem analysis and action planning workshops were found useful in understanding the underlying causes of the project’s under-performance and formulating measures for the improvement of irrigation service (see examples in Annex 3).

**Insights on RIPPA: Challenges and Lessons Learned**

RIPPA offers a quick structured method for assessing outcomes accruing from completed projects whose results could feed into the periodic and more formalized evaluations conducted by ODA funding agencies. As shown by the study, less formal methods such as RIPPA are useful in analyzing project issues and identifying solutions to improve project performance. In the course of conducting RIPPA, stakeholders gained relevant insights on how to analyze problems in a logical manner using structured problem analysis, suggest solutions to problems using structured objectives analysis and translate these trees into action plans for improving irrigation system performance. Moreover, the participatory approach adopted by RIPPA promoted a sense of commitment among project stakeholders especially the water users not only in addressing the identified problems affecting the project through the execution of the action plans but also in attaining the project targets set forth at the planning stage.

While RIPPA can provide project management with early indications of project performance in achieving desired results, attribution of observed outcomes becomes a challenge when projects subjected to evaluation have long been completed. For instance, a significant increase in average rice yields for certain crop years may not only be due to improved irrigation service but also to massive government programs promoting the use of high yielding rice varieties and chemical fertilizers. Cross-checking or triangulation of facts by comparing data obtained from different sources and methods in order to get the complete picture of the situation proved to be very important in this case.

**References**


Annex 1
Profile and location of projects

Profile of irrigation projects covered by RIPPA

<table>
<thead>
<tr>
<th>Project</th>
<th>Year completed</th>
<th>Total service area, ha</th>
<th>Total farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - CMIPP (UPRIIS)</td>
<td>2007</td>
<td>16,879</td>
<td>23,320</td>
</tr>
<tr>
<td>B - TGISRP</td>
<td>2005</td>
<td>3,218</td>
<td>5,470</td>
</tr>
<tr>
<td>C - PDIP</td>
<td>2007</td>
<td>7,836</td>
<td>11,754</td>
</tr>
<tr>
<td>D - BHIP-I</td>
<td>1998</td>
<td>4,140</td>
<td>4,968</td>
</tr>
<tr>
<td>E - BHIP-2</td>
<td>2008</td>
<td>5,300</td>
<td>6,890</td>
</tr>
<tr>
<td>F - BRISRIP</td>
<td>2008</td>
<td>11,954</td>
<td>21,517</td>
</tr>
</tbody>
</table>

Project location
Annex 2
RIPPA survey results from selected projects

1. Perceived effects on water sufficiency

**Dry season**

- Before Project: 24% Excessive, 71% Sufficient, 5% Insufficient, 0% No water
- After Project: 97% Sufficient, 3% Insufficient, 0% No water

**Wet season**

- Before Project: 17% Excessive, 54% Sufficient, 31% Insufficient, 0% No water
- After Project: 48% Sufficient, 31% Insufficient, 21% No water

2. Perceived Effects on Rice Yield

**Dry season**

- UPRIS: 100% Increase, 0% Decrease, 0% No Change
- TGIS: 100% Increase, 0% Decrease, 0% No Change
- PDRIS: 100% Increase, 0% Decrease, 0% No Change

**Wet season**

- UPRIS: 94% Increase, 6% Decrease, 0% No Change
- TGIS: 87% Increase, 13% Decrease, 0% No Change
- PDRIS: 82% Increase, 18% Decrease, 0% No Change

3. Perceived Effects on Income

**Dry season**

- UPRIS: 100% Increase, 0% Decrease, 0% No Change
- TGIS: 94% Increase, 6% Decrease, 0% No Change
- PDRIS: 87% Increase, 13% Decrease, 0% No Change

**Wet season**

- UPRIS: 69% Increase, 24% Decrease, 6% No Change
- TGIS: 62% Increase, 32% Decrease, 6% No Change
- PDRIS: 59% Increase, 21% Decrease, 20% No Change
Annex 3
Sample outputs of participatory action planning workshops

PROBLEM TREE: BRISRIP

ACTION PLAN: BRISRIP

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>RECOMMENDED ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Low river discharge arising from degraded watershed &amp; low rainfall</td>
<td>• Coordinate with PENRO re Bago River Watershed Mgt</td>
</tr>
<tr>
<td></td>
<td>• Promote Water Saving Technology (WST)</td>
</tr>
<tr>
<td></td>
<td>• Continuous review of CDPP/WDD</td>
</tr>
<tr>
<td>(2) Water cannot reach some areas due to lack of terminal facilities and inefficiencies in water management</td>
<td>• Assist IAs/TSAGs in constructing on-farm facilities</td>
</tr>
<tr>
<td></td>
<td>• Solve ROW problems</td>
</tr>
<tr>
<td></td>
<td>• Strengthen IA policy enforcement</td>
</tr>
<tr>
<td></td>
<td>• Strictly implement WDD schedule</td>
</tr>
<tr>
<td></td>
<td>• Promote WST</td>
</tr>
<tr>
<td>(3) Flooding in downstream due to lack of drainage outlets, siltation of drainage channels &amp; tidal flows</td>
<td>• Construct additional drainage outlets/channels</td>
</tr>
<tr>
<td></td>
<td>• De-silt/dredge drainage channels</td>
</tr>
<tr>
<td></td>
<td>• Build pumping station/check structures for seawater</td>
</tr>
<tr>
<td>(4) Sugarcane areas are excluded from UPA as farmers do not avail of irrigation service during WS</td>
<td>• Include sugarcane lands in UPA even if irrigated only during DS</td>
</tr>
<tr>
<td></td>
<td>• Review ISF collection policy for lands served by project facilities but not availing of irrigation service</td>
</tr>
</tbody>
</table>