



IMPACT BRIEF

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Philippines

Irrigated Rice Production Enhancement Project (IRPEP)

About the project

Objective. The Irrigated Rice Production Enhancement Project (IRPEP) was designed to improve rice productivity and smallholder livelihoods in three regions of the Philippines. The project strengthened the canal irrigation infrastructure of communal irrigation systems (CISs), built capacity of the irrigators' associations (IAs) that manage the CISs, improved market information and encouraged the collective sale of rice, provided rice-based farmer field schools (FFSs), and enhanced emergency rice seed buffer stocks.

Financing. The project budget of US\$22 million was jointly funded by IFAD, the European Union (EU) and the Government of the Philippines (GoP).

Timing. Project activities were implemented in regions VIII and X from 2010 to 2015 and in Region VI from 2012 to 2015.

The project's theory of change

The first step in implementing IRPEP was to identify suitable CISs—those with high poverty rates, low average productivity and landholdings, and low water supply with potential for improvement—and offer **support to the smallholder rice farmers** who use them and the IAs that manage them. Because the FFSs and seed buffer stocks were also provided nationwide by the GoP (as well as by IRPEP), this impact assessment focused on the irrigation and marketing activities only.

IRPEP's work to rehabilitate **irrigation canals** was expected to expand the amount of land covered by the systems and to improve the quantity, reliability and timely delivery of water supply, particularly during the dry season. Consequently, farming activities were expected to increase and become more efficient, stimulating increased productivity and marketable surplus, leading to increased income from crop sales and food security. Marketing support was also expected to facilitate **increased income** from crop sales.

IA capacity building was expected to complement the rehabilitation work by improving the management and leadership of the CISs. Besides becoming better equipped to ensure that the systems were well maintained, the IAs were expected to become more sustainable through improved financial management and resource mobilisation capacities. **Better management** was also expected to improve the equitable distribution of water across the length of the canals.

Project outreach and outputs

By project completion, IRPEP had disbursed 90 per cent of the IFAD budget allocation and 58 per cent of the EU budget allocation. In 2013 project activities were disrupted in Region VIII and to a lesser extent in Region VI by Super Typhoon Haiyan. The following are the main outputs of IRPEP:

Total beneficiaries: **59,144**

Beneficiary households: **14,082**

Female beneficiaries: **4224**

CIS rehabilitated: **109**

Hectares of land covered by rehabilitated CISs: **9,347**

IA officers and members trained: **5,048** (33 per cent women)

Project impact

As part of IFAD's Development Effectiveness Framework, IRPEP has been subject to a rigorous impact assessment.

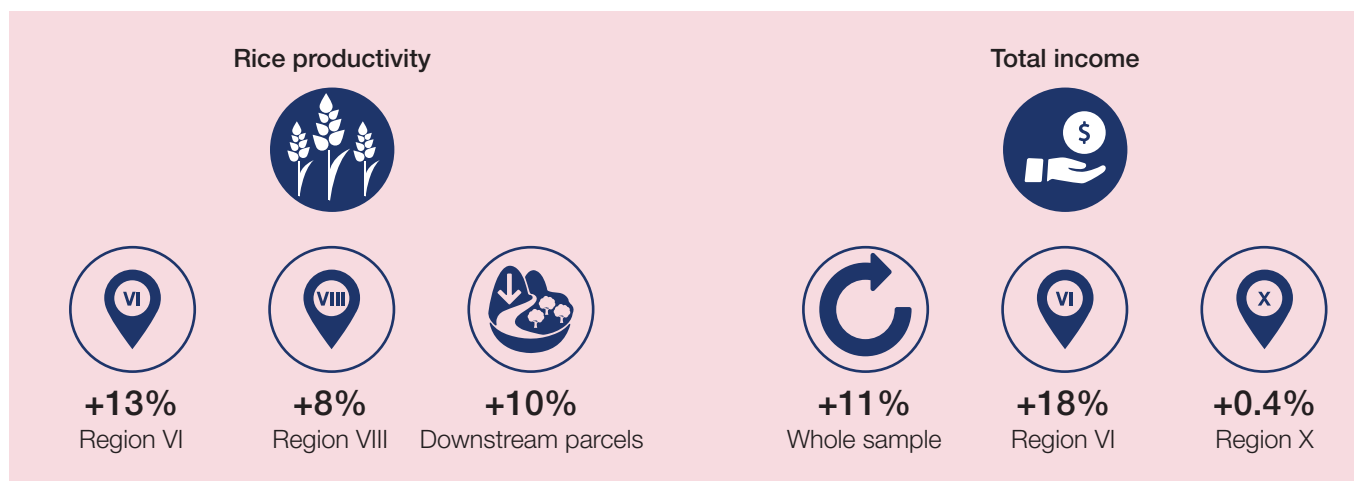
Data and methods

Estimating the impact of IRPEP followed a mixed-methods approach using quantitative and qualitative surveys. A valid counterfactual group was created using both statistical methods and expert validation with project staff and stakeholders to reconstruct the targeting process used by IRPEP when the project was originally designed.

This effort resulted in the identification of a set of treatment and control CISs from the three project regions among which household and IA surveys were conducted. In addition, statistical matching at the household and IA level was performed to improve the quality of the counterfactual. This process resulted in a household dataset used for analysis that covers 1,015 treatment and 664 control households, and an IA dataset used to assess impact on IA level indicators from 58 treatment and 55 control IAs.

Key impact estimates

The impact assessment found that IRPEP unequivocally increased water delivery across the three project regions. It also found that impact was higher for downstream parcels, suggesting an improvement in the equity of water delivery.



Improved water delivery resulted in a **13 per cent** increase in rice productivity in Region VI and an **8 per cent** increase in Region X. It did not increase rice productivity in Region VIII owing to the damage caused in the region by Super Typhoon Haiyan. The yield impact was also larger for downstream parcels, which are predominantly owned by poorer households and are known to have the most severe water access issues due to overuse by upstream parcels.

Increased yields translated into a large increase in rice sale revenue in Region X but not in Region VI. The project had a significant impact on rice sale revenue for downstream parcels, but unlike the yield impact, the revenue impact was higher for up- and midstream parcels. Region VI and downstream households used a large proportion of their harvest to repay production costs, suggesting a lack of improvement in production efficiency and in access to capital during production. Qualitative insights suggest that the marketing component was largely ineffective owing to long-term relationships between traders and farmers that fill the financing gap because of lack of credit, meaning efforts to improve selling practices were hindered by farmers being tied to these credit-for-harvest arrangements.

IRPEP increased household income by **11 per cent** overall. Surprisingly, this impact was larger in Region VI than in Region X. This difference was caused by a narrowing of livelihood focus onto rice production in Region X and a large increase in livestock-related income in Region VI.

IRPEP had a somewhat unexpected positive impact on nutrition. Households' dietary diversity increased significantly, as did their consumption of meat and eggs, which may be linked to a significant increase in livestock ownership. The other social indicator investigated here was education, for which we found inconclusive evidence of impact.

At the IA level, IRPEP had a significant positive impact on the number of IA members and the number of female IA officers. The assessment also found improvements in IAs' income-generating capacity and in their expenditures on maintenance and support to CIS users. Importantly, given the upcoming abolishment of water user fees, we found a large increase in IA income from sources other than water user fees, suggesting that impacts are likely to be sustainable.

About the brief

This brief draws upon the findings of an IFAD-funded impact assessment of IRPEP in the Philippines, which was prepared by Aslihan Arslan, Daniel Higgins and Paul Winters.

The impact assessment report of IRPEP is available upon request.

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Lessons learned

IRPEP proved effective in improving the supply of irrigation water to households across the project regions, and this effect translated into higher rice yields in two of the three project regions. Strengthened capacity of IAs combined with a conducive institutional environment can have distinct benefits for sustainable improvements in smallholder livelihoods, including improved water equity, women's empowerment, and significant increases in IA participation, income, and operation and maintenance expenditures. A project with this bundle of activities also has potential to boost income from livestock production and improve nutritional outcomes.

However, mixed results for production, market participation and household income highlight the following:

- Further supplementary **support is required** when households are coping with **extreme weather conditions**.
- Production efficiency does not automatically increase with improved irrigation supply; other supplementary support should be provided to **ensure that yields increase** in proportion with increased expenditure on water and other inputs.
- **Capital constraints** may have limited beneficiaries' use of production inputs. This finding suggests that the yield impact may be greater if future projects can address these constraints.
- Marketing support must be rethought. More research is needed on whether and how to encourage **collective marketing** and how best to **provide market information services**.
- Future projects must consider household income in its entirety and should be **wary of encouraging concentration of livelihoods** on a narrow range of activities to the potential detriment of livelihood resilience.

