

## IMPACT OF NATIONAL IRRIGATION ADMINISTRATION'S (NIA) IRRIGATION PROJECTS ON AGRICULTURAL PRODUCTIVITY, SOCIO-ECONOMIC BENEFITS AND MAINTENANCE CHALLENGES IN CATANDUANES

**Richiel A. Masagca**  
Catanduanes Colleges  
PHILIPPINES

**Pedrito Jose V. Bermudo**  
Catanduanes Colleges  
PHILIPPINES

### ABSTRACT

This study assessed the impact of National Irrigation Administration (NIA) irrigation projects on agricultural productivity, socio-economic benefits, and maintenance challenges in Catanduanes. Utilizing a descriptive-correlational research design, the study involved selected stakeholders from NIA, local government units, and farming communities. It sought to determine the perceived effects of NIA's irrigation initiatives on crop yield, quality, and farming practices, as well as the socio-economic gains experienced by farmers, the maintenance challenges encountered, and the relationships among these variables. Data were collected using structured questionnaires and analyzed using weighted means and Pearson correlation coefficients. Findings revealed that NIA's irrigation projects had a strong positive impact on agricultural productivity, with an overall weighted mean of 3.53. Specifically, 115 respondents strongly agreed that crop yields increased (WM = 3.55), crop resilience improved (WM = 3.61), and crop diversity expanded (WM = 3.52). Farmers also reported adopting more sustainable practices, including fertilization (WM = 3.56), crop rotation (WM = 3.54), and drip irrigation (WM = 3.53). Socio-economic benefits were substantial, with farmers indicating higher income and profit (WM = 3.57), improved market access (WM = 3.44), enhanced food security (WM = 3.55), and community infrastructure development (WM = 3.53–3.62). Maintenance challenges were rated as highly significant (overall WM = 3.43), particularly in canal cleaning, inconsistent irrigation schedules, low participation in meetings, poor coordination, delayed reporting of issues, water-sharing conflicts, and irregular fee payments. Correlational analyses revealed a significant positive relationship between the perceived impact on agricultural productivity and socio-economic benefits ( $r = 0.523 > \text{critical value } 0.444, p < 0.05$ ). However, there was no significant relationship between agricultural productivity impact and maintenance challenges ( $r = 0.456 < \text{critical value } 0.632, p > 0.05$ ), nor between socio-economic benefits and maintenance challenges ( $r = 0.333 < \text{critical value } 0.632, p > 0.05$ ). Based on these results, the study concluded that NIA irrigation projects strongly enhance agricultural productivity and socio-economic well-being, while farmers face substantial maintenance challenges. The positive correlation between productivity impact and socio-economic benefits underscores the value of irrigation investments for rural communities. Strategic interventions are recommended to address manpower limitations, improve coordination, and strengthen community engagement in irrigation maintenance. Regular orientations and monitoring are essential to sustain both project performance and farmer participation.

**Keywords:** Irrigation projects, agricultural productivity, socio-economic benefits, maintenance challenges, strategic intervention