



Impacts of a Rice Production Project Intervention in Nicaragua

An ex-post evaluation of the effectiveness of the TaiwanICDF Rice Production Project

Research, Development and Evaluation Department
International Cooperation and Development Fund(TaiwanICDF)

Yan-Tzong Cheng, Yun-Ching Tseng
Feb 18, 2020



01

Introduction

Concept of project evaluation in TaiwanICDF , project background , project summary and theory of change.

02

Methods

Study design and data collection, measurement variable, data analysis

03

Results

Demographic information, analysis of joining the project, project effect, project performance

04

Discussion

The scale of the rice industry in Nicaragua is growing
A stable/low-interest source of loan is an important factor

05

Conclusion

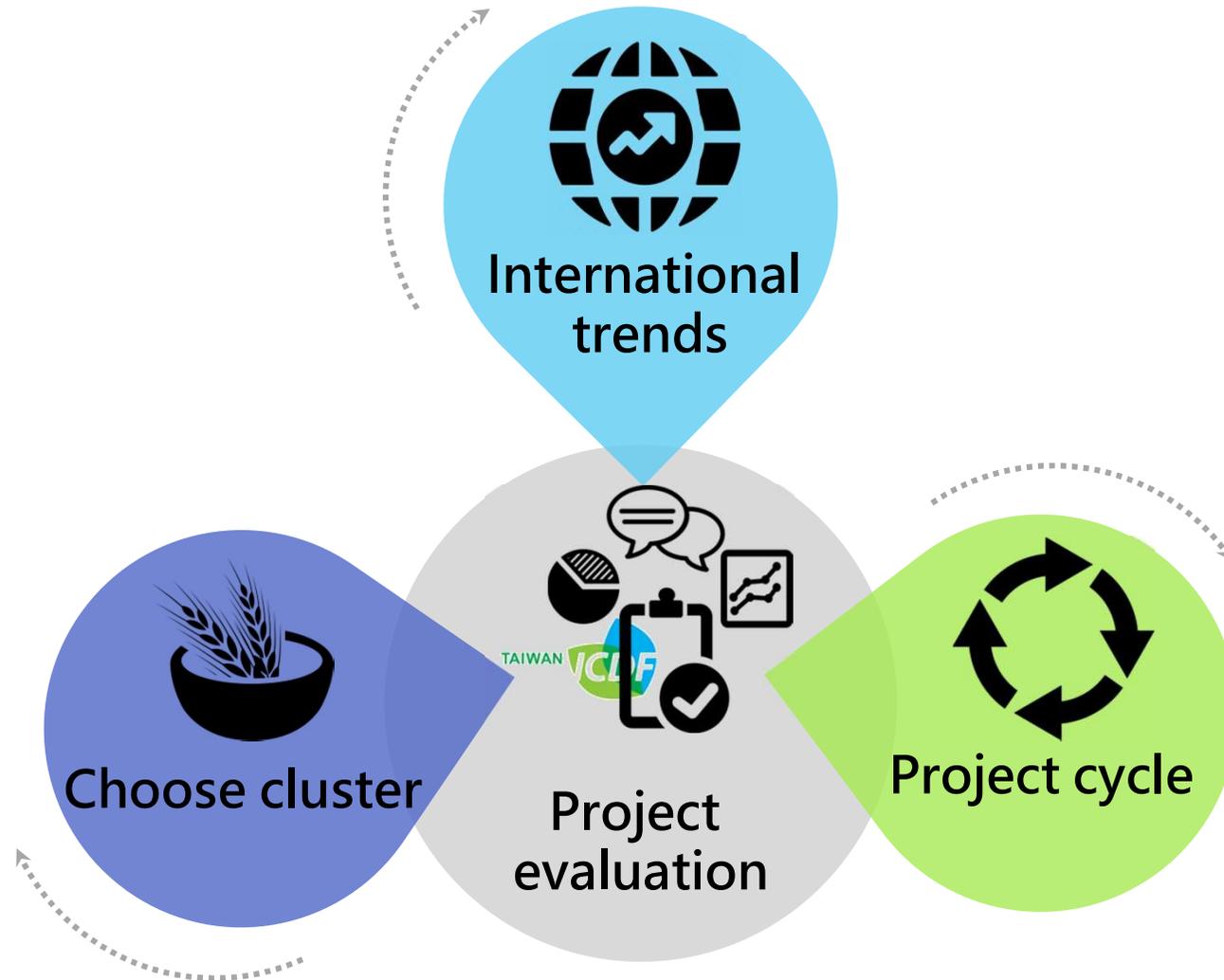
The project is in line with the theory of change, lessons learned, Recommendations



Introduction

Concept of project evaluation in Taiwan/ICDF, project background, project summary, and theory of change.

Concept of project evaluation in Taiwan ICDF



Project background

- Nicaragua has been unable to improve its rice production because the rice produced is of poor quality due to a lack of qualified seed.
- The TaiwanICDF conducted the Rice Production Project (2009-2014) with the aim of establishing a three-level system of rice seeds, increase the yield per unit area and improve the quality of rice, thereby increasing farmers' income.



Project summary

<i>Project Name</i>	Rice Production Improvement Project in Nicaragua (2009-2014)
<i>Implementation Date</i>	2009/01/01-2014/12/31
<i>Project Outcome</i>	1.Select and introduce high-quality varieties of rice 2.Improve production of rice
<i>Main components</i>	1.Provision of certified seeds 2.Training sessions 3.Assistance of cooperatives

Theory of change



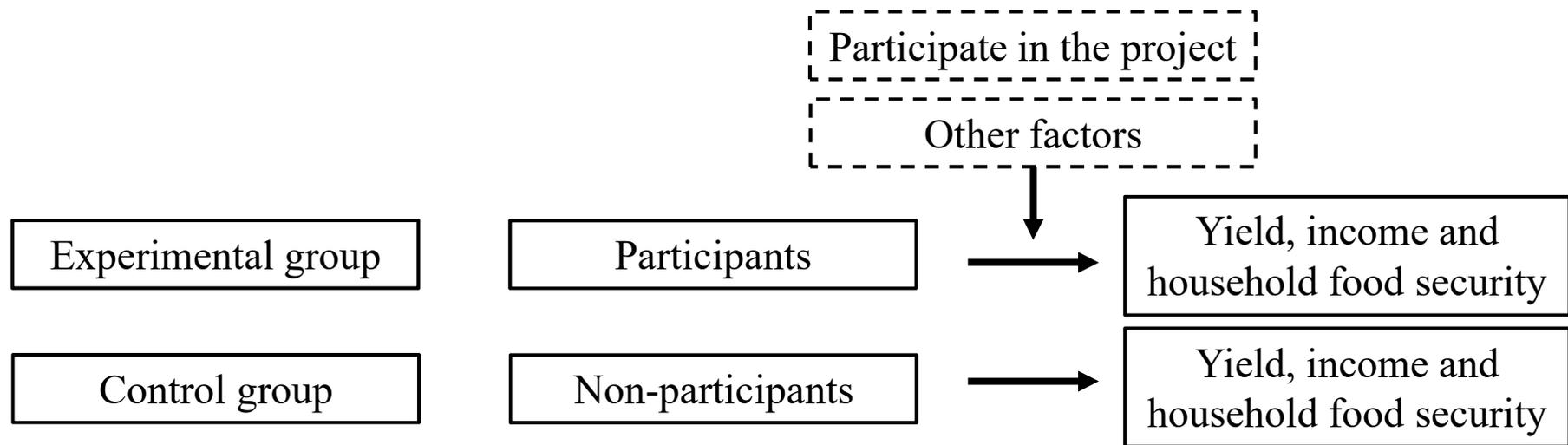


Methods

Study design and data collection, measurement variable, data analysis

Study design

- Cross-sectional study with a quasi-experimental design and mixed methods.



Data collection

- We collected data through a structured questionnaire.
- The data collection in field was implemented electronically with surveyors carrying a tablet to record respondents' answers.
- Dispatched a team to interview stakeholders of the projects.



Measurement variable

Demographic information

- Interviewees' gender, age, educational years, household size, etc.

Yield

- To understand the increased level of rice production of project participants due to technical assistance and materials supplied.

Income

- To understand the improvement in project participants' income after joining the project.

Household food security

- We used HFAIS (Household Food Insecurity Access Scale) provided by the FAO (Food and Agriculture Organization) as the indicator to measure the status of household food security of the participants.

Measurement variable

HFAIS (Household Food Insecurity Access Scale)

- 1 In the past four weeks, did you worry that your household would not have enough food?
- 2 In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?
- 3 In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?
- 4 In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?
- 5 In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?
- 6 In the past four weeks, did you or any household member have to eat fewer meals in a day because there was not enough food?
- 7 In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?
- 8 In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?
- 9 In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?

Data analysis

- Analyses were carried out in IBM SPSS Statistics (version 22).
- Data analyses include descriptive statistics and inferential statistics. For all statistical tests, the α level was set to 0.05.



Results

Demographic information, analysis of joining the project, project effect, project performance

Demographic information

- A total of 314 valid questionnaires were collected, including 46 participants and 268 non-participants.



Over 80% of participants are male.

53.26

Age (years)

The age of the participants on average is 53.26

8.87

Educational years

The educational years of the participants are 8.87 on average.

Demographic information



In terms of off-farm activities, only around 10% are engaged in off-farm economic activities to generate additional income.

4.46

Household size

The average number of people in the participants' households is 4.46.

Analysis of joining the project



The reason for joining the project

The reasons the participants decided to join the project are: To improve planting skills (100%), improve household economy (93.5%), and increase rice yield (60.9%).

-  To improve planting skills
-  To improve household economy
-  To increase rice yield

Analysis of joining the project



97.8% of participants reached out to the TaiwanICDF for the solutions when they encountered problems.



97.8% of participants thought that the guidance by the TaiwanICDF is useful.

Project effect

- The results show that participants have a significantly higher yield of rice than before joining the project ($P < .05$).

Project effect

- The income of the participants is higher than that of non-participants ($P < .05$).
- Results from regression analysis indicate that participation in the project significantly affects the income of selling rice ($p < .05$).

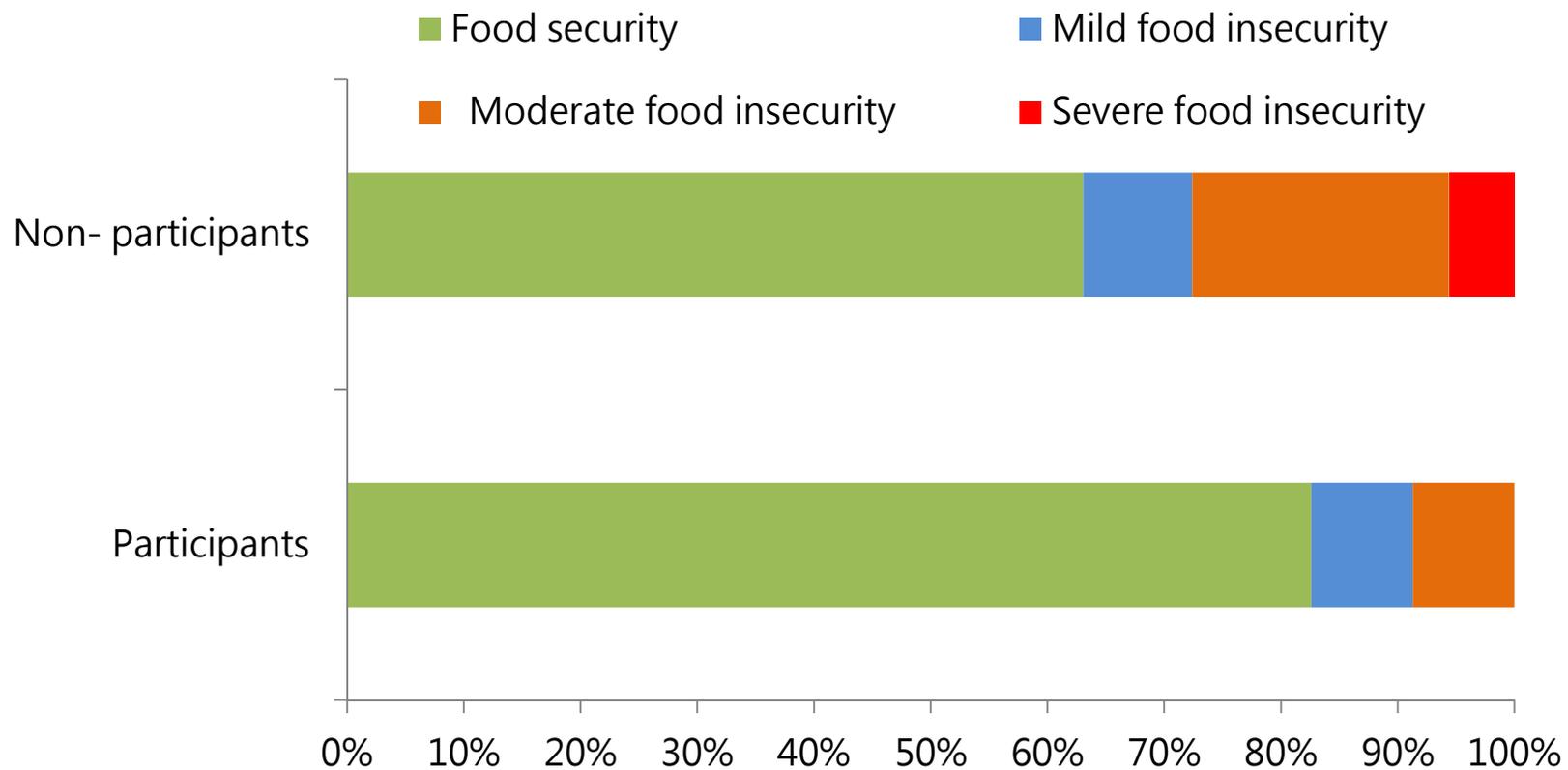
Project effect

- The participants have a significantly lower HFIAS Score than non-participants ($P < .05$).

	Mean	T value
Income in 2018 (USD)		
Participants (N=46)	1.696	2.21**
Non- participants (N=268)	2.996	

Project effect

- The participants have a significantly lower HFIAS Score than non-participants ($P < .05$).



Project performance

Relevance	Effectiveness	Efficiency	Sustainability	Overall performance
3.44 meets the standard of the criterion	3.83 meets the standard of the criterion	3.82 meets the standard of the criterion	3.67 meets the standard of the criterion	3.69 meets the standard of the criterion

Summary

- The project is in line with the national policy and the participants did change during the project implementation period.
- The three major components of the project – provision of certified seeds, training sessions and assistance of cooperatives – have improved the livelihood and household food security of participants.
- The design of the project meets the needs of the partner country and the participants continue to benefit from the project.



Discussion

*The scale of the rice industry in Nicaragua is growing
A stable/low-interest source of loan is an important
factor*

The scale of the rice industry in Nicaragua is growing

- Rice farmers in Nicaragua not only grow rice for themselves, but also focused on having high yield and value.
- The scale of the rice industry in Nicaragua has gradually grown, and the profits of the cooperatives have increased year by year.



A stable/low-interest source of loan is an important factor

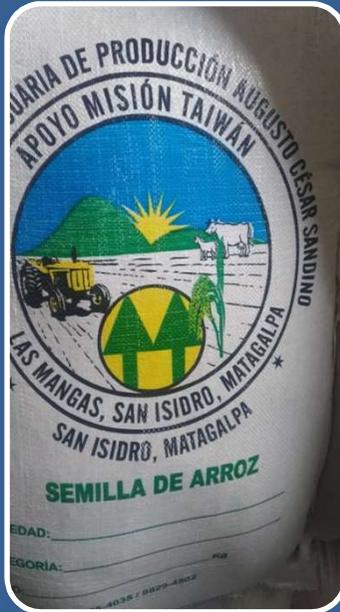
- 78.7% of the respondents had a need for a loan. The borrowers with a stable/low-interest source of loan gain a significant higher income from selling rice than those without.
- The regression analysis indicates that having access to a stable/low-interest source of loan significantly affects the income from selling rice.



Conclusion

The project is in line with the theory of change, lessons learned, Recommendations

The project is in line with the theory of change



The contents of the project are in line with the theory of change and the model of assistance to cooperatives has value for reference.

- The three major components of the project improved the livelihood and household food security of participants.
- In general, there are statistically significant intervention effects on yield, income and household food security status.

Key Factors



Partner country has policies on cooperatives that are relevant to the effectiveness of the project.

- The cooperatives play a key role in the implementation of the project.
- The reason the effectiveness of the project is clearly seen in the cooperatives is not only related to the content and implementation of the project, but also due to the strict and comprehensive regulations of the cooperatives.



The financial instrument is crucial for rice industry.

- The participants still being affected by financial risks, and the financial status and management of the cooperatives have also been affected.

Recommendations



Strengthen the functionality of the cooperative headquarters/center and establish a platform for communication and information sharing.

- A platform for communication and information sharing;
- Branding and product quality enhancement;
- Strengthening of post-harvest modulation and sales.



A Better World, A Brighter Future