Climate-Resilient Agriculture Practices Investment Prioritization

Investment Prioritization for Region 2: Climate Resilient Rice Varieties (CRV):

Planting of NSIC Rc 216 or 222/152 (1st Cropping) and PSB Rc 18 (2nd cropping)

Overview

Isabela is a first class province and the richest and progressive province in Cagayan Valley Region (Region 2). It has a total land area of 1,241,493 of which 42% of the area is covered by agriculture. The province is popularly known also as the Regional Trade and Industrial Center of Northeastern Luzon. It is the country's top corn producer with a physical area of 235,998 ha and second in census in rice production with physical area of 235,998 hectares and 339, 605 hectares respectively. However, due to the poor infrastructural development and its geographical location, Northern Isabela is particularly vulnerable to climate change. From 2003-2011,nine (9) super typhoons hit the whole province of Isabela that caused large damage to the agricultural industry and human lives. In 2016, the Province of Isabela was heavily devastated by typhoon Lawin with ₱2.5 billion recorded cost of damage in the agriculture sector.

Prioritized CRA Practice

NSIC Rc 216 or 222 is a short maturing variety planted during the cropping period May/June-August/September while PSB RC I8 is being grown from November/December-February-March. A longer maturing variety, PSB RC 18 is a lowland rice variety which is drought and heat tolerant, resistant to major diseases, insects, pests, high rice recovery and good grain quality. Its maturity is 123 days after seeding with a height of 102 cm, long grain size, and 65.34 % milling recovery. It reaches a maximum yield of 8.1 tons/ha with an average yield of 5.1 tons/ha. The variety can recover from or withstand submergence during floods or too much rain.

PSB RC 18 was identified by the Office of the Municipal Agriculture in San Mateo, Isabela as an effective climate resilient agricultural practice. During the field visits, the local farmers recognized this rice variety as having good growth performance in the last 10 years.

According to the farmers, the use of Climate Resilient Variety of rice with crop calendar practice was prioritized and adapted as it can avoid or minimize the unpredictable risks to their crops due to the changing climate conditions.

Data Gathering and Methodology

Focus group discussions (FGD)and key informant interview schedule were employed to gather primary data from the Municipalities of San Mateo, Cabagan, Sta. Maria, San Pablo, Delfin Albano, and Sto. Tomas. With the assistance and recommendations of the Local Government Units (LGUs) visited, the team have identified 17 farmers (with average age of 53) practicing the use of Climate Resilient Varieties (CSV)of rice namely; NSIC RC 216/222 (early maturing) during the first cropping (May/June-August/September) and PSB RC 18, a Climate Smart Variety, during the second cropping season (November/December-February/March). Five (5) conventional farming practitioners were interviewed in order to compare the current CRA and the old (conventional)farming practice. The data gathered analyzed using the Cost-Benefit Analysis (CBA) online tool developed by the International Center for Tropical Agriculture (CIAT).

Results

The results of analysis indicate that the Net present Value (NPV)) of the practice is **US$** 10,483.42 and its Internal Rate of Return (IRR) is 40.05%, The Social Net Present Value (SNPV) is **US$** 28,850.37 while the Social Internal Rate of Return (SIRR) is 93.40%The Initial Investment is **US$** 7,500 with a payback period of three (3) year.

In the aggregate analysis, the table shows that the Private Net Present Values (PNPV) of the practice is **US$** 6,077,933.9, while the aggregate Social Net Present Value (SNPV) is **US$** 12,662.311.08.

The Scenario of analysis indicates that the current price of ₱16/kg of rice will decrease in 20% after 10 years of adoption of the CRA practice.

CBA tool summary Farm (1 ha) results	**Net present value (NPV)**	**Internal Rate of Return (IRR)**	**Payback Period**	**Initial Investment**	**Social NPV**	**Social IRR**	**Scenario in the analysis (10 years)**	
Unit	**US$**	**%**	**Year/s**	**US$**	**US$**	**%**	**Before**	**After**
Value	10,483.42	40.05%	3	7500	28,850.37	93.40%	Current price of Php 16.00 per kilogram of rice	20% decrease in price
Aggregate analysis CBA tool summary	Total harvested area (ha)	Current adoption rate	Adoption rate	Aggregated private NPV	Aggregated Social NPV			
	523,031	1%	30%	6,077,933.9	12,662.311.08		Period	

Recommendations

The use of the two (2) Climate Resilient Rice Varieties (CSV)as a CRA Practice should be promoted and adopted by other farmers.

References

1. Oscar B. Zamora. 2011. Agroeconomic Response of Lowland Rice PSB RC 18 (Oryzasativa L.) to Different Water, Spacing and Nutrient Management.
2. Philrice 2014: Chief Lauds Isabela farmers.
3. Philippine Crop Insurance Corporation (PCIC).
4. Official website: Isabela Province