



Climate-Resilient Agriculture Practices Investment Prioritization

Investment Prioritization for Region 2: Adaptive Crop Diversification/Rotation (ACDR): Rice-Rice-Mungbean

Overview

Isabela is a first class 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

In the Municipality of San Mateo, the local government noticed a marked decline in the rice harvest yield, which was traced to the depletion of organic materials brought about by chemical intensive use of agro chemicals. Subsequently, the decrease in yields meant dwindling incomes for the farmers. To reverse the trend, the municipal government introduced a different cropping pattern involving rice and mungbean production.

Planting of rice-rice-mungbean is a major farm practice in the town of San Mateo. This cropping pattern has been institutionalized as a primary alternative farming system because of its benefits in terms of income generation and climate change adaptation strategy since mungbean is a drought-tolerant crop. Mungbean is dubbed as “black gold” by the farmers of San Mateo, Isabela. The Municipality is known as the “mungo capital” of the Philippines. Planting mungbean is done immediately after the harvesting of rice at the end of the month of March which is the onset of the dry season month.

Aside from mungbean production of which an additional income is ensured, mungbean is also beneficial when it comes to soil fertility. It enhances the quality of soil that lessens the use of farm inputs like synthetic fertilizer for the next planting season of rice. With this, some municipalities in Isabela are now emulating this practice as an evidently good intervention to increase family income



Data Gathering and Methodology

Focus group discussions (FGD) and key informant interview schedule were employed to gather primary data from the Municipality of San Mateo. With the assistance and recommendations of the Local Government Units (LGUs) visited, the team have identified 4 farmers (with average age of 50) practicing rice-rice mungbean crop pattern. Also, due to the absence of conventional practitioners four (4) old conventional practices from the same group of respondents were interviewed to complete the data needed for the CBA tool. The data gathered were analysed 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\$ 16,230.92** and its Internal Rate of Return (IRR) is 50.14%. The Social Net Present Value (SNPV) is **US\$ 29,597.87** while the Social Internal Rate of Return (SIRR) is 103.73%. The Initial Investment is **US\$ 7500** with a payback period of three (3) years.

In the Aggregate analysis, the table shows that the Private Net Present Values (PNPV) is **US\$ 5,396,810.52**, while the Aggregate Social Net Present Value (SNPV) is **US\$ 9,173,017.12**.

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 in 10 years	
Unit	US\$	%	Year/s	US\$	US\$	%	Before	After
Value	16,230.92	50.14%	3	7500	29,597.87	103.73%	With ₱16 price of per kilogram of rice	20% decrease in price
							With ₱60 per kilogram of mungbean	20% decrease in price
Aggregate analysis CBA tool summary	Total harvested area (ha)	Current adoption rate	Adoption rate	Aggregated Private NPV	Aggregated Social NPV		Period	
	523,031	1%	30%	5,396.810.52	9,173,017.12			

The Scenario of analysis indicates that the current price of ₱16/kg of rice will decrease in 20% likewise in ₱60/kg of mungbean after 10 years of adoption of the CRA practice.



Recommendations

Based from the results, the practice is highly profitable and thus, should be adopted. As such, widespread Information, Education and Communication (IEC) activities on this CRA practice should be undertaken.

References

1. Best Practices in Local Governance 2007
Munggo: The Black Gold of San Mateo, San Mateo, Isabela, Philippines.
2. Philrice 2014: Chief Lauds Isabela farmers.
3. Philippine Crop Insurance Corporation (PCIC).
4. Official website: Isabela Province.



