



Climate Resilient Agriculture Practices Investment Prioritization

Investment Prioritization for Region IV-A: CALABARZON on Coconut-based Integrated Farming System

Overview

CALABARZON is the 12th largest region in the Philippines, with an area of 16,873.31 km². The region itself is relatively flat, but also consists of coastal areas and highlands. The region's agricultural sector has 282,700 farms with 2.08 ha per farm^[1]. According to Philippine Statistics Authority, the Province of Quezon is the second largest province in Southern Luzon among the five provinces of the region, with 513,618 ha of land dedicated to agriculture.

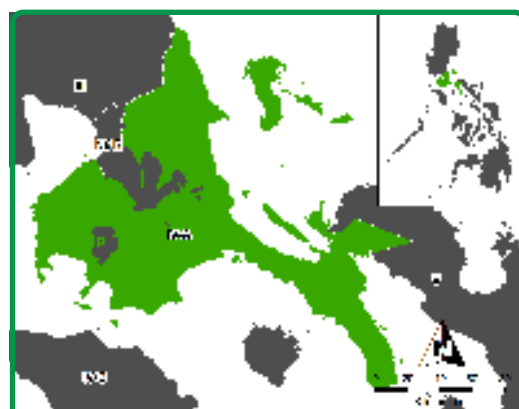
Quezon is frequently visited by different climatic hazards specifically typhoons. In the last 10 years, the province suffered from five typhoons namely Typhoon Nina, Lando, Pepeng, Ondoy, and Glenda, where almost half of the municipalities' agricultural areas and yields were greatly affected. In 2009, the province experienced typhoons Pepeng and Ondoy that created a great impact on the coconut industry.

The province of Quezon is dominated by coconut where 84 percent of the trees in the region are grown by the provinces' farmers. Palay and corn are the major temporary crops that the province produce in terms of area planted.

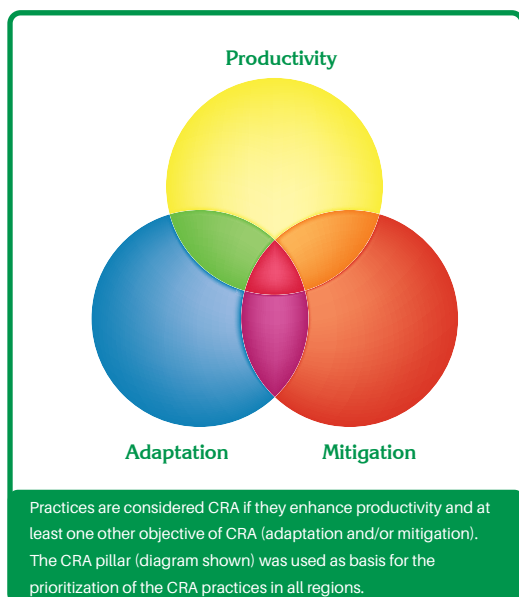
Prioritized Climate Resilient Agriculture (CRA) Practice

Quezon is one of the top producers of coconut in the region. Products that are mainly produced from coconut in the province are coconut oil, copra, and lambanog. Several problems are being faced by the province between the agricultural production and poverty incidence, since the province is dedicated agriculture and most of the community members are relying on the benefits from their farms.

In order to address these problems, Coconut-based Integrated Farming Systems (CBIFS) will be introduced in the province particularly to areas that are highly vulnerable to different climatic changes. CBIFS is a system in coconut production wherein available farm resources are utilized to produce nuts, food, and non-food agricultural products from the farm in a profitable way. With this practice, farmers will be benefited since the practice will provide them a good source of income with the planting alternative crops and survival crops instead of just relying on what the coconut tree can give. Also, through this CRA practice, the increasing poverty incidence in the province will be eradicated.



CALABARZON consists of Cavite, Laguna, Batangas, Rizal, and Quezon. Each province is composed of different environments, ranging from low coastal areas to rugged mountainous ones.



Data Gathering Methodology

The team collected secondary data from different offices, municipalities, and other government agencies—in the province. For verification, seven Key Informant Interviews (KII) with farmers engaging in integrated farming systems were conducted in different areas of Quezon Province. Another secondary data collection was conducted to supplement the missing information for the Cost–Benefit Analysis (CBA) Tool prescribed by the International Center for Tropical Agriculture (CIAT).

Results

The CRA practice requires a private initial investment of Php80,489.29 (USD 1,651.74) per hectare for it to be adopted. The projected net cash flow of the CRA result is profitable from the private point of view with a potential net present value (NPV) of Php214,803.79 (USD 4,408.04) and an internal rate of return (IRR) of 32.76 percent which is more than twice the 12 percent discount rate, making the CRA practice likely to be adopted by farmers. Initial investment is realized in 6 years..

On the other hand, from the point of view of the society in general and by incorporating externalities, the CRA seems to be highly attractive with a potential NPV of Php227,766.46 (USD 4,674.05) and a social IRR of 34.33 percent.

Recommendations

It is recommended that the government promote this CRA practice because of its multiple positive effects and positive economic value.

At the same time, in order to reduce the degree of uncertainty in the evaluation of the impacts of the CRA practice, it is recommended to allocate funds to finance research processes aimed to gain more information on CBIFS.

CBA Tool Summary Results

Farm-level Analysis	Net present value (NPV)	Social and Environmental NPV	Internal Rate of Return (IRR)	Social IRR	Payback Period	Initial Investment	Scenario in the Analysis	
	USD 4,408.04*	USD 4,765.60	32.76%	34.33%	6 years	USD 1,651.05	WITHOUT CRA: Mono-cropping	WITH CRA: Coconut-based Integrated Farming System
Aggregate analysis	Total area of coconut	Current adoption rate	Adoption rate	Aggregate NPV			Period	
	15 ha	5%	50%	USD 80,931.93			5 years	

*USD 1 = Php48.73

References

- ^[1] Philippine Statistics Authority. 2002.
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About the authors

This investment brief was authored by the team from Southern Luzon State University (SLSU), CIAT-AMIA's partner SLIC for the CRA-DS project in CALABARZON.

Felino J. Gutierrez, Jr.: Project Leader, Southern Luzon State University
felinogutierrezjr@gmail.com

Dr. Jesusita O. Coladilla: Socio-Economist, Southern Luzon State University
jocoladilla@gmail.com

Phoebe Ann Hadaza C. Villasanta: Southern Luzon State University
phoebevillasanta@gmail.com

Ma. Chariz A. Montero: Southern Luzon State University
charizmontero@yahoo.com

