



COST-BENEFIT ANALYSIS (CBA) OF CLIMATE-RESILIENT AGRICULTURAL (CRA) PRACTICES

BOHOL PROVINCE

CLIMATE-RESILIENT AGRICULTURE (CRA)

- CRA includes a broad set of practices that sustainably (CGIAR, 2014)
 1. increase productivity and resilience
 2. reduce and/or remove greenhouse gas emissions where possible
 3. enhances the achievement of food security and development goals

PILLARS OF CLIMATE-RESILIENT AGRICULTURE

*CRA is
agriculture that
sustainably...*

Adaptation

...enhances
agricultural resilience
(Climate Change
Adaptation)



Productivity

...increases the **yield**
and agricultural
income

Mitigation

...reduces/removes
GHGs emissions
where possible
(Mitigation)

COST-BENEFIT ANALYSIS

- Net Present Value (NPV)
- Payback Period
- Internal Rate of Return (IRR)
- Social NPV
- Social IRR
- Sensitivity Analysis

IDENTIFIED CRA PRACTICES

1. Bohol Province

- Traditional Rice Varieties Farming

2. Negros Oriental Province

- Corn and Peanut Intercropping
- Rice and Watermelon Switching
- Organic Rice Farming

3. Siquijor Province

- Corn-Peanut Intercropping

**CLIMATE-RESILIENT
AGRICULTURAL PRACTICES AND
COST-BENEFIT ANALYSIS**

Bohol Province

DATA GATHERING

1. Key Informant Interview

- The CRA practices were identified during the workshop on crop occurrence.
- A questionnaire on CRA practices were given to respective MAOs of the municipalities.

2. Farmer Interview

- The interview was conducted in Bohol for the municipalities of **Sagbayan, Jagna** and **Ubay**.
- A total of 42 farmers were interviewed and 11 of which are practicing CRA and the remaining 31 were not.

CLIMATE RESILIENT AGRICULTURE PRACTICES

	CRA Practices/Technologies	Count	Percent*
1	Non-burning of rice straw and other biomas	282	25.43%
2	Rice crop manager	238	21.46%
3	Different cropping systems	203	18.30%
4	Agroforestry	145	13.07%
5	Crop-animal integration	144	12.98%
6	Traditional cultivars/varieties	143	12.89%
7	Crop switching or rotation	131	11.81%
8	Water harvesting	103	9.29%
9	Vermi-compost application	100	9.02%
10	Indigenous crop species	87	7.84%

**With respect to 1,109 barangays (Philippine Standard Geographic Code, 2018)*



SELECTED CRA PRACTICE IS TRADITIONAL CULTIVARS/VARIETIES FOCUSING ON RICE

GROWING TRADITIONAL RICE VARIETIES



PRODUCTIVITY

Despite from a relatively lower yield, profitability is higher than the non-CRA due to a reduced operational cost.



ADAPTATION

Traditional varieties are tolerant to water level variations and other environmental stresses such as drought, flood, and salinity.



MITIGATION

Due to its ability to compete with weeds and tolerance with pests and diseases, it requires minimal usage of synthetic chemicals which in return helps in mitigating climate change.



RED RICE WAS THE SELECTED TRADITIONAL VARIETY VERSUS TRIPLE 2 FOR INBRED VARIETY

COST AND BENEFIT ANALYSIS HIGHLIGHTS

Unit	Traditional Rice Variety	Inbred Rice Variety
Price Per Bag of Palay	860.00	925.00
Yield Per Hectare (Bag)	90.00	109.00
Total Revenue (Php)	77,400.00	100,886.01
Labor Input (Php)	40,914.66	51,620.76
Other Variable Input (Php)	27,943.71	42,847.24
Operational Cost (Php)	68,858.38	94,468.00
Gross Margin (Php)	8,541.38	6,418.00

- Labor cost for CRA is 20.47% lower than the non-CRA.
- Other variable inputs such as fertilizer, pesticide, seeds, etc. is 34.78% lower than non-CRA.
- Despite lower yield and revenue, the gross margin of the CRA is higher by 34%.



COMPARISON BETWEEN RED RICE AND TRIPLE 2

GROWING TRADITIONAL RICE VARIETIES

COST AND BENEFIT ANALYSIS HIGHLIGHTS

Initial Investment
Requirement

P 15,000.00

Payback Period

1 year

Estimated Annual
Incremental Benefits

P 8,541.38

NPV

P 41,457.65

in 10 years at 10%
market interest rate

IRR

84.17%

per hectare

RECOMMENDATIONS

Where and When?

Growing traditional rice varieties – particularly the red rice is applicable to areas suffering water scarcity. Due to its relatively higher level of resistance, it is well-suited to areas with frequent problems of pests, diseases and weeds.

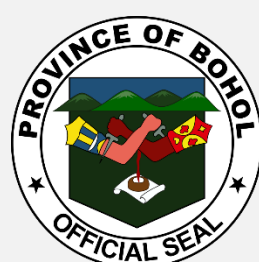
What?

While it finds a niche in the local and international market, concerned government agencies in partnership with LGUs should empower the rice farmers by providing seed subsidy and training rice growers to enhance productivity. Health benefits of traditional rice varieties must be promoted across the country along with its cultural significance to stimulate demand.

RECOMMENDATIONS

Who?

Rice growers association must be strengthened where members are trained to produce not just for their subsistence but also for profit. The organization must be able to manage the overall rice production and post-production undertakings. Farmers must have an easy access to agro-input suppliers, financing and lending entities, trainings and marketing experts.



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PROVINCE OF BOHOL

Thank you very much!