Impact Evaluation of the Fisheries, Coastal Resources, and Livelihood (FishCORAL) Project in Eastern Visayas

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PRESENTATION OUTLINE

- Introduction
- Objectives and Evaluation Question
- Methodology
- Preliminary Results
- Provisional Conclusion and Policy Implications

Introduction

The **FishCORAL** is a project co-financed and implemented by IFAD, DA-BFAR, and the LGUs of the coastal barangays of the 11 bays in Regions 5, 8, Caraga, and BARMM (2016-2021, US$43.05M budget).

Components:

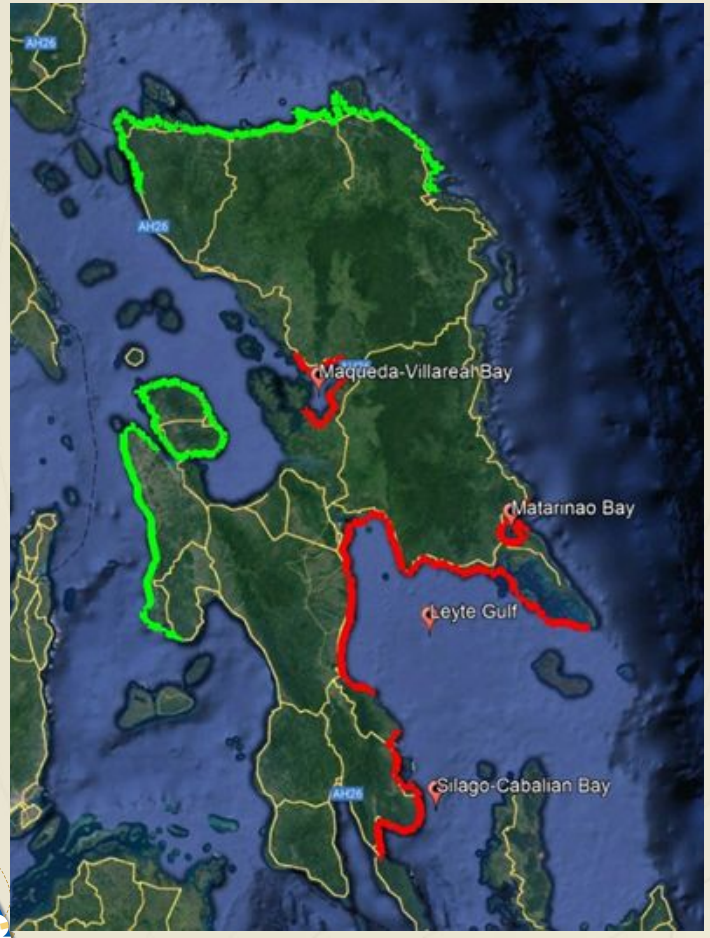
1. Coastal Resource Management
2. Livelihood Development

Introduction

The **FishCORAL Project** aimed to:

1. **Increase household income by 10%** through diversified livelihood sources
2. **Reduce poverty** in economically challenged coastal communities

Introduction



Implementation of the **FishCORAL Project** in **Eastern Visayas:**

- **4 bays** in Eastern Visayas
- **Yolanda**-affected areas
- **36** cities/municipalities
- **500** barangays

Theory of Change

Input	Activities	Output	Short-Term Outcomes	Final Outcome
Livelihood training/ Capability Development (e.g., experts, fisherfolks, LGUs, and project implementers)	***Conduct of trainings and other capacity building activities*** (Livelihood trainings, workshops, orientations, and meetings)	***Trained fisherfolks and livelihood projects identified,*** *and fishing households* ***organized into livelihood groups***	***Livelihood projects adopted*** per coastal barangay ***Increased women's participation*** in economic activities (30% are women from a baseline of 20% involved in fishery enterprises)	Fishing households in the coastal barangays' annual income ***increased by 10%***
Budget/Funds	***Construction of livelihood infrastructures*** and acquisition of equipment	***Livelihood facilities established*** and equipment installed	***Livelihood facilities and equipment utilized***	

Assumptions:

1. FishCORAL Component 1 was successful
2. Participation and cooperation of Fisherfolks and LGUs.
3. No major shocks (e.g., calamity) affected the growth of the livelihood enterprise.

OBJECTIVES AND EVALUATION QUESTION

Objectives

This study aims to:

1. Describe the **fishing households** that participated in the livelihood project
2. Determine the extent of **women's participation** in livelihood projects
3. Estimate the **impact of the livelihood projects** on the income of the fishing households

Evaluation Question

"Did the FishCORAL Project (Livelihood Development) increase the annual income of participating fishing households?"

Hypothesis:

HO The project intervention has no significant effect on the annual income of the fishing households.

HA The project intervention has a significant effect on the annual income of the fishing households.

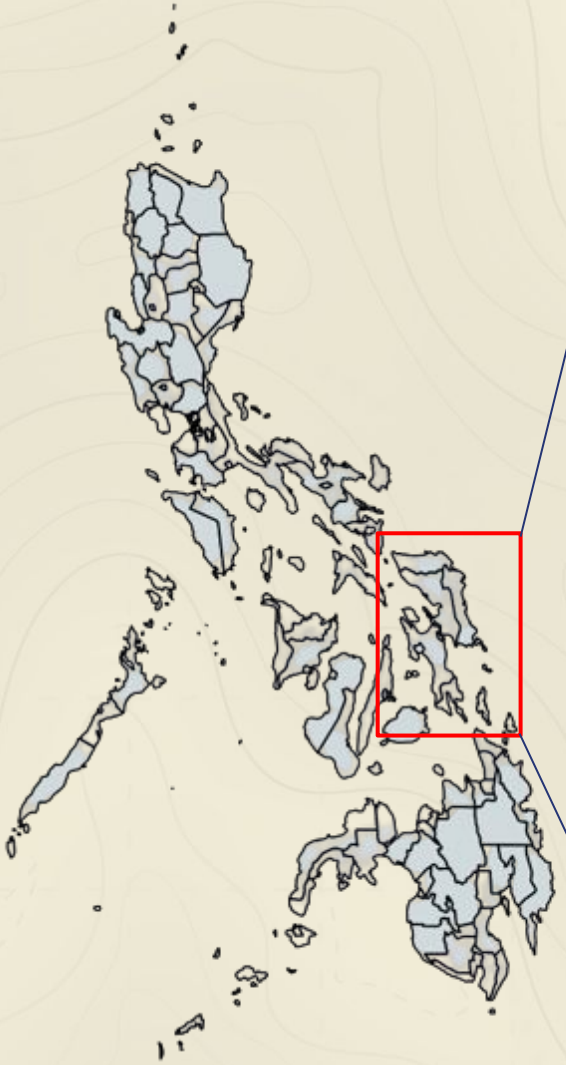
METHODOLOGY

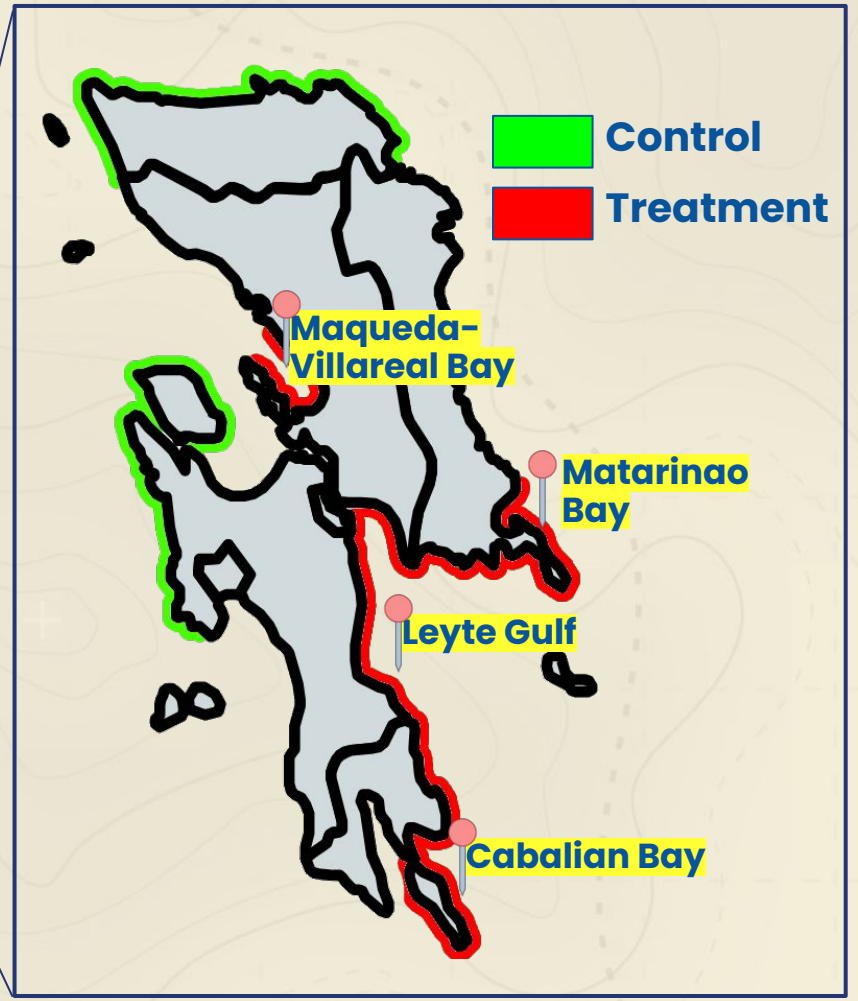
Methodology

Sampling

- Treatment Group: 660
- Control Group: 660

Total: **1,320** fishing households





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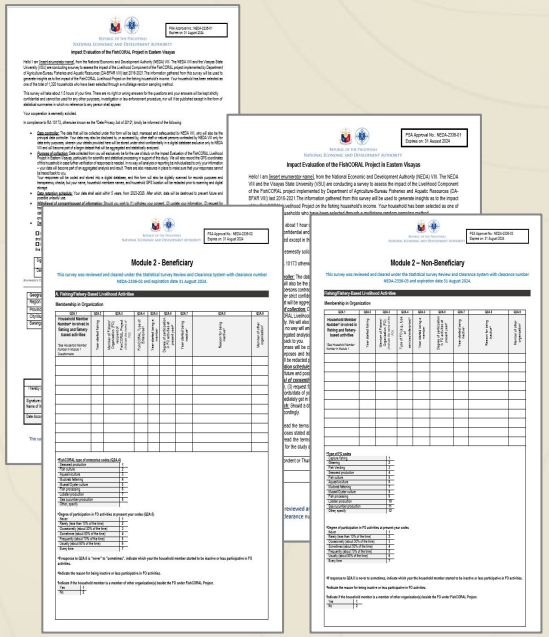
Sampling

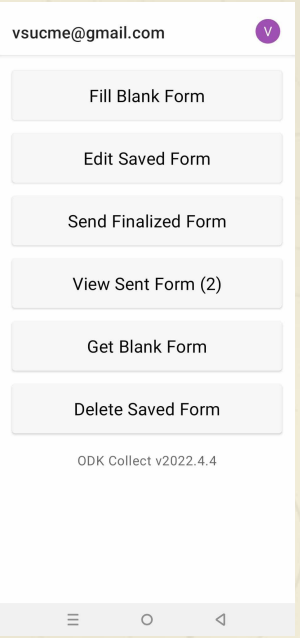
Treatment Group (Bay)	No. of Samples (Households)
Maqueda-Villareal	155
Matarinao Bay	57
Leyte Gulf	341
Silago-Cabalian	107
TOTAL	**660**

Control Group (Coastal Area)	No. of Samples (Households)
Biliran	154
Northwest Leyte	169
Northern Samar	337
TOTAL	**660**

- **25%**of the total cities/municipalities were covered to represent either treatment group (10 out of 36) and control group (9 out of 34)
- **Treatment Group**: the number of samples was **proportionate to the number of household beneficiaries from each city/municipality**
- **Control Group**: the number of samples was **proportionate to the number of households from each city/municipality**
- **1 to 5 barangays** were randomly selected from each city/municipality

The Survey





PSA-approved and pre-tested questionnaires

30 trained enumerators

ODK App

Methodology

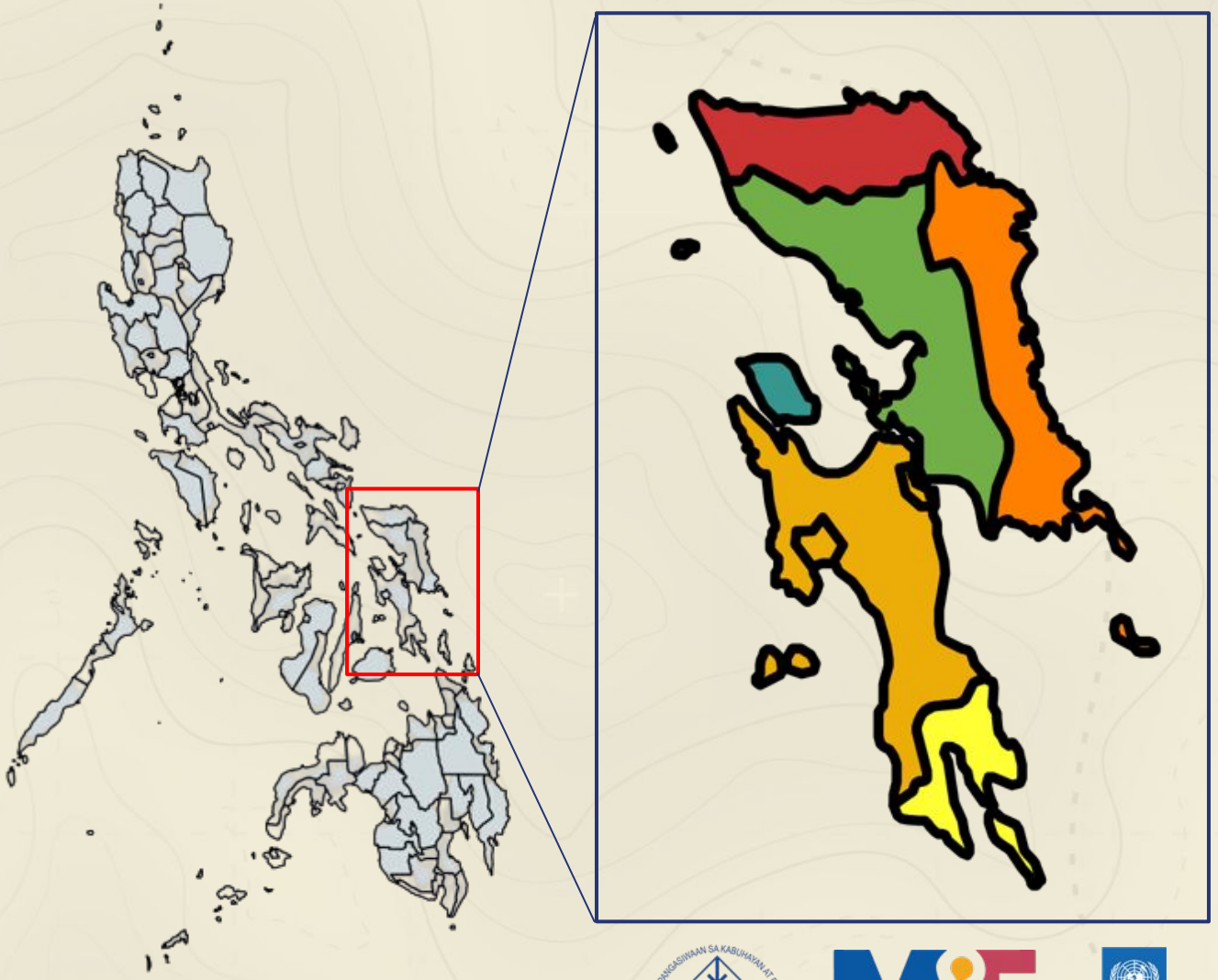
Data Analysis

- Various measures of **descriptive** (center, variation, comparison of means, etc.) and **inferential** statistics were used to describe and infer from the data.
- **Propensity score matching** (using the nearest-neighbour matching algorithm) was used to match the control and treatment groups.
- **Difference-in-Differences** will be used to estimate the net impact on the fishing households' income in the treatment group by using the matched treatment and control units.

PRELIMINARY RESULTS

Geographic Distribution

- Northern Samar (330)
- Eastern Samar (n)
- Western Samar (n)
- Biliran (n)
- Leyte (184)
- Southern Leyte (82)



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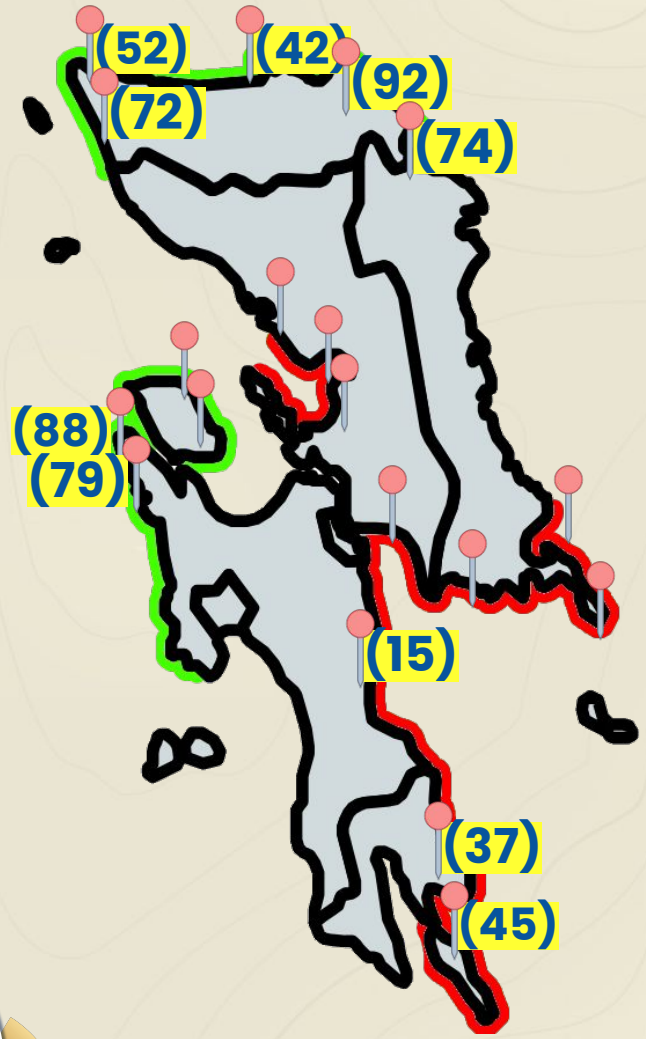
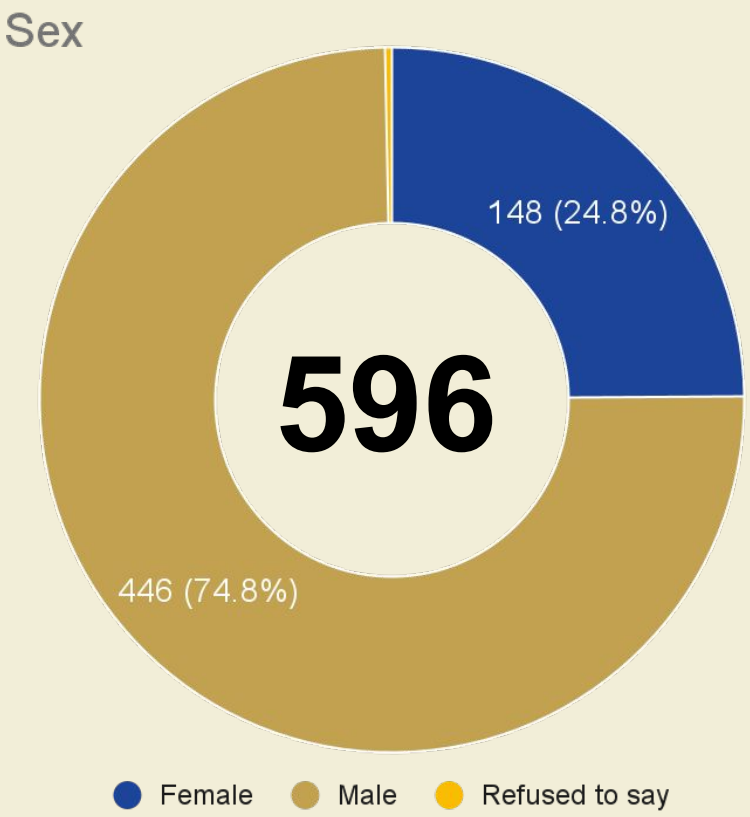
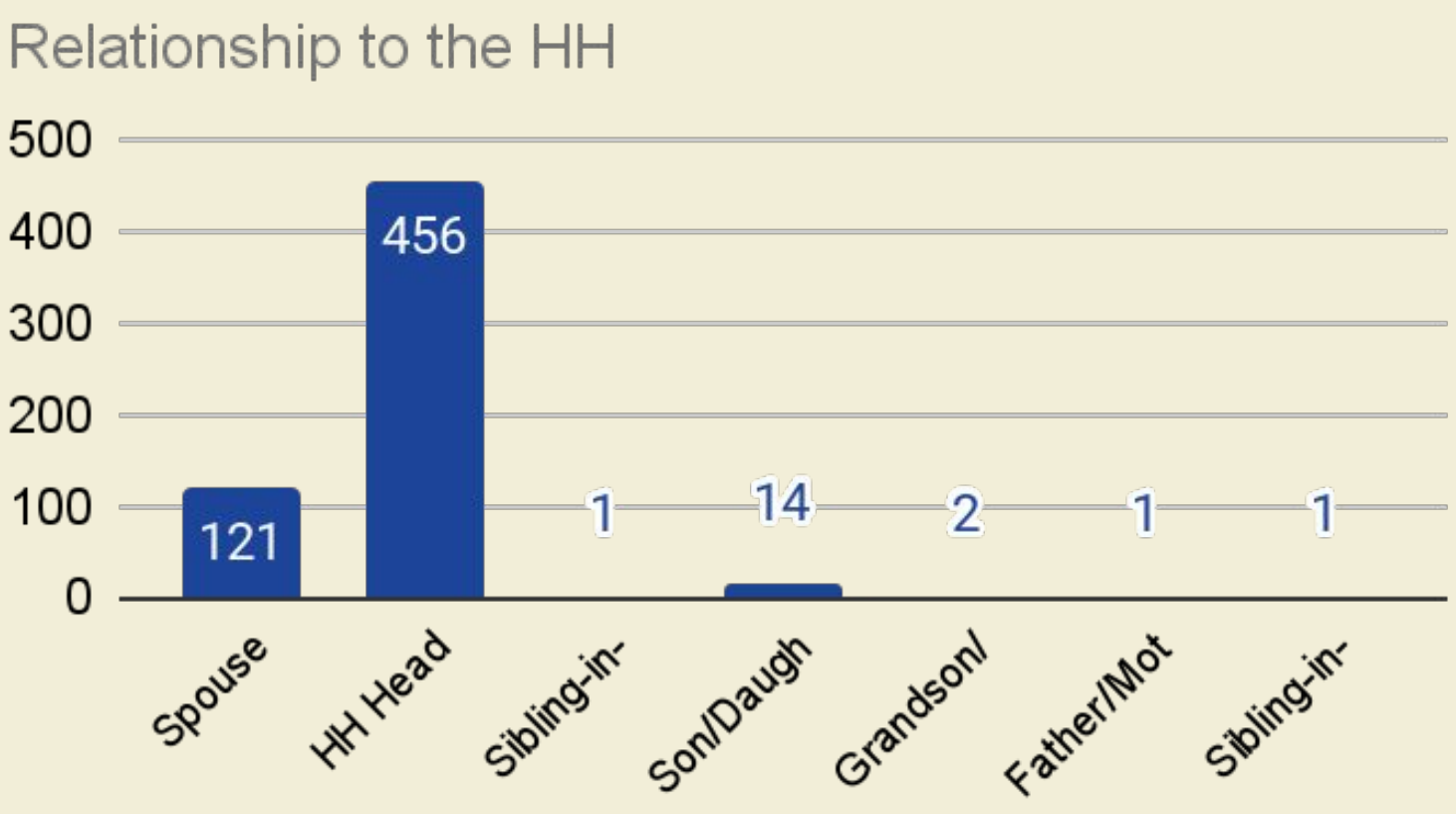


Location	Treatment	Control
Leyte		
Calubian		79
MacArthur	15	
San Isidro		88
Southern Leyte		
Liloan	37	
San Juan	45	
Northern Samar		
Allen		52
Bobon		72
Catarman		42
Mondragon		92
San Isidro		74
Total	**97**	**499**

Image source: mapchart.net

Sociodemographic Characteristics





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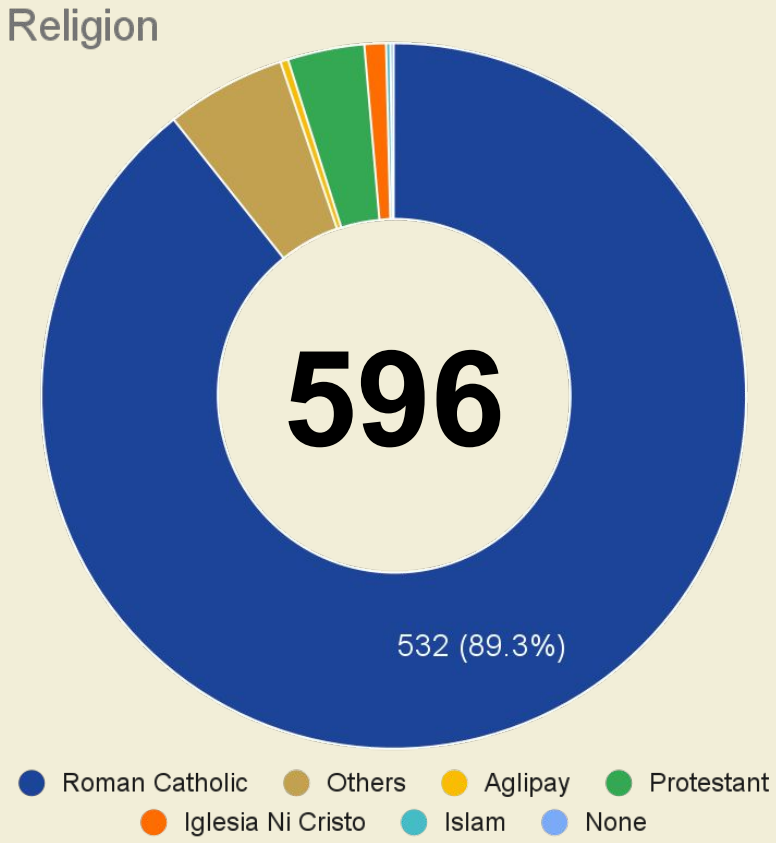
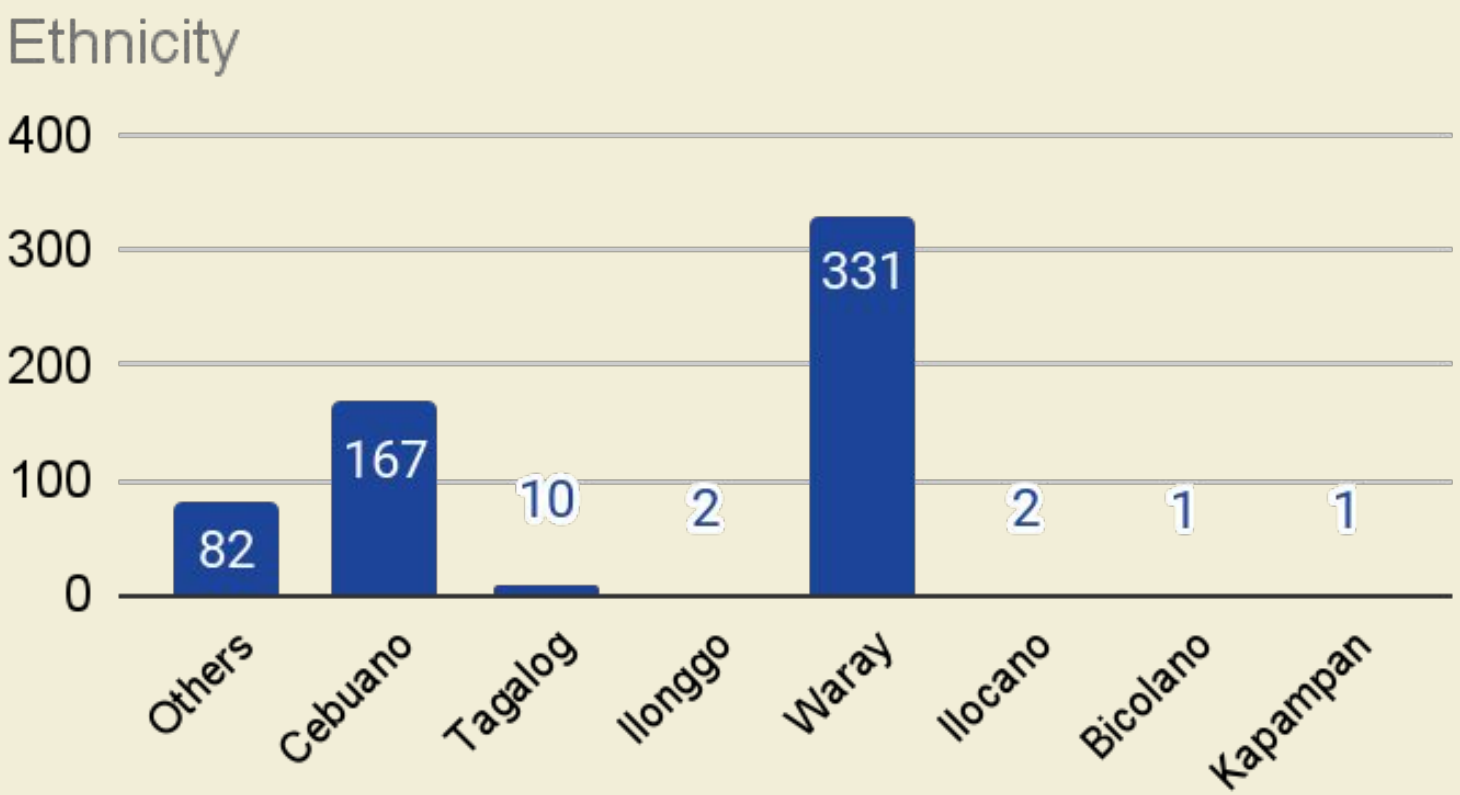




Sociodemographic Characteristics

Variables	Min	Max	Mean	Median	Std. Dev.
Age	17	86	48.85	49.00	13.30
Duration of the residence in the Brgy	1	86	41.32	42.00	17.99
Duration of the residence in the City/Municipality	2	86	42.00	43.00	17.53
No. of nuclear family/ies residing in the HH	1	5	1.16	1.00	0.47

Sociodemographic Characteristics

Treatment Group		Control Group
Roman Catholic		**Roman Catholic**
Bisaya		**Waray**
51.78 years old		**49.14** years old
41.42 years		**46.04** years old
41.91 years		**42.61** years old
1 nuclear family		**1** nuclear family

Significant at 5%.

Sociodemographic Characteristics

Treatment Group		Control Group
27% no Grade completed		**25%** Elementary Graduate
69% married		**59%** married
5 Household size		**5** Household size
2 children schooling		**2** children schooling

Significant at 5%.

Sociodemographic Characteristics

Household Amenities (Treatment and Control Group, 2023)

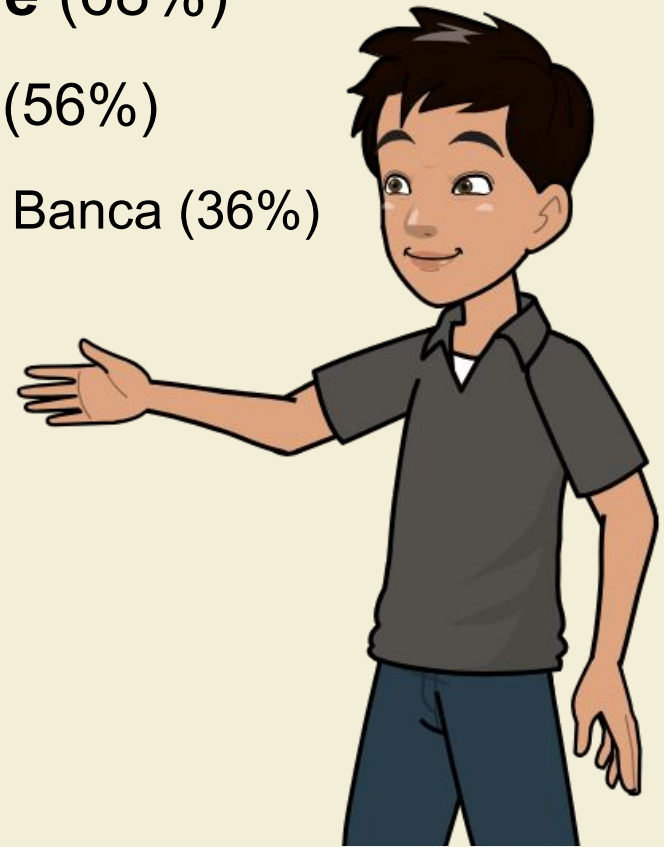
Single-Bungalow/ Single-storey (91%)	Type of the House	**Single-Bungalow/ Single-storey** (82%)
Owns the house (69%)	Tenure status	**Owns the house** (42%)
Private, within the household (94%)	Toilet Facility	**Private, within the household** (79%)
Yes (92%)	With electricity?	**Yes** (91%)
3	Ave. no. of rooms	2
2	Ave. no. of bedrooms	1

Significant at 5%.

Sociodemographic Characteristics

Top 5 Household Assets (Treatment and Control Group)

Cellular Phone/ Mobile Phone (85%)	1	**Cellular Phone/ Mobile Phone** (68%)
Television Set (68%)	2	Television Set (56%)
Living Room/ Sala set (38%)	3	Motorized Boat/ Banca (36%)
Gas Stove (36%)	4	Motorcycle (30%)
Washing Machine (35%)	5	Dining Set (20%)
16	**Max**	16
3 assets	**Ave.**	**4** assets
0	**Min**	0



Significant at 5%.

Sociodemographic Characteristics

Treatment Group		Control Group
18 years in fishing		**24** years in fishing
91% member to organizations		**36%** member to organizations

Significant at 5%.

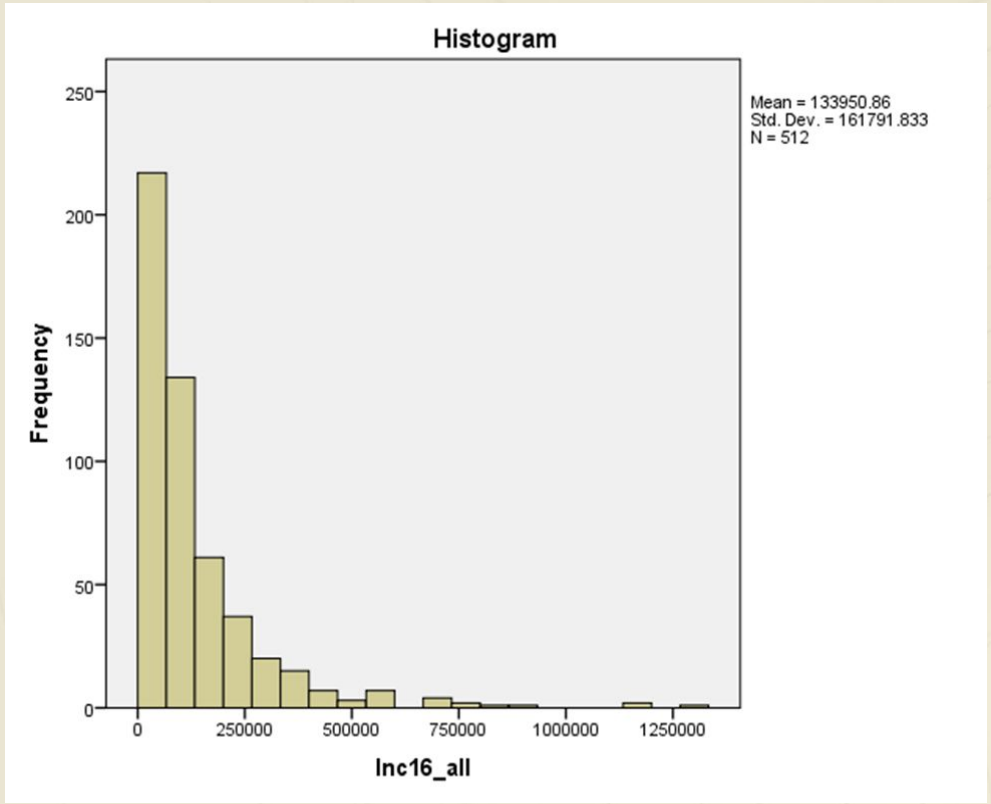
Comparison on access to basic services

Variables	2016 Treatment (%)	2023 Treatment (%)	2016 Control (%)	2023 Control (%)
Electricity*	93.8	96.0	85.4	91.7
Improved sanitation facility*	95.8	97.7	89.5	91.7
Improved source of drinking water*	97.7	98.8	92.8	95.5
Improved outerwall material	76.3	86.0	77.2	82.6

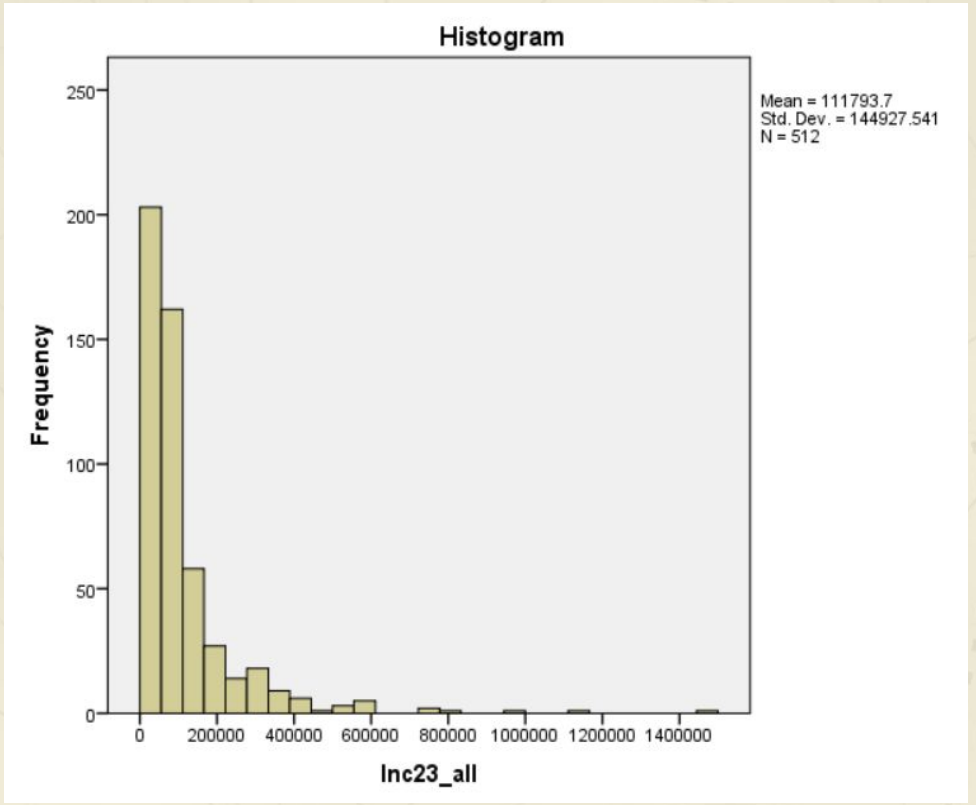
Note: Treatment=480, Control=649, *significant at 5% (pearson chi-square test)

- Higher proportions of **fishing households** with **access to electricity, improved sanitation facilities, and improved sources of drinking water** in the treatment group than in the control group

Comparison on household incomes



2016



2023

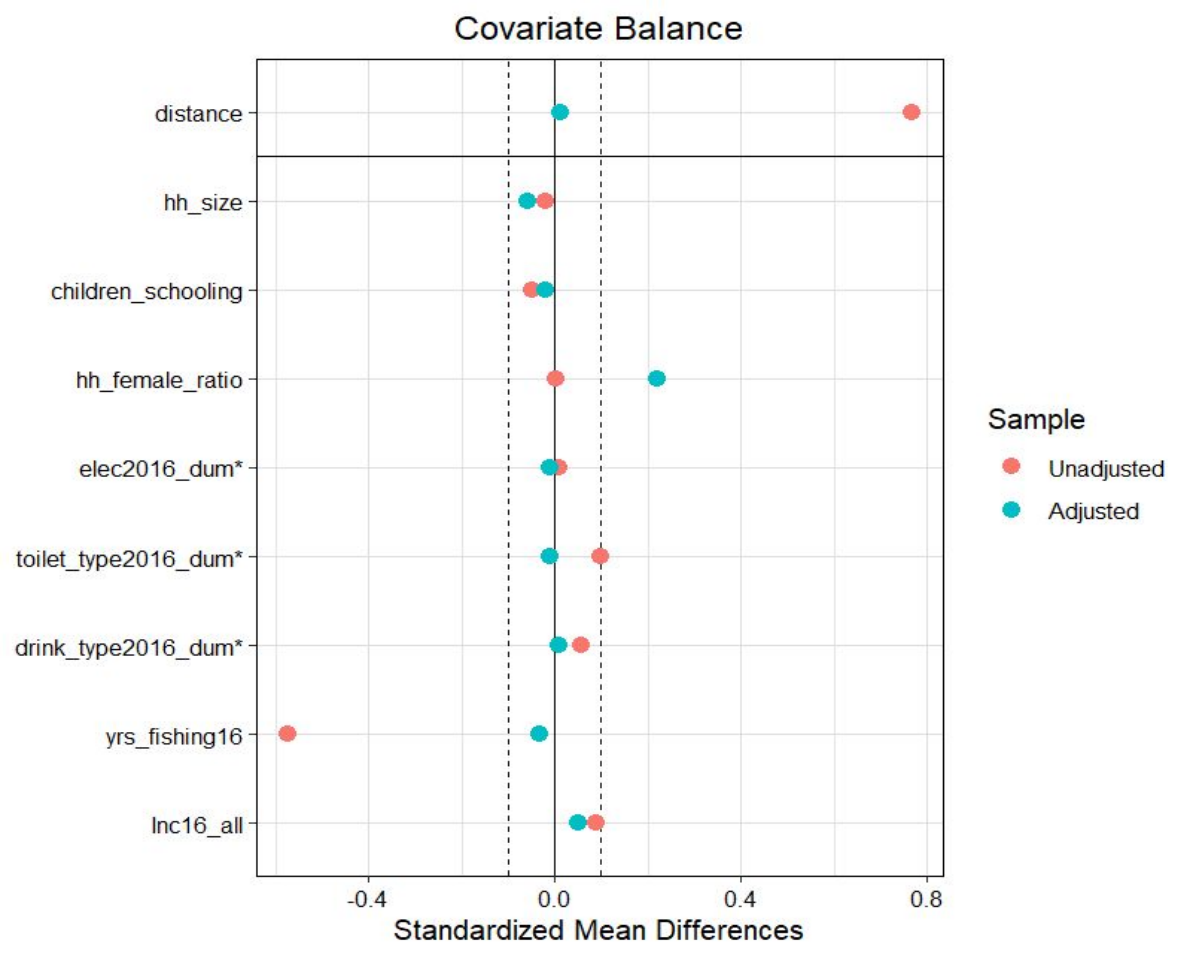
Comparison on household incomes

The mean household incomes of the treatment and control groups **showed no significant difference**

	2016 Control (PhP)	2016 Treatment (PhP)	2023 Control (PhP)	2023 Treatment (PhP)
Mean	106,202.02	120,629.78	126,117.51	149,407.55
Std. Deviation	143,923.17	135,086.78	153,961.84	182,973.00
Levene's Test	p=0.198		p=0.239	
T-test	p=0.225		p=0.380	
Mann-Whitney U	p=0.147		p=0.415	

Propensity Score Matching

Standardized Mean Difference and Region of Common Support



Propensity Score Matching: ATT estimation

The average treatment effect on the treated in terms of annual income is only at **PhP 1,035**, not statistically significant at 5% level.

Hence, the project has no impact on the annual income.

Variables	Income	p-value
Treatment	1,305	0.955
	(22843)	
n	98	
R^2	0.005	

Note: Standard errors in parentheses
***p<0.01, **p<0.05, *p>0.1

Points for consideration: survey insights on the implementation of the FishCORAL project

1. The **pandemic** affected the implementation of the project.
2. **Typhoon Odette** (2021) destroyed most of the FishCORAL Project facilities and equipment in Silago-Cabalian Bay, Southern Leyte (Treatment Group).
3. In some treatment areas (e.g., Silago-Cabalian Bay), facilities/equipment were provided but **no livelihood trainings conducted**.
4. Most beneficiaries in the Maqueda-Villereal Bay (Catbalogan City) had only participated at the start of the project due to **change of *Punong Barangays* in 2016**.
5. Project monitors **rarely visited** toward the end of the project.

Tentative Conclusions

More fishing households in the treatment group have access to **electricity**, **improved drinking water sources**, and **improved sanitation facilities** than in the control group.

No significant difference in the average annual incomes of fishing households between the treatment and control groups.

The project has **no significant impact** on the annual income of the fishing households.

Provisional policy implications

- Prioritize strategies that **enhance the resilience and long-term sustainability** of the project by integrating adaptive measures (e.g., resilient infrastructure and livelihood practices)

- Thorough **needs assessment** in terms of provision of livelihood interventions (e.g., equipment type)

- **Strengthen monitoring** of projects even beyond the implementation period

THANK YOU!