Abante Bohol!

Provincial Commodity Investment Plan

(With Climate Change Adaptation PAPs)

VCO

VIRGIN COCONUT OIL

CY - 2024

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List of Abbreviations and Acronyms

A and D	Alienable and Disposable
ACFT	Annual per Capita Food Threshold
ACPT	Annual per Capita Poverty Threshold
AES	Agro-Edaphic Suitability
AIP	Annual Investment Plan
ARMM	Autonomous Region in Muslim Mindanao
BEMO	Bohol Environment Management Office
BFAR	Bureau of Fisheries and Aquatic Resources
BOI	Board of Investments
CCA	Climate Change Adaptation
CDA	Cooperative Development Authority
CLUP	Comprehensive Land Use Plan
CPT	Commodity Prioritization Tool
CSO	Civil Society Organization
DA	Department of Agriculture
DENR	Department of Environment and Natural Resources
DOLE	Department of Labor and Employment
DOST	Department of Science and Technology
DRRM	Disaster Risk Reduction and Management
DTI	Department of Trade and Industry
ELA	Executive Legislative Agenda
EO	Executive Order
E-VSA	Expanded Vulnerability and Suitability Assessment
FA	Farmers' Association
FMR	Farm-to-Market Road
GAP	Good Agriculture Practices
GEF	Global Environmental Facility
I-BUILD	Intensified Building-Up of Infrastructure and Logistics for Development
IEC	Information Education Campaign
IP	Indigenous People
I-PLAN	Investment for AFMP Planning at the Local and National Levels
I-REAP	Investments for Rural Enterprises and Agricultural and Fisheries Productivity
KII	Key Informant Interview
LGU	Local Government Unit

M&E	Monitoring and Evaluation
MCPI	Marine Colloids for Pilipino Integrity
MLGU	Municipal Local Government Unit
MOA	Memorandum of Agreement
MPA	Marine Protected Area
NCIP	National Commission on Indigenous Peoples
NGA	National Government Agency
NOL	No Objection Letter
NPCO	National Project Coordination Office
NSCB	National Statistical Coordination Board
OPA	Office of Provincial Agriculturist
OPV	Office of Provincial Veterinarian
PCA	Philippine Coconut Authority
PCC	Philippine Carabao Center
PCIC	Philippine Crop Insurance Corporation
PCIP	Provincial Commodity Investment Plan
PCPT	Provincial Core Planning Team
PDC	Provincial Development Council
PDPFP	Provincial Development Physical Framework Plan
PGBh	Provincial Government of Bohol
PLGU	Provincial Local Government Unit
PMIU	Provincial Program Management and Implementing Unit
PO	People's Organization
PPDO	Provincial Planning and Development Office
PRDP	Philippine Rural Development Project
PSA	Philippine Statistics Authority
RBMES	Results-Based Monitoring and Evaluation System
RPC	Rice Processing Center
RPCO	Regional Project Coordination Office
RROW	Road Right-of-Way
SEAFDEC	South East Asian Fisheries Development Center
SES	Social Environmental Safeguard
SIAP	Seaweed Industry of the Philippines
SP	Sangguniang Panlalawigan
SRC	Semi Refined Carrageenan
SSS	Social Security System
SWCF	Soil and Water Conservation Foundation
TWG	Technical Working Group
VCA	Value Chain analysis
VCO	Virgin Coconut Oil

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Introduction and Rationale

Bohol is one of the selected recipient provinces of the Philippine Rural Development Project (PRDP). It is a six-year project designed to establish an inclusive and market-oriented agri-fishery sector through strategic investments in priority commodity value chains. It is a poverty reduction program that aims to improve the incomes and food security of the rural poor. Externally, it will focus on expanding market access and improving competitiveness. Through a Memorandum of Agreement, the Department of Agriculture (DA) and the Province of Bohol have come into a joint partnership in implementing the PRDP. Both the DA and the Province will partner with Local Government Units (LGUs) and the private sector in providing key infrastructure, facilities, technology, and information that will raise incomes, productivity, and competitiveness in the countryside.

One of the requirements of PRDP is the formulation of the Provincial Commodity Investment Plan (PCIP). The PCIP is a 3-year rolling plan based on the value chain analyses of the commodities conducted with strong participation of the various stakeholders in the chain. Moreover, it is a strategic plan that rationalizes the interventions within the various segments of the value chain of commodities. These interventions are significant to the province and will contribute to the national goals of the agriculture and fishery sector. The PCIP be the basis for selecting eligible interventions and sub-projects for funding PRDP's I-BUILD and I-REAP project components. However, the CIP is not only focused on the investments of PRDP but also leveraging resources from other NGAs and the private sector.

Furthermore, the PCIP reflects agreements between DA-RFOs, PLGUs with strong participation of the various stakeholders and other government agencies in the context of convergence to leverage resources in helping develop the province's agri-fishery sector. It aims to maximize the synergy among various players of the value chain (industry players and the enablers), and the CIP represents an overarching platform in expanding opportunities in the value chains. The CIP not only rallies around the value chains that are being prioritized, but generates commitment to address the identified bottlenecks of the value chain based on the results of VC analysis.

The adopted planning approach for PCIP formulation is anchored on the use of the value chain approach (VCA) to objectively identify interventions to develop or enhance priority commodities. A value chain is defined as *the full range of activities that are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final customers, and final disposal after use.*[1]It involves an analysis of the vertical and horizontal process and players that add value to the product.

To enhance the value chain approach of planning, scientific tools are used, such as the Expanded Vulnerability and Suitability Assessment (E-VSA). It is a user-based online tool available at the PRDP website that uses the VSA result as a database and is collaborated with socio-economic parameters. A map will be generated as visual presentation of municipal ranking based on the parameters used per commodity.

[1]J. Hellin and M Meijer. *Guidelines for Value Chain Analysis*, (FAO) November 2006, p. 4.

Another important tool used to identify priority commodities is the Commodity Prioritization Tool (CPT). The major criteria for this tool are: suitability, market potential, impact on the poor, and the number of beneficiaries. The identified priority commodities of the province ranked as to the results of the CPT are the following: coconut, dairy, native chicken, high-value vegetables, cassava, inland fishery, mariculture (seaweed), swine, cacao and coffee. These identified commodities that are important to agricultural development will undergo the value chain analysis and will be integrated into the PCIP.

To ensure the successful implementation of the Project, the Governor issued Executive Order No. 05, Series of 2015, creating the Provincial Core Planning Team (PCPT) that is chaired by the Provincial Agriculturist. The PCPT is tasked as the principal mechanism through which the Provincial Commodity Investment Plan (PCIP) will be prepared. The enhanced PCIP of Bohol is a 3-year strategic plan (2019-2021) that rationalizes the interventions within the various segments of the value chain of identified significant priority commodities and will contribute towards the vision of a strong and balanced agri-industrial province.

The Bohol PCIP had undergone series of consultation with various stakeholders. After the National Project Coordination Office (NPCO) issued a No Objection Letter (NOL) for the Value Chain Analysis of the priority commodities, it was presented to the Provincial Governor, the Provincial Project Management Implementing Unit (PPMIU) and to the PCPT. The PCPT started the integration of the approved commodity to the PCIP after it was presented. The planning process being participatory includes technical reviews and stakeholders' consultation with various actors along the chain from the input supplier, producer, processor and traders. All six (6) priority commodities of the province had been subjected to a Stakeholders' Consultation. The final PCIP was presented to the Provincial Development Council for approval and endorsed to the Regional Project Coordination Office (RPCO) for inclusion to the Regional Development Investment Program (RDIP) for possible funding by other agencies. The approved PCIP served as the basis for identifying eligible I-REAP and I-BUILD sub-projects. Likewise, the PLGU also used the PCIP to mobilize resources from other sources such as other National Government Agencies (NGAs), NGOs and the private sector.

The interim approach in updating the PCIP for PRDP Scale-Up implementation focuses on the integration of Climate Risk Vulnerability, particularly the incorporation of Major Climate Risks and Risk Adaptation Measures in the existing PCIP Matrices. This approach will likewise serve as a bridge for planners at all levels to progressively familiarize themselves on climate-resilient investment planning.

Chapter I. Development Background

Agriculture is one of the economic drivers of Bohol and is the main source of livelihood of majority of the Boholanos. It provides income and livelihood to farmers and fisherfolks and their dependents. Agriculture also enables traders, processors, retailers, and other groups to, directly or indirectly, make a living. Given these facts, it is only logical that the agriculture sector needs to be fully harnessed to enhance agricultural productivity and improve the incomes and welfare of farmers and fisherfolks.

Consistent with this drive and with consciousness that agriculture is one of the main economic drivers of Bohol, the Provincial Government has been steadfast in implementing agri-based support programs and projects to achieve food sufficiency and attain economic growth through agri-industrialization. The Province of Bohol is fortunate to be selected as a one of the sites of the Philippine Rural Development Project (PRDP) that aims to develop an inclusive, market-oriented, climate-resilient agri-fishery sector by strategically investing in priority value chains. Based on suitability, market potential, impact on the poor and number of growers/ producers, identified provincial priority commodities that go through prioritization are the following: coconut, dairy, native chicken, swine, high-value vegetables, cassava, inland fishery, mariculture, cacao and coffee.

The Provincial Government also desires to develop other commodities like banana, mango, balut and other economically beneficial crops like palm oil. Fishery development in the province is also being prioritized, considering that Bohol has rich marine resources. As to livestock and poultry development, the Provincial Government has been continually responsible in improving and safeguarding the said industries with the promotion of native chicken and the ongoing research on the development of a Boholano strain of native chicken.

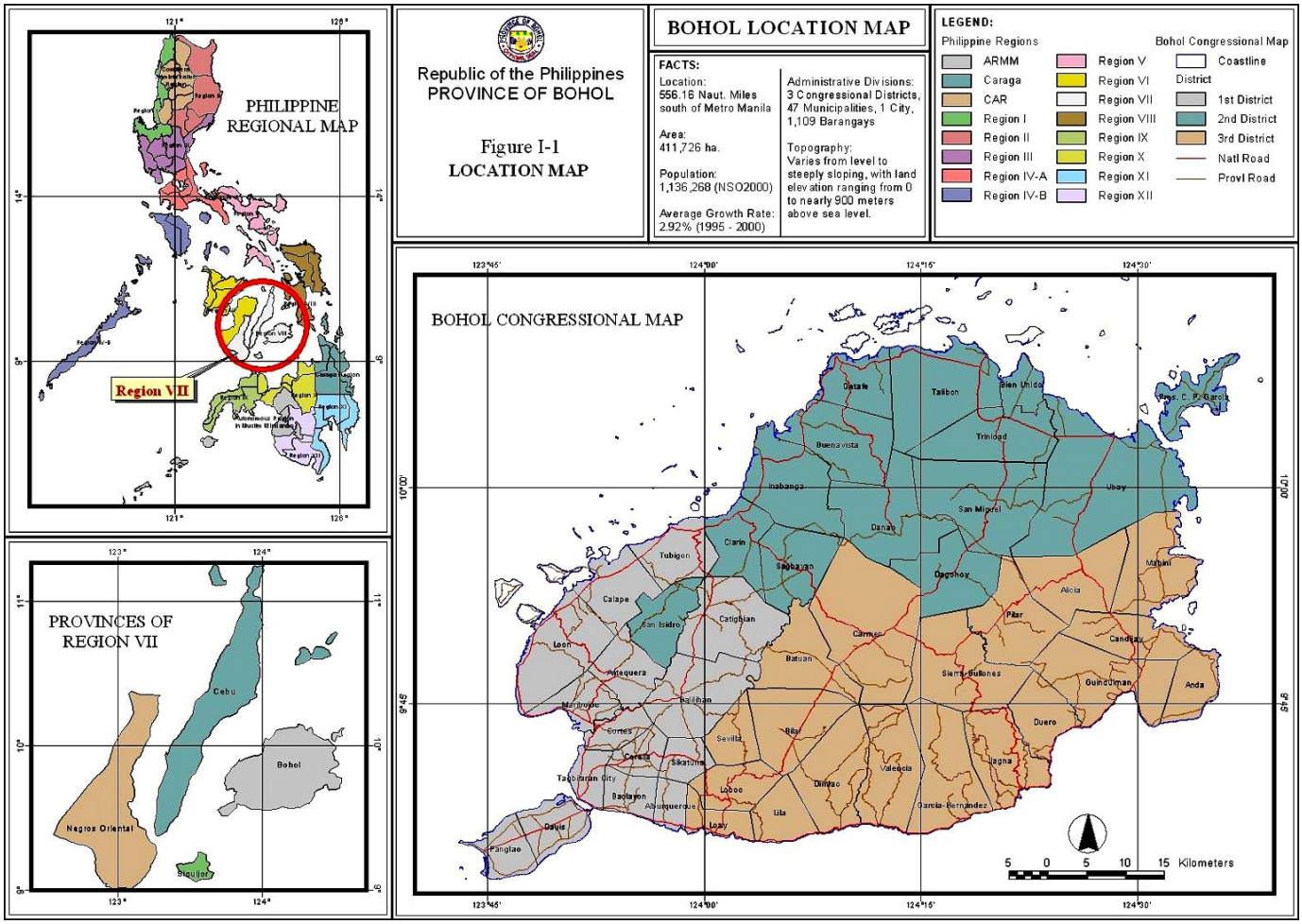
Geographic Profile

Location

Bohol is an island province of the Philippines located in the Central Visayas Region (Region 7) consisting of Bohol Mainland and 75 minor surrounding islands. It is one of four provinces in Region VII with 47 municipalities and one city, Tagbilaran City, serving as its capital. About 1,109 barangays comprise its administrative area of jurisdiction grouped into three congressional districts.

Bohol is the tenth largest island of the Philippines, with a land area of 4,117.26 square kilometers (1,589.68 sq. mi) and a coastline of about 261 kilometers (162 miles) long. To the west of Bohol is Cebu Province, to the northeast is the island province of Leyte and to the south, across the Bohol Sea is Mindanao.

Map 1. Bohol Location Map



Topography and Slope[2]

- **Topography Range**

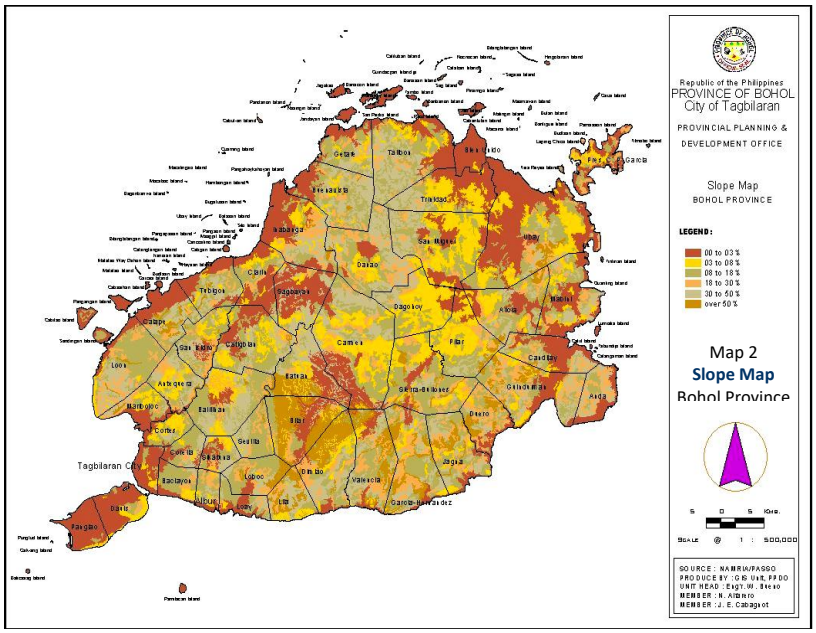
Bohol's terrain is variable from nearly flat at the plains to low rolling, moderate to very steep sloping with 5 to 50 meters high cliffs in the Sierra-Bullones limestone formation. The more rugged terrain is found in the southern part of the province although the Ubay volcanic rocks and Boctol serpentinite in the north and northeast are of moderate and rugged slopes in most of their outcrop areas. The central valley is almost rolling to moderately steep.

There are several mountain ranges found in Bohol. Two sets of them are found in the northeastern side of the mainland and located between the municipalities of Alicia and Ubay that generally trend to the north and south directions with a maximum elevation of about 404 meters above sea level. Farther east are two other mountain ranges, the Mt. Tanawan and Mt. Candungao with 460 meters and 500 meters elevation, respectively. Both are prominent landmarks rising as they do several meters above the surrounding landscape. From Mt. Tanawan going southwestward, it declines gradually in height until it finally joins southwestwardly the foothills of Calape. The main range of hills extending from Calape joins to the southwestwardly trending mountain range from the interior, runs south and out to Loon Peninsula terminating in Punta Cruz, Maribojoc. The Sierra Bullones Range follows roughly the trend of the south coast. The highest point of this range and in the entire province is Mt. Mayana in Jagna town with a height of 827 meters above sea level.

- **Slope Range**[3]

The province has six slope ranges from level to very steep. Level to nearly level sloping areas are mainly located along the coast and in the outer islands. The steep slopes are prevalent in the mountainous area, covered mainly by carbonate rocks (Wahig Limestone), volcanic extrusive and magmatic rocks (Ubay Volcanics and Jagna Andesite). *Map 2* and *Table 1* show the slope categories and the corresponding area covered in hectares.

Map 2. Slope Map, Bohol Province

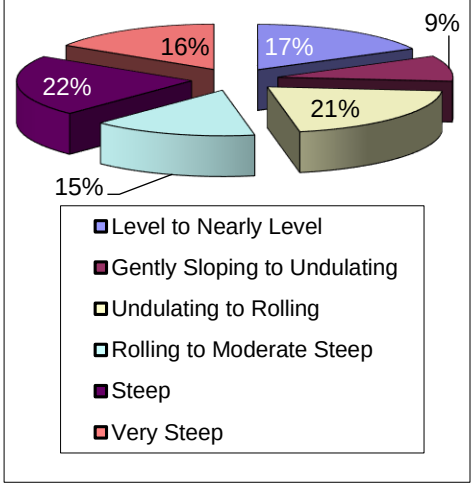


[2] Bureau of Soils and Water Management, DA, Region 7, Cebu City
[3] Philippine Land and Soil Management Atlas for Central Visayas

Table 1. Slope Classification, Bohol Province

Slope Category	Classification	Area Covered (has.)	% Distribution
0 - 3 %	Level to nearly level	71,289.00	17.31%
3 - 8 %	Gently sloping to undulating	37,519.00	9.11%
8 - 18 %	Undulating to rolling	84,902.00	20.63%
18 - 30 %	Rolling to moderately steep	62,473.00	15.17%
30 - 50 %	Steep hills& mountains	89,507.00	21.75%
50 % >	Very Steep hills	6,040.00	16.04%
Total		**411,726**	**100%**

Figure 1. Slope Classification in Bohol



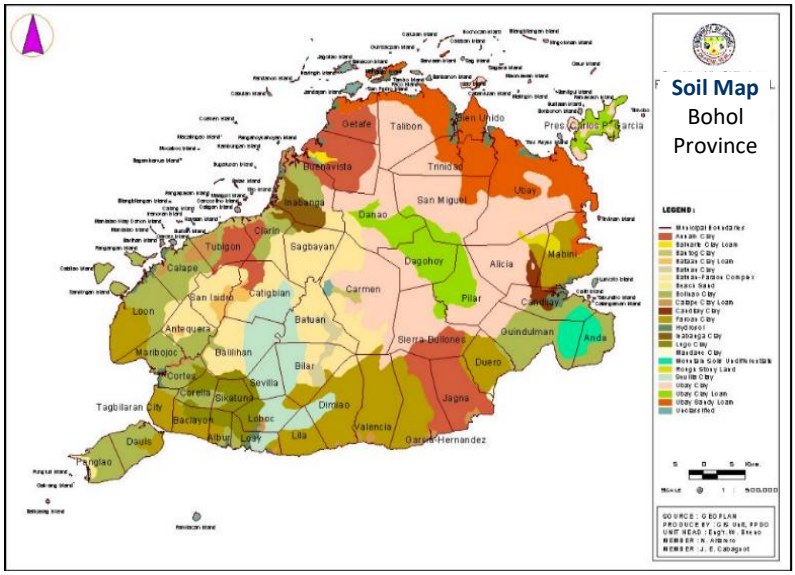
Source: ***BSWM, DA, Region7, 1992***

Soil Types[4]

According to the Bureau of Soils and Water Management (BSWM Region 7, Cebu) there are 22 different types of soil that can be found in Bohol, which differ mainly in physical, chemical and morphological characteristics. The soil depth is relatively thin ranging from a minimum depth of 24 centimeters to a maximum of 30 centimeters. Most of the hills and ridges have meager to no soil cover due to fairly rapid surface drainage over most of the province's land. Clay soils with fine textures are predominant throughout the island province. The dominant soil type is Ubay Clay found in the northeastern part of Bohol constituting 19.34 percent or 79,644 hectares of the total land area of Bohol.

The soil derived from all rock types are generally clay and silty with sandy soil limited in some parts to the coastal area. Soils on steep to very steep side slopes (18-50%) are clay loam to clay. Gently sloping to undulating (3-8%) is clay while the narrow alluvial valleys are silty clay to clay. The soils in the province are predominantly brown having moderate to high inherent fertility *(Map 3)*.

Map 3. Soil Map, Bohol Province



[4] Bureau of Soils and Water Management, Department of Agriculture 1992, Region 7, Cebu City

Existing Land Use and Vegetative Cover[5]

The province of Bohol has five major land uses, i.e., agricultural land, grassland/shrubland, woodland, wetland and miscellaneous land that includes built-up areas, reservoirs and mine sites *(Map 4)*. Almost one-half of the province's total land area is covered by grassland/shrubland, while one-third of its total area is utilized for agricultural activities. About 67% of Bohol's land is used for agriculture while forestland occupies 25% of the province's total land area.

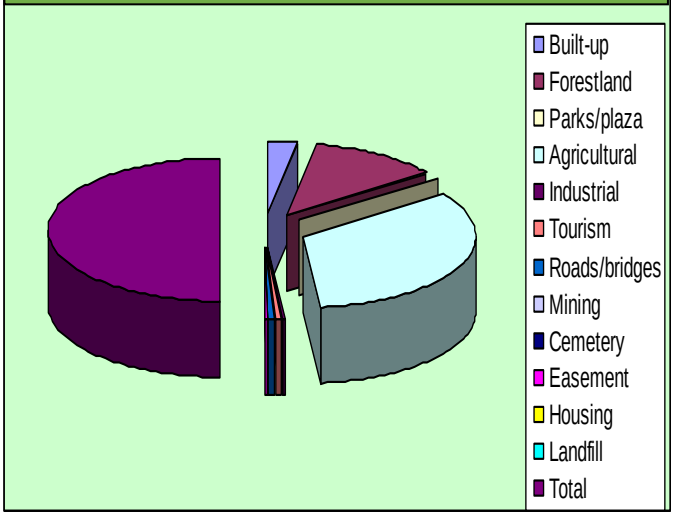
The province has a larger coverage of woodland (10.69%) compared to Cebu and some other provinces in the region. Wetland constitutes 4.92%, which includes mangrove, nipa, beach sands and fishponds while built-up areas comprise 10.22%.[6]

Table 2. Existing Land Use Distribution in Bohol

Land Use Category	Area	Percent
Built-up	21,882	5.32%
Forestland	101,271	24.61%
Parks/plaza	196	0.05%
Agricultural	273,950	66.56%
Industrial	2,672	0.65%
Tourism	3,663	0.89%
Roads/bridges	4,612	1.12%
Mining	1,138	0.28%
Cemetery	115	0.03%
Easement	1,916	0.47%
Housing	69	0.02%
Landfill	102	0.02%
Total	**411,586**	**100.00%**

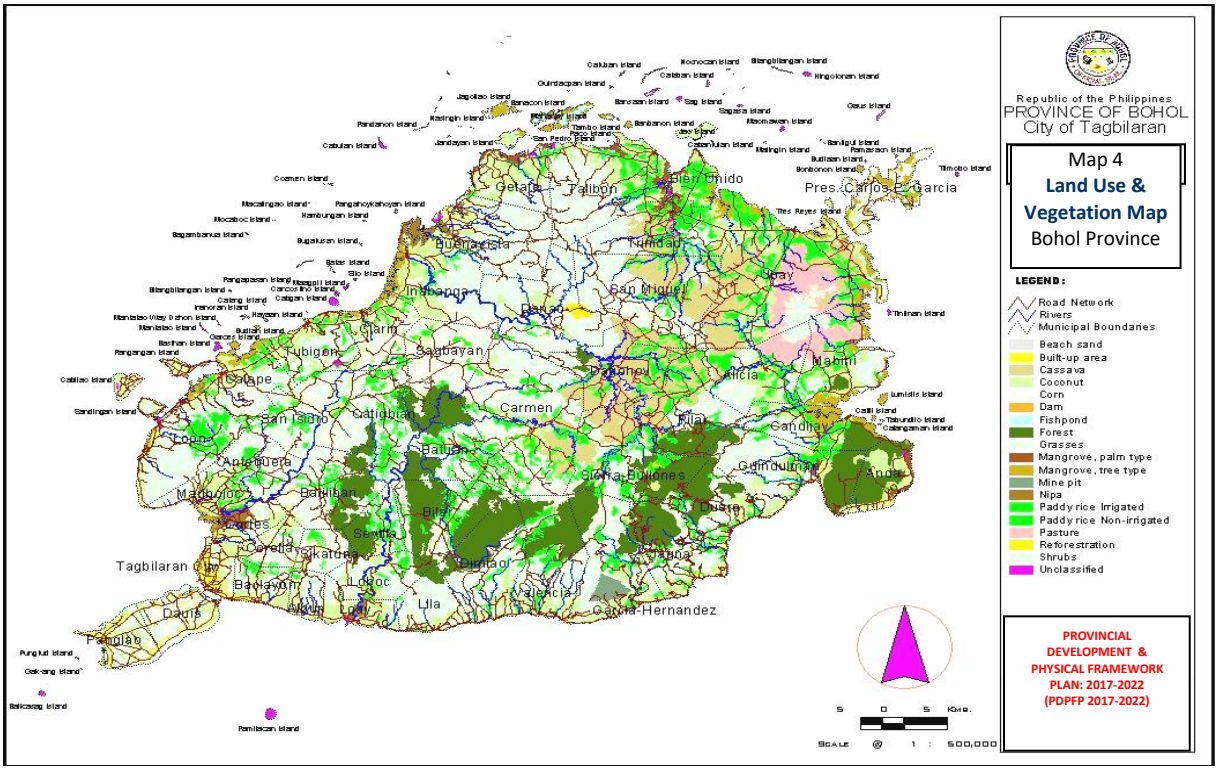
Source: ***Approved Municipal/ City Land Use Plan***

Figure 2. Present Land Use & Vegetation Cover, Bohol Province



[5] Bohol Ecological Profile of DENR, 1992
[6] Bohol Ecological Profile, DENR 1992

Map 4. Land Use and Vegetation Map, Bohol



Mangrove forests play a very vital role in shaping the ecology and economy of the Boholanos. Ecologically, mangroves are among the most productive coastal resources of Bohol as they serve not only as feeding, breeding and nursery grounds for many aquatic and terrestrial animals, but also as a protective structure against destructive waves and currents along the shoreline. Bohol has the biggest mangrove area in Central Visayas at 16,287.42 hectares. The biggest mangrove stands are located in Getafe, Talibon, Ubay, Pres. Garcia, Mabini and Candijay municipalities. The province also has the most diverse mangrove ecosystem in the Philippines with some 32 identified species. The largest and most diverse mangrove area is found in Cogtong Bay, which is bounded by Mabini and Candijay towns and covers an area of 2,200 hectares[7]. The most popular man-made mangrove forest in Bohol is around Banacon Island in Getafe town comprising an area of 1,750 hectares.

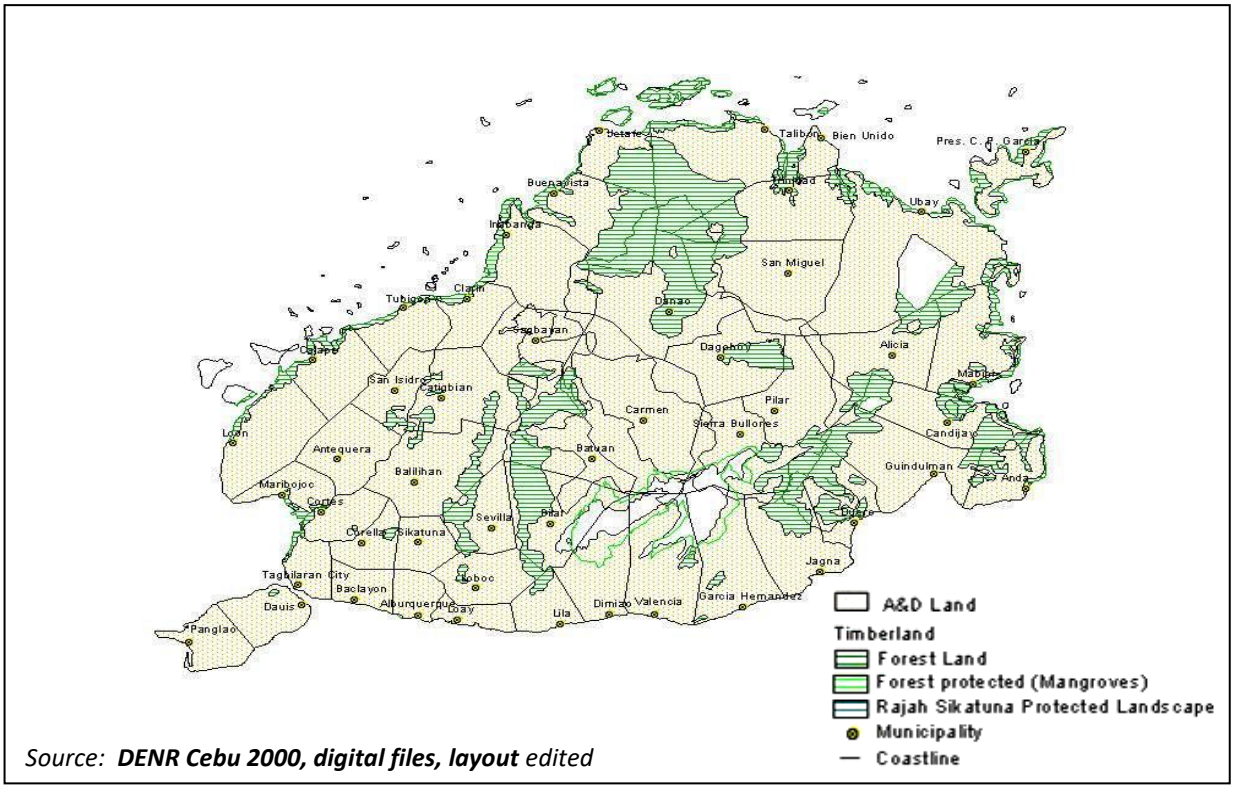
Land Classification[8]

The total land area of Bohol Province is approximately 411,726 hectares representing 43% of the region's land area and 1.4% of the total land area of the Philippines. About 75% are classified as alienable and disposable (A & D) land. The total area devoted to agricultural use is 273,950 hectares or 66 percent of the total land area of the province. Of the total agricultural area, 54 percent or 148,673 hectares is utilized for the planting of major crops such as rice, corn, coconut and rootcrops. The estimated land area as potential irrigable areas in the province is 40,800 hectares. The existing irrigable and non-irrigable rice lands are classified as priority focus for agricultural production.

[7] Bohol Coastal Environment Profile of 2002
[8] Department of Environment and Natural Resources (DENR), 2000

Bohol's public forestland or timberland occupies an area of about 101,271 hectares or roughly 25 % of its total land area. Almost 15% or 75,766 hectares of the province's land area is under protection through NIPAS System and are classified as environmentally constrained and critical areas.

Map 5. Land Classification Map, Bohol Province



Source: ***DENR Cebu 2000, digital files, layout*** *edited*

Physical Resources

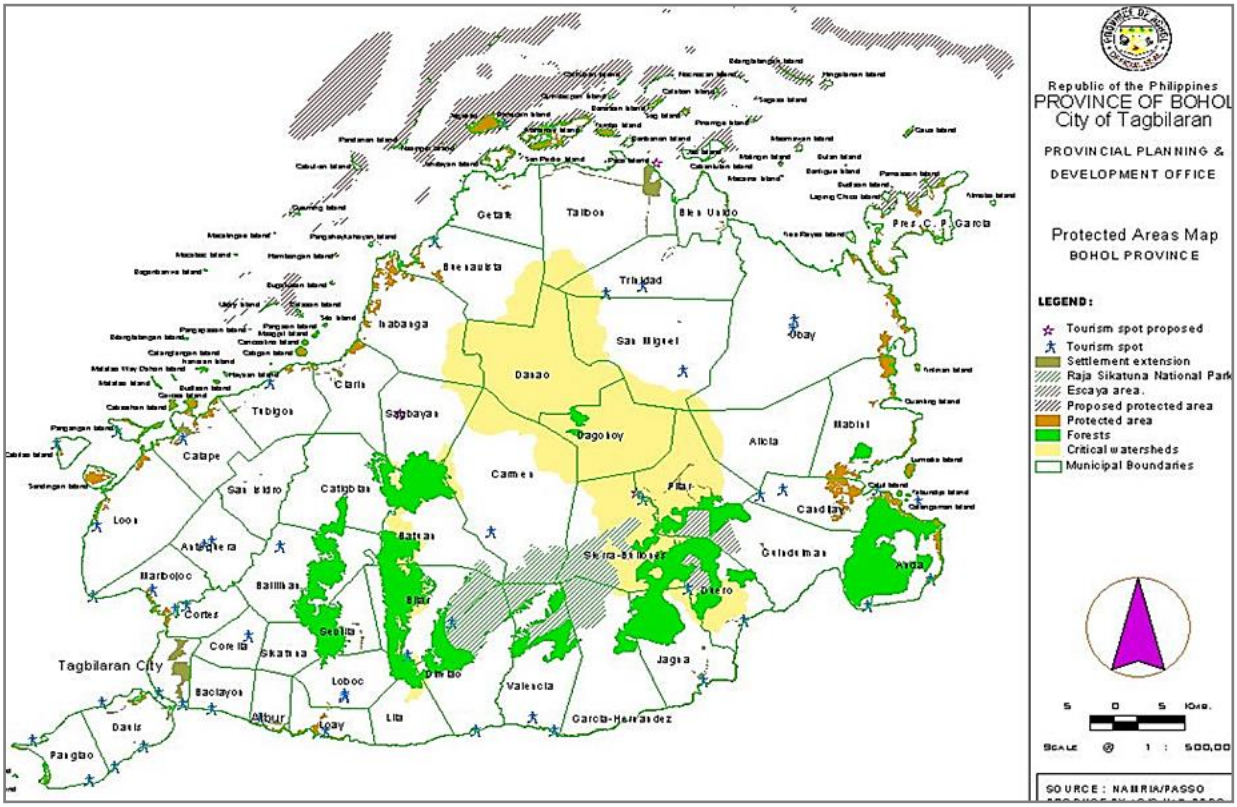
Bohol is endowed with a rich biodiversity and natural resources that play an essential role in guiding its future development for agriculture, industry, tourism, settlements, culture and infrastructure in both the medium and long-term time frame. It has a high diversity of flora and fauna found in the different ecosystems of the island such as its forests, reefs, farmlands, in zones along creeks and rivers, caves and marine areas. The quality of life in any given area is extremely dependent on the vibrant condition of these ecosystems and biological resources.

Bohol has a total land area of 411,726 hectares with 654 kilometers of coastline and 6,245 square kilometers of municipal waters covering its major islands and islets. The province is within four major resource boundaries, i.e., upland/forestry, lowland/agriculture, coastal/marine and water boundaries.

Bohol's water supply system for domestic, agricultural and industrial uses is mainly based on 2,224 springs, 59 rivers and 200 creeks. There are 22 rivers basins/watersheds that are valuable sources of water for drinking and irrigation. Surface water from rivers and streams in these basins are impounded and distributed for irrigation, electric generation, and industrial use as well as for domestic use.

Surface water in Bohol feeds its watersheds. There are 3 major watersheds in the province that have been declared as protected areas under the NIPAS. The largest reserve is the Wahig-Inabanga Watershed covering 16 municipalities with an aggregated area of 14,000 hectares. The second largest, and first to be proclaimed as a watershed forest reserve in Bohol, is the Loboc Watershed with an area of 10,450 hectares, part of which is inside the Rajah Sikatuna Protected Landscape. The third is the Duero Watershed (that covers an area of 3,620 hectares. The map below shows the location of these watersheds.

Map 6. Protected Areas Map, Bohol Province



Bohol's public forestland or timberland occupies an area of about 101,271 hectares or roughly 25 % of its total land area. Almost 15% or 75,766 hectares of the province's land area is under protection through NIPAS System and are classified as environmentally constrained and critical areas.

In terms of biodiversity assets, Bohol has a high biodiversity level of plant species categorized as: upland, mangrove, coastal areas, cave entrances, cultivated cropland and intensively used lands. Several plant species noted to be abundant before are already extinct, others are becoming rare.

The Province has the biggest mangrove forest in Southeast Asia which is located in Banacon, Getafe. There are about 1,200 species of crabs and shrimps with over 6,000 mollusks species found in 15,000 hectares of Baclayon, Dauis and Panglao (Bohol Marine Triangle). Bohol has one of the the six (6) world-renowned Double Barrier Reefs-the Danajon Double Barrier Reef, covering 13 municipalities. The province has a total of 1,920 hectares of coral reefs and its coastal ecosystem provides the major source of animal protein for the populace.

Biodiversity

Bohol has a high biodiversity level of plant species categorized as: upland, mangrove, coastal areas, cave entrances, cultivated cropland and intensively used lands. Several plant species noted to be abundant before are already extinct, others are becoming rare. Data about Bohol's terrestrial and freshwater flora and fauna is scarce except for studies conducted in Rajah Sikatuna Protected Landscape (RSPL) conducted by Soil and Water Conservation Foundation, Inc. (SWCF) and University of Bohol Community Development Foundation, Inc. (UBCDFI).

The greater part of the tourism industry is based on Bohol's biodiversity. Unless we get very serious about conserving and protecting it, we will lose the tourism to other sites in the Philippines and other Southeast Asian Countries.

There is a diverse wildlife species in the province including: 33 mammals, 29 reptiles, 8 amphibians, several bat species, the Philippine tarsier and flying lemurs, 192 butterflies, 29 ants, 20 dragon flies, 116 birds species belonging to 28 families, 411 fish species and 60% of country's marine mammal species found in Pamilacan, Baclayon and almost 16% of deptirocarp species including the rarest in the country (30% of the total national deptirocarp) are found in Bohol (Source: SWCF Research Study & BMT 2006).

However, the biodiversity is under threat due to persistent and excessive utilization and sale of different species coupled with conversion of forests to agricultural and urban areas, monoculture farming with exotic species, farming on steep hillsides and mountains, coral reef destruction and over-fishing. In fact, several plant species noted to be abundant before are already extinct on the island while others are becoming rare and endangered.

- **Caves in Bohol**

Caves, we are losing them to exploitation for tourism, guano collection, swift-nest collection, vandalism. Maybe one in ten caves could be used for tourism purposes but only after careful study as to how to use it. In the meantime, with present activities, the bats move out, swiftlet young are killed and surface areas deforested causing siltation in the caves.



- **Flora in Cultivated Croplands and Intensively Used Lands**

Generally, the extremely diverse and dispersed vegetation in open fields could well evolve into forests without human intervention. However, most of these potential lands are within alienable and disposable areas and if these are within timberland areas, they are covered under the Integrated Social Forestry Program with a Certificate of Stewardship Contract (CSC). Constant cultivation and burning inhibit forest evolution and encourage the proliferation of grasses such as

cogon (Imperata cylindrical) and other shrubs like kanding-kanding (Lantana camara). To develop systems closer to natural forests, agroforestry shall be established in these areas.

Data about terrestrial fauna in Bohol are scarce. In the few studies conducted in Rajah Sikatuna Protected Landscape eight mammal species have been identified. These do not include the recent identification of 14 bat species (including one endangered species) inside the protected area. Forest regeneration by bats as keystone species for the reason that they are pollinators and seed dispersers of greater ecological value.

Most fauna classes such as reptiles, amphibians and insects have not been studied. Recent bird studies have positively identified 56 bird species with 18 more species still unidentified. Actually, recorded bird observations in Bohol, mainly near Bilar, go back to the mid-1800. However, there are now birds previously seen on the island that are not positively identified. This includes the Philippine Cockatoo last seen in RSPL in 1995. The most well-known animal in Bohol is the Philippine tarsier, one of the smallest primates in the world. Although not on international endangered lists, it is fast losing its habitat areas on the island. This is true of Bohol's flying lemurs, civet cats, wild pigs, grey squirrels and Philippine monkies.

Water Resources[9]

Bohol's water supply system for domestic, agricultural and industrial uses is mainly based on 2,224 springs, 59 rivers and 200 creeks. There are 22 rivers basins/watersheds that are valuable sources of water for drinking and irrigation. Surface water from rivers and streams in these basins are impounded and distributed for irrigation, electric generation, industrial use and potable water. The province has an average rainfall varying from 1,331 mm/yr along the coastal areas to 2,006 mm/yr in the mountainous part of the island that supplies the island.

At present, the quality of water in the province's catchments and streams is poor and will continue to deteriorate as human development activities increase. The water resources should be managed in order to meet the growing demand for domestic, agricultural, tourism, industrial, recreational and commercial uses. Proper management should prevent public health hazards associated with increasing incidence of water contamination and pollution from negligent human activities.

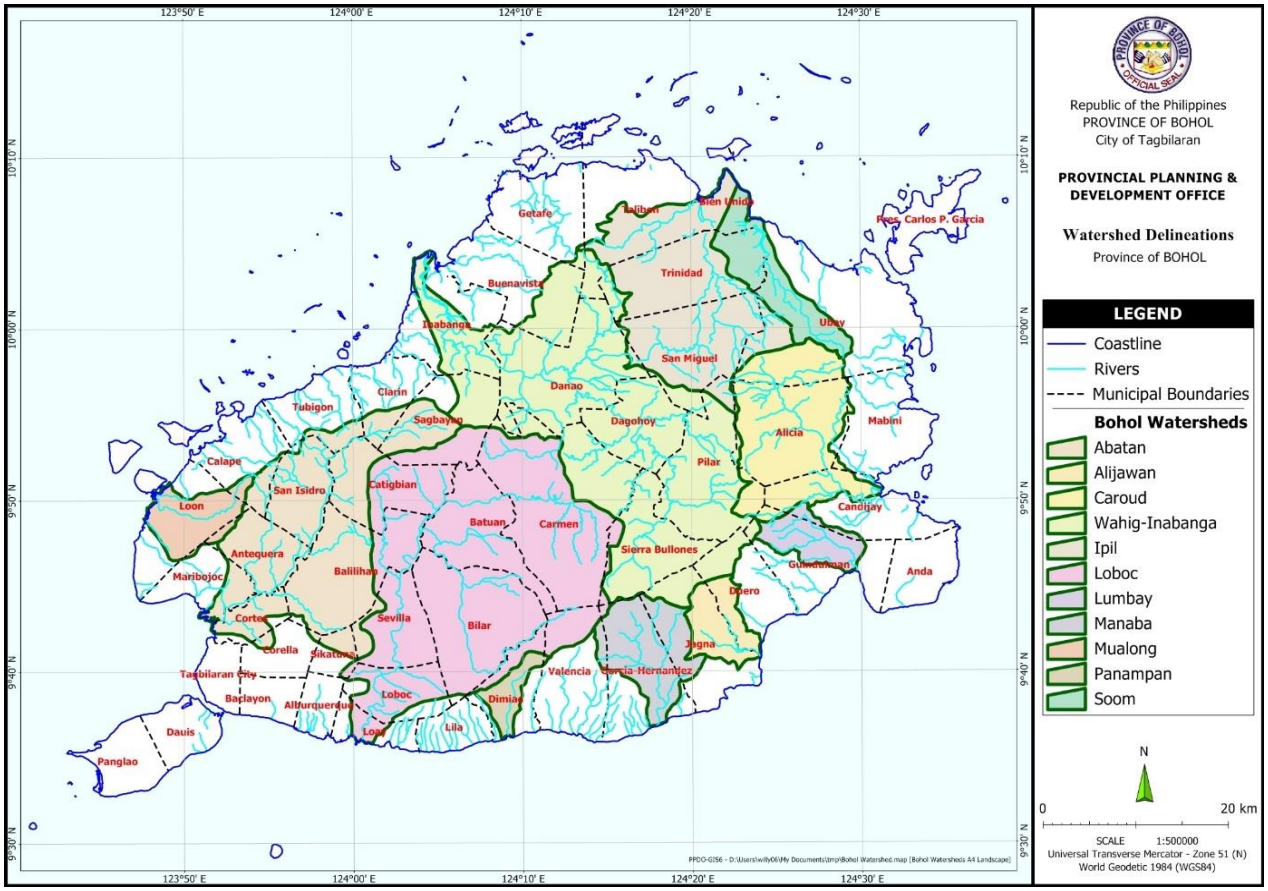
- **Surface Freshwater and Groundwater Resources**[10]

Bohol has eleven watersheds (see Table 8 Watershed Map). The biggest one is Inabanga Watershed followed by Loboc, Abatan, Ipil, Carood, Manaba, Soom, Mualong, Alijawan, Lumbay and Panampan watersheds. Three of the major watersheds are declared as protected areas under the NIPAS. The largest reserve is the Wahig-Inabanga Watershed (PP No 468, amended to PP No. 223), covering 17 municipalities with an aggregate area of 14,000 hectares. The second largest, and first to be proclaimed as a watershed forest reserve in Bohol, is the Loboc Watershed (PP No. 450) with an area of 10,450 hectares, part of which is inside the Rajah Sikatuna Protected Landscape (PP No. 127 as amended April 2000). The third is the Duero Watershed (PP No. 881) that covers an area of 3,620 hectares.

[9] *BW4SMP Master Plan of Bohol 1999*
[10] *DENR Bohol and Region 7*

The rivers and river estuaries are used in many ways. They commonly serve as harbors and navigation routes, areas for aquaculture development (Inabanga River), fishing and sand quarrying areas (Abatan River), and recreation and tourism (Cambuhat River in Buenavista and the Loboc River in Loboc and Loay, Bohol). They also provide water for irrigation (Malinao Dam on the Wahig River that feeds the Bohol Irrigation Project Stage I) as well as domestic and industrial uses such as power supply (Loboc River hydro-power plant and mini hydro-power plant in Balilihan).

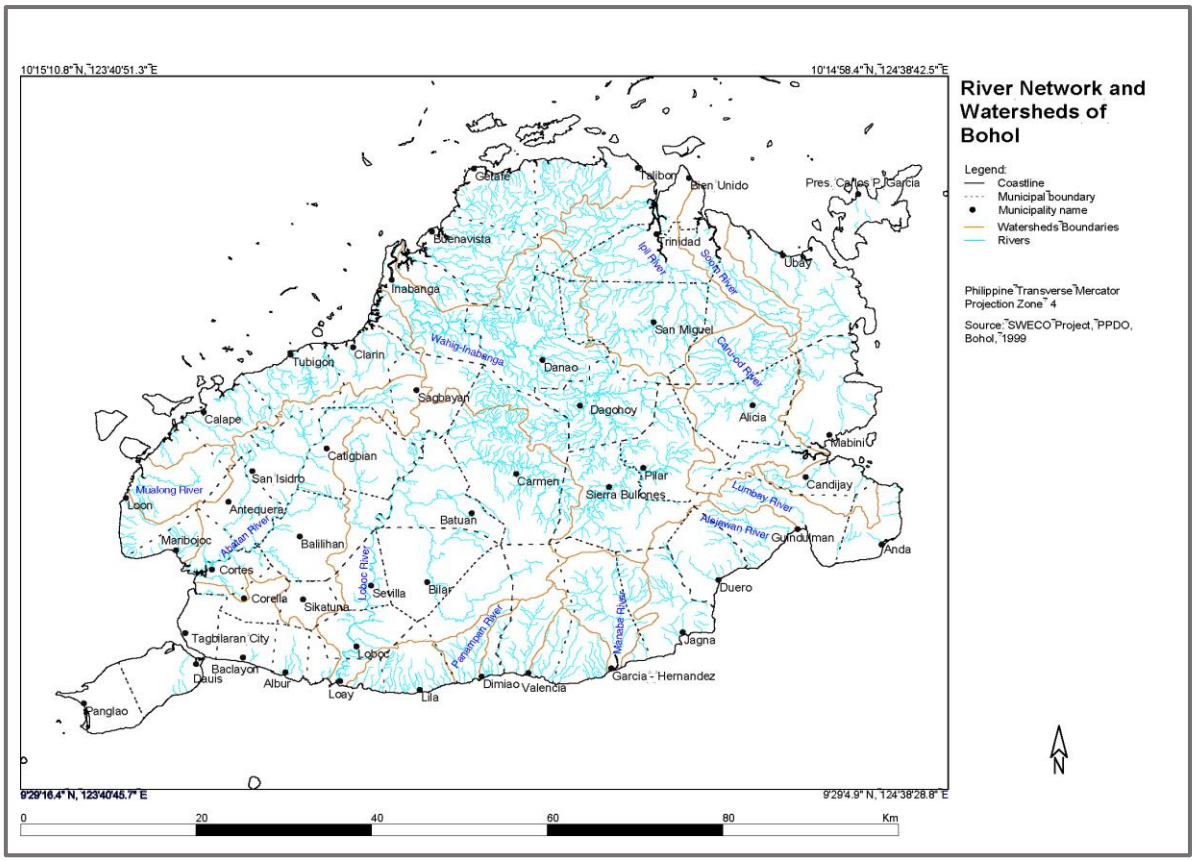
Map 7. Watershed Map, Bohol



- **Protection of Bodies of Water**

Water is a vital resource for Bohol's future prosperity. Its sustainability and management for economic, social and environmental gains underpin activities in government, industry, business and communities. The Bohol Environment Code contains a number of policies intended to preserve, protect and conserve the island province's water resources, including minimization of pollution in ground and surface waters. Data on surface and groundwater quality are scarce in the province. Based on the survey of wells conducted by SWECO revealed that the water for drinking do not satisfy the water quality standards for safe and potable. An estimated of 5000 wells have water quality problems caused by higher salinity content, excessive amounts of iron and manganese and bacteriological pollution *(see River Network Map below)*. Water for home consumption is often prone to contamination due to inadequate sanitation practices and characteristics in limestone inherent substrate (karst). It is important to designate strict water production areas for drinking water purposes and establish buffer zones to protect the same from activities that will harm them.

Map 8. River Network Map, Bohol

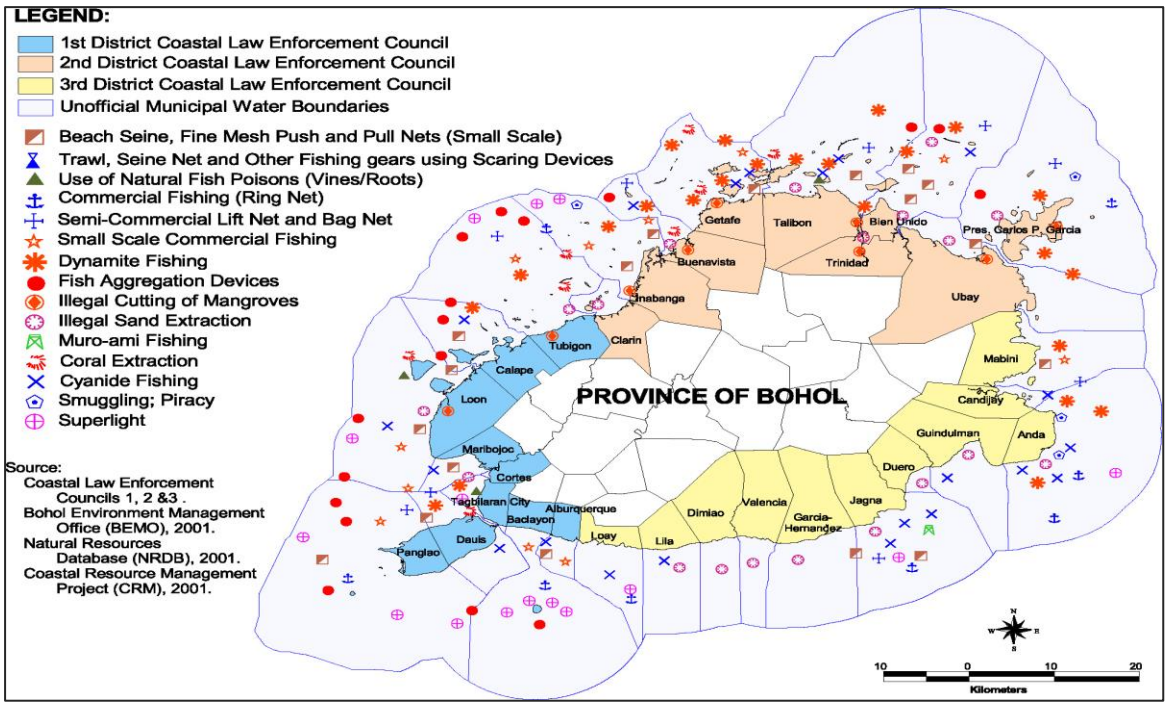


Coastal/ Marine Resource Management

Bohol has a total area of 624,506 hectares of municipal waters (6,245.06 square kilometers) and a total shoreline length excluding offshore islands of 654 kilometers.[11] It has 30 coastal municipalities with 304 coastal barangays and 72 islets. Approximately 33 percent of Bohol's population is directly dependent on fishing and fisheries-related activities as major sources of income (see Maps 10 and 11). Based on the records of the Regional Office of BFAR, the total area granted for fishpond development is 2,909.97 hectares. This data is, however, still subject for verification as BFAR is conducting an on-going inventory of fishpond areas in Bohol.

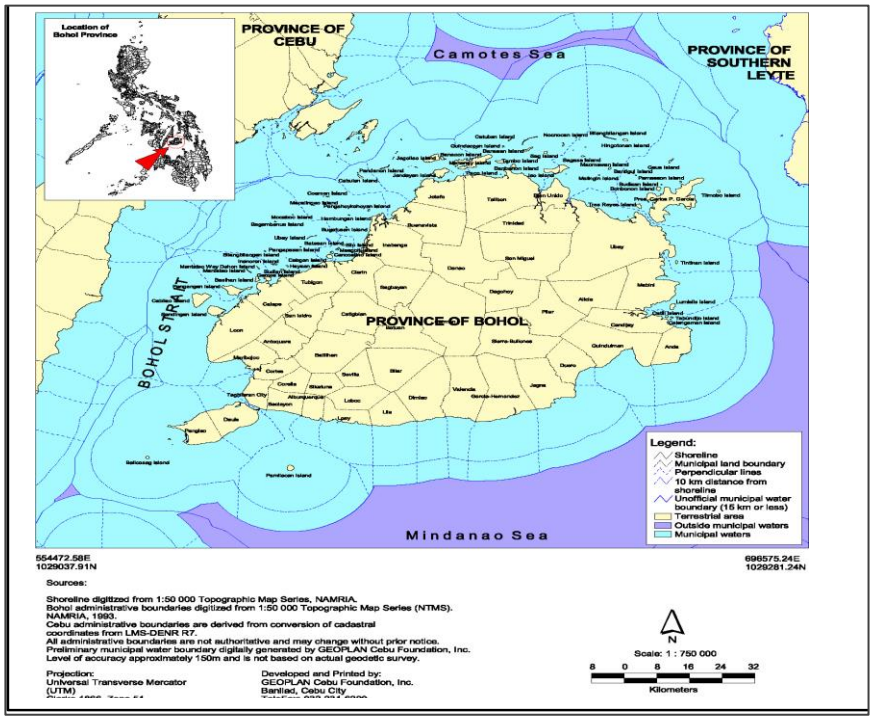
[11] *Bohol Coastal Environment Profile 2002*

Map 9. Coastal Resources Map of Bohol



The joint DA/BFAR and DENR General Memorandum Order No. 3, Series of 1991, tried to respond to the problem of idle, unproductive, abandoned and/or illegal fishpond areas by reverting them into their original classification of timberland. Fishpond areas with FLAs that are found to be violating this policy will be reverted to the administration of DENR. All applications within timberlands, which have not been released for fishpond development by DENR, shall automatically be returned without being acted upon. However, not even one idle unproductive, abandoned or illegal fishpond has been reverted to the category of timberland.

Map 10. Bohol Municipal Waters



- **Coastal Habitats**

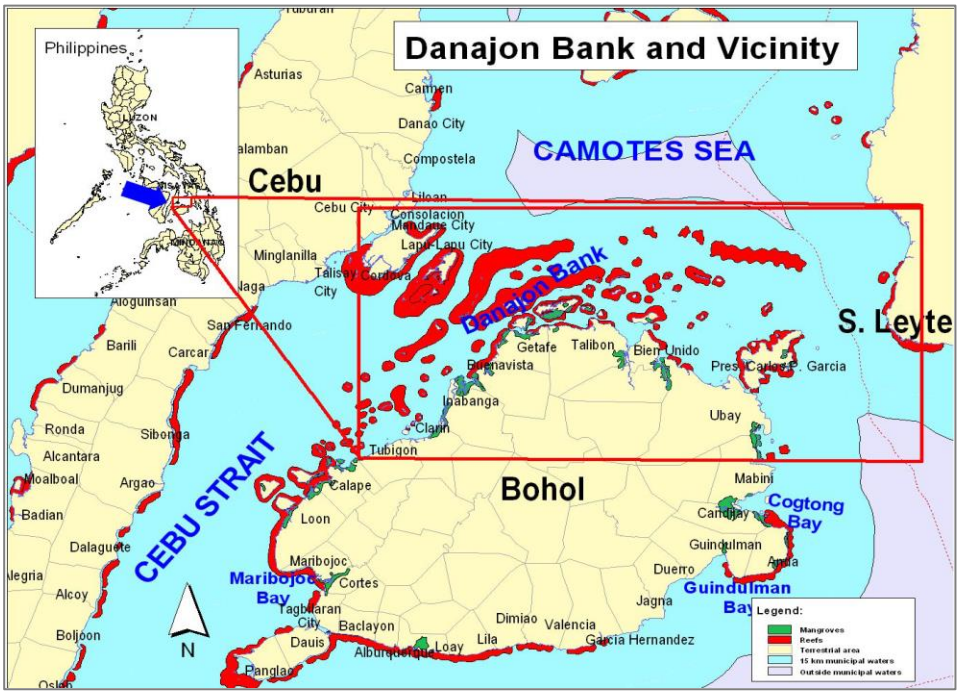
Bohol boasts of its white, sandy beaches that are commonly used as sites for tourism development (hotels, restaurants, beach resorts among others), fish and boat landings, and as a source of construction materials. These areas are evidence of healthy coral reef ecosystems. Many environmental issues focus on the beach ecosystem as it is prime land for commercial and household development due to its aesthetic value. It attracts the interest of many people to the shoreline, mangroves, coral reefs and fisheries that inhibit the near shore waters.

The area covering municipal waters is measured 15 kilometers seaward from the furthest inhabited shoreline to one kilometer inland if the shoreline contains estuaries, mangrove forests or marshlands.[12] This means the total municipal waters of the 29 towns and one city is two and one-half times larger that Bohol's land area. It also indicates that there is a remarkably huge area to consider in planning, yet only a few coastal LGUs have started to manage coastal areas. With the enactment of the Philippine Fisheries Code of 1998 and the Bohol Environment Code, the national government recognized that a paradigm shift is needed to adequately provide for the development, management and conservation of coastal resources.

- **Danajon Bank Double Barrier Reef**

The Danajon Bank is a double barrier reef that runs parallel to the northern coast of Bohol and is proposed as a designated provincial rehabilitation, conservation and protection area (see Danajon Map). The Danajon Double Barrier Reef is one of the six double barrier reefs in the world and the only one in the Philippines which could likely be nominated as national heritage site. Because of its unique coral reef ecology, Danajon Bank is a major breeding ground and habitat of many different species of fishes, marine mammals, mollusks, seagrasses and seabeds.

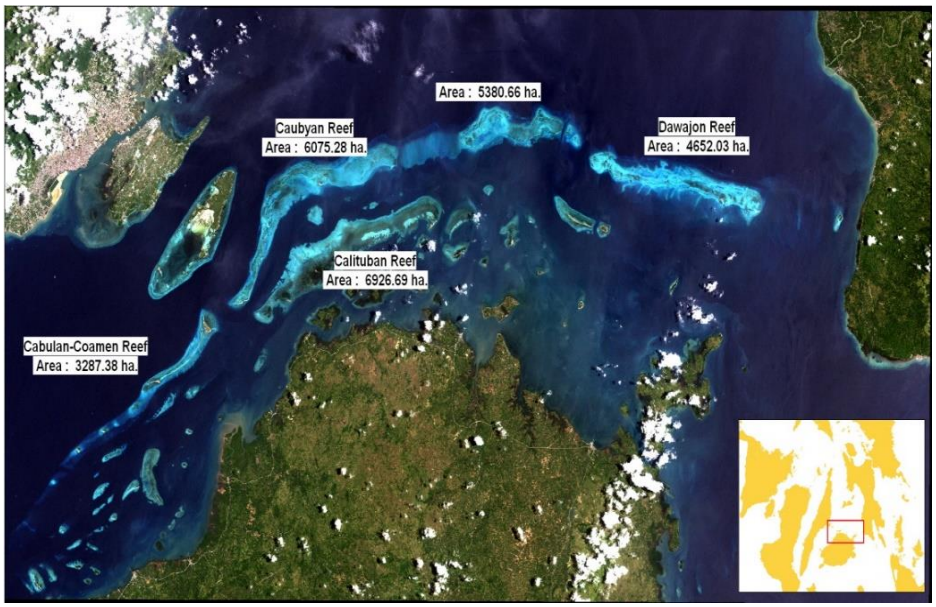
Map 11. Map of Danajon Bank Double Barrier Reef and its Vicinity



[12] *Republic Act 8550 (The Philippine Fisheries Code of 1998, Chapter 1, Section 4(58))*

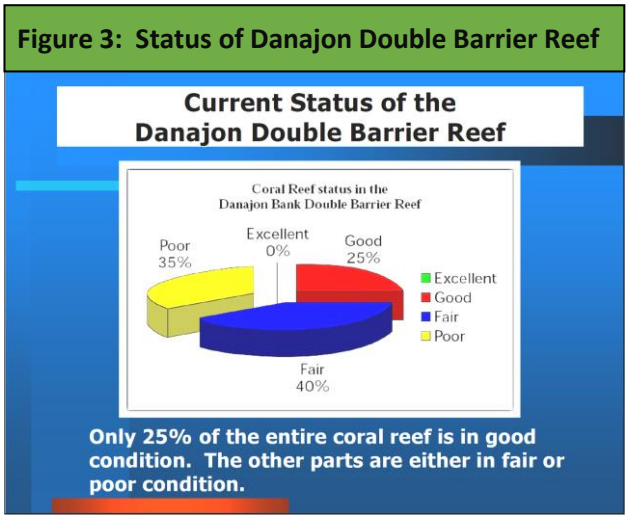
It is composed of the outer Caubyan and inner Calituban barrier reefs. It runs along the coastline of four municipalities, Getafe, Bien Unido, Talibon and Ubay in the south and into the Camotes Sea in the north. To the west it runs all the way to Cebu and to the east and northeast to Leyte and Southern Leyte. The establishment of the protected reef area should serve as an excellent example of how northern coastal towns of Bohol, from Tubigon to President C. Garcia can work together to implement an inter-provincial Coast Resource Management program to protect and preserve this unique treasure. However, marine resources like coral reef ecosystems, seagrass beds, mangrove forests, estuaries and inter-tidal seascapes are fragile and have limited potential if they are utilized improperly. Because these ecosystems are stressed by increasing population, environmentally-degrading consumption patterns, pollution wastes and human encroachment in coastal zones, there is an urgent need to protect and conserve the integrity of the ecosystems in order to continue to provide benefits to the present and future generations.

Map 12. Map of Danajon Bank Double Barrier Reef



- **Status of Coral Reefs and Sea Grass Beds**

Figure 3: Status of Danajon Double Barrier Reef



Coral reefs, commonly known as rainforest of the sea, while serving as a buffer against underwater current also constitute one of the provinces most productive and diverse ecosystems. They cover an estimated area of 1,920 hectares that include the Danajon Bank Reef in Inabanga, Buenavista, Getafe, Talibon, Trinidad, Bien Unido, Ubay, President Garcia and Mabini. However, the state of the province's reefs is classified as 35% poor condition, 40% fair condition, only 25% in good condition and o% excellent (BFAR, UP-MSI, CRMP and DENR surveys, FISH Project-USAID Survey 2005). This means that Bohol has already lost more than three quarters of its known corals. This has had a significant effect on the breeding grounds of many marine biodiversity. Significant human threats to coral reefs include collecting and exporting, blasting, use of cyanide, siltation, boat anchorage (especially diving

boats), illegal fishing methods, storms, coral bleaching due to increase temperature, pier wharf and breakwater and other construction activities.

Initiatives to Danajon Bank under the Philippine Rural Development Project – Global Environmental Facility (GEF) (PRDP-GEF)

Bohol is one of the six (6) pilot provines in the Philippines funded by the Global Environmental Facility (GEF). It is a 5-year World Bank grant package included under the Philippine Rural Development Project. The project aims to strengthen the conservation of the coastal and marine base in targeted program areas through biodiversity conservation and fisheries resources management. Among the pilot municipalities for the GEF sites are Ubay, Talibon Pres. Carlos P. Garcia, Bien Unido and Buenavista.

Risk Profile[13]

The Province of Bohol is prone to a wide range of natural and human-induced hazards such as flooding, rain-induced landslides, earthquake, storm surges, liquefaction, fire, air and water pollution, and contaminated land. Inappropriate location and design of developments can aggravate exposure to and impact of hazards and climate change impact like sea-level rise, storm surges, among others.

Hydrometeorological Hazards

Bohol's climate, as classified by PAGASA, belongs to Corona's 4th Type which is characterized by rainfall more or less evenly distributed throughout the year. Intensification of the southwest monsoon usually occurs during the months of July to October. The rainfall varies from about 1,200 mm/yr. around the coast to slightly more than 2,200 mm per year in the mountainous areas in the province. Based on the climatological records of Tagbilaran City weather station, the province has an annual average of 161 rainy days. Average rainfall and trend have illustrated a declining trend of 250 mm over a period of 35 years of about 7mm a year due likely to climatic change in the Southeast Asian Region. The coastal area of the province is warm in contrast with the interior part, which is colder especially during the night. Mean temperature is at 27.40 degrees Celsius.

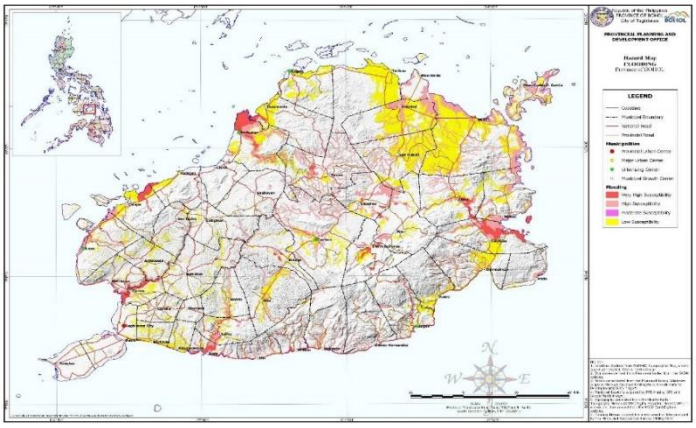
- ***Flooding***

Flood-prone areas in Bohol include the influence areas of the eleven major rivers namely: Inabanga, Loboc, Abatan (Maribojoc), Moalong (Loon), Ipil (Trinidad), Soom (Trinidad), Carood (Mabini), Lumbay (Pilar), Alejawan (Duero), Manaba (Garcia) and Panangatan (Dimiao) Rivers. Aside from the areas where the rivers are located, the following towns were sites of flooding in 2011, namely: Jagna, Valencia, Guindulman, Alicia, Bien Unido, Clarin, Sagbayan, and Antequera. These areas adjacent to the rivers have been the subject of seasonal destructive flash flooding which caused substantial damage to agricultural land and crops, infrastructure, dwelling and occasional loss of lives. The primary factor which contributes to the occurrence of these hazards is the denudation of the forest cover in the upper watershed areas and river tributaries. This causes heavy siltation resulting in the incapability of the river waterways to handle heavy flash flood water flow from the rain catchment area (PDPFP 2016-2028).

[13] Bohol Provincial Disaster Risk Reduction and Management Plan 2023-2025

Based on the disaster risk analysis data as of 2020 (PDPFP 2016-2028) and on historical data, the municipalities with agriculture at risk to flooding are the following: Candijay, Alicia, Pilar, Batuan, and Mabini in terms of Agri-fisheries while Buenavista, Mabini, and Sevilla for fisheries alone, and they are considered as priority LGUs. Livestock at risk are mostly in Alicia, Candijay, Guindulman, and Mabini.

Map 13. Flood Susceptibility Map, Bohol Province

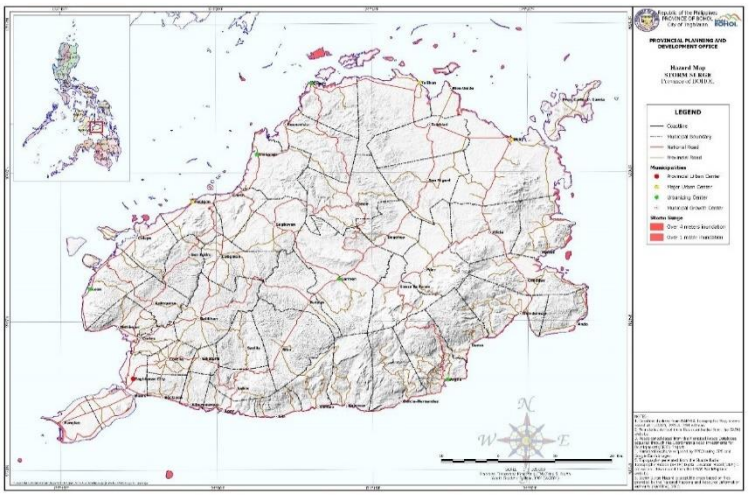


Source: ***PPDO Bohol***

- ***Storm Surge***

Storm Surge, as defined by the PAGASA, is **the abnormal rise in sea level that occurs during tropical cyclones**. It is caused by strong winds and low atmospheric pressures produced by tropical cyclones. Most of the storm surge-prone areas are located in the southeastern, southwestern, northern and western portions of Bohol. The inundation coverage is estimated based on geomorphologic analysis and observation in the areas during interviews/surveys. The surge heights are computed using the data gathered during surveys in reference to the significant tropical cyclone occurrences and from storm surge model results.

Map 14. Storm Surge Hazard Map, Bohol Province



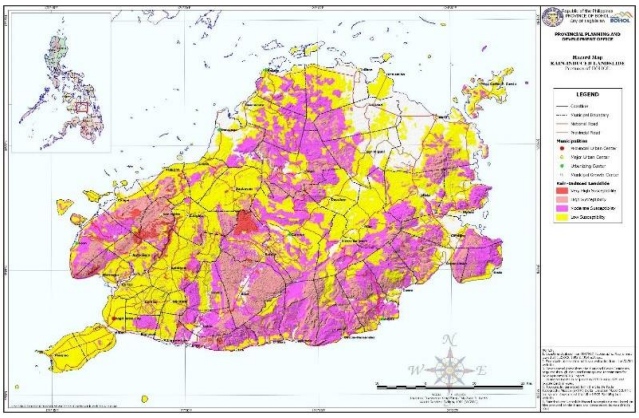
Source: ***PPDO Bohol***

The 30 coastal LGUs (Tagbilaran City, Dauis, Panglao, Baclayon, Alburquerque, Loay, Lila, Dimiao, Valencia, Garcia Hernandez, Jagna, Duero, Guindulman, Anda, Candijay, Mabini, Ubay, Trinidad, Pres. Carlos P. Garcia, Bien Unido, Talibon, Getafe, Buenavista, Inabanga, Clarin, Tubigon, Calape, Loon, Maribojoc, Cortes) with island barangays are prone to storm surge if aggravated by strong typhoons (PDPFP 2016-2028). Among the listed municipalities: Getafe, Panglao, Talibon, Calape, Tubigon, Inabanga, Candijay, Ubay, Loon and Tagbilaran City are the notably with high population at risk.

Based on current data available, 30 coastal LGUs are under high risk in agricultural areas to Storm Surge. The highlighted municipalities with agriculture at risk of storm surge are Talibon, Bien Unido, Ubay, Pres. Calros P Garcia, Panglao, Baclayon, Getafe, Anda, Mabini and Guindulman based on observation and discussions. Fish cages and seaweeds production areas are mostly affected.

- ***Rain-Induced Landslide***

Map 15. Rain-Induced Landslide Susceptibility Map, Bohol Province



Source: ***PPDO Bohol***

Landslides, as defined by the Philippine Institute of Volcanology and Seismology (PHIVOLCS), **is the mass movement of rock, soil, and debris down a slope due to gravity**. Landslides triggered by intense rainfall are called Rain-Induced Landslides (RIL).

There are seven (7) municipalities in the province which are determined to be the priority LGUs considering frequent landslide occurrence and their severity, namely: Jagna, Valencia, Sagbayan, Sierra Bullones, Garcia-Hernandez, Dimiao and San Isidro. In addition to these, the municipalities of Duero, Bilar, Loboc and Sevilla are also considered to be more exposed than the risk analysis data and considered the priority LGUs as well.

The agriculture areas at risk to RIL are highly observed in Sagbayan, Sierra Bullones, Jagna, Garcia-Hernandez and Duero, based on experience. A total of 176,775 hectares are potentially affected by rain-induced landslides in Bohol Province.

- ***Drought/El Niño***

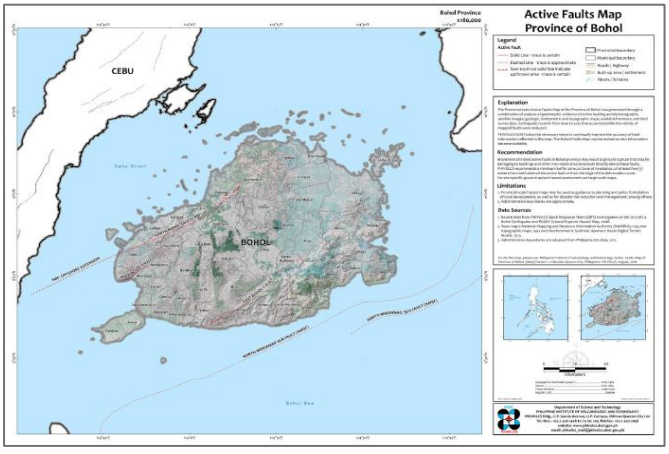
El Niño is the projected increase in temperature that will result in drought and drought-like conditions in the municipality. Drought is projected to have a high impact on the municipalities with mostly agriculture and fisheries.

Geological Hazards

Outline of Geological Hazards in Bohol

Geological hazards result from geologic processes acting on or beneath the earth's surface. These include earthquake, earthquake-induced hazards (ground shaking, ground rupture, earthquake-induced landslide, liquefaction, and tsunami), and volcanic hazards.

Map 16. Active Fault Map, Bohol Province



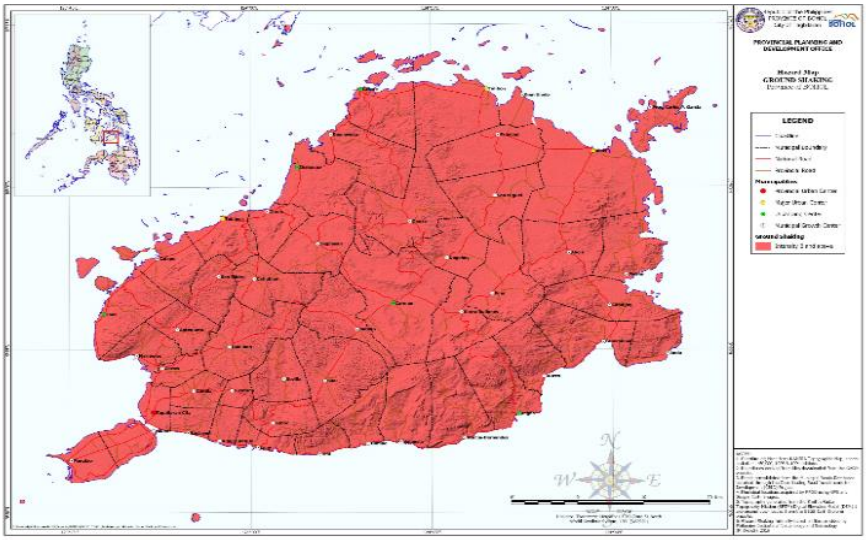
Source: ***PPDO Bohol***

Bohol is prone to geologic hazards like ground shaking, liquefaction, earthquake-induced landslide and tsunami because of the presence of East Bohol Fault and another fault located in the Bohol Sea going to Mindanao Sea facing the southern part of Bohol. The presence of Negros Trench and PFZ Central Leyte Fault may also contribute to the generation of earthquake. Geologic hazards result from geologic processes acting on or beneath the earth's surface. These include movement of plates in the earth's crust or from local concentration of heat and are a source of hazards to people and their natural and built- up environment on the earth's surface.

- ***Ground Shaking***

The immediate effect of an earthquake is **Ground Shaking**. PHIVOLCS describes ground shaking as the *disruptive up, down and sideways vibration of the ground during an earthquake*.

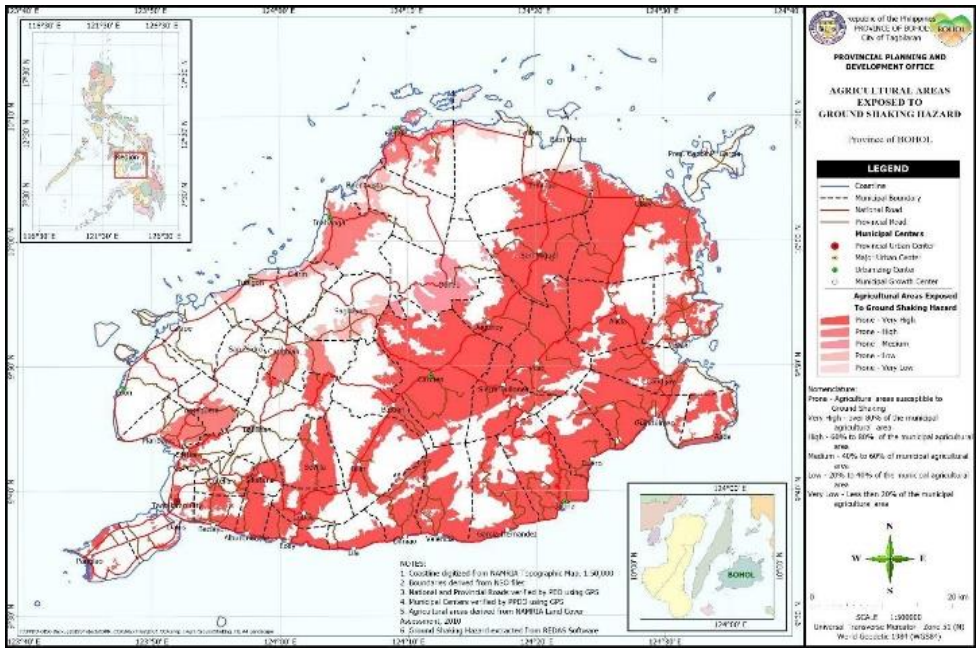
Map 17. Ground Shaking Hazard Map, Bohol Province



Source: ***PPDO Bohol***

According to recent hazard map, majority of the provincial agricultural lands are highly exposed to ground shaking with a total exposed agricultural area of about 168,307 hectares or 70% of the total agricultural land area is within the very high to high exposure area.

Map 18. Agricultural Exposure Map to Ground Shaking, Bohol Province



Source: ***PDPFP 2016-2028, PPDO Bohol***

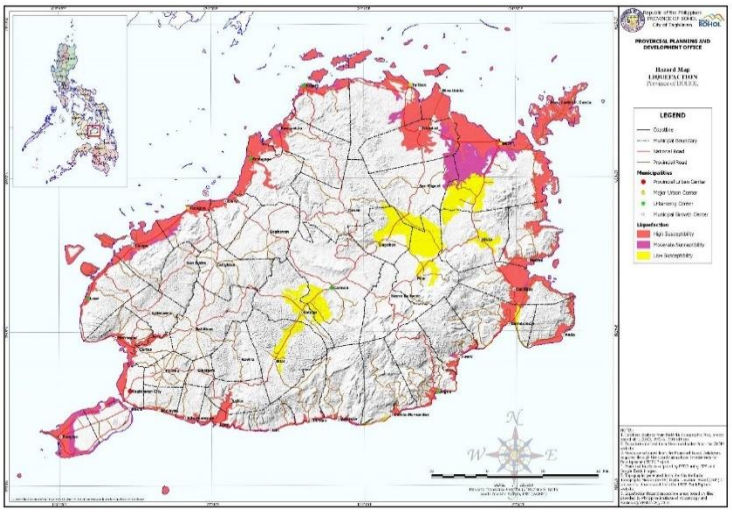
At very high risk to ground shaking are the 36 municipalities and one (1) city of the province of Bohol with agricultural areas exposed to ground shaking. Out of these towns, the 27 municipalities and one (1) city have their entire agricultural areas highly exposed to ground shaking. At risk are the municipalities of Carmen, Ubay, Pilar, San Miguel, Alicia, Guindulman, Trinidad, Sierra Bullones,

Candijay, Dagohoy, Garcia Hernandez, Jagna and Valencia having more than 10,000 hectares of their agricultural area highly exposed to ground shaking (PDPFP 2016-2028).

- ***Liquefaction***

Liquefaction is the phenomenon wherein sediments, especially near bodies of water, behave like liquid similar to a quicksand. Such could lead to sinking and/ or tilting of structure above it, sand boils and fissures.

Map 19. Liquefaction Hazard Map, Bohol Province



Source: ***PPDO Bohol***

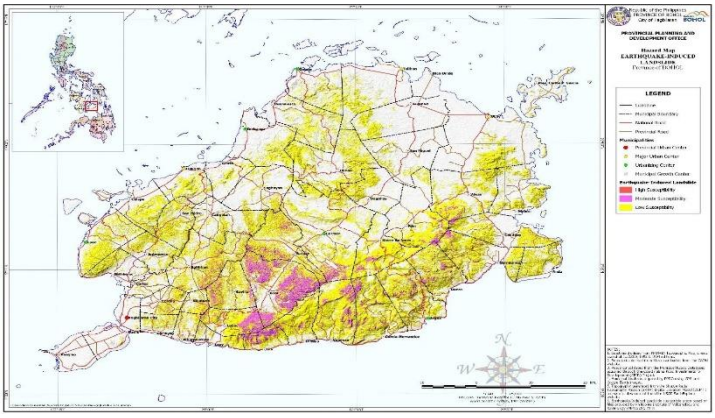
According to current data, all coastal municipalities and one (1) city, including island barangays of Bohol are highly susceptible to liquefaction. The municipalities of Ubay, Bien Unido, Panglao and Pres. Carlos P. Garcia are observed to be highly affected by liquefaction based on data and discussions. The moderately susceptible areas include some barangays located in the different municipalities of Ubay, Trinidad, San Miguel, Talibon, Candijay, Duero, Jetafe, Buenavista, Tubigon, Calape, Panglao, Dauis and Cortes. The coastal municipalities located in the southeastern, northeastern and northwestern portions of Bohol have more areas exposed to the liquefaction hazard compared to those situated in southern Bohol. Municipalities with low exceedance liquefaction are portions of Ubay, Alizia, Pilar, Dagohoy, Carmen, Batuan and Bilar. The worst scenario is when there is high excess liquefaction which would affect the Central Business District (CBD) and urban barangays of coastal municipalities (Bohol PDPFP, 2016-2028).

There are agricultural areas that at risk to liquefaction along coastal municipalities as well and these are located in the municipalities of Ubay, Pres. C.P. Garcia, Bien-Unido and Panglao.

- ***Earthquake-Induced Landslide***

Earthquake-Induced Landslides (EIL) are described by PHIVOLCS as the *down slope movement of rocks, solid, and other debris commonly triggered by strong shaking*. It causes erosion as well as burial and blockage of roads and rivers. Similar to rain-induced landslides (RIL), an earthquake-induced landslide could destroy houses and cause injury or death to residents living near sloped areas. It could likewise damage vegetative cover and croplands, as well as access roads to agri-tourism, commercial, residential, and other key built-up areas.

Map 20. Earthquake-Induced Landslide Hazard Map, Bohol Province



Source: ***PPDO Bohol***

The municipalities of Lila, Dimiao, Valencia, Loboc (man-forest), Bilar (east-side), Garcia-Hernandez, Sierra Bullones, Duero, Jagna, Sevilla, Loay, and Candijay are observed to be with the highest susceptibility based on current data and experience.

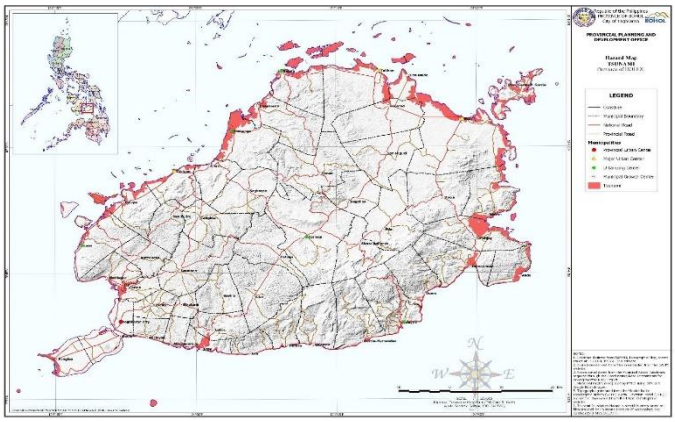
The agricultural areas, except fishery areas, at risk to EIL are in Dimiao, Loboc, Valencia, Sierra Bullones, Garcia-Hernandez, Guindulman, Jagna, Pilar, Alicia and Carmen. In relation to this, the municipalities such as Dimiao, Lila, and Loboc have agricultural land areas that are highly susceptible to EIL. Furthermore, the agricultural areas of Loon, Calape, Tubigon, Inabanga, Clarin, Buenavista, Valencia, Pilar, Bilar, Guindulman, Candijay, S. Bullones, Carmen are also at risk to EIL.

- ***Tsunami***

Tsunami refers to the *series of waves caused commonly by an earthquake under the sea*. It causes flooding, coastal erosion, drowning of people, and damage to properties.

According to current data, all coastal municipalities are highly susceptible to tsunami. The population, agriculture, including fisheries at risk to Tsunami are located in 30 coastal LGUs. Inundation of rivers caused by pressure from tsunami may affect the municipalities of Inabanga, Pres Carlos P. Garcia, Candijay, Loay, Loon, Anda, Maribojoc, Cortes, Duero and Loboc, hence they are considered as priority LGUs.

Map 21. Tsunami Hazard Map, Bohol Province



Source: ***PPDO Bohol***

Disaster Risk Reduction Management (DRRM) and Climate Change Adaptation (CCA)

Climate Change Mitigation and Adaptation

Climate change is one of the strongest development agenda of the 21st century; global scientific studies conducted by the Intergovernmental Panel on Climate Change (IPCC) have already confirmed that the change in global temperature is already unequivocal. In the Philippines, the manifestation of extreme weather events that resulted to losses in terms of livelihoods, infrastructure, and even lives, have become more frequent in recent years.

With the passage into law of Republic Act 9729 or the Climate Change Act of 2009, local government units (LGUs) were tasked to serve as frontline agencies in the formulation, planning and implementation of climate change action plans in their respective areas. Cognizant of the fact that climate change is a multi-sectoral concern, the involvement of all levels of government in the urban resilience planning process is crucial in order to attain higher probability of desired outcomes.

In **Section 14 of RA 9729** which is the ***Local Climate Change Action Plan,*** further states *that t*he Local Government Units (LGUs) shall be the frontline agencies in the formulation, planning and implementation of climate change action plans in their respective areas, consistent with the provisions of the Local Government Code, the DRM-CCA Framework, and the National Climate Change Action Plan. Barangays shall be directly involved with municipal and city governments in prioritizing climate change issues and in identifying and implementing best practices and other solutions. Municipal and city governments shall consider climate change adaptation as one of their regular functions. Provincial governments shall provide technical assistance, enforcement and information management in support of municipal and city climate change action plans. Inter-local government unit collaboration shall be maximized in the conduct of climate- related activities.

Resilience to extreme weather and climate change will greatly impact the communities as adaptation and mitigation measures provide opportunities for local governments to enhance the well-being of communities by lessening its impacts/vulnerability to them.

Climate and Hazard Profile

The effects of climate change are now being felt in the Province of Bohol. The impact of this change has affected Bohol's forest, its biodiversity, water, agricultural, fishery resources and cultural assets with wide-range adverse impact on human health and loss of life. The ten (10) warmest years on record in the world all occurred in the years 1880 to 2000. Temperature changes are known to affect the transmission of infectious diseases like malaria, dengue and respiratory tract infections. Rising incidence of morbidity cases from these infectious diseases, particularly respiratory tract infections has been recorded in Bohol with pneumonia as a leading cause of illness in the province affecting 10% of Bohol's population in 2008, mostly children.

Bohol is among the areas in the Philippines threatened by drastic effects of global warming. It is ranked 9th among top 20 provinces in the Philippines vulnerable to a one (1) meter sea level rise.[14] Its seascape, as an eco-tourism asset, is vulnerable to threats of global warming that may result in sea-level rise, causing loss of tourism and business investments. Cutting of trees in the upland communities is commonly practiced. There is degradation of marine environment due to pollution from industries, agriculture, including animal husbandry and settlements. Coastal erosion and sedimentation are not properly addressed and resulted to occurrence of sea level rise. Dumping and burning of solid wastes that include toxic materials and chemicals still pose a problem as well as the overflowing of sewers. There is an increase in frequency and intensity of the El Niño and La Niña phenomenon resulting to agricultural and ecological problems (e.g., disruption of wildlife) and damage to property.

[14]Source: Climate Hotspot, Climate Change Impacts in the Philippines conducted by Greenpeace Southeast Asia, Climate and Energy Campaign, 2007

Changes in rainfall patterns, typhoon frequency and the irregular period of occurrence, and sea level rise are now becoming noticeable. The connection between local environmental threats and climate change is an emerging concern among local government units. It is in the context that local government must play a major role in implementing measures on climate change mitigation and adaptation due to their authority to control the necessary changes.

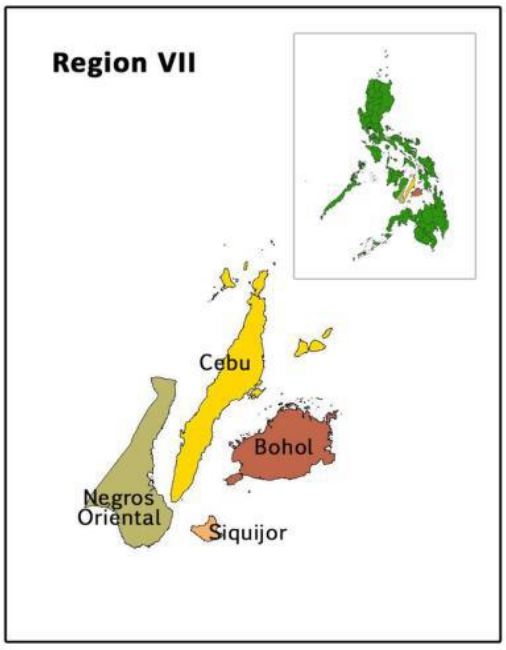
Based on the distribution of rainfall during the year, Bohol's climate as classified by PAG-ASA belongs to Corona's 4th Type, characterized by rainfall more or less evenly distributed throughout the year. Intensification of the southwest monsoon usually occurs during the months of July to October. The rainfall varies from about 1,200 mm/yr around the coast to slightly more than 2,200 mm/yr in the mountainous areas in the province. Based on the climatogical records of Tagbilaran City weather station, the province has an annual average of 161 rainy days. Average rainfall and trend illustrated a declining trend of 250 mm over a period of 35 years or about 7mm a year, which is likely due to climatic change in the Southeast Asian Region. The coastal area of the province is warm in contrast with the interior part, which is colder especially during the night. Mean temperature is at 27.40 degrees centigrade. Prevailing wind direction is towards northeast with an average speed of 2 miles per record. Bohol is not included in the so-called typhoon belt of the country, as typhoons rarely pass in the province. Those passing below or above the island contribute to the greater volume of precipitation. The frequency of typhoon passage is 0-10% from the average of 20 typhoons passing over the Philippines per year.[15]

Based on the data on climate change scenario, the projected seasonal temperature increase, seasonal rainfall changes and frequency of extreme events in 2020 and 2050 under the medium-range emission scenario in the provinces in Region 7 are presented in Table 5, Table 6 and Table 7, respectively.

Climate Projections in 2020 and 2050 of Bohol and other Provinces in Region 7

Bohol is facing the real impacts of climate change that are threatening its development prospects and exacerbates the vulnerability of its poor communities. With projected changes in precipitation, temperature, intensity of tropical cyclones and frequency of extreme weather events, considerable efforts would be required to prepare in dealings with the impacts of climate change on the different climate-sensitive sectors e.g. agriculture, forestry, biodiversity, water, coastal/marine resources and health. Adaptation will be an essential part in response to the threats of climate change.

Map 22. Location Map of Region 7



Scientific basis for adaptation and vulnerability assessment studies were already conducted by PAGASA which provides the opportunity to understand the future changes in climate and how these changes will affect the province in the future and what adaptation efforts will be done. Based on

[15] DENR-BSWM 1991 Preliminary Climatic Classification of 15 selected Provinces in the Philippines

the data on climate change scenario, the projected seasonal temperature increase, seasonal rainfall changes and frequency of extreme events in 2020 and 2050 under the medium-range emission scenario in the provinces in Region 7 are presented in Tables 5, 6 and 7, respectively. To use the tables and arrive at values of seasonal mean temperature and seasonal rainfall in 2020 and 2050 in any of the provinces, the projections are added to the observed values (presented in each of the tables). For Bohol province, the projected values are:

- DJF mean temperature = (26.6 °C +0.9 °C) = 27.5 °C;
- DJF rainfall = {376.1mm+376.1(9.8%) mm} = (376.1+36.9m) or 413mm;
- Number of days with Tmax> 35 °C in Tagbilaran City during the 2006-2035 period (centered at 2020) = 1,710;
- Number of dry days in Tagbilaran City during the 2006-2035 period (centered at 2020) = 6,836; and
- Number of days with rainfall > 300mm in Tagbilaran City during the 2006-2035 period (centered at 2020) = 1.

Table 3: Seasonal temperature increases (in °C) in 2020 and 2050 under medium-range emission scenario in provinces in Region 7

Provinces	OBSERVED BASELINE (1971-2000)				CHANGE in 2020 (2006-2035)				CHANGE in 2050 (2036-2065)			
	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
Bohol	26.6	28.0	28.2	27.8	0.9	1.2	1.2	1.0	1.8	2.3	2.3	1.9
Cebu	26.8	28.4	28.2	27.9	0.9	1.2	1.1	1.0	1.9	2.4	2.1	1.9
Negros Oriental	27.0	28.4	28.0	27.8	0.9	1.2	1.0	1.0	1.9	2.3	2.0	1.9

Table 4: Seasonal rainfall change (in %) in 2020 & 2050 under medium-range emission scenario in Provinces in Region 7

Provinces	OBSERVED BASELINE (1971-2000)				CHANGE in 2020 (2006-2035)				CHANGE in 2050 (2036-2065)			
	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
Bohol	376.1	209.6	412.9	514.5	9.8	-7.1	4.5	6.8	21.2	-11.9	18.9	22.6
Cebu	324.0	228.3	595.1	607.4	17.7	0.8	7.7	7.7	19.6	0.5	18.9	17.8
Negros Oriental	225.8	226.0	639.5	636.9	15.0	-4.9	9.3	4.7	17.4	-6.8	20.7	10.5

Table 5: Frequency of extreme events in 2020 & 2050 under medium-range emission scenario in Provinces in Region 7

Provinces	Stations	No. of Days w/ Tmax>35 °C			No. of Dry Days			No. of Days w/ Rainfall >100mm		
		OBS (1971-2000)	2020	2050	OBS	2020	2050	OBS	2020	2050
Bohol	Tagbilaran	260	1710	3413	8176	6836	6473	15	21	23
Cebu	Mactan	25	1488	2463	7112	5720	5693	12	4	17
Negros Oriental	Dumaguete	66	826	1499	8451	6032	5642	5	7	6

Climate Change Threats and Potential Impacts

Table 6: Trends in Climate Change Impacts				
Climate Change Impacts	**Areas or location affected (Municipalities/Barangays)**	**Trend**	**Intensity**	**Frequency of Occurrence**
Sea level rise	30 coastal towns including Tagbilaran City	Same areas	Every year	Increasing every year
Prolonged drought	47 towns and 1-city	Expanding to coastal areas	Every year	Every year
El Nino events	47 towns and 1-city	Expanding to coastal areas	Every year	Every year
Floods	336 out of 1,109 brgys (47 towns and 1-city)	Expanding to other areas	Increasing	Increasing every year (flash flooding, seasonal, river overflow, coastal flooding due to heavy rains, dam overflow
Storm surge	30 coastal towns and 1-city	Same areas	Increasing	Increasing every year
Monsoon rains a) Southwest Monsoon or Habagat; b) Northeastern Monsoon/ Amihan	47 towns and 1-city	Expanding to interior part of the province	Increasing even dry season	Increasing every year

Disaster Risk Management Resiliency to Disasters and Climate Change

Bohol, as an island province, is vulnerable to various hazards resulting from natural and man-made disasters such as flooding, rain-induced landslides, earthquake, storm surges, liquefaction, fire, air and water pollution and contaminated land. Inappropriate location and design of developments can aggravate exposure to and impact of hazards and climate change impacts like sea-level rise, storm surges, among others.

Infrastructure [16]

In 2022, Bohol's **total road** length is 6,152.19 kilometers. Of these roads, 12% are classified as national roads and 14% provincial roads. The city roads only account for 1% while municipal roads 5%. Barangay roads have the longest stretch of roads, accounting for 68%. In terms of type of pavement, most of the province's roads are still gravel, which may be attributed to local roads. Concrete roads account for 35%, and continue to increase in length as both national and local governments sustain their projects for road concreting. Asphalt roads, on the other hand, shared 3% of the total road length. Meanwhile, 18% of the province roads remain to be earth roads, which are mostly classified as barangay roads.

As to bridges, there are 8,419.64 linear meters of bridges within the road network in the province and 64% of this total length is composed of concrete. Steel bridges account for 27% while bailey bridges are 7%. There are still timber bridges in the province, which shared a total length of 2%.

Majority of the bridges in the province are under the jurisdiction of the national government, which account for 61%. The Provincial Government is maintaining 1,509.00 linear meters or 18% of these bridges. The rest of the bridges are managed and maintained by the city/ municipal and barangay local governments.

Figure 4. Type of Pavement, Province of Bohol: CY 2022

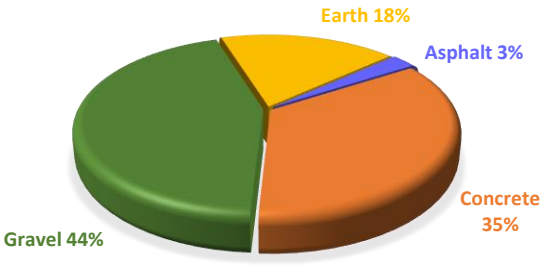


Figure 5. Road Classification, Province of Bohol: CY 2022

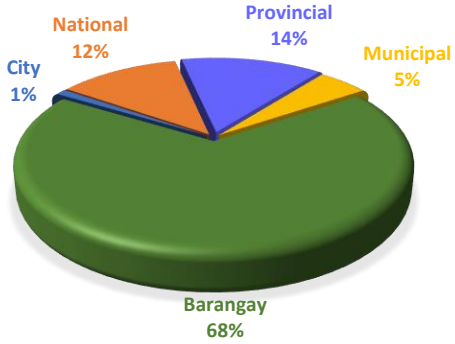
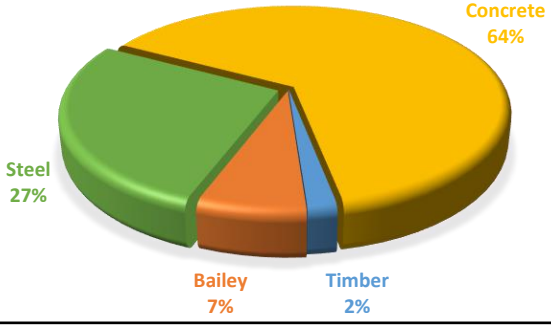


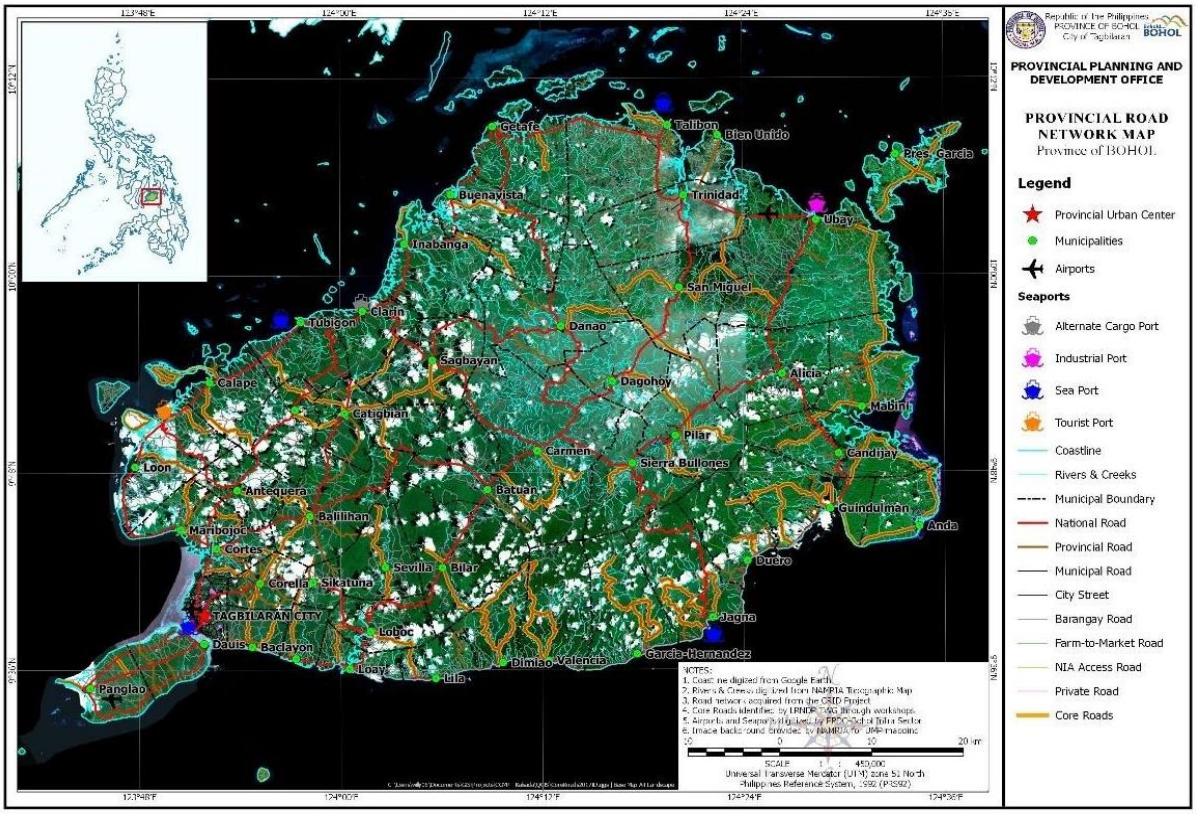
Figure 6. Bridge Classification, Province of Bohol: CY 2022



Source: ***Department of Public Works & Highways (DPWH)***

[16] Department of Public Works and Highways (DPWH)

Map 23. Road Network Map, Bohol Province



As to **seaport**, there are 16 ports in Bohol serving as the gateways of people and goods to and from the province. Of the 16 ports, there is only 1 baseport, located in Tagbilaran City. There are 4 terminal ports, 9 outports and 2 private ports located in several coastal municipalities. The Port of Tagbilaran is considered a major port of entry while the Port of Tubigon, the busiest among the terminal ports, offer more than ten daily round trips plying the Cebu-Bohol route. The Port of Jagna offers services that ply between Bohol to Cagayan, Nasipit and Camiguin with roll-on, roll-off route.

For **air travel**, the Province of Bohol is being served by two airports, namely, the Bohol-Panglao International Airport (BPIA) and the Ubay Airport which classified as a community airport with a runway of 1.2 km that serves as a feeder airport. Only the BPIA handles commercial flights and passenger traffic with direct flights to and from Manila and international flights. Number of flights to the province has been irregular for the past 6 years brought about by airline competition, level of demand for air travel, and changes in aviation regulations.

For **land transportation**, the road network in Bohol consists of circumferential road along the coastline and interior that connects the interior municipalities. The Tagbilaran Eastern Road (TER) connects Tagbilaran to Ubay via Jagna while the Tagbilaran Nothern Road (TNR) completes the loop from Ubay to Tagbilaran via the northern town of Tubigon. However, the province experienced the number of registered vehicles had a decreasing trend in 2018-2023 but increased slightly in 2021 to 2022. Before the COVID-19 pandemic in 2018, the number of vehicles registered in Bohol reached 124,744, yet this has decreased to 108,093 in 2023. Moreover, the preference for motorcycles stayed on top because of its affordability and lower maintenance cost compared to four-wheeled vehicles.

Socio Economic and Demographic Profile

Population

Based on the latest 2020 Census on Population, Bohol's population reached 1.394 Million, showing a 1.06% average annual increase from the 2010 population count. Such annual growth rate is lower than the Central Visayas' growth rate of 1.74%. Bohol's population growth, however, is lower than that of the 1.67% national annual growth rate. With this growth, estimated population of the province in 2024 is pegged at 1.398 Million and will further increase to 1.402 Million in 2025.

Among the 48 localities, Tagbilaran City has the highest population with 104,976, followed by municipalities of Ubay, Talibon, Dauis, Carmen, Inabanga, Tubigon, Loon, Panglao and Jagna. Sikatuna is the least populated municipality with only 6,906 population.

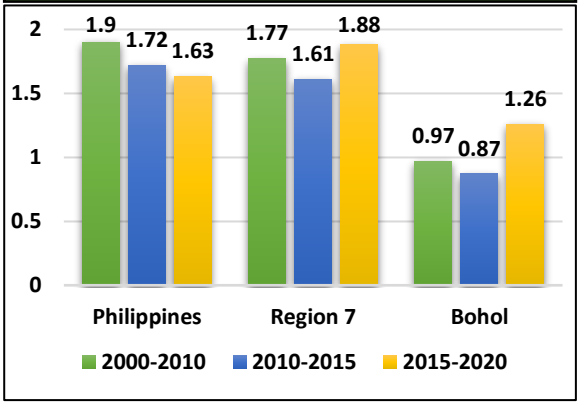
The population of Bohol has been fluctuating from 0.97% average annual increase (2000-2010) down to 0.87% (2010-2015) and bounced back to 1.26% (2015-2020).

The municipality of Panglao has the highest growth rate in the Province (3.37%). Among the top 10 localities with high growth rates include Dauis, Corella, Trinidad, Sagbayan, Getafe, Baclayon, Cortes, and Tubigon. The municipality of Dimiao has remained to have a negative population growth rate of -0.18% (2010-2020).

BASIC FACTS OF BOHOL PROVINCE

Population: 1.255 Million (2010)
1.313 Million (2015)
1.394 Million (2020)
Income Class: 1st Class Province
Land Area: 411,726 hectares (411.726 Km^2)
Population Growth Rate: 1.06% (2010-2020)
No. of Household: 322,022 (2020)
Ave. HH Size: 4.3 (2020)
Pop. Density: 292 persons/km^2 (2020)
Administrative Units:
1 City, 47 Municipalities
1,109 Barangays
3 Congressional Districts
Coastline: 654 Km. of coastline
Municipal Waters: 6,245 Km^2
Coastal Barangays: 304 Brgys.
No. of Islets: 72 islets

Figure 7. Average Annual Growth Rate

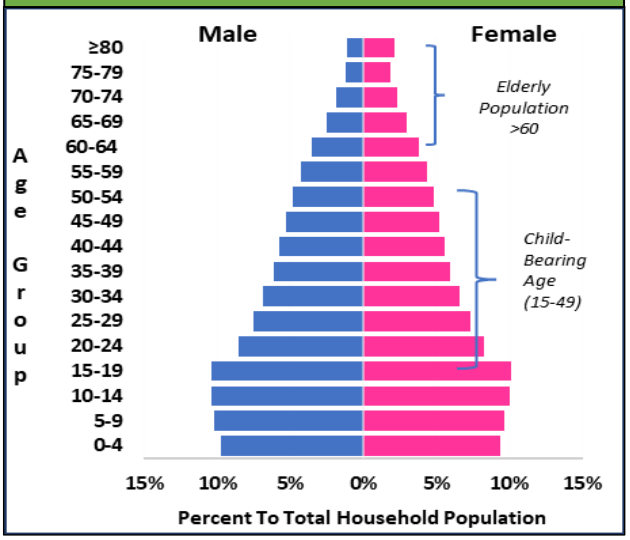


Source: OpenSTAT, PSA

Based on the 2020 Census, the population structure of Bohol shows bigger group of younger people (with 29.7% belonging to age group under 15 years old). Female reproductive Age (Child-bearing age) comprised 49.6%. Males outnumbered females in the 0-59 years old. Females outlived the males in the older age groups. Those aging 60 and over comprised 10% of Bohol's Population. From 24.5 in 2010, the median age for Boholanos rose to 25.7 years old for both sexes. This means that half of the total population was below 25.7 years old. For the female population, the median age was 26.3, higher by 2.4 years against their male counterpart. Moreover, 50.9 percent of the total population were males and 49.1 were females. This translated to a sex ratio of 104 males for

every 100 females. Among the municipalities, Buenavista had the highest sex ratio of 108 while Tagbilaran City had the lowest sex ratio of 98.

Figure 8. Age-Sex Pyramid of Household Population: 2020

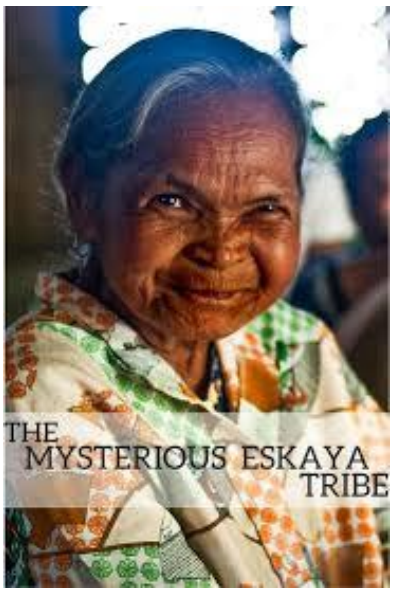


Source: OpenSTAT, PSA

Bohol's population density is 292 persons per sq. km in 2020, which is higher compared to the 275 persons per sq. km in 2015. In 2010, the province's population density was only 263 persons per sq. km. Most of the densely populated areas in the province are found along the coast, concentrated along the north to northeastern part of Bohol. Among the top 10 most densely populated areas in the province include Tagbilaran City (2,876/km^2), Dauis (1,211/km^2), Bien Unido (974/km^2), Panglao (834/km^2), Cortes (671/km^2), Baclayon (652/km^2), Tubigon (585/km^2), Talibon (507/km^2), Maribojoc (449/km^2), and Calape (439/km^2). On the other hand, the least densely populated areas include Sevilla (97/km^2), Dimiao (110/km^2), Danao (124/km^2), Antequera (126/km^2), Sierra Bullones (131/km^2), Bilar (143/km^2), Balilihan (147/km^2), San Isidro (165/km^2), Trinidad (180/km^2) and Sikatuna (181/km^2).

Bohol's Indigenous Peoples (IP)

- **Eskaya Tribe**



The Eskaya is an indigenous tribe found in the hinterlands of the towns of Duero, Guindulman, Pilar and Sierra Bullones, in Bohol's southeast interior. They are a gentle community of about 4,000 people hardy peasants. Likewise known as the "Visayan-Eskaya", the community is only found in the island province of Bohol. They have a unique cultural heritage, use a distinct language and literature, and have traditional practices that dates way back to pre-Spanish times. The Eskaya people have their own language quite unlike the local Boholano or Cebu dialects, a system of writing, and an intrinsic written literature. While their whole week is devoted to tilling and communal forms, Sundays are set aside for Eskaya classes. Young and old alike learn the Eskaya ways in an attempt to relive and revive the almost forgotten Eskaya legacy.

The first settlement of this tribe is at Biabas, Guindulman, established in the early 20th century by one Mariano Datahan who died in 1949. A second settlement was established in Taytay, in the municipality of Duero in the year 1951 founded by Fabian Baja under Datahan's instructions. Eventually, the group spread to nearby Barangays of Canta-ub, Lundag, Tambongan, Cadapdapan and Abihilan.

The group was recognized and the community awarded a Certificate of Ancestral Domain Claim (CADC) in 1996 by President Fidel V. Ramos. CADC No. R7-CADC-14 was deemed as an ancestral domain consisting of 3,173 hectares of land in Taytay (Duero), Biabas (Guindulman), Lundag (Pilar), Canta-ub (Sierra-Bullones), and Cadapdapan (Candijay).

Legally, the Eskaya are now classified as an indigenous group under Republic Act No. 8371 entitled "The Indigenous People's Rights Act of 1997". No official census has yet been made of the group but a report in 1991 mentioned 130 Eskaya families living in Bohol.

- **Ati**

The Ati community in the Municipality of Loay, Bohol consists of about 200 people with an average family size of 5. Some of them settled along the shorelines of Loay, Bohol which is about 0.30 kilometers from the national highway. Their primary sources of income are fishing, hunting and selling herbal plants and medicines. Most head of families go fishing while mothers with their children sell herbal medicines.

The Atis are believed to have originally come from Panay Island. They are from the Negrito ethnic group in Panay, located in the Visayas Islands of Cebu, Bohol, Siquijor, Leyte, Samar, Masbate, Negros and Guimaras. They are genetically-related to other Negrito ethnic groups in the Philippines such as the Aeta of Luzon, the Batak of Palawan, and the Mamanwa of Mindanao.

- **Badjao**

The Badjaos are an indigenous ethnic group of Malaysia and the southern Philippines. In Bohol, they are found largely in Brgy. Totolan, a coastal barangay at the northern part of Dauis, 1.5 kilometers away from the City. This cultural community migrated to this barangay during the tumultuous years in Mindanao in the 70's and have since then found a haven in the shorelines of said Municipality. Since then, this cultural group of Badjaos had established a community in said area.

The Badjaos are what are considered as sea gypsies. The Bajaos have been a nomadic, seafaring people, living off the sea by trading and subsistence fishing. They generally live in the sea using "bankas" as houses if not on stilt houses along the seashore. Their primary source of income is deep sea fishing. At present, there are 78 families in the community and a population of 545 people.

The reduction, if not the elimination of poverty continues to be a challenge in Bohol with a number of its families still considered as poor. Bohol's Poverty Incidence as well as its Subsistence Incidence[17] among families has been steadily decreasing since 2015 despite the pandemic in 2020. From 21.7 percent in 2015, poverty incidence among families lowered to 15.5 percent in 2018, which rose to 19.1 percent in 2021 post-COVID pandemic and eventually lowered to 14.8 percent om 2023.In the same period, the proportion of Boholanos in extreme poverty whose incomes are not sufficient to meet basic food needs registered at 4.0 percent in 2023.

Furthermore, the Annual Per Capita Poverty Threshold of the province had been decreased from Php 26,853 in 2021 to Php 15,175 in 2023. The Annual Per Capita Food Threshold of Php 18,743 in 2021 to Php 10,602 in 2023. In terms of income gap in 2023, the measured amount of income required by the poor in order to uplift from poverty was estimated at 25.4% based on PSA preliminary results.

Table 7. Poverty Profile, Bohol Province
Annual Per Capita Poverty & Food Thresholds, Poverty & Subsistence Incidence & Magnitude of Poor Families & Other Poverty Indicators in Region 7 & Bohol Province, 2015, 2018, 2021 and 2023

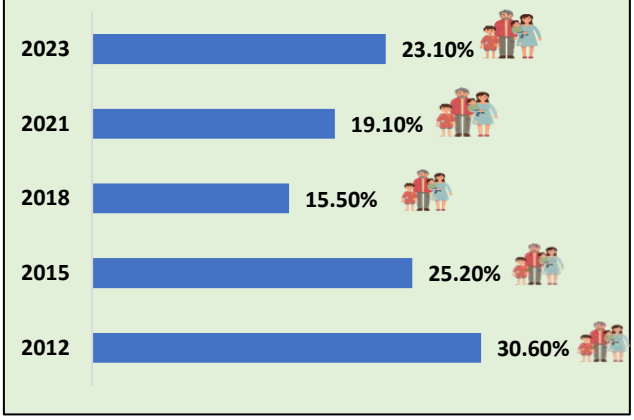
Region/ Province	Annual Per Capita Poverty Threshold (in Pesos)				Poverty Incidence among Families (%)				Magnitude of Poor Families			
					Estimates (%)				Estimate ('000)			
	2015	2018	2021	2023	2015	2018	2021	2023	2015	2018	2021	2023
PHILIPPINES	21,753	25,814	28,794	33,296	16.5	12.1	13.2	10.9	3,747	3,005	3,482	2,992
Region VII	21,914	25,968	32,423	34,553	23.6	12.2	22	12.3	394	181	354	207
Bohol	20,437	26,108	26,853	30,981	21.7	15.5	19.1	14.8	60	47	61	49
Cebu	21,740	25,914	33,657	35,605	17.9	11.3	22.8	11.7	179	134	293	157
Region/ Province	**Annual Per Capita Food Threshold (in Pesos)**				**Subsistence Incidence among Families (%)**				**Magnitude of Subsistence Poor Families**			
					Estimates (%)				Estimate ('000)			
	2015	2018	2021	2023	2015	2018	2021	2023	2015	2018	2021	2023
PHILIPPINES	**15,189**	18,126	20,046	22,994	5.7	3.4	3.9	2.7	1,303.55	839.54	1,032.63	741.73
Region VII	**15,357**	18,033	22,679	24,049	9.8	2.6	8.1	3.2	164.50	38.24	130.18	53.42
Bohol[b/]	14,249	18,245	18,743	21,636	7.2	2.9	6.2	4	20.14	8.90	19.94	13.33
Cebu	15,139	17,959	23,400	24,798	6.8	2.5	8.6	3	68.35	29.34	110.25	40.09

Region/Province	Income Gap				Poverty Gap				Severity of Poverty			
	2015	2018	2021	2023	2015	2018	2021	2023	2015	2018	2021	2023
PHILIPPINES												
Region VII	27.9	19.2	25.8	20.53	6.6	2.34	5.69	2.52	2.6	0.72	2.15	0.81
Bohol	25.7	18.11	23.92	21.53	5.6	2.8	4.57	3.19	2.1	0.79	1.58	1.05
Cebu	26.3	19.58	26.19	20.21	4.7	2.22	5.97	2.36	1.8	0.7	2.29	0.75

[17] Families with income below the food threshold; subsistence incidence is often referred to as the proportion of Boholanos in extreme or subsistence poverty

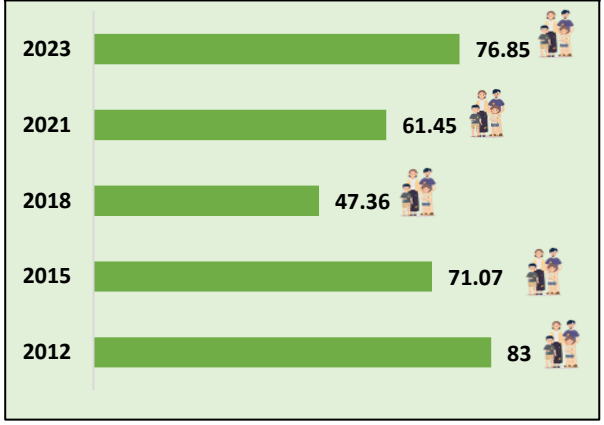
Bohol's poverty incidence among families reduced by 39% in 2018, however in 2021 the poverty incidence gradually increased until 2023, this may be caused by COVID-19 pandemic and Typhoon Odette that brought devastating effect to the province. From a low percentage in 2018 (15.50%) to increased percentage in 2023 (23.10%). In terms of magnitude of poor families, a total of 76,850 families were considered poor in 2023, which was higher compared to year 2018.

Figure 9. Poverty Incidence among Families (%)
Province of Bohol



Source: ***2023 Full Year Poverty Statistics, (PSA)***

Figure 10. Magnitude of Poor Families ('000)
Province of Bohol



Source: ***2023 Full Year Poverty Statistics, (PSA)***

Employment

In terms of employment in the Province, employment rate has improved over the past three years. Based on the Labor Force Survey of the Philippine Statistics Authority (PSA), employment rate in the year 2015 is pegged at 95.6%, which is higher to the 93.6% and 94.8% in the year 2013 and 2014, respectively. It can also be noted that the employment rate of Bohol is consistently higher compared to the national and regional averages for the three-year period. Meanwhile, labor force participation rate of the Province has also increased during the same period, with 66.3% in 2015, higher than the 58.2 in 2013 and 60.2% in 2014.

Figure 11. Employment Rate

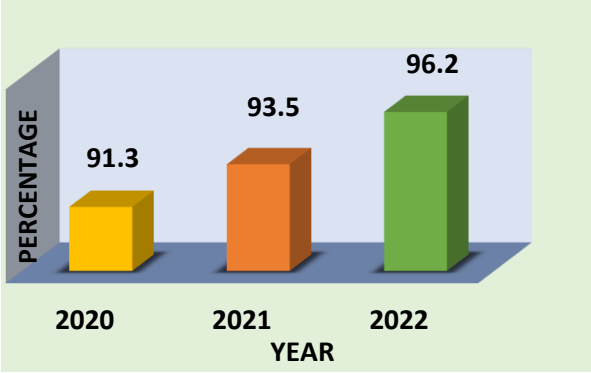
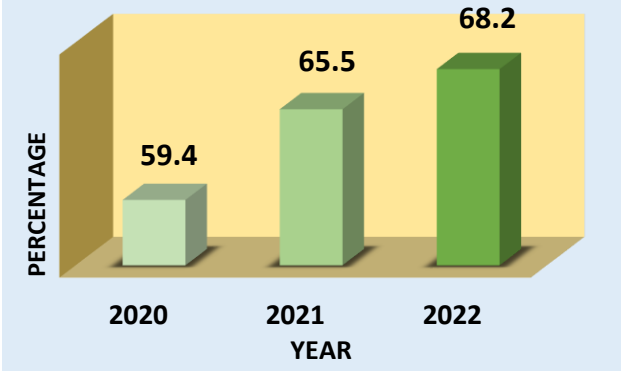


Figure 12. Labor Force Participation Rate

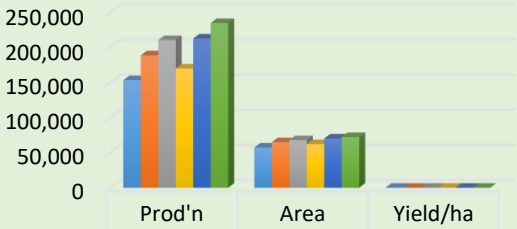


Source: ***Philippine Statistical Authority (PSA)***

Economy and Priority Industries

The economy of Bohol is largely based on agricultural activities that focused on the cultivation of crops on its vast agricultural land. With this, home-based industries, which are mostly of the micro and cottage types, play a vital role in the economy. The government continues to provide support to sustain the development and production of major crops such as palay, corn, high value commercial crops, and fisheries through upland and marine aquaculture, organic agriculture and livestock. The development of dairy products is also being pursued in collaboration with appropriate government agencies and livestock farmer's groups. Support for this program would allow further value-adding processing of cow and carabao's milk, which in turn, will provide higher income for farmers.

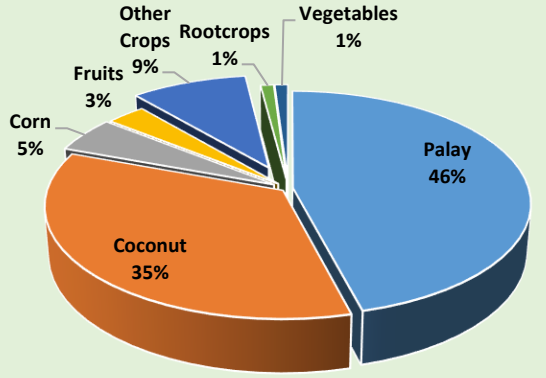
Figure 13. Palay Production, Bohol: 2018-2024



	Prod'n (mt)	Area	Yield/ha (mt/ha)
2019	153,405	57,400	2.67
2020	188,832.78	65,009	2.9
2021	210,584	67,907	3.1
2022	170,086.85	62,244	2.73
2023	212,718.61	70,278	3.03
2024	234,801.78	72,360	3.23

Source: ***OpenStat, Philippine Statistics Authority***

Figure 14. Area Harvested to Major Crops, Bohol: 2023



Source: ***OpenStat, Philippine Statistics Authority***

Agriculture is the largest sector in terms of providing employment, as well as in land use. Of the total land area of the province, 273,950 ha (66%) are available and use for agriculture. Meanwhile, 149,598.74 hectares of this area is planted and harvested with major crops. Among the major crops in the area includes palay (47%), coconut (36%), corn (6%), fruits (4%), other crops (4%), root crops (2%) and vegetables (1%).

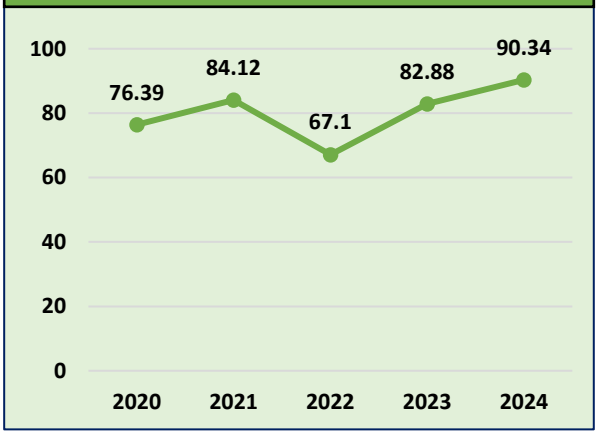
- **Crops Production**

Rice. A staple food for many Boholanos wherein producing locally ensures food security for the province. It is mainly produced by small farmers, with a total of 72,630 hectares area planted. The irrigated and rainfed rice area is approximately 41,738 and 30,892 hectares, respectively. The total palay production in 2024 was about 234,801.78 metric tons.

The province of Bohol remains to be rice sufficient with a sufficiency level of 90.34% and continued to hold its title as "Rice Basket "in Central Visayas. The volume of production and area planted with palay has been increasing from 2019 to 2024. This came as the rice harvest season in Bohol is mid-way and the Boholano farmers have registered high yield performance both in hybrid and inbred rice being planted in rain-fed and irrigated areas in the province.

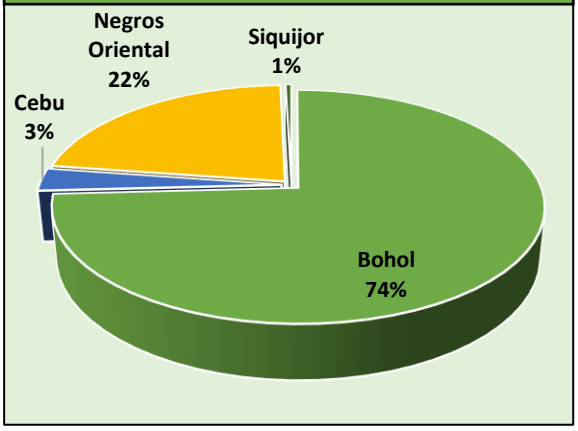
At the regional setting, Central Visayas rice production is largely dependent on the Province of Bohol. In 2024, the province accounted 74% of the region's rice production, which is significantly higher compared to the production share of the other provinces.

Figure 15. Rice Sufficiency, Bohol: 2020-2024



Source: ***Department of Agriculture Region VII***

Figure 16. Central Visayas Rice Production: 2024



Source: ***OpenStat, Philippine Statistics Authority***

Corn. A staple crop to many Boholanos next to rice. There are two varieties of corn produced in the province, white corn and yellow corn. The total area planted for corn was about 8,589 hectares, produced by local farmers. In 2024, area planted for white and yellow corn is approximately 6,905 and 1,684 ha., respectively. The total corn production in 2024 was about 11,340.75 metric tons.

Vegetables. There are two types of vegetables grown in the province, the leafy and fruit vegetables. The leafy vegetables include pechay, kangkong and green onions while the fruit vegetables are ampalaya, eggplant, okra, squash, string beans, tomato and ginger. Some lettuce, cabbage and chayote are commonly grown in the highland areas of Duero, Jagna, Sierra Bullones, Candijay and Guindulman. Eggplant has the most extensive area of 318 hectares and showed the highest volume of production of 1,626.84 metric tons in 2023.

Coconut. Coconut is a major commercial crop in Bohol. The towns with vast areas planted with coconuts are Balilihan, Antequera, Valencia, Garcia Hernandez, Ubay and Inabanga. As of 2023, in terms of agricultural land usage with an approximate area of 53,585.45 hectares, of which 4,028,713 bearing trees. Furthermore, there were 89,322 coconut farmers registered in the National Coconut Farmers Registry System (NCFRS).

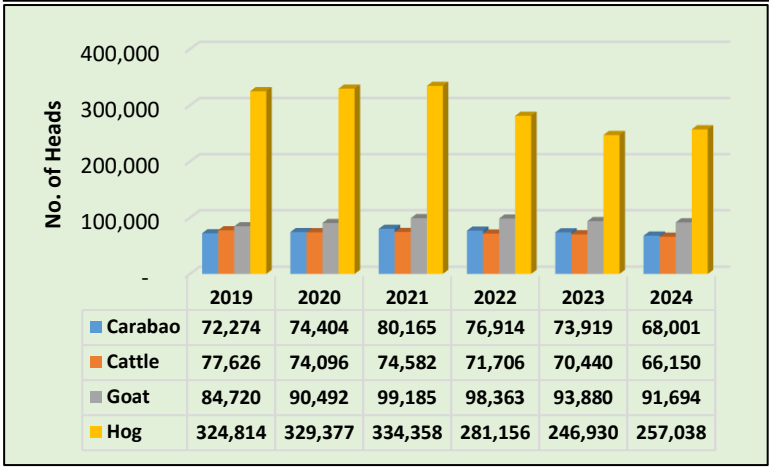
Rootcrops. In 2023, Bohol's major rootcrops posted a production of 18,974.35 metric tons. The decline in production was brought by the damaging effect of Typhoon Odette. Cassava remains to be the dominant crop with a total production of 9,456.60 metric tons. Camote and ubi produced 3,677.13 metric tons and 3,546.77 metric tons, respectively. Gabi, on the other hand, posted 2,293.85 metric tons. As of 2023, a total of 3,151.68 hectares of land have been harvested with major rootcrops.

Fruit Crops. As of 2023, the total area planted was 6,398.49 hectares with banana having the largest area covering 3,148.77 hectares, followed by mango with 2,215.68 hectares. PSA report shows an overall production of fruits in the province with an output of 19,867.53 metric tons where banana is the dominant fruit in the province in terms of production volume at about 15,498.36 metric tons compared to pineapple with a total production of 792.28 metric tons.

- **Livestock and Poultry Production**

Bohol is self-sufficient in livestock and poultry such as swine, carabao, cattle, goat, chicken and duck. Bohol's livestock and poultry industry is a major contributor to the region's total production. In terms of **livestock inventory**, the livestock numbers have been gradually decreasing from year 2021 to 2024. Moreover, hog still remains to be the largest in number composing 53% of the entire livestock inventory of Bohol which accounted 257,038 heads in 2024, followed by goat (91,694 heads), carabao (73,919 heads), and cattle (66,150 heads). In addition, Bohol, being one of the top producers of hog, has remained to be free from African Swine Fever (ASF) and has tightened its borders from any possible entry of transboundary diseases including the Avian Influenza or bird flu.

Figure 17. Livestock Inventory, Bohol: 2019-2024



	2019	2020	2021	2022	2023	2024
Carabao	72,274	74,404	80,165	76,914	73,919	68,001
Cattle	77,626	74,096	74,582	71,706	70,440	66,150
Goat	84,720	90,492	99,185	98,363	93,880	91,694
Hog	324,814	329,377	334,358	281,156	246,930	257,038

Source: **OpenStat, Philippine Statistics Authority**

Carabao. As of 2024, carabao inventory reached to 68,001 heads, decreasing compared to previous years. The province plays a vital role in providing good quality carabaos for breeding, draft and meat for its neighboring provinces. In terms of production, Bohol had a total production at about 2,520.68 metric tons, as of 2024.

Cattle. The inventory of cattle in 2024 indicated 66,150 heads showing a downward trend from previous years. Based on the PSA data, Bohol ranks second to Cebu and accounted for 19.06% of the total 346,994 cattle in the region. Moreover, Bohol ranked third in terms of volume of production in the entire region at about 3,755.06 metric tons, as of 2024.

Goat. The production of goat in the province showed 589.52 metric tons, as of 2024. In terms of goat inventory, Bohol ranked third which had 91,694 heads, accounted 14.94% of the total 613,628 goat in the region, as of 2024.

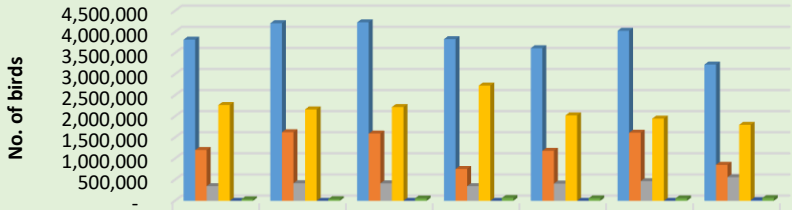
Hog. Hog population of the province as of 2024 is recorded at 257,038 heads (PSA), where 165,604 heads on smallhold farming, 89,778 heads on commercial farming and 1,656 heads on semi-commercial farms. In region 7, Bohol ranks third contributing 27.45% of the regional total population of 936,452 heads as of 2024. The Province of Bohol still remained free from African Swine Fever (ASF) which helped sustained the production of hogs. In terms of production, Bohol showed 46,939.90 metric tons in 2024 which ranked third of the total 218,202.62 metric tons production of the region.

The operation of government-operated artificial breeding centers for swine in the municipalities and in some private farms and the mobile boar for hire services, has contributed to the upgrading of existing stocks. On the other hand, native pig production is becoming popular on a "back to basics" husbandry with starter breeders distributed through dispersal projects.

On the other hand, **poultry inventory** in the province showed irregular trends from 2020 to 2024. Bohol poultry inventory in 2024 accounted for more than 3 million birds that are predominantly composed of chicken.

Chicken. The chicken population in the province include broiler, layer and native or improved. As of 2024, Chicken remains as the top poultry commodity of Bohol with 3,227,974 heads, much lower than 2023 inventory that accounted 4,029,559 heads. Out of these inventories, 56% is attributed from native chicken production, followed by broiler with 56%, layer with 17% and gamefowl which accounted for 0.5%. In terms of production, Bohol produced 36,644.20 metric tons of chicken, as of 2024.

Figure 18. Poultry Inventory, Bohol: 2018-2024



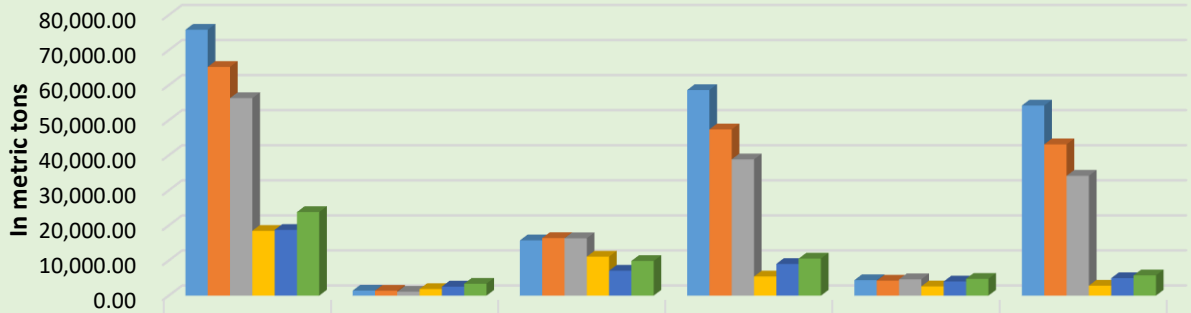
	2018	2019	2020	2021	2022	2023	2024
Chicken	3,820,306	4,207,970	4,228,731	3,830,427	3,616,454	4,029,559	3,227,974
Broiler	1,203,280	1,625,000	1,593,532	753,664	1,184,987	1,614,855	851,799
Layer	348,035	416,642	413,885	346,611	407,910	466,236	560,332
Native	2,268,991	2,166,328	2,221,314	2,730,152	2,023,557	1,948,508	1,800,371
Gamefowl	-	-	-	-	-	-	15,472
Duck	37,464	38,770	57,225	66,633	59,011	58,881	65,730

Source: ***OpenStat, Philippine Statistics Authority***

- **Fisheries Production**

In terms of **fisheries production**, aquaculture still remains to be the highest contributor to the volume of fishery production in the province. In 2024, aquaculture posted 44.3% share in the total volume of fishery production where the 24.22% came from seaweed production and 20.09 percent contributed from brackishwater/freshwater production, followed by municipal fisheries accounting 41.45%, next was the commercial fisheries which accounted 14.24%.

Figure 19. Fisheries Volume of Production, Bohol: 2018-2024

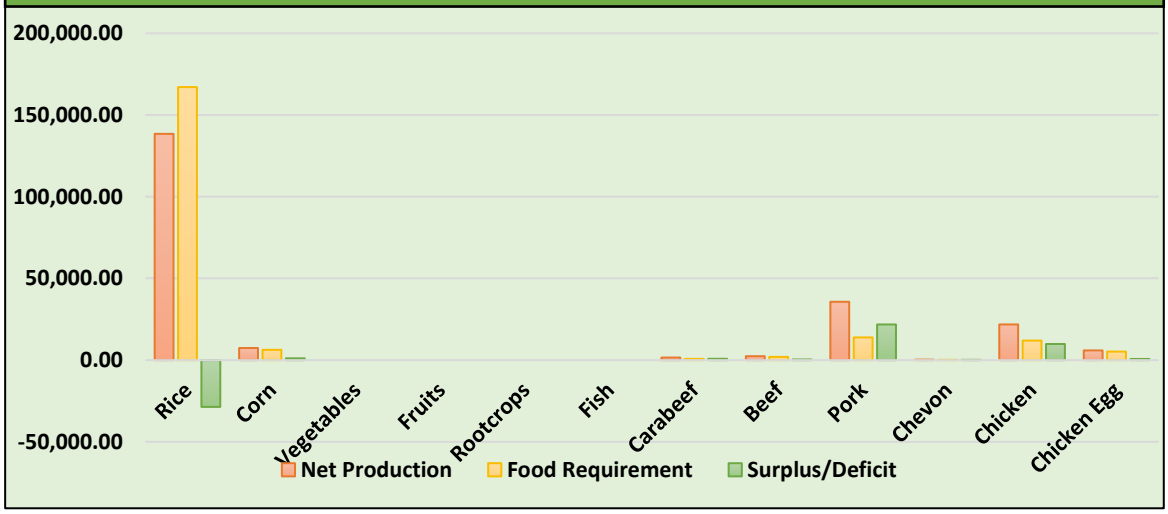


	TOTAL	Commercial Fisheries	Municipal Fisheries	Aquaculture	*Brackishwater /Freshwater	*Seaweed
2019	75,818.35	1,443.37	15,751.12	58,623.86	4,419.53	54,204.33
2020	65,215.31	1,387.20	16,421.72	47,406.39	4,265.20	43,141.19
2021	56,316.82	1,115.83	16,359.99	38,841.00	4,663.95	34,177.05
2022	18,473.61	1,886.55	11,116.90	5,470.16	2,624.42	2,845.74
2023	18,732.54	2,581.84	7,118.09	9,032.60	4,035.05	4,997.55
2024	23,820.82	3,393.07	9,872.85	10,554.90	4,785.81	5,769.09

Source: ***OpenStat, Philippine Statistics Authority***

Comparing the production and consumption of major food commodities in the year 2023, the province of Bohol has surplus production for corn, carabeef, beef, pork, chevon, chicken and eggs. Food commodities where the province have recorded deficit in terms of production include rice, vegetables, fruits, rootcrops, fish and marine products.

Figure 20. Production and Consumption of Major Commodities, Bohol: 2023

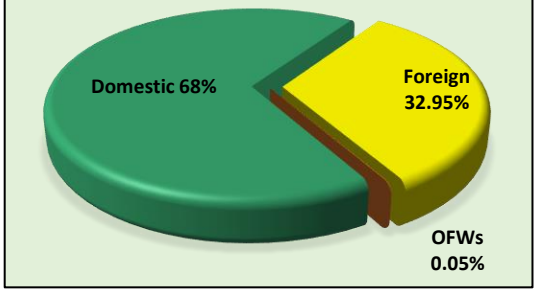


Source: ***OpenStat, Philippine Statistics Authority***

Tourism

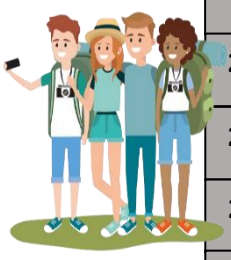
Tourism is another industry, which is sustained by both the private sector and government. The tourism industry further boomed after the province was designated as Bohol Island UNESCO Global Geopark in 2023 - the only one in the Philippines and largest in Asia. In 2023, the tourist arrivals increased by 89 percent compared to 2022. Domestic visitors hold the majority share of the total arrivals accounted 68 percent in 2023. Meanwhile, foreign visitors shared 32.95 percent and OFW's with 0.05 percent in 2023.

Figure 21. Bohol Tourist Arrivals, 2023



Source: ***Department of Tourism Region 7) and Bohol Provincial Tourism Office (BPTO)***

Figure 22. Visitor Arrivals, Bohol: 2019-2023



	Domestic	Foreign	OFW's	TOTAL
2019	854,853	720,364	6,687	1,581,904
2020	109,237	68,104	0	177,341
2021	178,654	1,127	0	179,781
2022	503,368	32,310	125	535,803
2023	686,875	325,499	480	1,012,854

Source: ***Department of Tourism Region 7) and Bohol Provincial Tourism Office (BPTO)***

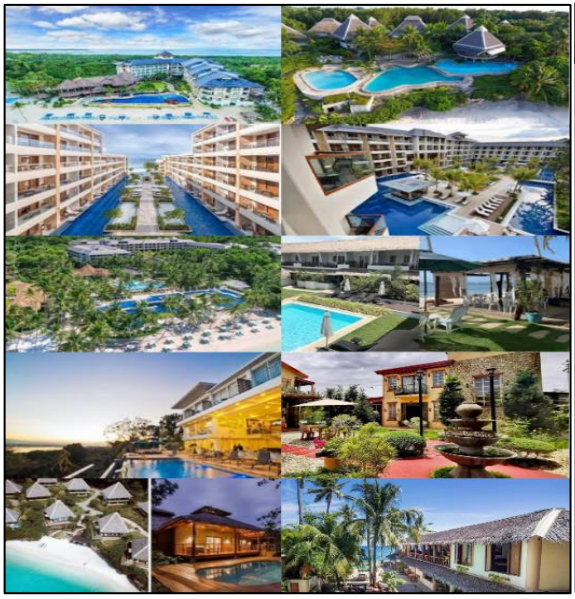
Table 8. Top 10 Foreign Tourist Travelers, Bohol: 2023		
	Korea	41.90%
	China	9.98%
	Taiwan	7.82%
	USA	5.98%
	Germany	2.72%
	France	2.64%
	Japan	2.64%
	Hongkong	2.02%
	Canada	2.00%
	United Kingdom	1.62%
	Others	20.70%

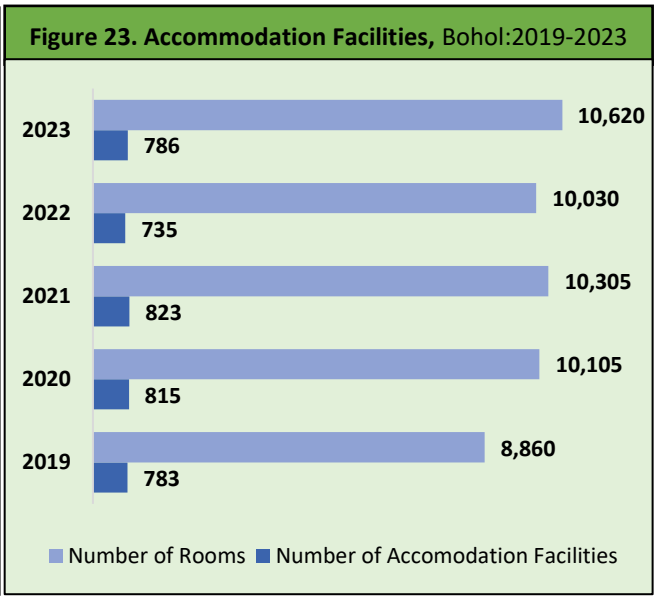
Source: ***DOT 7 and BPTO***

In terms of foreign visitors in the province for 2023, Koreans dominated the tourism market, sharing 41.90%. It is followed by Chinese with 9.98% share, Taiwan (7.82%), USA (5.98%), Germany (2.72%), France and Japan (2.64%), Hongkong (2.02%), and United Kingdom (1.62%).

In terms of regional scale, as of 2023 Bohol accounted 18% of the total visitor arrivals in Central Visayas. Meanwhile, Cebu as the major gateway and hub in the region accounted a significant share of 74%.

Local and foreign industry players continue to pour in investments in this sector considering the consistent and stable growth of the tourism industry in the province and bright outlook of the industry prospects. Improvement of infrastructure and support facilities in the province has also enticed larger investments through the years. In terms of accommodation facilities, the number of available rooms increased by 20% from year 2019 to 2023.





Source: ***Department of Tourism Region 7 (DOT 7) and Bohol Provincial Tourism Office (BPTO)***

Bohol opened its doors to entice more investments into the province. Investment areas in the province are focused on eco-tourism, light industries and agro-industrial development. Recently, two major investors are opening up in Bohol, namely, the **SM Supermalls**, the country's largest retail mall (in the city) and the **JW Marriot Panglao Resort and Spa** (Marriot remains the world's largest hotel chain in terms of the number of rooms globally) located in Panglao - among many other resorts and hotels. Another promising industry in Bohol is the Information and

Communications Technology, particularly for business process and knowledge process management outsourcing. In 2019, two major BPO companies **(TaskUS and iBex.)** had been established in the province which are currently employing around 5,000 with 85% being Boholanos. This sector has a potential in contributing to the economic growth of the province. Furthermore, with the improvement of information and communications technology highway, following the installation of fiber optic technology in Bohol by private telecommunication firms, the province may soon provide significant employment opportunities to its capable workforce for such related services.

Additionally, in terms of **trade, investments and livelihood**, an estimate of more than Php 1 billion worth of investments were poured in the province for new hotels, resorts and malls. Furthermore, the Bohol Economic Development and Promotion Office reported a total of Php 29.3 billiion new investments in 2023.

The **micro, small, and medium enterprises (MSMEs)** in the province has an important role in the province local economy, stimulating economic activities even in rural and far-flung areas. However, MSMEs sector had shown irregularities over the period, with yearly increases and decreases observed. Additionally, number of business name registered decreased from 9,344 in 2022 down to 7,763 registered business names in 2023. The employment generated from MSMEs also decreased from 34,473 in 2022 to 6,640 in year 2023. Meanwhile, the investment generated was Php 1,163,731,619.85 in year 2023.

Table 9. Micro Small Medium Enterprises (MSMEs) Business Name Registration and Employment Generated, Province of Bohol

Year	BN Registrations			Employment Generated			Buisness Owners			Investments Generated
	New	Renewal	Total	Male	Female	Total	Male	Female	Total	(in million pesos)
2019	7,280	1,049	8,329	3,560	2,757	6,317	3,120	5,209	8,329	994,419,278.00
2020	7,595	1,007	8,602	11,645	11,336	22,981	3,225	5,377	8,602	10,866,297,832.33
2021	7,264	1,135	8,399	6,868	26,781	33,649	3,322	5,077	8,399	1,725,935,647.38
2022	7,859	1,485	9,344	7,472	27,001	34,473	3,631	5,713	9,344	11,795,279,732.17
2023	6,166	1,597	7,763	3,261	3,379	6,640	3,129	4,634	7,763	1,163,731,619.88
Total	**36,164**	**6,273**	**42,437**	**32,806**	**71,254**	**104,060**	**16,427**	**26,010**	**42,437**	**26,545,664,109.76**

Source: ***Department of Trade and Industry- Bohol***

Moreover, the operation of cooperatives in the province is also thriving to provide socio-economic benefits to its member. As of 2023, there are 701 Registered Cooperatives in Bohol. Of the total cooperatives registered, only 191 cooperatives are operating and compliant to CDA requirements, operating with a total asset of Php 6,196,761,233.58 and with a total membership reaching to 158,798.

The banking sector of the province had been growing with an increasing number of banks established in Bohol. As of 2022, there were 125 banks established in the province where 8 banks were added from the 117 banks in year 2021. In terms of total number of accounts, it also rose from 724,999 in 2018 to 857,454 in 2022. Additionally, total bank deposits grew from 50,934,448 in 2018 to 69,329,749 in 2022.

Figure 24. Number of Banks, Bohol

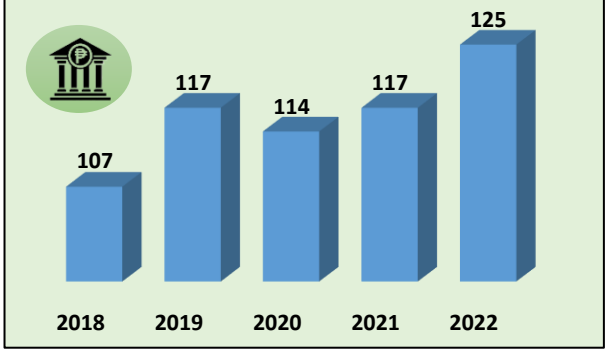


Figure 25. Amount Deposit (in Php), Bohol

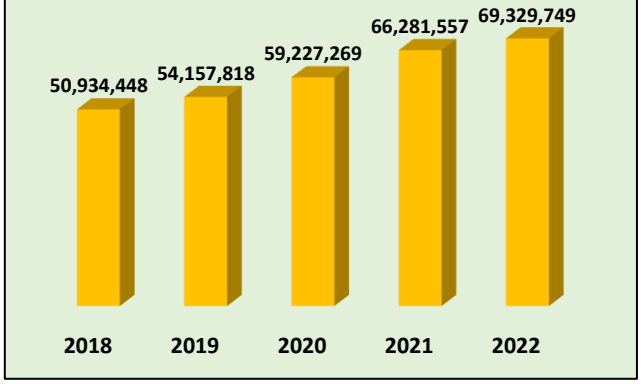
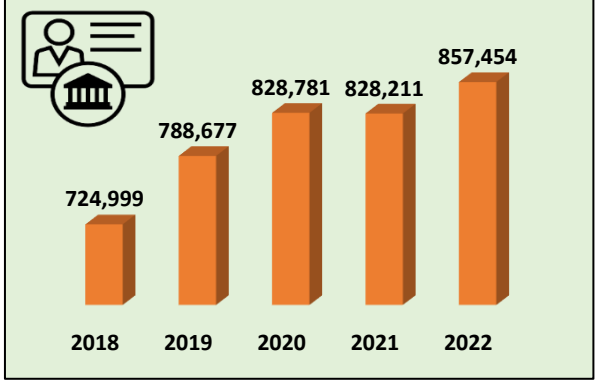


Figure 26. Number of Accounts, Bohol



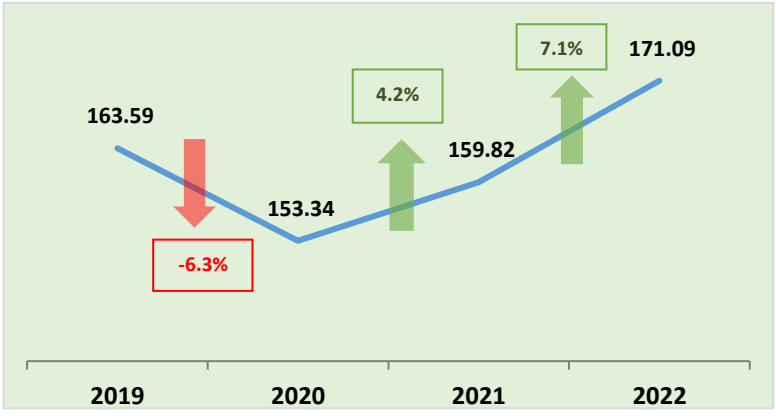
Source: ***Philippine Deposit Insurance Corp. (PDIC)***

Gross Domestic Product

In terms of **Gross Domestic Product (GDP)**, the Province of Bohol posted a growth of 7.05% in 2022 estimated at Php 171.09 billion, higher than the 4.3% growth rate registered in the previous year. Bohol Province represents the third largest economy in the ntral Visayas region following Cebu Province and Cebu City.

In 2022, all industries in the province grew except for Agriculture, forestry, and fishing which declined by 9.5%. In terms of share of the major industries to the

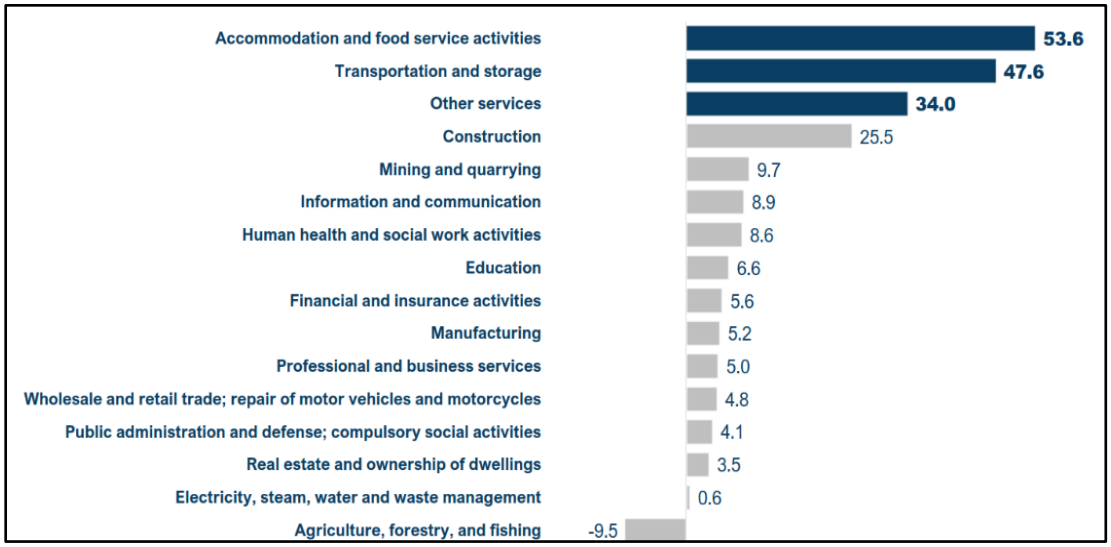
Figure 27. Annual GDP of Bohol, 2020-2023 Level (in Billion Php) and Growth Rates (in Percent), at Constant 2018 Prices



Source: ***OpenStat, Philippine Statistics Authority (PSA)***

economy of the province, wholesale and retail trade, and repair of motor vehicles and motorcycles had the largest share, accounting 33.1%, followed by, Agriculture, forestry and fishing with a share of 11.7%, then, closely followed by financial and insurance activities at 8.8%.

Figure 28. Growth Rates by Industry (in Percent), 2022, Bohol Province, at Constant 2018 Prices



Source: ***Philippine Statistics Authority (PSA)***

Chapter II. Development Vision and Framework of Bohol

Over-all Vision Statement and Development Goals

The Province of Bohol's development has been guided by its vision and mission statements. These statements, which have been crafted through consultative and participatory processes with practically all stakeholders and sectors represented, continue to serve as the overall guiding beacon of what Bohol wants to be, summarizing the aspiration of its people and the foundation of government's continued efforts of providing services, facilities and overall governance of the province.

The vision and mission statements, for several provincial administrations, have been adopted and revalidated to ensure that the province's goals, strategies and programs are aligned with such long-term development state. Below are the vision and mission statements of the Province of Bohol.

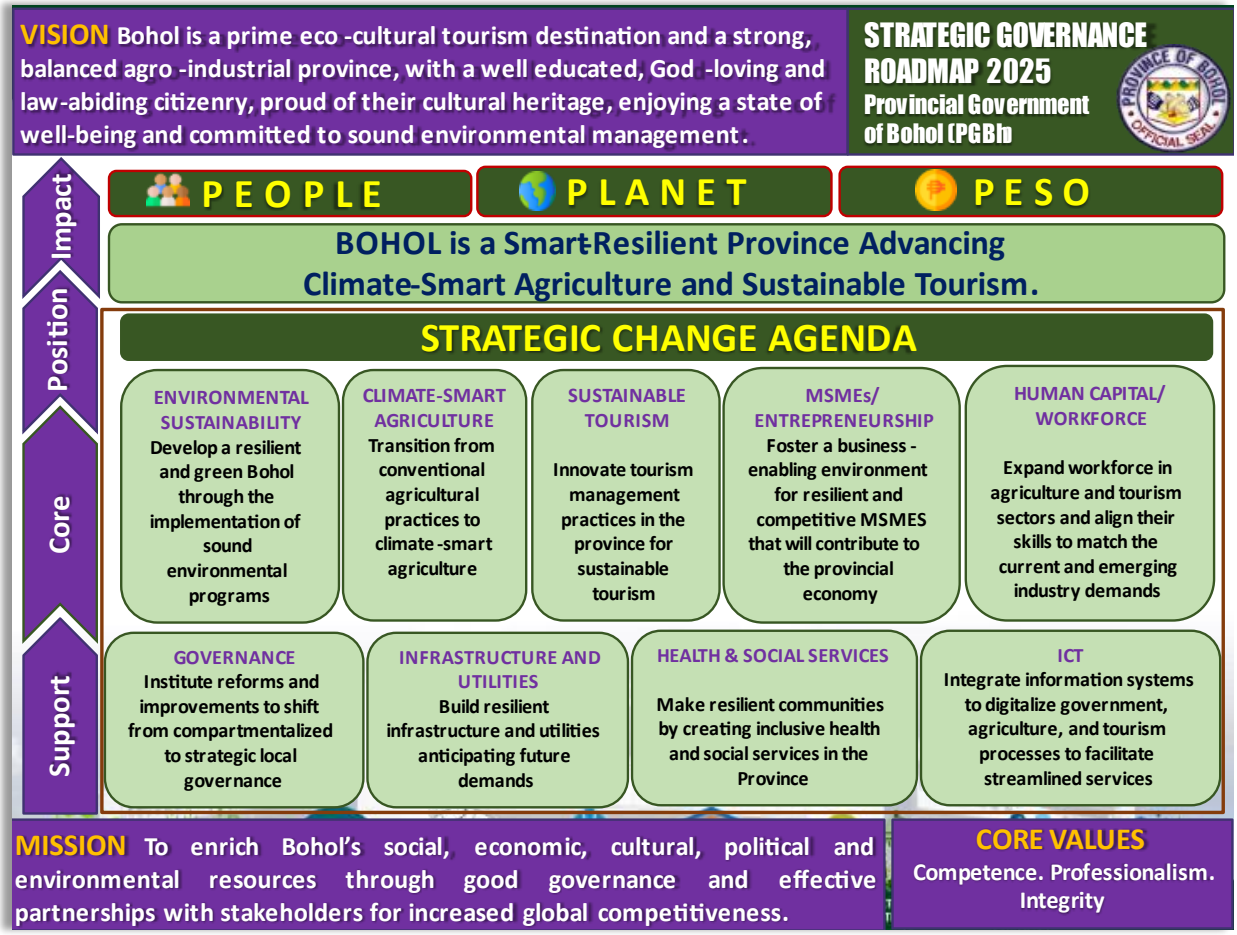
Vision	**Bohol is a prime eco-cultural tourism destination and a strong, balanced agri-industrial province, with a well-educated, God-loving and law-abiding citizenry, proud of their cultural heritage, enjoying a state of well-being and committed to sound environmental management.**
Mission	**To enrich Bohol's social, economic, cultural, political and environmental resources through good governance and effective partnerships with stakeholders for increased global competitiveness.**

To effectively achieve this vision, the Provincial Government of Bohol (PGBh) has periodically updated its Development Framework, which basically covers the medium-term (term-based) development priorities for the next three years. Such priorities are attuned to current realities and situation, to make government-led interventions as pro-active as possible to address issues and concerns of all sectors.

Recognizing the important role of planning in governance, the Provincial Governor, Vice Governor, members of the Sangguniang Panlalawigan and the members of the Management Executive Board (MEB) crafted a roadmap, which specify the priority strategies that will serve as its Agenda in next three years. The Strategic Governance Roadmap 2025 of the Provincial Government of Bohol (PGBh) aims to position Bohol as a "Smart-Resilient Province advancing Climate-Smart Agriculture and Sustainable Tourism." It still identifies the two economic drivers of agriculture and tourism as the primary industries that will bring the progress of its constituents and bring back the normalization of the economic and social activities that were greatly affected by the COVID-19 pandemic.

Strategic Governance Roadmap of the Provincial Government of Bohol (PGBh)

While supporting the existing Vision and Mission for the Province of Bohol, the Roadmap establishes to position Bohol as a Smart-Resilient Province advancing Climate-Smart Agriculture and Sustainable Tourism. It means that information and communication technology will be utilized to support the further progress of the two economic drivers of agriculture and tourism and the processes of governance for the welfare of the public. The roadmap, likewise, contains the Strategic Change Agenda and the Core Values that are expected from each employee of the PGBh.



Contained in the roadmap are nine (9) Strategic Change Agenda that are envisioned to provide the impetus for accelerating the necessary development of Bohol, which will benefit the majority of the Bol-anons.

- ***Strategic Change Agenda Mind Maps***

The means to achieve this position is through the Strategic Change Agenda, which are divided into the 5 Core of *Sustainable Environment*, *Climate-smart Agriculture*, *Sustainable Tourism*, *MSMEs/Entrepreneurship*, *Human Capital/Workforce* and the 4 Support of *Governance*, *Infrastructure and Utilities*, *Health and Social Services* and *Information and Communication Technology (ICT)*. Each of the Change Agendum is contextualized in a Mind Map that shows the Objective, Measures, and the Key Results Areas (KRAs).

Divided into five (5) Core and four (4) Support, each Agendum aims to transition governance with each respective objective:

a) Develop a resilient and green Bohol through the implementation of sound environmental program for *Environmental Sustainability*;
b) Transition from conventional agricultural practices to *Climate-smart Agriculture*;
c) Innovate tourism management practices in the province for *Sustainable Tourism*;
d) Foster a business-enabling environment for resilient and competitive MSMEs that will contribute to the provincial economy for *MSMEs/Entrepreneurship*;
e) Expand workforce in agriculture and tourism sectors and align their skills to match the current and emerging industry demands for *Human Capital/Workforce*;
f) Institute reforms and improvements to shift from compartmentalized to strategic local *Governance*;
g) Build resilient *Infrastructure and Utilities* anticipating future demands;
h) Make resilient communities by creating an inclusive *Health and Social Services* in the province; and
i) Integrate information systems to digitalize government, agriculture, and tourism processes to streamlined services for the *Information and Communication Technology*.

- ***Deliverables for the Planning Period***

A presentation of the deliverables for each year of the planning period is presented after each Mind Map. Each table contains the proposed programs, projects and activities (PPAs) that will support each Key Result Areas (KRA). The targets will be the measure upon which assessment will be made to know the status of its accomplishment.

- ***Core Values***

The Roadmap also contains the Core Values of Competence, Professionalism and Integrity, which each officer or employee of the PGBh is expected to adhere and put at heart.

- **Agriculture Sector Vision and Goals**

Agriculture is one of the economic drivers of Bohol and is the main source of livelihood of majority of the Boholanos. It provides income and livelihood to farmers and fisher folks and their dependents. Agriculture also enables traders, processors, retailers, and other groups to, directly or indirectly, make a living. Given these facts, it is only logical that the agriculture sector needs to be fully harnessed to enhance agricultural productivity and improve the incomes and welfare of farmers and fisherfolks.

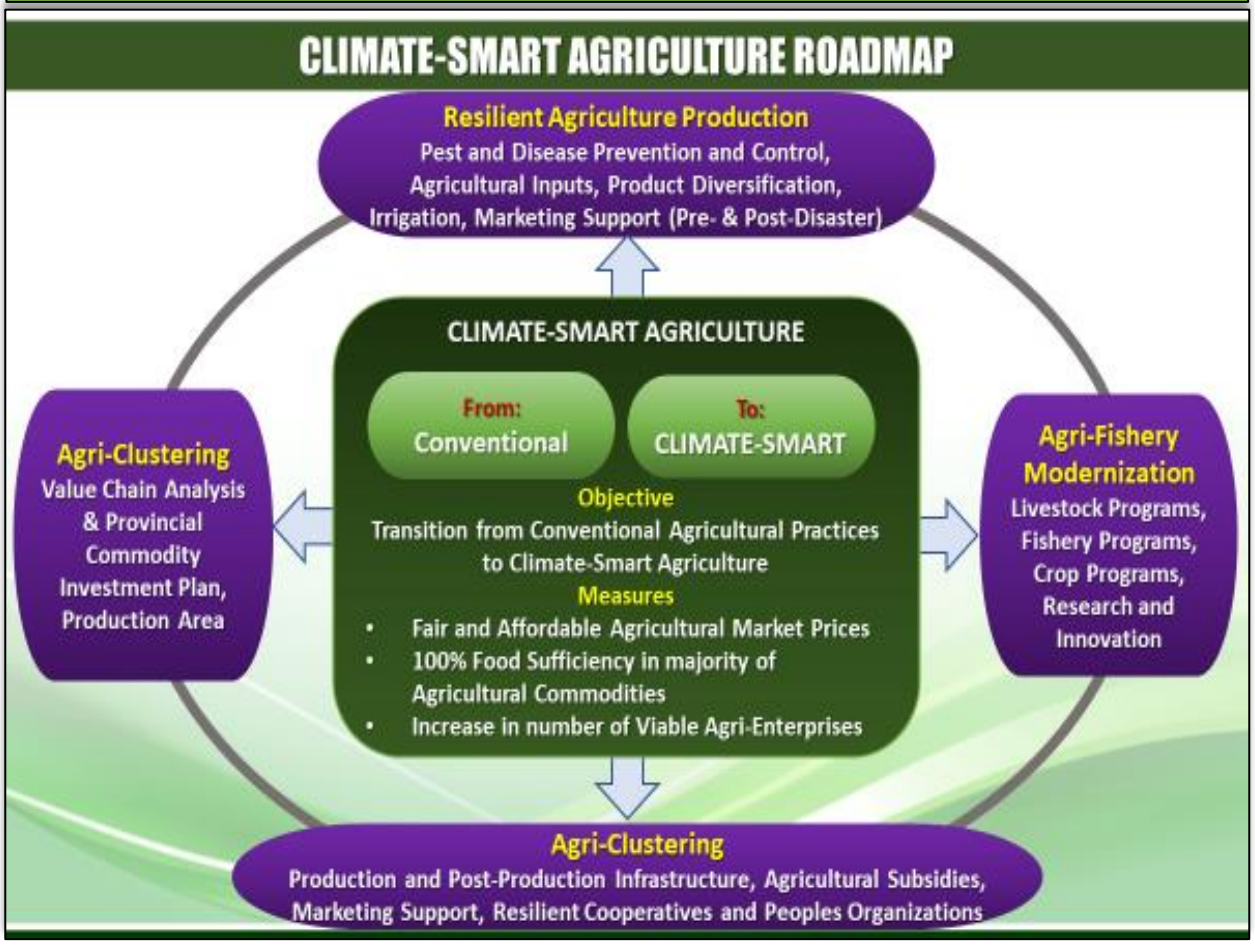
Consistent with this drive and with consciousness that agriculture is an economic driver of Bohol, the Provincial Government has been steadfast in implementing agri-based support programs and projects to achieve food sufficiency and attain economic growth through agri-industrialization. The province is fortunate to be selected as a one of the sites of the Philippine Rural Development Project (PRDP) that aims to develop an inclusive, market- oriented, climate-resilient agri-fishery sector by strategically investing in priority value chains. Based on suitability,

market potential, impact on the poor and number of growers/ producers, identified provincial priority commodities that go through prioritization are the following: coconut, dairy, native chicken, swine, high-value vegetables, cassava, inland fishery, mariculture, cacao and coffee.

The Provincial Government also desires to develop its high-value crops, vegetables, banana, mango, coconut and other economically beneficial crops like palm oil and cassava. Fishery development in the province is also being prioritized, considering that Bohol is a major source of fishery products in Region VII. As to livestock and poultry development, the Provincial Government has been continually responsible in improving and safeguarding the said industries with the promotion of native chicken and the research on the development of a Boholano strain of native chicken.

Much attention has been focused in the agriculture sector, Bohol being predominantly agricultural with more than half of its total land area devoted to agriculture. The development effort of the province is guided by its vision for a Green Bohol, a Competitive and Sustainable Agro-industrial Province in the Visayas. The figure below presents the mind map of the agriculture sector with the overall goal for a Climate-Smart Agriculture aiming for a transition from Conventional Agriculture to Climate-Smart Agriculture through resilient agriculture production, agri-fishery modernization and agri-clustering.

Figure 29. Agriculture Goals and Strategies



Chapter III. Priority Commodity Value Chain Development

The priority commodities identified in the province are: coconut, livestock-dairy, native chicken, vegetable, cassava, inland fishery, swine, mariculture (seaweeds), cacao and coffee. The identified commodities were ranked using the criteria as to suitability, market potential, impact on the poor and as to the number of growers or producers.

Table 10. Priority Commodities, Bohol, 2015

Commodity Prioritization Worksheet (CRITERIA)	Weight		Priority Commodities					
			COCONUT		LIVESTOCK-DAIRY		NATIVE CHICKEN	
			Raw Score	Weighted Score	0	Weighted Score	Raw Score	Weighted Score
I. Suitability	**20%**		-	**0.00**	0	**0.00**	0	**0.00**
II. Market Potential	**30%**			**2.70**		**2.70**		**2.34**
1. Market size		*20%*	9	1.80	9	1.80	9	1.80
3. Market growth potential		*20%*	9	1.80	9	1.80	9	1.80
4. Ease of entry		*20%*	9	1.80	9	1.80	6	1.80
5. Potential for value addition		*40%*	9	3.60	9	3.60	7	2.40
III. Impact on the Poor	**20%**			**1.80**		**1.80**		**1.80**
1. Number of Poor People Involved		*50%*	9	4.50	9	4.50	7	4.50
2. Potential to Raise/Create Income		*50%*	9	4.50	9	4.50	6	4.50
IV. Number of Growers/ Producers	**30%**		9	**2.70**	6	**1.80**	3	**1.80**
Total Weighted Score	**100%**			**7.20**		**6.30**		**5.94**
RANK				**1st**		**2nd**		**3rd**

Criteria	Weight		Priority Commodities					
			HI-HV VEGETABLE		CASSAVA		TILAPIA-HITO -IF	
			Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score
I. Suitability	**20%**		0	**0.00**	0	**0.00**	0	**0.00**
II. Market Potential	**30%**			**1.98**		**2.34**		**1.62**
1. Market size		*20%*	9	1.80	9	1.80	6	1.20
3. Market growth potential		*20%*	9	1.80	9	1.80	6	1.20
4. Ease of entry		*20%*	9	1.80	9	1.80	9	1.80
5. Potential for value addition		*40%*	3	1.20	6	2.40	3	1.20
III. Impact on the Poor	**20%**			**0.90**		**1.80**		**0.60**
1. Number of Poor People Involved		*50%*	3	1.50	9	4.50	3	1.50
2. Potential to Raise/Create Income		*50%*	6	3.00	9	4.50	3	1.50
IV. Number of Growers/Producers	**30%**		6	**1.80**	6	**1.80**	3	**0.90**
Total Weighted Score	**100**			**4.68**		**5.94**		**3.12**
RANK				**4th**		**5th**		**6th**

Criteria	Weight		Priority Commodities							
			SWINE		MARICULTURE		CACAO		COFFEE	
			Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score
I. Suitability	**20%**		0	**0.00**		**0.00**		**0.00**		**0.00**
II. Market Potential	**30%**			**2.52**		**1.50**		**1.50**		**1.50**
1. Market size		*20%*	9	1.80	6	1.20	6	1.20	6	1.20
3. Market growth potential		*20%*	9	1.80	6	1.20	6	1.20	6	1.20
4. Ease of entry		*20%*	6	1.20	7	1.40	7	1.40	7	1.40
5. Potential for value addition		*40%*	9	3.60	3	1.20	3	1.20	3	1.20
III. Impact on the Poor	**20%**			**0.60**		**0.90**		**0.80**		**0.50**
1. Number of Poor People Involved		*50%*	3	1.50	3	1.50	2	1.00	2	1.00
2. Potential to Raise/Create Income		*50%*	3	1.50	6	3.00	6	3.00	3	1.50
IV. Number of Growers/Producers	**30%**		6	**1.80**	2	**0.60**	2	**0.60**	2	**0.60**

Commodity Value Chain 6: VIRGIN COCONUT OIL (VCO)

A) Commodity Profile[13]

Product Description

The coconut tree is a plant that belongs to the family *Arecaceae* of the genus *Cocos* and species *Cocos nucifera*. The term "coconut" may refer to the whole tree, the seed or its fruit which is botanically called a drupe and not a nut. Coconuts have over 150 species all over the world and the tree grows in tropical and subtropical areas.

It is grown in different soil types – laterite, coastal sandy, alluvial, and reclaimed soils of marshy lowlands. It tolerates salinity and a wide range of pH (5.0-8.0). It also requires extensive exposure to sunlight and prefers an elevation not more than 600 meters above sea level.

Coconuts are classified into two types: tall and dwarf varieties. Tall varieties grow up to 30 meters, while dwarf varieties reach 15 meters. The tall type of coconut is a slow growing variety bearing less nuts. It starts bearing nuts 5-8 years after planting and will reach its maximum yield after 15-20 years. The tree has a strong stem, and has a lifespan between 80-100 years. They are normally cross-pollinating or heterozygous and are commonly found in Central Visayas.

Unlike the tall varieties, the dwarf varieties are fast growing and fruit at an early age. They flower 3 to 4 years after planting and reach maximum yield within 5 to 6 years from planting. Dwarf varieties have smaller nuts with variable colors of yellow, green, red and orange. They have a life span of up to 50 years and are self–pollinating or homozygous compared to the tall varieties. Hybrids are the inter-varietal crosses of two morphological forms of coconut. They show earliness in flowering and give increased yield, higher quantity and better quality of copra and oil when compared to the parents.

Based on the estimation of the Regional Office 7 of PCA, majority or about 85-90% of the coconut varieties in the region is of the tall variety. A little, about 5 to 10% is of hybrid variety and the remaining are dwarf varieties. The type of coconut varieties planted in the region is dependent on the type of seedlings available since coconut farmers do not usually spend money to buy seedlings to grow.

Coconut Suitability

Coconut is one of the staple commodities in the region and being surrounded with bodies of water, Central Visayas gains natural salt fertilizer from the sea which is good for the growing of coconut trees.

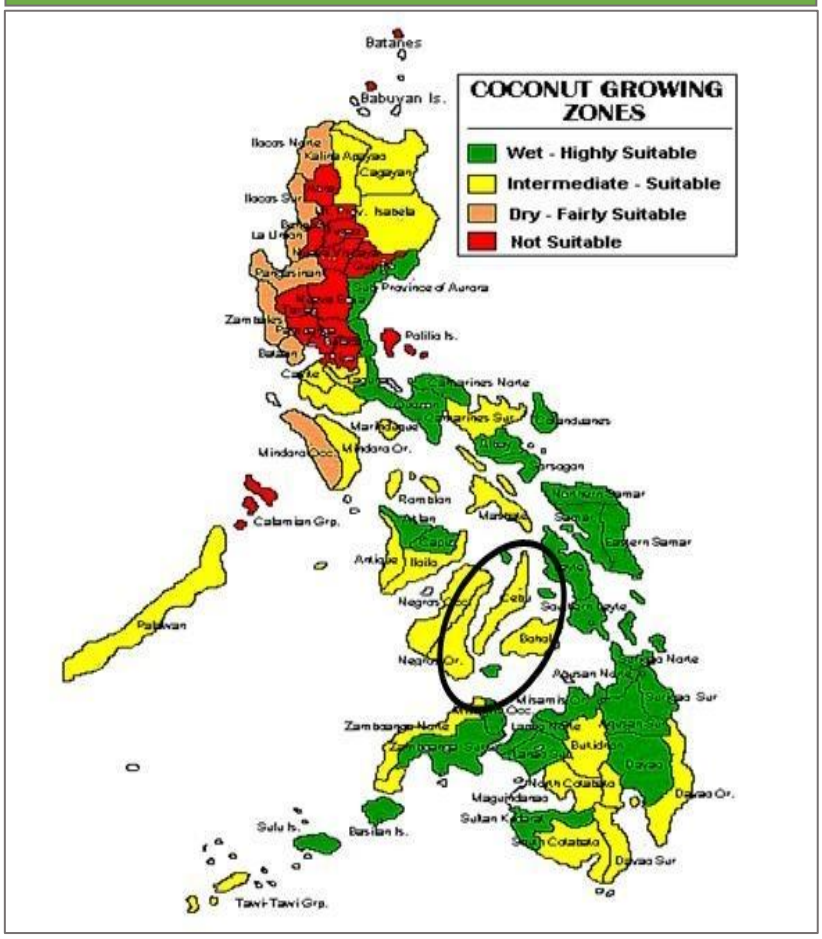
[13] Value Chain Analysis Virgin Coconut Oil, Central Visayas, April 2018

Table 11. Coconut Suitability of Central Visayas		
Province	**Estimated Area**	**Estimated Bearing Trees**
Negros Or.	50,160	4,775,910
Cebu	42,290	4,094,330
Bohol	42,640	3,621,330
Siquijor	6,800	549,440

Source: PCA, (Magat)

The map below shows the suitability of the region based on the rainfall distribution and growing altitude of the provinces. Central Visayas is classified under Suitability (Priority 2). These are areas in the Intermediate Growing Zone (IGZ), with adequate rainfall year-round and only 3 to 4.5 dry months. The average expected productivity of bearing trees annually is 1.5 to 2.5 tons copra/ha or 6,750 to 11,250 nuts/ha.

Figure 30. Philippine Coconut-Growing Zone



Source: Philippine Coconut Authority

Virgin coconut oil is making waves in the export market. Philippine VCO products as Koko Oil from Leyte, Celebes Certified Organic Virgin Coconut Oil from Butuan City (with market outlets in Cebu City), Nutrizen Extra Virgin Coconut Oil, and Nutiva Organic VCO – are among the few samples showing the great potential in both domestic and export market.

In Region 7, the four provinces agreed to have coconut as one of its top priority commodities, with virgin coconut oil as one of the emerging and potential products. A number of VCO processors have already tapped both the domestic and export markets. The BHMC Bio Natural Products, Inc. for Bohol, the Southern Partners Fair Trade Center Inc. in Cebu, the BLISCOFA farmers association in Negros Oriental and the Smylen Dream VCO in Siquijor. They have farmer-members supplying matured nuts or whole nuts for their coconut oil supply.

Based on commodity selection criteria, the four (4) provinces in Central Visayas were able to prioritize coconut, as shown in the table.

Table 12. Commodity Prioritization for Coconut in Region 7

Criteria	Commodity Ranking: Coconut			
	Bohol	Negros Oriental	Cebu	Siquijor
Suitability	9	9	8	9
Market Potential	9	9	9	9
Impact on the Poor	9	8	8	9
No. of Growers/ Producers	9	6	9	9
Rank	**1**	**2**	**1**	**1**

Source: Commodity Prioritization Worksheet, PCIP
(Note: 10 = highest raw score)

Owing to the table above, there is a big potential of coconut-based products in both the domestic and international markets. Thus, the respective provinces of the region made coconut as the top priority commodity as this can compete in the market having suitability to the natural conditions of Central Visayas - particularly on rainfall patterns, soil quality and temperature levels distributed throughout the year. The commodity is readily available region-wide and is potential for value addition to other product formats, two of those are VCO and coco coir/geonets which involves local farmers and rural poor who are currently into the coconut industry.

In the region, this could be economically advantageous for farmers in Bohol, Negros Oriental, Cebu and Siquijor, who ventured into virgin coconut oil production - mostly on a smaller scale - but also to groups exporting VCO with good sales.

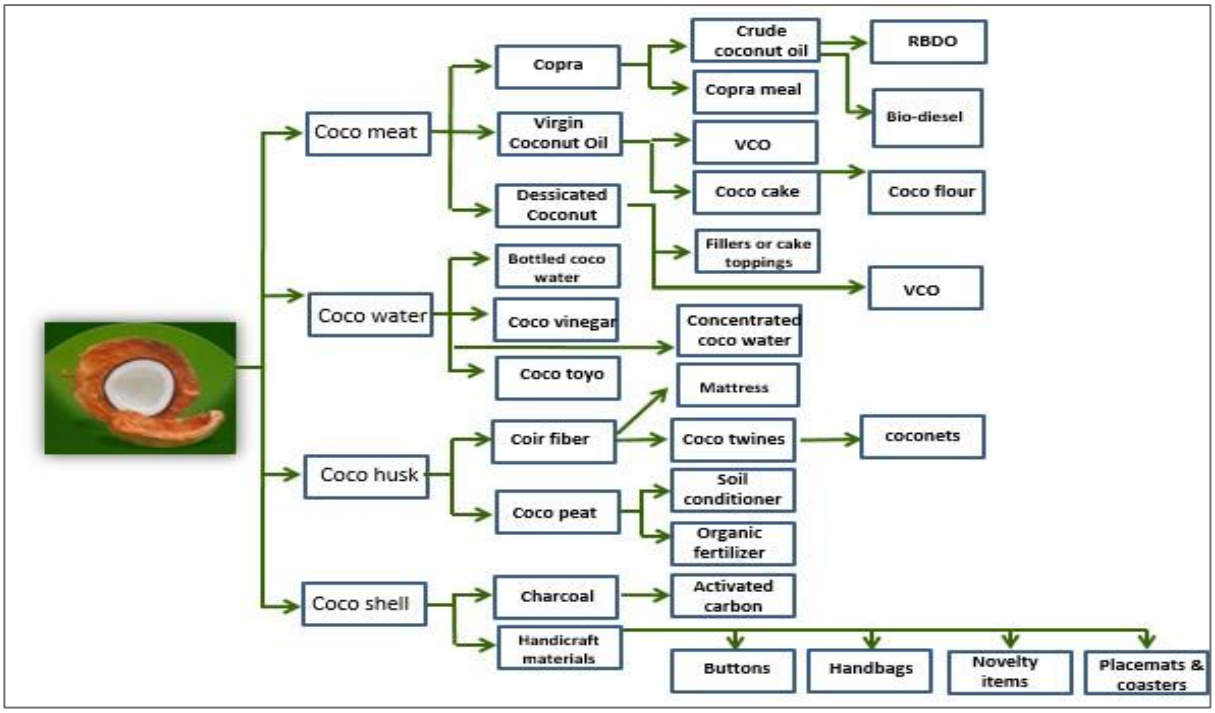
Product Formats

With the use of machineries, equipment and technology, different products can be generated from a mature coconut such as oil, copra, fiber, coir dust, sap, coco water, charcoal and coco lumber. These primary products are then upgraded into high value coco-based products to be traded in the local and export markets.

Each part of the coconut tree can be converted into other products that can be useful to its users but more products are produced from the whole mature nut. A whole nut has four major parts which include the meat, husk, water and shell. Mature coconuts are harvested at around 9-12 months and produce more meat as compared with young coconuts, which

produce more water. The former's meat is thick, fibrous and full of flavor while the young coconut is gelatinous and not very flavorful. The different parts of the mature coconut can be processed into different products which include coconut oil, virgin coconut oil and coir, among others as shown in the Figure 32 below.

Figure 31. Whole Mature Nut Product Formats



Source: *PCA-Trade Information and Relations Division, National Office*

The coconut meat is the most important part of coconut because it is used to produce copra which is the number one coconut product of the Philippines. According to PCA, more or less 90% of the national coconut production is processed into copra. From copra, crude coconut oil is produced which can be further refined into cooking oil or used for bio-diesel.

Coconut oil is usually obtained from the copra or from kernel or meat of mature coconuts. It is slow to oxidize and is resistant to rancidification which can last up to six months at a temperature of 24˚C (75˚F) without getting spoiled. There are two broad categories for coconut oil: (1) those mass-produced at an industrial level which needs further refinement and (2) those which start from fresh coconut and have much less refining.

Another oil produced from the coconut meat is the virgin coconut oil which can be produced in households after undergoing several processes. Based on Philippine National Standard (PNS/BAFPS 22:2004/ ICS 67.2000.10), VCO is defined as:

1. Oil obtained from the fresh, mature kernel (*coconut meat*) of the coconut by mechanical or manual means, with or without the use of heat, without undergoing chemical refining, bleaching, or deodorizing, which does not lead to the alteration of the natural oil. Virgin coconut oil is suitable for human consumption without the need for furthering processing.

2. Virgin Coconut Oil (VCO) consists mainly of medium chain triglycerides, which are resistant to peroxidation. The saturated fatty acids in VCO are distinct from animal fats, the latter consisting mainly of long chain saturated fatty acids.

One by-product of producing VCO is the copra cake. Dessicated coconut is another product made from the coconut meat. This is used as fillers or toppings for desserts.
For the coconut water, this can simply be bottled or further processed into coco vinegar and coco toyo, among others. One of the fast-emerging products from coconut is coco coir which is produced from decorticating the coconut husks. The waste product from this processing is called coco peat which is often used as organic fertilizer. Coconut coir on the other hand is used to produce twines and geonets or being used as material for different fibrecrafts and horticulture products.

Coconut shells are converted into charcoal or used as raw material for producing different accessories, handicrafts such as handbags, placemats etc.

In Central Visayas, the products produced in the region includes VCO, Coir, Coconut based food products ("bucayo") and desiccated coconut, among others. Out of all these products, this VCA would focus on the Study of the Virgin Coconut Oil (VCO).

- **Uses**

VCO can be used as raw material for the manufacturing of laundry and bath soaps, shampoos, shower gels, and other cleaning ingredients. It is also used in the making of lotions, toiletries, massage oils and cosmetics. It is hypoallergenic, and is safe and gentle to the skin.

It is also considered as a nutraceutical because of its many health benefits. Studies conducted show the following benefits of VCO:

1. Possesses anti-inflammatory, anti-microbial and antioxidant properties which work together to protect arteries from atherosclerosis and the human heart from cardiovascular disease (Fife, 2004);
2. Boosts immune system of babies (medium chain C8 and C12) and adults (Kabara 2000);
3. Protects against heart diseases by increasing the high-density lipoprotein (HDL) that collects the excess or unused cholesterol in the body for excretion by the liver;
4. Provides protection from infectious diseases not easily cured by antibiotics;
5. Makes digestion easy without the need for bile and goes directly to the liver for conversion to energy (Dayrit, 2003);
6. Stimulates metabolism, boosts energy and prevents deposition of fats thereby preventing obesity (Dayrit, 2003);
7. Improves nutritional value of food by increasing absorption of vitamins, minerals and amino acids (Fife, 2004);
8. Provides natural, low-calorie fat (Fife, 2004); and
9. Inhibits the action of cancer forming substances (Clara Lim Syliangco, 1987).

Figure 32. VCO products in Central Visayas

According to studies, VCO boosts the immune system, reduces heart disease because of its high contents of lauric acid, and stimulates metabolism. Aside from oral intake, VCO can also be applied topically to skin and hair. It is good for the skin to heal burns and rashes and for the hair to make it healthier.

Because of the health benefits of VCO, it is being used in a homeopathic clinic. VCO is also marketed as a food supplement and as pure oil. In some cases, VCOs are re-processed and made as base oils for aromatherapy, and massage oils used in massage salons and resorts. Herbal essences like eucalyptus, mint, and vanilla are mixed with the VCO to have achieve aromatic oils.

One potential VCO product from Bohol is the so-called "ozonated" virgin coconut oil, a product of BHMC Bio Natural, which is an effective treatment of bacterial infections, fungal infections, and viral infections with anti-protozoal and anti-parasitic properties. The product is also an effective adjunct treatment for the inflammation of the skin, such as dermatitis

Domestic Production

The coconut industry is one of the most important industries in the Philippines due to its large contribution to the economy by comprising nearly half of the agriculture exports. There are also 68 out of 81 provinces in the country engaged in coconut production which are mostly in rural areas with smallholder farmers. Among the major crops, coconut lands have the largest potential for diversification, and it still has huge, untapped resource pool for industry development.

Table 13. Philippine Coconut Production, 2011-2016 (in MT)

Regions	2012	2013	2014	2015	2016	Ave. Annual Growth Rate
PHILIPPINES	15,863,801	15,354,334	14,696,298	14,735,189	13,825,080	-3.35%
Davao Region	2,720,233	2,275,980	2,332,090	2,246,188	1,894,663	-8.30%
Northern Mindanao	1,816,501	1,816,578	1,838,405	1,851,702	1,802,403	-0.18%
Zamboanga Peninsula	1,730,428	1,743,792	1,659,014	1,682,121	1,529,763	-2.94%
ARMM	1,311,219	1,327,299	1,356,182	1,393,168	1,376,545	1.23%
CALABARZON	1,417,439	1,434,804	1,380,491	1,379,298	1,517,414	1.84%

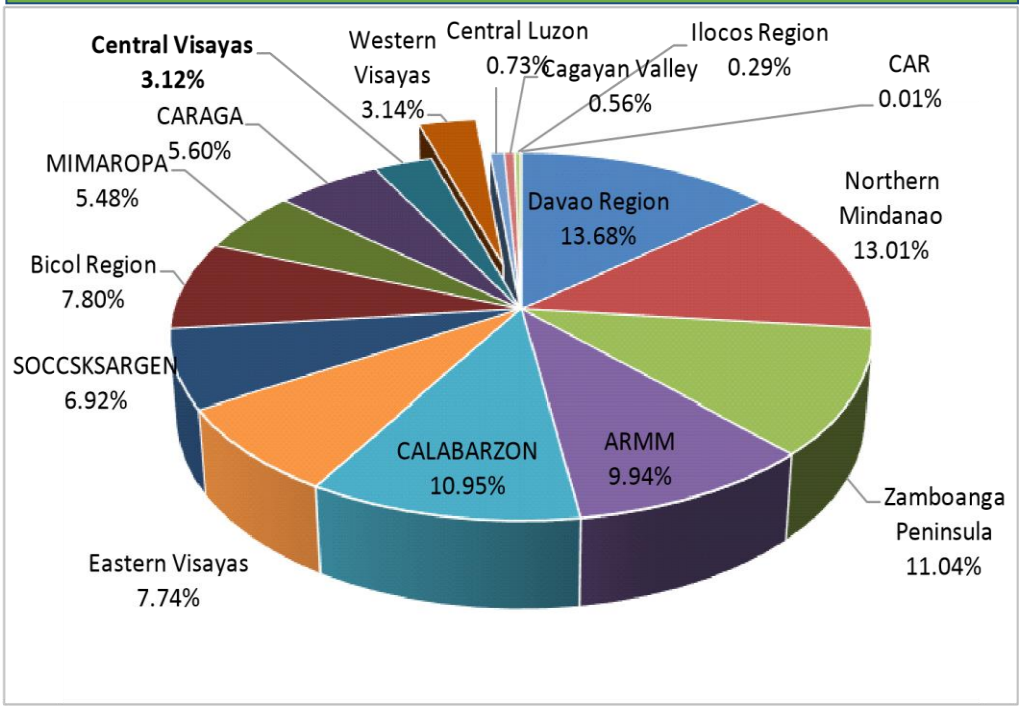
Table 13. Philippine Coconut Production, 2011-2016 (in MT)						
Regions	**2012**	**2013**	**2014**	**2015**	**2016**	**Ave. Annual Growth Rate**
Eastern Visayas	1,771,459	1,623,586	1,191,923	1,165,867	1,072,666	-11.28%
SOCCSKSARGEN	985,175	1,040,610	1,071,707	1,159,818	958,351	-0.13%
Bicol Region	1,240,459	1,255,507	1,124,412	1,105,743	1,081,112	-3.28%
MIMAROPA	745,489	779,135	806,929	818,146	758,748	0.55%
CARAGA	880,883	834,917	821,513	804,723	775,473	-3.13%
Central Visayas	**451,037**	**458,993**	**448,111**	**432,043**	**432,043**	**-2.68%**
Western Visayas	477,953	470,653	359,826	410,888	435,057	-1.25%
Central Luzon	209,025	179,360	189,174	167,738	100,755	-15.00%
Cagayan Valley	66,233	71,561	74,372	77,118	77,177	3.94%
Ilocos Region	39,316	40,482	40,978	39,464	40,158	0.56%
CAR	952	1,079	1,173	1,165	1,037	2.60%

Source: ***Philippine Statistics Authority, 2017***

It can be seen from the table that Philippine coconut production from 2012-2016 has been continuously decreasing at average growth rate of -3.35%. Davao Region, Eastern Visayas, and Central Luzon experienced the sharpest decreases at 8.30%, 11.28%, and 15% respectively. Despite the decrease in production of Davao Region, it still remains as the top-producing region in the country.

The figure below shows the percentage share of coconut production per region in in 2016.

Figure 33. Percentage Share of Coconut Production per Region, 2015



Of the 16 regions of the country, Davao region has the largest share of production with 13.70% share. This is followed by Northern Mindanao with 13.04% and Zamboanga Peninsula with 11.07%. The top three regions are located in Mindanao which has large plantations of coconut and religiously practices intercropping which produces higher yield.

Central Visayas is ranked 11th behind CARAGA with 2.92% share of total domestic coconut production. It is one of the least performing regions in the country, posting decreasing growth rate of 2.68% from 2011-2015. To be a top coconut producer, Central Visayas has to at least double its production, and be at par with CARAGA or MIMAROPA with around 5.5% share of total domestic production.

- ***Central Visayas Coconut Production***

The table below shows the coconut production of the region by province.

Table 14. Central Visayas Coconut Production per Province, 2011-2015 (in MT)

PROVINCE	2012	2013	2014	2015	2016	Ave. Annual Growth	% share 2016
CENTRAL VISAYAS	**451,036.96**	**458,992.52**	**448,110.88**	**432,042.79**	**403,757.73**	**-2.68%**	**100%**
Bohol	165,853.66	172,697.92	177,573.35	156,619.95	145,029.28	-3.06%	35.92%
Cebu	109,870.37	113,280.37	103,476.22	106,882.40	107,702.61	-0.37%	26.68%
Negros Oriental	164,212.80	162,757.31	156,684.34	157,974.17	142,178.44	-3.45%	35.21%
Siquijor	11,100.13	10,256.92	10,376.97	10,566.27	8,847.40	-5.22%	2.19%

Source: ***Philippine Statistics Authority, 2017***

From 2012 to 2016, coconut production in the region was characterized by an increasing trend in 2012-2013 before declining to its lowest in 2016. Average annual growth of the region posted -2.68%. Bohol has the highest production share for the past five years, despite the sharp decline in 2015 by 11.8%, which continued until 2016. Negros Oriental followed closely with production share of 35.21% in 2016, it's lowest through its erratic production.

One of the major factors affecting coconut production in the region is the occurrence of natural calamities. In 2015, El Nino affected coconut plantations in Bohol with land drought and very limited rainfall. In 2013, Typhoon Yolanda also hit the northern part of Cebu devastating coconut farms in the affected areas. Aside from that, there is also the issue on the pest infestation (brontispa or common leaf beetles and rhinoceros beetle) which has affected the coconut production.

PCA reported that from August 2007 to March 2011, the brontispa infestation already affected more than 3 million coconut trees nationwide. It also caused alarm as it infected 171,000 coconut trees in 25 provinces throughout the country, including Bohol. In Central Visayas, the Bohol had the highest affectation, while Negros Oriental, Cebu and Siquijor experienced minor or slight damages. This alarming situation prompted the PCA to spearhead the Brontispa Action Program to determine the extent of infestation and the level of damage in the country.

Apart from the Brontispa, the rhinoceros beetle (*oryctes rhinoceros*), locally known as "bakokang", also wreaked havoc in coconut trees. According to PCA Region 7, the pest

infestation occurs year-round in all provinces. Its population is highest between June to September, with the onset of the monsoon that brings light damages to coconuts. This began in 2009 but the effect was only felt in 2011 to 2013, with Bohol as the province with most damage, followed by Cebu, Negros Oriental and Siquijor.

PCA implemented the Integrated Pest Management (IPM) to control or contain the damage to coconuts brought about by insect pests. Trunk injection, leaf pruning, and massive control of biocontrol agents are undertaken by PCA in affected regions. *Tetrastichus sp.* are wasps whose parasitic activity can regulate the population of B. Longgisima at a low level so that it could no longer cause significant damage to coconut palms.

Table below shows the coconut harvest areas in the region. Same as the global coconut area there is little to no significant change in the coconut planted areas in the region.

Table 15. Coconut Harvest Areas in Central Visayas, 2011-2015 (in ha)

	2012	2013	2014	2015	2016	Ave. Annual Growth Rate
CENTRAL VISAYAS	**128,660**	**128,666**	**126,347**	**124,950**	**124,940**	**-0.73%**
Bohol	35,293	35,293	35,293	35,258	35,278	-0.01%
Cebu	42,490	42,490	40,174	38,812	38,812	-2.21%
Negros Oriental	45,530	45,530	45,525	45,525	45,525	0.00%
Siquijor	5,347	5,353	5,355	5,355	5,325	-0.10%

Source: ***Philippine Statistics Authority, 2017***

Overall, the region posted an average growth rate of -0.73%. Cebu on the other hand, experienced a decline at 2.21%. The data implies that expansion of coconut planted areas is given little importance and are even decreasing, but at the same time conversion of these areas for other purposes is not apparent. Coconut areas are maintained in general, recognizing the coconut as a prime commodity in the region.

Table 16. Coconut Yield per Province, 2016

	Production (MT)	Planted area (ha)	Yield (MT/ha)
CENTRAL VISAYAS	403,757.73	124,940	**3.23**
Bohol	145,029.28	35,278	4.11
Cebu	107,702.61	38,812	2.77
Negros Oriental	142,178.44	45,525	3.12
Siquijor	8,847.40	5,325	1.66

Source: ***Philippine Statistics Authority, 2017***

Table above shows the coconut yield per province in the region for 2016. Bohol had the highest yield at 4.11 MT/ha. Overall, Central Visayas posted a yield of 3.23 MT/ha, almost half of the yield of Davao Region at 6.28 MT/ha, which is the top coconut-producing region in the country. Its coconut farms are characterized with vast plantations compared to the small

landholdings of farmers in Central Visayas. This allows for concentrated and more systematic application of various practices that contribute to the high yields. This shows that Central Visayas has still a lot to improve in terms of productivity of its coconut areas.
Bohol has substantial number of small-holder farms with denser coconut cropage as farmers continue to rely on coconut as a staple crop than the rest of the provinces in the region. This is followed by Negros Oriental with coconut farms located in the uplands and vast sugar lands in the lowlands.

Table 17. Coconut Population in Central Visayas, 2013

Province	Bearing Trees	Non-Bearing Trees	Senile Trees	Nut Production
Bohol	4,680,669	344,065	421,260	168,504,084
Cebu	4,291,490	1,312,830	386,234	154,493,640
Negros Oriental	3,505,810	2,177,866	315,500	126,209,160
Siquijor	367,605	271,646	33,000	13,233,780
Total	**12,845,574**	**4,106,407**	**1,155,994**	**462,440,664**

Source: ***Philippine Statistics Authority, 2013***
(Note: Computation for Nut Production is Bearing Trees times 36 (Average nut per tree per year is 36 for Central Visayas)

In 2013, Central Visayas has 12.84M bearing trees, 3.79% of the population in the country. Bearing trees are mature coconut trees producing nuts, while non-bearing trees are coconut trees 3 years old and below that are yet to mature. Senile trees are 60 years old and above and have already reached or are beyond their productive years.

Bohol has the highest number of bearing trees followed by Cebu, Negros Oriental and Siquijor. Negros Oriental has the most non-bearing trees, implying that the province is more aggressive in the planting and re-planting of coconut trees. Senile trees on the other hand, are used for lumber and fuel.

Table 18. Average Nuts Harvested per Tree/ Harvest (kg), 2016

Province	Nut Production (kg)	Nuts Production/ Harvest (kg)	Bearing Trees	Nuts Harvested/ Tree/Harvest (kg)
Central Visayas	**403,757,730**	**100,939,433**	**12,845,574**	**7.86**
Bohol	145,029,280	36,257,320	4,680,669	7.75
Cebu	107,702,610	26,925,653	4,291,490	6.27
Negros Oriental	142,178,440	35,544,610	3,505,810	10.14
Siquijor	8,847,400	2,211,850	367,605	6.02

Eighty percent (80%) of the nuts harvested in the region are used for copra production. Only 0.63% are utilized for VCO production, while the rest are used for household consumption and fresh buko juice. The computation for the nut utilization for VCO production has the following assumptions:

a) 1 nut = 1 kg
b) VCO production is done quarterly as based on the KII, most processors process/ distribute VCO quarterly
c) 1 L of VCO uses 12-15 nuts or 13.5 nuts if averaged

Table 19. VCO Nut Utilization in Region 7, 2016

Province	Nut Production (kg)	VCO Production (L)	no. of nuts for VCO production	% nuts utilized for VCO Production
Central Visayas	**403,757,730**	**189,180**	**2,553,930**	**0.63%**
Bohol	145,029,280	16,740	225,990	0.16%
Cebu	107,702,610	103,800	1,401,300	1.30%
Negros Oriental	142,178,440	67,800	915,300	0.64%
Siquijor	8,847,400	840	11,340	0.13%

Source: ***Philippine Statistics Authority***

Copra remains the major industry of coconut, utilizing 80% of the nut produced in the region. VCO is still an emerging niche industry, utilizing only 0.63% of of nut production. The remaining 19.37% is is utilized for household consumption (gata) and fresh buko juice sold in public markets or retail stores, or in restaurants, resorts and other establishments.

The table below shows the top producing municipalities per province in Central Visayas and the top ten producing municipalities in the region as a whole.

Table 20. Top Coconut-producing Municipalities, Bohol, 2012

Province: Bohol	No. of Bearing Trees	Province: Cebu	No. of Bearing Trees
1. Carmen	718,479	1. Argao	422,033
2. Dimiao	565,887	2. Tuburan	358,235
3. Balilihan	533,861	3.Oslob	337,909
4.Ubay	531,167	4.Balamban	290,772
5.Inabanga	490,446	5.Barili	265,205
6.Batuan	393,161	6.Asturias	245,598
7.Candijay	387,258	7.Carmen	231,660
8.Antequera	383,728	8.Dalaguete	228,940
9. Anda	348,456	9.Dumanjug	227,152
10.Alicia	326,169	10.Catmon	222,650

Source: ***PCA 7, 2012 (Latest Update)***

Under the assumption that each bearing tree in the region produces an average of 36 nuts per year, Table 20 shows that majority of the top-producing municipalities in the Central Visayas are found in Negros Oriental and Bohol.

Carmen (Bohol) on the other hand, has 5,768 ha. It has high production due to its high number of bearing trees with an average yield of 35 nuts/tree/year. The average farm size is 0.50 ha/farmer with the highest number of coconut farmers in the region at 11,524. [14] According to PCA Bohol office, they do not have an updated data than that of 2011 figure since the Bureau of AgrIcultural Statistics (BAS) data is currently reconciling with that of the Philippine Statistics Authority (PSA) data. There is an on-going direct collection of data down to the barangay level by PCA region-wide, which is expected to be completed by the second semester of 2018.

Environment

Environmental factor is being considered in the VCO processing. Coconut farmers and VCO processors adopt climate resiliency measures owing to the Yolanda experience in the Visayas. Most of these farmers adopted climate-smart activities such as intercropping in order to protect and sustain their livelihoods.

Aside from VCO, processors also produce coco coir or geonets to control the impact of coir dust and make it into fertilizer. This is practiced by Barangay Liptong Small Coconut Farmers Association (BLISCOFA) in Negros Oriental as they buy whole nuts and dehusk the nuts before VCO processing.

Common to all processors in the region, production wastes mainly come from the losses on the expeller and the grinder. All the other wastes are processed later. The wastes or contaminants from the expeller and the grinder are composed mainly of ground coconut meat which are utilized as animal feed or natural fertilizer. Waste from the settling tank and filter press are mainly coconut oil and some fibers from the coconut meat which can also be used as animal feed or fertilizer.

[14] Data available for Bohol in number of workers and coconut areas was dated 2011.

Value Chain Mapping

Figure 34. Geographical Flow Map of VCO in Central Visayas

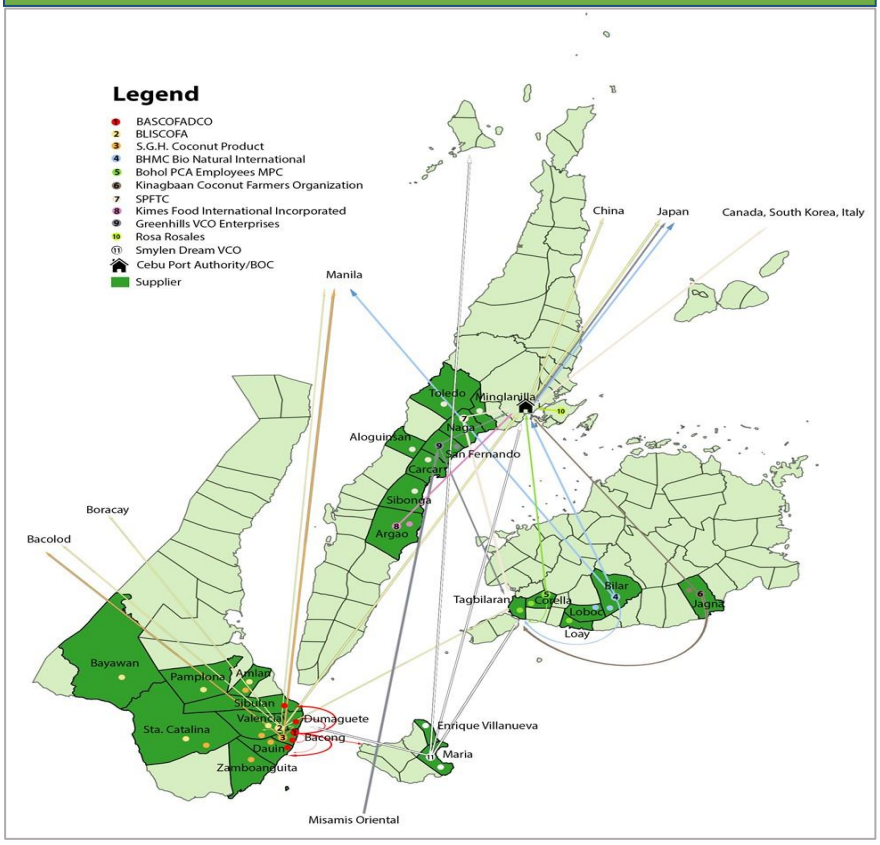


Figure 34 shows the flow of VCO in Central Visayas. The major domestic destinations of processed VCO are Manila, Boracay, Bacolod and Cebu. Some provincial processors export VCO to Japan, South Korea, Canada, Italy and China.

In the domestic market, the Biological Homeopathic Medical Corporation (BHMC) Bio-Natural Products Incorporated, a processor in Bohol, ships to BHMC – Cebu Office, their partner homeopathic medical clinic and the market-consolidating arm located in Cebu. The BHMC Cebu branch then ships these VCOs to the other clinics in Manila (BHMC Pasay and Alabang), and in Mindanao (BHMC Cagayan de Oro, Davao and Surigao), depending on the orders of said branches.

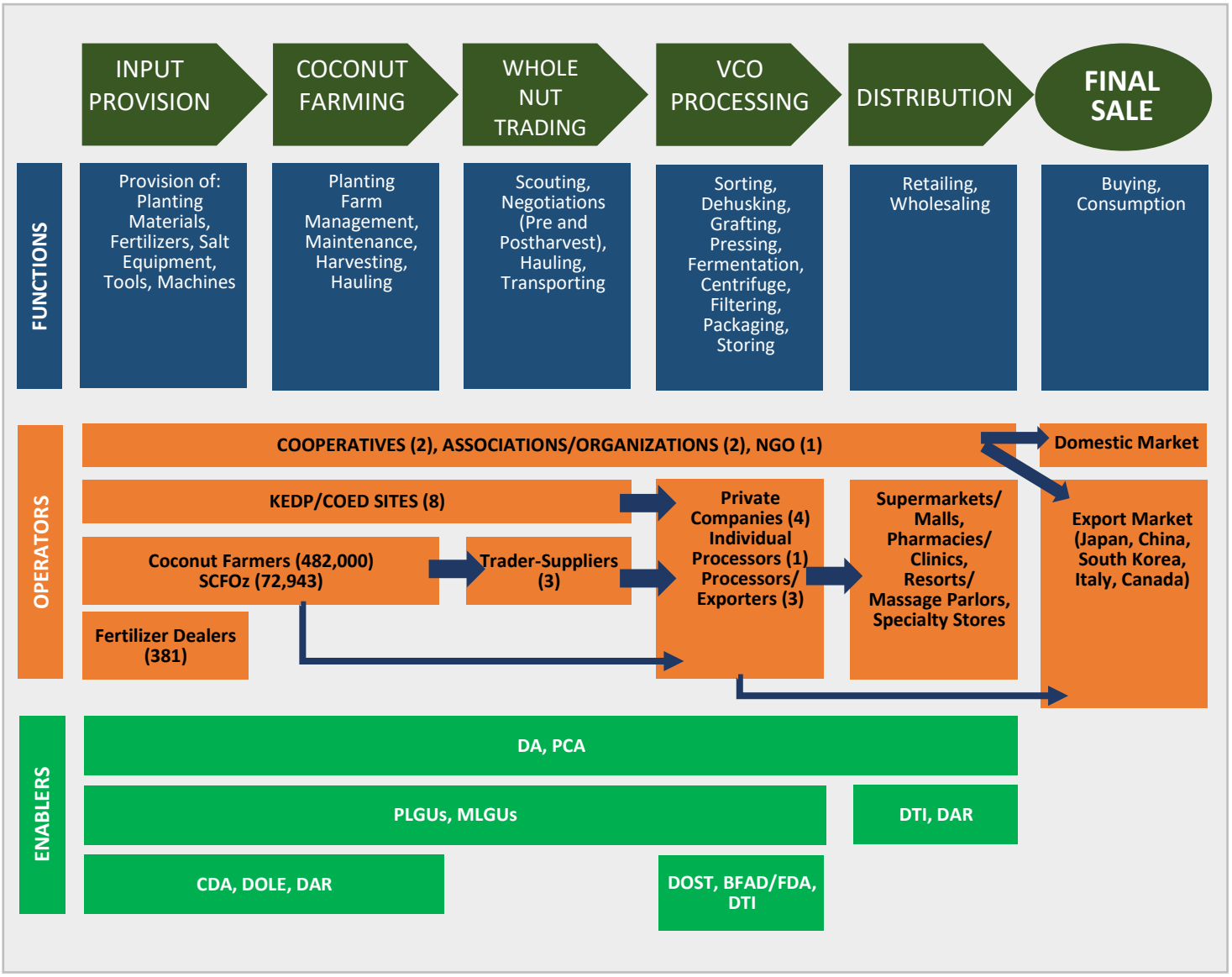
In Negros Oriental, VCO is shipped to the resorts and massage parlors in Boracay, Bacolod and Manila. There is really no permanent buyer in Manila and shipment is on a per order basis. Currently, Negros Oriental processors are more aggressive in their export marketing of VCO to Japan and China.

Smylen Dream VCO in Siquijor processor sells locally, with buyers from resorts Bantayan Island, Minglanilla, Cebu and Bohol. Buyers mix VCO with eucalyptus and local scents for massage oils. Southern Partners and Fair-Trade Center, Inc. has domestic markets in Cebu (Gaisano Country Mall) and Bohol (5 outlets of Alturas Group) and export market to South Korea and Canada. Two metric tons (2 MT) of VCO is supplied by Misamis Oriental to Southern Partners and Fair-Trade Center in Cebu for order shipments going to Canada. The company's

buyer from Canada requires that the coconuts used in the VCO production are Organic Certified. Since there is no organic certified coconut farm in Cebu, they order VCO from their partner organizations in Mindanao and package it in Cebu.

The other VCO processors in the region are only trading locally and have not yet made some breakthroughs in terms of capturing a larger market share.

Figure 35. Value Chain Map of VCO



The chain starts with input provision. Seedlings and fertilizers are provided through the programs of PCA to farmers. Coconuts are then grown until the fruits mature after 12 months for harvest. When the nuts are fully matured, the farmers who are directly involved in the production and the farm workers - harvest these nuts, and sell either to whole nut traders/buyers or directly to the processors. 1 liter of VCO needs an average of 12 to 15 fully matured coconuts, depending on the size.

Processed VCO are then distributed to retail outlets, pharmacies, clinics, supermarkets, malls and specialty stores. In the region, VCO is distributed both in the domestic and export

markets. End users are hotels, resorts, massage parlors, and households who use VCO for various purposes. VCO exported to Japan, South Korea, and Canada are further processed to food supplements and cosmetic products.

There are two classifications of VCO domestic markets. The first are individuals who use VCO for personal use. The other are establishments buying VCO and further re-process it into different VCO-based products. Most common are massage parlors and resorts that use VCO as the base oil and mix it with the massage oils, aromatherapy oils and local scents such as eucalyptus. Others also further processed into VCO soap.

The Department of Trade and Industry (DTI) also provides machines and equipment as a start-up for VCO processing through the provision of Shared Service Facility (SSF). Through this project, machines and equipment were provided to processors whose business got damaged by the 2013 earthquake in Bohol.

Small-scale processors in the region comprise of cooperatives or farmer associations, having a capacity of processing 100-200 nuts per day. Medium-scale processors are usually private businesses or farmer associations with a foreign investor, except for Southern Partners and Fair-Trade Center, Inc., which is a Non-Government Organization (NGO). Some processors also produce coco coir, coco geonet, coco vinegar, flour and other coconut products aside from VCO.

Shown in the table below are the suppliers of mature coconuts to some selected VCO processors. Most of these are farmer-associations whose members are coconut farm owners and laborers.

Table 21. Supplier of Coconuts of some VCO Processors

Province	VCO Processor	Supplier
Bohol	Kinagbaan Farmers' Organization	Farmer members
	BHMC Bio Natural Products Inc	Macaban Kakaw-Krayollo & LubiNetibo Agriculture Cooperative (MKLAC)
Cebu	Southern Partners Fair Trade Center	Mag-uumang Nagkahiusa sa Sam-ang ug Magdugo (MANAGSAMA) in Toledo City
		Kahugpungan sa mga Mag-uuma sa Aloguinsan (KMA)
		San Roque Farmers Organizaton (SRFA) in Aloguinsan
		Nagkahiusang Mag-uuma sa Lamacan Sibonga (NAMALASI)
		the Nagkahiusang Mag-uuma sa Cadulawan ug Vito-Camarin (NAMACAVIC) in Minglanilla
		Gabay sa Bag-ong Pag-asa sa Napo (GBP-Napo) in Napo, Carcar City

Source: ***KII***

Table 21 shows that Kinagbaan Farmers' Organization and BHMC Bio Natural Products Inc. in Bohol have arrangements with farm groups for their coconut supply. Southern Partners Fair

Trade Center. in Cebu, through their six active partner-farmer-organizations are supplied with desiccated coconut which they process into VCO. The rest of the processors in the region have individual farmers as suppliers of whole nut.

SPFTC partnered with the Department of Trade and Industry (DTI) for the installment of Shared Service Facility (SSF) to its 10 partner farmer organizations supplying them desiccated coconut. Ten village facilities for desiccated coconut were provided by DTI with equipment worth P498,000 for each farmer organization, which was later augmented with P2M in sum. However, only six village facilities are currently running, as some have problems regarding the damaged structure which housed the equipment and some also have problems on the installation of electricity connection. Each facility can process 48 kg of dessicated coconut everyday which are then picked up by SPFTC.

Waste Disposal

According to processors, there are no wastes in VCO production. This is because all inputs that are used in the production can be re- used. The milked coconut meat or “sapal” are bought or given away and used as animal feeds. The husks can be further processed to coco coir and geonets. One processor in Bohol gave the husks to the neighboring houses as replacement for firewood since it is not allowed to gather firewood per forestry laws. Coconut shells are bought and sold to factories in Cebu.

In the natural fermentation method, when the milk has settled, it produces 3 layers. The first layer can be re-processed for cooking oil and the third layer can be made into vinegar. For those who do not further process the two layers, these are diluted with water first before disposing so as not to affect the environment.

For BFAD/FDA certified processors, they have their own septic tanks for the disposal of wastes, but other processors dilute their wastes with water. According to one processor, waste from VCO processing does not really have an adverse effect on the environment because the inputs used were all natural. They do not have any chemicals added to VCO. Feedback from their neighboring rice farmers about the VCO wastes is positive as the water and waste serve as fertilizer for the rice farms which resulted to higher rice yields.

Distributors

In Central Visayas, the distribution of VCO is mostly done through retailing. VCO are packaged in different sizes like 220 ml, 250 ml, 330 ml, 450 ml, 500 ml and 1 liter. They are sold in retail in malls, supermarkets, pharmacies and specialty stores or health clinics. Processors also sell to walk-in buyers in their facilities. Unlike the more popular oils such as RBD coconut oil and palm oil which can be found in any supermarkets, sari-sari stores and convenience stores, VCO can only be found in select outlets.

Southern Partners Fair Trade Center has 7 channels, 5 outlets through the groceries of Alturas Group (Colonade, Island City Mall, Alturas Mall) with fixed orders, and 1 through the Gaisano Country Mall grocery which is through consignment. They also sell in the Fair-Trade Shop which is located in Cebu City. Alturas Group picks up the stocks every three months, around 2,000 500-mL-bottles distributed to their groceries. Their VCO costs P175.00 (330 mL) and P450.00 (500mL), which is slightly higher than other VCO brands in the local market.

According to them, this is one of the reasons why domestic sales are not high but they cannot lower the price as they are bound by fair trade principles to conduct business with farmers, workers, and distributors fairly.

According to the KII, they are selling more to the export market compared to the domestic market which is only distributed within the region. Last year, around 10,000 liters of VCO were exported to South Korea and Canada. The exported products are used as ingredients in cosmetics, skincare, and haircare. SPFTC sets the base price which is up for negotiation. Its affiliation with the World Fair Trade Organization provides it with tools for market access of its export destinations. Presently, SPFTC is applying for its certification for Japanese Agricultural Standards (JAS) and National Organic Program of the United States Department of Agriculture (USDA). This allows them market access of their products to Japan and USA.

BHMC Bio Naturals Inc. also has higher export than domestic sales of VCO. Domestically, distribution is through the local malls in Bohol (Island City Mall, Alturas, Plaza Marcela, Bohol Quality supermarket), pharmacies like the City Pharmacy and Jo's We Care Pharmacy, Bohol Bee Farm branches in Bohol and Cebu, market stalls in Robinson's Dumaguete City, Bohol PCA Employees Multipurpose Cooperative in Bohol and Cebu, and BHMC clinics in Cebu, Pasay, Alabang, Cagayan de Oro City, Davao, and Surigao City. Transit point of VCO from Bohol to its various clinics is Cebu. Around 2,200 liters of VCO are distributed domestically per yearl. Its export market is solely Japan, with around 3,800 liters sold yearly. According to the KII, compared to their production, there are less sales due to the premium price of their VCO attracting few consumers.

Table 22 below shows some basic information of VCO processors in the Province of Bohol. There are eight identified processors in the province with six processors operating are in the municipalities of Bilar, Corella, Jagna, Loon and two in Carmen. There are two processors in Clarin and Trinidad which are not operational at the moment. Map 20 shows the location of VCO processors in Bohol and other industry players and facilities indicating the ports of entry and main roads in the province.

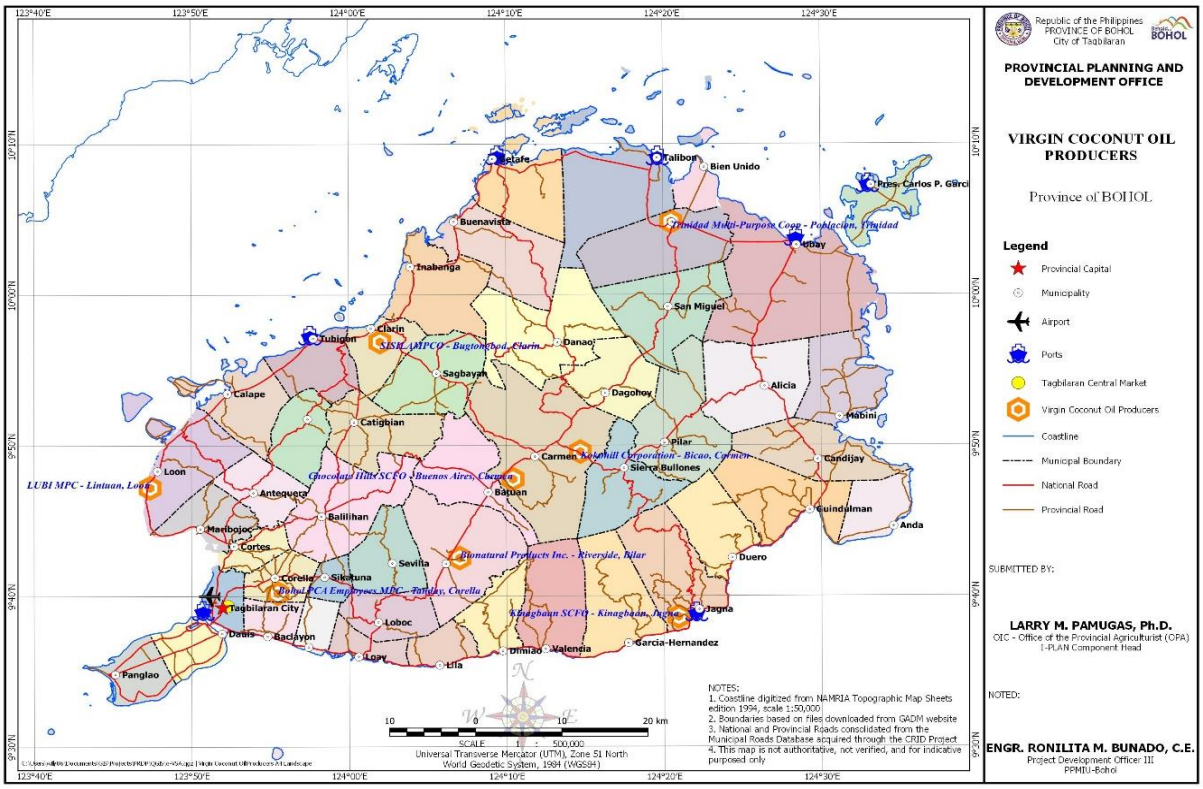
Table 22. VCO Processors in Bohol

	Name of Coop/ Organization	Address	Ave. Daily Processing (Nuts/Day)	Ave. Monthly Production (Liters)	Raw Materials Supplier	Market	Remarks
1	Bionatural Products Inc.	Riverside, Bilar	1,500	1,067	Bilar and adjacent towns including Inabanga	Local/ Homeopathic Clinics in major cities of the Philippines/ Japan	Wet Process/ Fully operational/ 20 + workers
2	Bohol PCA Employees MPC	Tanday, Corella	600	148	Corella & adjacent towns	Local/Tagbilaran City	Wet Process/ operational /3 workers
3	Kinagbaan SCFO	Kinagbaan, Jagna	400	Depends on order	Jagna	Local	Dry Process/ Intermitent operation/ 3 workers
4	LUBI MPC	Lintuan, Loon	200		Previously operated at 100-200 nuts daily capacity but stopped operation when their processing plant was badly damaged by the earthquake		

5	Chocolate Hills SCFO	Buenos Aires, Carmen	400	Not yet in commercial production	Newly installed processing plant with 200 nuts daily full production capacity funded by PCA under the KAANIB Program and targetted to be fully operational by next quarter of this year		
6	Kokohills Corporation	Bicao, Carmen		Not yet in commercial production	Newly installed processing plant with 200 nuts daily full production capacity owned by Manuel Decasa and targetted to be fully operational by next quarter of this year		
7	SISILAMPCO	Bugtongbod, Clarin	150				Non-operational
8	Trinidad Multi Purpose Cooperative	Poblacion, Trinidad	100				Non-operational
	TOTAL			**1,215**			

Source: ***Philippine Coconut Authority (PCA)***

Map 24. Commodity Map of VCO Industry Players



VCO is a slow-moving product because only a limited number of consumers are aware of its benefits. It has developed a niche market of health-conscious individuals, which is why it is exporting more than it is selling domestically. Japan, South Korea, Canada, and USA are among the countries which are shifting to organic and health products, which is why VCO is appealing to them. Most of the VCOs displayed in the retail outlets are on consignment basis with orders made only when product inventory is low. Although VCO sits on the shelf longer than other products, there is a steady sale of VCO on a monthly basis amidst its limited supply. VCO also has longer shelf life, with the expiry date usually written in the container.

Domestic Market

The domestic market for VCO in the region is not yet established. Only a small number of consumers and general public are aware of the benefits of virgin coconut oil. Even if VCO has been around for quite some time, the product has been promoted as a food supplement only recently.

Table 23. Volume of VCO Produced and Sold in the Market (in Liters)

Province	Volume Produced	Volume Sold in Domestic Market	Export Volume
Bohol	7,516	3,716	3,800
Cebu	17,864	4,864	13,000
Negros Oriental	25,110	11,110	14,000
Siquijor	840	840	0
Total	**51,330**	**20,530**	**30,800**

Source: ***KII***

Volume of VCO sold in the domestic market has 40% share of total VCO produced in Region 7, with export volume higher at 60%. This implies that there is higher demand for VCO of Region 7 from other countries than domestically, despite its low market share to total VCO exports of the Philippines. Domestic market of Region VCO is premature, with only a few consumers who belong to a niche market of health-conscious individuals. The figure below shows the distribution of VCO in the domestic market.

Figure 36. VCO Domestic Market Share

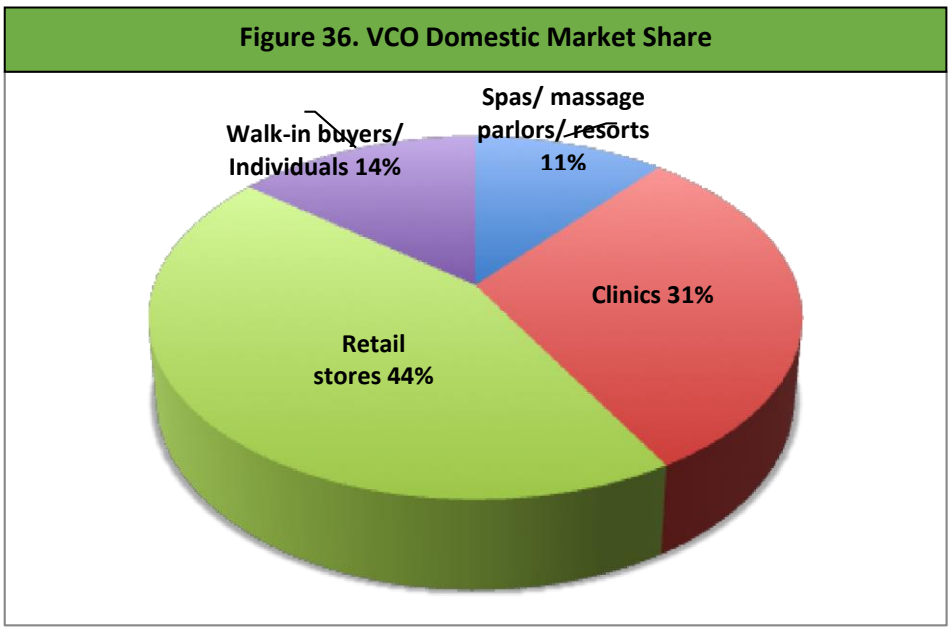


Figure 36 shows that retail stores capture the largest market share of VCO at 44%. Domestic sales of VCO in retail stores are also partly driven by foreign tourists as Region 7 is a tourist hub. As VCO caters mainly to a niche market of individuals who are conscious of healthy lifestyle, some retail stores order new stocks from processors every 3 months.

B) Investment Plan

The Provincial Government of Bohol recognizes the development of the virgin coco oil industry value chain as a strategy to help farmers not only raise their income but also their productivity and market competitiveness. The strategy would help reduce the incidence of poverty and maintain food security particularly in the rural areas, and sustain agricultural development of the province and country in general.

There is a growing interest of the provincial local government in strengthening the VCO industry since the province is among the top tourist destinations of the country and there is an increasing demand of VCO in massage parlors and spas that are frequented by tourists and health enthusiasts. VCO is a high value product with a niche market catering to the health-conscious individuals, massage parlors, wellness spas, health clinics, cosmetics/pharmaceutical industry, institutional buyers and tourists.

On the other hand, the way to increase production is to capacitate the farmers on new technology on nut production and provision of high-quality planting materials for a continuous supply of nuts for VCO processing.

VCO processing and marketing encounter problems because input supplies do not reach the upland barangays due to road inaccessibility and high transportation cost as a result of poor road condition. Farm-to-market road construction and rehabilitation are the best intervention for the foregoing predicaments. Provision of transport vehicles is the most welcome intervention next to farm-to-market roads.

The nuts suppliers and processors must be organized and registered so that group selling may be undertaken for a more stable supply of coconuts. There must be constant supply to sustain the demand from the buyers. Production of VCO will be enhanced with the increase in number of nuts to be processed and the improvement in the quality of finished product. Supply of nuts for the processing of virgin coconut oil will be sourced out from coconuts produced by its members. Marketing system must be also established. Producers must sell in group so that vehicle could be provided for product transportation. Another proposed intervention is the provision of technical assistance through trainings to improve the knowledge and skills of the farmers.

The project envisions to attract more processors and investors who will embark on VCO production in commercial scale. This will contribute to the generation of employment and livelihood opportunities in the agricultural sector, thus contributing to the overall economic growth of the province.

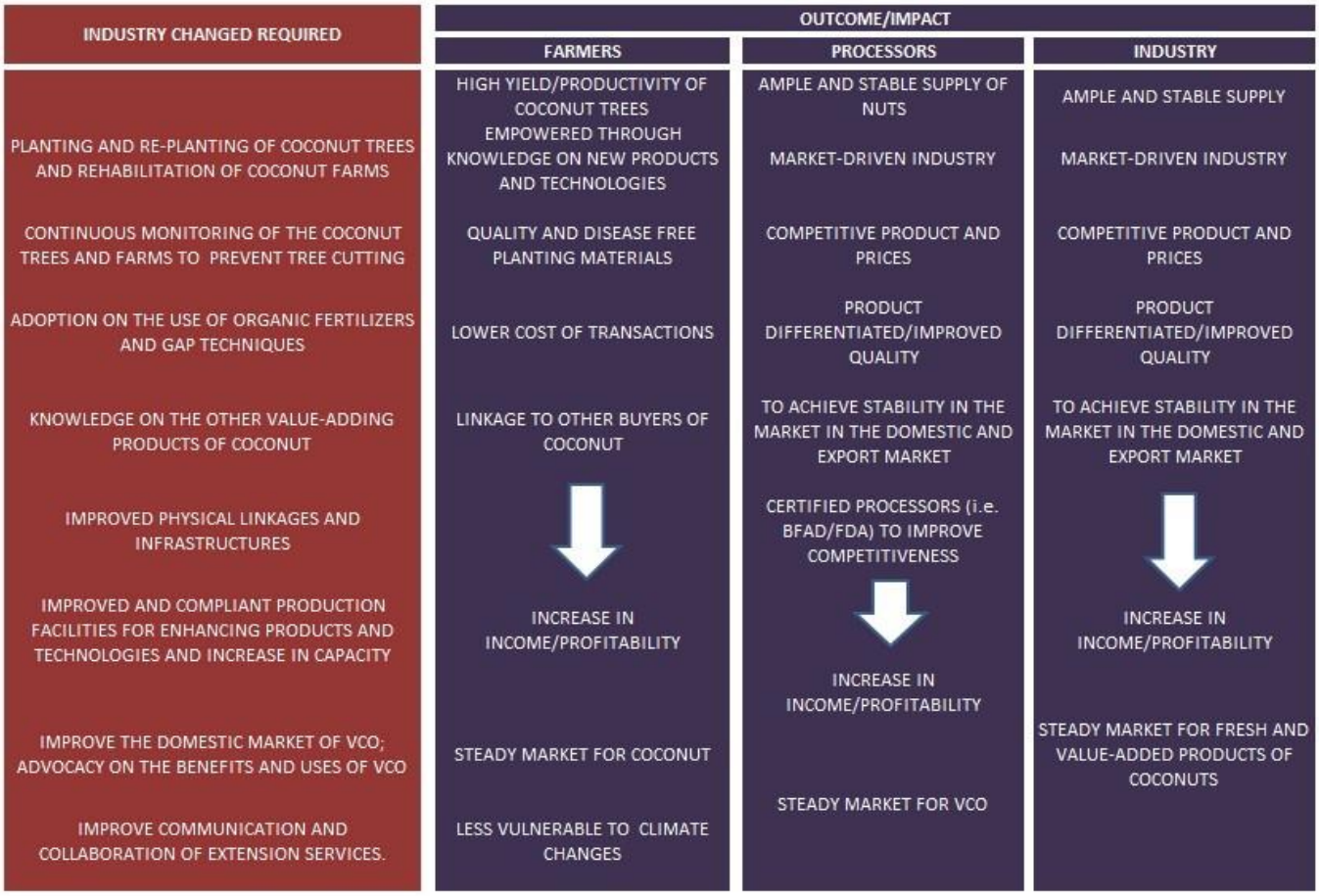
Plant facilities for VCO processing should be improved, and investment should be geared towards the acquisition of complete and up to date machines and equipment to increase the capacity of processors, and meet the export standards which is the main goal of the industry. On the other hand, financial and technical trainings should also be conducted to achieve this. Training on downstream products of VCO could be another option to increase the income of processors and to obtain product differentiation. Furthermore, the local industry council can conduct forums and seminars to spread relevant information about VCO.

There should be an established relationship among the key players and the stakeholders, and an enabling environment to effect convergence and collaboration to ensure support to the development of the industry.

Competitiveness Vision

Expressed by both VCO players and stakeholders during the joint stakeholder's consultation, a vision strategy was formulated for the development of the coconut industry.

"A sustainable industry in a conducive atmosphere for inclusive growth where stakeholders lead in undertaking market-driven, climate-resilient technologies and enterprises through coconut value-adding, adopting consolidated/integrated approaches in order to anchor the development in the community and strengthen peoples' participation in the dynamics of change."



Summary and Rank of Constraints and Opportunities

Table below shows the constraints of the virgin coco oil value chain. The constraints are ranked according to their priorities in the value chain. Most of the constraints have similar ranking. This is because constraints can be addressed simultaneously and addressing the constraints may be performed not just by one value chain player. This also shows that

proposed interventions are not "stand alone" as such will be simultaneously commenced with convergence of resources by a number of players in the value chain.

Table 24. Summary and Rank of Virgin Coconut Oil Value Chain Constraints	
Constraints	**Rank**
Segment 1. Input Supply	**3**
• Input supplies do not reach the upland barangays due to road inaccessibility	
• Lack of financing for purchase of fertilizers which led to irregular application	
• Low volume of planting materials available due to pest infestation (brontispa, longissima) of coconut seedlings	
Segment 2. Coconut Production	**5**
• 6.38% of the coconut tree population in the region are senile trees which need replacements	
• Affectation of brontispa longissima during the dry season	
• Occurrence of natural calamities which led to the destruction of some coconut farms	
• Land/soil erosion resulted to soil degradation of coconut farms	
• Reduction of coconut areas due to conversion to residential and commercial lands, and other agricultural farms	
• Decreasing number of nut harvesters	
• Conversion of coconut farms to residential and commercial lands and other agricultural farms	
Segment 3. Whole Nut Trading	**1**
• High transportation costs due to poor road conditions in some areas	
• Difficulty in consolidating whole nuts due to fragmented coconut farmers with small landholdings and different harvesting days/schedules	
• Competition of nut supply between copra traders and buko/young nut traders	
Segment 4. VCO Processing	**2**
• Strict/stringent processing and manufacturing procedures	
• Capacity of machineries of the processors are not maximized due to limited volume of coconuts available for processing	
• Limited knowledge on the processing of other downstream products of VCO (i.e. soaps, lotions, shampoos, etc.)	
Segment 5. Distribution	**4**
• Low demand in local markets due to limited promotion and advocacy	
• Limited number of laboratory for VCO analysis for export	
Segment 6. Enabling Environment	**6**
• High cost and voluminous requirements needed for the application of BFAD/FDA certification	
• Reduction of coconut areas due to conversion to residential and commercial lands and other agricultural farms	
Segment 7. Inter-firm Relationships	**6**
• Only very few farmers are members of cooperatives and SCFOs	

Table 25. Summary of Opportunities
Opportunities
Segment 1. Input Supply • Agricultural grade salt fertilizers are provided for free to some coconut farmers • Coconut farms situated in coastal areas have natural fertilizers because of the salinity of coastal lands • Presence of nursery in Ubay, Bohol which is a good source of planting materials for dwarf and hybrid varieties **Segment 2. Coconut Production** • 70.9% of coconut trees in the region are bearing, with 22.7% non-bearing trees which could produce nuts once they mature • Climate in Central Visayas (immediate wet and dry season) is suitable for coconut farming • Replanting and rehabilitation programs of PCA focused on the replanting and rehabilitation of typhoon-damaged farms and senile trees • Practice of intercropping which maximizes the farm area and provides alternative income for farmers **Segment 4. VCO Processing** • VCO has longer shelf life compared with other oils • Presence of BFAD/FDA approved VCO processors in the region **Segment 5. Distribution** • Developing niche market in the health and wellness sector • Stable demand for VCO in the export market **Segment 7. Inter-firm Relationships** • Existing SCFOs which provide avenues for sharing of best practices and easier delivery of services

Expanded Vulnerability and Suitability Analysis (E-VSA)

Only three parameters were used in the assessment and selection of priority sites using the EVSA as a tool, namely: poverty incidence, number of bearing trees and the VCO processing potential capacity. The data on number of bearing trees and VCO processing potential capacity in liters are sourced from the Philippine Coconut Authority (PCA) Tagbilaran City and from the VCO processors.

For poverty incidence, the weight of 0.001 was assigned based on the premise that virgin coco oil processing can be done in a municipality with large number of bearing trees may it be the poorest municipality or not. The number of bearing trees parameter was assigned a weight of 0.20, and the VCO processing potential capacity parameter in nuts per day was assigned a weight of 0.25 based on the idea that if there are no VCO processors in the area the industry cannot thrive no matter the number of bearing trees present.

The system-generated results in Table 26 show the ranking of the 10 municipalities that are into Virgin Coconut Oil production and are potential for VCO production in the municipality, namely: Carmen, Bilar, Calape, Ubay, Inabanga, Balilihan, Antequera, Loon, Corella and Jagna. The table below shows the ranking and composite index of municipalities with competitive advantage in VCO production based on the parameters identified.

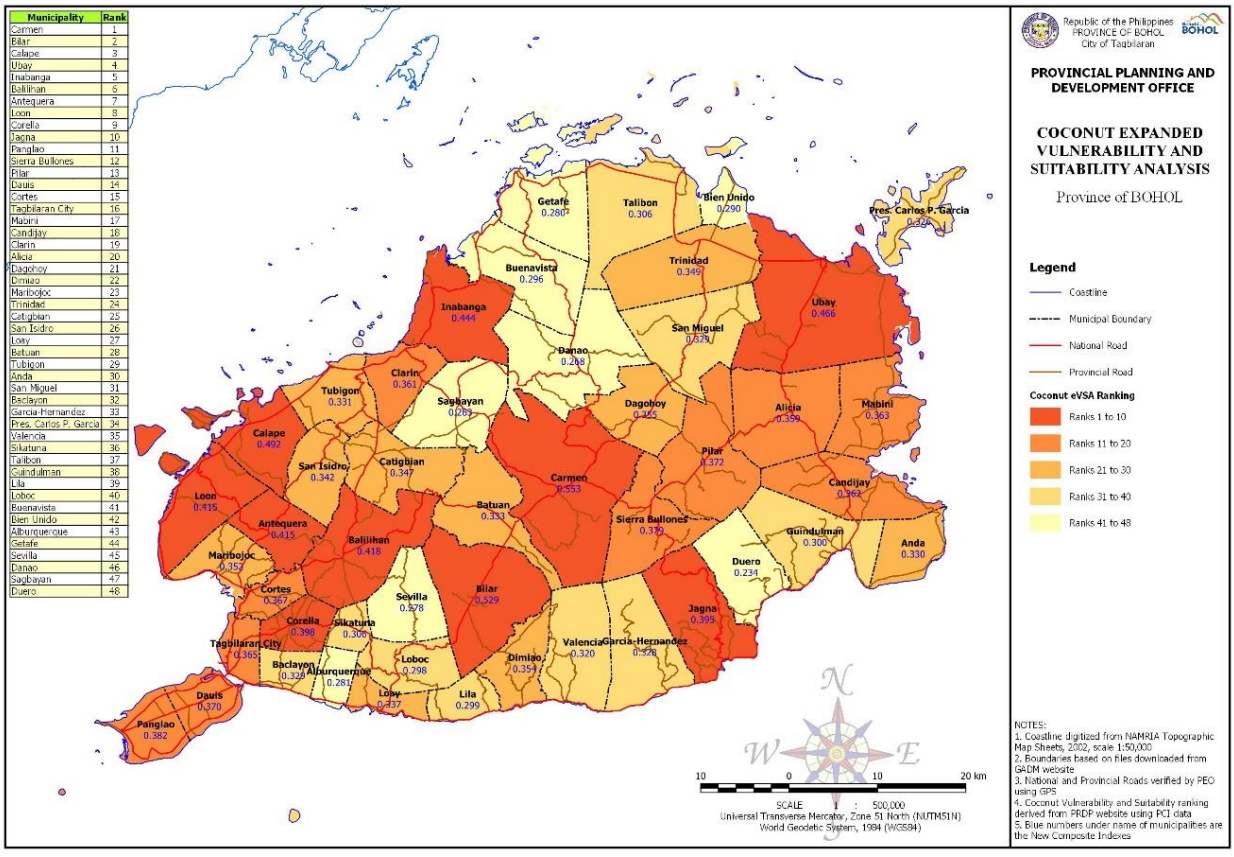
Table 26. EVSA Ranking of Municipalities

Municipality	Poverty Incidence	Bearing Trees (No.)	VCO Processing Capacity	New Composite Index	New Rank
CARMEN	38.4	653,368	400	0.55311	1
BILAR	22.6	84,592	1500	0.52889	2
CALAPE	25.4	303,455	800	0.4922	3
UBAY	39.6	531,167	0	0.46608	4
INABANGA	34.7	491,267	0	0.44403	5
BALILIHAN	31.3	532,356	0	0.41794	6
ANTEQUERA	18.5	385,904	200	0.41546	7
LOON	22	386,371	200	0.41538	8
CORELLA	17.9	87,407	600	0.39791	9
JAGNA	19.6	278,699	600	0.39536	10
PANGLAO	16.4	75,586	0	0.38202	11
SIERRA BULLONES	35.1	400,231	0	0.37865	12
PILAR	38.8	196,740	0	0.37174	13
DAUIS	17	37,877	0	0.37047	14
CORTES	15.9	92,592	0	0.3667	15
TAGBILARAN CITY	7.9	26,570	0	0.36514	16
MABINI	46.8	226,853	0	0.36287	17
CANDIJAY	34.5	305,057	0	0.36156	18
CLARIN	26.4	241,787	150	0.36054	19
ALICIA	33.9	257,668	0	0.35921	20
DAGOHOY	40.7	146,200	0	0.35506	21
DIMIAO	30.6	394,424	0	0.35372	22
MARIBOJOC	17.3	159,586	0	0.35223	23
TRINIDAD	39.7	159,811	100	0.34939	24
CATIGBIAN	37	170,044	0	0.34718	25
SAN ISIDRO	44.9	304,239	0	0.34234	26
LOAY	19.3	215,278	0	0.33749	27
BATUAN	32.3	79,302	0	0.33293	28
TUBIGON	26.7	208,681	0	0.3314	29
ANDA	30.9	348,456	0	0.32969	30
SAN MIGUEL	42.7	124,645	0	0.32921	31
BACLAYON	15.1	56,236	0	0.32862	32
GARCIA HERNANDEZ	28	373,894	0	0.32769	33
PRES. CARLOS P. GARCIA	51.8	107,130	0	0.3255	34
VALENCIA	28.5	329,044	0	0.31962	35

Table 26. EVSA Ranking of Municipalities					
Municipality	**Poverty Incidence**	**Bearing Trees (No.)**	**VCO Processing Capacity**	**New Composite Index**	**New Rank**
SIKATUNA	29	88,820	0	0.30643	36
TALIBON	36.4	145,770	0	0.30631	37
GUINDULMAN	30.3	155,058	0	0.29953	38
LILA	19.6	219,230	0	0.29894	39
LOBOC	21.5	190,845	0	0.29773	40
BUENAVISTA	45.5	199,964	0	0.2959	41
BIEN UNIDO	48.8	27,762	0	0.28955	42
ALBURQUERQUE	15.9	83,858	0	0.28076	43
JETAFE	43.5	94,695	0	0.28045	44
SEVILLA	31.7	85,410	0	0.27793	45
DANAO	42.7	110,560	0	0.26798	46
SAGBAYAN	24	160,875	0	0.2627	47
DUERO	29.6	105,348	0	0.2335	48

The system-generated results show the ranking of the 47 municipalities including the City of Tagbilaran (Table 26). It can be noted that the top 5 areas are considered municipalities engaged in VCO processing activities.

Map 25. Expanded Vulnerability and Suitability Analysis (E-VSA) Map



Investment Priorities

The over-all estimated investment cost for Virgin Coconut Oil (VCO) proposed interventions amounted to **P5.7 Billion** where the biggest bulk of the proposed PPAs is for the rehabilitation and upgrading of access roads of the priority municipalities amounting to P5.5 Billion. Farm-to-market road infrastructures play significant role in providing access and link from production sites to the market which will be funded way beyond the planning period by different fund sources. Selected road sections have been identified in Annex 1.

The proposed interventions identified in the 3-year Investment Plan are based on the gaps and constraints indicated by segments in the Value Chain Analysis conducted for the industry. The preparation of the PCIP has been subjected to series of consultations, arriving at a consensus on the prioritized interventions. Results from the EVSA ranking are used as reference in identifying locations of proposed projects.

Table 27. Investment Plan Summary for Virgin Coconut Oil (VCO), Province of Bohol

	Proposed Interventions	Estimated Cost (P000, 000, 000)			
		Year 1	Year 2	Year 3	Total
SEGMENT: INPUT SUPPLY					
1	Farm-to-Market Roads Rehabilitation/ Construction with climate-resilient specifications (274.84 kms)	2,832.99	1,571.10	1,117.60	**5,521.69**
2	Assist in access to financing institutions and credit providers with less interest and simplified requirements	0.05			**0.05**
3	Continuous education on pest management and control risk reduction and management	0.47			**0.47**
4	Strengthen the implementation of PCAs Coconut Seedling Dispersal Program (CSDP) and Participatory Coconut Planting Project (PCPP)	15.00	15.00	15.00	**45.00**
SEGMENT: COCONUT PRODUCTION					
5	Cut and replant senile coconut trees with climate change resilient varieties	0.15	0.15	0.15	**0.45**
6	Encourage farmers to adopt Good Agricultural Practices (GAP) in coconut farming to improve yield and productivity through trainings and demonstrations	0.36			**0.36**
7	Replication of parasitoid laboratory in each district	1.40	0.80	0.80	**3.00**
8	Provision of ready emergency funds for infestations	1.00	1.00	1.00	**3.00**
9	Establishment and dissemination of drought mitigating technologies to augment the low coconut production during long dry spells	0.36			**0.36**
10	Establishment of water supply system for fertigation	1.50			**1.50**
11	Adaption of climate change resilient coco varieties and planting methods	1.50	1.50	1.50	**4.50**
12	Introduction of intercropping and cover cropping	1.50			**1.50**
13	Increase production capacity of existing coconut farms	1.88	1.88	1.88	**5.64**
14	Promotion of contract harvesting (agsa)	0.06	0.06	0.06	**0.18**
15	Provision of accident insurance to harvesters	0.19	0.19	0.19	**0.56**
16	Introduce pole harvesting technique	0.06	0.06	0.06	**0.18**
17	Promotion and massive planting of high yielding dwarf coconuts	1.50	1.50	1.50	**4.50**
SEGMENT: WHOLE NUT TRADING					
18	Rehabilitation of climate resistant existing roads/ Construction of new roads				

Table 27. Investment Plan Summary for Virgin Coconut Oil (VCO), Province of Bohol					
Proposed Interventions		**Estimated Cost (P000, 000, 000)**			
		Year 1	**Year 2**	**Year 3**	**Total**
19	Provision of whole nut delivery vehicles	6.00			**6.00**
20	Developing POs/ SCFOs to act as consolidators	4.80			**4.80**
21	Scheduling of harvesting by area for easier consolidation	0.02	0.02	0.02	**0.06**
22	Forging of Marketing Agreements between VCO processors and consolidators/coops	0.02	0.02		**0.04**
SEGMENT: VCO PROCESSING					
23	Institutional upgrading through production expansion by improving farmers' production capacity	0.12			**0.12**
24	Upgrading of VCO processing plants and equipment using standard design compliant to FDA and HACCP	36.00			**36.00**
25	Integrated Processing Center, FDA Compliant (with Food Grade Equipments, and Hauling, Delivery Vehicles)	115.0			**115.0**
26	Establishment of common processing standards for VCO in the province	0.03			**0.03**
27	Link whole nut consolidators with VCO processors to supply raw materials	0.06			**0.06**
28	Conduct trainings on new technologies on downstream VCO products that could be developed	0.15	0.15	0.15	**0.45**
SEGMENT: DISTRIBUTION					
29	Conduct trade activities (investment forums, trade fairs, business-to-business meeting) to link buyers to VCO producers	0.30	0.30	0.30	**0.90**
30	Intensify advocacies to promote the uses and benefits of VCO to the domestic market	0.05	0.05	0.05	**0.15**
31	Provide assistance to processors in securing required certifications (GMP, HACCP, Fair trade)	0.06			**0.06**
32	Facilitate provision of assistance to VCO processors/ consolidators		0.05		**0.05**
SEGMENT: ENABLING ENVIRONMENT					
33	Provide assistance in the completion of requirements for product certification	0.03			**0.03**
34	Strict implementation and information campaign of government laws and regulations that will protect coconut farm areas and other major agricultural areas	0.03	0.03	0.03	**0.09**
35	Advocate for periodic policy reviews on CLUP versus Rural or Urban Development Plan	0.24	0.24	0.24	**0.72**
SEGMENT: INTER-FIRM RELATIONSHIP					
36	Formation of an industry council that will initiate the coordination among players in the industry		0.24		**0.24**
	GRAND TOTAL	**3,022.88**	**1,594.34**	**1,140.53**	**5,757.75**

PCIP Matrix for Virgin Coconut Oil (VCO)

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
SEGMENT: INPUT SUPPLY																
Poor Road Network	**Upgrading of climate resilient FMRs with positive impact on the value chain**	**274.84 kms** farm to market roads rehabilitated/ constructed with climate-resilient specifications						Road reblocking/ Closure, Reduce Speed, proper evaluation, implementation and maintainance	PRDP, DPWH, PCA, DA, LGU							**Boundary dispute (RROW)** - Negotiate with owners - Social Environment
	Carmen: •Guadalupe-Monte Video Road •Carmen-Vallehermoso Road •Buenos-Aires-Nueva Vida-Monte Hermoso Road	•5.77 kms •7.03 kms •7.60 kms		√ √ √	√ √ √	√ √ √	High in Erosion	1. Slope Stabilization 2. Proper Drainage System 3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Reforestration 5. Use of bioengineering for slope stability 6. Sediment control 7. Maintenance and monitoring		**15.40** **40.60** **52**	**62.50** **62.50** **62.50**	**62.50** **62.50** **62.50**	National Agencies/ PGBh -do- -do-			
	Bilar: •Campagao-Cabacnitan FMR, Bilar, Bohol •Bilar-Sevilla Road	•10.96 kms •2.00 kms •2.80 kms 5.00 kms		√ √	 √ √ √	 √	Very High in Landslide; Moderate in Erosion			**219.20** **0** **0** **0** **175**	**0** **50** **70** **75**	**0** **0.00** **0.00** **25**	DA-PRDP/ PGBh NAs/ PGBh NAs/ PGBh			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	•Bilar-Magsaysay Park Road •Jct. (Bilar-Dimiao)-Oac-Omjon Road												CMGP/ DTI/ DPWH/ PGBh			
	Calape: •Calape-Cabayugan-Tabuan (Antequera) Road •Calape-Pangangan Road •Jct. (Calape - Pangangan)-San Isidro-Tipkan Road	•12.68 kms •15.60 kms •1.10 kms		√ √ √	√ √ √	√ √ √	Moderate in Flooding, Erosion and Landslide, Sea Level Rise and Storm Surge	1. Slope Stabilization 2. Improve Drainage System 3. Installation of Seawalls and Barriers 4. Resilient Road Materials 5. Conduct of Risk Assessment 6. Maintenance and monitoring Environmental Measures 1. Natural Buffers		**500** **5.0** **0.30**	**1.0** **1.0** **0.10**	**1.0** **1.0** **0.10**	DA-PRDP/ PGBh PGBh PGBh			
	Ubay: •San Miguel-Bayongan-Bulilis-Mabuhay (Ubay) Road •Jct. (Soom)-Humay-Humay Road	•17.40 kms •3.31 kms •0.40 kms •1.01 kms •1.60 kms		√ √ √ √	√ √ √	√ √ 	Very High in Tropical Cyclone, Storm Surge; High in Flooding	1. Elevation & Structural Design (Bridges & causeways; Reinforced structures; elevated roads) 2. Enhanced drainage system		**36** **6.20** **8.0** **25.25** **0**	**150** **37.50** **0** **0** **40**	**150** **37.50** **0** **0** **0**	National Agencies/ PGBh -do- -do- -do-			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	• Road to Ubay Jr. High School • Gabi Seed Farm, Ubay • Road to Ubay Stock Farm • Jct. (TER)-San Pascual (Ubay)-Mahayag (San Miguel) Road • Jct. (TER)-Ilihan-Cabulao Road	• 2.47 kms 1.90 kms		√ √				3. Protective Barriers 4. Resilient Road Materials Environmental Measures: Natural barriers, reforestration Risk Assessment/Planning Maintenance and monitoring		**49.40** **38**	**0** **0**	**0** **0** **0**	-do- -do- -do-			
	Inabanga: • Dagnawan-Dagohoy, Inabanga FMR • Pob. (Inabanga)-Lawis Road (Causeway Length) • One Way Traffic, Inabanga • Inabanga-Sagbayan via Lapacan-Magtangtang Road	• 6.48 kms • 6.248 kms • 0.335 kms • 9.340 kms		√ √ √ √	 √ √	 √ √	Very High in Flooding; Moderate in Tropical Cyclone, Sea Level Rise and Storm Surge	1. Elevation & Structural Design (Bridges & causeways; Reinforced structures; elevated roads) 2. Enhanced drainage system 3. Protective Barriers 4. Resilient Road Materials Environmental Measures: Natural barriers, reforestration		**127** **31.20** **8.38** **20**	**0** **75** **0** **125**	**0** **75** **0** **77.50**	DA-PRDP/ PGBh National Agencies/ PGBh -do- -do-			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
								Risk Assessment / Planning Maintenance and monitoring								
	Balilihan: •Corella-Balilihan Road •Sikatuna-Balilihan via Badiang Road •Baucan (Balilihan)-Cambague (Sevilla) Road •Antequera-Balilihan via Dorol Road •Pob. (Catigbian)-Ambuan-Sagasa (Balilihan) Road •Sikatuna-Balilihan via Can-agong Road •Balilihan-Cabad Road	•3.00 kms •9.26 kms •8.27 kms •12.28 kms •11.14 kms •3.65 kms •1.57 kms		√ √ √	√ √ √	√ √ √	High in Erosion	1. Slope Stabilization 2. Proper Drainage System 3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Reforestration 5. Use of bioengineering for slope stability 6. Sediment control 7. Maintenance and monitoring		**20** **160** **150** **0** **0** **0** **0**	**25** **1.0** **1.0** **0** **0** **0** **0**	**25** **1.0** **1.0** **0** **0** **0** **0**	NAs/ PGBh DA-PRDP/ PGBh DA-PRDP/ NAs/ PGBh National Agencies/ PGBh -do- -do- -do-			
	Antequera: •Calape-Cabayugan-	•12.68 kms		√	√	√	High in Erosion;	1. Slope Stabilization		**500**	**1.0**	**1.0**	DA-PRDP/ PGBh			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	Tabuan (Antequera) Road •Antequera-Balilihan via Dorol Road	•12.28 kms		√	√	√	Moderate in Landslide	2. Proper Drainage System 3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Reforestration 5. Use of bioengineering for slope stability 6. Sediment control 7. Maintenance and monitoring		**30**	**50**	**50**	National Agencies/ PGBh			
	Loon: •Pondol-Candaigan, Loon FMR •Tajang-Sandingan Road •Catagbacan-Lawis Road •Pondol-Pananquilon-Cantam-is Road •Maribojoc-Pagnitoan Candavid-Tabuan Basak Road	•4.74 kms •2.50 kms •1.33 kms •4.15 kms •7.00 kms		√ √ √ √	√ √		Moderate in Erosion and Landslide	1. Slope Stabilization 2. Proper Drainage System 3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Reforestration 5. Use of bioengineering for slope stability 6. Sediment control 7. Maintenance and monitoring		**0** **50** **26.56** **83** **100**	**118.5** **0** **0** **0** **0** **40**	**0** **0** **0** **0** **0**	DA-PRDP/ PGBh NAs/ PGBh -do- -do- CMGP/ DTI/ PGBh			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	Corella: •Corella-Balilihan Road •Baclayon-Corella Road •Baclayon-Corella via Tunga Road •Sambog-Caumbang-Tanday Road •Pob. (Corella)-Cancatac-Abucay (Sikatuna) Road •Tanday-Guinoan-Cancatac-Corella Road •Canapnapan-Canangcaan-Canhumang-it Road Pob. (Corella) Pandol-Anislag-Monserrat (Cortes) Road	•3.00 kms •0.50 kms •4.00 kms •2.30 kms •4.50 kms •7.09 kms •7.90 kms •4.88 kms		√ √ √ √ √ √ √ √	√ √ √ √ √ √ √	√ √ √ √ √ √ √	High in Erosion	1. Slope Stabilization 2. Proper Drainage System 3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Reforestration 5. Use of bioengineering for slope stability 6. Sediment control 7. Maintenance and monitoring		**20** **10** **20** **6.0** **20** **18** **58** **17.60**	**25** **0** **50** **25** **62.50** **87.50** **62.50** **50**	**25** **0** **50** **25** **25** **87.50** **62.50** **50**	NAs/ PGBh -do- -do- -do- -do- -do- -do- National Agencies/ PGBh			
	Jagna: •Can-uba-Faraon-Laka Road •Road Around Jagna Market	•1.50 kms		√			Very High in Erosion; High in Landslide	1. Slope Stabilization 2. Proper Drainage System		**30** **0** **0**	**0** **0** **0**	**0** **0** **0**	National Agencies/ PGBh -do-			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	•Road Infront Central School, Jagna •Road to Jagna Wharf •Severo Salas Street •Achacoso Street •Abrea Street •Road to Central School, Jagna •Road Around Ilihan Hill •Jct. (Jagna-Sierra Bullones) Lonoy Road •Jct. (Jagna-Sierra Bullones) Can-ipol-Odiong Road •Jagna-Cabungaan-Lonoy Road •Jct. (TER)-Bunga Mar-Kinagbaan-Balili Road •Jct. (Jagna-Sierra Bullones)	•1.00 kms •1.90 kms •1.445 kms •10.50 kms •9.00 kms		√ √ √ √ √	√ √	√ √		3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Reforestration 5. Use of bioengineering for slope stability 6. Sediment control 7. Maintenance and monitoring		**0** **0** **0** **0** **0** **0** **20** **38** **28.90** **10** **60**	**0** **0** **0** **0** **0** **0** **0** **0** **0** **100** **60**	**0** **0** **0** **0** **0** **0** **0** **0** **0** **100** **60**	-do- -do- -do- -do- -do- -do- -do- -do- -do- -do- -do- National Agencies/ PGBh			

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	Malbog-Calabacita Road															
Lack of financing for purchase of organic fertilizers which led to irregular or non-application of fertilizers	•**Assist in access to financing institutions and credit providers with less interest and simplified requirements** **- *Creation of a "soft loan portfolio" to cater to the coconut farmers*** •**Intensify the promotion and utilization of coconut coir-based organic fertilizer**	•MOA signed with government banks and cooperatives concerning provision of soft loans to coconut farmers •XXX farmers using Coconut Coir-Based Organic Fertilizer •Mulching technology practiced by farmers		1. Corella and surrounding mun. 2. Bilar and surrounding mun. 3. Jagna & surrounding mun. 4. Loon & surrounding mun. 5. Carmen & surrounding mun.					LBP, PCA, DA, Farmers Coops, Coco farmers	**0.05**			LBP, PCA,DA, Farmers Coops, Coco farmers	10 T per meeting/ session	**5**	•**Refusal of financing institutions to the proposal** - Seek assistance with PLGU and concerned national agencies to lobby for the proposal •**Availability of CCBOF** - PCA to identify and develop Coconut Farmers Organizations/ Coops to produce CCBOF •**Adaption of mulching technology** - Farm visits/ Lakbay Aral to farms implementin

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	•**Promotion for the utilization of coconut debris for mulching**															g the technology
Low volume of planting materials available due to pest infestation (brontispa, longissima) of coconut seedlings	**Continuous education on pest management and control risk reduction and management**	47 Trainings conducted on Coconut Pest Management and Control		47 mun.					ATI, PCA, DA	**0.47**			ATI, PCA, DA	P10,000 per training	**19**	**Insufficient funds for the trainings/** Scout for funds from other sources
	Strengthen the implementation of PCAs Coconut Seedling Dispersal Program (CSDP) and Participatory Coconut Planting Project (PCPP)	450,000 coco seedlings planted under the CSDP & PCPP programs •Accreditation of three PO nurseries •Three hauling vehicle for coco seedlings		• 47 mun. • Balilihan, Ubay, Carmen	47 mun.	47 mun.			•PCA •PRDP, PCA, PLGU, LGU	**15.00** 	**15.00** **3.00**	**15.00**	PCA PRDP, PCA, PLGU, LGU	P100 per seedling 1M / Truck	**17**	**Natural calamities Adoption of new planting patterns Pest infestations and disease infections** - Prohibition of entry of coconut products and byproducts from infested & infected areas
SEGMENT: <u>COCONUT PRODUCTION</u>																

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
6.38% of the coconut tree population in the region are senile trees which need replacements	**Cut and replant senile coconut trees with climate change resilient varieties**	Senile trees cut and replanted with climate change resilient varieties		Province wide	Province wide	Province wide			PCA	**0.15**	**0.15**	**0.15**	PCA	P100/ seedling	**18**	**Unavailability of planting materials** - PCA to mass produce climate change resilient planting materials
Affectation of bronstispa longissima during the dry season	**Encourage farmers to adopt Good Agricultural Practices (GAP) in coconut farming to improve yield and productivity through trainings & demonstrations** **Replication of parasitoid laboratory in each district**	•47 GAP Trainings on Coconut conducted •1 existing parasitiod laboratory maintained •3 parasitiod laboratories established & operational •Funds provided & guidelines established		47 mun. Tagbilaran Balilihan, Ubay, Carmen Tagbilaran	Tagbilaran	Tagbilaran	Sinkholes	Site assessment and planning Climate Resilient laboratory (Foundation Design; structural reinforcement; Drainage control, etc)	PCA, ATI, LGU, PLGU	**0.36** **0.80** **0.60** **1.00**	**0.80** **1.00**	**0.80** **1.00**	PCA, ATI, LGU, PLGU	P7,500 per training 800T/ laboratory site 200T/lab site 1 Million/ year	**20**	**Non-adaption of some farmers to GAP technologies** - Benchmarking on successful GAP certified coconut farms **Non-cooperation of farm owners & stakeholders during prevention & control operations** - Benchmarking or farm visits to successfully treated farms - Provision of alternative

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	Provision of ready emergency funds for infestations															income generating activities to affected farmers
Occurrence of natural calamities which led to the destruction of some coconut farms	**Establishment and dissemination of drought mitigating technologies to augment the low coconut production during long dry spells**	•47 Trainings conducted		47 mun.			Tropical cyclone * Flood ** Erosion * Landslide (Rain Induced) Landslide (Earthquake Induced) Drought *** Sea level rise * Storm surge ** Salt water intrusion Pest and Diseases Infestation	Construction of Climate resilient small farm reservoirs/ irrigation facilities Water conservation technologies (water harvesting) Resistant Varieties, GAP	ATI, DA, PCA	**0.36**			ATI, DA, PCA	7,500 per training	**21**	**Establishment & adaption of a holistic drought mitigating technology** - Review and consolidation of all mitigating techniques from different concerned agencies
	Establishment of water supply system for fertigation	•3 demo areas for fertigation (1 per District)		Balilihan, Ubay, Carmen			Balilihan & Carmen -High in Erosion; Ubay - Very High in Tropical Cyclone, Storm Surge;	PCIC Insurance Climate resilient farming system Intercropping/Cover cropping w/ coffee, cacao, pineapple Contour Farming Technology	NIA, DOST, PCA, LGU PCA, LGU	**1.50**			NIA, DOST, PCA, LGU	0.5M/ demo site		
	Adaption of climate change	•450T climate change		47 mun.	47 mun.	47 mun.				**1.50**	**1.50**	**1.50**	PCA, LGU, PLGU	P100/ seedling		

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	resilient coco varieties & planting methods - *Planting of coco varieties using climate change resilient planting system methods*	resilient coco trees					High in Flooding Landslide (Earthquake Induced), Drought									
Land/ soil erosion which resulted to soil degradation of coconut farms	**Introduction of intercropping & covercropping**	Erosion-prone areas intercropped/ covercropped		Province wide				Soil and Water conservation practices	PCA, LGU	**1.50**			PCA, LGU	P30/ planting material	**22**	**Inadequate knowledge on intercropping** - PCA, LGU to conduct training
Conversion of coconut farms to residential & commercial lands & other agricultural farms	**Increase production capacity of existing coconut farms:** - *Organic fertilization* - *Adaption of GAP for coconut*	20% increase in production		47 mun.	47 mun.	47 mun.	High in Tropical Cyclone; Flooding; Erosion; Drought; salt water intrusion	1. Use of Climate-Resilient Varieties: Use drought-tolerant and disease-resistant coconut varieties to withstand adverse climatic conditions; and Hybrid Varieties: Plant hybrids that have higher yields and better		**1.88**	**1.88**	**1.88**	PCA, LGU	P400 per bag	**23**	**Insufficient supply of organic fertilizer** - Development of POs to produce coconut coir based organic fertilizer as an enterprise

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
								resistance to pests and diseases. 2. Rainwater Harvesting: Install rainwater harvesting systems to capture and store rainwater for irrigation during dry periods 3. Efficient Irrigation System 4. Pest and Diseases Management / Disease Surveillance 5. Soil Conservation 6. PCIC Insurance								
Decreasing number of nut harvesters	**Promotion of contract harvesting (agsa)** **Provision of accident insurance to harvesters**	•Increased adaption of contract harvesting (agsa) •Inventory of nut harvesters established •Insurance provided to		Province wide Province wide	Province wide Province wide	Province wide Province wide			PCA, LGU PCIC, PLGU, PCA	**0.06** **0.188**	**0.06** **0.188**	**0.06** **0.188**	PCA, LGU PCIC, PLGU, PCA	5 T/ month mobility fund P400/ harvester/ year	**24**	**Hesitant to adapt contract harvesting** - Field visits **Provision of sources of funds for insurance** - Apply for

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	Introduce pole harvesting technique **Promotion and massive planting of high yielding dwarf coconuts**	nut harvesters •Increased adaption of pole harvesting technique •Increased area planted to high yielding dwarf coconuts		Province wide Province wide	Province wide Province wide	Province wide Province wide	Typhoon, Flooding, Erosion, Drought, Landslide, Pest, Diseases, Storm Surge	PCIC Insurance Climate resilient farming system Intercropping/Cover cropping w/ coffee, cacao, pineapple Contour Farming Technology Planting of windbreaks Construction of Seawall Planting of mangroves	PCA, LGU, PLGU PCA, LGU, PLGU	**0.06** **1.50**	**0.06** **1.50**	**0.06** **1.50**	PCA, LGU, PLGU PCA, LGU, PLGU	5 T/ month mobility fund P100/ seedling		group insurance **Hesitant to adapt pole harvesting technique** - Field visits **Provision of high yielding dwarf coconut seedlings**
SEGMENT: <u>WHOLE NUT SUPPLIERS</u>																
High transportation cost due to the poor road conditions in some areas	**Rehabilitation of climate resistant existing roads/ Construction of new roads**	**<u>185.03 kms</u>** farm to market roads rehabilitated/ constructed		Corella Loon Inabanga	Jagna Bilar Panglao	Carmen Ubay Trinidad	**Corella** - High in Erosion **Jagna** - Very High in Erosion; High in Landslide **Carmen** - High in Erosion	1. Slope Stabilization; Elevation & Structural Design (Bridges & causeways; Reinforced structures; elevated roads)					PRDP, DPWH, PCA, DA	20 M per kilometer	**1**	**Possible intervention as to identification of project area** - Setting up of clear selection guidelines

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
							Loon- Moderate in Erosion and Landslide **Bilar** - Very High in Landslide; High in Erosion **Ubay -** Very High in Tropical Cyclone, Storm Surge; High in Flooding **Inabanga -** Very High in Flooding; Moderate in Tropical Cyclone, Sea Level Rise and Storm Surge **Panglao -** Very High in Salt Water Intrusion **Trinidad -** Very High in Tropical Cycle, Flooding, Salt Water Intrusion;	2. Proper Drainage System 3. Surface Protection (Paving and Surfacing; vegetative cover) 4. Environmental Measures: Natural barriers, reforestration 5. Use of bioengineering for slope stability/ Resilient Road Materials 6. Sediment control 7. Risk Assessment/ Planning 8. Maintenance and monitoring								and criteria based on E-VSA

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
							Moderate in Erosion									
	Provision of whole nut delivery vehicles	6 delivery vehicles provided to consolidators		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen					Whole nut consolidators, PRDP	**6.00**			PRDP	1.0 M per vehicle	**8**	**Maintenance capabilities of consolidators** - Require consolidators to undergo proper briefing/ seminar on proper maintenance activities
Difficulty in consolidating whole nuts due to fragmented coconut farmers with small landholdings and different harvesting days/ schedules	**Developing POs/ SCFOs to act as consolidators**	1 PO per municipality acting as consolidator		Province wide	Province wide	Province wide			Whole nut consolidators, MFIs	**4.80**			Whole nut consolidators, MFIs	P100,000/ consolidator start-up capital	**6**	**Start-up capital** - Assist POs in formulation of business plan and fund sourcing (investors' forum)
	Scheduling of harvesting by area for easier consolidation	Schedule of harvest per municipality programmed for easy consolidation		Province wide	Province wide	Province wide	Typhoon, Flooding, Landslide	Re scheduling of Hauling, Re routing / Alternate Road	PCA, LGU	**0.024**	**0.024**	**0.024**	PCA, LGU	P2,000/ month mobility fund for M&E		**Difficulty of some farmers to adhere to proposed harvesting schedule** - Continuous education on proper coconut

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
																harvesting technology
Competition on nut supply with copra traders and buko/ young nut traders	**Forging of Marketing Agreements between VCO processors and consolidators /coops**	At least six (6) Marketing Agreeements formulated		1. Corella 2. Bilar 3. Jagna	1. Loon 2. Buenos Aires, Carmen 3. Bicao Carmen				PCA, DTI, LGU	**0.0225**	**0.0225**		PCA, DTI, LGU	P7,500 per session	**7**	**Disagreement as to the price of nuts** - PCA to mediate and propose for an appropriate price beneficial to both parties
SEGMENT: VCO PROCESSING																
Strict/stringent processing and manufacturing procedures	**Institutional upgrading through production expansion by improving farmers' production capacity**	At least six (6) VCO Processing Enhancement Trainings conducted		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen					ATI, DOST, PCA, DTI	**0.12**			ATI, DOST, PCA, DTI	20 T/ per training	**10**	**Refusal of some processors to participate** - Motivate processors to produce more to earn more
	Upgrading of VCO processing plants and equipment using standard design compliant to FDA &	6 VCO processing plants and equipment upgraded		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen			**Corella** - High in Erosion **Bilar** - Very High in Landslide; High in Erosion **Jagna -** Very High in Erosion; High in Landslide	Conduct site selection PCIC Insurance Climate resilient facility (Foundation design / structural reinforcement, etc)	PRDP, PCA, DOST	**36.00**			PRDP, PCA, DOST	6,000,000 per plant	**2**	**Local availability of upgraded equipments** - Request assistance from PCA and DOST and other manufacturing institutions

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	HACCP Processing						**Loon-** Moderate in Erosion and Landslide **Carmen -** High in Erosion	Water conservation facilities installed								
	Integrated Processing Center, FDA Compliant (with Food Grade Equipments, and Hauling, Delivery Vehicles)	1 Integrated Coco Processing Center		Balilihan			High in Erosion	Conduct site selection Climate resilient facility (Foundation design / structural reinforcement, etc) Water conservation facilities installed Drainage system	PCA LGU	**115.0**			PCA, PRDP		**2**	
	Establishment of common processing standards for VCO in the province	One common processing standard for VCO		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen			**Corella** - High in Erosion **Bilar** - Very High in Landslide; High in Erosion **Jagna -** Very High in Erosion; High in Landslide **Loon-** Moderate in Erosion and Landslide	Conduct site selection Climate resilient facility (Foundation design / structural reinforcement, etc) Water conservation facilities installed Drainage system	VCO producers, PCA, DOST, DTI, PLGU	**0.03**				5 T/ session	**11**	**Non-compliance of some processors** - Constant monitoring

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
							Carmen - High in Erosion									
Capacity of machineries not maximized due to limited volume of coconuts available for processing	**Link whole nut consolidators with VCO processors to supply raw materials**	At least 18 consolidators linked to VCO processors		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen					PCA, LGU, DTI, DA,	**0.06**			PCA, LGU, DTI, DA,	5 T / per linkaging session	**9**	**Not continuous operation of some VCO processors** - Encourage processors to engage in coconut meat-based multi-product processing
Limited knowledge on the processin of other downstream products of VCO (i.e. soap lotion, shampoo, Etc.)	**Conduct trainings on new technologies on downstream VCO products that could be developed**	**18 Trainings Cum Production on VCO downstream products:** - Products developmen t - Packaging & labeling		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen	1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen	1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen			**DOST, ATI, PCA, DTI**	**0.15**	**0.15**	**0.15**	DOST, ATI, PCA, DTI	25 T / per training	**3**	**Availability of ingredients for trainings, packaging materials & equipments** - Request trainors/ DOST/ DTI to provide access to sources of ingredients
SEGMENT: <u>DISTRIBUTION</u>																
Low demand in local	**Conduct trade activities**	At least 2 trade forums for VCO		1. Tagbilaran City 2. Ubay	1. Tagbilara	1. Tagbilar			DTI, PCA, PLGU	**0.30**	**0.30**	**0.30**	DTI, PCA, PLGU	P15,000 per	**4**	**Financing for the Trade Forums**

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
markets due to limited promotion and advocacy	**(investment forums, trade fairs, business-to-business meeting) to link buyers to VCO producers**	conducted per year			n City 2. Ubay	an City Ubay								Trade Forum		- Coordination of all governement agencies having related thrusts
	Intensify advocacies to promote the uses and benefits of VCO to the domestic market	Radio programs or plug-ins on testimonies for the healing wonders of VCO		1. Tagbilaran City 2. Ubay 3. Jagna	1. Tagbilaran City 2. Ubay 3. Jagna	1. Tagbilaran City 2. Ubay 3. Jagna			VCO producers, PCA, PLGU	**0.048**	**0.048**	**0.048**	VCO producers, PCA, PLGU	4 T / per month	**13**	**Funds to sustain the program** - Encourage VCO processors to pool their resources for the purpose
	Provide assistance to processors in securing required certifications (GMP, HACCP, Fair trade)	At least 6 VCO processors assisted		1. Corella 2. Bilar 3. Jagna 4. Loon 5. Buenos Aires, Carmen 6. Bicao, Carmen					PCA, DOST, DTI	**0.06**			PCA, DOST, DTI	P10,000 per extension of assistance	**12**	**VCO processors have limited technical expertise to do the job** Request assistance from DOST/ PCA and other allied agencies
Limited number of laboratory for VCO analysis for export	**Facilitate provision of assistance to VCO processors/ consolidators**	**At least 1 VCO consolidator assisted**		Tagbilaran City					DOST, PCA		**0.05**		DOST, PCA	5T allowance for mobilization	**14**	**Uniformity of quality of VCO** - Set clear and strict processing standards

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
																among VCO producers
SEGMENT: ENABLING ENVIRONMENT																
High cost and voluminous requirements needed for the application of BFAD/ FDA certification	**Provide assistance in the completion of requirements for product certification**	At least 3 VCO processors assisted in the application for FDA certification		1. Jagna 2. Buenos Aires, Carmen 3. Bicao, Carmen					VCO processors, DOST, PCA	**0.03**			VCO processors, DOST, PCA	10 T / processing site allowance for mobilization	**15**	**Access to FDA accredited laboratories** - Request assistance from PCA Central Office
Reduction of coconut areas due to conversion to residential & commercial lands and other agricultural farms	**Strict implementation and information campaign of government laws and regulations that will protect coconut farm areas and other major agricultural areas such as the following:** • Comprehensive Land Use Plan (CLUP)	At least 3 violators prosecuted or penalized per district per year		47 mun. & 1 City	47 mun. & 1 City	47 mun. & 1 City			PCA	**0.027**	**0.027**	**0.027**	PCA	3 T / per apprehension for mobilization	**16**	**Limited number and voluminous workloads of PCA personnel**

Key Gap/ Constraints	Brief Description of Potential Intervention	Target Result/ Outcome	MFO/ Sub-MFO	Target Areas to be covered			Major Risks	Risk Adaptation Measures	Proposed Lead & Other Players for Subproject Implementation	Estimated Project (Php '000 in M)			Proposed Sources of Funds	Remarks	Ranking	Risk & Risk Management
				Y1	Y2	Y3				Y1	Y2	Y3				
	• RA 8048 (Coconut Preservation Act) as amended by RA 10593															
	Advocate for periodic policy reviews on CLUP versus Rural or Urban Development Plan	Regular review of policies conducted by LGUs		47 mun. & 1 City	47 mun. & 1 City	47 mun. & 1 City			LGU's	**0.24**	**0.24**	**0.24**	LGUs	P5,000 per review session	**26**	**Policy review not prioritized in some LGU's** - Monitoring of LGUs on policy review
SEGMENT: INTER-FIRM RELATIONSHIP																
Only few farmers are members of cooperatives and SCFOs	**Formation of an industry council that will initiate the coordination among players in the industry**	One Provincial Local Coconut Industry Development Council organized			47 mun. & 1 City				PCA, LGU		**0.24**		PCA, LGU	5 T / per organizational meeting	**25**	**Manipulation of local executives on the council** - Formulate policies and operations manual

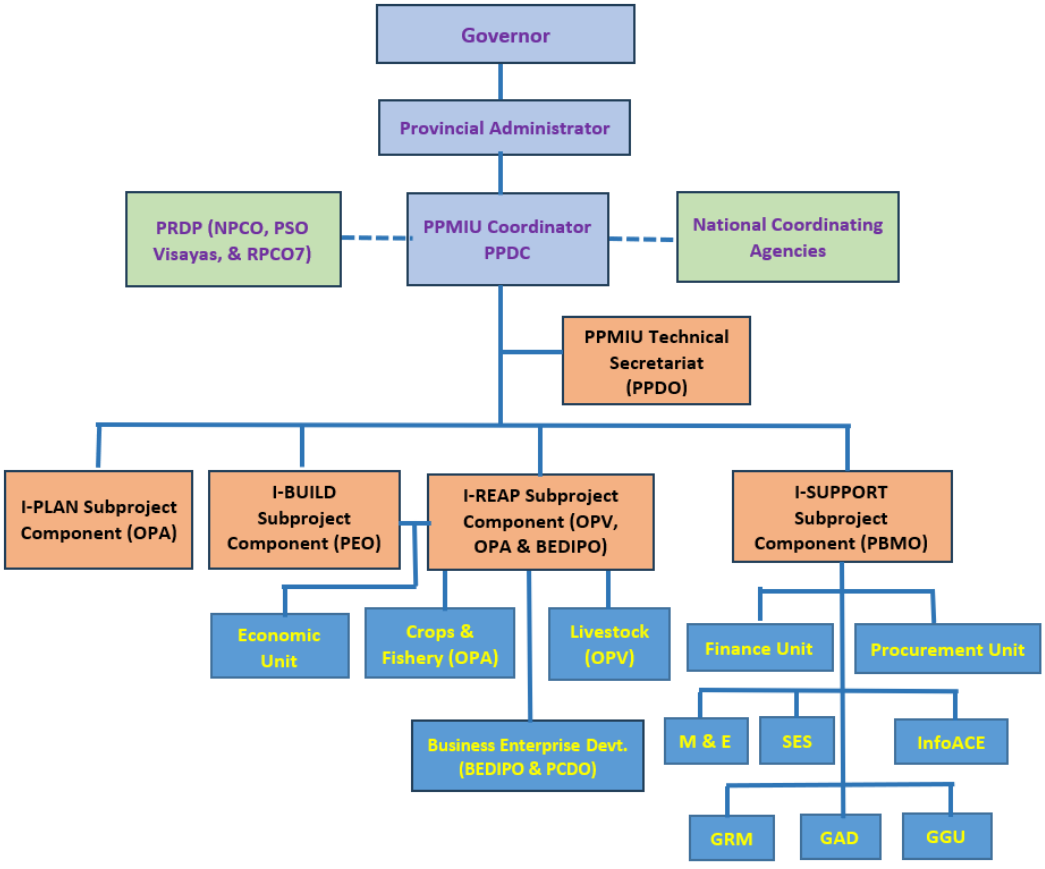
Chapter IV. Institutional Arrangements

Implementation/ Supervision

The implementation and supervision of the Philippine Rural Development Program (PRDP) will be under the Provincial Governor thru the Provincial Program Management and Implementing Unit (PPMIU) created thru EO. No. 05 Series of 2014, with the Provincial Planning and Development Coordinator as the overall head. The PPMIU will be responsible for implementing all sub-projects, including but not limited to the preparation of pertinent documents as required by the program. The Regional Program Coordinating Office (RPCO) headed by the Regional Executive Director of the Department of Agriculture (DA) shall provide technical assistance in implementing the various projects.

Organization and Management

The organization and management of the program will be handled by the province through the PPMIU, following a structured hierarchy to ensure efficient implementation of the program. Under the leadership of the Governor and the Provincial Administrator, the PPMIU Coordinator oversees key components: I-PLAN, I-BUILD, I-REAP, and I-SUPPORT, each with specialized sub-units catering to planning, infrastructure, enterprise development, and administrative support. Collaboration with national coordinating agencies and PRDP offices ensures alignment with broader development goals. The inclusion of monitoring and evaluation, social and environmental safeguards, and advocacy units highlights the program's commitment to sustainability, transparency, and inclusive growth. The Bohol PRDP- PPMIU organizational structure is shown below.



Monitoring and Evaluation

A monitoring and evaluation system for the I-PLAN will be installed using the PRDP Results-Based Monitoring and Evaluation System (RBMES), to track the implementation of projects indicated in the plan as well as projects being implemented and completed. Based on the PRDP Results-Based Monitoring, the indicators, means of verification of results and means of data collection are to be adopted. The use of geo-tagging tool/system is to be used in the pre-implementation, implementation and post- implementation of the projects funded under the PRDP. The PPMIU M&E Sub-Unit shall have the following functions:

1) Oversee monitoring and evaluation of the I-REAP and I-BUILD components in the province;
2) Coordinate all M&E activities of the participating LGUs;
3) Implement and Maintain Program Monitoring Information System ensuring that system's problems are immediately attended to or reported to RPCO thru the PRMIU;
4) Identify problems and issues which impeded program implementation for remedial actions by the PPMIU;
5) Generate and submit the prescribed provincial reports based on the LGU's reports to PPMIU for submission to RPCO;
6) Ensure that all completed data capture forms and file copies of the provincial consolidation reports are properly kept for ready reference;
7) Validate submitted reports by participating LGUs;
8) Provide technical assistance to participating LGUs pertaining to M&E system;
9) Prepare and submit reports to the RPCO.

Social and Environmental Safeguards

The province will observe safeguard policies set by the World Bank and the Philippine Government as described in the Social and Environmental Safeguards (SES) Framework of the PRDP.

Social safeguards will be governed by the Indigenous People Development Framework, Land/ Right of Way (ROW) Acquisition and Resettlement Policy Framework. Environmental Safeguards will be governed by the Philippine Environment Impact Statement System and will adopt the Environmental Framework and Guidelines set for by the program.

The SES Sub-Unit of the PPMIU shall carry out environmental guidelines, prepare and implement environmental management plan, resettlement action plan and indigenous people development framework in a manner and substance satisfactory to the World Bank.

Chapter V. PDC Resolution Approving the PCIP

a) PDC Full Council Res. No. 04-2018 Approving the PCIP for Virgin Coconut Oil (VCO)

Republic of the Philippines
PROVINCE OF BOHOL
City of Tagbilaran

PROVINCIAL DEVELOPMENT COUNCIL

EXCERPT FROM THE MINUTES OF THE FULL COUNCIL MEETING OF THE PROVINCIAL DEVELOPMENT COUNCIL HELD ON OCTOBER 24, 2018 AT THE MAGNOLIA PAVILION, REYNA'S HAVEN AND GARDENS, TAGBILARAN CITY, BOHOL, PHILIPPINES

In Attendance:

Gov. Edgar M. Chatto.....Chairman, Presiding Officer
and
Majority of the Members of the PDC Full Council

PDC FULL COUNCIL RESOLUTION NO. 04-2018

A RESOLUTION APPROVING THE ENHANCED BOHOL PROVINCIAL COMMODITY INVESTMENT PLAN (PCIP) WITH THE UPDATED VERSION FOR THE SEAWEEDS PCIP AND THE NEW VIRGIN COCONUT OIL PCIP AND FAVORABLY ENDORSING THE SAME TO THE CENTRAL VISAYAS REGIONAL DEVELOPMENT COUNCIL (RDC-VII) FOR INCLUSION IN THE REGIONAL DEVELOPMENT AND INVESTMENT PROGRAM (RDIP) AND THE DEPARTMENT OF AGRICULTURE (DA) AND OTHER RELEVANT AGENCIES FOR SUPPORT AND FUNDING ASSISTANCE

WHEREAS, the Enhanced Bohol PCIP is an integration of the six (6) approved priority commodities of the province, namely: seaweeds, native chicken, highland vegetables, buffalo dairy, cassava and virgin coconut oil (VCO) through mainstreaming biodiversity conservation, climate change resiliency and natural resource management;

WHEREAS, the Seaweeds PCIP is an updated version with the previous plan already due for updating and the addition of the Virgin Coconut Oil (VCO) PCIP, another priority commodity of the province, with a newly approved Value Chain Analysis (VCA) undertaken and prepared as part of the necessary requisites to ensure effective interventions with the new PCIP enhanced through integration of environmental protection and conservation measures;

WHEREAS, the PRDP Project Support Office – Visayas Cluster issued a Memorandum dated February 21, 2017 requiring all PCIPs for endorsement to the Regional Development Council (RDC) for inclusion of the PCIP to the Regional Development Plan and in the Regional Development

Investment Program (RDIP) for funding support, thus ensure that other NGAs will be aware and cognizant in their role as important source of funds for sub-projects and interventions indicated in the PCIP that are in line with the agency's programs;

WHEREAS, the matrix of interventions in the PCIP significantly consider potential fund sources to facilitate integration of CIPs in the planning and budgeting processes of the DA and LGUs, specifically for identified interventions relevant to the development of the priority commodity but do not qualify to funding support from PRDP, thus the PLGU may use the PCIP to mobilize resources from other sources or utilize other financing scheme;

WHEREAS, the Bohol PCIP was presented to this Body, giving emphasis on biodiversity conservation measures, climate change resiliency and natural resource management, relevant information, gaps and constraints, and needed interventions, which has been identified through a technical review and a stakeholders' consultation involving suppliers, growers, processors, traders, municipal agriculturists, provincial and regional commodity coordinators, and other key players in the industry;

WHEREAS, the Bohol PCIP, after review and deliberation, has been found by this Body to be relevant, well-grounded, responsive, and aligned with the provincial goals and priorities, as well as contribute to the regional and national agriculture goals and for these reasons, worthy of its approval and endorsement to the Regional Development Council, Department of Agriculture and other relevant agencies for support;

WHEREFORE, upon proper motion duly seconded, be it resolved by this Body in a meeting duly convened –

To approve the enhanced Bohol Provincial Commodity Investment Plan (PCIP) with the updated version for the Seaweeds PCIP and the new Virgin Coconut Oil PCIP and favorably endorsing the same to the Central Visayas Regional Development Council (RDC-VII) for inclusion in the Regional Development and Investment Program (RDIP) and to the Department of Agriculture (DA) and other relevant agencies for support and funding assistance

UNANIMOUSLY ADOPTED.

-0-

I hereby certify to the correctness of the foregoing Resolution.

RONILITA M. BUNADO
OIC, PPDO-Bohol
Head, PDC Secretariat

APPROVED:

EDGARDO M. CHATTO
Governor
Chairman, PDC-Bohol

RDC-VII - 20th 2018

b) PDC ExeCom Resolution No. 57-2024 Endorsing the Updated Provincial Commodity Investment Plan with Climate Change Adaptation Programs and Projects

Republic of the Philippines
PROVINCE OF BOHOL
City of Tagbilaran

PROVINCIAL DEVELOPMENT COUNCIL

EXCERPT FROM THE MINUTES OF THE MEETING OF THE PROVINCIAL DEVELOPMENT COUNCIL EXECUTIVE COMMITTEE (EXECOM) HELD ON JULY 19, 2024 AT THE CAMBANGAY CONFERENCE ROOM, PROVINCIAL PLANNING AND DEVELOPMENT OFFICE, PROVINCIAL CAPITOL, LINO CHATTO DRIVE, COGON DISTRICT, TAGBILARAN CITY, BOHOL, PHILIPPINES

In Attendance:

Acting Gov. Tita V. Baja .....Chairman, Presiding Officer
and
Majority of the Members of the PDC Executive Committee

PDC EXECOM RESOLUTION NO. 57-2024

A RESOLUTION FAVORABLY ENDORSING THE UPDATED PROVINCIAL COMMODITY INVESTMENT PLAN (PCIP) WITH CLIMATE CHANGE ADAPTATION PROGRAMS AND PROJECTS (PAPS) FOR THE DEPARTMENT OF AGRICULTURE - PHILIPPINE RURAL DEVELOPMENT PROJECT (DA PRDP) SCALE-UP FUNDING SUPPORT

WHEREAS, the Department of Agriculture – Philippine Rural Development Project Scale-Up (DA PRDP Scale-Up) is a World Bank-supported project designed to address gaps in value chains, climate resilience, and a more modernized agri-fishery sector;

WHEREAS, the Provincial Commodity Investment Plan (PCIP) is a 3-year rolling consensus plan reflecting agreements between DA and PLGUs with strong participation of the various stakeholders which rationalizes the upgrading strategies and interventions within the various segments of the value chain of commodities prioritized by the province including emergent commodities, and will contribute to the goals of the agriculture and fishery sector;

WHEREAS, the interim approach in updating the PCIP for PRDP Scale-Up implementation focuses on the integration of Climate Risk Vulnerability, particularly the incorporation of Major Climate Risks and Risk Adaptation Measures in the existing PCIP Matrices for the identified priority commodities of Bohol;

WHEREAS, after review and deliberation, the Updated Provincial Commodity Investment Plan (PCIP) with Climate Change Adaptation Programs and Projects (PAPs), has been found by this Body to be aligned with Bohol's strategic change agenda for a climate-smart agriculture and is supportive to the attainment of Bohol's development goals and objectives towards agricultural productivity through improvement of climate change resilient agricultural infrastructure, and is consistent with the Comprehensive Land Use Plans (CLUPs) of all concerned municipalities, and on

top of all this, is consistent as well with the Provincial Development and Physical Framework Plan (PDPFP) of the Provincial Government of Bohol; and therefore, worthy of support and endorsement for Department of Agriculture - Philippine Rural Development Project (DA-PRDP) Scale-Up;

WHEREFORE, upon proper motion duly seconded, be it resolved by this Body in a meeting duly convened –

to favorably endorse the Updated Provincial Commodity Investment Plan (PCIP) with Climate Change Adaptation Programs and Projects (PAPs) for the Department of Agriculture - Philippine Rural Development Project (DA-PRDP) Scale-Up funding support.

RESOLVED FURTHER, to furnish a copy of the same Resolution to the Department of Agriculture Regional Office-7, for appropriate action.

UNANIMOUSLY ADOPTED.

-0-

I hereby certify to the correctness of the foregoing Resolution.

MARIA IMELDA R. BORROMEO
OIC - PPDO Bohol
Head, PDC Secretariat

APPROVED:

TITA V. BAJA
Acting-Governor
Chairman, PDC-Bohol

c - LETAPU - 2024 - 538

ANNEXES

Annex A. Farm-to-Market Roads (FMR) for Virgin Coconut Oil PCIP

	Project Name	Road Length (km.)	Estimated Project Cost (Php '000 in M)		
			Y1	Y2	Y3
1	**Carmen**				
	Guadalupe-Monte Video Road	5.77	15.40	62.50	62.50
	Carmen-Vallehermoso Road	7.03	40.60	62.50	62.50
	Buenos-Aires-Nueva Vida-Monte Hermoso Road	7.60	52.00	62.50	62.50
2	**Bilar**				
	Campagao-Cabacnitan FMR, Bilar, Bohol	10.96	219.20		
	Bilar-Sevilla Road	2.00		50.00	
	Bilar-Magsaysay Park Road	2.80		70.00	
	Jct. (Bilar-Dimiao)-Oac-Omjon Road	5.00	175.00	75.00	25.00
3	**Calape**				
	Calape-Cabayugan-Tabuan (Antequera) Road	12.68	500.00	1.00	1.00
	Calape-Pangangan Road	15.60	5.00	1.00	1.00
	Jct. (Calape-Pangangan)-San Isidro-Tipkan Road	1.10	0.30	0.10	0.10
4	**Ubay**				
	San Miguel-Bayongan-Bulilis-Mabuhay (Ubay) Road	17.40	36.00	150.00	150.00
	Jct. (Soom)-Humay-Humay Road	3.31	6.20	37.50	37.50
	Road to Ubay Jr. High School	0.40	8.00		
	Gabi Seed Farm, Ubay	1.010	25.25		
	Road to Ubay Stock Farm	1.600		40.00	
	Jct. (TER)-San Pascual (Ubay)-Mahayag (San Miguel) Road	2.47	49.40		
	Jct. (TER)-Ilihan-Cabulao Road	1.90	38.00		
5	**Inabanga**				
	Dagnawan-Dagohoy, Inabanga, FMR	6.48	127.00		
	Pob. (Inabanga)-Lawis Road, Causeway Length	6.248	31.20	75.00	75.00
	One Way Traffic, Inabanga	0.335	8.38		
	Inabanga-Sagbayan via Lapacan-Magtangtang Road	9.340	20.00	125.00	77.50
6	**Balilihan**				
	Corella-Balilihan Road	3.00	20.00	25.00	25.00
	Sikatuna-Balilihan via Badiang Road	9.26	160.00	1.00	1.00
	Baucan (Balilihan)-Cambague (Sevilla) Road	8.73	150.00	1.00	1.00
	Antequera-Balilihan via Dorol Road	12.28			
	Pob. (Catigbian)-Ambuan-Sagasa (Balilihan) Road	11.14			
	Sikatuna-Balilihan via Can-agong Road	3.65			
	Balilihan-Cabad Road	1.57			
7	**Antequera**				
	Calape-Cabayugan-Tabuan (Antequera) Road	12.68	500.00	1.00	1.00
	Antequera-Balilihan via Dorol Road	12.28	30.00	50.00	50.00
8	**Loon**				
	Pondol-Candaigan, Loon, FMR	4.74		118.50	

	Project Name	Road Length (km.)	Estimated Project Cost (Php '000 in M)		
			Y1	Y2	Y3
	Tajang-Sandingan Road	2.50	50.00		
	Catagbacan-Lawis Road	1.33	26.56		
	Pondol-Pananquilon-Cantam-is Road	4.15	83.00		
	Maribojoc-Pagnitoan Candavid-Tabuan Basak Road	7.00	100.00	40.00	
9	**Corella**				
	Corella-Balilihan Road	3.00	20.00	25.00	25.00
	Baclayon-Corella Road	0.50	10.00		
	Baclayon-Corella via Tunga Road	4.00	20.00	50.00	50.00
	Sambog-Caumbang-Tanday Road	2.30	6.00	25.00	25.00
	Pob. (Corella)-Cancatac-Abucay (Sikatuna) Road	4.50	20.00	62.50	25.00
	Tanday-Guinoan-Cancatac-Corella Road	7.09	18.00	87.50	87.50
	Canapnapan-Canangcaan-Canhumang-it Road	7.90	58.00	62.50	62.50
	Pob. (Corella) Pandol-Anislag-Monserrat (Cortes) Rd	4.88	17.60	50.00	50.00
10	**Jagna**				
	Can-uba-Faraon-Laka Road	1.5	30.00		
	Road Around Jagna Market				
	Road Infront Central School, Jagna				
	Road to Jagna Wharf				
	Severo Salas Street				
	Achacoso Street				
	Abrea Street				
	Road to Central School, Jagna				
	Road Around Ilihan Hill				
	Jct. (Jagna-Sierra Bullones) Lonoy Road	1	20.00		
	Jct. (Jagna-Sierra Bullones) Can-ipol-Odiong Road	1.9	38.00		
	Jagna-Cabungaan-Lonoy Road	1.445	28.90		
	Jct. (TER)-Bunga Mar-Kinagbaan-Balili Road	10.5	10.00	100.00	100.00
	Jct. (Jagna-Sierra Bullones) Malbog-Calabacita Road	9	60.00	60.00	60.00
	TOTAL	**274.84**	**2,832.99**	**1,571.10**	**1,117.60**

Annex B. Industry Players Directory

Name of Association/ Cooperative / Individual	Business Address/ Contact Number	Contact Person	Main Business
Association/ Cooperative			
BHMC Bio Natural International	Riverside, Bilar, Bohol 09285017573	Pastor Ibarra	VCO Processor
Bohol PCA Employees MPC	Tanday, Corella, Bohol 09197561235	Vicky Lago	VCO Processor
Loon Untied Business Inc. (LUBI) MPC	Cogon Sur, Loon, Bohol 09225379897	Alexander Luzon	VCO Processor,
East Ulbujan Virgin Coconut Oil Producer	East Ulbujan, GarciaHernandez 09108877877	Procopio Peligrino	Vinegar VCO Processor
Kinagbaan Coconut Farmer and Processors Organization	Kinagbaan, Jagna, Bohol (038) 238-2855; 531-8144;	Rose Olaer/ Julia Cuartero	VCO Processor
Adlawan Small Coconut Farmers MPC	Adlawan, Valencia, Bohol 09183332047	Antonio Sumaylo/ Grace Cellan	VCO Processor, copra
Dimiao Coconut Processing MPC	Poblacion Dimiao, Bohol	Coop BOD	VCO Processor
Andang CBO	Clarin, Bohol 09209175711	Andang CBO Officer	Whole nut trader
Sensen Coconut Farmers Consumers Coop	Cambacay, Batuan, Bohol 09296466459	Norma P. Legaspi	VCO processor, consumers coop
SESILAMCO	Pob Clarin, Bohol 09363190149	Leonida P. Japay	VCO processor
Buenavista Farmers Multipurpose Coop	Buenavista, Carmen, Bohol 09212650771	Alma Garcia	Copra trading
Sagbayan Coconut Farmers MPC	Poblacion, Sagbayan, Bohol 09108491631	Dante Lozano	VCO processor, copra trading
Jagna Small Coconut Farmers MPC	Poblacion, Jagna, Bohol	Primitivo Gozales, Jr.	“Calamay” production, copra
Individual Player			
Delfin R. Lago	Tanday, Corella, Bohol 09161741593	Delfin R. Lago	Whole nut supplier
Timoteo R. Lago	Tanday, Corella, Bohol 09198905309	Timoteo R. Lago	Whole nut supplier
Eduard Mainit	Tanday, Corella, Bohol	Eduardo Mainit	Whole nut supplier
Epifanio Ribay	Tanday, Corella, Bohol 09103347119	Epifania Ribay	Whole nut supplier
Outlet			
Bohol Quality Store	Tagbilaran City 09176263321	Vincent Decasa	VCO buyer/dealer
Botica Ng Bayan	Tagbilaran City 09198905309	Restituta Lago	VCO buyer/dealer
City Pharmacy	Tagbilaran City (038) 411-2430	Mrs. Yap	VCO buyer/dealer
Shop Me	Tawala, Panglao Bohol 09173085187	Leuca Trotin	VCO buyer/dealer
Biological Homeophatic Medical	Riverside, Bilar Bohol 09228139711	Hermogenes Decasa	VCO processor
Biological Homeophatic Medical Clinic – (Inter-regional branches)	Manila, Davao, Cebu, Cagayan de Oro, Surigao - 09228198241	Jay Jumamoy Bernaldez	VCO outlets/trading
Export Market - Japan	Tokyo, Japan 09228198241	Jay Jumamoy Bernaldez	Importer/exporter

Annex C. Summary of Risk Profile of Municipalities

	Indicators									Adaptive Capacity						
	Over-All Hazards	Tropical Cyclone	Flood	Erosion	Land Slide	Drought	Sea Level Rise	Storm Surge	Salt Water Intrusion	Econo Mic *	Natural *	Social *	Human *	Instituti-Onal *	Physical *	Anticipa-Tory Capitals *
Albuquerque	Low	Very Low	Low	Very High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Moderate	Very Low	Low	Moderate	Low
Alicia	High	High	Low	High	Low	Low	Very Low	Very Low	Very Low	Very Low	Low	Moderate	Low	High	Very Low	High
Anda	Moderate	High	Very Low	High	High	Very Low	Very Low	Very Low	Very Low	Very Low	Very High	Low	Very Low	Low	Moderate	Moderate
Antiquera	Low	Very Low	Very Low	High	Moderate	Very Low	Very Low	Very Low	Very Low	Low	Very Low	Very High	Very Low	Moderate	High	Moderate
Baclayon	Very Low	Very Low	Very Low	High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Very High	Low	Moderate	Very Low	Very Low
Balilihan	Low	Very Low	Very Low	High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Very High	Very Low	Moderate	Very High	Moderate
Batuan	Low	Very Low	Very Low	Moderate	High	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Low	Moderate	Very Low	Moderate
Bilar	Low	Very Low	Very Low	High	Very High	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low	Very Low	Moderate	Low	High
Buen Unido	Very High	Very High	High	Very Low	Very Low	Ver High	Very Low	Moderate	High	Low	High	Moderate	Very Low	High	Moderate	High
Buenavista	Very High	Very High	Low	Very High	Low	High	Low	Low	Very Low	Very Low	Low	Moderate	Very Low	Moderate	Very Low	Moderate
Calape	Moderate	Very Low	Moderate	Moderate	Moderate	Very Low	Moderate	Moderate	Very Low	Very Low	Moderate	Moderate	Low	High	Low	High
Candijay	Very High	High	Very High	Moderate	Low	Very Low	Moderate	Moderate	Very Low	Very Low	Very High	Low	Low	Low	Moderate	High
Carmen	Low	Low	Very Low	High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Moderate	Low	Moderate	Low	Moderate
Catigbian	Very Low	Very Low	Very Low	Moderate	Moderate	Very Low	Very Low	Very Low	Very Low	Low	Very Low	Very High	Low	Moderate	Moderate	Moderate
Clarin	Very Low	Low	Very Low	Low	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very High	Low	Very Low

	Indicators									Adaptive Capacity						
	Over-All Hazards	Tropical Cyclone	Flood	Erosion	Land Slide	Drought	Sea Level Rise	Storm Surge	Salt Water Intrusion	Econo Mic *	Natural *	Social *	Human *	Instituti-Onal *	Physical *	Anticipa-Tory Capitals *
Corella	Very Low	Very Low	Very Low	High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	High	Low	Moderate	Very High	High
Cortes	Low	Very Low	High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low	Very Low	Moderate	Low	High
CP Garcia	Very High	Very High	Very High	Low	Very Low	Very High	Very High	Moderate	Very Low	Low	Moderate	High	Low	Moderate	High	Moderate
Dagohoy	High	Moderate	Moderate	High	Low	Low	Very Low	Very Low	Very Low	Very Low	High	High	Very Low	High	Very High	High
Danao	High	High	Low	Very High	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	Low	High	Very Low	High	Low	High
Dauis	Very Low	Very Low	Very Low	Very High	Very Low	Very Low	Very Low	Very Low	Very High	Low	Low	Low	Low	High	High	Moderate
Dimao	Low	Very Low	Very Low	Very High	Moderae	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low	Low	Low	Moderate
Duero	Low	Low	Very Low	Very High	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	High	Moderate	Low	Moderate	Very High	Low
Garcia Hernandez	Low	Very Low	Very Low	High	High	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Very High	Low	High	Moderate	Loe
Getafe	Very High	Very High	Very Low	Moderate	Very Low	High	High	High	Very Low	Very Low	Moderate	Very Low	Very Low	Very Low	Moderate	Moderate
Guindulman	Moderate	Moderate	Low	High	High	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very High	Low	High	High	Moderate
Inabanga	High	Moderate	Very High	Low	Very Low	Very Low	Moderate	Moderate	Very Low	Low	Very High	Moderate	Low	High	Very Low	High
Jagna	Low	Very Low	Very Low	Very High	High	Very Low	Very Low	Very Low	Very Low	Low	Low	High	Very Low	Moderate	High	Moderate
Lila	Low	Very Low	Low	Very High	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	Very High	Very High	Very Low	Very High	Very High	High
Loay	Moderate	Very Low	Very High	Moderate	Moderate	Very High	Very Low	Very Low	Very Low	Very Low	Moderate	Very High	Very Low	High	High	Moderate
Loboc	Moderate	Very Low	Moderate	Very High	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Moderate	Low	Moderate	High	High
Loon	Low	Very Low	Low	Moderate	Moderate	Very Low	Very Low	Very Low	Very Low	Low	Low	Very High	Low	High	Moderate	High
Mabini	High	Very High	Moderate	High	Low	Very Low	Low	Low	Very Low	Very Low	Low	High	Low	Moderate	High	High

	Indicators									Adaptive Capacity						
	Over-All Hazards	Tropical Cyclone	Flood	Erosion	Land Slide	Drought	Sea Level Rise	Storm Surge	Salt Water Intrusion	Econo Mic *	Natural *	Social *	Human *	Instituti-Onal *	Physical *	Anticipa-Tory Capitals *
Maribojoc	Low	Very Low	Low	Moderate	Moderate	Very Low	Very Low	Very Low	Very Low	Low	Very High	Moderate	Low	High	High	High
Panglao	Very Low	Very Low	Very Low	Low	Very Low	Very Low	Very Low	Very Low	Very High	Low	Low	Low	Low	High	Moderate	High
Pilar	Low	Moderate	Very Low	Moderate	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very High	High	Very Low	Low	Moderate	High
Sagbayan	Low	Low	Very Low	High	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Very Low	Low	Moderate	Moderate
San Isidro	Low	Very Low	Very Low	Very High	Very High	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very High	Vey Low	Moderate	Low	High
San Miguel	Moderate	Very High	Moderate	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	High	Moderate	Very Low	Moderate	High	High
Sevilla	Low	Very Low	Low	High	Moderate	Very Low	Very Low	Very Low	Very Low	Low	Very Low	Very High	Low	Moderate	Moderate	Moderate
Sierra Bullones	Low	Very Low	Very Low	High	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Moderate	Very Low	Moderate	Moderate	Low
Sikatuna	Low	Very Low	Very Low	Very High	Moderate	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Low	High	High	High
Tagbilaran	Very Low	Very Low	Very Low	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very High	Moderate	Low	Very High	Very High	Low	High
Talibon	Very High	Very High	Low	Moderate	Very Low	Very Low	Moderate	High	Moderate	Low	High	High	Low	High	Low	Moderate
Trinindad	Very High	Very High	Very High	Moderate	Very Low	Very Low	Very Low	Very Low	Very High	Very Low	Very Low	Very Low	Low	Moderate	Low	Moderate
Tubigon	Low	Very Low	Very Low	Moderate	Low	Very Low	Moderate	Low	Very Low	Low	Very High	Very High	Low	Moderate	Moderate	High
Ubay	Very High	Very High	High	Low	Very Low	Very Low	Very Low	Very High	Moderate	Moderate	Moderate	Moderate	Moderate	High	Very High	Very High
Valencia	Low	Very Low	Very Low	Very High	High	Very Low	Very Low	Very Low	Very Low	Low	Moderate	Very High	Very Low	Moderate	High	High

** Source: Bohol, Negros Oriental and Siquijor CRVA Completion Report*
*** Source: Bohol LDRRM Plan*
**** Based on location of Major Dams*

Annex D. Risk Profile of Commodity per Municipality

Municipality	Production Volume (No. of Trees)	Key Hazard	Overall Hazards
Albuquerque	83,858.00	Very high in erosion	Low
Alicia	257,668.00	High in Tropical Cyclone and Erosion	High
Anda	348,456.00	High in Tropical Cyclone, Erosion and Landslide	Moderate
Antiquera	385,904.00	High in Erosion; Moderate in Landslide	Low
Baclayon	56,236.00	High in Erosion	Very Low
Balilihan	532,356.00	High in Erosion	Low
Batuan	79,307.00	High in Landslide; Moderate in Erosion	Low
Bilar	84,592.00	Very high in Landslide; Moderate in Erosion	Low
Buen Unido	27,762.00	Very High in Tropical Cyclone and Drought; High in Flooding	Very High
Buenavista	199,964.00	Very high Tropical Cyclone and Erosion; High in Drought	Very High
Calape	303,455.00	Moderate in Flooding, Erosion and Landslide, Sea Level Rise and Storm Surge	Moderate
Candijay	305,057.00	Very High in Flooding; High in Tropical Cyclone	Very High
Carmen	653,368.00	High in Erosion	Low
Catigbian	170,044.00	Moderate in Erosion and Landslide	Very Low
Clarin	241,787.00	Low in Tropical Cylone, Erosion and Landslide	Very Low
Corella	87,407.00	High in Erosion	Very Low
Cortes	92,592.00	High in Flooding	Low
CP Garcia	107,130.00	Very high in Tropical Cyclone, Flooding, Drought, Sea Level Rise; Moderate in Storm Surge	Very High
Dagohoy	146,200.00	High in Erosion; Moderate in Tropical Cyclone and Flooding	High
Danao	110,560.00	Very High in Erosion; High in Tropical Cyclone; Moderate in Landslide	High
Dauis	37,877.00	Very High in Erosion and Salt Water Intrusion	Very Low
Dimao	394,424.00	Very High in Erosion; Moderate in Landslide	Low
Duero	105,348.00	Very High in Erosion; Moderate in Landslide	Low
Garcia Hernandez	373,894.00	High in Erosion and Landslide	Low

Municipality	Production Volume (No. of Trees)	Key Hazard	Overall Hazards
Getafe	94,695.00	Very High in Tropical Cyclone; High in Drought, Sea Level Rise and Storm Surge; Moderate in Erosion	Very High
Guindulman	155,058.00	High in Erosion and Landslide; Moderate in Tropical Cyclone	Moderate
Inabanga	491,267.00	Very High in Flooding; Moderate in Tropical Cyclone, Sea Level Rise and Storm Surge	High
Jagna	278,699.00	Very High in Erosion; High in Landslide	Low
Lila	219,230.00	Very High in Erosion; Moderate in Landslide	Low
Loay	215,278.00	Very High in Flooding and Drought; Moderate in Erosion and Landslide	Moderate
Loboc	190,845.00	Very High in Erosion, Moderate in Flooding and Landslide	Moderate
Loon	386,371.00	Moderate in Erosion and Landslide	Low
Mabini	226,853.00	Very High in Tropical Cyclone; High in Erosion; Moderate in Flooding	High
Maribojoc	159,586.00	Moderate in Erosion and Landslide	Low
Panglao	75,586.00	Very High in Salt Water Intrusion	Very Low
Pilar	196,740.00	Moderate in Tropical Cyclone and Erosion	Low
Sagbayan	16,875.00	High in Erosion	Low
San Isidro	304,239.00	Very High in Erosion and Landslide	Low
San Miguel	124,645.00	Very High in Tropical Cyclone; Moderate in Flooding and Erosion	Moderate
Sevilla	85,410.00	High in Erosion; Moderate in Landslide	Low
Sierra Bullones	400,231.00	High in Erosion; Moderate in Landslide	Low
Sikatuna	88,820.00	Very High in Erosion; High in Landslide	Low
Tagbilaran	26,570.00	Low in Flooding	Very Low
Talibon	145,770.00	Very High in Tropical Cycle; High in Storm Surge, Moderate in Sea Level Rise and Salt water Intrusion	Very High
Trinindad	159,811.00	Very High in Tropical Cycle, Flooding, Salt Water Intrusion; Moderate in Erosion	Very High
Tubigon	208,681.00	Moderate in Erosion and Sea Level Rise	Low
Ubay	531,167.00	Very High in Tropical Cyclone, Storm Surge; High in Flooding	Very High
Valencia	329,044.00	Very High in Erosion; High in Flooding	Low

Annex E. Provincial Core Planning Team Composition

Component	Commodity	Agency/Office	Name
I-PLAN Subproject Component			
Component Head		Office of the Provincial Agriculturist (OPA)	OPA/ Dr. Larry M. Pamugas, PhD.
Commodity Experts	Crops	Office of the Provincial Agriculturist (OPA)	Mr. Ramil Rodela
		Department of Agriculture (DA -PATCO)	Mr. Roman Dabalos
		Philippine Coconut Authority (PCA)	Mr. Jovencio Felisilda
	Seaweeds/Fisheries	Office of the Provincial Agriculturist (OPA)	Ms. Queenie Atup
		Bureau of Fisheries and Aquatic Resources (BFAR)	Mr. Candido Samijon
	Livestock	Office of the Provincial Veterinarian	Mr. Ian Ray Tejada Ms. Isabelita Alipoyo
I-BUILD Subproject Component / Engineering		Provincial Engineer's Office (PEO)	Engr. Camilo Gasatan Engr. Evelyn Ayuban
I-REAP Subproject Component		Office of the Provincial Veterinarian	Dr. May Dallyn Paman
Planning		Provincial Planning and Development Office	EnP. Maria Imelda Borromeo Atty. Maria Contessa Butron-Arcaya
ON-CALL			
Environment and Natural Resources			EnP. Jovencia Ganub
Social Welfare and Development/GAD			Ms. Carmelita Tecson
Disaster Management			Dr. Anthony Damalerio
Enterprise			Ms. Gertrudes Fuentes
PAFC Representative			Mr. Apolonio Manatad

PHOTO DOCUMENTATION

1) Bohol PCIP Enhancement Writeshop

8-9 August 2018

2) Enhanced PCIP Writeshop

17-18 September 2018

3) Stakeholders Consultation

22 October 2018

4) Enhanced Seaweeds and VCO PCIP Presentation to the Provincial Development Council (PDC)
24 October 2018

5) PDC ExeCom Presentation of the Updated PCIP Matrices

19 July 2024