

Chapter 4

SOCIOPOLITICAL SETTING

POLITICAL BOUNDARIES

t

he profile area is bounded by 6 municipalities. To the south is Maribojoc, while Antequera, San Isidro, Sagbayan and Danao border the East. The northern edge of the profile area is bounded by the municipality of Talibon.

DEMOGRAPHICS

Population

Seven municipalities comprise the profile area. Their total population in 1995 was 197,463 distributed to 38,138 households. The average household size was 5.3 persons (NSO 1995).

The average annual rate of provincial population growth is estimated at 1.86 percent over the 1990-2002 period (PPDO 1993b). There is a high level of out-migration as people search for "greener pastures" abroad and in the cities of Cebu, Manila and Davao. (Bohol has over 30,000 people working abroad.) This growth rate is one of the lowest in the Central Visayas region, which is currently experiencing a regional annual growth rate of 2.17 percent. The profile area's population annual growth rate is estimated at a slightly lower 1.75 percent. Getafe and Buenavista, both highly rural, are projected to grow relatively rapidly at rates exceeding 2 percent (Table 4.1).

As mentioned earlier, population pressure in the future will impact upon land-use sustainability. For example, 5 of the fastest-growing municipalities in Bohol are coastal, and 5 of the 6 central business districts are located within coastal municipalities (PPDO 1997). Current population levels are not seen as adversely affecting sustainability,

Table 4.1. Population by municipality and growth (PPDO 1993b; NSO 1995).

Municipality	Population	No. of households	% Annual growth
Buenavista	24,215	4,240	2.04
Calape	26,051	5,097	1.07
Clarin	15,961	3,217	1.78
Inabanga	40,015	7,561	1.48
Getafe	23,927	4,179	2.56
Tubigon	34,578	6,770	1.55
Loon	32,716	7,074	-0.94
Profile area	197,463	38,138	1.36
Bohol Province	1,159,680	218,807	1.86

but that may change as the need for food and living space (including sanitation space) increases over time. The implications of urban and rural population pressure will be discussed in the following sections.

There are 121 coastal and island barangays (Table 4.2) with a combined population of 106,307 inhabitants along the coastline of the profile area (PPDO 1992; NSO 1995). Forty of these are island barangays populated by 30,790 inhabitants. The remaining 81 barangays are located along the coastline of the Bohol mainland and are populated by 75,517 inhabitants. The municipality of Loon has the most coastal (18) and island (13) barangays, but it does not have as many fishing households as other municipalities such as Calape, Tubigon and Inabanga. In fact, the fishing households of Loon's 13 island barangays comprise a relatively low percentage of the total island population. This situation is explained by the townsfolk's tendency to migrate to other parts of the country, particularly Eastern Visayas, Mindanao and Metro Manila for employment or business. NSO (1995) records show that among the municipalities in the profile area only Loon has a negative population growth rate (-0.94 percent) (Table 4.1). It also has the lowest population density (Table 4.4).

Buenavista has 8 coastal barangays (population: 5,609) and 2 island barangays (population: 3,151). Calape has 8 coastal barangays (population: 9,064) and 9 island barangays (population: 4,213), 8 of which are on Pangangan Island. Clarin has only 7 coastal barangays (population: 6,510), while Inabanga has 17 (population: 14,241) and 2 island barangays (population: 2,361). Getafe has 11 coastal barangays (population: 9,476) and 8 island barangays (population: 8,516). Tubigon has 12 coastal barangays (population: 17,036) and 6 island barangays (population: 3,128). Loon has 18 coastal barangays (population: 13,581) and 13 island barangays (population: 9,421) (PPDO 1992).

Seventy-six percent of the coastal inhabitants were born in the profile area. In most cases, they continued to live in their birthplace. The other 24 percent were born outside the area, but generally in the province.

Table 4.2. Coastal and island barangays in the profile area (PPDO 1992, 1998; NSO 1995).

Municipality	Coastal barangays		Island barangays	
Loon	Song-on Tontonan Cuasi Tangnan Pig-ot Basdacu Lintuan Napo Cogon Norte	Basac Biasong Canhangdon Occidental Ubayon Catagbacan Sur Catagbacan Norte Catagbacan Handig Cantumocad Pondol	Basdio Canigaan Ubujaan Sondol Mocpoc Sur Mocpoc Norte Calayugan Sur Calayugan Norte	Looc Cabacongan Talisay Pantudlan Cambaquiz
Calape	Liboron Desamparados Bentig Abucayan Norte	Tultugan Santa Cruz San Isidro Abucayan Sur	Mantatao Lomboy Magtongtong Looc Madangog	Talisay Lawis Kahayag Kinabag-an
Tubigon	Matabao Tinangnan Potohan Panaytayon Macaas Centro	Guiwanon Pandan Cabulihan Poc Oriental Poc Occidental Pinayagan Norte	Batasan Bilangbilangan Ubay Mocaboc Pangapasan Bagongbanwa	
Clarin	Buacao Lajog Bonbon Poblacion Norte	Tangaran Bacani Nahawan		
Inabanga	Ubujaan Tungod Saa Cogon San Isidro Poblacion Fatima Ilaud Daet Sur	Lutao Bugang U-og Ondol Sto. Rosario Lawis Cagawasan Sto. Niño	Hambongan Cuaming	
Buenavista	Cambuhat Sweetland Asinan Hunan	Cruz Poblacion Cangawa Bato	Western Cabul-an Eastern Cabul-an	
Getafe	Saguisi Salog Poblacion San Jose Taytay Tugas	Campao Oriental Campao Occidental Carlos P. Garcia Corte Baud Tulang	Pandanon Nasingin Banacon Jandayan Norte Jandayan Sur Alumar	Handumon Jagoliao
Profile area (121)	81		40	

In comparison with the province of Bohol as a whole, the entire profile area is more rural in population distribution, and has a higher population density per km² of land (see Tables 4.3 and 4.4).

Typical of Philippine coastal municipalities, the urban areas of the profile area are located along the coast. Development is concentrated in and around these urban clusters,

Table 4.3. Distribution between urban and rural populations (PPDO 1993b).

Municipality	% Urban	% Rural
Buenavista	2.70	97.30
Calape	7.66	92.34
Clarin	16.47	83.53
Inabanga	4.41	95.59
Getafe	7.37	92.63
Tubigon	14.88	85.12
Loon	25.90	74.10
Province	16.29	83.71
Profile area	11.34	88.66

Table 4.4. Population density in the profile area (persons/km²) (PPDO 1993b).

Municipality	Density
Buenavista	309
Calape	365
Clarin	310
Inabanga	335
Getafe	277
Tubigon	539
Loon	272
Province	282
Profile area average	344

following a linear pattern of growth along the coastline. This means that urban areas are going to encroach upon mangrove and marsh lands at an approximate rate of 1.75 percent per year. Consequently, agricultural lands will have to be increased annually by as much as 3 percent in the area to meet local consumption demands (AusAID 1995).

In addition, each municipal urban center should have at least 8,000 m² of landfill/dumpsites. By the year 2005, these same urban centers will each require about 11,000 m² of landfill. At present, there is only one such site, located in Calape, in the profile area. This means that a large amount of land will have to be claimed just to meet the minimum sanitary requirements. This future land conversion will cut into agricultural and housing usage that is necessary to meet the increased needs of more and more inhabitants.

The high population density of the area (relative to the rest of the province) implies that land-use sustainability in the profile area may drop at a much faster rate than in the rest of the province. This could result in a higher rate of environmental degradation, with a resulting drop in land (and coastal zone) productivity.

The municipality that potentially will suffer the most pressure and degradation is Tubigon. Not only is Tubigon highly urban, but it also has the highest population

density in the profile area (and the province). With its intended urban expansion and industrial area/port development, Tubigon will definitely encroach upon delicate mangrove and marsh systems as its population increases. Waste and pollution run off from the urban center will increase, which will add to effluents from the industrial area and ship discharge. This will seriously degrade the surrounding environment.

Religious and Ethnic Groups

Approximately 90 percent of the population in the profile area are Roman Catholic, with the remaining 10 percent scattered among the following denominations: Philippine Independent Catholic Church (Aglipay), *Iglesia ni Kristo*, United Church of Christ of the Philippines, Jehovah's Witnesses, and Seventh Day Adventist Church (PPDO 1993b). Cebuano is the predominant language with each municipality, or even barangay, having certain modifications in speaking tone and pronunciation.

Labor and Employment

Within the province, over one-third of the 1990 working population was employed in the agriculture sector, which includes fisheries and forestry (PPDO 1993b). The provincial employment rate is approximately 95.6 percent, with a working age population of 15 years and above. Of the working age population, approximately 61.8 percent participate in the labor force.

The overall annual projected employment growth rate for the period 1990-2002 is estimated at 5.26 percent (PPDO 1993b), which is among the highest in Central Visayas. The annual regional employment growth is projected at only 2.5 percent. There is a growing trend of people moving into the manufacturing and service sectors as agriculture and related fields are not known for generating much personal income. This may result in fewer small family plots, and the emergence of larger, more commercial ventures.

The tertiary sector (manufacturing, construction, transportation, etc.) is projected to grow annually at a rate of 6.6 percent over the next 5 years. Mining and quarrying are expected to be the highest growth sub-sectors. This increase is worrisome from an environmental impact point of view. Since many mining and quarrying ventures do not adhere to DENR guidelines, this growth may lead to increased soil erosion, destruction due to excavation and nearshore water pollution.

Half of the people interviewed in the coastal communities in the profile area engage in fishing, with an average income of PhP 1,830 per month (Table 4.5). Ten percent are involved in fisheries-related occupations (PhP 3,269 per month), and another 10 percent are involved in commercial businesses (PhP 4,096 per month).

Table 4.5. Livelihood and income profile of coastal inhabitants (PPDO 1993b; SUML 1997).

Livelihood	Population distribution (%)	Monthly average (pesos)	Annual income (pesos)
Fishing	50.00	1,830	21,876
Fisheries-related	9.77	3,269	38,261
Business	9.77	4,096	49,153
Fishing and non-fisheries related	6.90	3,829	45,026
Skilled labor	6.32	2,800	32,545
Unskilled labor	6.03	1,098	12,994
Salary	3.16	360	4,000
Farming	2.87	604	4,063

US\$1 = PhP 26.50 in 1997.

Only about 3 percent of the coastal inhabitants are actively involved in farming activities of any kind. The average monthly income of farmers is PhP 604, which is one of the lowest incomes reported in the profile area. Approximately 10 percent of the coastal inhabitants engage in fisheries-related activities to supplement their primary incomes.

All in all, over 60 percent of the coastal inhabitants live below the poverty line of PhP 6,000 per month for a family of 5-6 members. Unfortunately, fisherfolk (and farmers), who provide the market with fresh food, make up the bulk of this group. As in other areas of the country, the middlemen who barter foodstuffs are among the highest-earning income groups. One popular argument for the low income of fisherfolk and farmers is that they typically have weak collective organizational structures. Instead of bartering for profit with the market through a unified cooperative or association, each individual usually attempts to strike some sort of deal, and ends up selling at cost. High levels of debt and the "suki" relationship with fish buying and selling keeps the "gate price" of fish down to the benefit of the middlemen. Nevertheless, this "suki" system allows the seller to borrow money and purchase fishing equipment.

Table 4.6. Monthly income distribution of full-time fisherfolk.

Income (pesos)	Profile area (% population)	Bohol (% population)
< 1,000	35	28
1,001 - 2,000	33	35
2,001 - 3,000	23	24
3,001 - 4,000	7	8
4,001 - 5,000	1.77	3
> 5,001	0.23	2

US\$1 = PhP 26.50 in 1997

Compared to the fisherfolk in the rest of the province, those in the profile area earn relatively the same level of income, with some minor variations (due to averaging). Only about 10 percent of the fisherfolk in the profile area live above the poverty line (Table 4.6).

Ninety-five percent of the coastal inhabitants in the area do not own agricultural land, but 61 percent do own residential land (SUMML 1997). Reportedly, 88 percent of the houses are owned by their residents. The majority of the houses in the coastal communities (70 percent) are made of light materials (non-permanent) such as *nipa*, *kawayan* (bamboo) and coconut lumber. Approximately 20 percent of the coastal inhabitants are essentially squatters, living on government/public land, i.e., 20 m from the high-tide level landward. The illegal encroachment by squatters is bound to increase dramatically as population pressure continues to soar in the near future and no provision for housing is forthcoming.

The majority of coastal inhabitants own livestock and poultry, the most common of which are hogs, native chickens and fighting cocks. Most of these animals are raised for household consumption and especially fighting cocks for entertainment particularly during fiestas or religious holidays.

Another approach to examining social classification is to observe the possession of furniture and appliances. More than 60 percent of the coastal residents do not own furniture; and only 50 percent own radios (SUMML 1997), from which most of them derive information and entertainment. This relatively low level of radio ownership is probably due to the fact that only about 50 percent of the profile area is connected to electric power (Table 4.7). However, this is comparable to the province, since only 53 percent of households in Bohol have electricity.

Table 4.7. Level of municipal electrical connections (PPDO 1993b).

Municipality	% of households
Buenavista	20.39
Calape	74.66
Clarin	66.39
Getafe	20.40
Inabanga	41.76
Tubigon	78.87
Loon	50.03
Profile area	50.35
Province	52.95

In keeping with its highly urban nature, Tubigon has the highest electrical connection rate in the area (and third highest in the province, behind Jagna and

Tagbilaran City). This indicates a higher infrastructure potential for Tubigon as a provincial growth area, which is backed up by the port expansion and industrial development.

Public Assistance Programs

Under Republic Act 8550 (the Philippine Fisheries Code of 1998), municipalities may seek financial assistance for fishery projects from the DA's Municipal Fisheries Grant Fund. This Php 100-million grant is aimed at easing the economic burdens of municipal fisherfolk. Another DA Fishery Loan and Guarantee Fund of PhP 100 million is also available under administration by the Land Bank of the Philippines. This fund will be made available to qualified borrowers in the near future; however, this funding program is commonly seen as only benefiting commercial operators. An Aquaculture Investment Fund is also mandated by the Philippine Fisheries Code for the purpose of extending soft loans to municipal fisherfolk organizations. The loans will be for aquaculture projects, and for the upgrade of inland fishponds.

Land Bank itself may give loans to fisherfolk for the purchase of fishing gears and related equipment. However, the bank typically does not extend these loans due to the lack of collateral on the part of the fisherfolk. Even the existence of fishing associations is not enough to generate a loan, because the bank claims that most of the associations are poorly managed. The bank does not want to take responsibility for unguaranteed loans that are almost sure to be defaulted. On the positive side, Land Bank does offer technical and consultative services as part of the loan to qualified cooperatives and associations. Its loans, however, tend to be very large and ambitious and have no thrust towards resource management, but solely for production purposes.

The national Poverty Alleviation Fund also allows the municipalities to present proposals for funding. The majority of the approved projects are related to child and maternal care, potable water supply, and alternative livelihoods for lower-income families.

In addition, there is the Presidential Commission for Countryside Development (PCCD) which sponsors rural-based alternative livelihood projects. The Minimum Basic Needs/Social Reform Agenda also seeks to meet the primary needs of food, shelter and clothing of low-income families. The Department of Social Welfare and Development (DSWD) and the PPDO are responsible at the provincial level for implementing these various projects. Calape Bay is one of the SRA sites in the province. DSWD also has its own activities aimed at uplifting women's groups and children. Loans are generally available through the Land Bank for the development of small enterprises. These enterprises are usually *sari-sari* stores and *traysikads* (pedicabs).

The National Food Authority (NFA) typically has some funding for small-scale rice millers. The farmers do not actually benefit from these programs, only the processors and middlemen.

The Department of Agriculture’s **Livelihood Enhancement and Development (LEAD)** program gives out loans to fisherfolk organizations for the purchase of fishing gears, boats and engines. This encourages more fishing effort and is only a short-term production-based solution, as opposed to offering sustainable management mechanisms tied to non-fishing livelihoods.

HEALTH, SANITATION AND MEDICAL CARE

There are several community hospitals in the profile area. A 10-bed municipal hospital is located in Cagayan, Inabanga, while a 15-bed hospital is located in Poblacion, Clarin. Loon has a 25-bed hospital while Tubigon has a new 10-bed hospital. There are also 53 barangay health stations and rural health units in the 7 municipalities. These are staffed by nurses and midwives, and are aimed at delivering primary health care. Barangay health programs cover immunizations, maternal and child health, nutrition and health education. In some cases, there are also barangay health and nutrition scholars who act as local health volunteers in the absence of certified practitioners.

While Bohol has more than 150 rivers and springs and about 170 creeks, there are still not many level 3 water systems (Table 4.8). The water system levels in the profile area are as follows: 1 - dug wells, artesian wells, shallow and deep wells, other natural sources such as springs and creeks (e.g., Buenavista); 2 - all sources mentioned in level 1 but provided with limited or small-scale distribution lines (e.g., Inabanga and Getafe); 3 - large-scale water system, usually with water pumping stations, reservoirs and even water treatment facilities (e.g., Loon, Calape, Tubigon and Clarin). The demand for potable water is projected to grow at an average rate of 5 percent over the next 5 years. The Central Visayas Water and Sanitation Project (CVWSP) is one of the programs developing water systems for Bohol.

Table 4.8. Potable water supply (levels 2 and 3) (PHO 1999).

Municipality	Population	No. of water sources		Population served		Percentage served	
		Level 2	Level 3	Level 2	Level 3	Level 2	Level 3
Loon	31,503	1	4	866	18,404	2.75	58.42
Calape	27,184	5	6	2,934	8,915	10.79	32.79
Tubigon	34,786	12	7	9,701	12,594	27.88	36.20
Clarin	15,917	7	12	2,665	8,337	16.74	52.37
Inabanga	42,087	16	2	2,756	7,403	6.54	17.58
Buenavista	26,324	2	2	476	2,230	1.8	8.47
Getafe	26,257	2	0	2,412	0	9.18	0

A high incidence of infrastructure development is reflected in Tubigon’s water supply of 64.08 (levels 2 and 3) percent. However, Tubigon is already experiencing shortages within the potable water delivery system, and this can only worsen as the population increases. On the other hand, highly rural Getafe and Buenavista have little

supply of potable water. In fact, Getafe is considered by the provincial government to have no supply of safe drinking water (PPDO 1993a). Surprisingly, highly-populated Inabanga has a very poor public water system despite the presence of 16 sources of water including the Iwahig-Inabanga watershed, one of the most extensive in Bohol. Loon, on the other hand, has abundant supply of potable water despite having only 5 sources for levels 2 and 3 water supply.

Coliform contamination is present along the entire coastline of the profile area (Table 4.9). In many cases, garbage is prevalent in the seawater, the source being the dense clusters of housing along the seashore. The primary source of coliform contamination is faeces, since approximately half of the coastal inhabitants do not have toilet facilities. In Inabanga, contamination from upstream communities along the Inabanga River can also contribute to seashore contamination. Animal production facilities, such as piggeries, are another point-source of contamination. Examples can be found in the large-scale swine raising projects along Calape Bay and a poultry business in Lintuan, Loon.

Table 4.9. Most probable number (MPN) of total coliform counts per 100 ml of seawater (SUML 1997).

Site	Nearshore	0.5 km offshore	1 km offshore
Getafe	4	24	14
Inabanga	8,950	10,800	49
Tubigon	12,600	1,530	694
Buenavista	484	1,523	308
Clarin	154	32	32

EDUCATION

There are many elementary schools in the profile area, which is common throughout the Philippines. High schools and vocational schools and colleges are less common. As a result, approximately 75 percent of the coastal inhabitants have attended elementary school, but only 11 percent high school. Only 9 percent have some college/vocational training. In the 7 municipalities, there are 101 primary schools, 92 elementary schools and 32 secondary schools. The elementary schools have an approximate teacher-pupil ratio of 1:30 (PPDO 1993b).

For post-secondary education, there are 2 colleges: the Central Visayas State College of Agriculture, Forestry and Technology (CVSCAFT) and Mater Dei College in Tubigon. CVSCAFT has 2 branches in Calape and one in Clarin. There are 3 other campuses of the CVSCAFT system. These are located in Candijay (east), Tagbilaran (southwest) and Bilal (interior, main campus). The University of Bohol started offering college courses at its high school branch in Loon, but had to close the college unit for varied reasons: lack of

highly competent instructors, dearth of facilities, and low enrolment due to the proximity of Tagbilaran which is less than an hour away via public utility jeepneys.

The prevalence of elementary schools, added to the high rate of attendance and good teacher-pupil ratio, indicates that elementary classes are one of the best ways to provide grassroots environmental education to a large percentage of the populace. Attempting to reach only high school and college students would seriously limit the reach of environmental education in the profile area. Through education, it is possible to shape popular attitudes regarding waste disposal, resource depletion, habitat degradation and human encroachment. Unfortunately, the majority of the coastal inhabitants lack the advanced education necessary for better jobs and opportunities to improve their socioeconomic standing.

ROADS, PORTS AND TRANSPORTATION

There is a provincial circumferential highway that connects the coastal municipalities to one another, and to Tagbilaran City. The highway is a mixture of concrete, asphalt and gravel, although gravel dominates most of the sections in the profile area. The new circumferential road will be completed by the end of 2000.

Buses and jeepneys are the major sources of public transport, along with motorcycles (*habal-habal*) and tricycles which are erroneously called pedicabs in some places. The real pedicab is popularly called *traysikad*. Trucks are often used for hauling large loads of construction material between towns, while most small-scale vendors, farmers and fishers use the jeepneys and tricycles.

Tubigon is the secondary port (after Tagbilaran City) for Cebu-Bohol shipping, receiving an average of 114 shipcalls and 2,126 tons of cargo per month. It is also the most highly urbanized and developed municipality in the profile area. While Getafe is primarily a rural municipality, it is considered the major fish landing area for the northern part of the province and receives an average of 65 shipcalls (and 1,300 tons of cargo) per month.

The Asinan Port in Buenavista; Daet River Quay and Inabanga Port, Inabanga; and the Port of Clarin are primarily used for small vessels, motorized *bancas*, pump-boats and fishing boats. Much of what is transported to and from nearby islands and Cebu City consists of agricultural and marine products, and live animals.

Loon has a secondary port as well. Situated in barangay Catagbacan Norte, this port averages only 11 shipcalls (and 246 tons of cargo) per month. In comparison, Tagbilaran port handles 134 shipcalls (and 22,730 tons of cargo) per month. Loon and Tubigon will soon experience increased numbers of shipcalls, as traffic is routed away from Tagbilaran. The problem in the latter is limited berthing capacity. Up until 3 years

ago, there was ample space in the port. At present, it is not uncommon to see “boats queuing to dock in the seaport for 2 or 3 days before finding berthing space (MTDP 1997).”

The Bohol 2nd District Development Master Plan lists several infrastructure development projects that would affect the coastal environment over the next 5 years. RORO (roll on, roll off) ports are to be developed in Getafe, Clarin and Buenavista. A municipal port improvement is also proposed for Inabanga. Obviously, the dredging and construction activities will cause siltation and sedimentation, disrupt the water flow and increase chances of shoreline erosion, even while further degrading the surrounding habitats along the coast (i.e., mangroves).

Tubigon is expanding the wharf, which is encroaching into nearby mangrove areas. Not only has the construction caused mangroves to be cut, but workers and their families are establishing homes further and further within the mangroves.

While Tagbilaran and Tubigon are presently serviced by fast ferry lines to and from Cebu, Getafe may well become the next port of call. Getafe’s northern location makes it well-suited as a hub for ferry service connecting Cebu, Bohol and Leyte.

SUMMARY

More than 60 percent of the coastal inhabitants in northwestern Bohol live below the poverty line. The coastal communities are closely connected with the natural resources around them, with more than 50 percent engaged in fishing and fisheries-related endeavors, and only about 3 percent engaged in farming. In the fast-growing municipalities with high population density (e.g., Tubigon) there are signs of encroachment upon mangrove areas. This implies that land-use sustainability in the area may drop faster than the rest of Bohol. Meanwhile, solid waste management appears to be a growing environmental problem since, with the exception of Calape, all the municipalities do not have landfill sites.

Although social services are available, there is inadequate public health, potable water and advanced education. The impoverished social condition and lack of sanitary facilities threaten the small supply of potable water. On the other hand, roads and ports are currently upgraded and are expected to respond to the transport needs of the populace. There is, however, a need to consider port upgrading and other shoreline developments as having great impact upon the coastal zone. Improved shoreline land-use planning will be one solution to the increasing conflicts of use in these municipalities.