# Gleaning in Bais Bay: A case study on an informal sector coastal activity in the Philippines

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**by**
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## ABSTRACT

Since the beginning of the 1970s, the informal sector has been a subject of increasing attention. Initially, attempts to understand workers making a living outside the official formal economy took a negative view. However, as the failure of industrialization theories of the 1950s and 1960s became apparent, a more positive attitude toward informal workers materialized. This study focuses on an undocumented informal sector activity taking place in Bais Bay Basin in the province of Negros Oriental in the Philippines. Gleaning involves walking on mud flats and in mangrove forest at low tide, probing with a stick for various shellfish. A comprehensive survey was conducted to explore the structure and organization of the activity. The social and economical systems the activity is integral to were also documented as well as the influences of inherited colonial structures on the shaping of today's life in Bais Bay. It was found that the problem of the landlessness of the majority of Bais rural population, exacerbated by the seasonal character of the work found in the main employment sector (the hacienda) causes most of the municipality's rural poor families to rely on gleaning during off-milling season, therefore adding tremendous pressure on Bais marine resources. Changes in legislation such as the Philippine Integrated Social Forestry Program of 1982 and the Philippine Local Government Code of 1991 affecting gleaners' traditional access right to the intertidal zone are also documented. This case study supports the idea that property rights are political and that gleaners, because of their lack of political strength, are unable to protect their interest. The City of Bais that now has jurisdiction over Bais Bay failed to balance the various needs of multiple users. As a consequence, user conflicts over the exploitation of marine resources and the degradation of coastal water quality are becoming major issues.

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# Chapter One

" Negros in particular and the Philippines at large will never attain its highest development of prosperity if we the poor, that make the mass or the greater part of the population, will always be allowed to be oppressed by the rich and influence of richness and high offices."

Antonio Villanueva, October 27, 1919
(Letter to the Director of Land) *

* Quoted in Larkin

## 1.1 The Problem: A case study

This case study focuses on "gleaning", an informal sector activity taking place in Bais Bay Basin, province of Negros Oriental, in the Philippines. Gleaning generally involves walking on mud flats, seagrass bed flats, and in mangrove forests at low tide, probing with a stick or a large bladed knife, or simply with bare hands, for various mollusks and crustaceans. This activity is often thought to be performed by females only but in the case of Bais Bay is performed by men and women alike. Young children of both sexes often accompany the adults on their expeditions and contribute substantially to the total catch. The harvest is brought to the city of Bais and is sold to vendors.

The gleaners of Bais Bay share the near waters with an estimated 3077 coastal fishermen, many of whom are involved in the cultivation of shellfish or seaweed. The average density of fishermen per square kilometre in Bais Bay is estimated to be 57, higher than in other bays of the Philippines for which the density of fishermen is known. Their catch per unit of effort (CPUE) is lower than those in other areas. [1] The high density of fishermen and the low CPUE, when combined, confirm the increasing difficulty for individuals engaged in fishing to make a living for themselves and their families. Bais Bay was always known for its fish and abundant shellfish, but in more recent years, its marine resources have been heavily exploited. Notwithstanding the importance of the marine resources, agriculture is the principal source of employment in Bais Bay. The Island of Negros is one of the premier sugar production regions of the Philippines and most of Bais Bay's agricultural land is owned by a few families and devoted to sugar cane production.

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[1] Silliman University. "Bais Bay Environment and Resource Management Project Marine Component: Terminal Report (Year 1)." Dumaguete City, Philippines, 1992.

The labour use pattern on sugar plantations is very specific. The harvest season, which goes from December to May, is very busy and labour intensive. On the other hand, during non-peak periods, just a small fraction of the field workers are required to weed and maintain the fields, leaving the majority out of work.

The lack of access to agricultural land by the majority of the population, the seasonal character of the work found in the main employment sector, and a heavily exploited fishery all cause serious problems with employment. Unemployment and/or underemployment are the predominant characteristics of the local economy. The options available to the landless unemployed and plantation workers families, which need to bridge from one sugar season to the next, are limited. Because they must engage in some income generating activity, they enter the "flexible" economic sector. One informal activity available to them is to collect shellfish from the Bay.

## 1.2 Objective

The objective of this study is to understand how gleaning relates to the formal economy and especially to see whether, in Bais, it represents a significant phenomenon.

There are two principal aims. The first aim is to shed light on an undocumented informal coastal activity, and to understand its structure. The second aim is to examine gleaning's socioeconomic function with respect to the system to which it is integrated. Our main thesis is that gleaning, acts as a safety net for the rural landless labour force. Our study also allows for an examination of how inherited colonial structures, by perpetuating differential access to and control over land, contribute to increased pressure on marine resources.

## 1.3 The Setting

Bais Bay Basin is located in the province of Negros Oriental in the Philippines. The Island of Negros is divided into two provinces, Negros Oriental and Negros Occidental by a forest-covered central mountain spine (Figure 1). The capital of Negros Occidental is Dumaguete City, located 45 kilometres south of Bais City.

Provinces in the Philippines break down into town-sized municipalities subdivided into smaller communities known as barangays which may consist of several barrios [2]. Bais City like other typical Filipino towns has its commercial, social and administrative core, where the Catholic church, the municipal hall, a covered market and shops arranged around a central plaza are located. Its population is 59,597, including inhabitants scattered among 35 baranguays (Appendix One).

Municipal land extends from the Bais Bay shoreline back to the mountains. The city of Bais as such is located five kilometres inland and can not be viewed from the shore. Standing on the mud flats the first points that come into view along the shoreline are the plantation workers' small nipa [3] houses, built very close to the water and surrounded by a few mangrove trees.

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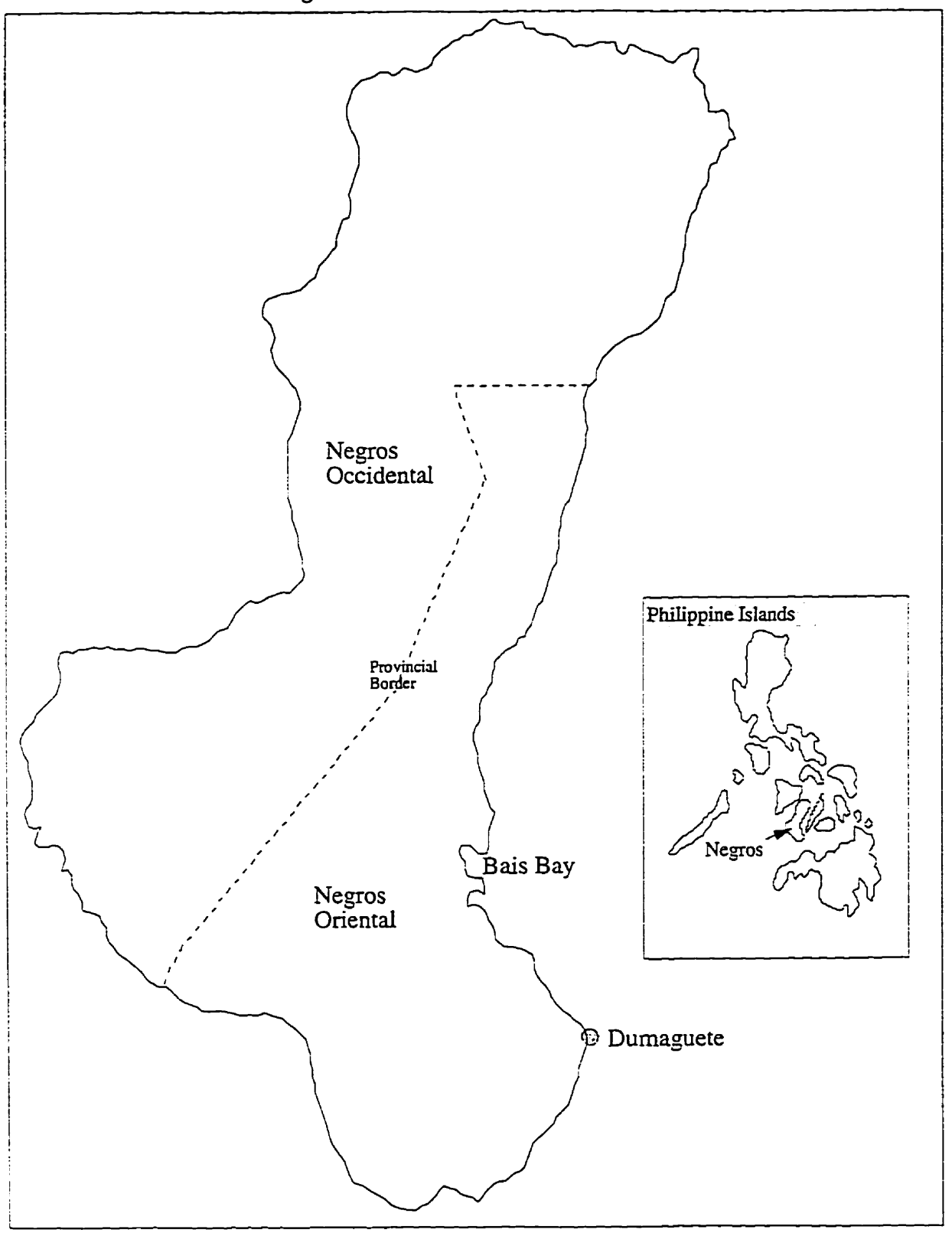
[2] There are no English translation for the words "barangay" and "barrio" which are commonly used by Filipinos in English documents. Each barangay is headed by an elected barangay captain who is member of the town council (in this case Bais City town council). A barangay may consists of several barrios.

[3] Bamboo wood used to build houses.

Figure 1. Location map of the Island of Negros showing two provinces, Negros Occidental and Negros Oriental.



Far away in the background are the mountains, the slopes of which are lined with coconut trees. Located at the immediate rear of the workers' houses, are large fish ponds built on wetlands and shore lands. Lastly, adjacent to the fish ponds and spread out to the mountains, lie kilometres of Bais' best agricultural land that is devoted to sugar cane production.

Bais Bay Basin where the present research was conducted belongs in fact to three different municipalities. Its northern end belongs to the municipality of Manjuyod, while a small part of its south end belongs to the municipality of Tanjay. For the greatest part, it falls under Bais City's jurisdiction. Our study focus on the Municipality of Bais, its residents and adjacent waters. The Bay occupies an estimated area of fifty-four square kilometres [4] and is naturally divided into North Bais Bay and South Bais Bay by the small island of Daco (Figure 2). Near the centre of North Bais is another island, Olympia, which unlike Daco has no road connection to the main land. Both islands are inhabited and belong to Bais City.

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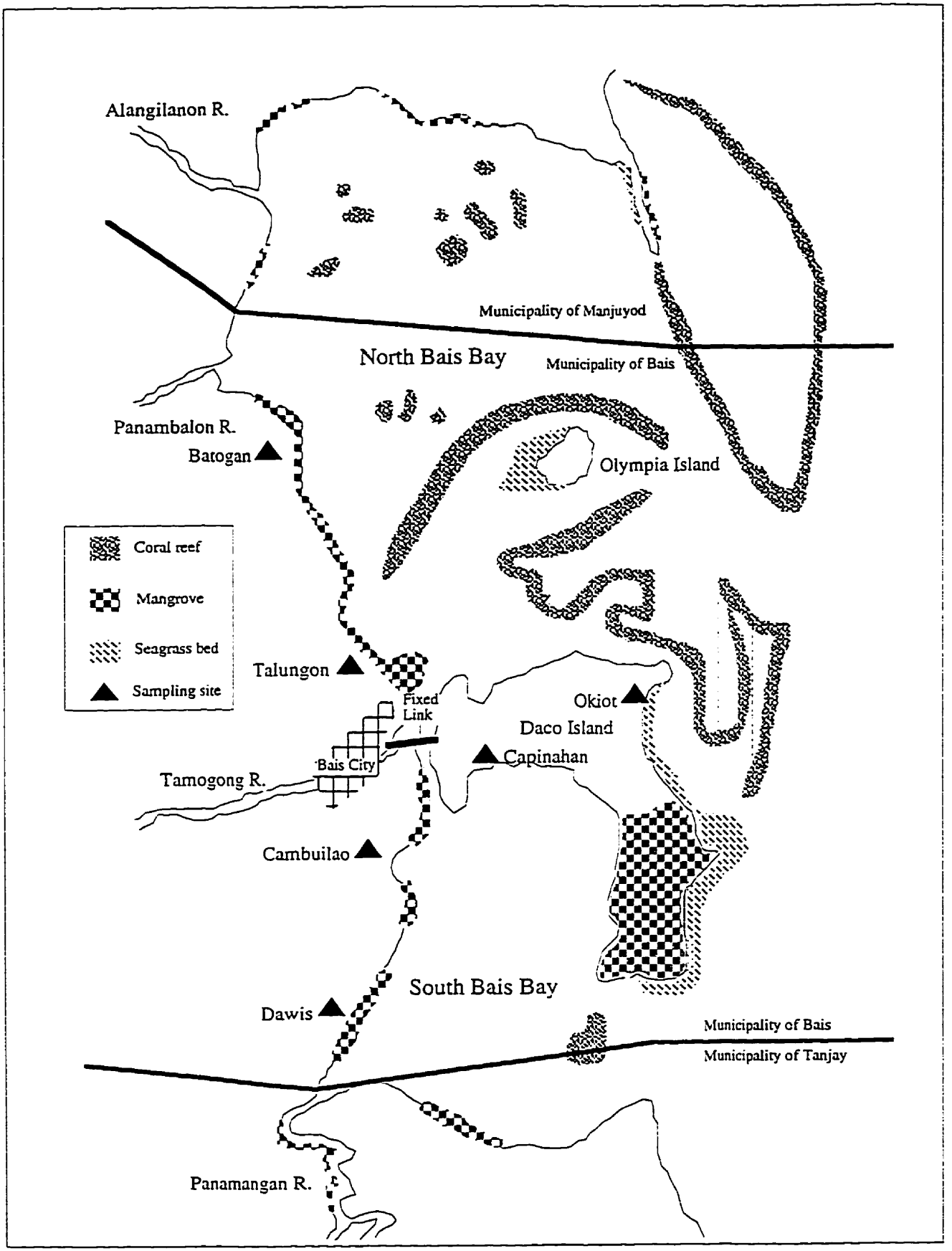
[4] Silliman University, "Bais Bay Environment and Resource Management Project. Marine Component: *Terminal Report (Year 1)*".

Figure 2. Bais Bay: political boundaries, main ecosystem types, and sampling sites.



## 1.4 Methodology

The research design divided the inquiry into four phases. The initial phase of research extended over two months, March, and April, 1993 when general information on Bais Bay was obtained from secondary sources of information, mostly from the office of the Environment and Resource Management Project (ERMP) of Dalhousie University [5]. This material provided a basis for understanding the environmental and economic problems and issues the people of Bais Bay confront. Additional information on women in the fisheries and coastal zone management in the Philippines, was acquired at the library of the International Centre for Living Aquatic Resources Management (ICLARM) in Manila, upon our arrival in the Philippines at the end of May.

The second phase of the research comprised field work in Bais Bay for a period of four months extending from May to October 1993 and further monitoring of the gleaning sites by local assistants for a period of seven months. A three pronged approach was used to ensure as exhaustive a collection of information as possible: **Firstly**, interviews were conducted with gleaners, shellfish vendors, municipal officials, fishermen, baranguay captains, hacienda owners, managers, and other key figures involved in the management and development of Bais Bay. The sample size interviewed was 55. **Secondly**, the primary information gathered during those interviews was supplemented by direct observations which mostly consisted of daily visits to the market of Bais City where gleaners came to sell their shells in the early morning, weekly visits to the Bais City bus terminal where shellfish were marketed, monthly visits to the markets of the three neighbourhood towns of Dumaguete, Tanjay and Manjuyod were shellfish were sold, and

[5] Bilateral cooperation project funded by the Canadian International Development Agency (CIDA) that comprised a Marine Component implemented in Bais Bay, Negros Oriental.

frequent gleaning expeditions to various sites in the company of key informants. It should be noted that continual involvement in the community life (friendly visits, invitations to family events such as baptisms and weddings, community celebrations such as numerous barrios fiestas) were occasions to gain valuable insights into the local culture. **Thirdly**, all the gleaning sites were identified and visited, and six enumerators were hired and trained to perform daily site monitoring which extended from July to December 1993, and February 1994. The enumerators were local residents familiar with the area and the type of work they were requested to do. Each enumerator was assigned a site which she or he visited daily at low tide. Using a questionnaire, the enumerators counted the number of female, male and child gleaners on the site and sampled four individuals. The sampling included the identification of the species, volume, use of the shellfish collected and the target price when the shellfish were collected for eventual sale, and the baranguay of residence of the individual sampled (Appendix 2). During the month of July, the enumerators were closely supervised through weekly visits. Afterward, they were visited once a month at which occasion data sheets were collected. For the months of November and December 1993, and February 1994, the supervision was done by a local research assistant. The third phase of the research, was completed in Canada in the Spring of 1994 after the identification by the Marine Laboratory at Silliman University of the shellfish collected in Bais Bay. [6] It involved coding, recording and analyzing the data collected by the enumerators. The information was recorded using the Lotus 1 2 3 software and copy of the file was sent to the Marine Laboratory of Silliman University in Dumaguete. The fourth and last phase of the research, from January 1995 to September 1996 consisted of the writing of this thesis.

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[6] Prior leaving the Philippines a sample of all mollusks collected by gleaners was handed to Silliman University Marine Laboratory for identification.

It should be noted that an interpreter was used in the second phase of the research. English is the language of education in the Philippines and it is commonly used throughout the country. Very few gleaners spoke English, however, and all exchanges with them as well as with the fishermen had to be conducted in Cebuano (the local language), through the use of a local research assistant who acted as interpreter.

Qualitative and quantitative methods were employed in the research. The decision to use both methods as well as the case study format of the presentation, were dictated by the nature of the topic. Because of the lack of statistics and information on gleaning, in general, and in the Philippines in particular, it became apparent that all empirical research in this field was in many ways to be exploratory. While the techniques used (interviews and direct observation) to gather qualitative information are suitable to record technical information and meanings and values alike, the case study approach enables the researcher to focus on social development in specific historical contexts. As for the quantitative information gathered by the enumerators, it provided the basis for understanding the economic importance of the activity.

Our thesis is comprised of five chapters. Following this Chapter One, Chapter Two consists of a review of the literature on the informal sector. Attention is directed toward understanding the concept of informality in development theories and establishing a definition of "Informal Sector". Chapter Three presents the findings of the field work and the data collected. In Chapter Four, an attempt is made to examine the implications of Chapter Two in the understanding of the activity studied, in terms of both its role, importance and continued existence. Consideration is given to the effects of inherited colonial structures on Bais Bay's poorest resource user group. A brief conclusion presented in Chapter Five, concludes the presentation of our research.

## Chapter Two

" There is a desperate need for fundamental rethinking of development strategies in a world economy of vastly reduced growth".

R. Broad and J. Cavanagh

## 2.0 The Concept of Informality and the Informal Sector

Postwar development strategies that equated development with industrialization and growth have not held up to their promise. In the context of stagnation of the formal economy and major lay offs from governments, attention in the late 1970s shifted from the formal to the informal sector. The concept of informal sector is now used to bring widely divergent Third World economic activities and production relations under a common denominator. This chapter presents a small sample of alternative theoretical definitions that have been introduced when trying to identify informal sector activities in practice. We first present an overview of the demographic and economic context in which the phenomenon of informality arose, and of how informality found its way into development theory.

### 2.1 Origin of Informality

The concept of informal sector first appeared in economic development literature at a conference at the University of Sussex in 1971. At this conference, anthropologist Keith Hart described the "formal" and "informal" income opportunities in Accra (Ghana), pairing the first with salaried jobs and the second with self-employment. His paper was subsequently published in journal form.[7] It is however the International Labour Office (ILO) that popularized the concept through a case study of the Kenyan economy it conducted in 1972. [8]

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[7] Hart, K. "Informal income opportunities and urban employment in Ghana". *Journal of Modern African Studies*, 11, 1 (January 1973):61-83.

[8] International Labour Office. *Employment, Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya*. Geneva, 1972.

The terms informal sector and formal sector refer to a dichotomized view of the economy in which the characteristics of one part form the opposite of the other. The heterogeneity of the sociopolitical and economic environment of developing economies makes it difficult to analyze their informal sectors. It is however generally agreed that formal sector refers to wage labour and employment situations which imply organized labour structure, are officially registered in economic statistics, and are protected by law. Authors therefore speak of the organized, registered or protected sector.

Other economic activities which do not meet these criteria are then referred to as being the "informal sector". Activities that fall within the category of the informal sector are found at all levels of economic development of both the rural and urban areas: merchandising activities by street vendors and hawkers, service activities by cobblers or repairmen, petty commodity production and subsistence production activities such as agriculture, forest and fishery, credit transactions, artisanal and small scale manufacturing, either on their own account or subcontracted by larger, formal sector enterprises.

Even though it is now recognized as being of fundamental importance in the analysis of developing countries, the concept of informality only recently found its way into development studies and theory. For several decades, developing countries' economies were viewed as consisting of modern capital intensive activities conducive to development and, of traditional activities viewed as not conducive to development. The native economy, it was expected, would eventually be absorbed by development. It is only in the 1970's that this expectation gave way to the realization that such was not the case. This realization prompted new interest in the concept of informality.

## 2.2 Informality in Development Theories

The issue of informal employment had been indirectly an object of attention long before the concept of informal sector was used by ILO in 1972. Demographers, as early as the 1940's, were the first to note that large segments of in-border migrants relied on informal economic activities to survive. The demographic and economic context in which the concept of informality arose was that of the massive urbanization of both the developed and the developing world. However, specific interest in the questions of income and of the employment situation in developing countries related more precisely to the massive labour surplus created by rural-urban migration to major cities of the developing world. [9] Overall population growth fuelled by the high birth rate and declining infant mortality in the Third World resulted in high labour force growth rates, especially in rural areas where most of the world's population then lived. Economic development policies promoted during the postwar years had a strong urban bias, and declining work opportunities in the countryside led to increasing migration to the cities where industrial growth and employment were concentrated. Throughout the developing world, rural migrants responsible for such a rapid rate of urban growth did not, when they migrated to the booming cities, encounter anything that responded to their economic needs and aspirations.

As shantytowns were growing, "marginality" became a popular term used to described the urban subsistence activities rural migrants engaged in. Attempts were made to label, in economic terms, the rural-urban phenomenon and the related employment situation, which

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[9] Charmes, Jacques. "Débat actuel sur le secteur informel." *Revue Tiers-Monde*, XXVIII, 112 (October-December 1987):854-73.

conservatives such as Boeke expressed as societal differences. [10] A number of new concepts appeared. Terms such as "underemployment" and "disguised unemployment" were extensively used in reference to the agricultural sector, and for the economists of the time, underemployment or labour surplus became one of the important characteristics of underdevelopment.[11] In what we could mainly label as dualism theories, rural subsistence economy was characterized as a static agricultural system of production. Boeke described this dualistic nature of national developing economies as rooted in colonization and best explained by basic ascribed differences in economic behaviour.

Departing from Boeke's orthodox views, Raul Prebish and Arthur Lewis contributed to the dual economy theory from new perspectives. Their assumption was that a socioeconomic duality existed, duality that originated in the phasing of development, a process that strengthened the contrast between modern and traditional modes of production. Arthur Lewis used the concept of dualism in that sense to investigate how surplus labour could be transferred from rural subsistence sector in order to help increase nonagricultural production. Development, Lewis believed, would occur by raising the productivity of the developing countries' agricultural sector. Surplus rural labour could then be freed to

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[10] Boeke, J.H. *Indonesian Economics*. The Hague: W. van Hoeve, 1961.

[11] Lewis, A. "Economic Development With Unlimited Supplies of Labor." *Manchester School of Economics and Social Studies*, 22, 2 (May 1954).

Prebish, Paul. *The Economic Development of Latin America and its Principal Problems*. New York: United Nations, 1950.

Rosenstein-Rodan. "Natura Facil Saltum: Analysis of the Desiquilibrium Growth Process". *Pioneers in Development*. Edited y Gerald M.Meir and Dudley Seers. London:Oxford Press University, 1984.

supply the urban developing economy. [12] Implicit to Lewis' model was the assumption that the urban economy or "modern sector" could absorb the steadily increasing labour force, an assumption soon known to be at variance with reality.

Rural-urban migration models followed, developed to remedy Lewis' shortcomings. More focused on in-border migration, Todaro and his followers added to Lewis' explanation the notion of the rural-urban income differential. [13] According to the rural-urban migration models, the individual decision to migrate is motivated by the rural-urban differences in incomes, and in addition, by the probability of finding a modern sector job. By focusing on the migrants' motives for migrating to urban areas rather than on their survival strategies, the rural-urban models contributed very little to a better understanding of the highly diversified activities being undertaken by growing segments of the population of developing countries. These models have since been challenged but their influence on how the informal sector came to be defined remains very important. By considering the subsistence activities of the self employed as transitional in nature, they contributed to its image of being anomalistic marginal labour.

While Lewis' analysis of surplus labour was stated within the context of the dual domestic economy, Raul Prebish, then Secretary for the Economic Commission for Latin America (ECLA), analyzed it from the perspective of international trade. He challenged the doctrine held by orthodox economists that international trade had created an international division of

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[12] Levitt, K. "Evolution of development economics." Unpublished paper, Saint Mary's University, Halifax 1992.

[13] Todero, M.P. "A model of Labour Migration and Urban Unemployment in Less Developed Countries." *American Economic Review*, 59, 1969.

labour which was mutually beneficial to both developed and developing countries, a doctrine based on the law of comparative advantage. ECLA advocated industrialization. Since developing countries' surplus labour exceeded the labour reserve requirements of their economies, it was considered as residual and as having no function for economic accumulation.

The differences in the cost of labour between advanced and developing countries, and its relationship to the exchange between core and periphery remained central in the three following decades of development theories. The period was largely dominated by the influence of the structuralists such as the American economist Andre Gunder Frank, [14] and the Egyptian economist Samir Amin. [15] For Frank, underdevelopment is not a problem of countries "left on the shelf" by industrialization, but an active process determined and modified by the requirements of capitalist expansion. He sees the world as one single system of exploitation extending between core capitalist countries to national and regional centres and from these to local centres and so on to large landowners who extracted surplus from peasants and tenants. As Portes and Walton point out:

> "For him it was impossible to speak of precapitalist structures in Latin America since such institutions as the hacienda encomienda and plantation slavery were the direct creation of core capital. (...) Frank focused exclusively on capitalist exchange structures neglecting the existence of alternatives modes of production and their patterned interaction with the hegemonic one. " [16]

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[14] Frank, Andre G. *Capitalism and Underdevelopment in Latin America*. New York:Monthly Review Press, 1981.

[15] Samir Amin. *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism*. New York: Monthly Review Press, 1976.

[16] Portes Alejandro and John Walton. *Labour, Class and the International System*. New York: Academic Press, 1981, p. 9.

Similarly for Emmanuel Wallerstein. There is no question of different production systems. Like Frank, he considers that there is only one capitalist system which originated in Europe and that centuries ago permeated and transformed the world periphery.[17]

If for the early structuralists, unequal exchange between developed and developing countries took place whenever labor of equal productivity received proportionally lower wages in the periphery, the question to ask is what in the periphery allows for the remuneration of labor at a fraction of its developed world costs. According to Meillassoux, Wallerstein, Amin and de Janvry the maintenance of a surplus labour force in the periphery requires the preservation of precapitalist structures that provide for the costs of reproduction of the labour force. Rural subsistence enclaves would help reduce payment to labour. However, this explanation was challenged when empirical research showed that precapitalist agriculture production in the world was associated with a segment of the world population that is diminishing. [18] But even without the preservation of pre-capitalist structures, the existence of a vast pool of unemployed and underemployed labor would likely be expected to exercise pressure over workers in the formal sector and help depress their incomes. However, existing empirical evidence does not support this "marginal mass" argument. As Tokman notes, technical progress in the formal industrial sector has been followed by wage increases. Even under condition of high unemployment and underemployment prevailing in developing countries, increases in productivity have been

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[17] Ibid.

[18] Ibid.

partly passed on to labor. [19] So although wages in the periphery are lower than in the centre countries, they have not been kept at the level of subsistence. Portes and Walton support this view and further explain that because they work in the regulated official sector, formal workers do benefit from a minimum protection, namely minimum wage legislation and trade unions that have allowed wages in the modern sector to keep pace with productivity gains. This would have created a situation of "impermeability" of the formal sector to the presence of the informal sector (labour surplus), hence the absence of downward pressure on wages exercised by the "reserve army of labour"(vast pool of unemployed and underemployed). But as the authors point out, the surplus labour theories and world-system analysis did not account for interdependence between those who create their own jobs and the formal economy.

In recent years, traditionally opposed views over the interpretation of structural inequality have given rise to a third perspective. As Portes and Schauffler explain:

> " This analysis begins by noting that the condition of excess labor supply created by rural-urban migration has had more complex consequences than the survival of the poor at the margins of the urban economy. Two such consequences are particularly important: the functions that informal enterprise plays in support of modern capitalist accumulation; and the creation of new niches in the labor market, corresponding to new positions in the class structure." [20]

Away from earlier sweeping generalizations, structuralist thinkers increasingly recognize that the informal sector has significance as the means by which the poor can survive at the

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[19] Tokman, Victor E. "An Exploration into the Nature of Informal-Formal Sector Relationships," *World Development* 6, (Sept-Oct) 1978:1065-1075.

[20] Portes, Alejandro and Richard Schauffler. "Competing Perspectives on the Latin American Informal Sector." *Population and Development Review*, 19, 1 (March 1993):32-60.

same time that they play a role in the process of peripheral accumulation. Further intermediate levels of analysis are, however, necessary to bridge the gap between theories about the "world-system" and local concrete situations. It appears even more important that early analysis of the informal sector became sidetracked into refuting its importance rather than focussed on gaining insights into its structure and organization. This may be explained by the fact that the most important studies directed at the informal sector were conducted through ILO's World Employment Program in African and Asia, [21] while it is from Latin America that most of the theorizing on the sector emerged. The concept of informality was readily adopted by ILO's Latin American and Caribbean Regional Employment Program, known by its Spanish acronym PREALC. But for Latin American thinkers the role and importance of the informal sector remained questionable. Their analysis focused on wether the informal economy was productive or unproductive and they saw in the informal sector a "rationality" of production, different from that found in the modern capitalist economy. [22] The stress on two different "rationalities" in the two sectors, formal and informal, gave their definition of the informal sector a strong dualistic connotation, reminiscent of the dual economy theories. Whereas Latin American thinkers still believed that the natural expansion of the market (hence development through expansion of the formal sector) would eventually lead to informal sector displacement, empirical research conducted in Asia and Africa increasingly showed that, although apparently marginal, the informal sector employed a steadily growing segment of the population of developing countries.

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[21] World Employment Program (WEP) launched by ILO in 1969. The rationale was that one of the most effective means of ensuring that higher incomes and living standards were achieved for the masses was to provide them with work opportunities and more productive work to do.

[22] Organisation de cooperation et de developpement economiques (OCDE). *Nouvelles approches du secteur informel*. Paris, 1990.

## 2.3 Informal Sector

### Definitions

The informal sector encompasses numerous unstructured and diversified activities, which are inserted in a wide range of historical processes across nation states. This heterogeneity of both activities and contexts provides for several difficulties when it comes to reaching agreement with respect to the exact composition of the informal sector, a sector not accounted for in official statistics. In spite of the difficulties linked to the methodology used to "measure" the informal sector, the two main problems encountered are not linked to the data used but rather to the choice of unit of analysis and to the determination of the boundary between informal and formal sectors. These difficulties and the fact that the informal sector only recently became a field of study together explain the vagueness and lack of precision of the definition. The principal propositions about the informal sector can be associated with two main orientations. The Latin American approach that is illustrated by its most prominent thinkers, De Soto [23] and Verna, [24] and the orientation taken by ILO in the research conducted in Asia and Africa through the World Employment Program .

While Latin American thinkers take marginality as the subject of analysis and focus on the boundaries between the informal and formal systems, the ILO approach uses the activities or enterprises themselves as the units of analysis. Implicit in this orientation is the suggestion that the activities can be sorted out on the basis of one or more of the following

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[23] De Soto, Hernando. *The Other Path: The Informal Revolution*. New York: Harper and Row, 1989.

[24] Arellano, Rolando, Yvon Gasse and Gérard Verna. "Le monde de l'entreprise informelle: Économie souterraine ou parallèle" ? *Futuribles*, 162 (February 1992): 41-55.

characteristics: mode of production, organization and scale of operation [25].

Hernando De Soto in *The Other Path* [26] defines the informal sector as the expression of real market forces in over-regulated economies. According to him, Latin American states manipulate and use legal barriers to limit access to business and profit making activities to the elites, therefore keeping the vast majority of the population in subsistence level type of activities.

Authors such as Chickering and Salahdine use their study of informal sector in five Asian countries to show that the poverty of informal sector workers is not caused by technical deficiencies such as lack of skills, but by the lack of opportunities. [27] The authors do not however agree on the causal relationship suggested by De Soto. De Soto's definition of the informal sector resembles the "underground economy" in the developed world. Exploring the analogy further, but working from the perspective of registered versus unregistered activities, Verna proposes a definition based on the distinction between legality and legitimacy. [28] For example, legitimate work, although illegal, would be that of a maid

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[25] International Labour Office. *The urban informal sector in developing countries:Employment, poverty and environment.* Edited by S.V. Sethuraman, Geneva, 1981.

[26] De Soto, *The Other Path.: The Informal Revolution.*

[27] International Centre for Economic Growth. *The Silent Revolution: The Informal Sector in Five Asian and Near Eastern Countries.* Edited by A.L. Chickering and M. Salahdine. San Francisco:ICS Press, 1991.

[28] *Le monde de l'entreprise informelle.* Selected Papers from the first conference on informal sector held at the Université Laval in Quebec City, 1991.

whose income is undeclared. By way of contrast, criminal activities such as the trade of narcotics, are both illegal and illegitimate. Following Verna's logic, the state's role is therefore to identify activities that are legitimate and to legalize them through registration. Verna's definition, very much like De Soto's, sheds an interesting light on informal work. By bringing up the issue of legitimate work, what in fact the two authors bring up is the question of the participation and integration of the disadvantaged classes into national economic development.

Within the ILO, and following the study on Kenya's economy and subsequent research conducted after 1972, the informal sector has been increasingly defined in terms of its functional attributes. The objective of the research on Kenya's economy was to gain a better understanding of the country's high unemployment rate. It was felt that the focus of the study should therefore be on production units as they directly relate to employment. Consequently, economic activities were selected as the basis for defining the subsystem which came to be labelled as the informal sector. Inherent to the ILO's definition, as defined by the authors of the Kenya Report, is the idea that informal activities are not confined to employment in the city slums or to particular occupations or even economic activities. Rather, they contend that informality refers to "a way of doing things" characterized by the following features:

" ease of entry
reliance on indigenous resources
family ownership
small scale of operation
labour-intensive and adapted technology
skills acquired outside the formal school systems
unregulated and competitive market " [29]

[29] International Labour Office, *Unemployment in Kenya.*

Critics such as Sethuraman argue that each of the features listed in the ILO report represents a world of its own and does not add up to a definition. [30] Using his study conducted in Asia, Sethuraman brings further precision to the definition by showing that the advent of informal sector activities is not prompted by investment opportunities as is the case with formal sector enterprises. Rather, they exist because of the individual's need to provide for his/her own employment. Therefore, independent workers in the informal sector are not capitalist entrepreneurs in the classical sense of the term, looking for investment opportunities. As Sethuraman stipulates, the key feature of the informal sector is that production emerges in spite of the lack of capital. These features, in turn, explain the choice of activity to be pursued, the mode of production, organization, and the scale of operation observed in the sector. [31] For Sethuraman the choice in favour of activities as basic units of analysis implies that the economy is viewed as a continuum of production units engaged in the making of goods and in the selling of services.

## Importance

While it is difficult to come to a precise estimation of the size of the informal sector, a recent study conducted in Asia reaches the conclusion that the informal sector is both economically and socially very important. It is estimated that on the average informality in the region exceeds 50% of the labour force, producing 40-60 % of the region's Gross

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30 International Labour Office. *The Urban Informal Sector in Developing Countries: Employment, Poverty and Environment.* Edited by S.V. Sethuraman, Geneva 1981.

31 Ibid.

Domestic Product (GDP). [32] Studies on the dimensions of informality in the Philippines estimates the relative size of the sector for the 1980s at anywhere between 26% and 49% of measured GNP, compared to 12% and 24% in 1967. [33] The estimated contribution of the sector to GDP brings into light a seldom studied, yet important role, that is played by the informal sector. This role is the significance of the informal sector not only from the point of view of providing employment for large segments of the population, but also from the point of view of its production and output.

The OECD in its review of the informal sector for the period 1980-1990, concludes that the relative importance of the informal sector appears to be inversely proportional to the standard of living of the majority of the people. [34] Access to any income generating activity is crucial for the "working poor" and unemployed. Those who must find employment are likely to do so by entering the "flexible income" sector, which is the informal sector. It is precisely because of this socioeconomic role, that the informal sector was at first described as a holding ground for the poor.[35] However, in recent years, the informal sector has been a source of both primary and secondary employment. Moreover, recent studies show an increasing degree of mobility from the formal to the informal sector. In periods of crisis

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[32] International Centre for Economic Growth, *The Silent Revolution: The Informal Sector in Five Asian and Near Eastern Countries*, p.188.

[33] Ibid, p. 42.

[34] Organisation de cooperation et de developpement economiques (OCDE), *Nouvelles approches du secteur informel.*

[35] Activities are usually regarded as temporary "holding" occupations when they are below subsistence level.

and inflation or occasional lack of work, individuals who hold positions in the formal sector need secondary employment in the informal sector in order to "make ends meet".

Because it is highly visible, the importance of the regulating social role that the informal sector plays in developing countries is more readily assessed than its economic role, or contribution to national economies. Available statistical data is often incomplete, and because these statistics seldom include informal sector activities, they cannot be relied upon to express the sector's contribution to the national economy. Given the need for sounder quantitative estimates of informal sector contribution in general and female activities in particular, the Statistic Office of United Nations developed a methodology to attribute a monetary value to female's production in the informal sector. Because females are involved in a larger range of activities than males, it was felt important to distinguish between activities that contributed to economic growth and those that did not. The methodology developed has since been used in numerous contexts to estimate subsistence type of activities and informal sector contribution to GDP. The method consists of either estimating the opportunity cost or attributing market value for the same service/product. [36] While the suggested method is most appropriate to tertiary sector activities (trade and services) which are remunerated, the economic value of primary sector activities (extractive) outputs generated by subsistence activities such agriculture, fisheries and forestry poses a problem on its own. The principle implicit to the approach developed by the United Nations is the following: if the work can be done or if the goods can be produced by a third party, the opportunity for commercial exchange exists. As long as the opportunity for commercial

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36 Départment des affaires économiques et sociales internationales des Nations-Unies. *Méthodes applicables à la mesure de l'activiteé et de la production des femmes dans le secteur informelle*. Serial F No 46, New York, 1991.

exchange does exist, the monetary value of the activity or good produced must be considered part of the country's Gross Domestic Product. From a national accounting point of view, it is therefore not required that an exchange did, in actuality, take place.

Women and children represent a large share of informal sector labour. It is, however, only recently that the importance of women and children was acknowledged. Until the 1980's, only salaried work was accounted for in the statistical surveys of developing countries. Nonsalaried work was viewed as unproductive. When new methods for collecting data began to be used and gender analyses were made, the contribution of women and children became obvious.

According to Arellano, Gasse and Verna, women are mostly working as petty retail traders (market women or prepared-food sellers) and in subsistence production. [37] The vast majority are on the borderline of survival, supplementing family income if they are part of a married household and providing for the entire family income if they head the household. The specific contribution of children to household income is difficult to assess. An important distinction is to be made between children's involvement in household activities and work performed for a non-household production unit. In many countries and especially in rural areas, children between the ages of 5 and 15 are gradually incorporated into household income generating activities. In such a case, this is considered as one form of participation in community life and part of the internalisation of adult roles. But even then, child labour does substantially contribute to the income of impoverished families.

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37 Arellano, Gasse and Verna, ***Futuribles.***

**Absorption capacity**

The role played by the informal sector as the provider of primary and secondary employment, further raises the question of its absorption capacity. Until now, the sector's ability to provide for at least the bare minimum required for survival, remains for the most part unquestioned, and is been arbitrarily regarded as unlimited. The absorption capacity of the informal sector could be assumed to be consistent with its role as producer of a large share of the consumption baskets of the poorer consumers. Following this logic, the larger the mass of the poor, the higher the demand for informal sector goods. And, if the demand for the goods produced by the informal sector is high, more producers can live off that demand. Studies on labour absorption capacity do however confirm that the absorption capacity of the sector is not a function of its demand.

In their study on the absorption of labour in the urban economy, Friedmann and Sullivan, show that if the expectation to find subsistence level or better employment is the principal encouragement to urban migration, it is the available income surplus that establishes an upper limit to the absorption of labour force into the urban economy. [38] The authors use the urban-migration model developed by Todero. They further divide the urban economy into three major employment sectors arranged hierarchically in an ascending scale of labour productivity, economic power and social status. The informal sector (designated as the individual-enterprise sector) occupies the lowest rank and the corporate sector the highest. In between, is a third sector comprising family enterprises (less than 50 employees).

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38 Friedmann John and Flora Sullivan. "The Absorption of Labour in the Urban Economy: the case of Developing Countries." *Economic Development and Cultural Change*, 22, 3 Chicago (April 1974):385-413.

We could expect large-scale unemployment and underemployment to depress wages in the highest ranking sectors until all fractional unemployment is absorbed. This, as already discussed earlier, does not occur. According to the authors explanation, the percentage of the labour force in the informal sector tends to remain stable. An improvement in the urban job situation will tend to raise expectations accelerating the inflow of migrants into the city above the actual increase in the number of jobs. As more people move to the city, all existing increase in the available surplus will be used up (given the incapacity of the urban economy to absorb all newcomers into employment at subsistence level or above). This will depress living levels to just below the acceptable subsistence minimum, rendering migration less attractive and restoring the employment equilibrium in the sector.

While the absorption capacity of the informal urban sector may be defined in terms of the limit imposed by the available income surplus, the absorption capacity of the informal sector in rural areas is best understood in terms of access to primary sector productive resources. Because land is the most important rural resource of all, access to land is very closely related to the pattern of rural employment and income-earning ability. In rural areas, the amount of labour that can be readily absorbed in non-farm rural activities is relatively smaller than the increase in labour force. [39]

Landlessness in an agrarian society represents an alienation from the principal productive asset, leaving only common property resources as the main sources of income generation. But common property resources, such as the oceans, do not any longer presuppose open access. For centuries the resources of the oceans were believed to be limitless, but in the last forty years, population pressure in the coastal zones of the world, increased pollution

[39] International Labour Office, *Poverty and Landlessness in Rural Asia.*

and technological changes contributed to the steady depletion of marine resources. In response to this critical situation new institutions were created to protect the resources. Property rights are delineated by allowing some people access to a resource and excluding others from it. An important implication arising from this statement is that property rights are man made and, consequently, are political.

In conclusion, it appears crucial to choose an appropriate definition of the informal sector. Without a clear definition it is difficult to understand the problems that confront informal sector workers and to identify a viable strategy for reform. Traditional definitions focus on either functional attributes such as size and scale of operations, or on legal status. Those who concentrate on functional factors usually see the informal sector narrowly as an expression of poverty. The functional proponents support policies that centre on providing direct aid to the informal sector. They also advocate economic integration of both the informal and formal sectors. Those, like de Soto, who focus on legal status are concerned with institutional issues. They support policies that target an improvement of the institutional setting.

The two divergent views raise a fundamental question: What is the cause of the "problem"? Is it the dysfunctions of the informal sector or is it the institutions of the larger society or some combination of both of these factors that limits the economic and social progress of the informal sector workers ? More precisely, we may ask how the Bais Bay workers arrived at their unenviable position at this time. Does the poverty that afflicts them demonstrate the lack of capacity of large segments of Bais Bay residents or does it demonstrate institutional failure to provide all of Bais' population with equal economic opportunities ? In order to understand how the Bais gleaners relate to the formal sector and how the formal sector's institutions contribute to their lack of integration into the economic and social mainstream, we must first glean some knowledge about gleaning itself. Despite

the importance of the functional attributes of gleaning, we may speculate at this early point that the larger issue of regulations is of paramount importance. Gleaners make a living by getting and selling shellfish, a traditional common resource that was always freely collected and utilized. However, open access is no longer permitted to common property resources. Property rights are delegated to formal institutions. An important question to bear in mind is as follows. Given the lack of informal labour participation in formal institutions is there any hope of gleaners protecting their historical right to collect shellfish in Bais Bay ?

## Chapter Three

" Seventy two per cent of all fishing households live below poverty line. It is the highest incidence of poverty among Filipinos".

A. Alcala *
Department of Environment
and Natural Ressources

* Opening speech. Fourth Annual Common Property Conference held in Manila, Philippines, June 16-19, 1993.

## 3.1 The Gleaners

The ILO Kenya Mission Report's concept of the informal sector contained two elements: marginality and productive activity. Other studies, mostly from Latin America, identified informality with illegality. We choose to concern ourselves with productivity in the context of economic informality.

The characteristics common to all gleaners are their labour force status (not covered by social security or other labour regulations) and the type of work they do (gleaning). As discussed in Chapter Two, the primary objective of informal workers is to generate enough income to survive, rather than to maximize profits. This chapter focuses on how shellfish collection is structured; attention is directed at unveiling how production is organized. Factors such as gender participation, specific resources targeted, access to collection sites, gleaners' skills and knowledge and certain aspects of commercialization are evaluated. We also try to give a humanized, personal picture of the gleaners and of their lives.

### Gender

As a rule in the Philippines, females are not involved in commercial fishing taking place outside municipal waters (15 kilometres from the shore). Gender participation in activities taking place in municipal waters such as coastal fishing and gleaning cannot however be defined with as much certainty as in the case of commercial fishing. Contrary to common belief, males are involved in gleaning, and evidence suggests some kind of involvement of females in fishing activities such as pulling fishing nets and emptying fish corrals, that they own.

Nonetheless, it is common belief that the female role in fishing is restricted to post-harvest activities (the cleaning and selling of fish) and gleaning. Gleaning is held to be an all female activity. However, as our data show, the total number of females and males gleaners accounted for by our enumerators for the months of July through November 1993, and for January 1994, is almost the same.

**Table 1: Number of female, male and child gleaners recorded.**

| | July | August | Sept. | Oct. | Nov. | Jan. | Total | % |
|---|---|---|---|---|---|---|---|---|
| Females | 1988 | 1717 | 1685 | 1811 | 1738 | 1112 | 9751 | 39% |
| Males | 923 | 1498 | 1703 | 1926 | 1715 | 1129 | 8894 | 35% |
| Children | 1185 | 1146 | 1184 | 1275 | 1260 | 528 | 6578 | 26% |
| | 3796 | 4361 | 4572 | 5012 | 4713 | 2769 | 25223 | 100% |

While gender participation varies from one month to the other, the total number of male and female adult gleaners is almost the same (female 39% - male 35%) with a slight over representation of female gleaners. Child participation is 26% of total number of gleaners. When combined, female and children comprise 65% of all gleaners in Bais Bay. In gleaning, as in most informal sector activities, women and children's contributions are very important. Females and males gleaning in Bais are somewhat different with regard to spatial characteristics; further differences were also observed in the shellfish collected and the techniques used. The general spatial access of both groups appeared to be primarily a function of water depth. For instance, access to the seaward side of the Bay, whether it be accessible on foot or by canoe, tended to be restricted to males. [40] Most gleaning (males and females), however, did not take place in deep water. Locally know as PAGINHAS, gleaning takes place at low (0.00 mm - 0.10 mm) and mid-low (0.10 mm - 0.30 mm) tides.

[40] Females consider gleaning in the proximity of the channel (deep water) dangerous and will not venture in that area.

Gleaners leave their homes in order to reach collecting sites before the tide is at its lowest point. Some shellfish are easier to locate when there is a little water left. Then, walking around, probing the ground with a stick or large bladed knife, they collect the various mollusks they will subsequently trade in Bais City's market. They glean accompanied by children [41] or by a female relative or friend, and walk, and in a few cases row, to the targeted gleaning area [42]. While they use public transportation to make it to Bais City's market to sell their shellfish, gleaners walk to go gleaning, irrespective of the distance from their homes to the shore. When collecting shellfish, gleaners pick up all marine sessiles that can either be sold or eaten. Small crabs, fish, jelly fish, seaweed, and sea cucumbers (holothurians) find their way to the market.

Males can be seen both walking on the mud flat among females, and diving in "deeper water" areas such as the mouth of the Panamangan River in South Bais and in parts of North Bais Bay. They reach the gleaning areas either by boat or on foot, in which case they swim across certain crevices and/or narrow channels. [43] When gleaning alone and without a canoe in which to put the collected catch, male gleaners tie a rope around their waist, and the rope is attached to a plastic container. This rope is long enough to allow them to dive while the plastic bowl containing the shellfish floats at the surface. Some males use

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41 These children may be the gleaners or the neighbours. Children however tend to glean in groups of peers.

42 In our observations we did not record a single case of spouses gleaning together. If both spouses were gleaners and gleaned during day time, they would not glean on the same site. Such an occurrence was however frequent in the evening.

43 In the case of the areas concerned, we are talking of shallow water, never deeper than one meter at low tide and three meters at high tide.

goggles but others do not.[44] Males also glean when they go fishing and have no fish. Instead of coming back to shore empty handed, they will dive to get some shellfish. Females do not glean in deep water because they feel it is a strenuous activity better suited for males. Also few females can swim.

Since the tide can also be low during the evening, some gleaning takes place after dark. However fewer people and only coastal residents glean in the evening.[45] Two shellfish [46] are known to be abundant when it is dark and are found laying on the mud's surface. Both females and males glean in the evening and spouses will glean together at this time.

In spite of significant male participation, gleaning is generally considered a female activity. The word "gleaner" refers to the female only, and male diving to collect shellfish is not considered gleaning by the female gleaners themselves who see it as an activity more akin to fishing than to shell collecting. In his study of fishermen's living conditions on Olympia and Daco (also known as Dewey) Islands in Bais Bay, Cadelina noted that in periods of fish scarcity, wives supplemented their spouse's fish catches by increasing their

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[44] In North Bais males dive to get BAKALAN and LITUB and in South Bais Bay, they get the brown mussels, PUNAO and LITUB. Scientific names for mollusks are indicated in Appendix 2. Crustaceans, sea weeds and sea cucumbers (holothurians) scientific names or English names, when their scientific names is not known, are identified in the text in brackets.

[45] Gleaners use a PETROMAX gas lamp to light up the area and locate the shells. In local dialect this lamp is called SULO, and gleaning at night is referred to as "going SULO".

[46] ANINIKAD and BUNGKAWIL.

involvement in the collection of marine sessiles, not affected by seasonality.[47] No mention is made of any males collecting shellfish. This absence of any mentioning suggests that only females, in a not so distant past, collected shellfish. The fact that gleaning most probably used to be an exclusively female activity, may partly explain the perception of gleaning as a female only activity by the local population.

Such a perception is also that of most fishermen. Although always keen to mention how important gleaning was, all fishermen we talked to considered gleaning an all female activity, unrelated to fishing, and to the more noble species they caught. They considered gleaning important during times when fish was not available, and did not seem aware of the important male participation in the activity. The male reluctance to be officially associated with the act of gleaning is likely attributable to the fact that the income generated by gleaning is lower than that of fishing. Gleaning is considered to be a female occupation with correspondingly lower pay. A traditional division of labour based on gender usually has the corollary of significant wage differences. The fact that until recently only wives gleaned to supplement their spouses' fish catch, placed the major onus squarely on the males to support their families. The present male involvement in a secondary and traditionally female exclusive gleaning activity is associated with failure to achieve success in Philippine society.

Interestingly enough, the main culture of shellfish, mostly done in backyard gardens, is perceived to be a "male" activity despite the fact that the household females do the collecting and selling of the shellfish production.

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[47] Cadelina Rowe. "A survey of fishermen's living condition and assessment of their development potentials in Olympia and Dewy Islands in Bais Bay, Negros Oriental, Philippines." Silliman University, Dumaguete City, Philippines 1983.

**Knowledge and skills**

Gleaning requires skill and knowledge. A knowledge of the various shellfish and ecosystems is requisite to knowing where to go to find large quantities of any single species. Once in the right location, gleaners must then be able to locate their quarry. The visual signs of the various species are very similar one to another, and in all cases, most consist of one or two or more "eyes" of almost the same size, located in specific distances one from the other on the tidal sea bed. [48]

To recognize the visual indicators of any specific shellfish, gleaners need sharp eyesight, and in order to obtain the shellfish, must know at which depth it hides and how fast it moves when it tries to escape. They must also master the various techniques used to get the shellfish out of the mud or the sand such as digging, "cultivating" [49], and use of the relevant instrument such as the large bladed knife (parone), metal bar (dugsak) or rake (rankas).

As the contact of gleaners with the marine environment is a daily one, they have had the opportunity to accumulate considerable knowledge. Gleaners have know of the habits of the various species of shellfish and of climatic factors and seasonal cycles affecting the relative abundance of different species. They know the influence on shellfish of: seasonal wind patterns (more shellfish when it is windy), current (strong currants bring more shellfish), tidal changes (best gleaning time is 5 days after the full moon - during full moon

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[48] These "eyes" are small holes (5 ml - 10 ml) at the surface that mollusks use to exchange water.

[49] Gleaners call "cultivating" the technic which resembles the ploughing of the land with a large knife.

the shellfish hide deeper), day light (some shellfish only come out at night), and temperature (no shellfish when it is hot - gleaners prefer overcast or rainy wether). Moreover, gleaners use their knowledge not only to collect the shellfish but also to determine when shellfish will be in demand.

Basic gleaning skills are passed down from the group of adults to all the children of a given neighbourhood. Boys and girls alike learn to glean. When they are very young, children spend most of their time with their mothers and learn by observing her. While adults mostly glean by themselves, children once they reach the age of six or seven, glean in small groups and learn as much from the group elders as they do from adults. Because there are many male gleaners and no fishing during low tide, males also contribute to the training of children. In all areas women are as skilled in collecting shellfish as men.

Not everyone possesses the skills and knowledge required to glean. On several occasions we met individuals who explained that they could not glean because they did not know where and how to get the shellfish, they could have otherwise sold. Others learned their trade once they were adults. We met with several female gleaners who moved to Bais Bay after their marriage and were taught how to glean by other female gleaners, kin or neighbours. Upon being queried about how they learned to glean, they replied that it was a very slow process. First, they accompanied their trainers and observed. Then they played with the stick and learned how to recognize the "eyes" of bivalve mollusks and the behaviour of each shellfish. When finally, they began to glean, they first gained experience with shellfish that are relatively easy to get,[50] and then graduated to the more difficult species.

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[50] Such as ANINIKAD, PUNYETE and BILA-OG.

The following information about marine sessiles collected in Bais Bay reveals how knowledgeable gleaners are about the various species collected, the marine environment and the commercialization of their catch.

### Table 2: Information Related to Various Mollusc Species collected by Gleaners

**Aninikad** This shellfish lives on the sea grass bed where it lays in a few centimetres of water, at the ebb of the tide. Because it is easy to locate and to get, it is the first one that children get when they learn to glean.

**Bagongon** Can sometimes be found in a mangrove environment, but is mostly collected in fish ponds when fish is harvested. The tip of this shellfish which lives immediately underneath the surface, comes out of the mud and visual sighting is how gleaners locate it. BAGONGON are specially abundant at night.

**Sangka-sangka/matag-lagsaw** Lives in the sand and seagrass. It is called sangka-sangka by gleaners from Olympia Island while other gleaners call it matag-lagsaw. It is found where aninikad is found. Sometimes sangka-sangka hold to each other in clusters of 5-6 individual shellfish.

**Bug-otan** The indicator of the presence of bug-atan are two small eyes. The shell is found on only one site in North Bais. The shellfish is eaten raw. Delicious, it sells for 3 pesos/piece. It is a kind of delicacy, appreciated by those who can afford it. Special orders are placed for them during the fiesta of Bais. The shellfish is very fast in getting its head inside and closing up. Gleaners have to be careful because their fingers can easily be caught inside. Bug-otan are most frequently located in 10 cm of water.

**Dalu-dalu** This shellfish is found in mangrove areas where it sticks to the roots of the trees. It can also be found in fish ponds, and does not hide very deeply (10 cm - 12 cm).

**Tandi-is** is considered to be a smaller version of another shellfish called ligis. Two small "eyes" 4 cm apart reveal the presence of this shellfish that hides 15 cm deep. Gleaners have observed that it seems to come and go without any predictable pattern. They claim that one day you find lots of it and the following day it is gone. It is easier to get this shellfish when there is still some water. The eyes are easier to see and also the mud is not as heavy to remove.

**Ligis** Is found in the same environment as the tandis-is. Both shellfish (small and big) are often sold together and for the same price. The empty shell is also used to mould native cigarettes.

**Pisos-pisos/talipsay** Gleaners in Capinahan (Daco Island) call this shellfish talipsay while everywhere else it is called pisos-pisos because of its round shape that makes it looks like a coin (pesos).

**Bayuyan** lives very deeply in the mud. To find it, gleaners use a stick when they see the two small "eyes" that indicate the shell's presence. The shell is known to be very bad for the hands. Gleaners say they can tell who collects this shell by the cuts on the person's fingers.

**Punyete** Gleaners locate this very small shellfish by the "smoke" (dust like) that come out of the "eyes". Punyetes lay at the surface of the mudflat and may be collected in two ways. Some gleaners will take a handful of mud and sift it with their fingers to let the mud drop and save the shellfishes. Others use a small rake to uncover it.

**Bisala** is found in both shallow water near the shore and farther away in deeper water. To locate it, gleaners sound the ground 30 cm - 40 cm deep with a stick until they can feel the shellfish. They will then dig the sand next to the place where it is located. As they get closer to the shellfish, it spurts water indicating its precise location.

**Punao** Gleaners distinguish between three types of punao: the most common species known locally as punao (found in both North and South Bais), the black punao so called for its grey stripes is found in South Bais (Cambuilao and Dawis), and a rare white shining Punao they call puti-an is found in North Bais (Cannibol). To get the puti-an, gleaners use a rake. The two other species are collected by probing the ground with a stick. Although punao does not hide deep in the mud and in the sand, it is nonetheless considered difficult to get. Small punao can be collected between the months of April and August and put in a fenced areas to grow for a period of 4-5 months.

**Litub** Gleaners distinguish between the female and male litub saying that the male has brown stripes. They recommend drinking the juice of the uncooked litub to fight anemia. The shellfish is sold as prawn feed and for human consumption. When sold for human consumption, it is sold in bottles. Litub can be bottled because it can be kept in fresh water for three days. It is not recommended to eat the ones collected underneath the rocks (dead corals) because of their poor taste. Litub is a very common shellfish. In South Bais it lives in the same environment as the tahong (brown mussels) and gleaners say that when you find one you find the other. Litub grow only a few centimetres deep below the mud surface. They are sometimes collected for cultures and it takes 8 months for the small seeds to reach adult size. Giant litub sometimes appear on the market. Three times the size of the regular litub, it is collected by males who dive to get them by high tide. It is believed that giant litub hide deeper during low tide and must therefore be collected during high tide.

**Tikod-tikod/sulod-sulod** is abundant and easy to find. It lays immediately beneath the surface and gleaners use a rake to get it. Reportedly, when on the dry flat, this shellfish can move to reach the water where it swims quickly. Despite its abundance, the price paid for a quart of tikod-tikod is half the price paid for most shellfish. Gleaners say it does not sell well because it grinds your teeth when you eat it. Eating tikod-tikod, they say, is like eating "your own skin". In Capinahan (Daco Island) the outside of the shellfish appears to be of a lighter colour than elsewhere in Bais Bay. For this reason, gleaners in Capinahan call it sulod-sulod contending that there are two different shells. As confirmed through formal identification, tikod-tikod and sulod-sulod are a same species.

**Tudlo-datu** The name tudlo-datu means "finger of rich", for its resemblance to rich people's fingers (long and white) [51]. This shellfish is very difficult to get. Because it is shaped like a knife, it moves quickly and hides deep in the mud. The "eyes" that indicate its presence are very small and difficult to see. It is also very soft and easy to break when you try to get it out of the mud.

**Bulok-bulok** This shellfish is found on sea grass beds in North Bais. It is rare and difficult to find. In order to see the two very small "eyes" which indicate the presence of the bulok-bulok, the water has to be very calm. Only the very experienced gleaners know where to get this shell and how to locate it. Once the bulok-bulok has been located, it is very easy to get and because it lays right beneath the surface, gleaners use their index finger to flip it out.

**Bila-og** The indicator for bila-og are two big "eyes". The techniques to get it are either to pick a stick between the two holes and to use your arm to get the shellfish out, or to search the mud with you feet and then grab the shellfish.

**Bunkawil** This shellfish comes out at night. It sometimes can be found in late afternoon, but mostly it is collected at night. Bungkawil is easy to get and abundant.

**Bulan-bulan** is very easy to find when there is still some water at the surface of the mud flat. Located immediately under the surface, it leaves a trace when it moves. Gleaners follow that trail and when they see one small "eye" they know the shellfish is there.

**Sa-ang** is used to relieve the pain from breast feeding. It is recommended that new mothers put it on the charcoal and expose their breast to the smoke. It is believed to diminish the sensitivity of the nipples. This shellfish is not used for consumption.

**Tamislat** Gleaners consider this shellfish very bad for their hands. It lives near the mangroves and to get it they use a large bladed knife. The indicator is two eyes that touch each other forming an "8".

**Alimango** Large mud crab that gets caught in the fish traps, fish nets and corrals. This crab does not swim and makes big holes in the mud flat where some experienced gleaners will catch it with their hands. In order to avoid been pinched, one must not hesitate. Experience gleaners put their hand straight and quickly to the bottom of the hole where they grab the crab.

**Embao** This shellfish is found in mangrove areas. Since there are few mangroves left outside the mangrove sanctuary on Daco Island, this is where embao is collected. The price paid for embao is higher than for most other shellfish. It is however a difficult shellfish to get. Three techniques can be used to get it: a metal bar (DUGSAK) can be used to poke the ground. Once the shellfish is located, it is extracted by hand, doing little damage to the trees. A large bladed knife (PARONE) can also be used to remove the soil around the mangrove roots where the embao hides. This technic is discouraged by local authorities because it uproots mangroves. A digging blade can also be used to get the small embao and hands are then used to search very deep in the mud.

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[51] Because of the Spanish colonization and hacienda systems established over Negros Island, rich people in Bais were the white Spaniards.

**Tahong** This brown mussel is a resident species of South Bais (Dawis) where it breeds. It is also cultivated in Hindungawan and Capinahan (Daco Island). Gleaners will pick up the tahong they see while gleaning for other shells, but most tahong on the market come from backyard gardens or are collected by males who dive in Dawis. They are mostly sold bottled and as meat for prawns. The taste of bottled tahong improves with time. In this case salt is used as agent of conservation in a proportion of about 1.4 litre of salt for every 4 litres of meat. TAHONG can also be mixed with lukot (egg mass of the seahare Dolabella auricularia) before it is bottled.

**Balat** This big holothurian (sea cucumber) is either sold raw, or cooked and sliced. Males eat it with their TUBA (local alcohol). It may also be noted that although in the course of this study, distinction is only made between 2 different types of holothurian, gleaners distinguish between 5 different species: Balat-bagisan (H. scabra - Jaeger); Balat-monang (Thelenota ananas - Jaeger); Balat-hanginan (B. argus - Jaeger); Balat-tagukan (A. echinites - Jaeger) and Batuli (H. leuscospilota -Brandt).

The wealth of knowledge gleaners possess about marine sessiles they collect and the various environmental factors that interfere in their collecting supports the notion that informal sector workers are not necessarily deficient in terms of skills and technical knowledge.

## Meeting the demand

Gleaners do not retail their shellfish. Instead they sell them to vendors who will retail them to consumers in Bais City, Tanjay and Dumaguete City. They come to Bais City to meet the vendors. [52] When the tide is low in the afternoon or in the evening, they keep their shellfish in the water overnight and come to the market early the following morning. When the tide is low in the morning, they come to the market in the afternoon.

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52 No shellfish are sold to middlemen who exclusively purchase fish. Fishing is done during high tide and gleaning is done at low tide. Because the two activities take place at different times, shellfish and fish are marketed by different people. Only Opao gleaners sell their shellfish to a couple from their barangay who retail them in Bais market.

To travel from the baranguay where they live to the market, gleaners use "pedicabs" at a cost of 1 to 2 pesos per ride, [53] depending on the distance. [54] Morning transactions can either take place "outside" or "inside" the market. The difference between selling "outside" or "inside" is a matter of price. While prices are more or less set for expensive shellfish, [55] prices paid for most shellfish vary by the day and negotiations must be reconducted every morning. Factors influencing the prices paid for the shellfish are the amount of shellfish on the market at one given time, the day of the week the transaction takes place, and more importantly, the price of fish. Since there are fewer shellfish on the market by mid-low tide, prices paid for the shellfish might be slightly higher than usual. Certain days of the week may also allow for better prices. Friday is usually good. Because most Filipinos are catholics, they will not eat any pork, beef or even squid that day, and will either buy fish or shellfish. Saturday and Sunday are also important market days because people are not working. The price of fish seems however to be the most important factor influencing both the demand for and the price paid for the shellfish. During the months of November and December, months of north wind, less fishing takes place in North Bais Bay. The price of fish goes up and so does the price of shellfish. [56] The same phenomenon occurs in

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53 It is of little use to convert these amounts in Canadian dollars since cost of living in Canada and in the Philippines is different. As a way of estimating the purchasing power of the various incomes mentioned, we suggest to use the cost of one kilogramme of rice, the daily intake for a family of five. Price for rice ranges between 8 Pesos/kg and 12 Pesos/kg depending on the variety purchased.

54 Pedicabs are motorcycles around which a large frame is built. Several passengers easily take their place inside while packages and baskets are placed on the top. These pedicabs are Philippine small town taxis.

55 The expensive shellfish are EMBAO and PUNAO.

56 A gleaner explained that during those months, retailers outside the market grab the gleaners' baskets before they can even step out of the pedicabs.

January. Because fish is very scarce, the price paid for shellfish is higher. [57] On the contrary, the months of February, March, April and May are bad months for selling shellfish. More fish enters the market and prices are low, bringing both the demand for shellfish and their prices down. Commenting on their morning transactions, gleaners explained that the good vendors are the ones that take into account their ability to sell at a higher price. They pay more when shellfish are few and fish scarce. Gleaners prefer to sell their shellfish to buyers outside the market than to those inside. Buyers outside the market tend to adjust prices to their ability to secure higher retail prices. They do not, however, buy any and all shellfish. They buy what is required to supply their retail outlet for one day, and purchase only the shellfish they know their clients want. On the other hand, buyers inside the market purchase every species brought to them. Because they supply shellfish to people selling from house to house, they need large quantities of any shellfish. However, they always pay the same price, which can be less than that paid by vendors buying outside the market.

Gleaners only go to the market if they have enough shellfish of any single species. No vendors purchase mixed species (sari-sari) so odd and small ones are used to feed the family.[58] Species for which there is an acceptable quantity are either sold by the litre [59], by

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57 For instance, the price paid for 100 units of Ligis will increase from 30 pesos paid the rest of the year to 40 pesos in December and January. Gleaners however recognize that because of the wind, it is sometimes difficult to glean during those months, specially in North Bais, the part of the Bay that is exposed to prevailing north wind.

58 Only the gleaners who irregularly sell their shellfish try to sell "sari sari". They also tend to be more timid and less efficient. Gleaners who rely on shellfish all year round develop the skills to meet the buyers' demand for large quantities of single species.

59 Referred to as Veedol because of the empty one litre container of Veedol Oil used to count the mollusks.

weight, or by unit, depending on the shellfish. Few words are spoken during transactions between traders and gleaners. The vendors stand up on the sidewalk near market entrance. They have large plastic containers and bags to store the shellfish, and a scale to weigh them. When she arrives at the market (selling the shellfish to various traders is a female only activity), the gleaner puts her basket on the sidewalk in front of a buyer and waits. If after waiting a few minutes the buyer does not make any move, it means that this vendor is not interested in buying the shellfish. The gleaner will then try with another vendor outside the market or, most of the time, go inside. [60] If the buyer adjusts her scale or grabs her empty can of Veedol oil, it means that she is interested in buying at least some of the species.[61] Some chatting then takes place. Gleaners often feel they are being cheated by the vendors and are very attentive to the way shellfish are counted or weighed. Voices are sometimes raised, and gleaners that are not satisfied with the total weigh the buyer reads on the scale, may take the scale and weight their shellfish a second time. They always recount their money, and sometimes express their disagreement with the prices given. They may do so, but the buyers never discuss or change their prices.

Gleaners, whose husbands get crabs and shrimps at night, take their husbands' catches to the market, along with their shellfish. The women who purchase the shellfish outside the market, also buy the small crabs and shrimps. By 6:30 AM all transactions are completed. Gleaners, after buying the rice needed to feed their families for the day, return to their baranguays.

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[60] It was explained to us that it is not to the advantage of the gleaners to have a regular buyer (SUKI). You get better prices by selling to different buyers.

[61] Unsold ones are sold to another buyer, generally inside the market.

When the tide is low in the morning, gleaners come to the market in the afternoon. Of the six buyers present outside the market in the morning, only one (from Tanjay) returns to Bais City in the afternoon to buy more shellfish. There is also a second buyer from Tanjay who does not come in the morning but instead comes in the afternoon.[62] Gleaners coming to the market in the afternoon must then sell to the two Tanjay buyers, or sell inside the market or, if they already have the rice they need for the day, wait until the following morning. Gleaners from Olympia Island, in their canoe, cross to TAVERA (DIKE) in the morning. [63] They are awaited by the people from that barangay who retail shellfish at the bus terminal in Bais. They do not make it to the market where morning transactions are done.

The reason why gleaners do not sell their shellfish themselves is their obvious lack of time. Already, along with collecting shellfish, gleaners must take care of their children, house and, if they are fortunate to have them, animals (chickens and/or pigs).

### 3.3 Retailing the shellfish

Bais Bay shellfish are retailed in Bais City, Tanjay and Dumaguete. We were told that they were also retailed in Manjuyod's market. We visited the market on three occasions and did not see anyone selling shellfish there. We were unfortunately unable to verify if individuals sold shellfish in that market on an irregular basis.

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62 Bais City is only 20 minutes by bus from Tanjay while it takes 45 minutes to get there from Dumaguete. Greater distance to travel may explain why none of the Dumaguete buyers make a second trip to Bais City to buy shellfish in the afternoon.

63 Part of Bais City proper adjacent to the shore of North Bais Bay.

In Bais City, shellfish are retailed in the market and at the bus terminal. In Tanjay and Dumaguete they are retailed at the market and by individuals, mostly from Tanjay, involved in the selling on a door to door basis. Lastly, a few families in Okiot Baranguay on Daco Island sell some specific shellfish to the craft industry in the neighbouring province of Cebu.

Most shellfish on the market are from the wild, with the exception of oysters cultured in South Bais Bay and green mussels. [64] Although green mussels cultured in Negros Occidental can easily be supplied to them, traders buying shellfish in Bais will only buy the green mussels when no other shellfish are available. [65]

**In the markets**

According to our old informants, there were always shellfish for sale in Bais City's market. Shellfish however were not always available in Dumaguete and Tanjay markets [66]. The year our research was carried out, ten individuals traded shellfish on a permanent basis.

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64 We consider the brown mussels to be from the wild even if some grow in backyard gardens.

65 As may be recalled, the island of Negros is divided into two distinct provinces Negros Oriental and Negros Occidental. Green mussels are cultured in Negros Occidental.

66 One informant who claims her parents were the first to sell shellfish in Tanjay market, maintains that it all began in the late 1970's, when fish catches began to decrease. As for Dumaguete, it seems that shellfish have been available in the local market since the mid 1980's. It was impossible to independently verify this information.

Two did so in Tanjay's market, five in Dumaguete and three in Bais City market [67]. All shellfish traders have been in business for over four years, and one of them for as many as twenty three years. In all cases, selling shellfish is a family enterprise headed by a female who is assisted in her work by a female relative (daughter, niece or sister).

The only exception is that of a very young couple (husband and wife) trading shellfish in Bais City's market. The mother of the young male involved in the trade is a gleaner. The remaining traders were born to fishing families on Daco Island. Apprenticeship is somehow done in the family, and in all cases there is a strong connection with the marine sector in general and Bais Bay in particular.

In addition to the shellfish, buyers from Tanjay and Dumaguete buy small crabs, shrimps, sea cucumbers, bottled brown mussels and LUCOT (Dolabella auricularia eggs). [68] On a low tide day, the following quantities of marine sessiles would be typical of the volume traded in Bais' market between gleaners and traders inside and outside the market: 375 litres of various mollusks sold by the litre; 80 tipo (355 ml) of LUCOT; 2,000 pieces of various mollusks sold by unit; 40 kg of the expensive EMBAO; 30 bottles of either one of the shellfish bottled locally [69]; 1/2 sack of cultured oysters and 30 kg of various crustaceans.

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[67] In Bais City market there are also a number of elderly ladies selling marine sessiles other than mollusks as explained below.

[68] Locally known as LUCOT.

[69] SISI, TAHONG and LITUB.

Buying shellfish from gleaners and retailing them in the market are different activities calling for different skills. Retailing the shellfish is not seen by the traders as difficult. Prices may vary slightly from day to day, depending on the amount paid to purchase them, fish availability and price, but they remain stable within any single day. The shellfish and other marine sessiles available are displayed in the open, and traders have regular clients whom they have known for a long time.

As opposed to retailing, buying is regarded as a more critical matter. Traders from Tanjay and Dumaguete will not send their relatives/helpers to Bais to purchase the shellfish from gleaners. Shellfish sell at a low price and only small quantities are sold each day. The profit that can be made is therefore minuscule, and traders have to negotiate the best deal possible for everything they buy. [70] Supply is also irregular depending on wind, tide and season and it is uncertain as to which varieties and what quantities will be available.[71] Vendors need to know what their clients want so as to be able to substitute one species for another, or for a different marine sessile altogether. It is also very important, that they be experienced in negotiating prices so as to pay the lowest possible amount. Various strategies are used. For instance, a trader counting one species sold by the units carefully separated the shellfish into two piles according to size. The many large ones were placed in one pile and the few small ones in another. These were to be purchased for a unique price, small and large ones all mixed together. But even if she was to purchase all the shellfish, by showing the gleaner that her catch consisted of some smaller shellfish, the trader

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[70] To sell their shellfish in Dumaguete, traders must pay 150P/month for the use of a table and water and 4.60P/day for their daily ticket. In addition, the shells they bring in must be weighted at the entrance and a small amount must be paid according to total weight. In Tanjay the use of a table and water is 36P/month

[71] As opposed to agricultural crops, for example, for which yields fluctuate only on a seasonal basis.

prepared her to settle for a lower price.

The size of the shellfish, is often the basis on which traders get the edge in their negotiations. For example, a gleaner had 6.5 litre of small but expensive shellfish [72] and was given 7 pesos for each of the six full litres, so a total of 42 pesos. That shellfish usually sold for 8 pesos per litre. The trader paid a price inferior to that usually paid, and in the same token managed to get half a litre free. The gleaner did not grasp that she would not get paid for the half litre, since she was told that she was given a lower price because of the shellfish' size. She expressed her dissatisfaction to the trader, in vain.

To secure, day after day, the supply they need and yet, pay the lowest possible price, vendors must be knowledgeable and experienced. Because profit margins are small, they trust no one but themselves to get their supplies.

While traders from Dumaguete and Tanjay do not talk to each other, retailers operating inside Bais City market seems to collaborate with each other. They informally agree on prices to be paid to the gleaners for each species, and unless shellfish are very scarce, they will seldom sell the same species. When such is the case, they then seem able to maintain among them a certain specialization with respect to the shellfish they sell. For example, on one occasion when only one shellfish was available in large quantity, one of the retailers was selling the smaller ones while the second one sold the larger pieces. The collusion between traders "inside the market" understandably upset gleaners who see it as a type of "price fixing" of buying their shellfish for as little as possible, and making the maximum possible profit.

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[72] PUNAO

In Bais City's market are also a number of older ladies who sell small quantities of various marine sessiles such as LUCOT, various sea weeds (some cultivated at the Provincial Fisheries Centre and sold to them, others collected from the wild) fresh and bottled wild oysters, and brown mussels, as well as the very small shrimps and crabs. These products are not retailed by the other retailers "inside the market" who handle the much larger volumes of mollusks traded on a daily basis. These "old ladies" are very seldom supplied by the same gleaners that bring the shellfish to the market. Their small supply mostly come from relatives and neighbours who live in their barangay. They retail their product to Bais City residents only.

Inside Bais Market, the area dedicated to shellfish is located in the section where fish is sold. Pieces of wood attached together allow for display of some of the shellfish, but most of the supply is on the floor, in either large native baskets or plastic buckets (also used to contain the water to wash the shellfish). While people selling fish use large tables often covered with aluminium for easier cleaning, the shellfish traders seem to be squeezed into a narrow area and appear to be the marine resources families' poor relations. [73] Shellfish outlets and displays in Tanjay and Dumaguete markets, are however, the same as those of people selling fish.

**House to House**

Shellfish retailers based in Bais City market sell directly to local consumers. They also supply shellfish to the people selling house to house in Tanjay and Dumaguete. Hence, they also act as intermediaries between gleaners and these itinerant retailers. The house to

[73] It must be mentioned that shellfish retailers only fee in Bais is between 1.60 pesos and 2 pesos per day for the space they use.

house retailers come inside Bais City market, mostly in the afternoon, to purchase various shellfish and the small plastic bags in which the litres of shellfish are individually wrapped.

These itinerant sellers pay a slightly higher price for their shellfish than the price paid to the gleaners. When asked why they did not purchase their shellfish directly from gleaners, they explained that gleaners needed to be paid immediately upon selling their shellfish. In the case of the traders "inside" the market, arrangements could be made with them to pay for the shellfish the following day. [74] To make a profit and recover the cost of transportation, house to house retailers before tying up the small plastic bags in which they put the shellfish, will take off a handful. Out of eight litres, they will make nine, hence providing somehow for their operating costs. [75]

It is difficult to estimate the number of individuals selling shellfish door to door in Tanjay and Dumaguete. While the six individuals we interviewed seemed to be involved in the activity on a regular basis, there were days when up to twelve retailers showed up in the market to buy large quantities of shellfish they individually wrapped in the small plastic bags associated with the selling "house to house". [76]

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[74] We were unable to obtain any information as to wether or not these retailers were charged some king of interest for not immediately paying for the shellfish they purchased

[75] If the house to house retailers buys eight litres, they get eight plastic bags for free. If of eight they make ten litres, they then have to pay for the two extra bags required.

[76] They buy a daily average of 20 litres each of various shellfish.

**At the Terminal**

While there are no gleaners who retail shellfish, there are retailers who do glean. These are some of the females and males selling shellfish at the bus terminal. All northbound buses out of Dumaguete pass through Bais City. As far back as people of Bais can remember, passengers on those buses have taken advantage of the two minute stop at the entry of the town to purchase shellfish.

The large vehicles stop on the main street, in front of the local gas station designated as the bus terminal. Traders holding their shellfish displayed on trays above their heads then walk around the bus. Transactions are done through the open windows since time does not allow for passengers to get off. Residents of Bais City do not buy their shellfish at the terminal, they buy at the market. All terminal customers are transients. The vendors, between six and ten depending on the day, get installed on the shadowed side of the street early in the morning, their shellfish displayed in front of them. They sit on small wooden stools. At noon, they move to the other side of the street to avoid being directly exposed to the sun. They converse among themselves and with the locals walking by. Females sometimes have their children with them.

The terminal appears to be where people with not enough skills to glean, and not enough money to trade shellfish gather. A minimum amount of capital is required to buy shellfish from gleaners. As we were told, if you don't have that minimum cash, and most of them don't, then you get easy-to-get shellfish such as BILA-OG and/or you bottle wild oysters, and sell them at the Terminal. BILA-OG are found in Tavera. To get them, people go by low or mid-low tide and walk around up to their knees in the black mud. They search the very soft and deep mud with their feet. When they come close to the shell, it sends a spray

of water that very precisely locates it. Since the shells do not try to escape, they are easy to catch. BILA-OG are fairly plentiful and even people with no experience at gleaning can get them.

As for the wild oysters, they cling to rocks and concrete structures such as bridges and are very easy to get. People use a knife to free them from whatever they are attached to. Because the shell is almost always broken in the process, they are not sold whole. Instead people put them in bottle. Since cultured oysters are available in Bais City (inside the market), there is not much demand for the wild species and the commercial value of the shellfish is very low. By getting and selling SISI and BILA-OG, people can nonetheless in a few days, in a very primitive form of capitalization, generate the 40 to 50 pesos required to buy shellfish from gleaners and resell them. If after a few days they run out of cash again, they can go back to the shore to get more of the two shellfish.

Also selling at the Terminal are a few females from Bais City proper who know how to glean but do not rely on gleaning for a living. They will from time to time glean and retail their shellfish at the Terminal. Others do not know how to glean but will occasionally buy a few litres of shellfish from gleaners and sell them at the Terminal. The following quantities are typical of the daily volume of shellfish traded at the Terminal: 40 litres of various mollusks; 15 bottles of either TAHONG/SISI/LITUB; 20 Tipo (355 ml) of LUCOT; 20 kg of various crustaceans.

### To the Craft Industry

The fabrication of craft and art items sold to tourists as souvenirs is an important activity in some parts of the Philippines. These arts and crafts are often sold overseas. Although there

is no craft industry on the Island of Negros, empty shells from Bais Bay are purchased by middlemen who sell them to craft enterprises based in the neighbourhood province of Cebu.

Various shells sold for craft can be found in fishing traps or by diving. The largest quantity however is gleaned and consists of a small shell named SIGAY. This species lives in the sea grass and is mostly collected in the intertidal zone on the seaward side of the mangrove sanctuary. [77] Three families in the baranguay of Okiot purchase the shells from fishermen and gleaners. Each family specializes in buying specific shells and no two families buy the same shells, or sell to the same middleman. While one family specializes in buying SIGAY, the two other buy shells found in the fishing traps and shells males dive for. Every second or third month, they are visited by the middlemen who buy the shells and sell them to the craft industry in Cebu. [78] While SIGAY are purchased by the litre, they are sold to the middleman in sacks of 50 kilograms. [79] In the course of one of our visits, we noted twelve sacks awaiting the middleman whos was expected the following day. We were told that the best months to collect SIGAY were April and August. The small shellfish comes out at night, at low tide. People use a small fishing gear to get them. [80]

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[77] The area is locally known as Sanlagan or "white sand area".

[78] Those middlemen (none of them from the Bais Bay area) are therefore the second intermediaries between the gleaners/fishermen and the industry that is the ultimate purchaser.

[79] One Veedol of SIGAY weights more or less .3 kg.

[80] This gear is a SIBUT. It is made of very small mesh size net hooked to two one meter long sticks. It is used, one stick in each hand, as a plough to collect SIGAY and the very small shrimps.

## 3.3 Resources

### Species

The most important category of marine sessiles harvested in Bais Bay by gleaners are mollusks. A total of 46 species belonging to 25 families of Gastropods (univalves) and Pelocypods (bivalves) were identified. The best represented families are the Veneridae - Venus Clams (13 species) and the Strombidae - True Conche (5 species).

The list of mollusks' vernacular names known to gleaners reveals their remarkable level of knowledge of shellfish (Appendix 3). In the total list of 46 species identified, there are very few generic names used for more than one species. The most confusing one seems to be BALOSO (sample # 72) that is used to designate 6 different species. SIGAY (sample # 71) is used to designate three different small shellfish, very similar in colour. The same confusion arises for TAMISLAT (sample # 38). As for BABOY-BABOY (sample # 29) it is used to designate two different species belonging to two different families. It should however be noted that none of the above mentioned species or groups of species are significant in terms of landings which may explain, in part, the low level of precision of the local nomenclature.

We can also note the occurrence of two or even three different vernacular names to designate the same species. The phenomenon does not however arise out of confusion. Gleaners from different baranguays and/or bays may have different names for a same shellfish. Such is the case for BILA-OG/BALOLO/TOMBALOLO (sample # 40 and 44) as three different vernacular names used for a same species. TIKOD-TIKOD/SULOD-SULOD ( sample # 26 and 27) and TALIPSAY/PISOS-PISOS

(sample # 23 and 33) also fall into the same category. As for TANDI-IS/LIGIS (sample # 8 and 37), gleaners have different names to refer to different stages of growth. TANDI-IS is used to designate the shellfish when it is small, while it is called LIGIS once it has reached adult size. In the case of SAHONG (sample # 60), gleaners make a distinction between the female and male shellfish, even if in fact both genders are of the same species.

The gleaners' sound knowledge of shellfish is also reflected in their acquaintance with species distribution and abundance patterns. Our informants all volunteered the information that fewer species, although in larger quantities, were found in South Bais than in North Bais. This information was validated by our enumerators' data according to which fewer species were recorded in South Bais (Canlargo:30; Cambuilao:27; Capinahan:28; Okiot:16) than in North Bais (Talungon:34 and Batogan:40).

**Volume and Price**

The six enumerators hired to assist with this study were asked to visit the sites they monitored on a daily basis, when the tide was at its lowest, and to count how many females, males and children were gleaning. They then sampled 4 gleaners. A total of 25,223 gleaners were recorded and 11% (2,880) gleaners) were sampled. The sampling was conducted on the shore, at the time gleaners left the collection sites. Species harvested were identified and quantities recorded. Our intention was to obtain the best possible approximate quantity harvested and bearing in mind that our data would not be used for any biological study, we chose the system of measurement used by the gleaners themselves. [81]

[81] In most cases, prices are also set according to the same system of measurement.

Table 3 shows the quantity of shellfish harvested by the 2,880 gleaners comprising our sample. Quantity and/or volume harvested per month (July to November 1993 and January 1994) is indicated for each species. The table also indicates the price paid to gleaners for the shellfish as well as their retail prices and total commercial value. As explained earlier, prices vary according to season and fish availability. Retail prices in the cities of Dumaguete and Tanjay also tend to be higher than they are in Bais City's market. Some of the missing retail prices were not available due to the limited quantity of some species on the market at the time the study was conducted.

Not all shellfish collected are sold. Many people in Bais Bay glean exclusively for their own consumption. Such is the case of upland baranguay residents but also of many coastal families who will regularly glean "a meal at a time". For those who cannot afford to buy fish, shellfish becomes an important source of protein. Gleaners also keep the odd shellfish to feed their families while they sell the single species of which they have the largest quantities. Our enumerators recorded the gleaners' intended use for each of the species collected. A total of 69% of each species was to be sold while the remaining 31% was to be used to feed the gleaners' families. [82]

[82] These figures must not be mistaken for volume or quantity of shellfish that are sold. They represent the percentage of species that are commercialized.

**Table 3: Volume and market value of marine sessiles harvest from July to November 1993 and in January 1994**

| A. Gastropod and Pelecypod | Jul. | Aug. | Sept. | Oct. | Nov. | Jan. | Total | Price to Gleaners | Retail Price | Monetary Value in Pesos |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Measure = litre | | | | | | | |
| 1. Aninikad | 498.1 | 344.5 | 416 | 280.5 | 242.5 | 214.7 | 1996.3 | 6P/L | 10P | 11 976 |
| 2. Balik-ad | 0 | 0 | 0 | 122 | 0 | 6 | 128 | 7P/L | N/A | 896 |
| 3. Bagongon | 0 | 9 | 1.25 | 13.9 | 24 | 2.25 | 50.4 | 6P/L | 10P | 302 |
| 4. Tabagsoy | 10 | 0 | 0 | 0 | 0 | 0 | 10 | 6P/L | N/A | 60 |
| 5. Sangka-Sangka/ Matag-lagsaw | 20.4 | 2.3 | 0.5 | 3 | 2.2 | 1.2 | 29.6 | 6P/L | 10P | 178 |
| 6. Baboy-Baboy | 1.9 | 0.6 | 1.7 | 1 | 1.85 | 1.3 | 8.35 | 4P/L | N/A | 33 |
| 7. Dalu-Dalu | 180.5 | 73.5 | 105.5 | 153.6 | 220 | 184.5 | 917.6 | 3P/L | 6P | 2 753 |
| 8. Bug-atan | 0 | 11.1 | 14 | 9.1 | 5.1 | 3.75 | 43.05 | 2P/pc | N/A | 1 722 (20 pcs/L) |
| 9. Ligis | 97.3 | 112.7 | 90.5 | 72 | 85 | 55.3 | 512.8 | .30P/pcs | .40P/pc | 3 077 (20 pcs/L) |
| 10. Tandis-is | 204.9 | 63 | 89.5 | 52.5 | 25.5 | 86.8 | 522.2 | 5P/L | 8P | 2 611 |
| 11. Pisos-Pisos/ Talipsay | 76.11 | 53.8 | 67.8 | 123.81 | 224 | 69.5 | 615.02 | 4P/L | 6P | 2 460 |
| 12. Hogdan-Hogdan | 5.1 | 1.5 | 0.5 | 1.25 | 0.5 | 0 | 8.85 | 3P/L | 5P | 27 |
| 13. Puti-an | 0 | 0 | 0 | 7 | 8 | 16 | 31 | 5P/L | 8P | 155 |
| 14. Tikod | 2321 | 3 | 5.5 | 4 | 6 | 2 | 2341.5 | 4P/L | 8P | 9 368 |
| 15. Bayuyon | 69.75 | 44 | 79.5 | 39.5 | 56 | 53 | 341.75 | 5P/L | 10P | 1 709 |
| 16. Punyete | 208.8 | 89 | 120.5 | 208 | 211 | 150.75 | 988.05 | 4P/L | 7P | 3 952 |
| 17. Bisala | 117.85 | 183 | 93.2 | 109.8 | 130.5 | 122.3 | 756.65 | 4P/L | 7P | 3 027 |
| 18. Punao | 569 | 297.23 | 308 | 300 | 287 | 321.6 | 2082.8 | 8P/L | 14P | 16 664 |
| 19. Kalaykay | 0.5 | 0 | 0.4 | 0 | 1.8 | 0 | 2.7 | 7P/L | | 19 |
| 20. Bakalan | 209.9 | 163.7 | 66.2 | 62.4 | 102.3 | 35.7 | 640.2 | 3P/L | 7P | 1 921 |
| 21. Litud | 687.8 | 788 | 953.6 | 1566 | 1388 | 796.5 | 6179.9 | 4P/L | 8P | 24 720 |
| 22. Tikod-Tikod/ Sulod-Sulod | 89.5 | 84.5 | 139.1 | 79.81 | 87.5 | 99.3 | 579.71 | 4P/L | 8P | 2 319 |
| 23. Tudlo-Datu | 0.5 | 1.5 | 7.5 | 22.5 | 45 | 30 | 107 | 3P/L | 7P | 321 |

| ... Gastropod and Pelecypod | Jul. | Aug. | Sept. | Oct. | Nov. | Jan. | Total | Price to Gleaners | Retail Price | Monetary Value in Pesos |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Measure = litre | | | | | | | |
| 24. Luwag-Luwag | 22 | 52.8 | 31.2 | 19.3 | 25.2 | 13.9 | 164.4 | 2.5P/L | 5P | 411 |
| 25. Talipis | 21 | 55.75 | 90 | 28 | 235 | 189.5 | 619.25 | 5P/L | 8P | 3 097 |
| 26. Bulok-Bulok | 18.45 | 90 | 69.91 | 39.5 | 65.8 | 83.16 | 366.82 | 5P/L | 8P | 1 834 |
| 27. Bila-og | 161 | 112.8 | 127.3 | 84.8 | 77.2 | 50.4 | 613.5 | 4P/L | 10P | 2 454 |
| 28. Tandok-Tandok | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 6P/L | N/A | 24 |
| 29. Sigay | 62 | 250 | 47 | 15 | 6 | 9 | 389 | 4P/L | 600P/50kg | 1 556 |
| 30. Bungkawil | 7082 | 2604 | 1395 | 2409 | 2784 | 1311 | 17585 | .35P/pc | .40P/pc | 6 155 |
| 31. Baloso | 25 | 0 | 0 | 13 | 16 | 0 | 54 | 3P/pc | N/A | 162 |
| 32. Kibol | 35 | 54 | 12 | 45 | 87 | 50 | 283 | .50P/pc | " " | 142 |
| 33. Bulan-bulan | 45 | 13 | 26 | 20 | 58 | 6 | 168 | .25P/pc | " " | 42 |
| 34. Sikad-Sikad | 21 | 0 | 0 | 0 | 0 | 0 | 21 | .50P/pc | " " | 11 |
| 35. Manok | 2 | 19 | 5 | 27 | 97 | 40 | 190 | .50P/pc | " " | 95 |
| 36. Lampirong | 372 | 144 | 713 | 54 | 1026 | 326 | 2635 | 7P/kg | " " | 615 (30 pcs/kg) |
| 37. Sa-ang | 20.7 | 14 | 5 | 7 | 22 | 11 | 79.7 | 2P/pc | " " | 159 |
| 38. Talab | 189 | 203 | 254 | 258 | 231 | 95 | 1230 | 2P/pc | " " | 2 460 |
| 39. Tamislat | 37 | 0 | 0 | 31 | 39 | 104 | 211 | N/A | " " | N/A |
| 40. Embao (weight) | 211 | 420 | 165 | 209 | 240 | 748.7 | 1993.7 | 20P/kg | 35P/kg | 39 880 |
| 41. Tahong (sack) * | 215 | 783 | 1478 | 543 | 388 | 424 | 3831 | 150P/sack | 10P/veedol | 574 650 |
| 42. Talaba (sack)* | 62 | 34 | 87 | 54 | 58 | 66 | 361 | 150P/sack | 40P/kg | 54 150 |
| 43. Sisi (basket)* | 131.5 | 130 | 46 | 39.5 | 37.1 | 44.5 | 428.6 | 10P/basket | 6P/bottle | 4 286 |
| **B. Crustaceans** | | | **Measure = pc/kg** | | | | | | | |
| 44. Lambay (pc) | 14 | 47 | 67 | 153 | 143 | 93 | 517 | 30P/kg | 45P/kg | 3 102 (.2kg/pc) |
| 45. Alimango (pc) | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 30P/kg | 45P/kg | 48 |
| 46. Kasag (pc) | 148 | 104 | 4 | 29 | 92 | 71 | 448 | 40P/basket | N/A | 717 |
| 47. Pasayan (kg) | 20 | 15.6 | 0 | 2.5 | 10.2 | 0 | 48.3 | 60P/kg | N/A | 2 898 |

**C. Holothurians/Other**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Volume = pc/tipo | | | | | | | |
| 48. Balat-bagisan (pc) | 88.2 | 312 | 149 | 148 | 32.4 | 28 | 757.6 | 5P/kg | N/A | 631 (6pcs/kg) |
| 49. Batuli (pc) | 778 | 6 | 880 | 455 | 344 | 206 | 2669 | .10P/pc | " " | 267 |
| 50. Lukot (tipo) * | 27 | 164 | 487.5 | 574 | 307 | 248 | 1807.5 | 5P/tipo | N/A | 9 040 |
| | | | | | | | | | **Total** | **799 156 P** |

* sack = 40-45 litres / basket = 10 litres / tipo = 355 ml

Gleaning is hard work. It takes gleaners living in the lowland barangays approximately four hours to fill their baskets with shellfish. They keep the odd ones and if lucky, dispose of 4-5 litres for sale. Making it to the market to sell their shellfish and returning home will take two more hours. Returns are low. The mean price for a litre of mollusks, by far the most important marine sessile collected, is only 6 pesos.

## 3.4 Collecting sites

### South Bais

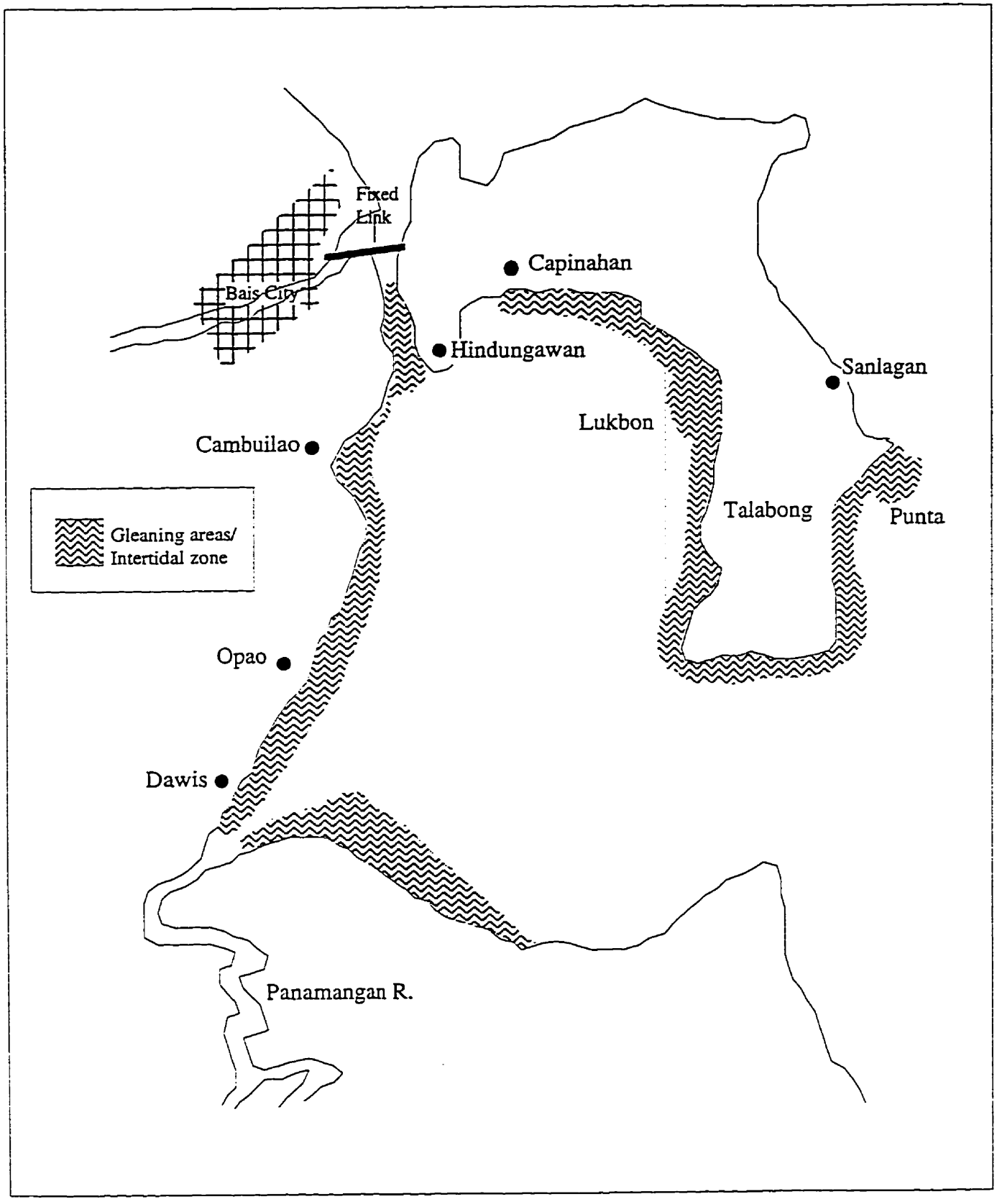
In South Bais Bay (Fig. 3), gleaners collect shellfish a) near the mouth of the Panamangan River (near Dawis), b) along the shore, between high water mark and low water mark (near Opao, Cambuilao and Capinahan), and in the Talabong Mangrove Sanctuary. The brown mussels breed in front of Dawis. These mussels are collected by males who come in their canoe from Daco Island (Hindungawan and Capinahan) to either collect the small mussels to seed their lots,[83] or the large ones to sell.[84] Upland barangay residents also collect the brown mussels. They walk across the sugar fields down to Dawis and, in the water up to their shoulders, dive to collect the shellfish. They often come in groups, of at least two individuals. One person holds the jute sack in which to put the mussels and the other dives. Upland residents collect mussels for their own consumption. In South Bais, in the mouth of the Panamangan River, males also dive for shells other than the mussels. [85]

[83] Also referred to as backyard gardens.

[84] Brown mussels are either sold as prawn meat or bottled and sold at the market.

[85] They mostly collect LITUB.

Figure 3. Gleaning areas / intertidal zone in South Bais Bay.



The intertidal zone in South Bais Bay is not very large and once they have reached the shore, gleaners can immediately begin to search for shellfish. In Capinahan, they gain access to the shore through small paths connecting the nearby main roads to the water. The gleaning area is readily accessible. In Opao and Cambuilao, gleaners can either use the barangay roads leading to the shore, or walk on the narrow edge of the fish ponds. There too, the gleaning area is easily reached.

Access to the Talabong Mangrove Sanctuary is, however, more arduous. The walking is made difficult by the greater distance and the soft mud. The mangrove sanctuary can either be reached from Capinahan or from Sanlagan. From Capinahan, the walk is long and difficult. It can take up to 90 minutes to reach the tip of the Talabong sanctuary. However, since the pattern followed by the receding water allows the Talabong area to be exposed (water free) before any other areas, some gleaners seize this opportunity to reach it in their canoe. Few shellfish are found in the sanctuary.[86] Reaching the Talabong is shorter from Sanlagan (the seaward side of the sanctuary). Gleaners use a narrow and well trod path that leads from Sanlagan through the mangrove forest. As long as they use the narrow way, gleaners are walking away from the soft mud, tall sea grass and sea urchins' needles. Sanlagan is also known as the "white sand area", and next to it is a gleaning site referred to as PUNTA.[87]

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[86] It is however where the dear EMBAO is found. Other shellfish collected are DALU-DALU, ANINIKAD,LITUB, HOGDAN-HOGDAN and SULOD-SULOD. EMBAO are hard to get and gleaners only go in the Talabong during the Fall when longer diurnal tides make their venture worthwhile. The remaining months of the year they go to a nearby site, at the foot of the Talabong, known as Lukebon.

[87] It is in Punta and Sanlagan that the sea cucumbers, sea urchins and small SIGAY are found.

**North Bais**

In North Bais Bay gleaning takes place in the intertidal zone, all along the shore from Tavera to Maaslum in the municipality of Majuyod. People also glean in various areas located at the centre of the bay, closer to Olympia Island than to the mainland shore. These gleaning sites all have different names (Fig. 4). Four of the sites, Manlingin, Bano, Pa-akgahan and Alawing, are very seldom free of water. Only at very low tide (0.00 mm) are they clearly visible, and then just for a short time. In all cases and regardless of the tide, gleaners must use a canoe to reach them. They anchor their small craft at the edge of the site, walk around and collect the shellfish. When the tide comes in, they reclaim the canoe and row back to shore. Other sites located at the centre of the Bay are accessible on foot. The total gleaning area in North Bais is very wide and gleaners walk greater distances than they do in South Bais. Gleaners who collect shellfish in North Bais walk on the mud flat an average of 30 minutes before they collect any shellfish. At very low tide, if gleaners wish to reach the sites near Olympia Island, the walk may take close to 60 minutes. With the exception of Tavera (Dike) where the soil is very soft, walking on the mud flat is fairly easy. Nonetheless, because of the dead corral[88] and various channels, gleaners in North Bais must be aware of crevices and areas which cannot be crossed on foot, even at low tide. Coastal barangay residents know their way around well. Such may however not be the case with upland people who glean less frequently and are less knowledgeable about the marine environment in general.

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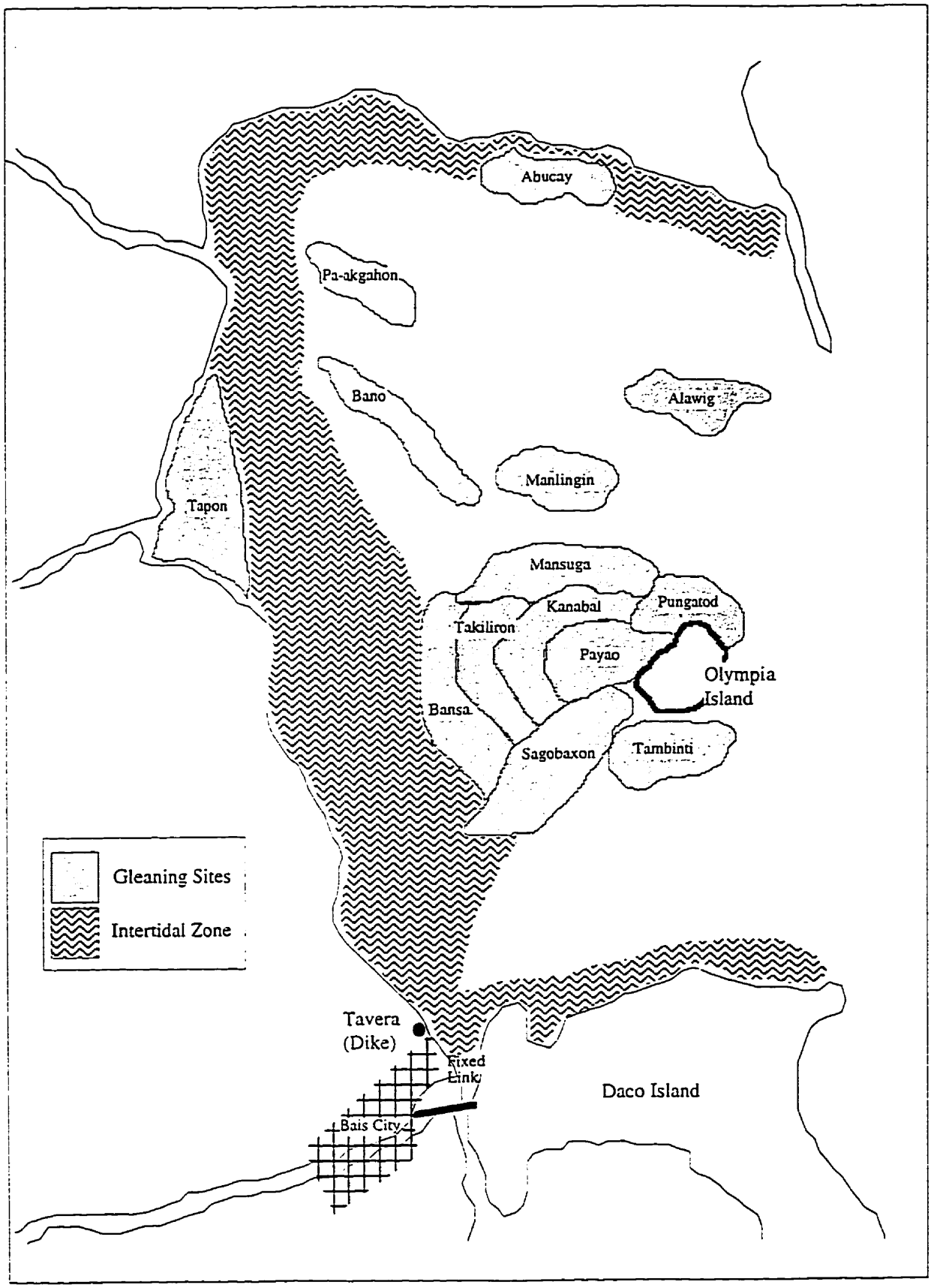
[88] Corals are coelenterates of the class *Anthozoa*. They have the calcareous or soft skeletons that form coral reefs. When the corals die the skeletons remain. These skeletons eventually break down into rubble and finally into sand. It is estimated that over fifty percent of the Bais Bay coral reefs are composed of dead corals.

Figure 4. Gleaning sites and intertidal zone in North Bais Bay



Stories of gleaning relating abnormal phenomenon always profile upland people. For instance, the gleaning site BANO near Olympia Island is considered dangerous. Its bottom is not even and because of deep crevices, gleaners may at one moment be walking in shallow water and the next moment be in water above their head. We were told that upland people who could not swim have died in that area. The phenomenon in the local dialect is called MANGINHAM which translates into "even at low tide they get lives". On another occasion, informed of our wish to glean at night, several gleaners warned us about the LAMAT and recommended that we only go accompanied by experienced gleaners. The LAMAT refers to the following phenomenon. A gleaner is with a group and suddenly finds herself/himself away from other gleaners, having drifted without knowledge of it. [89]

We were unable to determine the frequency of non-costal people drowning while gleaning. However upland gleaners we saw in South Bais Bay could swim and dive. Similar beliefs in the context of traditional common property regimes were seen by maritime anthropologists studying Pacific Island communities as ways to restrict access to resources.[90] In the Bais Bay context it certainly reinforces the idea that upland people are foreign to marine resources (verified by their lack of knowledge about gleaning and gleaning grounds). One would only need to take it one step further to conclude that they have no users' rights, in spite of the fact that they have been collecting shellfish for as long as coastal residents can remember.

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89 We were told of a group of people gleaning at night. Among them a boy suddenly went missing. The group looked for him but the child was nowhere to be found. When morning came, his body was discovered trapped in a fish corral. People immediately concluded that he had drifted away, was caught by the high tide and since he could not swim, drowned.

90 Ruddle, K. and R.E. Johannes. *Traditional coastal resource management in the Pacific basin: an anthology.* UNESCO/ROSTSEA, Jakarta 1990.

## Conflict of access

Because they do not belong to the official sector, informal sector workers are often ignored when rules and regulations are changed. Recent changes in Philippines legislation affecting gleaners' traditional access right to the intertidal zone support the idea that property rights are indeed political and that gleaners, because of their lack of political strength, are unable to protect their interest.

Access to gleaning areas in Bais Bay has traditionally been open to all. This is, however, slowly changing. Through the 1980s, modification to the Philippine forestry policy, in particular the new legislation for the conservation of mangroves, and the passage of the Philippines Local Government Code, indirectly produced changes in both access and use patterns in the coastal zone. Gleaners were displaced and gleaning areas lost to other user groups, namely mussel and oyster cultivators.

The Philippines Integrated Social Forestry (ISF) Program of 1982, as it relates to mangroves, is centred on the provision of certificates of mangrove stewardship. The Department of Natural Resources (DNR), through contracts granted by the City of Bais, provides home owners living along the shore with 25 year renewable leases to small portions of the intertidal zone. The contract says:

> "The Granter will enter into a Stewardship Agreement with, and issue a Certificate of Stewardship covering mangrove areas, to qualified individuals, communities, associations or cooperatives for the purpose of allowing the Grantee to plant and/or manage and protect permanent mangrove forest, to harvest in a sustainable way and enjoy all the produce thereof, and to benefit others by maintaining that forest for coastline protection and support of coastal fisheries." [91]

[91] Mangrove Stewardship Agreement. Document obtained from the City of Bais.

The usefulness of stewardship contracts as a tool for promoting conservation and reforestation has been limited thus far. While more than three hundred of those contracts have been issued over the past few years to households located on Daco Island, very little has been done for mangrove conservation by the owners. [92] The first certificates of mangrove stewardship were granted in the late 1980s to residents of Hindungawan in the barangay of Lo-oc on Daco Island.[93] Hindungawan home owners feared the intended project of a large fish ponds owner to expand his ponds to the mangroves' brackish water located along the shore at the immediate rear of their houses. They banded together and created the Brown Mussel Producers Association and petitioned the City of Bais to have the development stopped. The City Mayor agreed to their request and granted certificates of mangrove stewardship to the forty-three Association members. [94] In a matter of months all residents of Daco Island, who could do so, requested similar certificates. Once the certificates were granted, Hindungawan owners of the houses located along the shore fenced the intertidal zone adjacent to the land on which their homes were built. Residents of the opposite side of the road were granted the space along the first row of what became to be known as backyard gardens, and a right of passage to access their lots (Fig. 5). The fencing, more or less 30 metres square, is rudimentary and consists of a dozen bamboo poles.

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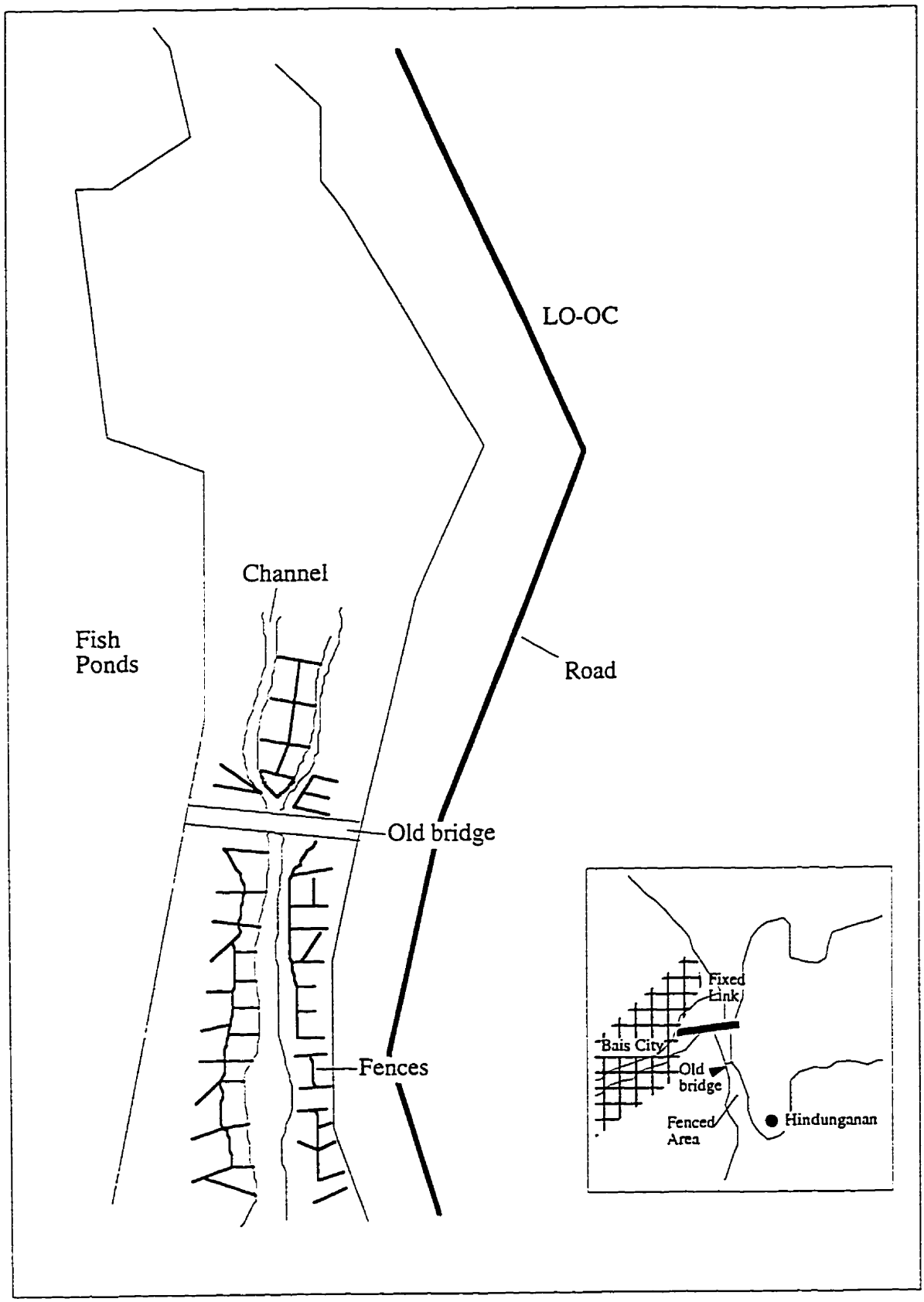
92 *Philippine Coastal Resources Under Stress.* Selected papers from the Fourth Annual Common Property Conference held in Manilla, Philippines, June 16-19 1993.

93 D. Wong (Brown Mussel Producers Association). Personal interview, August 11, 1993.

94 The case aroused passions. In the course of an argument over fencing, the fish ponds owner's manager (Hindungawan resident himself) shot and killed the Vice-President of the Browns Mussel Producers Association and hurt its President. He subsequently died of a hearth attack before standing trial. The families of Hindungawan were deeply divided over the whole issue and have remained so.

Figure 5. Backyard gardens in Hindungawan.



Prior to the granting of the certificates of mangrove stewardship, gleaners collected shellfish in Hindungawan. According to elderly gleaners we interviewed, shellfish were found in Hindungawan.[95] Today the entire area where gleaners used to collect shellfish is fenced. The only wild shellfish collected are the low priced wild oyster that fasten to the bridge structure and the few rocks left around after the old bridge was constructed. Moreover, the disappearance of wild species from Hindungawan is the direct consequence of the introduction of the species brought in for culture.[96] Gleaners first lost access to some of the area where they traditionally gleaned when the large fish ponds were constructed. They then lost total access to the area when the certificates of mangrove stewardship were awarded. The situation is less critical in Capinahan. Because of the fencing and construction of backyard gardens, shellfish collectors are prevented from gaining access to some of the areas where they traditionally gleaned. However, because of the Daco Island coastal topography, large sections of the intertidal zone nonetheless remain open to gleaners, unlike the situation in Hindungawan.

The passage of the Philippines Local Government Code in 1991 also provided for changes in Bais Bay use and access patterns. The Local Government Code grants local authorities jurisdiction over coastal waters and power to:

" Grant fishery privileges to erect fish corrals, oyster, mussels or other aquatic beds or bangus fry areas, within a definite zone of the municipal waters (...)" [97]

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[95] BILA-OG, SANGKA-SANGKA, PISOS-PISOS, BUNGKAWIL, LAMPIRONG, TUDLO-DATU AND EMBAO.

[96] Competition between the cultured species newly introduced for culture and wild species often results in the later's disappearance.

[97] Government of the Philippines. *Local Government Code.* Book 11: Section 149 (b)(1).

Among other activities, interested individuals can request annually renewable permits to establish oyster or mussel beds for culture in parts of the intertidal zone that are not adjacent to their houses and for which they cannot obtain certificates of mangrove stewardship.

Since the late 1980s, people from Hindungawan and Capinahan have been going to Dawis to fill their canoes with the brown mussels they use to seed their backyard gardens [98]. Residents of Dawis, upset with this practice, moved their fish corrals in the way of outside intruders and secured appropriate city permits to culture brown mussels. They then fenced large water and intertidal areas. [99] The fencing in this case is more elaborate than that of backyard gardens. The paling is composed of the same material and made according to the same technic used for fish corrals, and a door must be opened to let family members and shellfish collectors in. Between 1991 and 1993, fences of all types (very sophisticated and more rudimentary ones) were set up in the Dawis water and the South Bais intertidal zone, as well as, inside the month of the Panamangan River, leaving only a narrow central passage free (Fig. 6).

This fencing makes it increasingly difficult for anyone to collect either small or large brown mussels, including upland people who traditionally collected the shellfish for their own consumption. Part of the fenced area (between Dawis and Opao) is partly located in brackish water gleaners from Opao identify as been part of their traditional gleaning site.

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98 The brown mussel (TAHONG) breeds in front of Dawis, near the mouth of the Panamangana River.

99 City requirements to issue a permit are: police clearance (no criminal record); judge clearance (no court record); barangay clearance (good behaviour); water bill clearance (no outstanding bills), health clearance (medical certificate); and tax clearance (no outstanding taxes). No mention is made by the City of the size of the area to be fenced.

One specific fence first put up in 1991 has since been displaced twice, each time to be moved closer to Opao.

Incidently, the area referred to is where gleaners from Opao used to catch mud crabs while gleaning.[100] Ever since the fences were put up, fewer of those crabs have been collected compared to the number gleaners use to catch prior to the erection of the fence. It kept them from gaining access to all of the intertidal zone. Changes in access and use patterns are for the time being limited to South Bais. But this happens to be the Bay where the intertidal zone in general and the gleaning areas are the smallest.

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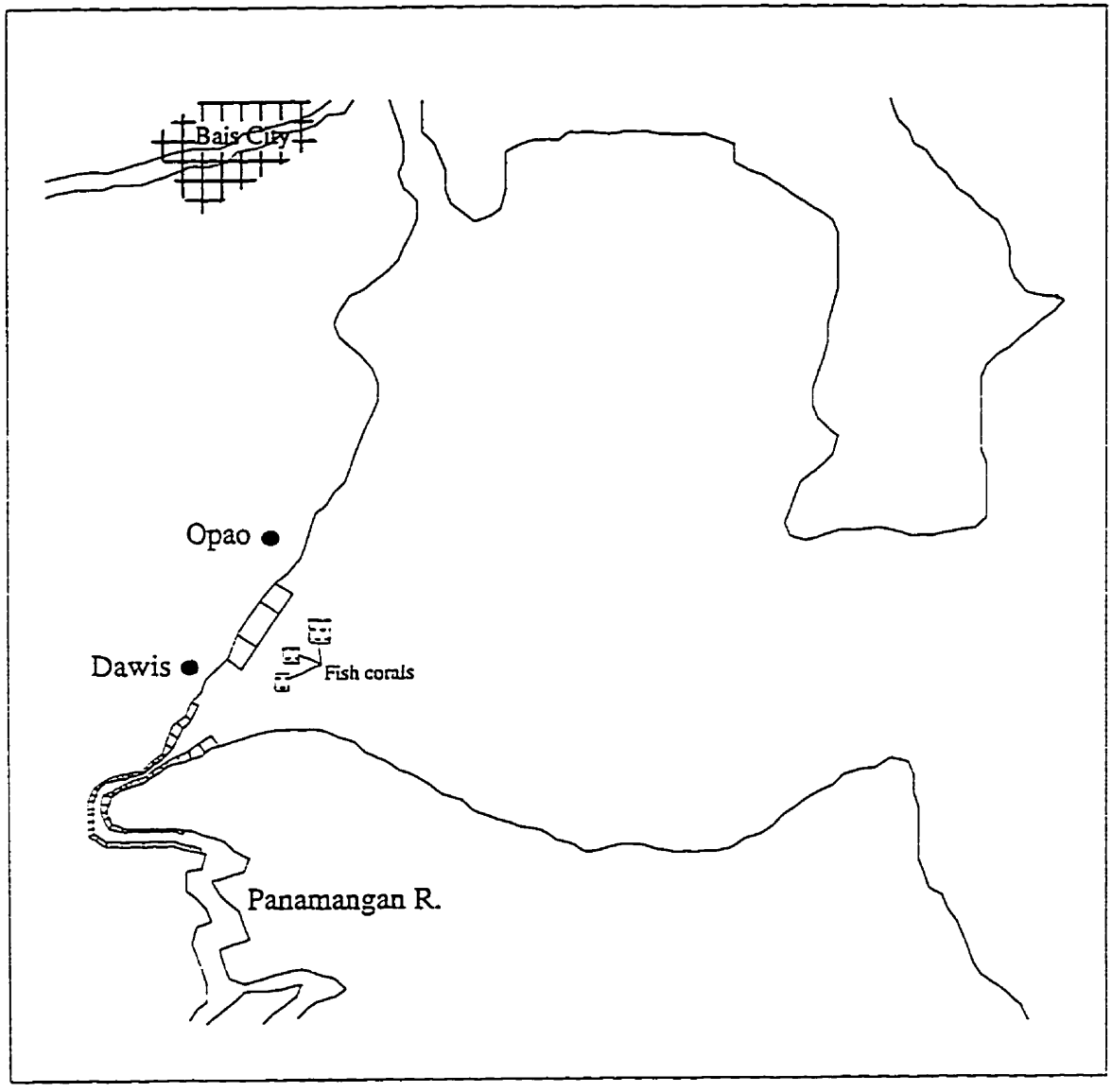
[100] Experienced gleaners in Opao explained to us that an average income for one day of gleaning would be around 30 P/day. When they catch the mud crabs (ALIMANGO) it does bring their income to 50 P/day.

Figure 6. Fencing in Dawis / Opao and Panamangan River.



**Gleaners' mobility**

Among other information, our enumerators were asked to record the barangay where gleaners comprising the sample lived. By comparing the location where they gleaned with the place where they lived, we wished to assess gleaners' mobility, and to identify potential patterns of access.

Barangay of origin for the gleaners collecting shellfish on each of the six landing sites where the enumerators were posted are listed in Appendix 4. With very few exceptions, shellfish collectors living in barangay located north of the fixed link between Daco Island and Bais City (which divides the bay in two), glean in North Bais. Shellfish collectors living in barangays located south of that link, glean in South Bais, and the few gleaners residents of Bais City glean in Tavera, North Bais.

Notwithstanding their mobility once they are gleaning as such, gleaners appear to always reach the intertidal zone through one specific location. They use the roads or paths that lead to the shoreline located directly in front of the barangays were they live. This pattern holds for upland people as well. Upland barangay residents walk down straight to the shore adjacent to the coastal sitio or barrio contiguous to their barangays.

Once on site, gleaners in North Bais seem to wander freely over the whole area up to Olympia Island. In South Bais however, water prevents gleaners from walking from one gleaning area to the other. They therefore restrict their shellfish collecting to the sites bordering their shore. The only exception seems to be that of Hindungawan residents who come to Dawis in their canoes to collect brown mussels.

The pattern of access to the intertidal zone that gleaners seem to follow provides for the shortest route (direct line) between any barangays and the shore. The long distance most gleaners walk to either reach the shore (specially upland gleaners) or while gleaning, likely explains why such a pattern developed in the first place. The fact that gleaning entails walking long distances is just one reason why gleaning is hard work. Gleaners act like any other rational economic agents and respond to their existing environment and try to improve their circumstances.

Hundreds of gleaners, day after day, spend long hours getting the shellfish which provides their livelihood. Large quantities of marine sessiles are collected in the bays and taken to Bais City and sold there. The traders who sell in the province's various markets and in Bais Bus Terminal also rely on the shellfish and the gleaners for their livelihood.

Superficially the activity could have been taken for a small and unstructured one, but it proved upon further observation to be highly organized and to affect large numbers of people. Shell collecting is far from insignificant. However, the gleaners access to collection sites is being increasingly compromised by changes in the Philippines' legislation. These changes raise vital questions about the political implications of formal sector decisions or the poorest segments of Bais society. The changes also relate to the influences of inherited colonial structures on the shaping of today's social and economic life in bais Bay.

# Chapter Four

" The utilization of natural resources at a particular place and time is the outcome of conflicting interest between groups of people with different aims".

N. Abel and P. Blaikie

## 4.0 Bais Bay Social Systems and Inherited Economic Structures

Bais Bay informal sector activities do not differ from other informal sector activities, either rural or urban, used as background documentation to this research. Gleaners have until the present time, enjoy free entry into the sector and rely on indigenous resources. Gleaning is family-based and operations are small-scale. The activity is labour intensive and relies upon non-formal sources of education and skills. Gleaners operate in an unregulated competitive market. What provides for shellfish collecting uniqueness are the specific characteristics that relate to production and how the activity is structured, as outlined in the previous chapter. In this chapter, we examine how the activity's origin and continued existence, stem directly from the necessity to create one own's employment. One of the major trends ILO identified concerning rural poverty is that through the third quarter of this century, in most Asian countries (including the Philippines), the income of the rural poor has been falling absolutely. [101] The countries comprising the study were all characterized by a highly unequal distribution of land ownership. The continuation of the highly unequal ownership of land during a period of rapid demographic growth resulted in increased landlessness and near landlessness and in increased poverty. The study further stated that the very poor cannot afford to be unemployed, and must obtain a source of livelihood even if this implies "pitifully low earnings". Those who must find employment are likely to do so by entering the flexible income sector, i.e. the informal sector.

The general pattern of land ownership that characterizes the Island of Negros is very similar to the one found in countries and regions comprising the various case studies. In addition, as may be expected, so is the survival strategy of those who must find a source of

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[101] International Labour Organization, *Poverty and Landlessness in Rural Asia.* Geneva, 1977.

livelihood. They enter the informal sector. To gain an understanding of who the gleaners are, and of the social system gleaning is integral to, and both its social and economic importance, it is necessary first to discuss land ownership in Bais as well as the work pattern found in the main Bais employment sector: the hacienda.

## 4.1 Land ownership in Bais

Three farming systems are found in Bais: aquaculture, a coconut-based farming system, and sugar cane.[102] The wetland and shoreline are devoted to fishponds (503 hectares), most of it for milkfish culture and the rest for prawn culture. These fish ponds are owned by the same people who own the land planted with sugar cane. Some of the upland agricultural area (2,000 hectares) is devoted to coconut with small patches of grasslands. Soil erosion is important and coconut, because of the minimal soil tillage it requires, is one of the only crops that can grow on the slopes of the hills. Land holdings are small ranging from one half to two hectares for the small farmers which comprise about 5% of upland ownership. The rest is owned by hacienda owners living in the nearby lowland, their holdings ranging from 50 hectares to 100 hectares. As for the lowland, the province's best agricultural land, it consists of haciendas, around 9,000 hectares, all planted with sugar cane.[103] The following table shows the specific crops grown on the 67% of Bais land devoted to agriculture.

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[102] Total municipal land is 29,109 hectares of which: 1,502 hectares (6%) is devoted to commercial, industrial and residential uses; 6,759 (27%) consist of various forest, grasses/shrubs, mangrove, bamboo, nipa and ipil-ipil; and 16,853 (67%) is devoted to agriculture. Department of Agriculture, Bais City. Personal interview, July 1993.

[103] Silliman University, *Proceedings*.

**Table 4: Agricultural Land Use Statistics of Bais City (1991)** [104]

| Land use | Area (hectares) | Percent (%) |
|---|---|---|
| Fishpond | 503.00 | 2.00 |
| Pasture Land | 161.90 | 0.64 |
| Paddy Rice irrigated | 5.00 | 0.02 |
| Paddy rice non-irrigated | 87.88 | 0.35 |
| Banana | 738.00 | 2.94 |
| Corn | 3,120.00 | 12.43 |
| Coconut | 3,060 | 12.19 |
| Sugar cane | 9,056.00 | 36.07 |
| Mango | 11.00 | 0.04 |
| Pineapple | 7.00 | 0.03 |
| Root crops | 0.03 | |
| Vegetables | 21.00 | 0.08 |
| | 16,853.24 | 66.82 |

Land owned by the large land owners (hacendados) therefore comprises 1,800 of the 2,000 hectares of the upland devoted to coconut; 503 hectares devoted to fish farming; 9,000 hectares to sugar cane growing. We find that at least 67% of the agricultural land, including the best of it, is owned by the descendants of a handful of families.

As a consequence of this skewed ownership of the land, 57% (33 970) of the 59,597 residents of Bais are landless.[105] However, if we do exclude residents of Bais City proper from our calculation (11,888 residents of urban barangays 1 & 11), we find the percentage of rural dwellers that are landless to be higher (71%). Yet, those numerous landless families live in the rural barangays of Bais. They either legally live in houses provided to hacienda workers or, squat on the small strips of land adjacent to the shore, not usable for sugar cane, and kept for use as buffers for the fish ponds. To assess which portion of Bais

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[104] *Ibid*, p. 53.

[105] *Ibid*, p .68.

rural labourers find employment, we must look at the labour requirement in the main employment sector.

## 4.2 Seasonal employment and surplus labour

While in certain parts of the Philippines, landholders based their exploitation on traditional patron-client relationships with their tenant-workers, the Spanish entrepreneurs who came to Negros in the late nineteenth century and established haciendas, operated them through the more economical and flexible use of paid labour.

The labour use pattern on sugar plantations is peculiar. Workers are needed for harvesting and planting, but these two activities follow one another closely. Since the new crop must go into ground as soon as the old one is gone, workers are only needed part of the year.

From January to May, plantation workers cut, trim and load the cane onto vehicles for transfer to the sugar mills. Meanwhile, the emptied fields must be replowed, harrowed, fertilized and planted once more with foot-long cuttings from the top of the cane. Later on, the young crop requires weeding and cultivating to assure good growth, and workers pass along the rows several times with ploughs and hoes. In May, work pace slackens for most field workers. The only work left is the repairs around the haciendas. Between 15 and 60 employees are then needed, depending on the size of the plantation. To obtain precise information on the number of workers employed during peak season, we met with five of the six owners and/or managers of Bais sugar haciendas. [106] These interviews confirmed

[106] In 1988, President Aquino signed into law the Comprehensive Agrarian Reform Law known as Republic Act (RA) No.6657. A ten year transition phase allowed for its implementation. In Bais, hacendados took advantage of the transition to create family corporations they leased their land to for 50 years.

the presence of a large rural labour surplus in Bais. According to the figures they provided, an approximated total of 2,300 workers are hired between January and May to harvest the old cane and plant the new one. [107] The overlap of harvesting and planting necessitates a large manual labour force. The number of workers required is however out of proportion with available labour, as the Bais population living in rural barangays is 47,709. Owners and managers we interviewed confirmed that their labour requirement remained stable over the years, and that their need for labour did not keep pace with population growth. They further asserted that even during peak season, hardly all hacienda legitimate workers could be hired, let alone "other workers".[108]

While it is generally accepted that within the past two decades barangays have become crowded, population growth does not appear to be solely responsible for the lack of work and resulting poverty that can be observed in Bais. In our opinion, rather than population growth, population density in relation to access to agricultural land can be linked to the prevailing employment problem. [109]

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107 E.J.Bacang, C.Gonzalvez, R.Nolan, B.L.Pileo and Garcia. Personal interviews, September-October 1993.

108 Legitimate workers are families that have been working on the hacienda for several generations. Illegitimate workers or squatters include husbands of females who married outside the hacienda (and must therefore leave); people who fled the mountains where rebels were in a hiding during the martial law years; and various other landless rural workers.

109 The existence of a large labour surplus also raises the question of the dynamism of the main employment sector. Readers interested in Philippines land reform are referred to Appendix Five for discussion on this topic.

## 4.3 The social role of gleaning

Very early in our study we found that all gleaners could be divided into three distinct categories, and that all of them were related to the Bais prominent structural feature: landlessness. The categories, based on the economic importance of the activity for the gleaners' household, are:

1. Gleaners from households for which collecting shellfish is the main income generating activity, all year round.

2. Gleaners from households for which collecting shellfish is not the most important income generating activity, but for which it remains very important because it completes the annual cycle of activities and/or complements the income generated by other economic activities, that are insufficient to meet the household's subsistence requirements, all year round.

3. Gleaners from households involved in shellfish collecting for the purpose of their own consumption.

The gleaners who supply shellfish to the market day after day, all year around, belong to the first category. Included in this category are female heads of families (widowed or single) who do not get seasonal work on the haciendas, households in which both females and males are involved in collecting shellfish on a year-round basis, and female gleaners from households where the males' only employment is work as extra labour in the sugar field (part-time work during the harvest). Gleaners belonging to this large group do not have any additional incomes and are squatters on land they do not own. In official statistics they are recorded as unemployed. These "illegitimate workers" constitute Bais official labour surplus. The second category comprises the numerous households that combine gleaning, part time fishing , and seasonal work in the sugar fields. Also included in this group are Olympia Island fishing households where females glean to supplement their

husbands' income. In spite of Olympia Island full time fishing households involvement in gleaning, the number of part-time fishing families involved in the activity outnumber by far the number of full-time fishing families.[110]

The type of part-time fishing referred to consists of crab and shrimp fishing, low tide activities that do not require the use of a canoe or any form of capitalization other than a gas lamp (since it mostly takes place at night) and some rudimentary gear, such as cane baskets to use as fish scoops. These part-time fishermen, like gleaners in this category, are the "legitimate workers" of the haciendas who need some income generating activity to bridge the next harvesting season. [111]

Traditionally on Negros Island's plantations, bridging with the next milling season was less a problem than today. Arrangements were made between the hacienda owners and, in this case, stores in Bais City. From June to December, workers could get the rice they needed and when the following harvesting season came, 30% of their salary was sent directly to the store that extended credit during the no-income season. Such arrangements are seldom seen today and where they do exist for some of the "legitimate workers", they

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110 Full time fishing families mostly live on the islands of Daco and Olympia. In spite of times being difficult because of an over exploited fishery, the standard of living enjoyed by most fishing families we met was higher than that of gleaners. Fishing families seem to benefit from assistance provided by family members who lived abroad. Gleaners apparently do not benefit from such support.

111 No data on part-time fishermen is recorded by the Department of Agriculture. Since no permit is required to engage in the activity, it is very difficult to estimate the exact number of individuals who at one point or another enter the sector. According to our observations, there would two categories of part-time fishermen. One of them, not accounted for in this study, comprises sugar mill workers born to a fishing family, and who do have access to various fishing gear including canoes and fishing net. The other category (described in the text) comprises hacienda workers and various unemployed labourers who do no have access to any fishing gear as such.

are not extended to workers who choose to join a trade union. Hacienda workers must therefore engage in some income earning activities. For them, bridging with the next harvest season involves feeding themselves and their families until they are again employed in the formal sector. Gleaners belonging to this group comprise Bais seasonally unemployed.

Lastly, comprising the third group, are households that rely on gleaning for some of their protein intake.[112] It comprises coastal families and the more important group of upland people. [113] The upland area is highly populated by small land owners and hacienda workers who are allowed by the landlords to till small pieces of land for food crops. To diversify their protein intake, they either glean and/or trade root crops for shellfish with Dawis residents.

The poor cannot be without work. This is why the landless rural work force is seldom openly unemployed, even during the slack season in areas where multiple cropping is not practised, such as Bais. A larger part of the workforce may however be underemployed in the sense that it is engaged in tasks with very low level of productivity, or works only a few months a year or a few hours a day.

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112 It may be noted that all three categories of gleaners rely on shellfish for protein intake. Odd and small ones that are not sold are used to feed the family and given to relatives and friends.

113 Upland or mountain people, as they are often referred to, can easily be distinguished from other gleaners. To stock their shellfish, they use large jute or plastic bags instead of baskets. Most upland gleaners are males. Upland females also glean. However because the walk is long from the baranguays were they live to the shore, they mostly glean during the long Fall diurnal tides. Upland females glean in groups of three to four.

For Bais' officially unemployed workforce (our first category of gleaners), a constant preoccupation, as we mentioned earlier, is to engage in any income generating activity. Like other informal workers, the type of activities they can engage in is determined by their access to material resources. Since they do not have access to the most productive resource of all, land, and belong to a group for whom owning a gas lamp is beyond the reach of most households, [114] their options are very limited. They can only enter the informal sector, either glean, catch small crabs and shrimps, or sell shellfish house to house in Dumaguete, Tanjay or at the Terminal in Bais.

The Bais employment situation, although difficult all year around, further deteriorates between the months of July and December when seasonal hacienda workers are out of work. Those months are known in local dialect as KIRIWI: "months of famine". Most of those who are fortunate enough to work during the harvesting and milling season are now out of work and must bridge to the next sugar cane harvest. Their options in terms of income-earning activities are very limited and they too enter the informal sector where they join the year round gleaners.

As early as 1972, the Kenya Mission Report identified the main problem of poverty as one of employment rather than unemployment. Employment in non-farm rural activities is limited and, in the case of Bais, where the agricultural land still bears the marks of the colonial heritage, consists of either gleaning or catching small crustaceans at night. A large number of agricultural labourers are therefore caught in low earning activities, not because of some technical deficiency, such as a lack of skills, but due to a lack of access to productive resources.

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[114] The cost of a PETROMAX lamp required for gleaning and part-time fishing at night was 1 400 pesos in 1993.

While it was very clear early in our study that gleaners belonged to either one of the three main groups, it proved more difficult to assess the relative importance of each respective category used in our classification. Our research design and the absence of a sampling frame ruled out the possibility of precisely ascertaining how many gleaners belonged to each one of the categories. Based on interviews and personal observations, we estimated that the number of gleaners from households who rely on gleaning all year around, and the number of gleaners from hacienda households gleaning to bridge with the next harvesting season were about the same. Fewer gleaners, it seemed to us, belonged to the category of people who gleaned for their own consumption.

In comparing the total number of gleaners, our enumerators counted in November (no data were collected in December) when there is no work on the hacienda, to the number for January, when work in the field resumes, we can however assess with some confidence the number of gleaners who belong to households seasonally unemployed.

The total number of gleaners in November 1993 was 4713, and the number observed in January 1994 was 2769 (Table 1), a decrease of 41%. [115] If, according to our personal observation and interviews, the number of workers in the first two categories is about the same, people who glean therefore consist of 41% hacienda workers, 41% households with no other income than gleaning year around, and 18% of people who glean for their own consumption.

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115 Full time fishing families from Olympia are included in the same category as hacienda workers. Total population on the small Island being only 724, we chose to ignore the few gleaners from Olympia since the influence on our figures would be minimal.

Although most gleaners have fond childhood memories of learning how to glean and playing on the mud flat, and appreciate the quiet walks in receding water, gleaning is no one's choice. Informal workers belong to the lower end of the social strata and consider themselves the poorest segments of the Bais population. The gleaners we interviewed prefer (those who can) to work as sugar cane workers. Field workers are paid 85 pesos a day, and when they work overtime until 8:00 pm, they are paid 40.25 pesos extra. Earnings from gleaning are in comparison very low. The mean price for shells is 6 pesos per litre. Depending on whether they are gleaning alone or have some children contributing to the yield, experienced gleaners can make 30 to 35 pesos a day, seldom more. The proportion of income spent on food rises as income falls. The poorest groups frequently spend as much as 70 per cent of their income on food.[116] Gleaners are no exception. After selling their shellfish outside the market, they get inside and use most of the income made to buy the food they need for the day. Gleaning represents a continual struggle to survive amidst poverty and to get enough to eat, one day at a time.

## 4.4 Economic importance

Because it provides a safety net to so many families who have no other options, the social importance of gleaning is more obvious than its contribution to national growth. Given its very nature, informality is difficult to measure. Informal sector activities such as gleaning are unrecorded in official statistics. In Bais, neither the Department of Agriculture nor the Municipal Council had statistical information on this activity.

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[116] ILO, *Poverty and landlessness in Rural Asia.*

You will recall that the guiding principle of the methodology developed by The United Nations Statistical Office to assess an informal sector's contribution to national economies is the following: if the goods produced can be produced by a third party, the opportunity for commercial exchange does exist, and the market value equivalent of that product contributes to national growth and must be accounted for.[117]

Activities usually performed by individuals employed in the formal sector belong to two categories. These are activities that take place outside the range of growth and those that are highly integrated into national production. In the informal sector, there is a third category of activities. This comprises a no man's land where individuals perform tasks that may not always lead to a commercial exchange, but could very well do so under different circumstances. In 40% of developing countries sampled by the United Nations Statistical Office, such subsistence rural activities accounted for 25% of the countries' GDPs, and in 30% of the sample it accounted for 10%. [118]

Types of activities included in this third category vary depending on whether the goods and/or services produced are primary, secondary or tertiary economic sector activities. Primary sector occupations comprise subsistence activities such as: raising domestic pigs, chickens and goats, the cultivation of bananas and vegetables such as corn, coconut, sweet potatoes and tapioca, hunting (except sport hunting), the gathering of food products (gum, resina, wild rubber, medicinal plants, wild fruits, leaves and roots), kindling, the carrying

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[117] *Ibid*, p. 13.

[118] Ibid, p.15

of water and, fishing (crustacean, mollusc, fish). [119] The goods produced are sometimes intended for feeding the family. They can, and often will, be sold on the market where similar products are sold. In most cases, the production is generated by a single household without any external help (employees) or capital investment. This is often referred to as domestic or household production.

Table 3 showed the monetary value of all the marine sessiles collected by the gleaners comprising our sample. These total value of shellfish collected by the 2 880 gleaners sampled in our study is 799 156 Pesos. In order to estimate the activity's contribution to the overall national economy, we must assess the total value of all the marine sessile collected for the study period. Applying United Nations Statistical Office guidelines, we must attach a market value to all the goods produced. According to our enumerators' data, a total of 25 223 gleaners were recorded for the study period. Knowing the commercial value of the marine sessile collected by 2 880 gleaners to be 799 156P, total value for the shellfish collected in Bais Bay for the 6 months surveyed would therefore be 6 998,997. Although not all shellfish collected were sold, [120] the possibility of market transactions to eventually take place for all marine sessile collected in Bais exists, the value of all shellfish collected must therefore be included in the GDP calculation.

Because data on the Bais finfish fishery and the sugar cane contribution to national growth were not available, we were unable to assess gleaning's economic contribution in relation

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[119] Département des affaires économiques et sociales internationales des Nations-Unies, *Méhodes*, p.16.

[120] As mentioned in Chapter Three, 69% of all species sampled were to be sold and only larger quantities of any single species find their way to the market.

to that of these two formal sector occupations. We could however expect gleaning not to hold up were we able to make the comparison. The virtues of informal sector are its low capital requirement per worker, the number of people it employs, and how it enables large segments of the population to take care of their own needs.

Informal sector activities such as gleaning in Bais, because they are limited in scope, may not contribute to national growth in any substantial way.[121] The fact that the contribution of some informal sector activities to national growth is limited revives the old debate on the sector's general productivity. Recent contributors have however begun to incorporate the diversity of the informal sector into their economic analysis, and do distinguish between the various activities that comprise it. Low status activities, such as gleaning, where existence is essentially at subsistence level, are found in both urban and rural areas of the developing world. But more literature also points to many informal sector activities, mostly located in industrialized areas of the world, that are economically quite efficient and which substantially contribute to national growth.[122]

But even when such is the case, often observers fail to realize the extent of economically efficient production in the informal sector because of the low incomes generated. Notwithstanding its important social role, gleaning in spite of its noteworthy sectoral production, shows low returns. Informal workers such as gleaners are occupied long hours considering that returns for their work provide no more than a poverty level standard of living. In some countries (although this is rapidly changing) social programs provide

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[121] In this case only the vendors income is recorded in National Statistics.

[122] Friedmann John and Flora Sullivan, *Economic Development and Cultural Change*. OECD, *The informal sector in the 1980s and 1990s*.

workers and unemployed with a minimum below which no one is willing to engage in any activities. This minimum is not provided for in the Philippines, and for the "working poor" and unemployed the key factor is to gain access to any income generating activity, no matter what the return may be.

## 4.5 Absorption capacity and pressure on marine resources

The low returns the informal sector is associated with, are the reason why its contribution in terms of economic growth and even employment, is seldom accounted for in developing countries .

This lack of interest is combined with presumptions about the sector, and the poor in general, that do not withstand scrutiny. One misconception about informal sector relates to its continuous absorptive capacity. Whereas informal sector activities are "largely ignored, rarely supported, and sometimes actively discouraged by governments", the sector is nonetheless expected to provide means of survival to the masses excluded from formal employment. As author Ian Bremnan explains:

> "Adherents of this view consider that mechanisms of shared poverty will make it possible in some malleable fashion to provide a living, however marginal and insecure, for growing numbers of self-employed workers and casual wage-labourers. If this belief has ever had any validity, it is certainly no longer the case." [123]

Two elements that provide for the gleaners' ability to supply their own needs have been gradually reduced. The first is the lack of political strength needed to protect their user

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[123] Breman Jan. "A dualistic labour system: Critique of the informal sector concept." *Planning for small enterprises in Third World Cities*. Edited by Ray Bromley. New York:Pergamon Press, 1976 p. 62.

rights. The second, is the limited carrying capacity of Bais Bay marine environment, given the increased pressure on its marine resources.

The employment situation which currently prevails in Bais, that is the presence of large labour surplus and six months seasonal lay off in the main employment sector, results in a increased pressure on Bais Bay marine resources, pressure which in its turn, contributes to the gleaners' decreasing ability to find subsistence earnings in gleaning.

The pressure on Bais Bay may briefly be summed up. Its fifty-four square kilometres of coastal waters are exploited by both the informal and formal sectors. According to studies conducted through Silliman University in the Philippines, there is a total of 3077 full time fishermen who exploit the Bay and rely on fishing for a living. As we also already mentioned, the average density of fishermen per square kilometres in Bais Bay is estimated to be 57, higher than in other Bays of the Philippines for which fishermen density is known. Yet these calculations do not account for sugar mills' workers from Daco Island who rely on part-time fishing, up to six months a year. Catch per unit of effort values (CPUE) is also lower in Bais Bay. The low CPUE combined with relatively smaller size of fish caught indicates of overfishing in the area. [124] In an attempt to have them diversify their activities and alleviate their high reliance on marine fisheries, fishermen are encouraged by various government agencies to engage in the cultivation of oysters and/or mussels.[125] In doing so, they both diversify their income earning activities and increase their use of coastal waters where shellfish are gleaned.

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[124] Silliman University, "Bais Bay Environment and Resource Management Project. Marine Component: Terminal Report (Year 1)."

[125] They also engage in the culture of sea weeds but this activity takes place slightly off shore from traditional gleaning sites.

Marine resources are further threatened by pollution. Important users of Bais Bay not yet mentioned in this study are the two sugar mills located around Bais Bay, in the municipalities of Majuyod and Tanjay. Managerial carelessness in the upkeep of the mills' sedimentation ponds, in the past twenty years, led to their overflow. Release of mills' effluents directly into the Bay resulted in periodic fish killings, increased siltation and long term sedimentation. Lastly, adding pressure to the already over exploited bay are Bais 2300 hacienda "legitimate workers" who need, 6 months a year, to feed themselves and their families, and numerous "illegitimate workers" who rely on gleaning or part time fishing on a year round basis.

A scientific study of the marine sessiles of Bais Bay would be necessary to determine if shellfish stocks are being depleted. However, gleaners contend that the quantities of shellfish collected today are much smaller than what they collected, for instance, twenty years ago. Where they today collect two or three litres of shells, they could in the past, it seems, collect two to three baskets. [126] Residents of coastal baranguay of Okiot on Daco Island also maintain that they used to collect shellfish at the immediate back of their houses. If such was the case, the implication is that in one generation, at least one collection site has been totally depleted. No shells are found in Okiot any more. Nowadays, Okiot residents wishing to glean shells do so in Punta and Sanlagan.

In his study of the fishermen's living conditions on Daco and Olympia Islands, Cadelina notes the crustaceans, mollusks and other marine sessiles, other than finfish, that are the most abundant in Bais Bay. He also lists other marine products that are abundant but for which there is a low demand.

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126 One basket equals more or less ten litres of average size mollusc.

Marine Sessiles that are reportedly abundant: [127]

| | |
|---|---|
| Crustaceans: | lambay, kasag, alimango, takla*, pasayan, pantat* |
| Mollusks: | squid, punao, tahong, dalu papa*, lumayagan*, kulabutan*, bungkawil, ticod, kugita* |
| Other: | lucot, lato, gulaman, dunsol**, ambalang*, balat, budyong*, dagatan* |

Marine Sessiles reportedly abundant for which there is a low demand:[128]

guso, lato, lucot, balat, dalodalo,tomyo, alawaki*, pawikan*, sea horse **

Indicated by a stars are twelve shellfish and sea cucumbers that did not show up once, in the harvests of the gleaners sampled in the course of our study. Neither have we noted their appearance on the market, at any given time. Indicated by two stars are two marine sessiles that were not sampled, but that were sometimes seen during gleaning expeditions. Our study extended from the month of July through the month of February and covered only seven months of the year. The explanation as to why these sessiles never appeared in our sample may have to do with seasonality. It is however amazing that no gleaners, most of them very detailed when it came to describe shellfish they collected, ever mentioned any seasonality factor. We are incline to think that these shellfish and holothurians are simply not found any more in Bais Bay. If such is the case, one important limit of the sector's absorption capacity is most definitely the carrying capacity of Bais marine environment.

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[127] Cadelina, Row. "A survey of fishermen's living condition and assessment of their developing potentials in Olympia and Dewy Islands in Bais Bay, Negros Oriental, Philippines." p. 48-49.

[128] Ibid, p. 63.

Marine resources such as shellfish are public property or a property of the commons. But in practice, common property resources do not necessarily presuppose open access. Communal ownership implies a right that can be exercised by all members of a community. Property rights are then rights in the sense of an enforceable claim to some use or benefit, claim that will be enforced by society, custom or law. In most cases that role is played by the state which creates and enforces the right that each individual has to the resources it declares to be for common use. But as C.B. Macpherson notes:

" A system of property rights is an instrument by which a society seeks to realize the purpose of its members, or some of the purposes of some of its members. But any system of property is apt to change by its own momentum, bringing about effects other than were intended. " [129]

An important implication arising from this definition is that property rights are political. Access to resources may therefore be politically defined and restricted to some parties and denied to others.

In their study about the absorption capacity of the urban informal sector, Friedmann and Sullivan note that although economic constraints and lack of employment will affect all social classes, all categories of workers are not affected the same way.

"Economic insecurity at the top of the occupational pyramid is partly counteracted by the ability of the elite to defend itself politically through legislation that is favourable to itself." [130]

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[129] Macpherson C.B. *Property: Mainstream and Critical Positions*. Toronto: University of Toronto Press, 1986 p. 3.

[130] Friedman John and Flora Sullivan, *Economic Development and Cultural Change* . p. 407.

It is suggested that informal sector workers, because of their lack of political strength, are unable to defend their income position. In the case of Bais Bay gleaners, protecting their income position implies protecting their user rights and traditional access to collection sites. But as the evidence suggests, Bais Bay gleaners do not have the ability to protect their traditional rights. They showcase well how little informal sector workers participate in formal institutions of political decision-making and ressource allocation.

When in the 1980s, the mayor of Bais was asked to settle the conflict between the Brown Mussel Producers Association and the expansionist fish pond owner, both these parties, but no gleaners were invited to the City Hall to present their views and defend their cases. The difference arose out of concerns for the change in the use of Bais coastal waters, traditionally open access, to be converted to private use. It is worth noting that, gleaners, and not mussel producers who made no prior use of the area, were the main user group whose rights were to be infringed upon. The case was nonetheless settled without any consultation with Bais gleaners, and against their best interest. In the process, gleaners lost total access to the areas for which certificates of mangrove stewardship were awarded.

The general implementation of the 1982 Philippines Integrated Social Forestry Program and the desirability of its scheme were never discussed with Bais gleaners. In what manner one of the main user groups was likely to be affected by the proposed changes was never considered by the City government of Bais.

We found that a similar attitude prevailed in the granting of municipal permits required to establish mussel and oyster beds for the cultivation of the two shellfish in areas previously used for gleaning. The interest of the 6,699 gleaners our enumerators accounted for, in

the part of South Bais Bay for which permits are granted, was never taken into consideration. Access to part of South Bais Bay, from Canlargo to well into the mouth of the Panamangan River was increasingly restricted. Upland and lowland gleaners are being excluded from areas they traditionally accessed.

Albeit unofficial and unrecorded, gleaning is highly visible. Hundreds of people walking on the mud flats by low tide are highly noticeable, even for people not familiar with the area. But the City government of Bais, although aware of the activity, seems determined to ignore the importance of shellfish collection for the poorest and largest segment of its population.

The passage of the 1991 Philippines Local Government Code gave the local governments and local communities of the Philippines greater control over aspects of public administration that are of immediate concern to them. Already in 1987, the Department of Agriculture had identified the decentralization of management of coastal waters to be of crucial importance for objectives set in its Fishery Sector Program. [131] But successful implementation of policies set up by central governments depends upon the participation of the masses of rural people in the local political and decision-making process, something which, as our research into the gleaners has shown, has get yet to be realized. The structure of inequality found in rural areas of the Philippines can restrict the ability of municipal governments to carry out policies that are in contradiction to the logic suggested by the concentration of economic powers. So far in Bais, economic and political power has been concentrated in the hands of a few families of land owners. Through

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[131] Munoz Jessica C. "Community-based resource management as an approach for implementing coastal resources management component of the Fishery Sector Program." Unpublished paper. Quezon City, 1993.

decentralization, those who control the land are now in position to control the near shore waters, and thus a common resource became privatized and concentrated into the hands of an elite. The gleaners - historically excluded from the land - are now excluded from the coast resource by means of which they could make a marginal, subsistence living. This is not development. Shellfish stock depletion and competition from fishermen engaged in aquaculture are some of the problems faced by today's gleaners. But with all due respect to Bais Bay's limited environmental carrying capacity, the gleaners' inability to protect their traditional user's rights seemed to be the more obvious limit to the sector's absorption capacity.

## Chapter Five

"Walay asenso ang manginginhas makakuwarta man gani ta sa kinason, igo ra sad nga ikapalit ug bugas, sud-an, ug uban pang galamiton sa balay. Ang among kita, igo ra gyud para sa matag-adlaw namong gikinahanglan. Mo-asenso lang tingali mi kon ang among kita sa paginhas among tapigan ug dili ipamalit...

There is no progress in gleaning. We may make some amount from shellfish but it is barely enough to buy rice, food and other necessities for the house. What we earn is just enough for our daily consumption. We can only make progress if we don't eat, if we save what we make and do not buy the basic things that are needed".

Gleaner of Bais Bay

## 5.0 Conclusion

The problem of the landlessness of the majority of Bais rural population, exacerbated by the seasonal character of the work found in the main employment sector, causes the majority of the municipality's rural poor families, at one point or another, to rely on the informal sector to secure the minimum daily earnings required for their protein intake and basic survival. While some households glean and/or fish part time during off-milling season, others depend on gleaning only for surviving, all year around. The informal sector in Bais provides vast segments of Bais population with a means to provide for themselves and therefore represents a significant phenomenon.

During the six months this research lasted, 25,223 gleaners were counted for by our enumerators, an average of over 250 individuals a day, collecting the shellfish on which they rely for their subsistence. Of these gleaners, we estimated, 41% are hacienda workers off work between harvesting seasons. Another 41% are landless labourers who do not get work on the hacienda and rely on gleaning year round. Lastly, comprising 18% of the gleaners are coastal and upland families who collect shellfish for their own consumption. These shellfish collectors share an astonishing knowledge of the 46 species of mollusc and other marine sessile comprising their catch. Marketing is done in Bais City market where traders from Bais City, Dumaguete City and Tanjay meet with gleaners in the early morning and in the afternoon.

Shellfish collecting is hard work characterized by low returns. It provides the bare minimum required to survive. Yet even this subsistence level of income is threatened. Bais Bay fisheries are overexploited as shown by the low catch per unit of effort of its fishermen and the small size of fish caught.

To diminish their reliance on the wild fisheries, fishermen are encouraged to engage in the cultivation of brown mussels and oysters, intensifying their use of coastal waters. In the process, gleaners are excluded from the collection sites to which they traditionally had access. Interviews with gleaners also confirm that fewer shellfish are caught today. Gleaning provides only an impoverished standard of living, but as pressure on the only nonagricultural source of income increases, accentuating competition for work, more and more landless families have to face the problem of consolidating their very own existence in Bais society.

It is through colonially inherited structures that the Bais informal sector in general, and gleaning in particular, relates to the formal sector. The sugar industry shaped the lives of the population in Negros and in doing so, decided the fate of Bais residents. The industry, through the development of a classic pattern of very rich and very poor, millers and field workers, had adverse effects on the economic development of the area. It led to wide, harsh economic cleavages among the Bais population. Sugar created a native elite among workers, which distorted distribution of profits and created permanent pockets of poverty.

The hacienda mode of production is now in crisis. A world wide surplus has kept the price of sugar down. Eager to see the old colonial structures converted into modern agribusinesses, the Filipino government has included the old plantations as part of the land targeted by its land reform. The problem of the landlessness of rural labourers and hacienda workers is however left untouched since the land reform does not aim at more equity in land holding. The pressure is now on field workers and squatters to leave the hacienda. Alienated from the most important productive asset of all, land, they can only enter the informal sector. Yet the absorption capacity of the Bais informal sector is strongly limited by the gleaners' inability to protect their traditional user rights and the state of over

exploitation of Bais Bay resources. Although it has jurisdiction over coastal waters, the Bais City government seems to ignore the gleaners' difficulties. Its attitude is characteristic of the attitude of formal institutions towards the informal sector in general.

The informal sector has traditionally been stereotyped as marginal, unproductive and seen as an interstitial holding ground for the unskilled. A slowdown in the growth of developing economies in the mid 1980s prompted new interest in the sector, which came to be regarded as a stable component of the national economy. This interest led to some very important questions about informality in general. For several observers, the split of the employment system into two independent sectors seems intolerable. Instead of rigidly applying the concept formal-informal, they suggest that we pay greater attention to distinctions in terms of the different articulated production relations, found in varying degrees and gradations, within the economic system of developing countries. [132] It is also generally accepted that the informal sector, may or may not be traditional, either in its means of production or its types of activities, but that in either cases, evidence points to informal sector's articulation with the formal economy. [133]

Our case study of the informal sector in Bais Bay supports those views. Far from being simple, Bais society, like other agrarian societies, is highly differentiated. Its structure is complex and comprised of various groups such as landowners, peasants, tenants, labourers, traders, plantation workers and several others. Numerous production relations are found in Bais and poverty is spread unevenly among the various groups.

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132 Breman, Ian. *Planning for small enterprises in Third World Cities.*

133 Portes, Alejandro and John Walton. *Labour, Class and the International System.*

And nowhere else is the destiny of the self-employed more closely linked to and dependant on decisions made in the formal sector. For more than a century, sugar represented the most important and influential sector of Bais economic life, and in spite of the problems the industry faces, it still steers Bais economy.

We agree that the economic systems found in developing countries encompass various modes of production, and that it is nearly impossible to demarcate informal sector activities as an isolated sector of the economy. But focusing on the informal sector does not necessarily imply denial of interrelationships between the informal and formal sectors, and the obvious dependence of the former over the latter. Such a distinction may however be required if policy making is to adequately reflect the interest of voiceless segments of the population. The problems that gleaners are confronted with require that both matters pertaining to links with the formal sectors and the question of land, and the management of Bais Bay be addressed.

In the Philippines, legislation required for decentralized management of near shore waters, often lacking in many parts of the world, is in place. The Philippines Local Government Code provides a real opportunity for community-based coastal resources management. But up to now, responsible local authorities have been unsuccessful in allocating coastal resources in an effective way. The City government of Bais's efforts fail to balance the various needs of multiple users. As a consequence, user conflicts, over the exploitation of marine resources and the degradation of coastal water quality are becoming major issues.

The ERMP Canadian bilateral project in Bais helped raise the level of awareness that Bais residents have of their own problems. This increased awareness of coastal problems creates a demand for effective resource management. But to be effective, managerial decisions

must be technically sound, accepted as necessary, and fair. [134]

The coastal resource management capabilities of the City Government of Bais must be strengthened. [135] Meanwhile, the fishery over-exploitation and the Bais Bay pollution problems have been sufficiently documented by Silliman University biologists for sound technical decisions to be made. The challenge for the Bais City government may rest more with its overall accountability. A serious policy agenda for the informal sector must include basic institutional reform, guaranteeing full participation in the institutions of the formal economy. It must also include real opportunities to comment on and critique rules instituted in the past, and those currently being made.

The social costs associated with the poor management of Bais Bay are running high. Landless labourers and hacienda workers who rely on gleaning are in an economic situation that is very precarious. It cannot escalate much further without asphyxiating them. There is an urgent need to achieve the conservation and sustainable multiple uses of the Bais coastal waters. Such however cannot be done without the majority of the population actively participating in the decision-making process, including informal sector workers.

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[134] Lemay H. Michele and Lynne Z. Hale. *Coastal Resources Management: A Guide to Public Education Programs and Materials*. Connecticut: Kumarian Press, 1989.

[135] For instance, requirements for permits for the culture of oysters and brown mussels need to be modified to reflect more concerns with the potential impact of aquaculture on other activities.

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# Appendices

# Appendix 1

**Municipality of Bais banrangays and population as of May 1, 1990**
**(National Census and Statistic Office in Dumaguete, Negros Oriental)**

| Barangay | Population | % of Pop. |
|---|---|---|
| **1. Coastal Barangays** | | |
| (Barranguays without any agricultural land - namely the two islands) | | |
| Capinahan (Daco Is.) | 1214 | |
| Lo-oc (Daco Is.) | 1601 | |
| Okiot (Daco Is.) | 2663 | |
| Olympia (Dewey Is.) | 724 | |
| | **6202** | 10.41% |
| **2. Lowland Barangays** | | |
| (Best agricultural land ) | | |
| Baranggay 1 (urban - City of Bais) | 4547 | |
| Consolacion * | 241 | |
| Hangyad * | 178 | |
| Katacgahan * | 500 | |
| La Paz * | 283 | |
| Rosario * | 193 | |
| Tamogong * | 405 | |
| Valencia * | 916 | |
| | **7263** | 12.18% |
| **3. Upland Barangays** | | |
| (Poorer agricultural land on the slopes of the hills and back country) | | |
| Basak * | 1340 | |
| Cabanlutan | 1373 | |
| Cambagahan | 4296 | |
| Cambaguio | 1198 | |
| Cambanjao | 1132 | |
| Dansulan | 954 | |
| Lonoy | 1811 | |
| Mabunao | 994 | |
| Manlipac * | 1854 | |
| Mansangaban | 1103 | |
| Panalaan | 3582 | |
| Panamangan | 801 | |
| Sabahan | 6147 | |
| Tagpo | 1716 | |
| | **28301** | 47.48% |

* Haciendas

| Barangay | | Population | % of Pop. |
|---|---|---|---|
| **4. Mixed Terrain Barangays** | | | |
| **Coastal/upland** | | | |
| Tamisu | | **2230** | 3.74% |
| **Coastal/lowland** | | | |
| Baranggay 2 ( urban - City of Bais) | | 7341 | |
| Binohon * | | 969 | |
| Calasga-an | | 2386 | |
| Cambuilao * | | 1160 | |
| Canlargo * | | 1453 | |
| San Isidro * | | 283 | |
| Talungon * | | 1102 | |
| Tangculogan * | | 907 | |
| | | **15601** | 26.17% |
| * Haciendas | | | |
| | Grand total | **59,597** | 99.98% |

# Appendix 2

SHELL COLLECTING DATA SHEET

Date: _____

Tide condition: Very low
Mid-low

Gleaning Site: _____

Enumerator: _____

If there are boats used to collect shells:

Number of gleaners: females: _____
males: _____
children: _____

Number of boats: _____
Hours from: _____ to _____

Gleaning Time: _____ Hours from: _____ to _____
(Total hours)

| | Volume | | | | Use (What they do with the shells) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Local Name (species) | No. of Sack Box /Veedol | Wt/Sack Box (kg) | T.Wt (kg) | Price | Collect for Culture | Food for Family | Sell at Market | Sell to Middlemen | Barangay where the Gleaner lives |
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# Appendix 3

## Scientific names of mollusks and other marine sessiles collected in Bais Bay

| **Molluscs** | Local Name | Sample # |
|---|---|---|
| A. Gastropoda (Univalves or Gastropods) | | |
| Family: Strombidae (True Conche) | | |
| 1. Strombus urceus Linnaeus | Aninkad | 22 |
| 2. S. canarium Linnaeus | Bunkawil | 13 |
| 3. S. aurisdianae Linnaeus | Balik-ad/Balik-ad | 9 |
| 4. Strombus sp. | Nasa | 67 |
| 5. Lambis lambis Linnaeus | Sa-ang | 60 |
| Family: Potamididae (Mud Whelks/Telescope Shells) | | |
| 6. Telescopium telescopium Linnaeus | Bagongon | 4 |
| 7. Terebralia sulcata Born | Dalu-dalu | 20 |
| Family: Conidae (Cones) | | |
| 8. C. omaria Hwass | Baloso | 72 |
| 9. C. copitanus Fulcon | " " | 72 |
| 10. C. generalis Linnaeus | " " | 72 |
| 12. C. mustelinus Hwass | " " | 72 |
| 13. C. textile Hwass | " " | 72 |
| Family: Volutidae (Volutes) | | |
| 14. Voluta vespertillo Linnaeus | Kibol | 3 |
| Family: Cypraeidae (Cowries) | | |
| 15. Cypraea annulus Linnaeus | Sigay | 71 |
| 16. C. moneta Linnaeus | Sigay | 71 |
| 17. C. tigris Linnaeus | Sigay | 71 |
| Family: Turritellidae (Screw Shells) | | |
| 18. Turritella terebra (Linnaeus) | Tabagsoy | 11 |
| Family: Trochidae (Top Shells) | | |
| 19. Tectus niloticus Linnaeus | Shahong | 61,62,63 |
| Family: Muricidae (Rock Shells) | | |
| 20. Murex chichoreum Gm | Sangka-sangka/ Matag-Lagsaw | 14 |
| Family: Buccinidae (Whelks) | | |
| 21. Solenosteira sp. | Baboy-baboy | 29 |
| Family: Cymatiidae (Tritons or Rock Whelks) | | |
| 22. Cymatium pileare Linnaeus | Baboy-baboy | 29 |
| Family: Naticidae (Sand or Moon Shells) | | |
| 23. Polinices flemingiana Recluz | Bulan-bulan | 47 |
| B. Class Pelecypoda (Bivalves) | | |
| Family: Veneridae (Venus Clams) | | |
| 1. Periglypta sp. | Bug-atan | 1 |
| 2. Tapes litterata (Linnaeus) | Ligis/Tandi-is | 8, 37 |
| 3. T. variegata (Sowerby) | Tandi-is | 37 |
| 4. Circe scripta Linnaeus | Talipsay/ Pisos-pisos | 23,33 |

| | | |
|---|---|---|
| 5. Palphia exarata (Philippi) | Tandi-is | 37 |
| 6. Clausinella calophyla Hanley | Hagdan-hagdan | 25 |
| 7. Pitar citrina | Punao (Puti-an) | 32 |
| 8. Anomalodiscus squamosus Linnaeus | Punyete | 48 |
| 9. Grafrarium tumidum (Roding) | Punao | 31 |
| 11. Katelysia japonicum | Punao | 39 |
| 12. Gomphina sp. | Punao | |
| 13. Unidentified sp. | Kalaykay | 24 |
| Family: Lucinidae (Lucines) | | |
| 14. Phacoides philippinarum (Reeve) | Embao | 17 |
| Family: Arcidae (Ark Shells) | | |
| 15. Anadara granosa bisenensis (Shenck ans Reinhart | Bakalan | 7 |
| 16. Anadara sp. | Litub | 6 |
| Family: Pinnadae (Pen or Fan Shells) | | |
| 17. Atrina vexillum gouldii (Reeve) | Talab | 10 |
| Family: Cardiidae (Cockles or Heart Shells) | | |
| 18. Vasticardium sp. | Tikod-tikod/ Sulod/sulod | 26,27 |
| Family: Solenidae (True Razor Clams or Jack Knife) | | |
| 19. Sinonovacula constricta (Lamarck) | Tudlo-datu | 28 |
| 20. Spongylus sp. | Tikod | 16 |
| Family: Anomiidae (Jingle Shells) | | |
| 21. Placuna placenta (Linnaeus) | Lampirong | 30 |
| Family: Mytiladae (Mussels) | | |
| 22. Modiolus metcalfei (Hanley) | Tahong | 34 |
| Family: Isognomonidae (Tree Oysters) | | |
| 23. Isognonom isognonom (Linnaeus) | Luwag-luwag | 45 |
| 24. Isognonom sp. | Talipis/Taglipis | 35 |
| Family: Mactridae (Surf Clams or Trough Shells) | | |
| 25. Mactra antiquata (Spengler) | Bulok-bulok | 36 |
| 26. Lutraria arcuata Reeve | Bila-og/Balolo/ Tambalolo | 40,44 |
| Family: Psammobiidae (sunset shells) | | |
| 27. Sanguinolaria sp. | Tamislat | 38 |
| 28. Gari gari (Linnaeus) | | |
| Family: Glauconomidae | | |
| 29. Glauconome rugosa Reeve | Bayuyan | 41 |
| Family: Pteriidae (pearl oysters) | | |
| 30. Pinctada mortensii (Dunker) | Luwag-luwag | 45 |
| Family: Ostreidae (Oysters) | | |
| 31. Crassostrea sp. | Talaba | 46 |
| 32. Crossostrea cucullata (Born) | Sisi | |
| 33. Myadora striata Q and G. | Sisi | * |

**Others**

| | | |
|---|---|---|
| 34. Dolabella auricularia (sea hares) | Dunsol | * |
| 35. Dolabella auricularia eggs | Lucot | * |

* No samples provided

**Appendix 4**

**Gleaner's places of residence and respective collection site**

| Barangay of Residences | Collection Sites |
|---|---|
| Capinahan, Lo-oc | Capinahan |
| Dawis, Basak, Cambuilao, Tapon Sta-Cruz, Tanjay, Manipis, Sta-Theresa, Capinahan, Hda Medalla, Hindungawan, Combado, Samparol, Hda Del Prado | Canlargo |
| Cambuilao, Rosario, Hindungawan | Cambuilao |
| San Sebastian, Tamisa, Tabla Sitio Pispong, Candigomon, Panambalon Bais City, Batogan, Binohon, Tangculogan, Catakgaham, Canlangkis, Candigomon | Batogan |
| Sanlagan, Lad-it, Lo-oc, Okiot Canibol | Talabong/Punta |
| Tavera, Cabanlutan, La Paz Olympia, Sta-Lucia, Barangay 11, Lo-oc, San Isidro, Hda Valencia, Tangilugan, Poblacion (Mabinday), Candumao, Hangyad, Talundon | Talungon |

# Appendix 5

## Land Reform in the Philippines:

In her study of agribusiness and agrarian reform in the Philippines, Agnes R. Quisumbing distinguishes between modern and traditional plantations. [1] According to the author, the hacienda mode that characterizes sugar cultivation in Negros, provides the best example of traditional plantations. Examples of modern Filipino plantations would be banana and pineapple export plantations. Implicit to her description, is a less efficient use of both land and labour. In Negros Oriental, only one hacienda made the transition from traditional to modern production. In this specific case, total area devoted to sugar was modified and reduced from 700 hectares to 200 hectares while the same sugar production was maintained. The case in hand is that of the Sycip hacienda in Majuyod. The owner choose to implement the Land Reform Act and to diversify his activities. He now owns 69% of the hacienda assets while an hacienda workers cooperative owns 31%. [2] In the process, the number of workers employed was reduced. Of the 3000 workers that were employed in 1970, only 300 were needed in the 1990s. [3] Increased rural productivity through more efficient use of labour and land, if not aiming at increasing income and employment per unit of limited land areas, result in increased landlessness. For instance in Punjab (India) where the Green Revolution raised incomes dramatically, the percentage of the rural population living in poverty and landlessness has rise. [4]

Agnes Quisumbing reminds us that the inclusion of the plantation sector in the Philippines land reform was not designed to increase equity in the countryside by homogenizing the land ownership structure. It aimed at expropriating feudalistic agrarian structures, and its objective was to induce the establishment of agribusiness plantations, supported by small

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[1] Quisumbing, Agnes R. "Agribusiness and Agrarian Reform: Modern and Traditional Plantations in Mindano and Negros." *Agrarian Reform and Official Development Assistance in the Philippines*. Occasional Paper No 13. Canterbury: Centre of South-East Asian Studies, 1990.

[2] Moises Sycip. Personal communication. August, 1993.

[3] Ibid.

[4] International Labour Organization. *Profiles of rural poverty*. Geneva, 1979.

farms which supply the former with labour. Underlying this model are assumptions regarding the existence of economies of scale in agriculture. The author suggests that economies of scale can be overcome through appropriate institutional innovations such as contract growing.

Further discussion on land reform is beyond the scope of this thesis. But Bais' unfortunate reality is that in the wake of the sugar crisis and what is perceived as a bias in government policy toward agribusiness ventures, few family corporations feel any responsibility for their workers. Most react to changes by putting pressure on them to leave the hacienda, thereby adding to the existing stress of the agricultural labourers.