Family Housing in San Fernando, the Philippines: Tradeoffs and Choices In the Use of Dwelling Space

by

Masako Niimi

Bachelor of Home Economics(1989)
Kyoto Prefectural University

Submitted to the Department of Urban Studies and Planning
in Partial Fulfillment of the Requirements for the Degree of

Master in City Planning

at the

Massachusetts Institute of Technology

June 2000

Signature of Author:

Department of Urban Studies and Planning
May 18, 2000

Certified by:

Anna Hardman
Thesis Supervisor
Visiting Lecturer of Urban Studies and Planning

Accepted by:

Paul Smoke
Associate Professor of the Practice of Development Planning
Chairman, MCP Committee

Family Housing in San Fernando, the Philippines: Tradeoffs and Choices in the Use of Dwelling Space

by

Masako Niimi

Submitted to the Department of Urban Studies and Planning
on May 18, 2000 in Partial Fulfillment of the Requirements
for the Degree of Master in City Planning in Urban Studies and Planning

ABSTRACT

Households make decisions on housing based on their budgets, preferences, and the family lifecycle. The outcomes we observe are very diverse. This thesis explores the causes and effects of these heterogeneous housing choices by looking at family characteristics including income, occupations, and ages of family members. It looks at outcomes by examining floor plans of the houses they build and alter over time. Housing choices are explored in terms of four major issues: crowding, tenure rights, time (time-span in a house and house owners' age), and home-based enterprises (HBEs).

The study was carried out at two sites in San Fernando, the Philippines: a government relocation settlement and an informal squatter settlement. This study shows how family needs and values produce a variety of housing decisions in both the resettlement and squatter sites. The data show how the residents' housing choices reflect their limited economic resources and different personal and tenure security needs and preferences. In these two survey sites, many factors enter into the tradeoffs households make, including land title, household size, plot size (and the uniform plot design in the resettlement site), and a desire for personal security against natural disasters.

In this study we see how households can utilize their dwellings for small business activities to gain income with little risk: some families surveyed, especially in the resettlement site, had created thriving HBEs. Thus mixed land-use in the residential site can help families survive the uncertain economic conditions such as families often face in resettlement. I argue that this should be incorporated in future housing policies.

Settlers build a variety of housing types: squatter shanties, shacks expanded into sturdy two-story dwellings, houses with businesses. The numerous and sometimes unrelated variables which determine their choices can make it difficult for planners and government officials who depend on statistics to formulate solutions. However, the outcomes we observe reflect how families adapt to their environment to sustain themselves with limited resources. Above all, planners need first to examine the reality of a neighborhood and then to make room for households' heterogeneous choices and tradeoffs in their plans.

Thesis Supervisor:
Anna Hardman
Visiting Lecturer of Urban Studies and Planning

Thesis Reader:
John de Monchaux
Professor of Architecture and Urban Planning

Acknowledgment

The author is indebted to many people and it is impossible to recognize them all by name. The following, however, have made personal contributions without them, this thesis could never have been written.

Anna Hardman
John de Monchaux
Paul Smoke
Ashna Mathema
Nayana Mawilmada
Mayor Mary Jane Ortega

The directors and staff of the
World Bank
City of San Fernando
Urban Studies and Planning, MIT

My parents

The author especially acknowledge the help of both my advisor and reader. Anna Hardman, my advisor, who was more generous with her time and attention than I ever expected or deserved. This thesis would not have been possible without her advice.

John de Monchaux, my reader, gave the author the invaluable suggestions regarding architectural approaches. His advice was also a source of encouragement through the course of this study.

Contents

Introduction

Demand for Housing: Households Make Choices and Tradeoffs

Households across the globe make choices to allocate their limited budgets on needed goods and services, such as housing, food, transportation, education and entertainment. Similarly, they make choices and tradeoffs between space and other housing attributes, such as quality and quantity. The elements of the home – quality of materials, size and number of rooms, furniture, fixtures, etc., reflect a family's priorities. Choices are influenced by social, cultural and economic characteristics including family relations and lifecycles, neighbors and friends, prices relative to income, financial conditions, access to loans, cultural customs and social rules. Choices are also influenced by the context: prices of land and housing; cost of other goods and services including transportation, and availability of infrastructure.

Some households may choose the location first because their priority is to live near the work place to save time and transportation fares. Some occupations such as farming, fishing and factory work require families to choose a home in close proximity to a particular job site. Accessibility to work, school and other city services can be a priority on a list of housing attributes. Some households choose to tolerate substandard housing rather than buy or rent a more spacious home, in order to save for a larger home or education for their children in the future or as a precaution against unexpected events. When circumstances change and allow them to invest in a home, they can use their savings for housing.

This thesis examines the choices made by low-income households in San Fernando, the Philippines, in two particular neighborhoods: an informally developed government resettlement site and in a squatter settlement site close to the sea. In order to understand the needs and expectations of residents in these places, this study will look precisely at family characteristics including income levels, occupations, ages of family members, and more specific factors such as floor plans of a sample of about 20 households in each of the two neighborhoods identified for this study. Furthermore, housing choices are examined in terms of four major issues: crowding, tenure rights, time-span in a house, and home-based enterprises (HBEs).

To analyze housing demand and choices made by households, economists often employ statistical models such as hedonic models. More generally they use regression functions to identify required prices of housing attributes from observed consumption choices. With this approach, they try to generalize varied household characteristics and family and cultural preferences and translate them into an equation. This hedonic model is particularly useful in identifying how many variables affect housing prices.

However, statistical models do not necessarily realistically represent all the dimensions of a community. Statistical models tend to ignore a variety of lifestyles chosen by households, because their purpose is to specify several influential variables. When we try to understand a group of households under particular conditions, such models cannot explain all the complicated decisions families make such as why some middle-aged households prefer a house made with high quality materials to secure a safe refuge for their old age, and why some young households are reluctant to spend much on housing because they expect to move later for more desirable jobs or other reasons. In addition, statistical methods cannot depict specific types of housing and community needs

that do not fit statistical assumptions. This approach can seriously limit findings.

This thesis, thus, will look at detailed housing profiles of individual households in two communities in a Filipino town. Case studies of households and neighborhoods can tell us more about the heterogeneity of choices and housing outcomes. To better understand this dynamic, data was collected on family profiles and floor plans in order to identify factors that influence household choices and behaviors. Our look at two locations in one city, a squatter settlement and a resettlement site, will show actual distinctions in two different environments. It will reveal how households at each site tried to improve their housing, based on their limited resources. My goal is to show how we can use housing policies to better understand the kinds of choices households actually make, and to better plan based on their actual needs. I will also examine important questions raised in the literature using this approach to obtain insights into the complex process of the development of settlements.

Structure of the Thesis

Chapter 2 will begin with a brief review of the specific aspects of housing problems related to informal (mainly squatter) settlements across the globe. It will focus on four issues that affect household decisions: crowding, length of residency, tenure rights, and home-based enterprises.

Crowding is measured by space per person: this is generally used to assess the level of comfort in housing. Property rights are another major reason why households invest in housing. However, squatters who do not have title to the land tend to invest much more in housing because they feel they are protecting themselves against evictions and they believe this will help them obtain ownership of the land.

Time has two meanings here: a time period a family has lived in the same home; and a house-owner's age. They are key factors in a household's decision to upgrade their housing.

Homes are often used for small business as an income generator. Working at home especially benefits low-income households because investment risks are minimal and they do not need to rent additional space; furthermore, mothers can take care of their families while working at home.

Chapter 3 provides a description of the survey of the 42 sample households and including demographic data. The survey was conducted in two sites in San Fernando, the Philippines. This chapter presents the project's background and descriptions of the two locations. The survey method will also be presented along with the summary statistics of the survey results.

Chapter 4 will analyze four key housing issues--crowding; property rights; time; and home-based enterprises--identified in Chapter 2 using the survey data. Based on a detailed analysis of each household regarding four topics, I will highlight existing constraints on improving houses, and the differences and similarities in housing circumstances between the two sites, Catbangen and Sagayad. This can help us understand how a government program that helped ex-squatters (now living in Sagayad) obtain legal property rights, influenced the families' housing choices.

I will analyze the amount money that households invested in their homes and how that investment influenced their housing conditions, and whether their need for security of tenure influenced the investment.

I will also look at some special cases; some households tried to utilize their limited space as much as possible to expand for their efficiency.

I will examine households who used their homes as businesses to analyze their characteristics, such as the size of their space, how they actually used the space and what kind of businesses they ran.

Chapter 5 will summarize the survey results, and then explore some policy implications and related research topics that need to be explored further. Based on an analysis of the data presented in Chapter 4, I will discuss possible policies that could benefit residents in the squatter settlement and the resettlement sites. For future housing projects, I will also raise additional questions related to families' choices in housing that aim to further expand urban planners' understanding.

2. Literature and Issues

For a better understanding of housing issues facing the city of San Fernando, this chapter will explore the literature focusing on four topics: crowding; property rights; time; and home-based enterprises (HBEs). These topics will continue to be discussed in the analysis, Chapter 4.

Problems related housing discussed in studies cannot be limited to physical issues. Family decision for making investments in housing usually incorporate wide-ranging physical and social factors. These factors which are often related to each other change circumstances over time. Time and financial constraints, degrees of urgency, and tolerance to current living circumstances also affect the decision. Choices about housing depend on the priorities of individual families, and their circumstances at a particular time; some choose to live in an inferior house under difficult conditions so that they can save capital for a large housing investment in the future. Others invest in better materials to make a safe haven for their families' lives. Choices are varied and reflect family needs and plans in life.

In essence, time and property rights influence households in their choices. Crowding can be the ultimate result of their values and preferences. A home-based enterprises is one of the choices that could influence dwelling space. Many planners/scholars have examined these factors in order to identify housing problems. The studies of these factors will be reviewed to clarify the steps that most families take to achieve better housing. This chapter will discuss each of the four points regarding housing choices, and introduce some useful hypotheses to reshape them for my analysis.

Crowding

Crowding is often considered a primary problem by both planners and the public. Crowded living conditions make life more difficult because they reduce the individual and the family's personal space and make any sense of individual privacy impossible.

Crowding is also often used as a measure of whether the housing sector provides adequate living space for every household in a region. A common measure of crowding calculate the number of people per bedroom or floor area per person. According to the Housing Indicators Program (Mayo & Stephens, 1992), floor area per person is one of the key indicators and is defined as the median usable living space per person; for example, in the Philippines it is 11 m^2/person, and in the US it is 59.95 m^2/person. These figures imply a wide range of acceptability. No one standard can be calculated.

In developing countries today, urban areas are being affected by increasing population. Most cities face rapidly growing numbers of migrants. This high rate of population growth results in severe pressures on the housing stock and spiraling prices; and hence over-crowding. In such cities it is essential to understand how families compromise on issues such as over-crowded space and investments in additional space.

Perceptions on crowding vary by economic status and culture. Cultural differences affect tolerance crowding. One culture's standard does not always match another's. In the US, people think privacy and independence especially important, and houses are required to have enough space for children to be given individual rooms at an early age. However, migrant family members often live together more closely at home. Cultural differences determine about how much space families need for comfortable circumstances.

Income and House Ownership

Follain and Jimenez's econometric study in three developing countries, Korea, Colombia and the Philippines, explains relation between housing floor area and households' income by looking at households' willingness to pay for additional unit space (1985). The study shows that as households' income rises, the amount of money that households are willingness to pay for additional dwelling space changes. However, the change varies by city and by country, and ownership of housing also influences their willingness to pay for additional space. For renters in Soul and Busan (Korea) and both renters and house owners in Davao (the Philippines) the amount that households are willing to pay for additional space increases as their income rises. Yet the amount of money that owners in Korea and renters in Cali (Colombia) are willing to pay for additional space shows an inverse relation to income.

The study reveals that an increase of income is not always associated with household investment for larger houses. Often the amount of housing investment in additional space can increase more slowly than as household income.

Household Size

It is not difficult to imagine that as household size gets larger, dwelling space become more crowded. The Follain and Jimenez's study also explains the relation between household size and dwelling space, by looking at household demand for housing characteristics. They show that household size affects households' willingness to invest in additional dwelling space

(1985). They point out that households' willingness to pay for additional space often declines as household size increases. Small households (1-2 persons) are often willing to pay more for additional unit space than larger households (more than 5 persons).

This study tells us that larger households in size often spend a smaller fraction of their income to expand their housing compared to smaller households. Large households tend to occupy more crowded housing while small households can expand dwelling floor area.

Effects of Housing Price

In areas with extremely expensive land and high construction costs, new housing tends to be on small lots with small living areas. Especially for very low-income households, small homes or apartments are wiser investments than larger houses. In Korea, despite recent rapid economic growth, people tend to live in crowded housing. Due to the high costs of housing, two and more families live in one home while their income increases. The cost of construction is far higher than most low- and middle-income households can afford. High costs constrain living spaces for most Koreans (Lim, et al. 1982).

Cost, quality and size of a housing unit are main factors that families consider when deciding on where to live. Price is important as well as preferences and income. Among these three main factors, affordability is the most influential reason; quality and enough space for family members follow (Murray, 1997). Because the cost of construction and land are far higher than households consider affordable, even though they are in principle willing to spend their savings for additional dwelling space, the high costs discourage households from investing in housing. As a result, the households stay in crowded housing.

Cultural Influences

Living conditions, whether they are crowding or below-standard housing conditions, are usually measured by the number of persons per room in one house. When crowded, it does not always indicate that an unfavorable situation is perceived by households.

People with the same cultural experiences and religious beliefs tend to live in the same community. They feel comfortable to live near others with the same cultural and social manners and who speak the same languages, and often share their rooms and houses in order to live close to each other. Such cultural preferences sometimes lead to crowded living space.

In New York, crowding is one of the key housing characteristics associated with residential segregation in communities. A study on New York's Hispanic dominated residential areas (Schill et al. 1998) indicates that Hispanics are likely to live in crowded houses. They tolerate crowded conditions for various reasons: to save money to send their extra savings back to their home country, to raise their socioeconomic status, and to care for extended families, especially their small children and elderly kin.

Pader (1994) also finds that Hispanic households prefer staying with many people; relatives, friends and visitors, to avoid isolation and get useful information. This living style let new residents adapt to new circumstances faster. Therefore, immigrants are more likely to live in crowded circumstances. She shows that Mexican-origin households in US tend to value physically and mentally intimate living with family members. Sharing bedrooms between family members is a familiar

custom, and having multi-purpose rooms (a living room can serve as a dining room and a bedroom) is a common practice, resulting in housing below minimum room requirements. In Mexican-origin households' houses, it is very normal for family members to share bedrooms, especially to share a bedroom with children. Thus, Mexican-origin families choose "crowding" (Pader, 1994).

In essence, households' choices about floor area and crowding vary, from economic and financial ability to cultural influences. Income and household size are major factors that affect whether a family decides to invest in additional space. Housing price also influences their decision to pay for extra space. Crowding often reflects values and cultural norms. Crowding increases intimacy between family members in certain cultures, and is thus not viewed as only negative effects.

Based on this literature review, below are hypotheses to be explored in the analysis.

Concerning crowding:

- Income associates with household investment in housing. As income rises, a household may spend more in housing, and a level of crowding generally decreases.
- Larger households in size may tend to spend more in housing to expand floor area. Therefore, crowding condition is not necessarily worse than smaller households.
- Cultural social behavior about family relation influences their choices about location such as a proximity of relatives.

Property Right

Investment

> Afraid of repetitions of her earlier experiences of forced removal by police action, the family made no investments and lived in provisional shacks. As there were no apparent moves to eradicate the settlement during the first five years, the family decided to risk investment in permanent building which, they calculated, would consolidate their squatter's claim. (Turner 1977, 95).

Without formal property ownership, often illegal settlers in developing countries invest in their homes. It seems that, if there is a possibility of eviction from the squatted land, the amount of investment in property must be little. However, people in informal housing settlements often take a risk and spend large amounts to build and upgrade their houses without tenure security.

The threat of demolition often has little effect on squatting. In order to prevent further invasion on state land, the governments have demolished squatter homes and entire settlements, and have fined and jailed settlers. In Jordan for instance, Razzaz reports that:

> They know that a makeshift shelter stands little chance, and that the more they invest in permanent material the more their claim to the land is legitimized. To them, consolidation and investment is part of the process, and not a by-product, of gaining security. In fact the case of Yajouz suggests that as the threat of demolition is reduced and essential services are obtained. people's willingness to pay to obtain legal title is significantly diminished.
> Whether the land is registered by the authority, means little. In order to make their lives more likely to continue, they challenge the regulations. A better house is required. Further, to squatters, the heavy investment is a way to claim the title on the land. In other words, legal property rights can be achieved in the end when the substantial amount of capital have been invested (Razzaz 1993, 351-352).

unless a squatter's house has a roof made with permanent materials, the structure is often demolished. This regulation was legislated on the basis of the bias that squatters prefer not to invest in upgrading their house, so the Jordanian government believes squatters rarely build homes with permanent materials. The result was different from what the Jordanian government expected. Against the pressure of eviction, settlers quickly and systematically constructed roofs and their home with permanent materials. They arranged to complete the building of houses before the planned inspections by government officials (Razzaz 1993).

Quality

House owners both in legal and illegal settlements evaluate their housing quality in the similar way. Although house owners in illegal settlements can face evictions by governments, they often spend much money on housing, and they build houses made of high quality permanent materials. We can see many similarities of the housing qualities between in legal settlements and in illegal settlements. The reason why the houses in legal and illegal settlements show similar qualities is that illegal settlers living in high quality housing feel possible little to be evicted. Their personal feelings about

safety against eviction influence their willingness to invest in housing, resulting in quality of their houses.

According to Jimenez's research in Tondo, a squatter settlement in Manila (the Philippines), older houses are considered hither quality. After a long period of living in the same place, illegal settlers (squatters) see little risks of eviction and feel secure to put labor work and materials on their houses. For them, housing improvements are associated with time period living in the same place, and capital expenditures on materials and fine external appearances. In Tondo, the quality of housing materials is quite high: 30% of informal housing units have cement walls and concrete foundations. Size is another indicator. The mean of floor areas is $61m^2$, and more than half have second floors. Since the government has not evicted squatters, residents have made more investments, resulting in high quality and larger houses (Jimenez, 1982).

De Souza's survey in Recife, Brazil, shows illegal settlers' varied views on security. Both family members' safety and their perceived tenure security affect the quality of housing they construct. Purchase of a shack provides squatters of initial security of tenure. Because intense clashes occur between squatters, and squatters and landowners. New squatters face such risks, and need to improve their shelter to prevent violence. Once they build a house, their sense of security increases, and squatters can use their savings and building skills to improve their housing. If squatters cannot improve their houses, burglaries and clashes between residents often keep squatters in a temporary or transitional level of housing. A sense of security comes from both tenure security and the continued safety of family members (De Souza, 1999).

The hypotheses that I have proposed based on the literature on property rights are:

- Levels of personal secure feeling influence investment in housing. Legal settlers who have land ownership and squatters who feel safe against eviction invests more.
- Property rights are not the only factor influencing squatters' housing improvement. Illegal settlers' feeling of security is based on experiences of eviction and also dangerous circumstances.

Time

> The principal disadvantage of the 'progressive development' procedure...is that the family must live in a mixture of provisional and incomplete structures for a long period. This, however, is offset by a number of advantages: the important problem of security is solved; the more spacious, though incomplete, house is far better than the overcrowded and far dirtier slum; the freedom that the family has to build what it most needs in accordance with its changing styles of domestic life; and perhaps most important of all, the incalculable value of the self-built house as a vehicle of family and local community integration and development. (Mangin & Turner 1969, 134)

A Family Lifecycle

At the early stage of settlement in a new location, low-income households can afford to build only a temporary or a small part of their houses. Due to insufficient resources, their first dwelling is simply for survival. Along with their lifecycles or with time spent on a particular plot, households can modify their homes.

Household's willingness to pay for construction and materials depends on their expected satisfaction with their new living housing and communities. If they feel uncertain about their chance of remaining at the present housing, very low-income households often choose to share a house or to build a petty shack in urban areas. Simply, they can enjoy the benefits of urban facilities, rather than pay high rent and to tolerate a long commute to the work place. It is desirable to save a small amount of their limited income for future expenses.

Priorities change in family's lifecycle. Food can rarely be reduced below the minimum consumption for all generations. Households' other expenditures for consumer goods and services depend on a stage of family cycle and their needs. If room sharers or tenants are a young family, they can expect much higher economic advancement in the future than households with older members, and set a priority to maximize the savings. For them, the low physical quality of dwellings can be accepted with hopes for future investment in better housing. Materially high quality housing is not always preferable for young families. For middle aged or elder households, comfortable housing becomes important for their retirement (Turner, 1977).

Age of Settlement

Low-income households often live low quality housing. For them, housing modifications is desirable. Public housing for low-income households are often designed small dwelling spaces, and neglect that households are various in size.

According to Shiferaw's study in the case of Addis Ababa, Ethiopia, housing projects offered evicted people uniform homes of sizes. Resettlers have been transforming their houses by themselves since moving in. They need extra rooms, due to more room for cooking, sleeping, generating income by business, protecting harsh climate and stable high quality housing. Households created subdivisions and extensions of their dwellings. The long time residency of the settlement give households time to save extra income for construction and to construct by themselves (Shiferaw, 1998).

Expansion often benefits owners' siblings as well. Tipple (1992) in his study overviews motives of dwelling modification. Because of social obligation, low-income

households often live with extended family members. When Married couples cannot find affordable housing, couples often decide to stay with parents. In many urban cities, households are expected to provide free accommodations and save money. Those who recently moved to urban cities often co-reside with relatives to survive unemployment.

Besides physical satisfaction, additional space supplies family members more privacy. With an increase in floor area, quality of housing facilities can be improved such as toilet, kitchen, bathroom, waste disposal systems are improved and added to original plans for users' convenience (Tipple, 1992).

Time, time period or span living in the same home, can stimulate a family to make an investment in modifications and home additions. Households change original small home into more comfortable space to match their lifecycle and various social and economic needs. That results in various generations and housing. Such heterogeneous societies can prevent the deterioration of community where household live.

In general, time benefits low-income households and illegal settlers because they tend to live in a small house. Taking the above factors into account, I have formed the following hypotheses:

- Middle and older householder invest more in housing for upgrading.
- Time allows them to expand their homes to acquire more floor area for their family members and relatives.

Home-based Enterprises (HBEs)

Urban planners have carried out research on HBEs since 1970s and related studies have continued today. Yet, the linkage between housing and the informal economic sector has been largely ignored. Housing policies have also rarely examined integration between housing and economic activities. It is important that policy makers and professionals take into account benefits of HBEs.

Small-scale Home-based industries

According to Strassmann (1988), his study in Lima, Peru, shows the HBEs distribution is not uniform. Mesa (1990) also points out the difference between two community in Medelline, Colombia, that 36% of houses in pirata, unauthorized subdivision, are used for economic activities, but 21% in squatters' invasion settlements. To rent rooms to others is more common business in pirata settlements (36%) than in invasion settlements (3.4%). The reason for these differences is that the older pirata settlements have more economically and socially stable conditions so that more intensive economic activities and more established markets are established.

If settlers or squatters face relocations, ensuing physical changes in buildings and communities affect the HBEs. Small shops owners or vendors take little risks when rebuilding their space. They can operate temporarily, and they move to larger plots which enables them to enhance their activities. Small manufacturing owners affected more than shop owners and vendors. Because much funding is required.

Relocation also cuts off customer-producer connection. Customers know the quality and the prices of familiar retailers, and know where they are located. In new environments and new neighbors after relocations, some HBEs may produce noise and putrid odors, and expand activities onto the surrounding sites. If residents know each other, such impositions are often tolerated.

The payment for improved services after relocations, such as water and electricity, and government regulations of residential areas make it difficult for some HBEs to survive. "Site and service"-style relocation often requires HBE owners construction work for their homes and payment for their plot. For squatters running HBEs, tenure security is not a priority. Relocation sometimes creates incredible problems for HBEs (Leynes, 1990).

Home-based Space Utilization

Housing is often more than a shelter for families who utilize the dwellings for economic activities such as shops, restaurants, hand-looming and printing factories, and automobile repair service. For very low-income households, working at home is attractive as primary or secondary income since HBEs require no commuting, and no rent for additional space. To utilize a house for economic activities, low-income households are often willing to spend on and work for housing to make their home productive.

Mesa (1990) suggests a classification of HBEs into three groups: 1) window sales-petty retail operations via an existing window by a little participation requiring minimal participation by the family , 2) small shops in a family's front room that is used as retail space with the same access to a dwelling unit, and 3) attached yet independent shops or workspaces- space separate and independent from living space used by the household members or renters. These classifications portray how homes can be used as a base for

work.

Many HBEs are informal and are often operated by women who prefer to work in the house because they can do domestic chores, such as cooking, laundry and taking care of small children. In Lesotho, the Republic of South Africa, many rural-urban migrant women work at home in jobs such as beer brewing. Living in shacks, they pay little rent and start up brewery businesses at home because it is easy to enter with little capital. Space and business is closely related in these HBEs and women need stable housing to sustain their business(Mapetla, 1996).

When working in houses, people compromise by accepting limited living space to minimize economic risks, rather than renting an extra room for their industries. In addition, it is easy to shift labor, equipment, materials and space from one use to another at home. Regarding space utilization and earnings, according to Strassmann (1987), dwelling with HBEs in Lusaka, Zambia, are larger than those without HBEs, and income of households with HBEs is by 10.7% above those without HBEs. In Colombo, Sri Lanka, although the size of HBE space varies, income of household with HBEs is by 10.3% above those without HBEs.

The amount of suitable and affordable HBE work spaces is difficult to predict. A study by Strassmann (1990) shows that in his case studies of Kalutara, Sri Lanka, and Lima, Peru, the amount of floor-space is significantly associated with the level of HBE income. In both cases, working at home is an advantage for the family to have more income and space for their living.

Findings from above literature and hypnoses for my analysis are:

- Older settlements are often economically and socially stable, so more households participate in HBEs.
- Few HBEs can readily restart their business immediately after relocation.
- For women, it is preferable to operate HBEs.
- Dwelling spaces with HBEs are larger on average than that without HBEs,
- Household income with HBEs are higher than whose without HBEs.

3 Survey and data

Project context: City Development Strategy

As rapid development has occurred around the world, regional governments as well as national government try to find more productive and sustainable growth. They also find and seek ways to solve their problems more flexibly and progressively.

While various forms of development are demanded, in 1999, the World Bank set out to seek an alternative approach to development, the City Development Strategy (CDS). The goal was to encourages inter-sectoral and inter-regional development.

The Philippines is one of the seven countries participating in the CDS. Local governments were encouraged to submit proposals for regional development on multi-dimensional scale. Among the seven cities in the Philippines, San Fernando is the most active city. The mayor has been entrepreneurial in encouraging and seeking support for dynamic development policies at the city level.

This research was carried out as a field study for the CDS, which provided funds for five MIT graduate students to do field work in two cities in the Philippines in the summer of 1999. The objective was to provide assistance and to report problems both to city officials and to the World Bank about issues in the implementing of the CDS, such as infrastructure, coastal environment, tourism and so on. Sun Fernando had specifically requested three MIT students to research about shelter and land-use issues and the graduate students spent one and half months in San Fernando.

San Fernando officials identified housing as one of the most critical problems to be solved if they are to achieve a social improvement. They see their disadvantages, lack of adequate housing stocks, undeveloped housing market, and growth of demand for homes in the cities as problems.

Housing demand in San Fernando came from a rapid population growth, which reflected natural increase; immigration flows; and, above all, a growing population of transient students, private and government employees. A second problem was the inadequate housing conditions in the illegal settlements. Housing development aimed at all range s of household incomes.

A specific concern in the summer of 1999 was households in the coastal neighborhood in Catbangen where the city government of San Fernando expected to develop economic projects. San Fernando had already experienced its first housing project, re-housing squatters from the government's land to the new developed location at Sagayad. The first project was considered an overall success and the city government felt confident. They were preparing for a second housing plan. Our research was intended to inform development of relocation plans for Catbangen.

Background

San Fernando

The city of San Fernando is the capital of the province of La Union. It is located in the northwestern Luzon Island, a 270km distance from metropolitan Manila. Facing the South China Sea, the city has 59 barangays (the minimum municipal unit); 20 are coastal, 24 are lowland, and 15 are upland areas. The main urban district is on a part of the coastal area with well-developed infrastructures serving education, health, finance, commerce and trade. Aside from the international seaport and the airport, transportation relies on road networks. The national highway is the major route and goes through the center district.

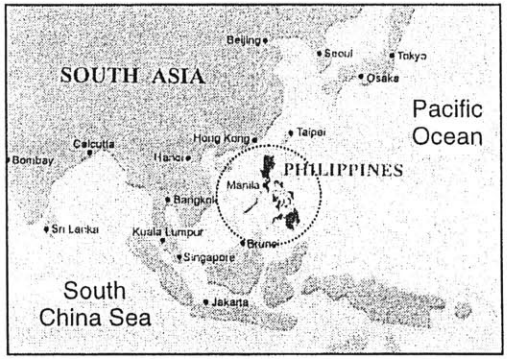


Fig. 3.1 The Philippines

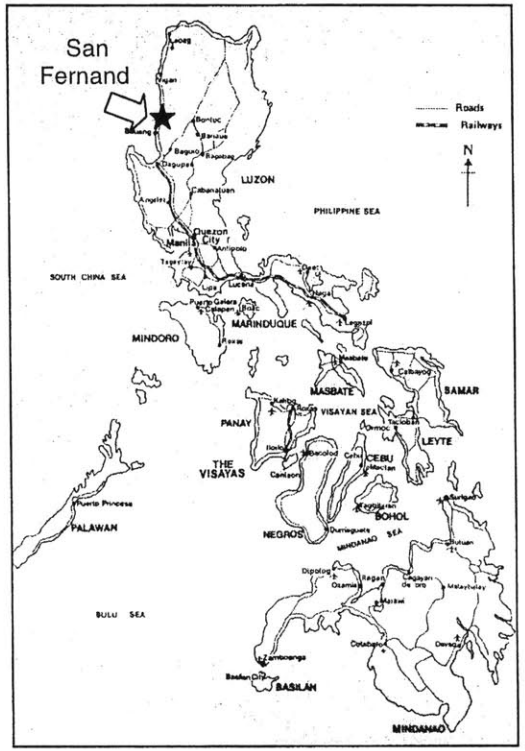


Fig. 3.2 City of San Fernando, La Union

Population

Based on the most recent Census report, the total population of the city of San Fernando was 91,943 in 1995 (National Statistical Office), and had increased about 2.4 times since 1960. Yet the population growth rate had fallen from 3.9% (1960-1970) to 1.6% (1990-1995). The number of households was 18,469 with five persons in a household on average (Table 3.1).

Employment and Income

The economically active group, age range 15 to 65-year old males, was 29,937 persons, and among them, the employment rate was 95% in 1995. The city boundaries include sub-rural areas of agricultural land and forest which is beyond the buildup area. In the distribution of the labor force, 41% of all those employed worked in the agricultural sectors (Table3.2).

In 1994, the mean per capita income in the province of La Union was 14,810 pesos and the median was 11,122 pesos (NSCB). In terms of family income, in 115,743 families, an average family income was 70,007 pesos. On the basis of the national poverty line, 10,992 pesos annually per capita, the poverty rate in the city was 52 % (Table3.3).

Housing

In 1990, San Fernando had the total of 15,378 occupied dwelling units in 16,088 dwelling units. The number of households was 16,206, so in spite of some vacant homes, there existed a backlog of 827 households who were in shared , boarding and other housing. Of 15,379 occupied dwelling units, 12,790 units (83 %) were owner-occupied (Table3.4).

Table 3.1 Population

	1970	1980	1990	1995
Population	52,597	68,410	84,949	91,943
% Change	-	1.300	1.242	1.082
Density(person/km^2)	477	630	795	860

Source: Provincial Physical Framework Plan, Province of La Union, 1997

Table 3.2 Distribution of occupation

Type of employment	Percentage
Farmers, fishermen and forestry workers	41%
Elementary occupations	17%
Craftsmen and related workers	11%
Service works	7%
Professionals	6%
Plant and machine operators	6%
Clerks	5%
Government workers	2%
Technicians	1%

Source: City strategic development plan, 1998

Table 3.3 Poverty rate

	Urban	Rural	Both areas
Poverty threshold (annual per capita, in pesos)	12,533	10,216	10,992
Poverty incidence rate	61.3%	47%	52%

Source: NSCB, Technical Working Group on Income Statistics, 1994

Table 3.4 Housing unit

Year	Number of household	Total housing unit	Occupied	Owner occupied
1980	12,426	12,527	12,252 (97.8%)	-
1990	16,206	16,088	15,379 (95.5%)	12,790 (83.2%)

Source: National Statistics Office, 1990

Catbangen and Sagayad

Catbangen

Barangay Catbangen was next to the center district of San Fernando. Its western boundary was a part of the San Fernando bay, and the eastern boundary was lined by the national highway (Figure3.3). Catbangen was the largest number by population in San Fernando with 8,986 persons (9.5%) in 1997. 1,555 units or 94% of all buildings were used for dwellings.

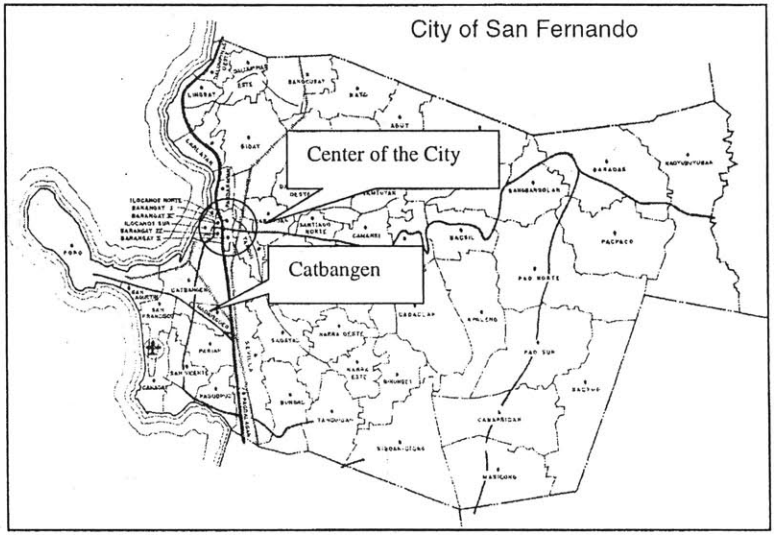
Catbangen had the largest number of informal settlements (Table 3.5). Of 1,174 total squatting family numbers in San Fernando, there were 505 families (43%) living with no land title; the number by private or public land was, 274 families on PNR, 106 families on the private property, and 124 families in salvage zones. Majority of salvage zone dwellers was fisher-folks. These illegal settlements arose a few decades ago. In recent years, extremely strong typhoons hit the coast and squatter families in salvage zones were evacuated at the barangay halls or the schools. They sought other locations to live but ended up moving around from one place to the other on salvage zones.

The study site was in a coastal area shown in the Figure. 3.3.

Table 3.5 Informal settlers

	Salvage zone	PNR	Private property	Total
Total	510	546	118	1,174
Catbangen	124	274	106	504

Source: City of San Fernando, 1998



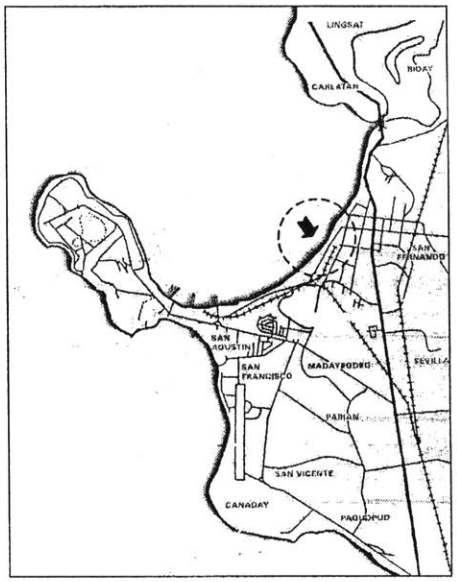


Fig. 3.3 Barangay Catbangen and the fishermen community

Sagayad

The Sagayad resettlement site was planned for households evicted for the construction of the San Fernando By-pass Road. The resettlers were previously living on the Philippine National Railways (PNR) which had not been in use for transport for a few decades. The Sagayad resettlement project started in 1995 with agreement among the National Housing Authority (NHA), Provincial Government of La Union, and Municipality of San Fernando and Congressman of this region. The road construction was stretched from barangay Sevilla and Tanqui to barangay Biday, which was 4.9km of total length and affected 386 structures.

At the time of implementation of the project, the number of the squatter households was 240, and 198 households were approved as qualified PNR beneficiaries. The selection criteria was set based on household income and excluded land owners.

The new site construction was completed in September 1997. The project was a "site and service" procedure, with sanitary toilets, shallow wells, drainage systems, roads and electricity. The new settlers were required to construct their new homes by themselves or to hire some laborers.

The final number of resettler households was 164 in July 1999. 106 households have started living in the new environment, and the rest of the plots were under construction or were still no structures.

The lot size was from 70 to 100m^2, and the price of lots were 80, 120 and 150 pesos/m^2, but the payment was set around 200 pesos monthly for two to five years to pay easily. The lots were allocated to beneficiaries randomly, based on the payment capacity of the family.

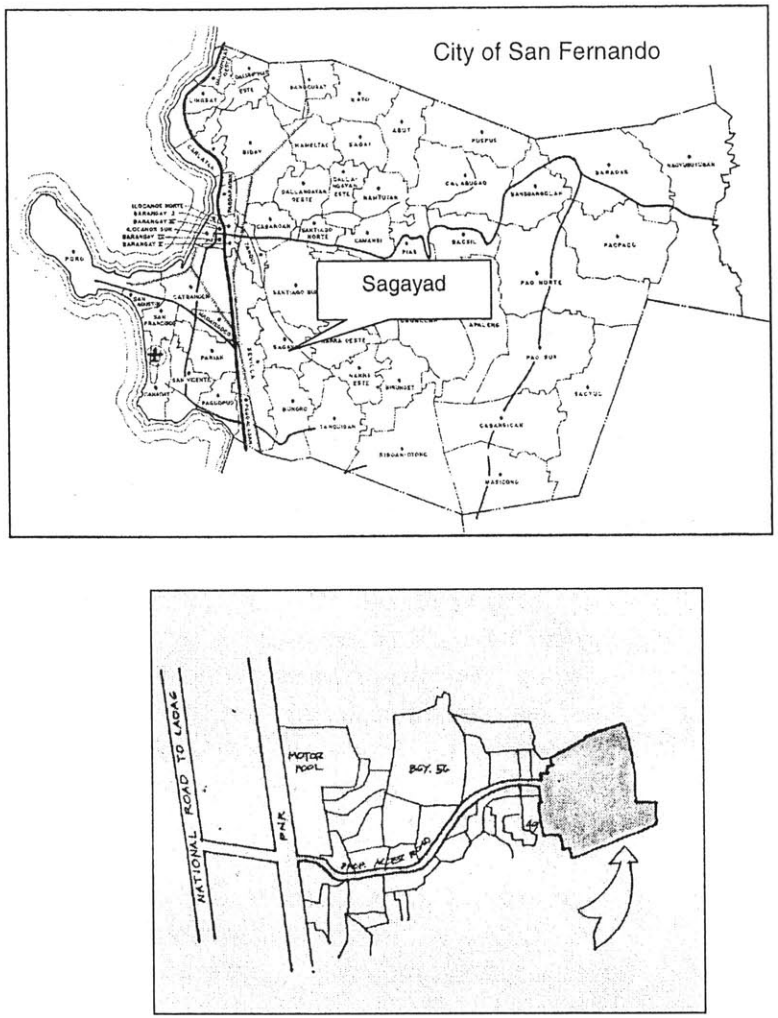


Fig. 3.4 Barangay Sagayad and the resettlement community

Survey Method

The Housing and household surveys of the Sagayad resettlement site and the Catbangen squatter settlement, which were carried out in July 1999, consisted of a questionnaire survey, interviews and measurements of interviewees' houses.

The survey was conducted by three MIT graduate students who stayed in San Fernando for one and half months to develop the survey in consultation with the Mayor and the city officials. During the stay, statistics related to housing data were collected and interviews with city officials and representatives of housing sectors were also carried out.

First, the questionnaire forms were figured out after the interviews with the city planning officials to gain the preliminary information on both sites. The forms were handed out by MIT students, via the city officials, to community group representatives, the Sagayad Saranay Homeowner Association at Sagayad and the Seaside Youth Club at Catbangen. They distributed the forms to almost all the households in both sites except absent residents when the representatives had visited to hand out the forms. The completed forms were used to see how residents had an interest in their housing, and which questions confused them so they could not answer correctly. The responses were received, 77 out of 102 households at Sagayad and 65 out of 93 at Catbangen. It seems that the collecting rate was relatively high, however, because of little preparatory explanation on the questions in the questionnaires for the residents, misunderstandings and blank answers were seen in some returned forms.

Second, based on the received questionnaire forms, households were randomly picked for interview. Surveyors were conducted by three MIT graduate students, the city planning officials (who joined the first day of the interview in both site to introduce the students to the residents) and the community group representatives, who helped residents to understand survey questions and translate to a native language, Ilocano. The number of interviewees was 22 households at Sagayad and 20 households at Catbangen. The purpose of the interview was to confirm the answers in the questionnaire form, to fill out the blanks in the form, and to add information about their housing. At the beginning, all three students interviewed the households; however, for efficiency, the two students asked spoke with the interviewees and one student measured and sketched the housing plans during the interview. The days when the interviews were conducted were set in the weekend when most residents stayed at home. The residents of both sites were so cooperative that no resistance was experienced.

Although basically the residents could understand questions in English, because they felt more comfortable to ask in their native language, the accompanying community representatives sometimes asked questions and translated their answers. Because the representatives understood our purpose well, there was a small possibility that they might influence the households' answers. Yet without their helpful collaborations, this survey could not have been carried out successfully at all.

For the questionnaire form and the field note of the housing plans, see Appendix 3 and 4.

Strength and weakness of this survey

Detailed household profiles can give lively information for comprehensive housing analysis.

This survey is a focussed rather than a comprehensive analysis. It is designed to identify important concerns for future housing projects in San Fernando, using detailed housing data from a small sample of households.

The data helps explain the sample households' lives and circumstances vividly. They include family structures and members' ages, educational attainments, occupations and income, ownership of property, housing structure and materials, amounts of investment in housing, reasons why they moved, relatives' proximity, and so on.

The household profile for each community is accompanied by a floor plan. The analysis includes graphical information on housing. The floor plans are also useful for the spatial study which let us ask how large their houses are and how they use dwelling space. The data may include outliers. Usually those extreme cases would be excluded from the analysis because they distort our perception of the norm.

The details in the small sample make it possible to narrow down potential factors which deserve attentions and which are difficult to identify in larger statistical studies. On the other hand, the interview and the floor plan measurement limited the data collection. The sample size was too small to generalize tendencies with quantitative analysis.

The detailed survey cannot show whole population characteristics; however, for small scale housing projects in particular regions, this method can be useful to understand households' real needs and preferences.

Summary statistics

Household characteristics

Catbangen

The average household size was 6.1 persons per household. There was no large family of more than 10 persons in one household.

Most households' income ranged from 5,000 to 9,000 pesos. Six families' income were below 5,000 pesos.

The number of years they had lived in Catbangen was, four cases had been there for more than 20 years, but around half were for less than ten years.

Twelve cases were nuclear families. Although more than half were nuclear families, 15 households said they had relatives in the neighborhood.

The householder's age was around 50 years old. Seven out of ten were below 50 years old, which probably reflect the number of the nuclear family (Table 3. 5).

Sagayad

The household size was 5.9 persons per household on average among the interview survey samples, but most were five person or smaller families (Table 3. 6).

The average household income was 7,804 pesos. There were eight households earning more than 10,000 pesos, but four cases were below 5,000 pesos (Table 3. 7).

Six households had lived in the PNR site for more than twenty years and around six out of ten households for more than ten years. It is not difficult to think that they had built a close relationship with their community so that they, in some

1.00 USD = 37.85 Philippine Pesos (July 1, 1999)

Table 3. 6 Household size

Household size	Catbangen	Sagayad
(persons)		
1-5	8	12
6-10	12	7
11-	0	3
Average	6.1 persons	5.9 persons

Table 3. 7 Monthly income

Income (monthly)	Catbangen	Sagayad
(pesos)		
0-4,999	6	4
5,000-9,999	11	10
10,000-	3	8
Average	6,063 pesos	7,804 pesos

Table 3. 8 Time period living in the site

Time Period	Catbangen	Sagayad (PNS site)
(years)		
0-10	11	8
11-20	5	8
21-	4	6
Average	12.9 years	17 years

Table 3. 9 Family structure

Family type	Catbangen	Sagayad
Nuclear family	12	11
Other	8	11

part, felt relocation as "demolition of the previous lifestyle by the government", although they are quite satisfied with the present housing (Table 3. 8).

Looking at the relationships in households, a half cases were nuclear families and the other half were three generation, single parent, parents with married children, and so on. Four households said their relatives lived in the Sagayad resettlement community (Table 3. 9).

As most were nuclear families, the householder's age was relatively young, but half were in the range of fifty years old or over. The average was approximately 48 years old (Table 3. 10).

Table 3. 10 Age of the householders

Age	Catbangen	Sagayad
(years old)		
Below 29	2	3
30-39	3	1
40-49	9	7
50-59	2	9
Above 60-	4	2
Average	49.6 years old	47.6 years old

Housing characteristics

Catbangen

The average floor area was 33m^2, and most were below 60m^2. It seemed there are few large houses in this community (Table 3. 11).

The amount of investment in housing was varied, but most were below 40,000 pesos. (Table 3. 12).

Regarding to the ownership of property, less than half believed that they had title of the land. Nine households squatted and the rest rented from the friends or relatives (Table 3. 13).

Their perception of housing quality was; nine were permanent, less than half. The perception depended on the materials, as well as in Sagayad (Table 3. 14).

The reasons why they moved in Catbangen, which were multiple answers, were family relations and an access to job. In addition, because of the no ownership of land, they moved to Catbangen for squatting.

At the same time, an access to job, water and education could be a motivation to move out from Catbangen. Because most of them were engaged in fishing or fishing vendor, and owned boats, the place near the sea could be a primary incentive (Table 3. 15 and 16).

Sagayad

A floor area of most of the houses was within the range from 30m^2 to 59m^2, and the average was 49.1m^2. The plot area was designed by the government and ranged from 70m^2 to 79m^2, and the average was 77m^2 (Table 3.17).

Table 3. 11 Floor area

Floor area	Catbangen	Sagayad
(m2)		
1-29	8	2
30-59	10	16
60-99	2	3
100-	0	1
Average	33.1 m2	49.1 m2

Table 3. 12 Amount of investment

Investment in housing	Catbangen	Sagayad
(pesos)		
0 -10,000	8	2
10,000-39,999	6	4
40,000-79,999	5	6
80,000-	1	10
Average	26,050 pesos	67,722 pesos

Table 3. 13 Land ownership in Catbangen

Land ownership	
Owner occupied	7
Squatters	9
Renters	4

Table 3. 14 Housing Quality

Perception	Catbangen	Sagayad
Permanent	9	17
Temporary	11	5

The resettlement community has just started, and around half of them invested in housing below 40,000 pesos and the average amount was 67,700 pesos per household. Most of them thought more investment in the future, and the estimated total amount will be 156,000 on average (Table 3.18).

The Sagayad resettlement was designed as "a site and service" project. So the settlers needed to arrange construction work, whether they constructed by themselves or hired some laborers. 15 out of 22 participated construction work, and eight households built their houses by only family members (Table 3.19).

The investment was mostly for permanent housing construction. Basically whether a home is permanent or not depends on the material they used, concrete block walls and metal sheet roofs (Table 3.14).

Table 3.16 Fishing occupations in Catbangen

n=20	
Fishing+Fishvendor	15
Own boats	11

Table 3.17 Plot size in Sagayad

Plot area	
(m2)	
70-79	15
80-100	3
100-	1
na	4
Average	77.0 m2

Table 3. 18 Estimated amount of investment in Sagayad

Estimated total investment in housing	
(pesos)	
0-79,999	5
80,000-119,999	6
120,000-159,999	5
160,000-	6
Average	156,243 pesos

Table 3. 19 Participation in construction work in Sagayad

Construction work	
Family	8
Family+Others	7
Hired laborers only	7

Table 3. 15 Motivations to move in Catbangen

Reasons (move to)	
Access to job	9
Access to education	1
Access to water	3
Not own land	8
Not own a house	4
Other family lived there	5
Other family lived there	10

Reasons (move out)	
Access to job	13
Access to education	11
Access to water	12
Not own land	7
Other family lived there	3
Other	1

4. Analyses

This chapter will discuss the four topics posed in Chapter 2: Crowding, Property rights, Time, and Home based enterprises (HBEs).

I will analyze the sample of this survey in the two sites, Catbangen and Sagayad. New findings and specific cases of dwelling in the analyses will be addressed. I look at the floor plans as well as charts and graphs to better understand residents' characteristics and their heterogeneous housing choices.

Crowding

Three hypotheses posed in Chapter 2 were the following:

- As income rises, a household may spend more on housing, and a level of crowding decreases,
- As a household size becomes larger, the household may less spend on housing, leading to more crowding.
- Cultural social behavior about family relation influences their choices about location such as a proximity of relatives.

Catbangen

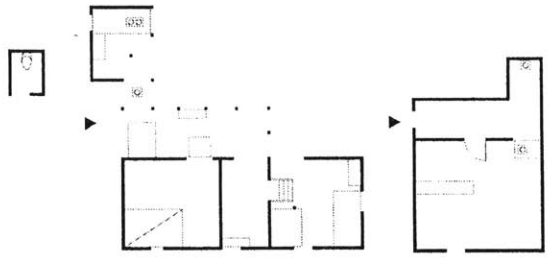
The survey conducted in Catbangen shows characteristics on crowding, shown in Table 4.1. Crowding indicator, space per person, was calculated as a structure floor area divided by a household size. The average floor area of 20 samples in Catbangen was 33.1 m^2. The largest house had 74.4 m^2 (C12), and the smallest had 10.7 m^2 (C3). Regarding the household size, the largest number of members was 10 (C20), and the smallest household had 3 family members in one house, which was counted in three cases (C1, C2 and C3). The mean and median household size was 6.1 and 7 persons, respectively. Because of the varied room usage and difficulty to determine the number of rooms (some rooms of the sample houses had no door but had curtains dividing spaces for specific purposes, such as a sleeping space and a storage space), a space per person includes all available areas, which ranged from 12.1 m^2/person (C1) to 1.7 m^2/person (C18).

For information about the survey household data, consult Appendix 2: Household Profile.

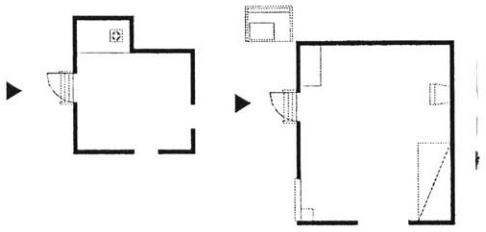
In this survey, two households (C15 and C20) had two houses, next to each other. They lived on the same plot. Yet the boundary of their plot were not clear to determine. These two houses were counted into one floor area (Figure 4.1). Two households (C11 and C19) had a family member working abroad, and this household size was counted the total number of all members including migrant workers.

Table 4.1 Household characteristics and crowding in Catbangen

n=20	Household size persons	Income pesos/month	Floor area m2	Space per person m2	Investment pesos
Mean	6.1	6,342	32.9	5.7	27,421
Median	7	6,000	31.0	5.5	25,000
Max	10	12,500	74.4	12.1	100,000
Min	3	750	10.7	1.7	0



C15



C20

Fig. 4.1 Two-house owners: one household owns two houses.

Income, investment and crowding

Not surprisingly, the more invested in housing made housing less crowded. Especially the amount of investment in permanent housing associated with crowded condition (Figure 4.2). The more households invest in permanent housing, the larger the space per person becomes. The relationship between space per person and income was not significant, but it seems that while income increases, space per person does not show clear tendency (Figure 4.3). The higher income does not always indicate that households live in adequate space in Catbangen.

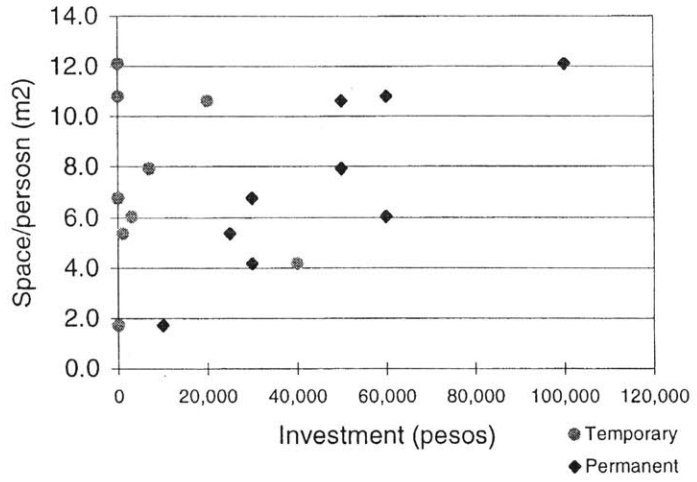


Fig. 4.2 Space per person by investment in Catbangen

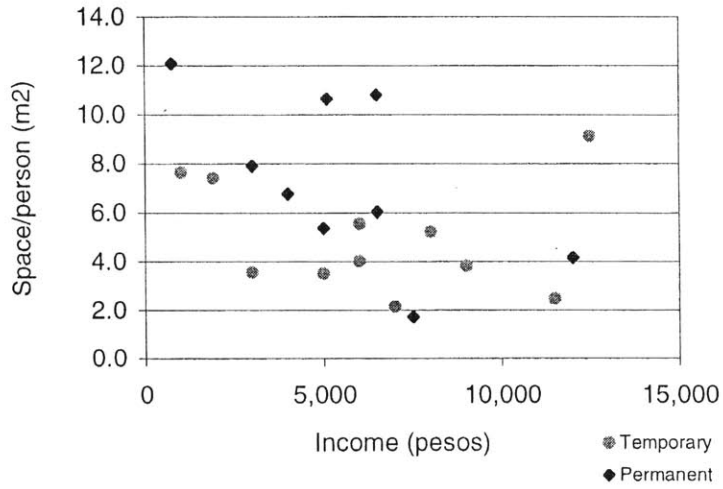


Fig.4.3 Space per person by Income in Catbangen

The average amount of investment in temporary housing was 9,600 pesos, and the average amount of investment in permanent housing was 46,000 pesos, which was more than four times higher than the temporary housing (Table 4.2). Sample size of this survey was not large enough to determine the relationship between the amount of investment and space per person; however, for households, to own a house made by permanent materials could be a key point to live in housing with adequate space.

Table 4.2 Space per person and investment in Catbangen

Temporary (n=11)	Space per person m2	Investment pesos
Mean	5.0	9,636
Median	4.0	3,000
Max	9.1	40,000
Min	2.0	0

Permanent (n=9)	Space per person m2	Investment pesos
Mean	7.3	46,111
Median	6.8	50,000
Max	12.1	100,000
Min	1.7	10000

Household size and space

As the graph shows, larger households had less space per person (Figure 4.4). Crowding conditions got worse as the household size increases. The household size was a negative factor to improve crowded condition, obviously, but larger household sizes could have more income than smaller household sizes (Figure 4.5). The amount of income did not show a significant relationship with space per person in the Figure 4.3. One of merits of large households is that for their future investment in housing, households can save housing cost by living together. In Catbangen most households lived with more than five members. Living in the crowded houses may show their choices; housing was not always their first priority.

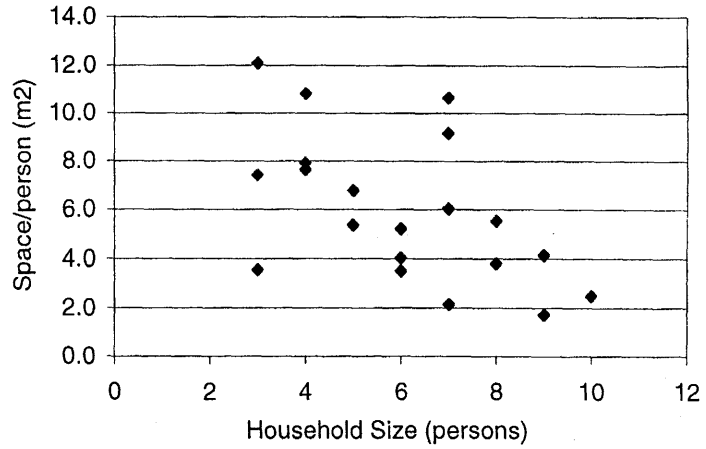


Fig. 4.4 Space per person by household size

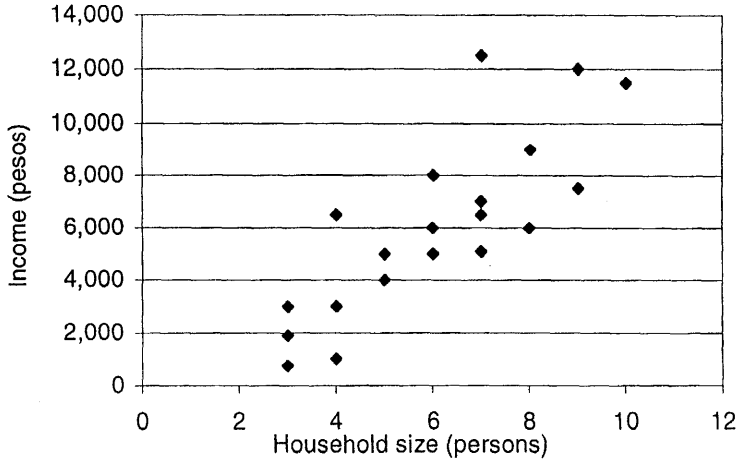


Fig. 4.5 Income by household size

The survey results regarding crowding show that,

- Investment in housing showed increase in space. The amount of household income did not indicate enough space for families.
- A positive relation was shown between household sizes household income, but increase in household size also indicated more crowded housing.
- Kinship could often reduce crowded conditions.

Findings

C18 was the most crowded household with 1.7 m^2 per person. This household of nine family members had the extended family (C1), mother and two other relatives, near their house (Fig. 4.6). Mother's house had 36.3 m^2, 12.1 m^2/person. Her house was built at her children's expense. In reality, they could share the houses to have adequate spaces.

The two-house owner was another sharing example (C15). A household of a brother and sisters' family were living together in two houses. The brother lived in a smaller house and sisters and their families lived in the bigger house. But they consider themselves one household. The brother lived alone, but probably sisters' family members often used the smaller house. They saw benefits in living with relatives, as sharing spaces, income and house chores Among the rest of the survey sample, 13 households answered that they had relatives in the neighborhood or the adjacent community. One solution to relieve crowded conditions was sharing spaces with relatives living next door or in the neighboring.

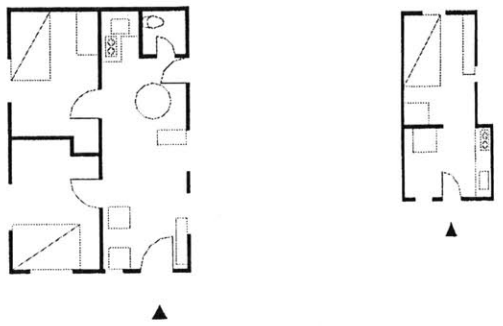


Fig. 4.6 Sharing space among extended families in Catbangen

Sagayad

Sagayad was a one-year-old community when this survey was conducted and construction of the survey sample was not entirely completed. Floor area was calculated based on usable spaces enclosed within walls or columns. The average floor area was 49.1 m^2; the largest house was 103.4 m^2 (S6) and the smallest was 27.0 m^2 (S20). Looking at the household size, The household, S22, was the largest family of 15 persons, and the household, S1, was the smallest family of two persons. The mean and median household size was 5.9 and 7 persons, respectively. Space per person ranged from 25.9 m^2/person, the largest (S6), to 2.5 m^2/person, the smallest (S20) (see Table 4.3).

In the survey, interviewees said that the reported family members were all living there, and no household owned more than one house in Sagayad.

Table 4.3 Household characteristics and crowding in Sagayad

n=22	Household size persons	Income pesos/month	Floor area m2	Space per person m2	Investment pesos
Mean	5.9	7,807	49.1	10.4	69,773
Median	7	6,650	46.9	8.2	40,000
Max	15	15,000	103.4	25.9	450,000
Min	2	3,000	27.0	2.5	15,000

Income, Investment and Crowding

Households who invested in housing more could live in less crowded housing (Figure 4.7). One household spent extremely much mount of money (450,000 pesos), however most households spent within 100,000 pesos and the more amount household spent, the more space they could have. Similar to the households in Catbangen, the relation between household income and space per person was not significant. It appears that higher income households do not always invest in housing for larger space (Figure 4.8).

Five households considered their house temporary. The average amount of their investment in temporary housing was 22,600 pesos. Seventeen household thought their houses were permanent. They spent 83,647 pesos for their permanent houses on average, 3.7 times higher than the investment in temporary houses. In addition, the households who lived in the temporary housing expected to spend the total amount of 88,600 pesos for housing and those who owned the permanent houses expected to spend the total amount of 180,118 (Table 4.4). The families' capability to spend on housing could make this difference in the amount of money between temporary housing owners and permanent housing owners, leading to the sufficient space for family members.

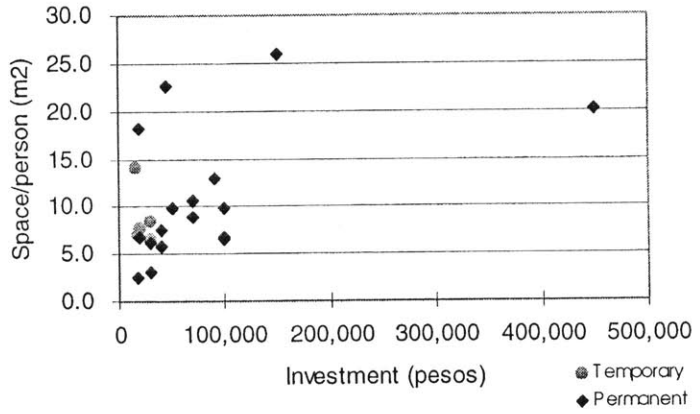


Fig. 4.7 Space per persons by investment in Sagayad

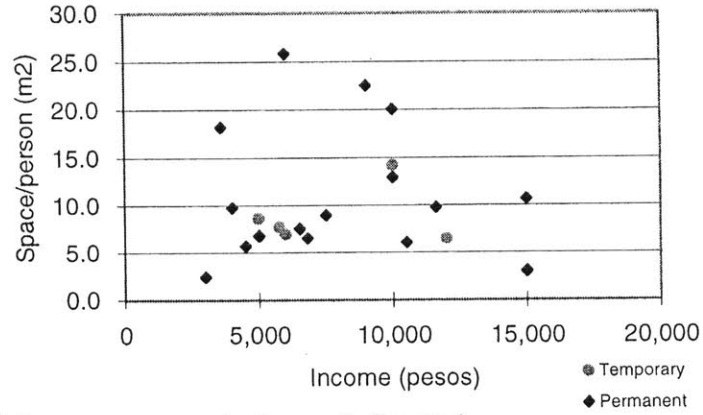


Fig. 4.8 Space per persons by income in Sagayad

Table 4.4 Space and investment in Sagayad

Temporary (n=5)	Space per person m2	Investment pesos	All expected amount of Investment pesos
Mean	5.8	22,600	88,600
Median	6	20,000	95,000
Max	8	30,000	130,000
Min	4	15,000	30,000

Permanent (n=17)	Space per person m2	Investment pesos	All expected amount of Investment pesos
Mean	5.9	83,647	180,118
Median	5	50,000	145,000
Max	15	450,000	700,000
Min	2	18,000	20,000

Household size and space

The household sizes ranged from 2 persons to 15 persons; however, the floor area did not reflect the household size. A large household did not necessarily live in a large home, and a small size household had more space for each family member (Figure 4.9). Their income sorted by household size showed that amount of household income in Sagayad was not strongly associated with household sizes. Increase in a family size may not be a realistic factor to spend more in housing to relieve crowded conditions for a large family (Figure 4.10).

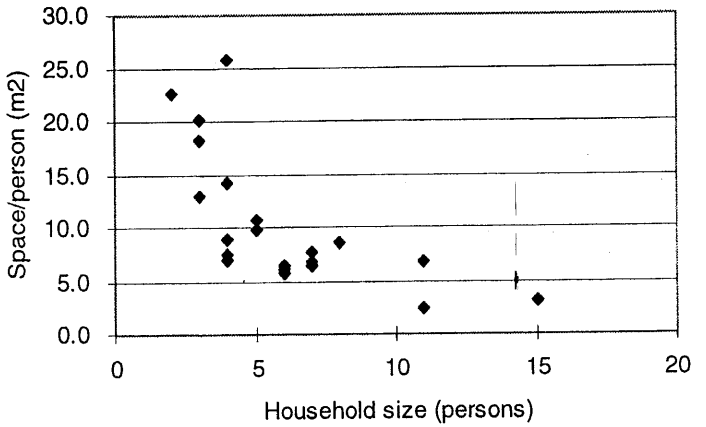


Fig. 4. 9 Space per person by household size in Sagayad

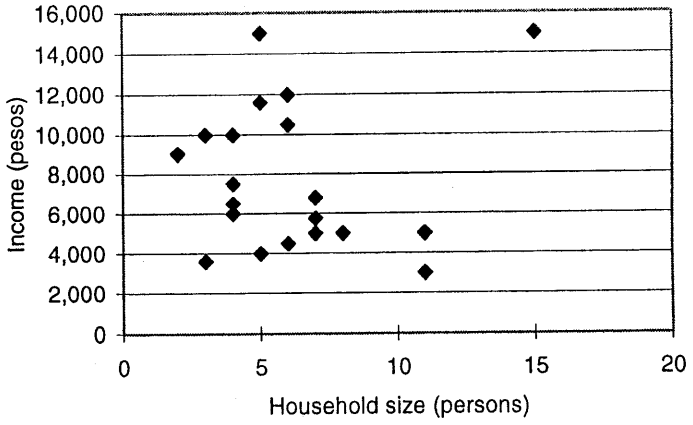


Fig. 4. 10 Income distribution by household size in Sagayad

In summary,

- The income did not associate with crowded conditions. space. Increase in investment in housing showed increase in space per person.
- Large households had little space available for each household member. Household income did not necessarily increased as household sizes were larger.
- In spite of large size families, they found solutions to live together.

Findings

A capability to invest in housing for one year was a key to build large enough houses. They have to resettle in the new site and build their new houses as matching their financial conditions.

The mean of the floor area was 49.1 m^2. Most houses, 16 out of 22 households, ranged from 30 to 60 m^2 (Table 4.5). The plot area was almost uniformed in size, around 72 m^2. Unless a house has two floors, a plot area could limit the space. Almost all household of the sample used the outdoor space for laundry or an outdoor kitchen. It appeared that to have some outdoor space around the house was essential.

The largest family had 2.5 m^2/person (S20) and the next had 3.1 m^2/person (S22). It may seem that they were living in a extremely crowded house. These two large families, 11 persons and 15 persons respectively, figured out a solution in a limited space. The family of 11 person (S20) had a house of 27.0 m^2, the smallest house in the sample. Their house faced a road of 6.5m width, and on the opposite side of the road was a hillside. Since vehicles rarely passed by and those who used this road was limited to neighbors, the front road was used for a dining and a living room for the family as well as a social

Table 4.5 Floor area distribution in Sagayad

Floor area (n=22) m2	The No. of households	Percentage
0-30	2	9.1%
31-60	16	72.7%
61-90	3	13.6%
90-	1	4.5%

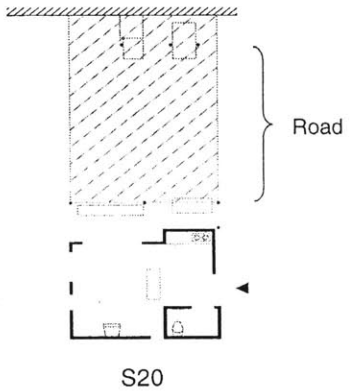


Fig. 4.11 Outdoor space:
The front road can be used as a living room and kitchen. This household utilized the space enclosed by the boundary walls.

space for visitors (Figure 4.11). Planted vines shaded over the road. In addition to the inside kitchen, they had the second kitchen outside across the road, which was bigger than the inside one. This dwelling space on the public land is illegal. However, the cozy shaded space can be a substitute for the limited dwelling space inside. In addition, they had relatives in the neighborhood, so they may go there in the evening to sleep.

The household, S22, had a 46.2 m^2 which was not small compared to the other households. The reason for crowding was the family of 15 people. The way to compromise was to utilize the plot area as much as possible (Figure 4.12). The construction area was the area enclosed by the inner walls. However, this house had boundary walls made of concrete blocks, which was used as dwelling walls with roofs around the house. Their front room was such an extra space. It was a living-dining room, and a business space for a shop. If the extra outdoor space is added, the total floor area is 83.1m^2, 1.8 times as large as the original space.

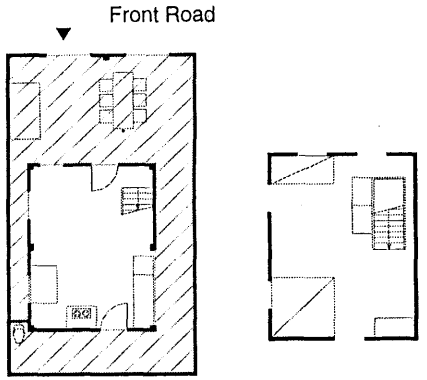


Fig. 4.12 Outdoor space:
This extra space is used as a living-dining room and a shop

Sagayad and Catbangen

Comparing the two sites, it appears that the houses in Catbangen were in inferior conditions (Figure 4.13). At both sites, the model space is 6-10m^2/person. In Sagayad, seven cases were above 11m^2/person, and only two were below 5m^2/person. On the other hand, in Catbangen, only three cases were in the range of 11-15 m^2/person, and no case was above 16m^2/person. Seven cases were below 5m^2/person. The lack of variation in Sagayad may reflect a time bracket, recent move to the resettlement site, or uniform plots in resettlements area.

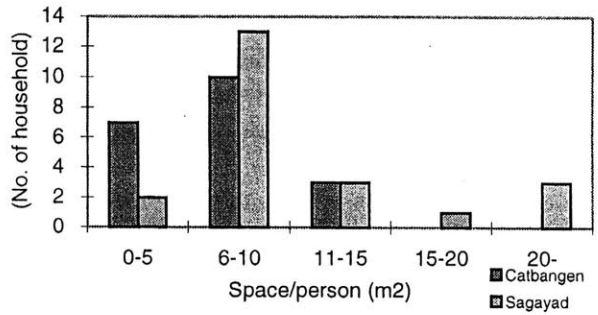


Fig. 4. 13 The Nomber of households by space per person

Property Rights

The hypotheses discussed in this section are:

- Levels of personal secure feeling influence investment in housing. Legal settlers who have land ownership and squatters who feel safe against eviction invests more.
- Property rights are not the only factor influencing squatters' housing improvement. Illegal settlers' feeling of security is based on experiences of eviction and also dangerous circumstances.

Catbangen

Regarding property rights, households and housing characteristics are shown in Table 4.6. The number of owners, renters and squatters were seven four and nine, respectively. On average, owner occupied units were less crowded; space per person was the largest, 7.3 m^2/person, around 2m^2 larger than others. Owner and renter occupied units had almost the same floor area, 35m^2, but the squatters' area was 27m^2, 8m^2 smaller than the owners. The owners spent the most for housing, 53,000 pesos, and renters and squatters spent 37,000 pesos and 14,000 pesos, respectively.

Perception and Investment

Two issues are associated with the residents' investment in their property, which relate to their desire for property rights – tax declaration is seen as a legal security and location is perceived as a personal security, based on safety from natural disaster.

In Catbangen, no eviction occurred for a long period, which allowed squatters to believe that they could stay and that no one would force them to leave. In fact, the land could be purchased in the informal market, which was not a legal procedure. However, the residents paid significant amounts of money to brokers to secure property rights. Besides, some have paid taxes every year, based on appraisals by the government. Officially a tax declaration document itself has no power to guarantee the ownership of land; however, the tax payers as "property owners," have never doubted their tenure rights.

As a result, the land owners invested in housing to improve housing quality. No matter how permanent or temporary their house was, six out of seven households thought their houses were permanent and spent 39,000 pesos for constructing larger houses. On the other hand, non-landowners recognized that the land was not their property but the government's, and they spend less money in housing on less floor area than owners on average, and their perception of their houses was that they were temporary, (over all, except two cases).

However, because many had no experience with forced eviction, some of the non-owners spent large amount of money for their houses. In two cases (C7 and C13) families had no ownership, and spent 60,000 pesos and 30,000 pesos respectively on improvements, resulting in more stable housing; in these two cases, the owners considered the housing permanent. In these two cases, the homes were the largest among non-landowners' houses – the floor areas being 33.9 m^2 and 42.3 m^2. The rest of the sample survey – renters – were renting from the other people, such as friends and their kin. So compared to the squatters, their tenure rights were rather stable, and three out of four households spent more than 30,000 pesos, and built houses of more than 30 m^2 of floor area.

Table 4. 6 Property rights and housing characteristics in Catbangen

Owner (n=7). No	Investment pesos	Space m2/ person	Floor area m2	Time years	House-hold head Years old	Location	Perception
C15	0	9.1	64.0	40	40	U	T
C18	10,000	1.7	15.5	9	48	M	P
C8	25,000	5.4	26.9	30	48	M	P
C19	30,000	4.2	37.6	7	84	M	P
C5	50,000	7.9	31.7	6	37	M	P
C6	60,000	10.8	43.2	6	75	M	P
C1	100,000	12.1	36.3	24	48	M	P
Average	53,000	7.3	35.1	14.6	58.4	Upper 1 Middle 6 Lower 0	Temporary 1 Permanent 6

Renter (n=4) No	Investment pesos	Space m2/ person	Floor area m2	Time years	House-hold head Years old	Location	Perception
C14	3,000	2.1	15.0	5	54	M	T
C17	30,000	3.8	30.6	15	37	M	T
C16	40,000	5.6	44.5	0	47	M	T
C12	50,000	10.6	74.4	16	79	U	P
Average	37,583	5.5	37.9	14.4	54.6	Upper 1 Middle 3 Lower 0	Temporary 3 Permanent 1

None (n=9) No.	Investment pesos	Space m2/ person	Floor area m2	Time years	House-hold head Years old	Location	Perception
C9	0	3.5	21.1	15	39	L	T
C2	0	7.4	22.3	9	44	L	T
C4	0	7.7	30.6	4	26	M	T
C10	1,000	4.0	24.2	3	57	L	T
C20	5,000	2.5	24.9	18	42	M	T
C3	7,000	3.6	10.7	11	29	M	T
C11	20,000	5.2	31.4	26	45	L	T
C7	30,000	6.8	33.9	7	40	M	P
C13	60,000	6.0	42.3	6	45	M	P
Average	13,667	5.2	26.8	11.0	40.8	Upper 0 Middle 5 Lower 4	Temporary 7 Permanent 2

The location was the other factor affecting their perception of safety. Almost every rainy season, several typhoons hit the city, and high-tides, flood and windstorms do enormous damage. Six households reported that demolition of their previous houses by a typhoon was the reason why they moved to Catbangen; they wanted to find better accommodations, since they had not owned land before. But Catbangen itself is located a sea shore so the potential for damage to their homes from storms remained critical. Houses in the waterfront areas faced the most potential damage from high-tides and storms. The next was the middle part, and the safest area was the higher part of the site.

These safety factors influenced the residents' perception of the value of the land. The higher locations provided a more secure place to live. Two households, C15 and C12, built significantly larger houses, 64.0 m^2 and 74.4 m^2 respectively on the higher land; the former had a title and the latter rented from kin. The middle part of the site offered a mixed perception about safety. In effect, some residents owned the land with a title.

Since some typhoons destroyed the area severely, squatters felt that it was necessary to build a strong structure made of concrete and bricks, resulting in greater investment in housing, even though they had no title. Even though living on land close to the sea (middle or lower part of the site), most residents spent more than 30,000 pesos to improve their housing in recent years.

Two households, C7 and C13, which had no title living on the lower part, spent 30,000 and 60,000 pesos and built houses of 33.9. m^2 and 43.2 m^2, respectively. Both considered their houses permanent. The lower location was the less desirable place to live; four households in this study lived there. All houses were made of wood; their structures were not strong enough to survive severe storms. Floor areas were mostly below 30 m^2.

In Catbangen, safety and locations (higher and inland than lower and coastal locations)as well as tenure security influenced investment in housing (Table 4.7). Among the owners of housing, the average investment in improvements was 39,000 pesos, and both owners and squatters spent 47,000 pesos on average for permanent (concrete, bricks and metal sheets) housing. Those who lived in lower area invested the least, 9,200 pesos, and squatters spent 13,000 pesos and the temporary was 9,600 pesos.

While there is danger from nature, these people have chosen to live in the coastal area. Few households said they would like to move out of Catbangen because their major occupation was fishing and selling fish as vendors; 15 in 20 households involved in fishing-related occupations. Many owned boats anchored on the beach next to the residential area. Despite risks, their occupation required them to live there without safety and tenure rights. This posed a critical dilemma for both the government and the residents.

Table 4. 7 Housing characteristics by ownership, locations and housing quality in Catbangen

Ownership

	Investment (pesos)				Floor area (m2)			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Owners (n=7)	39,286	30,000	100,000	0	36.5	36.3	64.0	15.5
Renter (n=4)	30,750	35,000	50,000	0	41.1	37.6	74.4	15.0
Squatter (n=9)	13,667	5,000	60,000	0	26.8	24.9	42.3	10.7

Location

	Investment (pesos)				Floor area (m2)			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Lower (n=4)	9,200	1,000	25,000	0	25.2	24.2	31.4	21.1
Middle (n=14)	45,000	30,000	100,000	0	32.9	31.7	44.5	15.0
Upper (n=2)	25,000	na	50,000	0	57.1	na	74.4	64.0

Housing quality

	Investment (pesos)				Floor area (m2)			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Temporary (n=11)	9,636	3,000	40,000	0	29.0	24.9	64.0	10.7
Permanent (n=9)	46,111	50,000	100,000	10,000	38.0	36.3	74.4	15.5

Table 4. 8 Amounts of investment by housing quality in Sagayad

Housing quality

	Investment (pesos)				Floor area (m2)			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Temporary (n=5)	22,600	20,000	30,000	15,000	49.3	54.2	68.8	27.9
Permanent (n=17)	83,647	50,000	450,000	18,000	49.0	46.2	103.4	27.0

Regarding hypotheses, the survey results show that:

Tenure security was not the only factor affecting housing investment to a large degree.

A desire for a sense of safety influenced the housing materials. Those who desired more safety built/added on with stronger materials such as concrete and bricks. Living in a safer location gave residents more incentive to spent more on housing.

Sagayad

Table 4. 9 shows household and housing characteristics in the Sagayad resettlement. In Sagayad, the relocation site and the property rights were secured by the government. The interviewees were all satisfied with their new community and had a willingness to pay more for housing and housing materials to secure their future.

Perception and Investment

Settlers' average investment in housing for the first year was approximately 70,000 pesos, and each household's estimated total investment over time was 159,000 pesos. Comparing residents living in permanent and temporary housing, floor area and space per person showed little difference, but the amount of investment was noteworthy. The permanent residents spent on average 84,000 pesos, but the temporary housing residents spent on average 23,000 pesos, almost 75 % less.

Table 4. 9 Housing characteristics by housing quality in Sagayad

Temporary (n=5) No.	Investment pesos	All investment pesos	Space m2/person	Floor area m2
S5	18,000	118,000	7.0	27.9
S9	15,000	95,000	14.2	56.8
S15	30,000	30,000	6.5	39.0
S17	20,000	70,000	7.7	54.2
S19	30,000	130,000	8.6	68.8
Average	22,600	88,600	8.8	49.3

Permanent (n=17) No.	Investment pesos	All investment pesos	Space m2/person	Floor area m2
S1	45,000	145,000	22.6	45.1
S2	20,000	20,000	18.2	54.7
S3	90,000	190,000	12.9	38.8
S4	450,000	700,000	20.1	60.3
S6	150,000	350,000	25.9	103.4
S7	40,000	80,000	7.6	30.2
S8	70,000	70,000	9.0	36.0
S10	100,000	150,000	9.8	49.0
S11	50,000	50,000	9.8	48.9
S12	70,000	270,000	10.7	53.3
S13	40,000	90,000	5.7	34.3
S14	30,000	80,000	6.1	36.6
S16	19,000	119,000	6.8	47.5
S18	100,000	270,000	6.6	46.0
S20	18,000	198,000	2.5	27.0
S21	100,000	150,000	6.9	75.5
S22	30,000	130,000	3.1	46.2
Average	83,647	180,118	10.8	49.0
All	69,773	159,318	10.4	49.1

The largest investment was 450,000 pesos and the owner was a government employee (S4). The original owner of the land was a mother of the present owner who inherited the land when his mother had passed away. The smallest amount spent was 15,000 pesos, but the owner expected to spend an additional 80,000 pesos in the future to improve the house from his savings and contributions from his children. Their temporary house was wooden and was built by themselves. The owner was retired, but he planned to hand it down to his children, so probably the future construction would be carried out by his children (S9).

The hypothesis on relationship between perception of security and investment is: because of their tenure security, all of the residents' sense of security is equal. Nevertheless, those with more money tended to build more permanent housing.

Catbangen and Sagayad

Sagayad resettlement residents invested far more in housing than Catbangen residents. Residents of temporary houses in Sagayad spent 22,600 pesos on average on home improvements, but Catbangen residents of temporary housing spent 9,600. Residents of permanent houses in Sagayad spent 84,000 pesos, but Catbangen residents spent 46,000 pesos. Comparing these groups in terms of floor area, both the temporary and the permanent residents in Sagayad had more space than Catbangen residents. The housing investment and floor area of squatters were the smallest. Residents on the middle part of the Catbangen site invested 45,000 pesos, but not all owned titles.

The possible reason is that the squatters in Catbangen felt very little security in the two types of security (tenure and storm-related) and furthermore, they did not own their land but the desire for both types of security gave them incentive to invest.

Time

The following hypotheses will be discussed in this section:

- Households who have lived in a home for long periods of time (10+ years) tend to invest more in housing.
- Time allows them to modify their houses to obtain more space.

Catbangen

Lifecycles

Figure 4.14, 15 shows the relation between time and investment and between time and floor area. They were not crystal clear.

Figure 4.16, 17 also does not indicate clearly the relationship between the house owner's age and the investment or floor area. However, both financial investment and floor area increases, as time period lived in a dwelling increases.

The longest period of stay was 40 years (C15), and as explained in "Crowding", this was a household of three families, two sisters and one brother. The land was owned by their mother who lived in the neighborhood, so the initial investment was paid by their parents. Over 40 years, original owners' children grew up, got married and had their own children; thus the family structure changed as time passed. When questioned about their housing preference in light of the government relocation plans, they all said that they would like to move out but to live close to each other.

Family C16 had lived in their house for less than one year. They had rented the land and spent 40,000 pesos for their house. Their reasons for moving in were that they had no land,

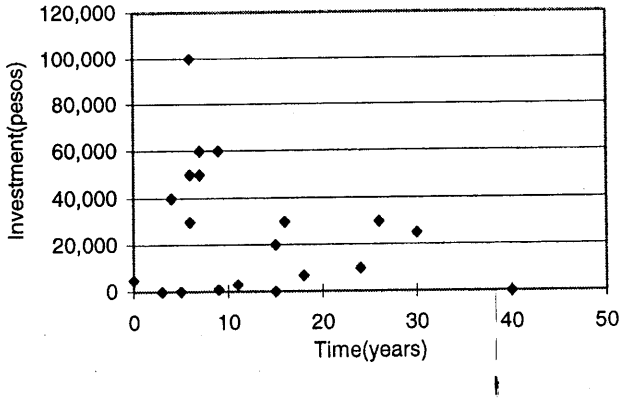


Fig. 4. 14 Investment by time in Catbangen

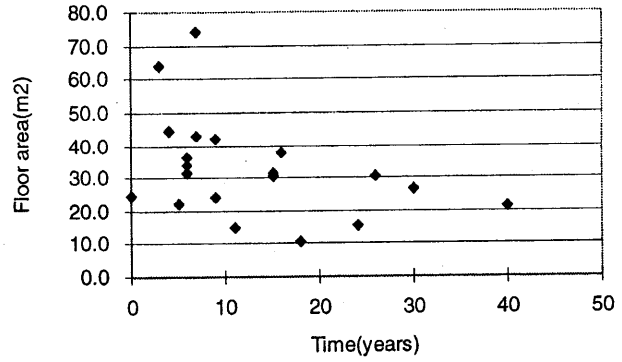


Fig. 4.15 Floor area by time in Catbangen

and that they wanted to live near their relatives who lived close by. If they could buy land at a low price and they could get an adequate job, they would not mind moving somewhere else. This family's occupation was fishing, but their location preference was not associated with the sea, probably because they have six daughters and parents, and fishing is a male-dominated occupation in Catbangen. So it seems that their daughters would not need to stay there. The location by the ocean will not benefit so much for them in the future. Therefore, their investment could have been just for survival and they might not invest much in housing improvement in the future.

If housing is not necessarily a priority in terms of a family's overall needs, they might be more likely to save their income rather than invest it in housing. Most of the Catbangen residents were self-employed fishermen, so unless they were not enrolled in the Social Security Service, public insurance for accidents, unemployment and retirement, they needed to save some of their income for unexpected accidents and for retirement. They also may need to set aside some of their budgets for higher education. Depending on personal concerns and family lifecycles, the investment priorities can change.

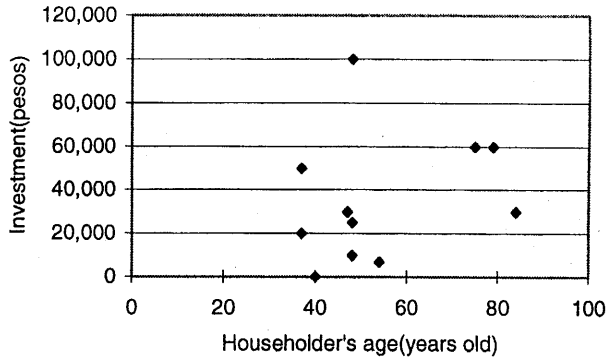


Fig. 16 Investment by householder's age in Catbangen

Fig. 17 Floor area by householder's age in Catbangen

Age of Settlement

Because most residents of Catbangen were not evicted for long time periods, they did not need to invest in legalizing their tenure rights. It was quite clear whether or not they held a land title (based on my observation). They did not discriminate against non-owners. Most had relatives in the neighborhood. Of the 20 cases, 14 households reported that their kin lived in the same community. In fact, six households reported that the reason they moved to Catbangen was that their relatives already lived there. Therefore, their investment in housing was not for the protection for their tenure security.

In summary, the analyses of the hypotheses are:

- As the house owner's age increases, the floor area increases. However the floor area is not correlated to the time lived in the house, in fact If there is any correlation, the floor area decreases with time lived in a house.
- The residents have very little knowledge about their legal rights and claims over land because they have very little experience with eviction. Thus, the longer that residents have lived in an area, or the greater their sense of security does not necessarily mean that they will spend more on housing improvements.

Home-based Enterprises

Hypotheses:

- Older settlements are more tight-knit and cohesive, making it easier for households to run HBEs,
- Few HBEs can restart their business right after relocation,
- HBEs are often operated by women who need to stay near home for their children and elderly relatives
- The floor area of HBEs is bigger than regular homes without HBEs.
- Household income of HBEs are higher than those without HBEs.

Catbangen

How Location Influences HBEs

Catbangen is on a good location. It is next to the center district of the city. However, roads in Catbangen were not paved and not wide enough for vehicles, even not for tricycles. Although it is in a short walking distance from the main paved street, visitors to the area are limited due to the poor roads, almost only Catbangen residents venture into the village. Due to its location near the main business district HBEs in Catbangen face competition from the larger retailers in the city.

Semi-HBE Cases

The major occupations among Catbangen residents are small-scale fishermen and fish-vendors. They catch fish in the very early morning on boats, and sell the fish at the public market. The men and women do much of the preparation work around the home but they go outside to fish, they return home and prepare their fish for sale at the community market; also they repair their fishing tools around home. However, since fishing is a traditional non-HBE, I have excluded it in the following analysis.

One occupations – cross-stitching (embroidery) – is often HBEs in Catbangen. During the interviews, some women were doing decorative cross-stitching (a kind of embroidery for wall-hangings) to sell; they told me that it takes a few months to complete one piece of cloth. On rainy days, it seemed they worked indoors (probably because stitching work requires good light), and on sunny days, they worked in outdoor communal spaces near their homes, chatting with each other. They did not report their earnings from this as a part of the household income. Although this cross-stitching work is not included in this study, it is like an HBE because the women did the work in their homes and needed a small storage space for threads and materials.

From these two work categories, it is clear that outdoor common space near the house was essential for this work, which in turn was key to a family's economic well-being. Even though the space was just a small area with a few benches, plastic stools and thatched roofing, it was necessary because the house wasn't large enough; they worked outside as a tradeoff to adding on to the house.

Table 4.10 HBEs in Catbangen and Sagayad

Sagayad

HBE n = 10 (7)	Area m2	HBE Income Pesos	All Income Pesos	HBE Income/ All Income *100	HBE Income/ Area Pesos/m2
Welding	11.5	3,000	5,750	52%	261
Tricycle Parking	8.0	3,600	4,000	90%	450
Tricycle Parking	6.7	4,500	4,500	100%	672
Laundry	6.8	2,000	6,000	33%	294
Laundry	12.7	1,200	12,000	10%	94
Restaurant & Grocery	7.6	3,000	5,000	60%	395
Storage	4.7	800	6,800	12%	170
Grocery	2.3	na	10,000	na	na
Grocery	2.2	na	10,000	na	na
Grocery	19.6	na	15,000	na	na
Average	8.2	2,586	7,905	51%	334

Catbangen

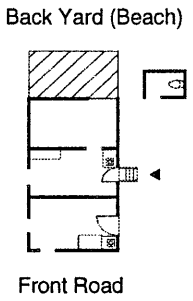
HBE n = 4 (2)	Area m2	HBE Income Pesos	All Income Pesos	HBE Income/ All Income *100	HBE Income/ Area Pesos/m2
Laundry	7.0	500	6,000	8%	71
Grocery	1.1	8,000	11,500	70%	7,273
Grocery	2.1	na	12,000	na	na
Grocery	8.3	na	5,100	na	na
Average	4.6	-	8,650	51%	334

All

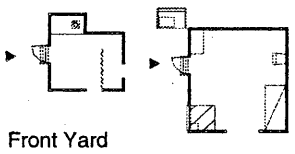
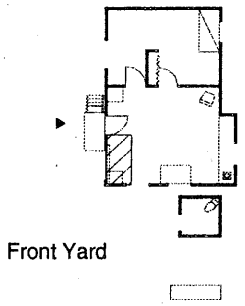
n = 14 (9)	Area m2	HBE Income Pesos	All Income Pesos	HBE Income/ All Income *100	HBE Income/ Area Pesos/m2
Average	7.2	3,263	8,281	53%	1,201

Table 4.11 HBEs in Catbangen

Laundry

Number	Plan	Comments
C10		HBE floor area-7.0m2. HBE income-500. The laundress was a wife. The laundry space was behind a house, on the beach.

Grocery

Number	Plan	Comments
C20		HBE floor area-1.1m2. HBE income-8,000. The shop keeper was the single mother. The window was used as a sales space.
C19		HBE floor area-2.05m2. HBE income-na. The shop keeper was not specified. The window was used as sales space.

Grocery

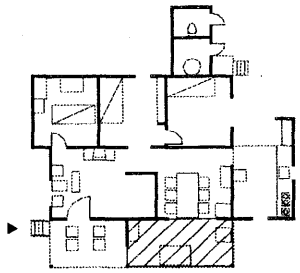
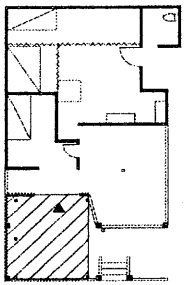
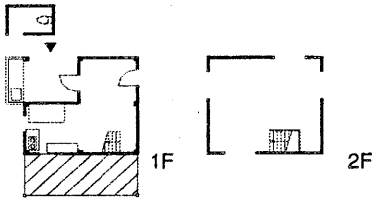
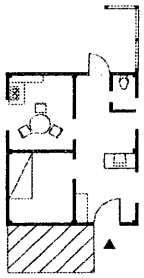
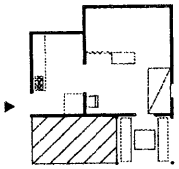
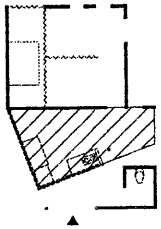
Number	Plan	Comments
C12	 Front Yard	HBE floor area-8.3m2. HBE income-na. The shop keeper is not specified. A terrace was used as sales space. A customer could buy products over the railings.

Table 4.11 HBEs in Sagayad

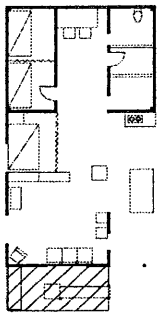
Welding		
Number	Plan	Comments
S17	 Front Road	HBE floor area-11.5m2. HBE income-3,000pesos. The welder is the wife of this family, who has a mechanics diploma at university. She had another job, a basket ball referee.

Tricycle Driver		
Number	Plan	Comments
S10	 Front Road	HBE floor area-8.0m2. HBE income-3,600pesos. The tricycle driver was the husband.
S13	 Front Road	HBE floor area-6.7m2. HBE income-4,500pesos. The tricycle driver was the husband.

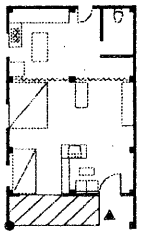
Laundry

Number	Plan	Comments
S5	 Front Road	HBE floor area-6.8m2. HBE income-2,000pesos. The laundress was the wife.
S15		HBE floor area-12.7m2. HBE income-1,200pesos. The laundress was the wife. The laundry place was where they used as a kitchen under a roof.

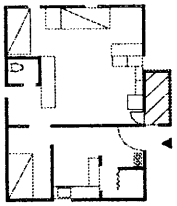
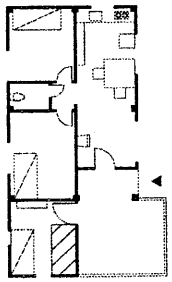
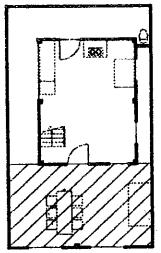
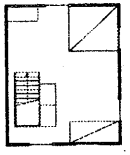
Restaurant

Number	Plan	Comments
S19	 Front Road	HBE floor area-7.6m2. HBE income-3,000pesos. The shop keeper was the single mother. She cooks at the front table and the inside kitchen.

Storage

Number	Plan	Comments
S18	 Front Road	HBE floor area-4.7m2. HBE income-800pesos. The wife delivered gas cylinders. She stocked them in front of the house.

Grocery

Number	Plan	Comments
S9		HBE floor area-2.3m2. HBE income-na. The shop keeper was not specified.
S4		HBE floor area-2.15m2. HBE income-na. The shop keeper was not specified.
S22	 	HBE floor area-19.6m2. HBE income-na. The shop keeper was not specified. The shop space was used for a dining and living room.

Types of HBE Businesses

Four households out of 20 ran HBEs. Three ran grocery stores (C20, C19, and C12), and one was a laundry (C10).

In the entire neighborhood, which included about 100 households, most of which were not interviewed for this study, there was no other HBEs, including restaurants, home-retailers or manufacturers observed.

Working Space

Two grocery stores (C20 and C19) used a window shelf to display foods and goods. This "window sales" advertising/marketing (Mesa, 1990) requires little space in the dwelling. The two HBE grocery stores had a 1.1 m^2 and 2.1 m^2 shelf respectively, and the only other needed space was where the owner sat aside the window. The main inside room was a multi-use area that families used as a living-, dining- and bed-room. If a customer came, the owner just went to the window. There was nearly no space to stock goods, probably because the city market was near enough to them so that when they ran out of stock, they could run down and buy more. So likely, they did not need to store extra goods. The other grocery store (C12) had a room (terrace) of 8.3 m^2 specifically for retail sales, which is categorized as a "small shop" (Mesa, 1990). This shop, equipped with a refrigerator, allowed the owner to sell foods over the railings to visitors outside, who would simply order what they wanted without coming inside and looking around.

The owner of the laundry HBE used open space behind her house. Since the laundress's house was built without property ownership, there was no boundary, so it was also on public land. Compared to the floor areas of her house, this outdoor working space was larger and extended onto the beach.

In Catbangen, most HBEs' customers were their neighbors. Near the HBE grocery stores, there were some benches in the open space, so the neighbors could sit down and take a rest whether or not they purchased goods from the shop. It served as a social space in the community, and even though the large grocery shops were nearby in the main shopping center, many preferred to buy daily necessities, such as eggs, bread and fruit and vegetables near their homes. The grocery owner said she needed to watch over their small children which was why she ran the store. This home based enterprise seemed idea for her.

HBE Profit Margins

There was not enough information about income from HBEs in Catbangen since two out of four did not report earnings on our questionnaires. However, the grocery (C20) earned 8,000 pesos/month from retailing, which was the largest amount earn from both sites, Catbangen and Sagayad. This amount accounted for 70% of all this family's income, so this HBE was critical for this family of ten.

Compared to households without HBEs, income with HBEs was lower than households without HBEs in Catbangen.

HBE Space

The productivity of the C20 grocery store was more than 7,000 pesos/m^2. The laundry reported earning 500 pesos/month, 8% of the family's entire income, and 71 pesos/m^2. The productivity by unit area was extremely different between the grocery store and the laundry; the grocery store earned almost 100 times more, 7,273 pesos/m^2, than the laundry. One reason for this difference may be due to the time period the families have lived there. The grocery shop family had lived in the house for 18 years, and the laundry family had lived in their home for just three years. For 18 years, the grocery store was able to build relations with neighboring customers and deliver them service and goods reliably.

Comparing floor area of households with HBEs to those without HBEs, in Catbangen households with HBEs had more space. They used outdoor space and because of this and the fact that it was a small sample survey, this comparison is insignificant and requires more care analysis.

Table 4.12 HBE, average income and floor area

		Income Pesos	Floor Area m2
Sagayad	HBE	7,905	45.75
	Non-HBE	7,725	49.75
Catbangen	HBE	8,650	37.8
	Non-HBE	10,092	31.9

Sagayad

How Location influences HBEs

For the HBEs, the site of Sagayad is not favorable (Figure 3.4). It is inconvenient for customers outside of the Sagayad district. It is a far distance, about more than one kilometers from the main street, a national highway, which many people travel. Despite such disadvantages only one year after relocation, ten households out of 22 samples (45.5%) were utilizing their homes for economic activities. However, its population of 100 households is enough to sustain these HBEs.

Types of HBE Businesses

Three households in Sagayad ran a grocery store (S9, S4 and S22), two ran a commercial tricycle taxi business (S10 and S13), two ran laundry service (S5 and S15), and others ran a welding shop (S17), a cooking gas delivery service (S18), and a restaurant/grocery store (S19). Other HBEs, which were not reported here, but observed, included an automobile repair shop and a grocery store.

Working Space

I observed no "window sales" HBEs, in contrast to Catbangen. Likewise, the HBEs were categorized as "small shops" (Mesa, 1990). Most were in front of the house, facing the street. Three HBEs – the laundry services (S5 and S15), and the grocery shop (S22) – using a main living space for both private and business purposes; however, they were separated by a curtain or furniture, to protect their family's privacy when their customers visited. For these three HBEs, the working area included both indoor and outdoor space, from 2.2m^2 to 19.6m^2, and the average was 8.2m^2, 11% of the average plot area.

The three grocery stores did not report their earnings. From my limited observation, the two grocery owners (S9 and S4) were males and had another job, a major stable income so that likely they did not try hard to sell their goods because they were not displayed well and the stores were about 10 meters from the public road. They both had outdoor social space with benches and stools. The other grocery store (S22) use an outdoor space with a roof as combination shop and living/dining room. It seemed they stocked goods basically for themselves and if the neighbors or visitors came, they would sell to them. So, while shopping, customers could sit down and socialize.

HBE Profit

The average HBE income in Sagayad was 2,386 pesos and it ranged from amount (0) to 4500 pesos among the 10 HBEs. Three households reported no income from their HBEs, which were all grocery stores. The most lucrative HBEs were the two tricycle drivers.

Precisely speaking, tricycle taxi drivers work in the city, and drive people, like taxis, around the city. So, their actual working place is outside of their homes. However a tricycle is an important tool and by parking on their front yard adjacent the home, owners can watch over their tricycles carefully while they are out of use, and they also can maintain them as well in their yards. In addition, by parking a tricycle at home, they save commuting time and costs.

The percentage of a family's income from an HBE, (excluding the three businesses that did not report their

income), ranged from 100% (tricycle taxi) to 10% (laundry). The highest earning HBEs were the two tricycle taxi businesses, and their household income was about 5,000 pesos. The next highest income (60% and 52% of the families' income) was the restaurant/grocery and welding shop, both operated by women. Their entire income was 5,000 pesos and 5,750 pesos, respectively. The lowest HBE income was from one grocery store, which earned 10% of the family's entire income. While the income was small from the HBE, one of the households that ran a grocery store earned 12,000 pesos, and the income of the two other households that ran grocery shops (and reporting no earnings from these HBEs) earned more than 10,000 pesos each from other work.

In Catbangen, income with HBEs was higher but the sample size was small to generalize. It was insignificant.

HBE Space

The HBE income per square meters varied from the highest, 672 pesos (tricycle parking), to the lowest, 95 pesos (laundry); 334 pesos was the average. The spaces of the two tricycle taxi HBEs were different, and seem to be based on the open space available around the home, approximately 500 pesos/m^2. The next most profitable business was the restaurant/shop business, which was 400 pesos/m^2.

I also compared floor areas of homes with HBEs to those without HBEs in Sagayad and found that the floor area in homes without an HBW was larger than those with HBEs. Due to varying size of outdoor space for HBE activities, this comparison is insignificant.

Summarizing the findings:

- In the new settlements, Sagayad had more HBEs than Catbangen.
- The HBEs in Sagayad were started at an earlier stage of resettlement. But Sagayad HBEs that required more space, materials, public services and linkages to customers and supplies, were few in number.
- Eight HBEs out of 14 HBEs in both Sagayad and Catbangen were operated by women.
- The differences in dwelling space and income, for households with and without HBEs were not clear, because many used outdoor space.

Conclusion

Summary

A home reflects family choices, preferences and views about living. Statistical methods can simplify household preferences and consumption habits. Planners often use such statistical means that generalize household preferences and housing characteristics in order to make it easier to develop new projects and policies, such as land-use zoning. Such practices often fail to recognize specific family needs, household compositions and various lifestyles (extended families, single parents, etc.) and physical characteristics (housing extensions) that are not measured with statistical methods. Even if households have similar family characteristics, their needs and choices often reflect different living styles.

The findings on use of dwelling space and family choices revealed a variety of influences ranging from income and age levels, family structure, building materials, education, etc.) even in the small communities (approximately 100 households), Catbangen and Sagayad. In addition, as a family's lifecycle and personal feelings about safety and tenure status changed, the family's priorities also changed which in turn was reflected in their investment in housing.

This study found that outdoor space was essential for the residents in both sites. Due to limited plots and dwelling space, families used the outdoors for doing laundry, cooking, living/dining rooms (extended porches), socializing, business and so on. Although the results of this survey showed that houses were very crowded, the people utilized their space inside and outside their house as much as possible, since a relatively moderate tropical climate allows people to use outdoor space. The climate was therefore important and benefited the households living in the small houses.

Property rights greatly influenced families' decisions to enlarge their dwelling space and improve the quality of their houses. All the Sagayad residents had (government-granted) property rights and invested in housing far more often than Catbangen residents (many were squatters). The region's propensity for natural disaster – typhoons and hurricanes, high tides, etc – also influenced land purchases. In Catbangen, many residents illegally bought the safer plots of land (in slightly higher elevations), and the lower spots were left to the squatters who were reluctant to invest their money (what little they had) in housing. Personal feelings about safety was another key factor that influenced household choices about housing investments. Repeated typhoon damage had affected squatters' willingness to invest upgrading their houses and create permanent housing on their squatter sites. The households in the less safe locations (the lower-altitude seaside area), showed little willingness to improve their housing. For them, safety as well as property rights were major incentives to invest in housing, and since they could not afford a safe location and had to live as squatters by the sea, they were reluctant to invest in their housing.

The time period of living in the same place meant less for squatters than the government-sponsored settlers. According to the literature, since none of the squatters had been evicted, they would be more likely to invest in improving their housing. However, this was not the case for my sample since most of the squatters lived in an unsafe area by the sea, and feared natural disasters, they tended not to invest in housing.

The households in both sites also used their houses as income generators. In the new settlement site, Sagayad,

residents tried to mesh their lives with the new environment and decided to set up their business at home. The scale of businesses in both sites were not large. More than half of the HBE were operated by women and no household hired workers. With little risk, they found ways to earn income.

Findings and Policy Implications

San Fernando officials have been considering the next relocation project for the Catbangen residents. The first relocation project for the Sagayad residents was considered a success. By looking at findings in this survey at both sites, I will talk about some policy implications in this section for the next housing project.

The most interesting finding in this study was the variety of family composition, lifestyles, and household preferences in terms of space, space usage building materials, in both Catbangen and Sagayad.

The way people utilized their outdoor space varied. Generally, adequate housing and dwelling space are evaluated by how much space one person can use, or how many persons there are per room. The sample of this survey showed various usage of outdoor space. Most households had outdoor kitchens and all households did their laundry outside. Some others used outdoor space for their businesses and others expanded their dwelling space to the road. Outdoor space was used for socializing for all the residents.

In general, zoning plans restrict the use of land, especially in residential areas where business activity is often prohibited. For those who work at home, their occupations are tied to residential space. To consider land simply for dwelling space can affect families' lifestyles, especially women's businesses at home. To enable development, zoning laws should not restrict purposes but should include multiple uses for dwellings, including home businesses. The negative influences of HBEs such as pollution, noise, and the tendency of home-based businesspeople to work overtime can not be denied, however, the benefits are generally greater.

In the two sample communities, the residents used the roads and paths and other public spaces for socializing and work. Indeed, the extra public space was well used. In general, planners need to realize that green space, while sometimes seemly dispensable, is indeed valuable, and furthermore, residents should be given the flexibility to choose how to use such space.

Some Sagayad households felt dissatisfied with small and uniform plot (70 m^2) because many households were large and the small plots created crowding. Various family lifestyles and preferences should be taken into account when planning.

For Catbangen residents, investment in housing was greatly influenced by their fear of natural disasters. They had tolerated their circumstances because they had no means to obtain land ownership. To reduce residents' worries about typhoons in the rainy season, the government should provide access to safer, higher-altitude locations. More specifically, several households reported that they wanted to move inland but close to the sea, because they needed to continue fishing. However, they could not afford to move inland.

Thus, since safety was the fundamental purpose of housing for the people of Catbangen, providing safe areas (inland) should be a focus of city development projects.

Future Research Directions

In this study, many households reported that family relations were most important aspect of their lives. Many residents in my survey reported that they needed family support to take care of their small children, and some also said that they moved to the present places because their kin lived in the neighborhood. While this paper did not focus on the function of family ties in housing, since societies across the globe are now aging rapidly, especially in the less developed countries, family proximity is ever more important and must be factored in when planning. This is an important, though neglected area of research.

Since my research was based only on a survey taken in the summer of 1999, additional longitudinal studies on how time and family lifecycle can affect households and housing are needed to provide us with a broader view of the issues involved to better serve residents.

Another area that needs to be explored is rental housing in small communities like San Fernando, because there is a lack of research on this modality as a method for low-income residents to secure housing.

Housing problems need not always be viewed as negative; they can act as a catalyst for change by generating community involvement and stimulating neighborhoods to band together and demand their government assistance and human rights. Furthermore, housing can function as not only a dwelling space but also as a cog in a community economic and social system, which is also important for planners to recognize.

Appendix: 1 References

De Souza, Flavio A. M. "Land Tenure Security and Housing Improvements in Recife, Brazil." HABITAT International 23. 1 (1999): 19-33.

Follain, James R. and Jimenez, Emmanuel. "The Demand for Housing Characteristics in Developing Countries. "Urban Studies 22 (1985): 421-432.

Follain, James R., Lim Gill-Chin and Bertrand Renaud. "Housing Crowding in Developing Countries and Willingness to Pay for Additional Space: The Case of Korea." Journal of Development Economics 11. 2 (1982): 249-272.

Jimenez, Emanuel. "The Value of Squatter Dwellings in Developing countries." Economic Development and Cultural Change 30. 4 (1982): 739-752.

Lim, Gill-Shin, James Follain R. and Bertrand Renaud. " Economics of Residential Crowding in Developing Countries." Journal of Urban Economics. 16. 2 (1984): 173-186.

Leynes, Angelo F. "Impact of the Slum Upgrading Programme in Metropolitan Manila on the Housing -based Income Generation Activities." Housing and Income in Third World Urban Development. Ed. Mulkh Faj and Peter Nientied. New Delhi: Oxford and IBH Publishing Co. PVT. Ltd., 1990.

Mangin, William P. and Turner, John C. "Benavides and the Barriada Movement." Shelter and Society. Ed. Paul Oliver. New York: F. A. Praeger, 1969: 127-136.

Mapetla, Matseliso. "Beer Brewing and Housing Strategies in Lesotho." A Place to Live: Gender Research on Housing in Africa. Ed. Ann Schlyter. Uppsala: Nordiska Afrikainstitutet, 1996: 144-159.

Mayo, Steve and Stephens, William. "The Housing Indicators Program." Infrastructure Notes. Urban No. HS-7. May 1992. Transformation. Water and Urban Development, the World Bank. Online.

Mesa, Nora Elena. "Economic Use of Housing 'Pirata' and invasion "barrios" Medellin." Housing and Income in Third World Urban Development. Ed. Mulkh Faj and Peter Nientied. New Delhi: Oxford and IBH Publishing Co. PVT. Ltd., 1990.

Muray, Margaret S. "Low-income Renter Housing: Another View of the Tough Choice." Journal of Housing Research 8. 1 (1997): 27-51.

Pader, Ellen, J. "Spatial Relations and Housing Policy: Regulations that Discriminate against Mexican–origin Households." Journal of Planning Education and Research 13 (1994): 119-143.

Razzaz, Omar M. "Examining Property Rights and investment in Informal settlements: The Case of Jordan." Land Economics 69. 4 (1993): 341-355.

Schill, Micheal H., Friedman, Samantha, and Rosenbaum, Emily. "The Housing Conditions of Immigrants in New York City." Journal of Housing Research 9. 2 (1998): 201-235.

Shiferaw, Demissachew. "Self-initiated Transformations of Public-provided Dwellings in Addis Ababa, Ethiopia." Cities 15. 6 (1998): 437-448.

Strassmann, W. Paul. "Home-based Enterprises in Cities of Developing Countries." Economic Development and Cultural Change 36.1 (1987): 121-144.

Tipple, A. Graham. "Shelter as Workplace: A review of Home-based Enterprise in Developing Countries." International Labour Review 132. 4 (1993): 521-539.

Tipple, A. Graham "Self-help Transformations to Low-cost Housing: Initial Impressions of Cause, Context and Value." Third World Planing Review 14.2 (1992): 167-192.

Tipple, A. Graham, David Koboe, Ken Willis and Guy Carrod. "Who is Building What in Urban Ghana?: Housing Supply in Three Towns." Cities 15. 6 (1998): 399-416.

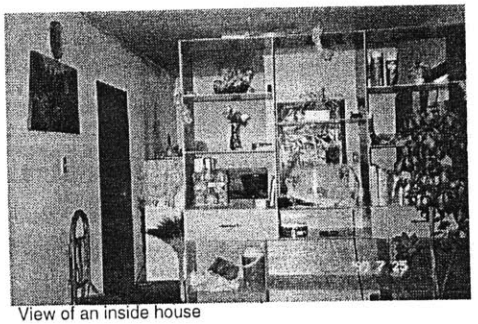
Turner, John F. C. Housing the People: Towards Autonomy in Building Environments. New York: Pantheon Books, 1977.

Appendix: 2 Resident Profiles

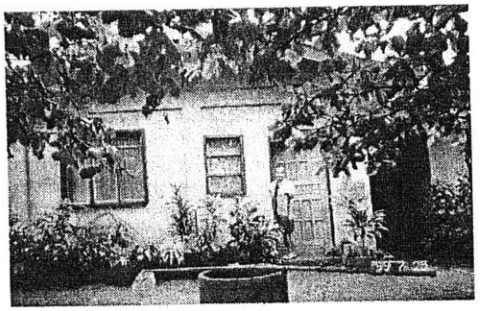
Catbangen

Sagayad

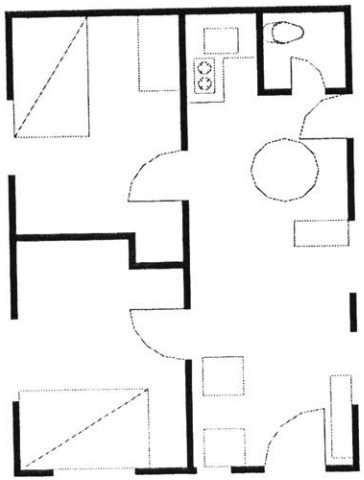
Catbangen	
Number	C1
Household Size	3
Income	750 Pesos
Age	0_9: 0 / 10_19: 1 / 20_29: 0 / 30_39: 1 / 40_49: 0 / Above 50: 1
Family	M 75 W D 14
Education	High-school: 1 / University: 0
Occupation	Fishing related: 1
Floor Area	36.3 m2
Housing Type	Permanent
Wall Material	Concrete blocks
Roof Material	Metal sheets
Plot size	NA m2
Water	Private shallow well
Sanitation	Private (interior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	100000 Pesos
Home-based Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Job, Tenure, Kin
Reasons to Move out	Job, Service
Period	24 Years
Comments	Children's support: Fish to sell and housing investment. Four sons live on the same plot. One of them is C18. Want to stay here with children. Prefer on the ground level because of age.

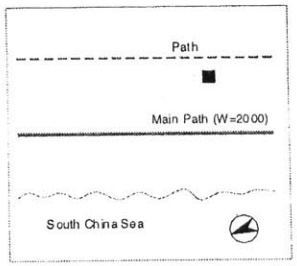


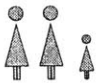
View of an inside house



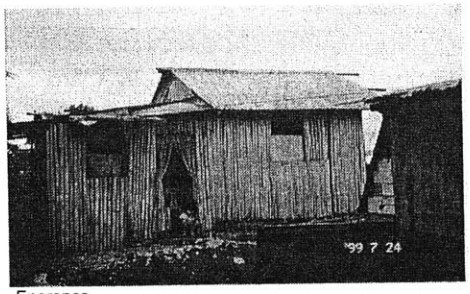
Facade



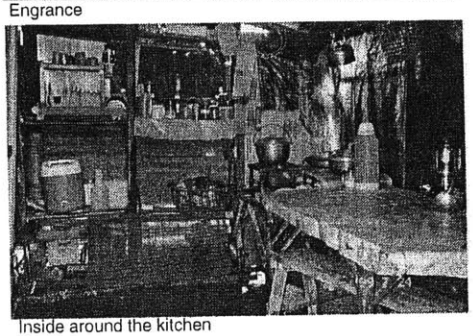


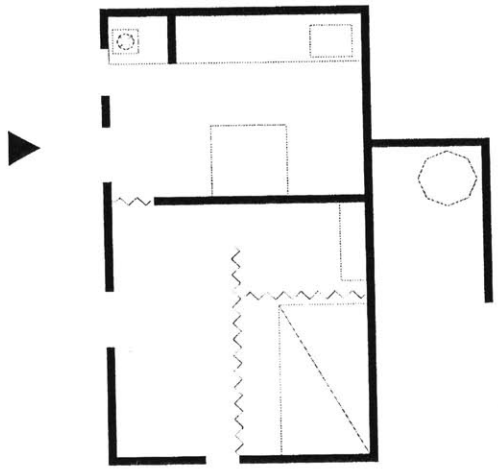


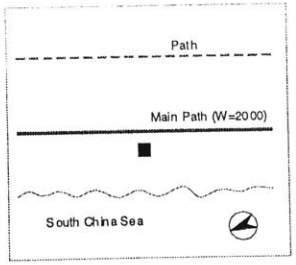
Catbangen	
Number	C2
Household Size	3
Income	1900 Pesos
Age	0_9: 1 / 10_19: 0 / 20_29: 1 / 30_39: 0 / 40_49: 0 / Above 50: 3
Family	H 45 + W 35 D7
Education	High-school: 0 / University: 0
Occupation	Fishing related: 1 / Driver: 1
Floor Area	22.3 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Private shallow well
Sanitation	Private (exterior)
Cost for Housing Maintenance	1200 Pesos/Year
Expenditure for Housing	0 Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	None
Inheritance	Friend
The Number of Boats	1
Maintenance Cost for Boats	6000 Pesos/Year
Reasons to Move in	Job
Reasons to Move out	Job, Service
Period	9 Years
Comments	Want to move to the other city, near their parents.

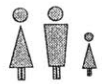


Engrance

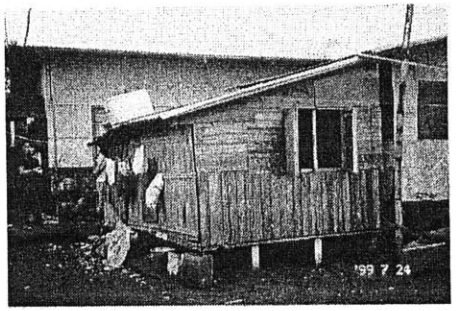

Inside around the kitchen



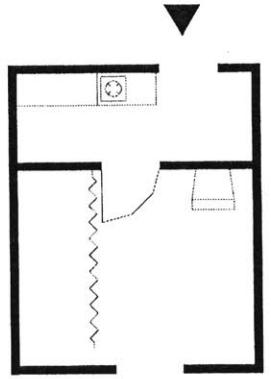


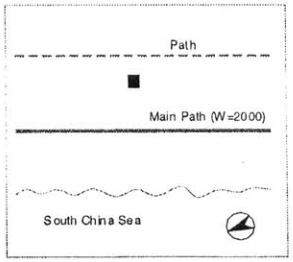


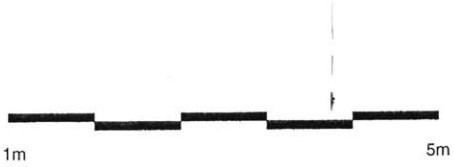
Catbangen	
Number	C3
Household Size	3
Income	3000 Pesos
Age	0_9: 1 / 10_19: 0 / 20_29: 1 / 30_39: 1 / 40_49: 0 / Above 50: 0
Family	H 29 + W 34 S2
Education	High-school: 0 / University: 0
Occupation	Fishing related 2
Floor Area	10.7 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	12 m2
Water	Public shallow well
Sanitation	Public
Cost for Housing Maintenance	500 Pesos/Year
Expenditure for Housing	7000 Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	Own
Inheritance	Son
The Number of Boats	1
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Job, Kin
Reasons to Move out	Job, Service
Period	11 Years
Comments	Parents live next door.



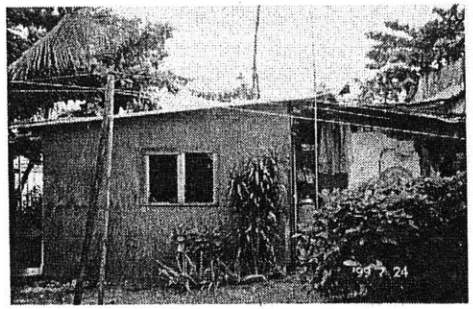
View of the home



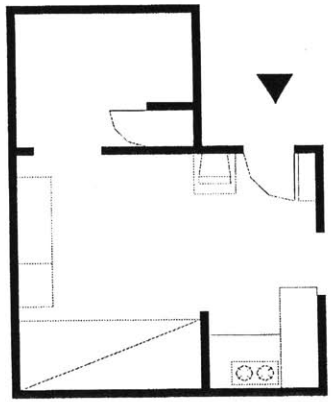


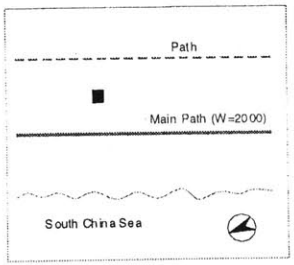


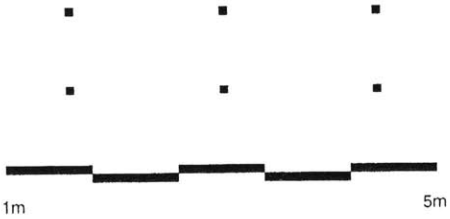
Catbangen	
Number	C4
Household Size	4
Income	1000 Pesos
Age	0_9: 2 / 10_19: 0 / 20_29: 2 / 30_39: 0 / 40_49: 0 / Above 50: 0
Family	H 26 + W 22 D 3 + D 1
Education	High-school: 1 / University: 1
Occupation	Fishing related: 0 / Laborer: 1 / NA: 1
Floor Area	30.6 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public deep well
Sanitation	Public
Cost for Housing Maintenance	NA Pesos/Year
Expenditure for Housing	NA Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	Parents
Inheritance	NA
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	NA
Reasons to Move out	Service
Period	4 Years
Comments	Want to own land.



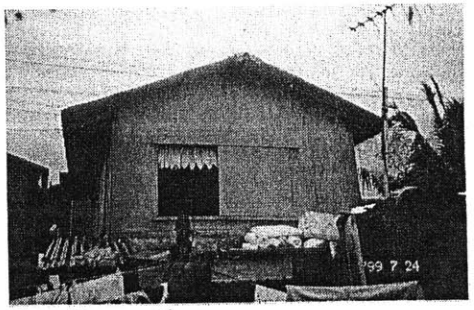
View of the home



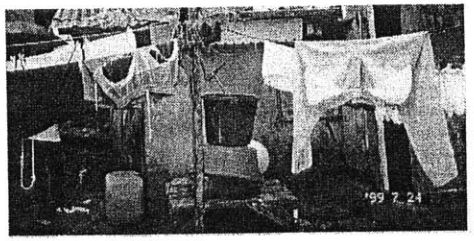




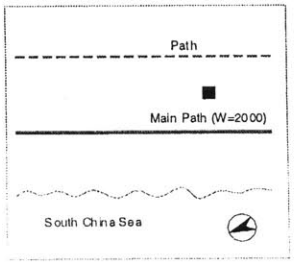
Catbangen	
Number	C5
Household Size	4
Income	3000 Pesos
Age	0_9: 0 / 10_19: 2 / 20_29: 0 / 30_39: 2 / 40_49: 0 / Above 50: 0
Family	H 37 + W 35 D 12 + S 10
Education	High-school: 2 / University: 0
Occupation	Fishing related 2
Floor Area	31.7 m2
Housing Type	Permanent
Wall Material	Concrete blocks
Roof Material	Metal sheets
Plot size	25 m2
Water	Private deep well
Sanitation	Private (interior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	50000 Pesos
Home-based Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Son
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Tenure, Demolished by a Typhoon
Reasons to Move out	NA
Period	6 Years
Comments	Other kin live in the neighborhood. Want to say here, near the sea. Need an outdoor space.

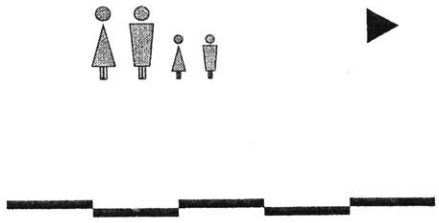


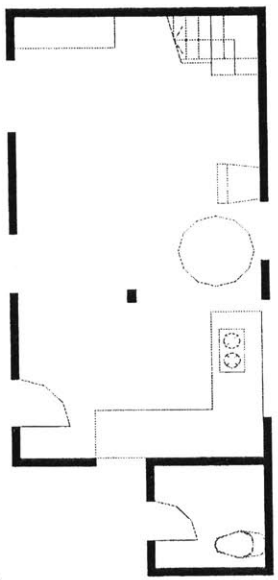
Ciew of the second floor

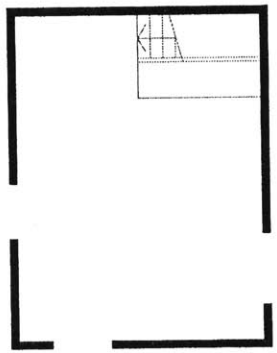


Outdoor space for laundry

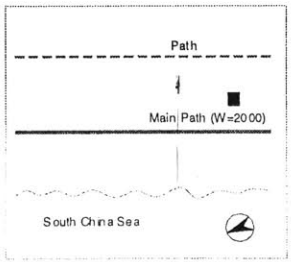


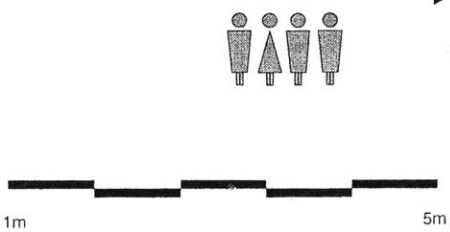


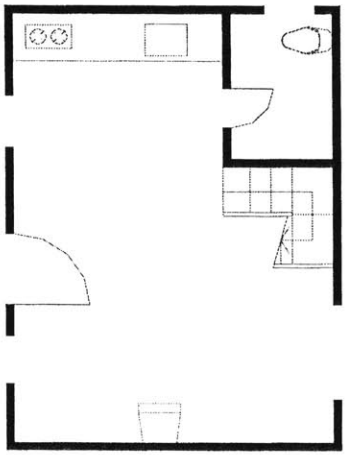

1F

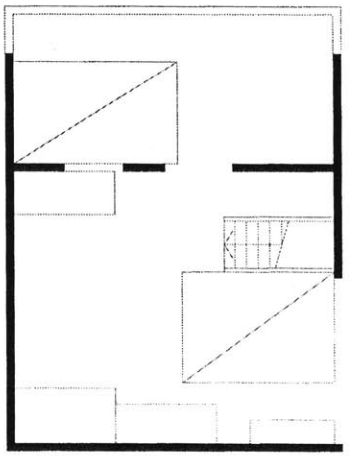

2F

Catbangen	
Number	C6
Household Size	4
Income	6500 Pesos
Age	0_9: 1 / 10_19: 0 / 20_29: 1 / 30_39: 0 / 40_49: 0 / Above 50: 3
Family	F75 H 52 + W 50 Ne20
Education	High-school: 1 / University: 1
Occupation	Fishing related 2
Floor Area	43.2 m2
Housing Type	Permanent
Wall Material	Concrete blocks
Roof Material	Metal sheets
Plot size	25 m2
Water	Private deep well
Sanitation	Private (interior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	60000 Pesos
Home-based Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	NA
The Number of Boats	0
Maintenance Cost for Boats	NA Pesos/Year
Reasons to Move in	Tenure, Demolished by a Typhoon
Reasons to Move out	Tenure
Period	6 Years
Comments	Wife's family had this plot. Don't want to move.

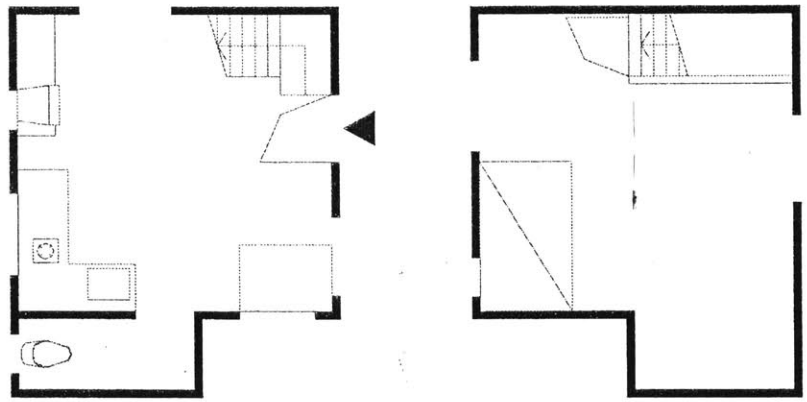


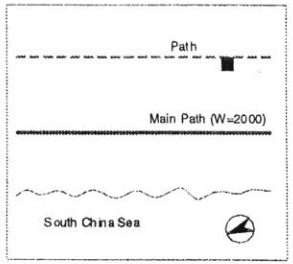




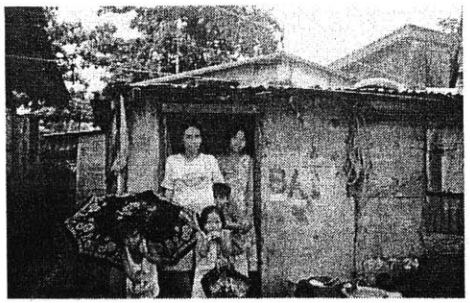


Catbangen	
Number	C7
Household Size	5
Income	4000 Pesos
Age	0_9: 1 / 10_19: 2 / 20_29: 0 / 30_39: 1 / 40_49: 1 / Above 50: 0
Family	H 40 + W 33 D 15 + D 12 + D 9
Education	High-school: 1 / University: 0
Occupation	Fishing related: 2
Floor Area	33.9 m2
Housing Type	Permanent
Wall Material	Concrete blocks
Roof Material	Metal sheets
Plot size	NA m2
Water	Public shallow well
Sanitation	Private (exterior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	30000 Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	Own
Inheritance	NA
The Number of Boats	1
Maintenance Cost for Boats	2000 Pesos/Year
Reasons to Move in	Demolished by a Typhoon
Reasons to Move out	Job
Period	7 Years
Comments	Other kin live in the adjacent barangay. Wan to stay near the sea. Don't mind any level of the floor.

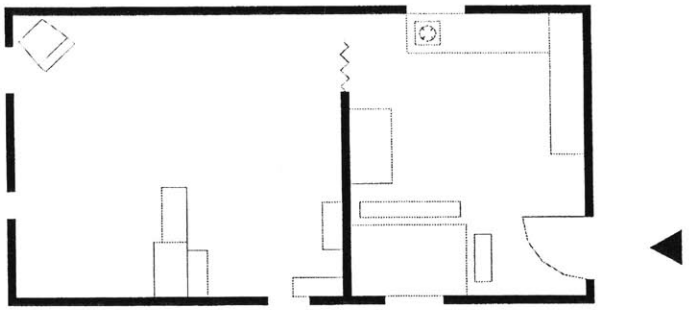


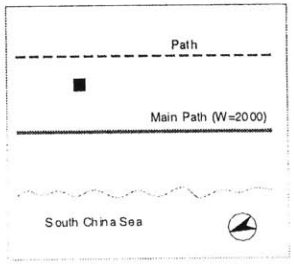


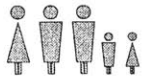
Catbangen	
Number	C8
Household Size	5
Income	5000 Pesos
Age	0_9: 0 / 10_19: 2 / 20_29: 1 / 30_39: 0 / 40_49: 2 / Above 50: 0
Family	H 48 + W 45 S 21 + S 17 + D 15
Education	High-school: 1 / University: 0
Occupation	Fishing related: 3 / Carpenter(Primary occupation): 1
Floor Area	26.9 m2
Housing Type	Permanent
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public shallow well
Sanitation	Private (exterior)
Cost for Housing Maintenance	1200 Pesos/Year
Expenditure for Housing	25000 Pesos
Home-based Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	NA
The Number of Boats	2
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Job
Reasons to Move out	Job, Service
Period	30 Years
Comments	One child's family lives next door. Want to stay here. Prefer the groud floor.



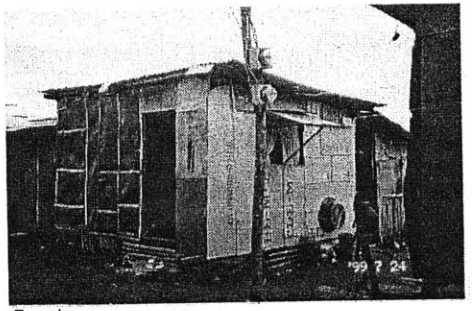
View of entrance



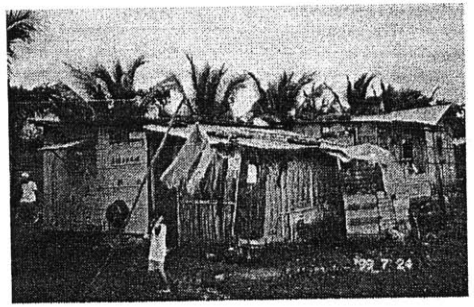




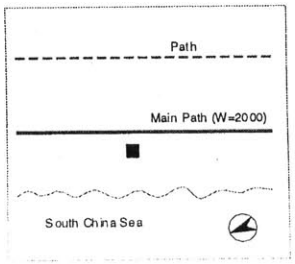
Catbangen	
Number	C9
Household Size	6
Income	5000 Pesos
Age	0_9: 0 / 10_19: 1 / 20_29: 3 / 30_39: 2 / 40_49: 0 / Above 50: 0
Family	H 39 + W 38 D 15 + S 14 + D 10 + S 4
Education	High-school: 1 / University: 0
Occupation	Fishing related: 1 / Driver(Primary occupation): 1 / Sales clerk: 1
Floor Area	21.1 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public deep well
Sanitation	Public
Cost for Housing Maintenance	1500 Pesos/Year
Expenditure for Housing	0 Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	Own
Inheritance	NA
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Job
Reasons to Move out	Job, Service, Tenure, Kin
Period	15 Years
Comments	Other kin live in the neighborhood. Feel anxious about typhoon. Want to stay here for livelihood. Need training programs for higher income.

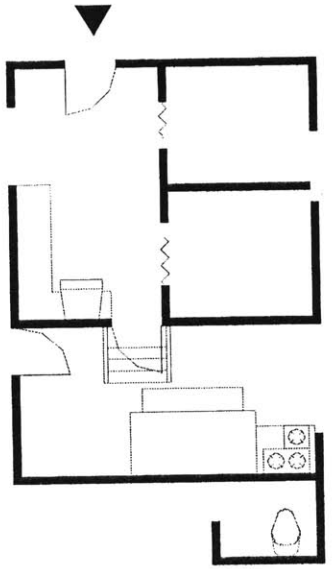


Facade

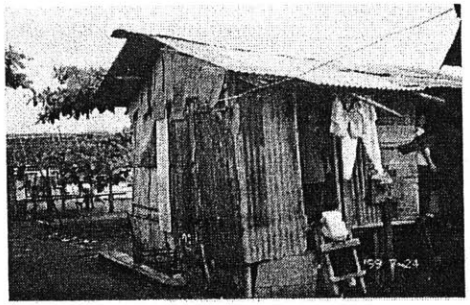


View of the backyard seaside

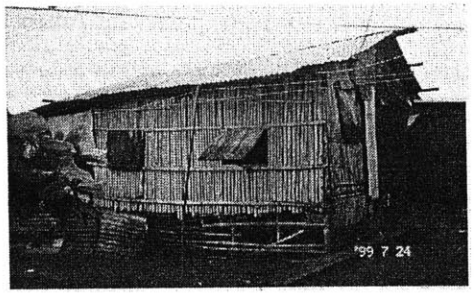




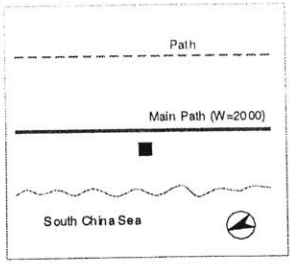
Catbangen	
Number	C10
Household Size	6
Income	6000 Pesos
Age	0_9: 0; 10_19: 2; 20_29: 1; 30_39: 1; 40_49: 0; Above 50: 2
Family	H 57 + W 55 S 31 + S 26 + D 12 + D 11
Education	High-school: 4; University: 0
Occupation	Fishing related: 0; Driver: 1; Laundry worker: 1; Laborer: 2
Floor Area	24.2 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public deep well
Sanitation	Public
Cost for Housing Maintenance	800 Pesos/Year
Expenditure for Housing	1000 Pesos
Home-based Workplace	Laundry-Small shop-500Pesos/Month
Ownership of Land	None
Ownership of House	Own
Inheritance	Other
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Tenure
Reasons to Move out	Job, Tenure
Period	3 Years
Comments	Prefer the groud floor beause of children. Want to move.

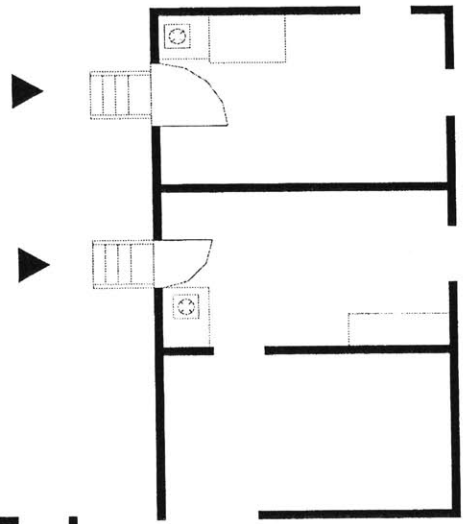


View of the entrance



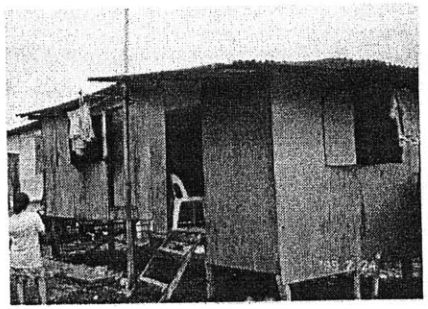
View from the path



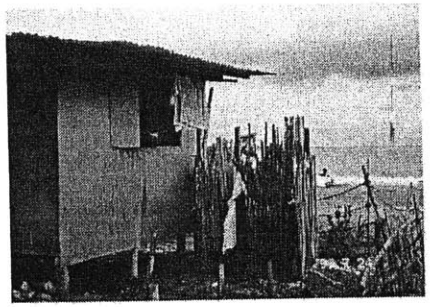


Laundry space

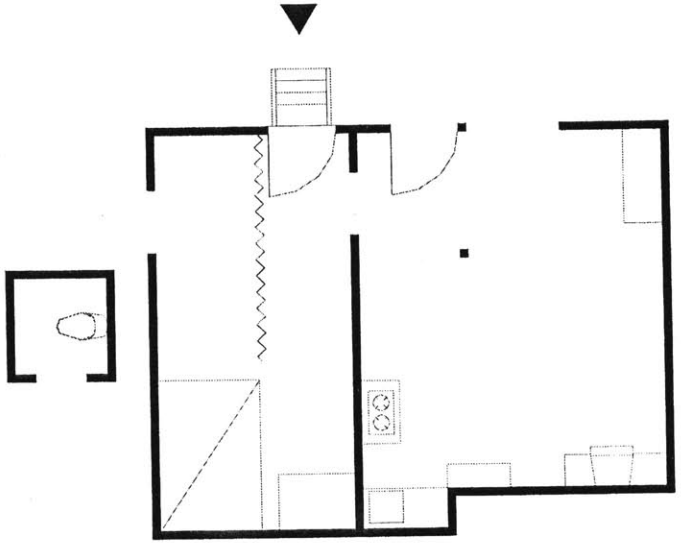
Catbangen	
Number	C11
Household Size	6
Income	8000 Pesos
Age	0_9: 2; 10_19: 2; 20_29: 0; 30_39: 0; 40_49: 2; Above 50: 0
Family	H (abroad) + W 44 D 11 + D 6 + S 3 Ne 14
Education	High-school: 2; University: 0
Occupation	Fishing related: 0; Laborer(abroad): 1
Floor Area	31.4 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public deep well
Sanitation	Private (exterior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	20000 Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	Own
Inheritance	NA
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Kin
Reasons to Move out	Service
Period	26 Years
Comments	Other kin live in the neighborhood. Remittance by a husband sends from abroad. Want to move because of typhoon, but prefer to stay near the sea.

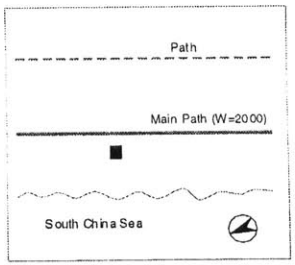


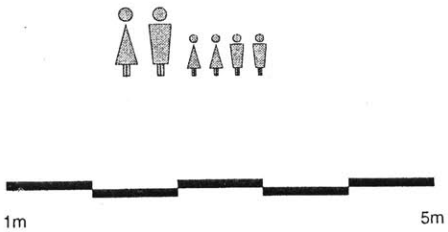
Facade



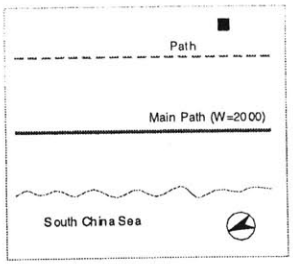
Toilet

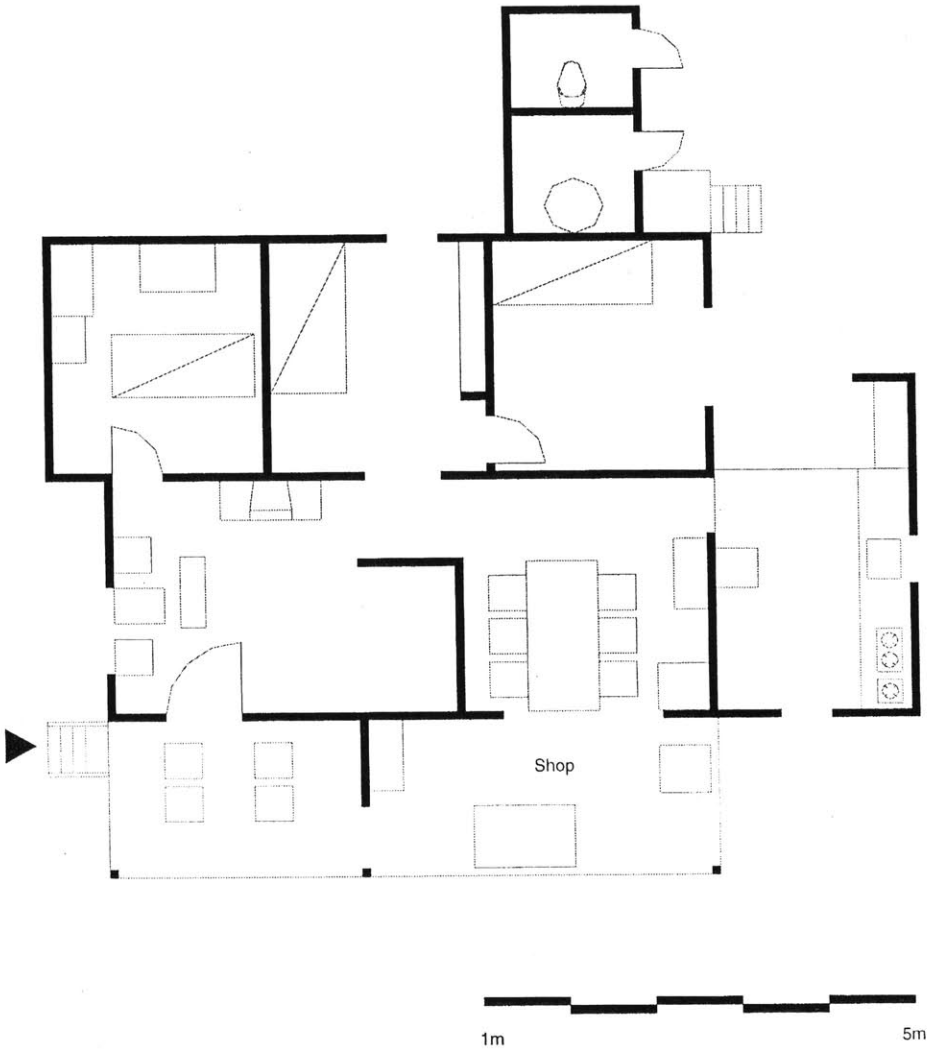




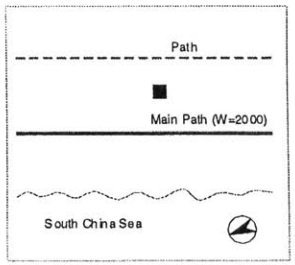


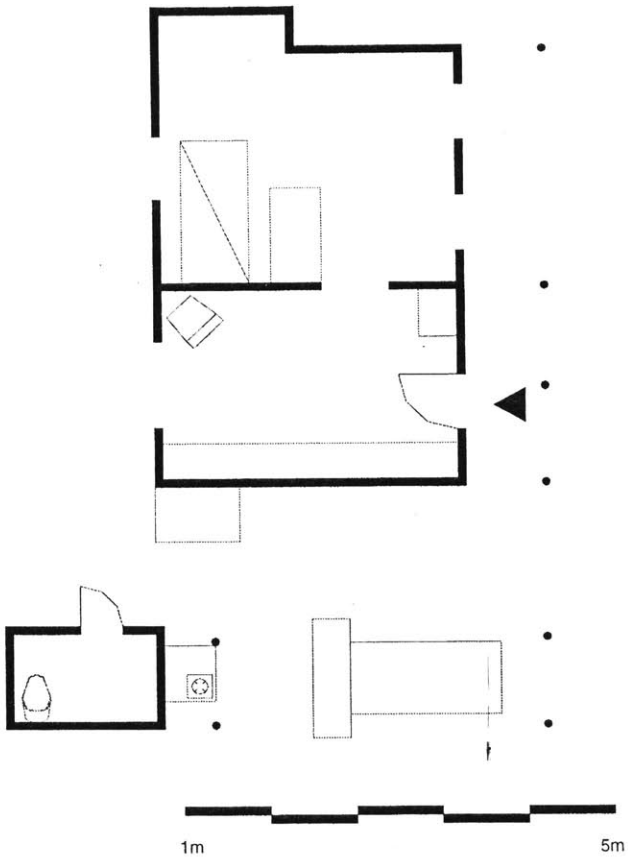
Catbangen	
Number	C12
Household Size	7
Income	5100 Pesos
Age	0_9: 1; 10_19: 2; 20_29: 2; 30_39: 1; 40_49: 0; Above 50: 1
Family	F 79 S 31 + W 23 D 23 S 17 + S 11 + S 2
Education	High-school: 5; University: 0
Occupation	Fishing related: 0; Store clerk: 1; Pension: 1
Floor Area	74.4 m2
Housing Type	Permanent
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Private deep well
Sanitation	Private (exterior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	50000 Pesos
Home-based Workplace	Shop(Food)-Small shop-Not much
Ownership of Land	Other kin
Ownership of House	Own
Inheritance	NA
The Number of Boats	0
Maintenance Cost for Boats	0 Pesos/Year
Reasons to Move in	Tenure
Reasons to Move out	NA
Period	16 Years
Comments	Other kin live in the neighborhood. Don't mind moving. Prefer the ground level because of age.



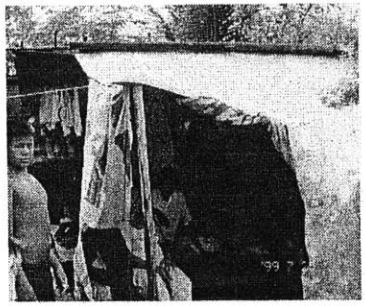


Catbangen	
Number	C13
Household Size	7
Income	6500 Pesos
Age	0_9: 0 / 10_19: 3 / 20_29: 2 / 30_39: 0 / 40_49: 2 / Above 50: 0
Family	H 45 + W 45 S 23 + D 21 + S 19 + S 17 D 10
Education	High-school: 1 / University: 3
Occupation	Fishing related: 2 / Tricycle driver: 1
Floor Area	42.3 m2
Housing Type	Permanent
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Private shallow well
Sanitation	Private (interior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	60000 Pesos
Home-based Workplace	None
Ownership of Land	None
Ownership of House	Own
Inheritance	NA
The Number of Boats	1
Maintenance Cost for Boats	4500 Pesos/Year
Reasons to Move in	Job, Kin, Demolished by a Typhoon
Reasons to Move out	Job, Service, Tenure, Kin
Period	6 Years
Comments	Other kin live in the neighborhood. Want to live near the sea, but mind moving. Prefer the ground floor because of fishing chores.

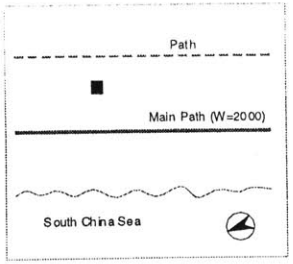


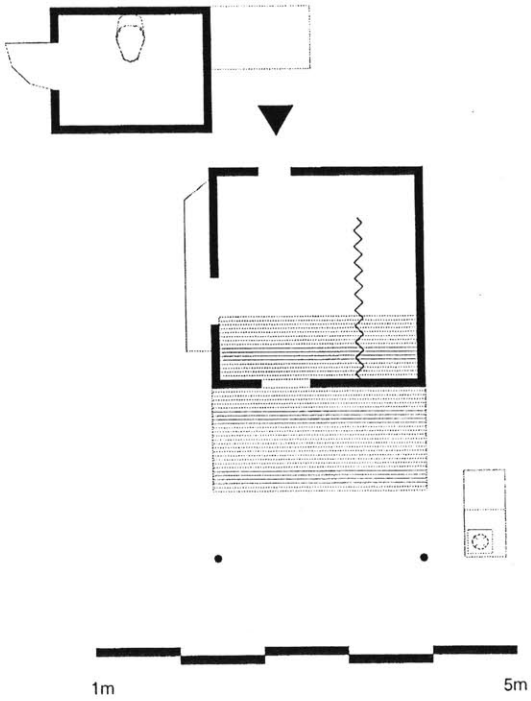


Catbangen	
Number	C14
Household Size	7 Persons
Income	7000 Pesos
Age	0_9: 1 / 10_19: 3 / 20_29: 1 / 30_39: 0 / 40_49: 1 / Above 50: 1
Family	F 54 + M 44 H 24 + W 18 D16 + S 13 S 6 + D 2
Education	High-school: 2 / University: 0
Occupation	Fishing related: 2 / construction worker: 1
Floor Area	15.0 m2
Housing Type	Temporary
Wall Material	Thatch
Roof Material	Thatch
Plot size	NA m2
Water	Private well
Sanitation	Private (exterior)
Cost for Housing Maintenance	200 Pesos/Year
Expenditure for Housing	3000 Pesos
Home-based Workplace	None
Ownership of Land	Other kin
Ownership of House	Own
Inheritance	Son
The Number of Boats	1
Maintenance Cost for Boats	2000 Pesos/Year
Reasons to Move in	Job, Kin, Demolished by Typhoon
Reasons to Move out	Job, Kin, Service
Period	5 Years
Comments	Move from an adcent barangay because of typhoon. Want to stay near sea, but don't mind moving.

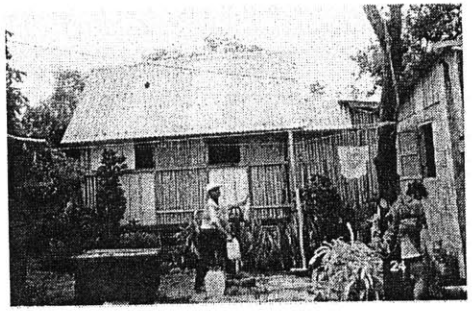


Outdoor space with temporary roof

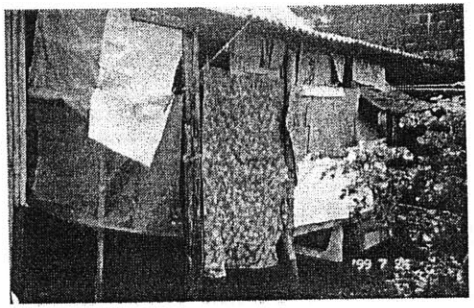




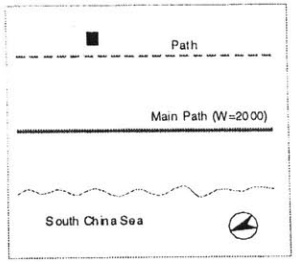
Catbangen	
Number	C15
Household Size	7
Income	12500 Pesos
Age	0_9: 2 / 10_19: 0 / 20_29: 1 / 30_39: 3 / 40_49: 1 / Above 50: 0
Family	H 40 + W 32 / D 6 / H 35 + W 29 / D 0 / S32
Education	High-school: 3 / University: 2
Occupation	Fishing related: 0 / Barber: 1 / Shoe Repaire: 1 / Daycare worker: 1
Floor Area	64.0 m2
Housing Type	Permanent
Wall Material	Concrete blocks
Roof Material	Metal sheets
Plot size	NA m2
Water	Public shallow well
Sanitation	Private (exterior)
Cost for Housing Maintenance	500 Pesos/Year
Expenditure for Housing	0 Pesos
Home-based Workplace	None
Ownership of Land	Mother
Ownership of House	Own
Inheritance	NA
The Number of Boats	0
Maintenance Cost for Boats	NA Pesos/Year
Reasons to Move in	NA
Reasons to Move out	Job, Service
Period	40 Years
Comments	Three families in one household in two houses adjacently: two sisters' and one brother. Want to live closely but separated houses. Prefer the ground level.

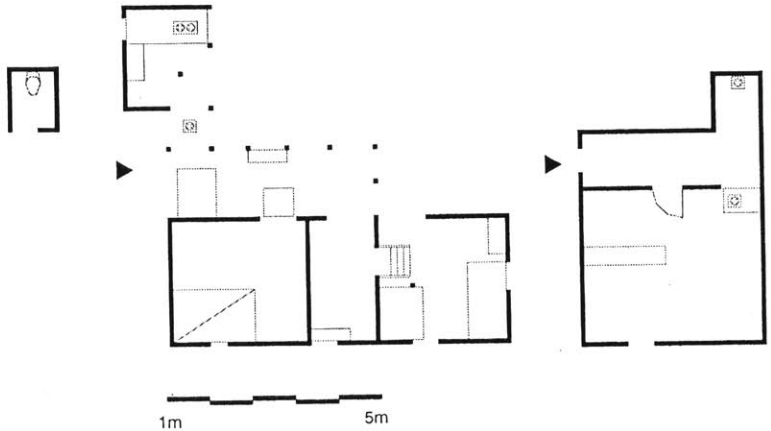


Front yard

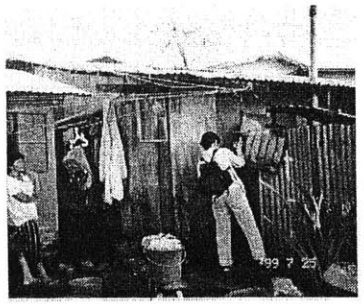


Protection against a rainy season

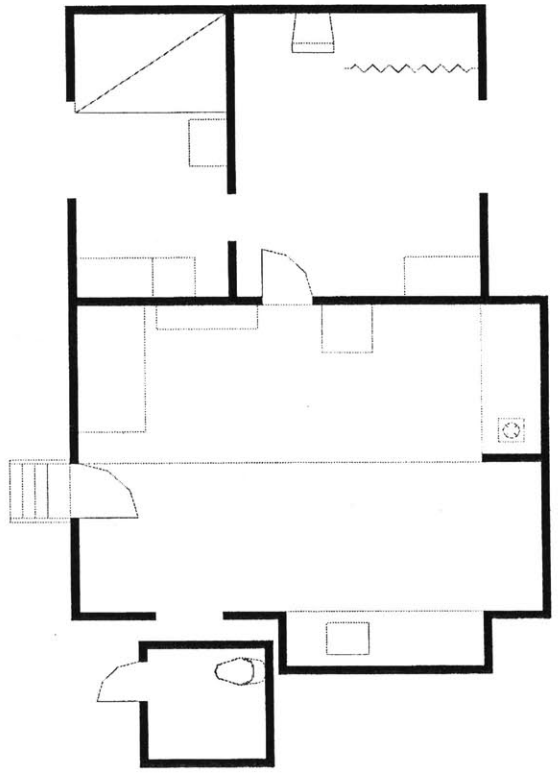


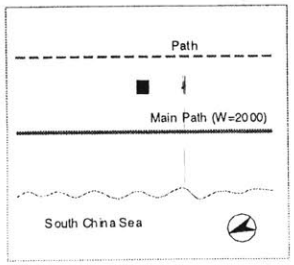


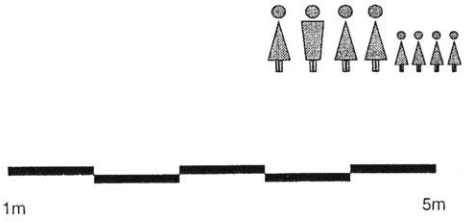
Catbangen	
Number	C16
Household Size	8
Income	6000 Pesos
Age	0_9: 1; 10_19: 3; 20_29: 2; 30_39: 0; 40_49: 1; Above 50: 1
Family	H 47 + W 50 D 21 + D 20 + D 16 + D 14 + D 12 + D 9
Education	High-school: 1; University: 3
Occupation	Fishing related: 2
Floor Area	44.5 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public shallow well
Sanitation	Private (exterior)
Cost for Housing Maintenance	1000 Pesos/Year
Expenditure for Housing	40000 Pesos
Home-based Workplace	None
Ownership of Land	Rent
Ownership of House	Own
Inheritance	NA
The Number of Boats	1
Maintenance Cost for Boats	6500 Pesos/Year
Reasons to Move in	Service, Tenure
Reasons to Move out	Job, Service Tenure
Period	0 Years
Comments	Other kin live in the neighbor. Want to move if land is free. Prefer the ground level because of children.



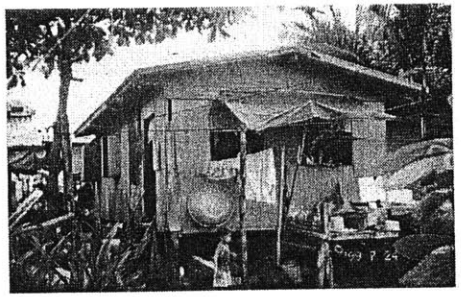
Corner of the house (toilet and outdoor laundry space



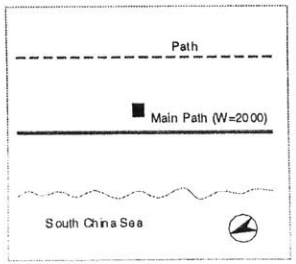


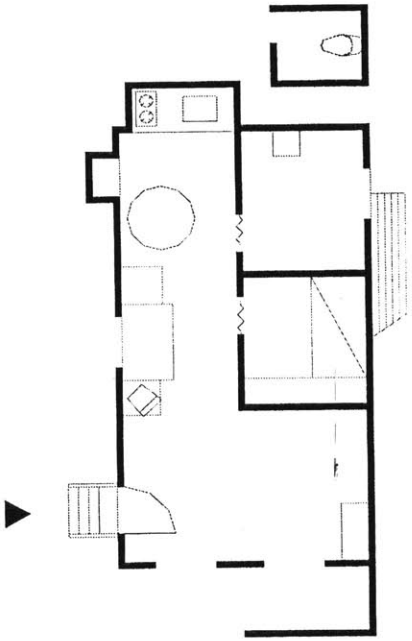


Catbangen	
Number	C17
Household Size	8
Income	9000 Pesos
Age	0_9: 3 / 10_19: 3 / 20_29: 0 / 30_39: 1 / 40_49: 1 / Above 50: 0
Family	H 37 + W 41 D 18 + D 15 + S 13 + D 9 + D 6 + S 4
Education	High-school: 4 / University: 0
Occupation	Fishing related: 2 / Waitress: 1
Floor Area	30.6 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Private deep well (shared with other families)
Sanitation	Private (exterior)
Cost for Housing Maintenance	2000 Pesos/Year
Expenditure for Housing	30000 Pesos
Home-based Workplace	None
Ownership of Land	Friend
Ownership of House	Own
Inheritance	Children
The Number of Boats	1
Maintenance Cost for Boats	5000 Pesos/Year
Reasons to Move in	Job,Tenure
Reasons to Move out	Job, Service
Period	15 Years
Comments	Othe kin live in the neighborhood. Want to stay near the sea, and to live on the ground level because of children.

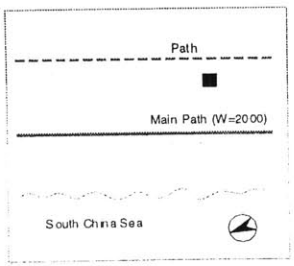


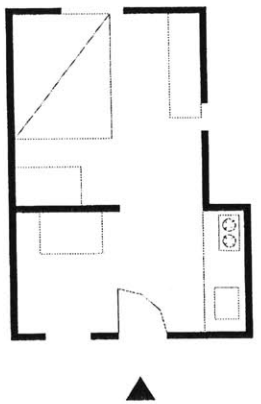
View of the house (outdoor space for laundry and storage)



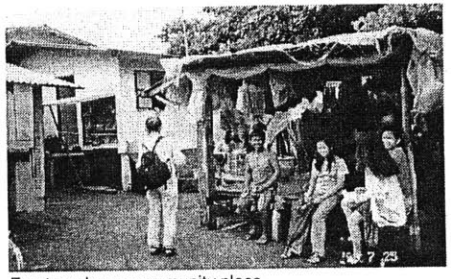


Catbangen	
Number	C18
Household Size	9
Income	7500 Pesos
Age	0_9: 3 / 10_19: 4 / 20_29: 0 / 30_39: 1 / 40_49: 1 / Above 50: 0
Family	H 48 + W 39 S 19 + S 17 + D 16 + D 13 + D 8 + S 6 + S 4
Education	High-school: 4 / University: 0
Occupation	Fishing related 2
Floor Area	15.5 m2
Housing Type	Permanent
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Private shallow well
Sanitation	Private (exterior)
Cost for Housing Maintenance	2000 Pesos/Year
Expenditure for Housing	10000 Pesos
Home-based Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	NA
The Number of Boats	1
Maintenance Cost for Boats	3000 Pesos/Year
Reasons to Move in	Job
Reasons to Move out	NA
Period	9 Years
Comments	A mother (C1) and four children on the same plot devided into six. Prefer the ground floor because of children.

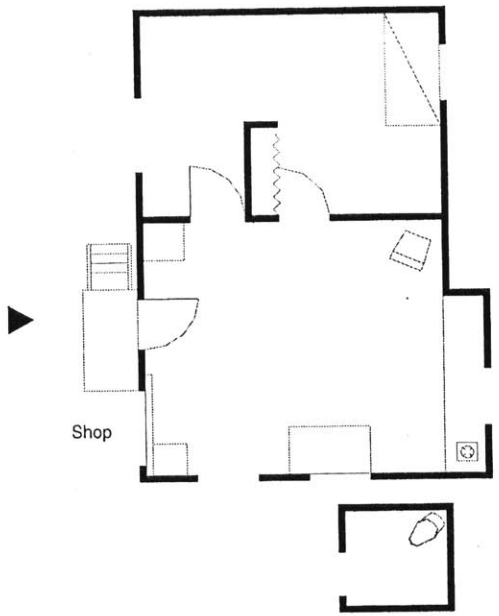


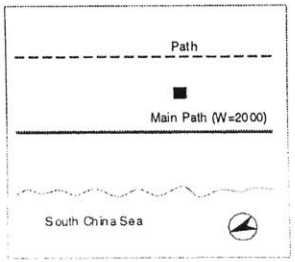


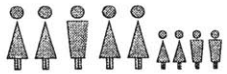
Catbangen	
Number	C19
Household Size	9
Income	12000 Pesos
Age	0_9: 0 / 10_19: 2 / 20_29: 4 / 30_39: 0 / 40_49: 1 / Above 50: 2
Family	M 84 H 50 + W 47 D 26(abroad) + D 22 + D + D + S + S
Education	High-school: 1 / University: 5
Occupation	Fishing related: 2 / Shop keeper: 1 / Teacher: 1 / Nurse(abroad): 1
Floor Area	37.6 m2
Housing Type	Permanent
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Private deep well
Sanitation	Private (exterior)
Cost for Housing Maintenance	0 Pesos/Year
Expenditure for Housing	30000 Pesos
Home-based Workplace	Shop(Food)-Window sale-Not much
Ownership of Land	Own
Ownership of House	Own
Inheritance	NA
The Number of Boats	1
Maintenance Cost for Boats	2000 Pesos/Year
Reasons to Move in	Demolished by a Typhoon
Reasons to Move out	Job, Service
Period	7 Years
Comments	Remittance by one daughter from abroad. Other kin live in the adjacent barangay. Want to stay here.



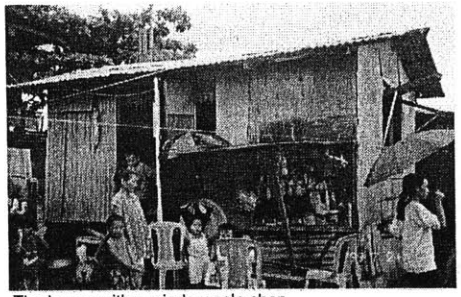
Front yard as a community place



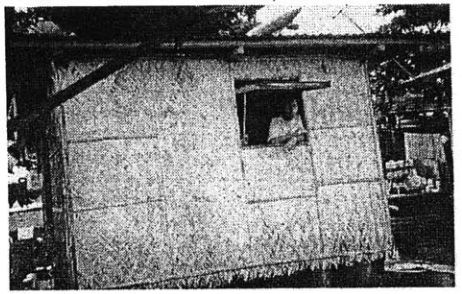




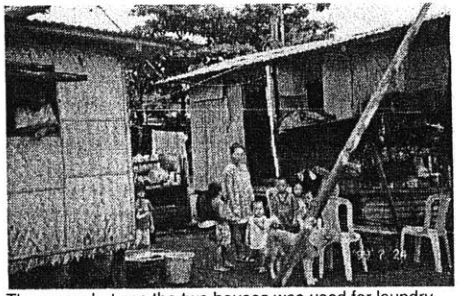
Catbangen	
Number	C20
Household Size	10
Income	11500 Pesos
Age	0_9: 4; 10_19: 3; 20_29: 2; 30_39: 0; 40_49: 1; Above 50: 0
Family	W 42 D 25 + S 22 + D 18 + D 14 + S 10 + S 6 + S 2 D+S
Education	High-school: 2; University: 0
Occupation	Fishing related: 2; Shopkeeper: 1; Babysitter: 1
Floor Area	24.9 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot size	NA m2
Water	Public deep well
Sanitation	Private (exterior)
Cost for Housing Maintenance	500 Pesos/Year
Expenditure for Housing	5000 Pesos
Home-based Workplace	Shop-Window sale-8000Pesos/Month
Ownership of Land	None
Ownership of House	Own
Inheritance	NA
The Number of Boats	1
Maintenance Cost for Boats	1000 Pesos/Year
Reasons to Move in	Kin
Reasons to Move out	Job, Tenure, Service
Period	18 Years
Comments	Other kin live in the neighborhood. Want to stay near the sea, but don't mind moving. Want to live on the ground floor because of many children.



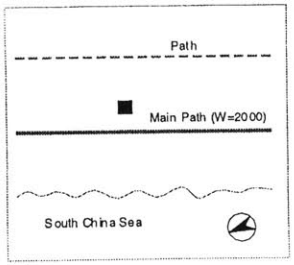
The house with a window sale shop

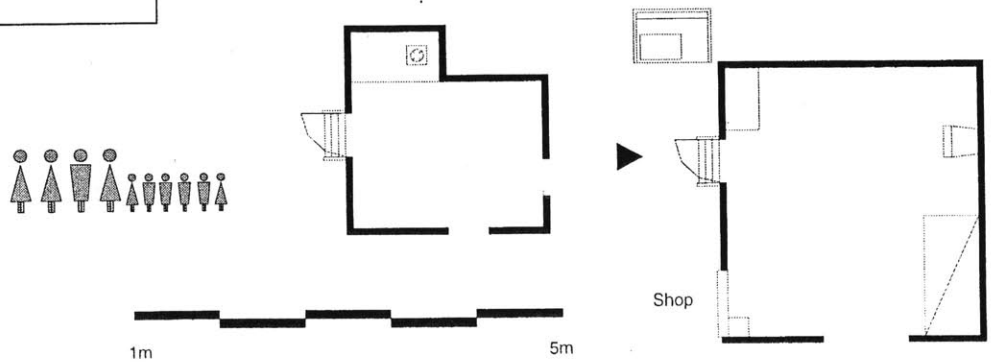


The other house

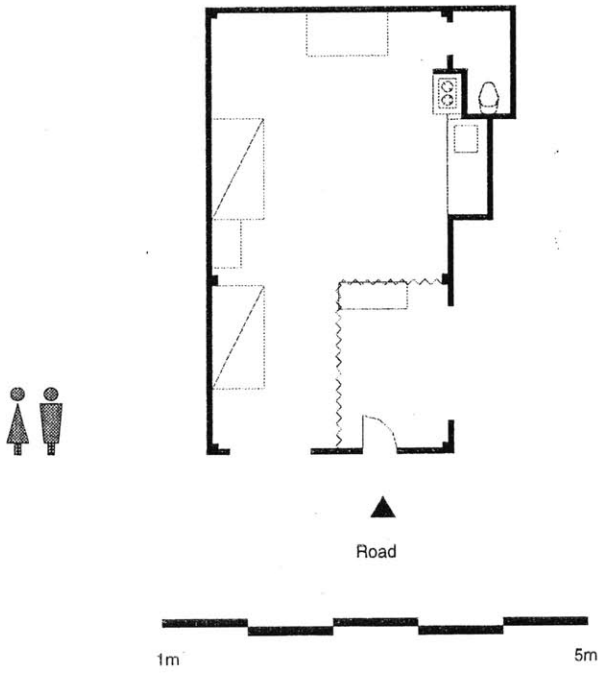


The space betwen the two houses was used for laundry, the kitchen, dining and living room, and community space

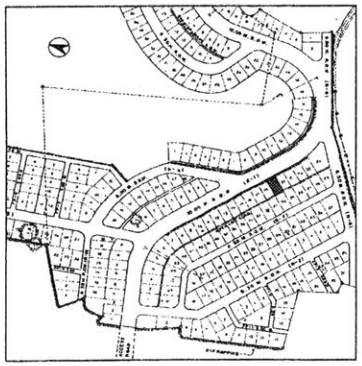


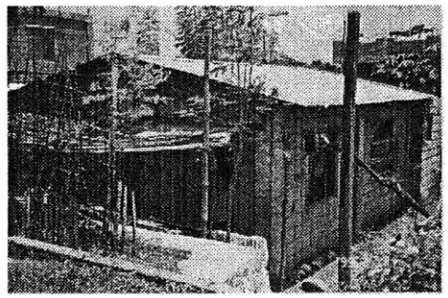


Sagayad	
Number / Plot Number	S1
Household Size	2 Persons
Income	9000 Pesos/Month
Age	0_9: 0 / 10_19: 0 / 20_29: 0 / 30_39: 0 / 40_49: 2 / Above 50: 0
Family	H 45 + W 45
Education	High-school: 1 / University: 0
Occupation	Government employee: 1 / Shop keeper: 1
Floor Area	45.1 m2
Housing Type	Permanenet
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	72 m2
Water	Private deep well
Sanitation	Private (interior)
Moving Cost	2000 Pesos
Payment to the Government	180 Pesos/Month (5 years)
Financial Resources	Loans (Bank), Mortgage
Expenditure for Housing	45000 Pesos
Investment Plan on Housing	100000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	NA
Reasons to Move in	Tenure, (Eviction)
Reasons to have Squatted	Tenure
Period at Previous Housing	10
Comments	Constructed by a family and some hired laborers, not completed.

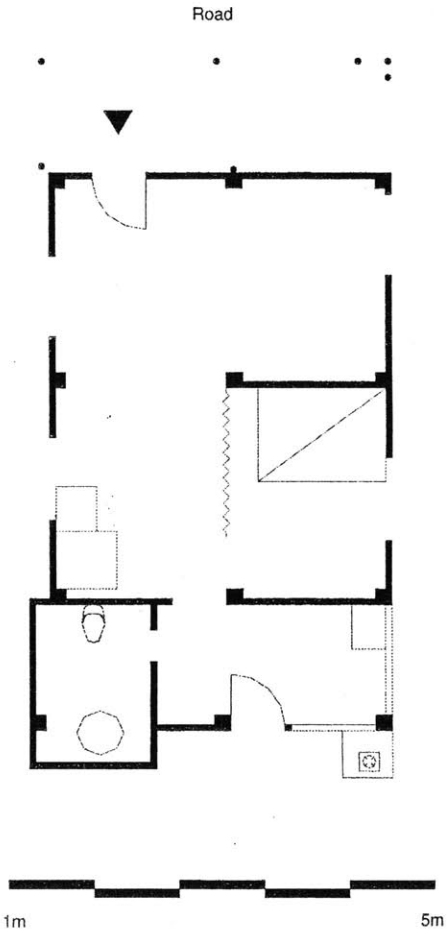


Sagayad	
Number / Plot Number	S2
Household Size	3 Persons
Income	3600 Pesos/Month
Age	0_9: 1 / 10_19: 0 / 20_29: 1 / 30_39: 0 / 40_49: 0 / Above 50: 1
Family	M S Grand Child
Education	High-school: 0 / University: 0
Occupation	Vender 1
Floor Area	54.7 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	NA m2
Water	Public well
Sanitation	Private (interior)
Moving Cost	500 Pesos
Payment to the Government	275 Pesos/Month (5 years)
Financial Resources	Remmitnace (Children)
Expenditure for Housing	20000 Pesos
Investment Plan on Housing	NA Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	(Eviction)
Period at Previous Housing	More than ten years
Comments	Constructed by some hired laborers, not completed.

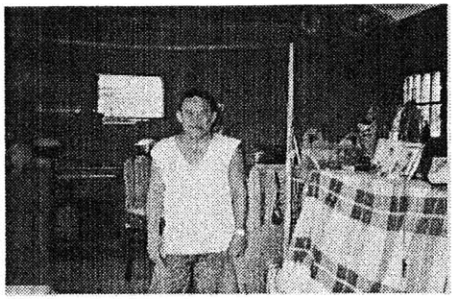




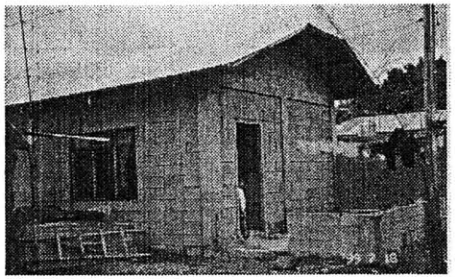
View from the front road



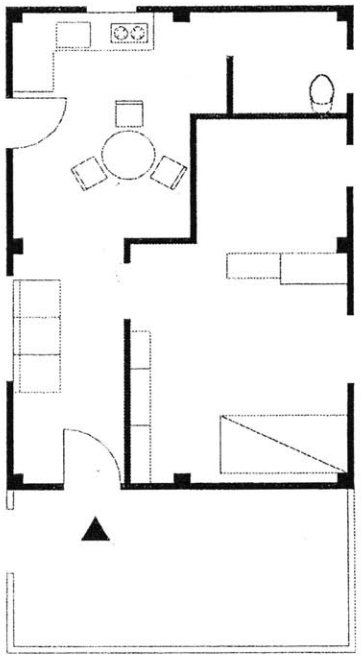
Sagayad						
Number / Plot Number	S3					
Household Size	3	Persons				
Income	10000	Pesos/Month				
Age	0_9	10_19	20_29	30_39	40_49	Above 50
	1	0	0	0	1	1
Family	H 50 + W 48 D 9					
Education	High-school		University			
	1		0			
Occupation	Hospital employee		Vender			
	1		1			
Floor Area	38.8	m2				
Housing Type	Permanent					
Wall Material	Concrete					
Roof Material	Metal sheets					
Plot Size	72	m2				
Water	Public deep well					
Sanitation	Private (interior)					
Moving Cost	1500	Pesos				
Payment to the Government	150	Pesos/Month	(5 years)			
Financial Resources	Savings, Loans (Bank, Employer, Social Insurance)					
Expenditure for Housing	90000	Pesos				
Investment Plan on Housing	100000	Pesos				
In-house Workplace	None					
Ownership of Land	Own					
Ownership of House	Own					
Inheritance	Child					
Reasons to Move in	Tenure					
Reasons to have Squatted	Tenure					
Period at Previous Housing	23					
Comments	Constructed by some hired laborers, not completed.					



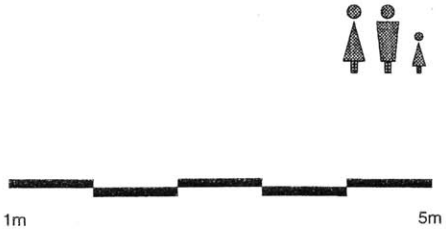
Inside the house



View from the next plot

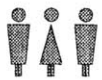


Road

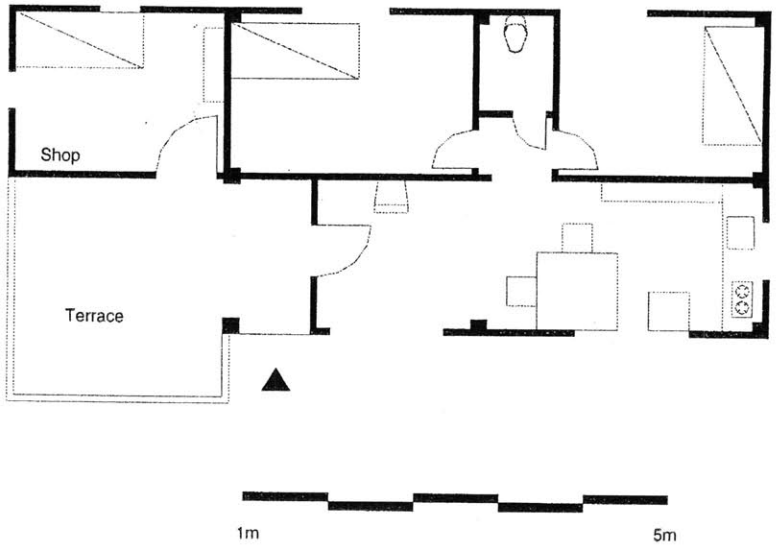


1m 5m

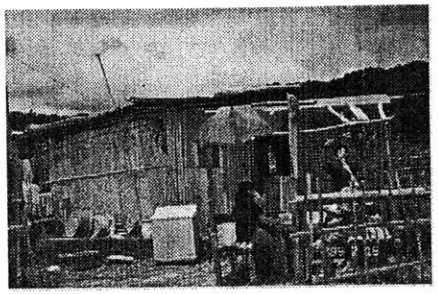
Sagayad	
Number / Plot Number	S4
Household Size	3 Persons
Income	10000 Pesos/Month
Age	0_9: 0 / 10_19: 1 / 20_29: 1 / 30_39: 0 / 40_49: 1 / Above 50: 0
Family	U42 Ni 25 + Ne 18
Education	High-school: 1 / University: 2
Occupation	Government employee: 1 (Consultant: Secondary Occupation): 1
Floor Area	60.3 m2
Housing Type	Permanent
Wall Material	Concrete
Roof Material	Metal sheets
Plot size	77 m2
Water	Private shallow well
Sanitation	Private (interior)
Moving Cost	6000 Pesos
Payment to the Government	576 Pesos/Month 2 years
Financial Resources	Savings, Loans (Community moneylenders), Remittance by kin from abroad
Expenditure for Housing	4500000 Pesos
Investment Plan on Housing	250000 Pesos
In-house Workplace	Shop(Food)-Small shop-Not much
Ownership of Land	Own
Ownership of House	Own
Inheritance	Niece
Reasons to Move in	Tenure, (Eviction)
Reasons to have Squatted	Job, Tenure
Period at Previous Housing	24
Comments	Constructed by a family and some hired laborers, not completed. An original ownership belonged to present owner's mother who died.



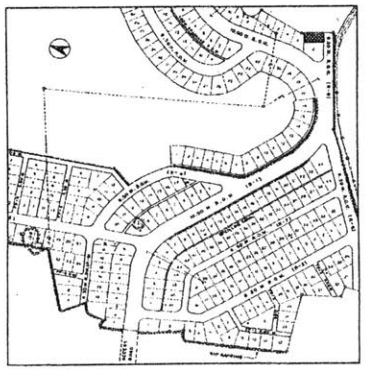
Road

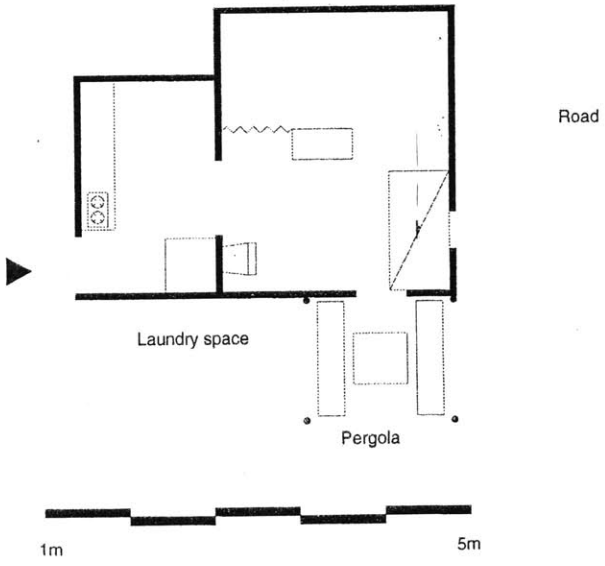


Sagayad	
Number / Plot Number	S5
Household Size	4 Persons
Income	6000 Pesos/Month
Age	0_9: 1 / 10_19: 0 / 20_29: 2 / 30_39: 1 / 40_49: 0 / Above 50: 0
Family	H 28 + W 33 S 1 + D 20
Education	High-school: 3 / University: 0
Occupation	Construction worker: 1 / Laundry: 1
Floor Area	27.9 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal Sheets
Plot Size	115 m2
Water	Public deep well
Sanitation	Sharing (interior)
Moving Cost	500 Pesos
Payment to the Government	192 Pesos/Month (na years)
Financial Resources	Savings
Expenditure for Housing	18000 Pesos
Investment Plan on Housing	100000 Pesos
In-house Workplace	Laundry-Small shop-2000Pesos/Month
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	6
Comments	Constructed by a family and friends, not completed. Parents live in the neighborhood.

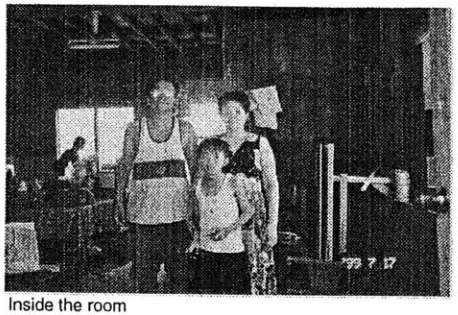


View from the next plot

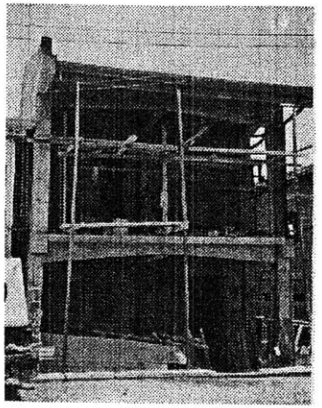




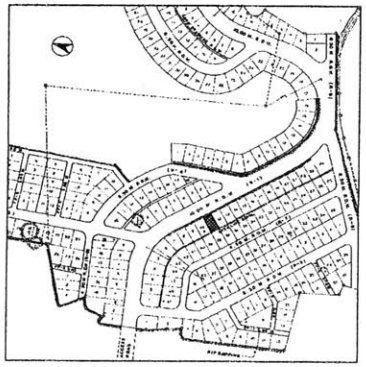
Sagayad	
Number / Plot Number	S6
Household Size	4 Persons
Income	6000 Pesos
Age	0_9: 1 / 10_19: 1 / 20_29: 0 / 30_39: 0 / 40_49: 2 / Above 50: 0
Family	H 49 + W 47 S 14 + S 9
Education	High-school: 1 / University: 2
Occupation	Hospital Secretary: 1
Floor Area	103.4 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot size	74 m2
Water	Public shallow well
Sanitation	Private (interior)
Moving Cost	1200 Pesos
Payment to the Government	230 Pesos/Month
Financial Resources	Savings, Remittance by kin from abroad
Expenditure for Housing	150000 Pesos
Investment Plan on Housing	200000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Kin
Period at the Previous Housing	9
Comments	Constructed by some hired laborers, not completed.

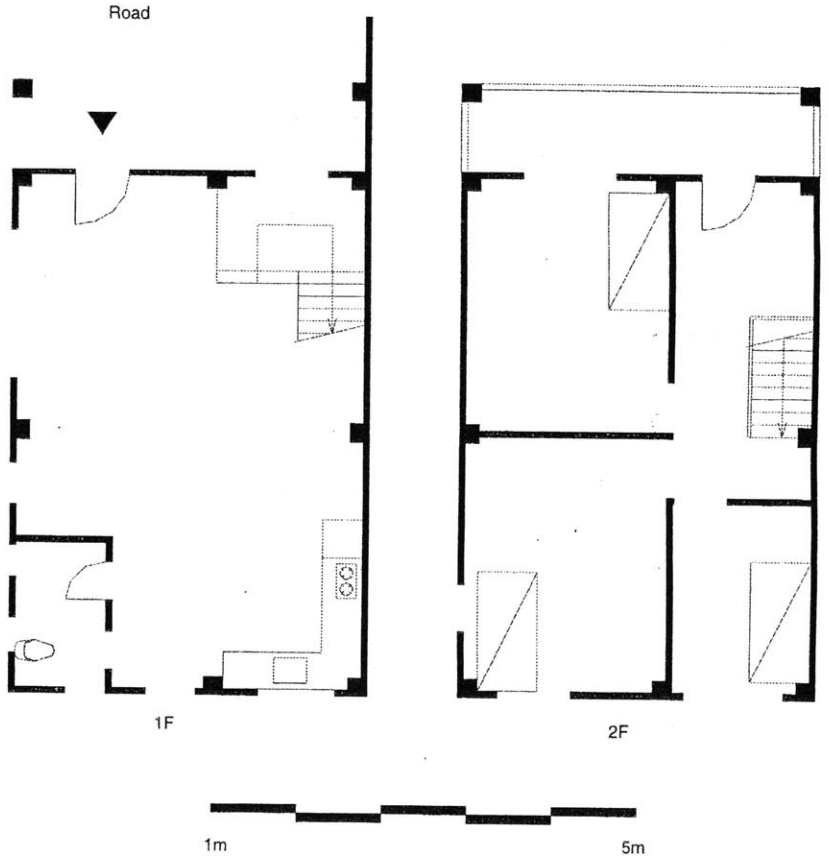


Inside the room

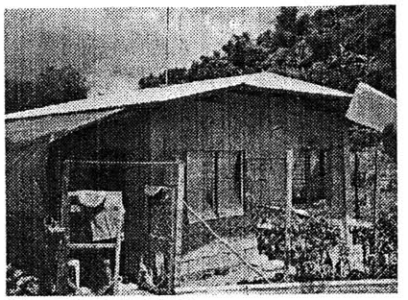


Facade

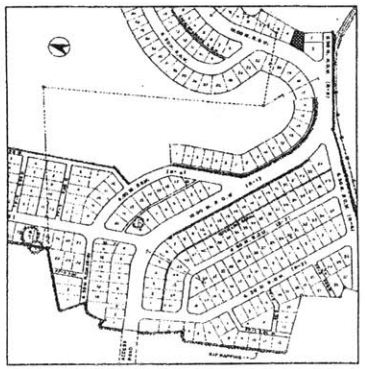


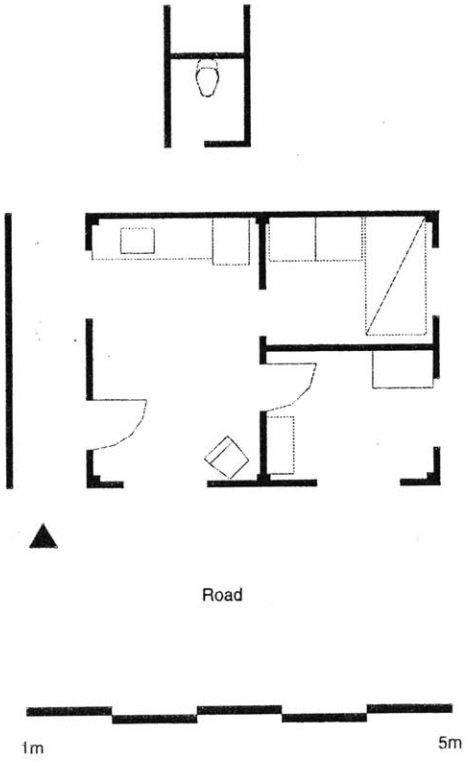


Sagayad	
Number / Plot Number	S7
Household Size	4 Persons
Income	6500 Pesos/Month
Age	0_9: 1 / 10_19: 0 / 20_29: 2 / 30_39: 0 / 40_49: 0 / Above 50: 1
Family	F 50 H 24 + W 20 S 2
Education	High-school: 3 / University: 0
Occupation	Carpenter: 1 / Laborer: 1
Floor Area	30.2 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	79 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	2500 Pesos
Payment to the Government	197 Pesos/Month (na years)
Financial Resources	Loans (kin)
Expenditure for Housing	40000 Pesos
Investment Plan on Housing	40000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure, (Eviction)
Reasons to have Squatted	Kin, Tenure
Period at Previous Housing	30
Comments	Consted by a family, not completed.



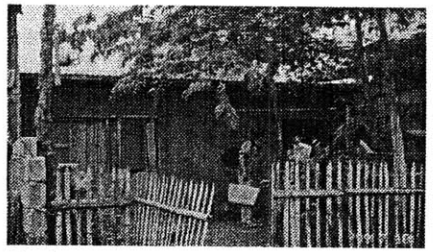
View from the front road



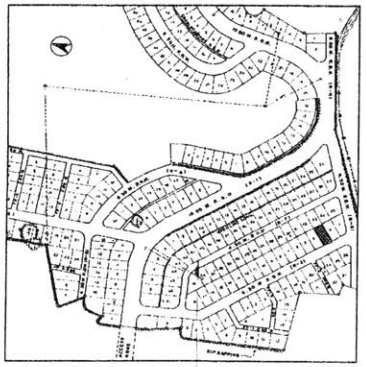


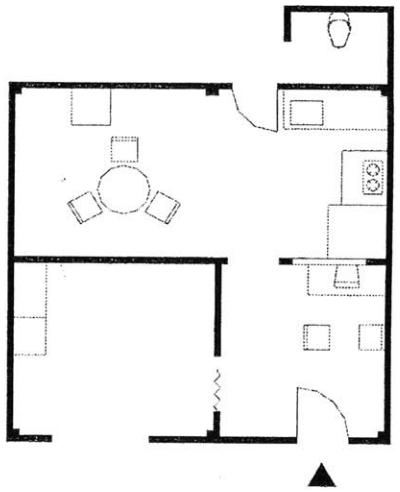
Sagayad	
Number / Plot Number	S8
Household Size	4 Persons
Income	7500 Pesos/Month
Age	0_9: 2 / 10_19: 0 / 20_29: 2 / 30_39: 0 / 40_49: 0 / Above 50: 0
Family	H 26 + W 28 D 7 + S 4
Education	High-school: 2 / University: 0
Occupation	Butcher 1
Floor Area	36.0 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	72 m2
Water	Public shallow well
Sanitation	Private (interior)
Moving Cost	0 Pesos
Payment to the Government	120 Pesos/Month (na years)
Financial Resources	Loans (Employer), Savings
Expenditure for Housing	70000 Pesos
Investment Plan on Housing	NA Pesos
In-house Workplace	None
Ownership of Land	Kin
Ownership of House	Kin
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Job
Period at Previous Housing	4
Comments	Constructed by some hired laborers, not completed. An owner of property, uncle, does not live.

Inside the house



Facade

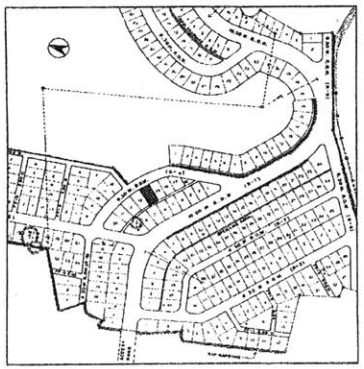


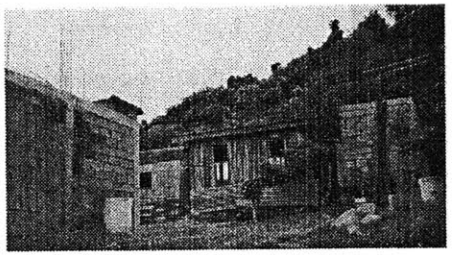


Road

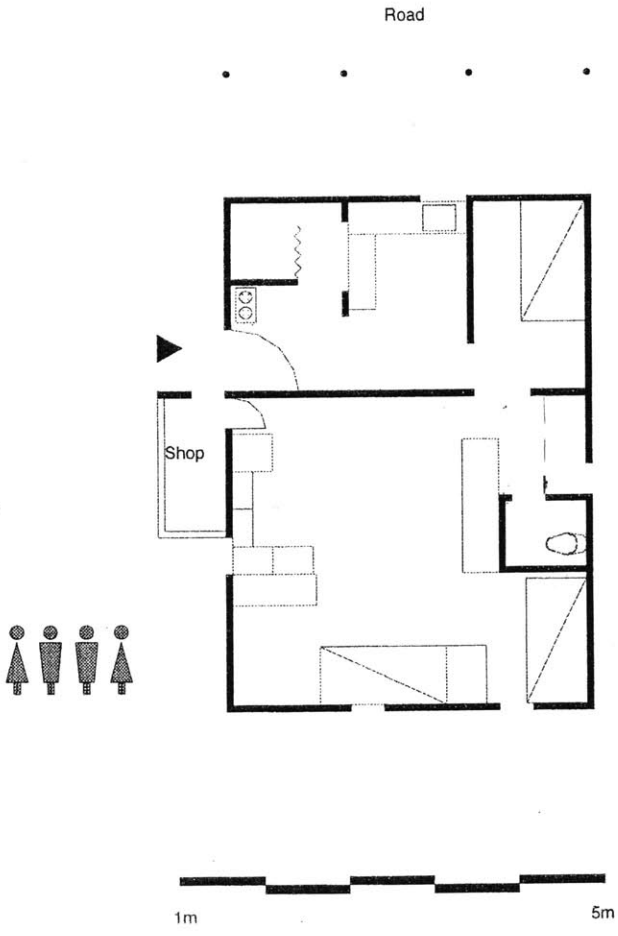
1m 5m

Sagayad	
Number / Plot Number	S9
Household Size	4 Persons
Income	10000 Pesos/Month
Age	0_9: na; 10_19: na; 20_29: na; 30_39: na; 40_49: na; Above 50: 1
Family	H 61 + W S + D
Education	High-school: 3; University: 1
Occupation	Carpenter: 1; Driver: 1; Store keeper: 1; Sales worker: 1
Floor Area	56.8 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal sheets
Plot Size	72 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	5000 Pesos
Payment to the Government	None Pesos/Month
Financial Resources	Savings,Remittance from abroad
Expenditure for Housing	15000 Pesos
Investment Plan on Housing	80000 Pesos
In-house Workplace	Shop(Food)-Small shop-Not reliable
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	20
Comments	Constructed by a family, not completed.

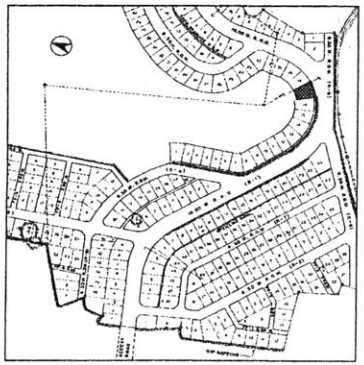




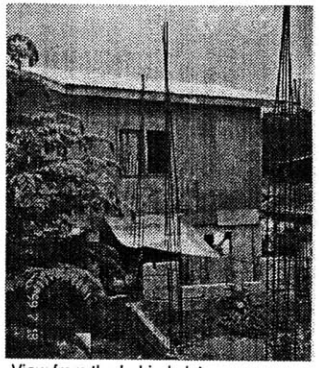
View from the behind plot



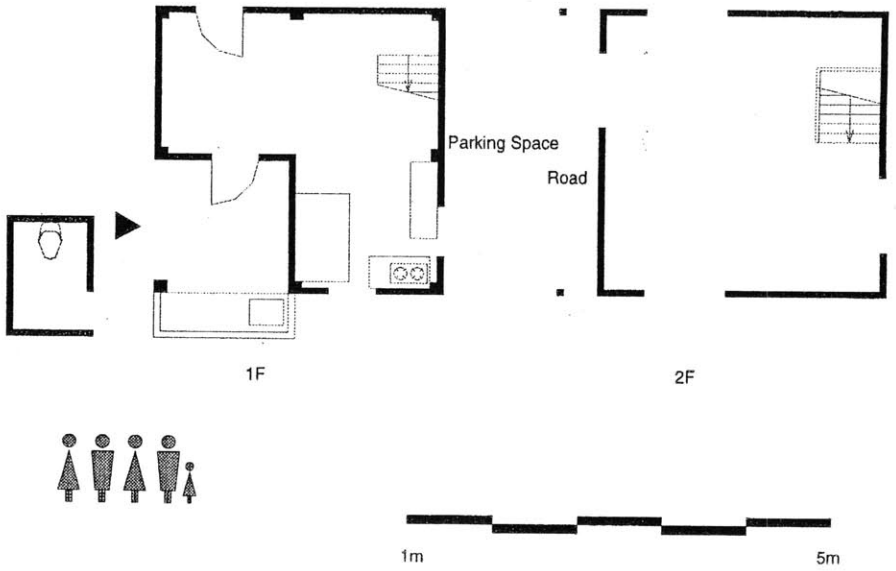
Sagayad	
Number / Plot Number	S10
Household Size	5 Persons
Income	4000 Pesos/Month
Age	0_9: 1 / 10_19: 0 / 20_29: 2 / 30_39: 0 / 40_49: 0 / Above 50: 2
Family	F 51 + M H 25 + W 24 D 3
Education	High-school: 0 / University: 1
Occupation	Driver: 1 / Laborer: 1
Floor Area	49.0 m2
Housing Type	Permanent
Wall Material	Wood, Concrete
Roof Material	Metal sheets
Plot Size	79 m2
Water	Private deep well
Sanitation	Private (interior)
Moving Cost	2000 Pesos
Payment to the Government	180 Pesos/Month (5 years)
Financial Resources	Savings, Loans (Friends)
Expenditure for Housing	100000 Pesos
Investment Plan on Housing	50000 Pesos
In-house Workplace	Parking (Tricycle)-Small shop-3600Pesos/Month
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure, (Eviction)
Reasons to have Squatted	Tenure
Period at Previous Housing	25
Comments	Constructed by some hired laborers, not completed.



View from the front road

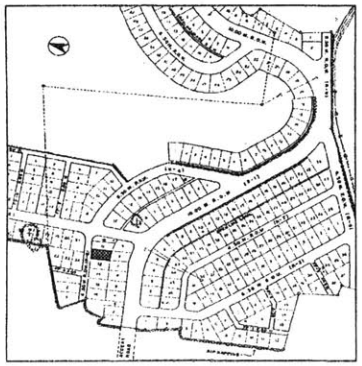


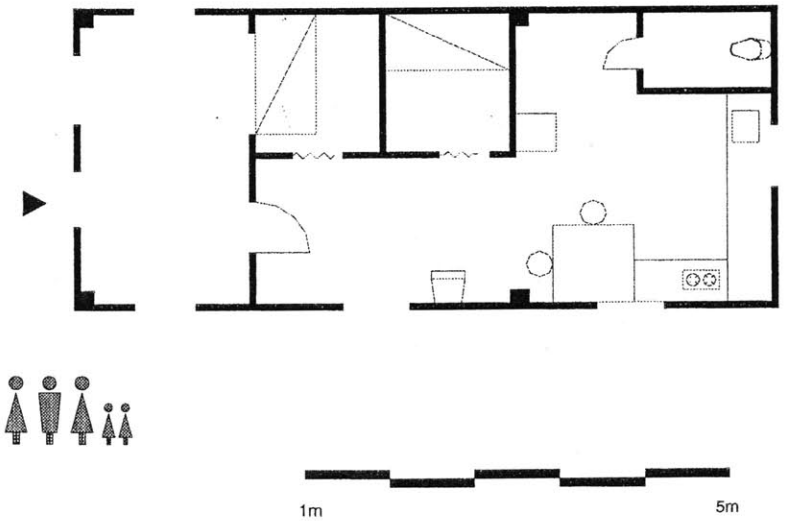
View from the behind plot



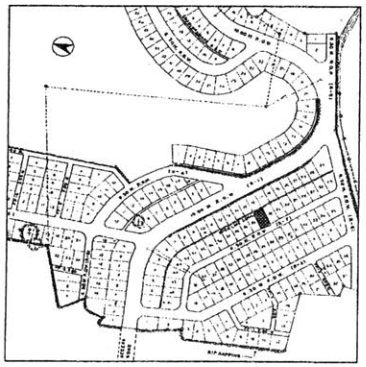
Sagayad	
Number / Plot Number	S11
Household Size	5 Persons
Income	11600 Pesos/Month
Age	0_9: 0 / 10_19: 2 / 20_29: 2 / 30_39: 0 / 40_49: 0 / Above 50: 1
Family	M 50 H 29 + W 20 D + D
Education	High-school: 2 / University: 2
Occupation	Teacher: 1 / Driver: 1
Floor Area	48.9 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Concrete
Plot Size	NA m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	10000 Pesos
Payment to the Government	280 Pesos/Month (na years)
Financial Resources	Loans (Bank, Community money lender)
Expenditure for Housing	50000 Pesos
Investment Plan on Housing	NA Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	12
Comments	Constructed by a family (female) and some hired laborers, not completed.

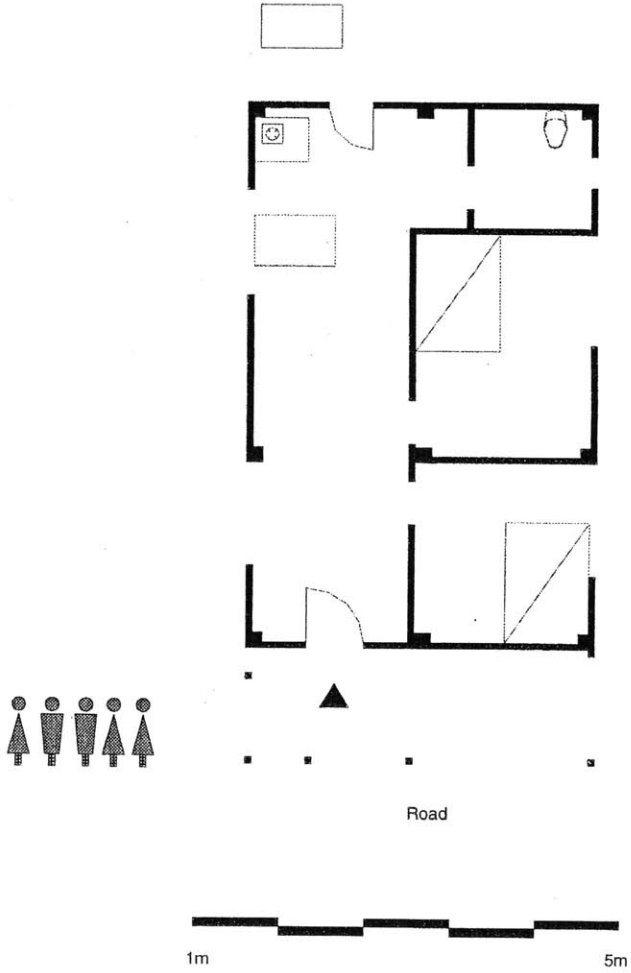
View from the front road



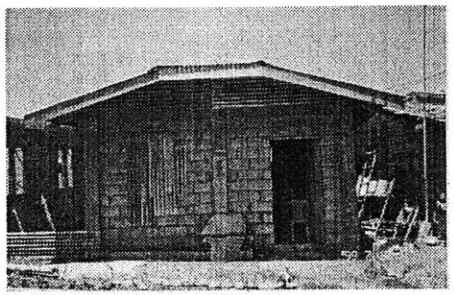


Sagayad	
Number / Plot Number	S12
Household Size	5 Persons
Income	15000 Pesos/Month
Age	0_9: 0 / 10_19: 1 / 20_29: 2 / 30_39: 0 / 40_49: 2 / Above 50: 0
Family	H 45 + W 48 S 22 + D 21 + D 19
Education	High-school: 1 / University: 4
Occupation	Government employee: 2 / (Driver: Secondary occupation): 1
Floor Area	53.3 m2
Housing Type	Permanent
Wall Material	Concrete
Roof Material	Metal sheets
Plot Size	NA m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	5000 Pesos
Payment to the Government	400 Pesos/Month
Financial Resources	Compensation, Savings, Loans (Kin, Institutions, Community moneylenders)
Expenditure for Housing	70000 Pesos
Investment Plan on Housing	200000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Kin, Tenure
Period at Previous Housing	20
Comments	Constructed by a husband and some hired laborers, not completed. Parents live in the neighborhood.

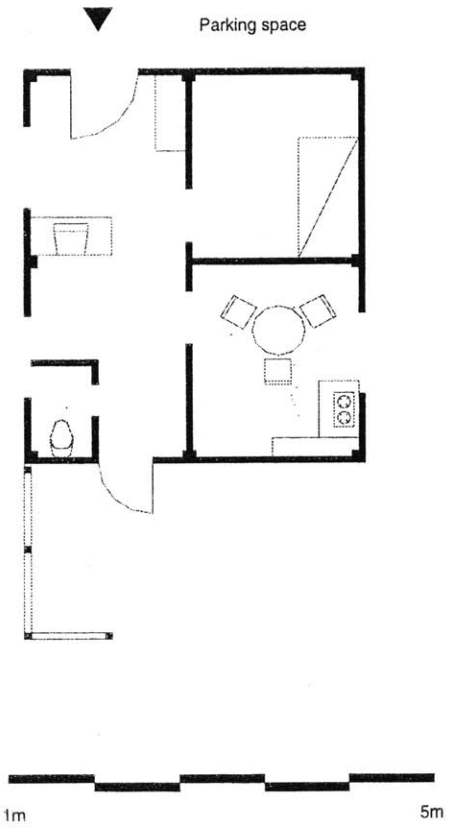




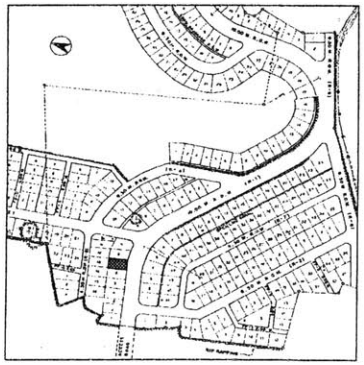
Sagayad	
Number / Plot Number	S13
Household Size	6 Persons
Income	4500 Pesos
Age	0_9: 4 / 10_19: 0 / 20_29: 1 / 30_39: 1 / 40_49: 0 / Above 50: 0
Family	H 32 + W 27 D 8 + S 6 + D 2 + D 1
Education	High-school: 2 / University: 0
Occupation	Driver 1
Floor Area	34.3 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	88 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	300 Pesos
Payment to the Government	None Pesos/Month
Financial Resources	Savings
Expenditure for Housing	40000 Pesos
Investment Plan on Housing	50000 Pesos
In-house Workplace	Parking tricycle-Small shop-4500 Pesos/Month
Ownership of Land	Kin
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	10
Comments	Constructed by a family, not completed.

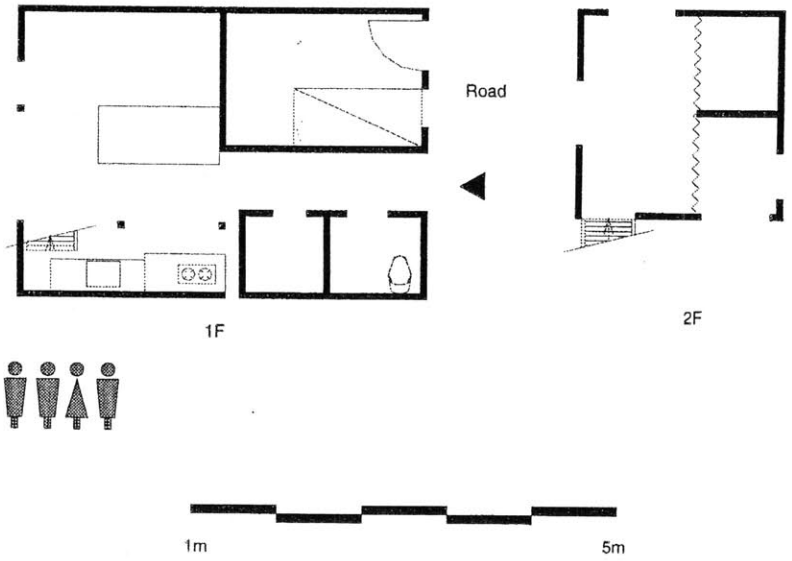


Facade



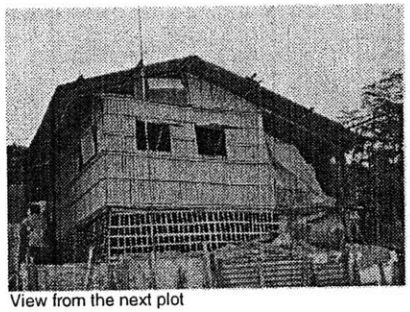
Sagayad	
Number / Plot Number	S14
Household Size	6 Persons
Income	10500 Pesos/Month
Age	0_9: 0 / 10_19: 2 / 20_29: 3 / 30_39: 1 / 40_49: 0 / Above 50: 0
Family	F 51 H 24 + W 17 S 22 + D22 + S 19
Education	High-school: 5 University: 1
Occupation	Shop keeper: 1 Carpenter: 1 Driver: 1
Floor Area	36.6 m2
Housing Type	Permanent
Wall Material	Wood, Concrete
Roof Material	Metal sheets
Plot Size	72 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	NA Pesos
Payment to the Government	240 Pesos/Month (na years)
Financial Resources	Savings
Expenditure for Housing	30000 Pesos
Investment Plan on Housing	50000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	8
Comments	Constructed by a family, not completed.



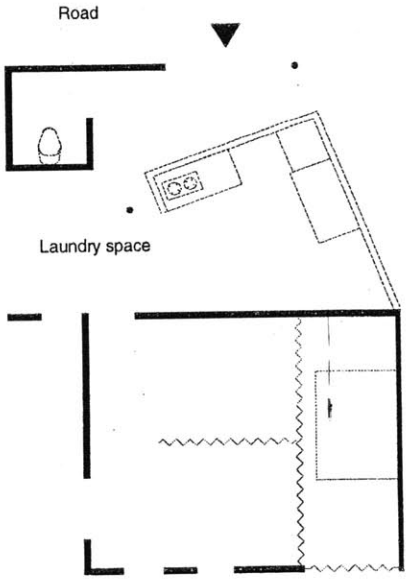


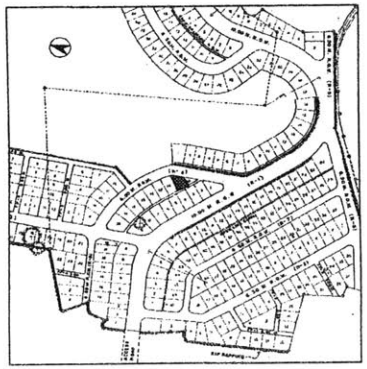
Sagayad	
Number / Plot Number	S15
Household Size	6 Persons
Income	12000 Pesos/Month
Age	0_9: 2 / 10_19: 0 / 20_29: 2 / 30_39: 0 / 40_49: 2 / Above 50: 0
Family	H 49 + W 48 S 27 + S 23 + S9 + S 3
Education	High-school: 2 / University: 0
Occupation	Driver: 2 / Laundry: 1 / Consturuction (including secondary occupation): 2
Floor Area	39.0 m2
Housing Type	Temporary
Wall Material	Wood
Roof Material	Metal Sheets
Plot Size	84 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	5000 Pesos
Payment to the Government	230 Pesos/Month (na years)
Financial Resources	Savings, Remittance (Kin)
Expenditure for Housing	30000 Pesos
Investment Plan on Housing	50000 Pesos
In-house Workplace	Laundry-Small shop-1200Pesos/Month
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	7
Comments	Constructed by a family and neighbors, not completed. Other children live in the neighborhood.

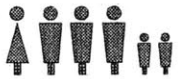
Inside of the house



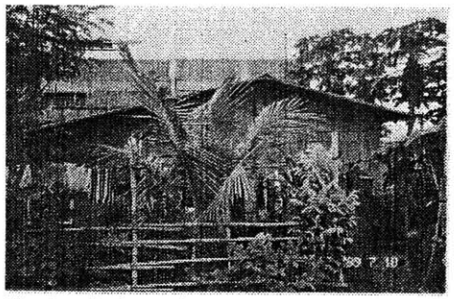
View from the next plot



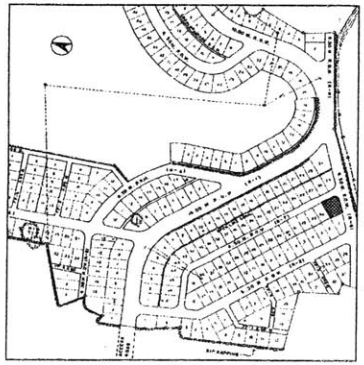


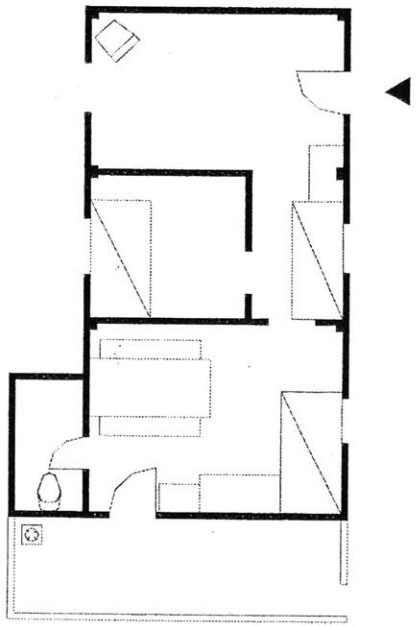


Sagayad	
Number / Plot Number	S16
Household Size	7 Persons
Income	5000 Pesos/Month
Age	0_9: 0 / 10_19: 2 / 20_29: 2 / 30_39: 0 / 40_49: 1 / Above 50: 2
Family	F 81 + M 71 H 45 D 22 + D 22 + D 18 + D 14
Education	High-school: 6 / University: 1
Occupation	Painter 1
Floor Area	47.5 m2
Housing Type	Permanent
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	80 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	3000 Pesos
Payment to the Government	280 Pesos/Month (na years)
Financial Resources	Savings
Expenditure for Housing	19000 Pesos
Investment Plan on Housing	100000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Job, Service, Tenure
Period at Previous Housing	34
Comments	Constructed by a family and some hired laborers, not completed.

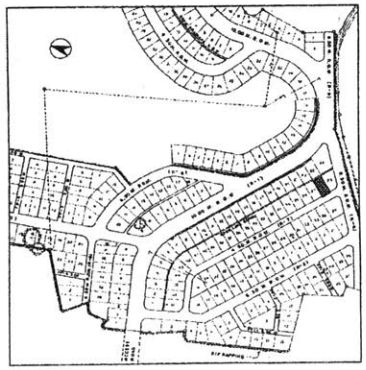


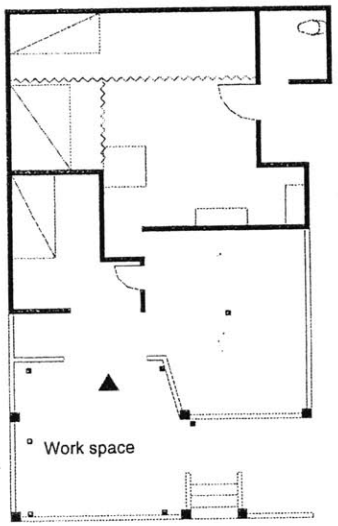
View from the fron road





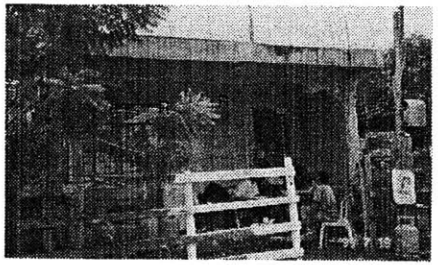
Sagayad	
Number / Plot Number	S17
Household Size	7 Persons
Income	5750 Pesos
Age	0_9: na; 10_19: (3); 20_29: 0; 30_39: 0; 40_49: 2; Above 50: 0
Family	H 48 + W 44 D 18 + D 13 + S 11 + One child Grand child
Education	High-school: 2; University: 2
Occupation	Cook: 1; Welder: 1; Game referee (Secondary Occupation): 1
Floor Area	54.2 m2
Housing Type	Temporary
Wall Material	Concrete, Wood
Roof Material	Metal Sheets
Plot Size	72 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	1000 Pesos
Payment to the Government	240 Pesos/Month (na years)
Financial Resources	Loans (Family), Government compensation
Expenditure for Housing	20000 Pesos
Investment Plan on Housing	50000 Pesos
In-house Workplace	Welding-Small shop-3000Pesos/month
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Job, Service Tenure
Period at Previous Housing	11
Comments	Constructed by a family, not completed.





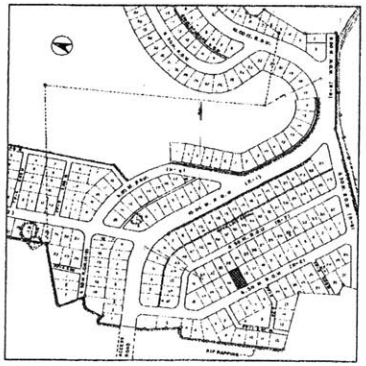
Road

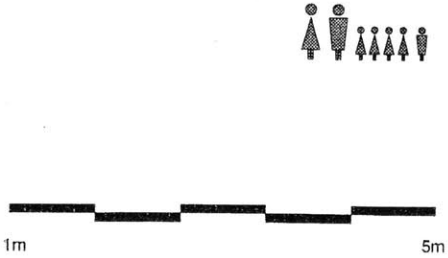
Sagayad	
Number / Plot Number	S18
Household Size	7 Persons
Income	6800 Pesos/Month
Age	0_9: 2 / 10_19: 3 / 20_29: 0 / 30_39: 1 / 40_49: 1 / Above 50: 0
Family	H 42 + W 39 D 15 + D 12 + D 10 + D 7 + S 2
Education	High-school: 2 / University: 0
Occupation	Government Employee: 1 / Delivery: 1
Floor Area	46.0 m2
Housing Type	Permanent
Wall Material	Concrete
Roof Material	Metal sheets
Plot Size	72 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	1800 Pesos
Payment to the Government	180 Pesos/Month (na years)
Financial Resources	Loans (Institution)
Expenditure for Housing	100000 Pesos
Investment Plan on Housing	170000 Pesos
In-house Workplace	Storage-Small shop-800 Pesos/Month
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Job, Service, Tenure
Period at Previous Housing	20
Comments	Constructed by a family, not completed.

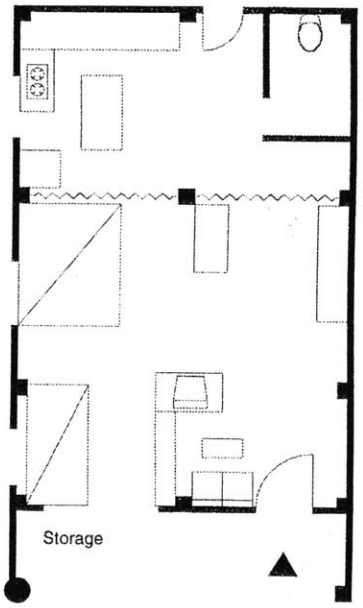


View from the front road

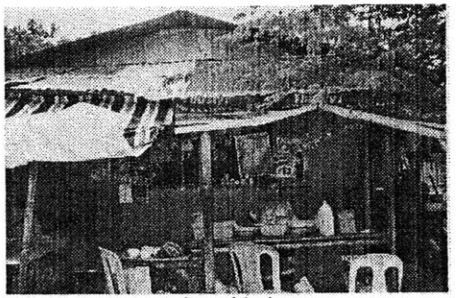
Inside the house



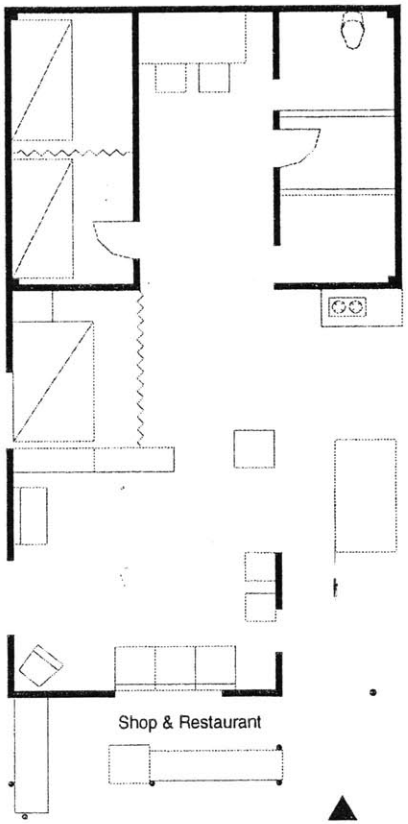




Sagayad	
Number / Plot Number	S19
Household Size	8 Persons
Income	5000 Pesos
Age	0_9: 0 / 10_19: 5 / 20_29: 2 / 30_39: 0 / 40_49: 0 / Above 50: 1
Family	M 51 D 21 + D 20 + S 18 + D 17 + S 15 + D 13 + D 11
Education	High-school: 2 / University: 3
Occupation	Shop Keeper: 1 / Office Worker: 1
Floor Area	68.8 m2
Housing Type	Temporary
Wall Material	Concrete, Wood
Roof Material	Metal sheets
Plot Size	72 m2
Water	Public shallow well
Sanitation	Private (interior)
Moving Cost	5000 Pesos
Payment to the Government	250 Pesos/Month (Not yet started)
Financial Resources	Loans (Institutions)
Expenditure for Housing	30000 Pesos
Investment Plan on Housing	100000 Pesos
In-house Workplace	Shop(Food)-Small shop-3000Pesos/Month
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Job,Service, Kin
Period at Previous Housing	20
Comments	Constructed by hired laborers, not completed. Unsatisfied with a small plot.

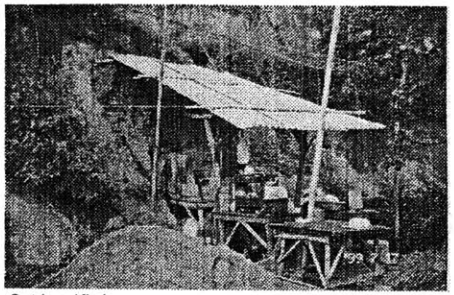


Shop and restaurant in front of the house

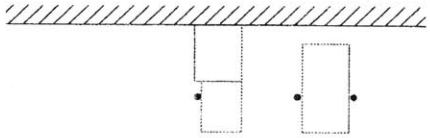


Sagayad	
Number / Plot Number	S20
Household Size	11 Persons
Income	3000 Pesos/Month
Age	0_9: na; 10_19: (3); 20_29: 3; 30_39: 1; 40_49: 0; Above 50: 2
Family	F 59 + M 58 D 34 + S 27 + S 21 + S 20 + S + D + 2 Children Grand Child
Education	High-school (9) University (0)
Occupation	Sales worker 1
Floor Area	27.0 m2
Housing Type	Permanent
Wall Material	Wood
Roof Material	Metal sheets
Plot Size	65 m2
Water	Public deep well
Sanitation	Private (interior)
Moving Cost	200 Pesos
Payment to the Government	180 Pesos/Month (5 years)
Financial Resources	Savings, Pension
Expenditure for Housing	18000 Pesos
Investment Plan on Housing	180000 Pesos
In-house Workplace	None
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	Tenure
Reasons to have Squatted	Tenure
Period at Previous Housing	11
Comments	Family: Couple + 8 Children + Grand Child Constructed by a family, not completed. Unsatisfied with a small plot for a large family. Other kin live in the neighborhood.

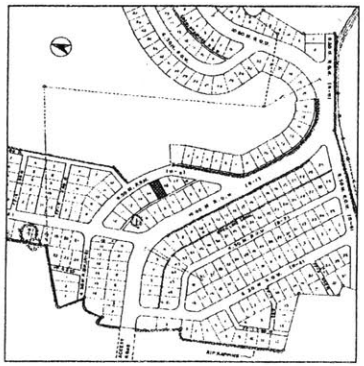
Front road as a socializing space

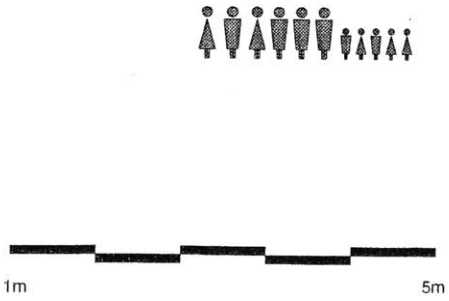


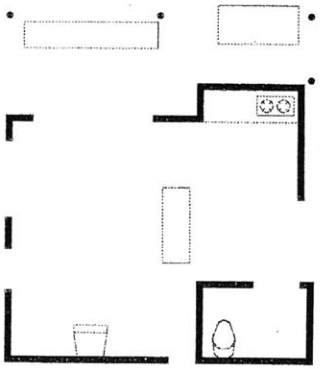
Outdoor Kitchen



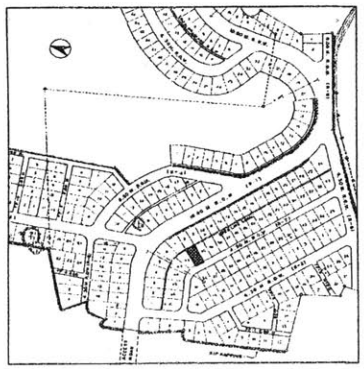
Road

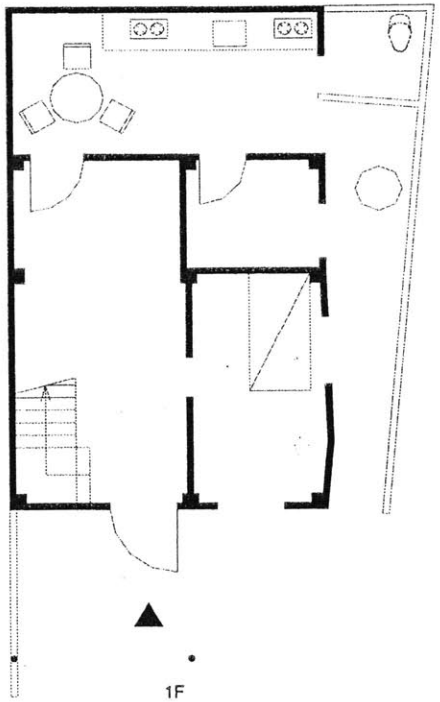


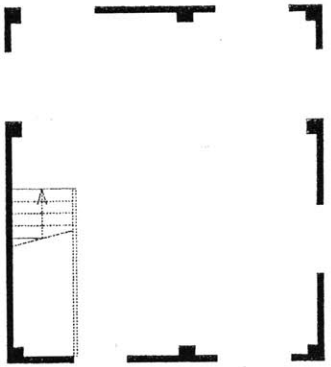




Sagayad Number / Plot Number	S21					
Household Size	11 Persons					
Income	5000 Pesos					
Age	0_9	10_19	20_29	30_39	40_49	Above 50
	na	na	na	na	na	na
Family	H 49 + W 38, H + W, H + W, S 14 + D 12 + S 10 + (2 children)					
Education	High-school (2)		University (1)			
Occupation	Government employee 1		(NA)			
Floor Area	75.5 m2					
Housing Type	Permanent					
Wall Material	Concrete, Wood					
Roof Material	Metal sheets					
Plot Size	72 m2					
Water	Public shallow well					
Sanitation	Private (interior)					
Moving Cost	5000 Pesos					
Payment to the Government	250 Pesos/Month (na years)					
Financial Resources	Loans (Institutions)					
Expenditure for Housing	100000 Pesos					
Investment Plan on Housing	50000 Pesos					
In-house Workplace	None					
Ownership of Land	Own					
Ownership of House	Own					
Inheritance	Children					
Reasons to Move in	Tenure					
Reasons to have Squatted	Tenure					
Period at Previous Housing	20					
Comments	Constructed by some hired laborers, not completed. Three families in one household - two brothers' + one sister's.					







1F

2F

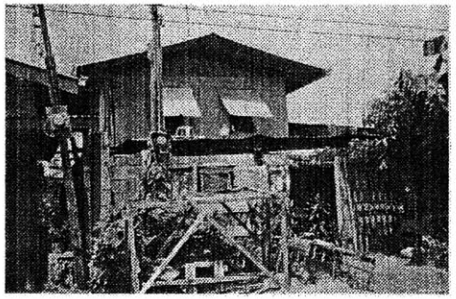
Road

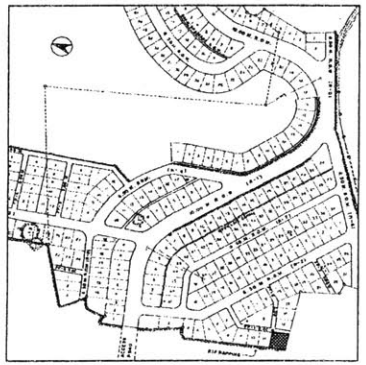
1m

5m

Sagayad	
Number / Plot Number	S22
Household Size	15 Persons
Income	15000 Pesos/Month
Age	0_9: 5 / 10_19: na / 20_29: na / 30_39: na / 40_49: 0 / Above 50: 2
Family	F 50 + M 54 H + D 32, H 20 + W , H + W 18, D 17 D 12 + D + S + 3 Children
Education	High-school (5) / University na
Occupation	Driver 2 / Vendor 1 / (NA)
Floor Area	83.1 m2
Housing Type	Permanent
Wall Material	Concrete + Wood
Roof Material	Metal sheets
Plot Size	72 m2
Water	Private deep well
Sanitation	Private (interior)
Moving Cost	1000 Pesos
Payment to the Government	80 Pesos/Month 5 years
Financial Resources	Savings
Expenditure for Housing	30000 Pesos
Investment Plan on Housing	100000 Pesos
In-house Workplace	Shop(Food)-Small shop-Not much
Ownership of Land	Own
Ownership of House	Own
Inheritance	Children
Reasons to Move in	(Eviction)
Reasons to have Squatted	Kin
Period at Previous Housing	34
Comments	Family: Parents + 4 Children + 3 In-Laws +6 Grandchildren Constructed by themselves, not completed. Using outdoor spaces as possible. Unsatisfied with a small plot. Concrete boundary walls are utilized for semi-indoor spaces.

Semi-indoor space as the shop and living, dining and socializing space





Appendix: 3 Questionnaires

Questionnaires for Catbangen Residents

Catbangen Residents' Survey

San Fernando, La Union
June / July, 1999

This survey is being carried out by Massachusetts Institute of Technology (USA), as part of the **World Bank City Assistance Strategy** initiative, in the City of San Fernando, La Union. The purpose of the survey is to identify the preferences, concerns, and special needs of the squatter families living along coastal salvage zones.

All information gathered in this survey will be used to help formulate future housing policy in San Fernando, and for academic research purposes. **The confidentiality of the individual respondents is assured.**

The research team is not politically affiliated with the local or national government or any other social organization within the Philippines, and will therefore maintain a neutral stance on all opinions expressed in response to this survey. In order to maximize the benefits for Catbangen residents, and future resettlement programs within San Fernando, the researchers would appreciate the responses to be as accurate and detailed as possible.

Please return your completed survey form, sealed, in the envelope provided.

Thank you for your cooperation.

Nayana Mawilmada
Masako Niimi
Ashna Mathema

Massachusetts Institute of Technology
Department of Urban Studies and Planning
77 Massachusetts Avenue
Cambridge, MA 02139, USA

Office of the City Mayor
City of San Fernando, La Union
The Philippines
Tel: 242-5601

Family Characteristics

Total number of members in household (including self):	
Total household income (monthly):	

Please provide the following information:

Head of Household:

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Other Household Members (List each individual separately. Use additional sheet if necessary.)

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Name:	Relationship to Head of Household:
Age:	Sex:
Education: ☐ College ☐ High School ☐ Primary School ☐ None ☐ Other	
Primary occupation:	Income/month:
Secondary occupation:	Income/month:
Distance to Primary Occupation (km):	
Mode of transport used: ☐ Jeepney ☐ Tricycle ☐ Walk ☐ Other (Specify)	

Among your family members, are there any who don't always live in your house?
☐ Yes ☐ No
If yes, please specify reason:
☐ Work ☐ School ☐ Other (specify)
Do your parents or children live in a different house?
☐ Yes ☐ No
If yes, where do they live?_____
How long does it take to commute from your house to their house?
_____ minutes by _____ (walking, jeepney, tricycle etc.)
How often do you meet them?
☐ Everyday ☐ _____ time(s) / week ☐ _____ time(s) / month
☐ _____ time(s) / year ☐ Other (specify)_____
What kind of help do you offer to them?
☐ remittance (around _____ Pesos per month)
☐ foods and daily necessities
☐ housework
☐ other (specify)_____
What kind if help do you receive from them?
☐ remittance (around _____ Pesos per month)
☐ foods and daily necessities
☐ housework
☐ other (specify)_____

If you have more than one family in your household, what is the reason? (check all that apply)
☐ Combined income is beneficial
☐ Help eachother in daily work (specify)_____
☐ I am taking care of my parents
☐ I am supposed to inherit the family property
☐ Other reason (specify)_____

Who owns the house where you live in now (specify relationship)?
Who owns the land where you live in now (specify relationship)?
Who inherits the house that you live in now (specify relationship)?
Do you have any property in addition to the above ?
☐ Yes ☐ No
If yes, where is it located (specify Barangay)?_____
Please mention why you do not live there:_____

When did you move to Catbangen?_____
Where did you live before you move to Catbangen (specify Barangay)?_____
Who lived there?
☐ The same family members as now ☐ Different family members(specify relationship)_____
How long did you live there? _____ years
Why did you move to Catbangen?
☐ Access to jobs
☐ Access to educational facilities
☐ Access to water, sewerage, and electricity
☐ Did not previously own land
☐ Did not previously own my house
☐ A family member was living there (specify relationship)_____
☐ Other (specify)_____

What are the most important things to consider if you move from your house? (check all that apply)
☐ Access to jobs
☐ Access to healthcare, childcare and educational facilities
☐ Access to water, sewerage, and electricity
☐ Did not previously own land
☐ A family member living elsewhere (specify relationship)
☐ Other (specify)

Housing Characteristics

Please provide the following information about your present house

How would you classify your house?

☐ Temporary ☐ Permanent

What primary materials are used for construction?

For walls:

☐ Metal sheets ☐ Concrete blocks/bricks ☐ Wood ☐ Other (specify)_____

For roof:

☐ Metal sheets ☐ Tiles ☐ Thatch ☐ Other (specify)_____

What is the approximate **indoor** area of your house (sq.mt.)?_____

Please list the number of indoor rooms of the following types within your house

☐ Living / Dining _____ ☐ Bedrooms _____ ☐ Storage _____ ☐ Other (specify)_____

Total number of rooms:

How much **outdoor** space do you use for productive purposes (sq.mt.)?_____

For what activities:

☐ Raising livestock ☐ Growing food crops ☐ Cooking ☐ Storage

☐ Other outdoor activities (specify) _____

How big is the plot of land you occupy (sq.mt.)?_____

Are you satisfied with your residence in general? Please state comments and concerns:

For Fisherfolk Families Only

Do you own any boats? ☐ Yes ☐ No

If yes, what is the total number of boats that members of your household own?_____

Where do you currently store your boat(s)?_____

Do you leave your boat(s) unsupervised on the beach? ☐ Yes ☐ No

Do you share a boat with anyone outside your household? ☐ Yes ☐ No

If yes, who (specify relationship)?_____

Do you fish with a certain group of fishermen ("co-operative")? ☐ Yes ☐ No

If yes, how many people are in your group?_____

Who are they? Please specify relationships: _____

How much do you spend per month on boat maintenance, fishing equipment etc.?_____

Do you need ground level outdoor space for any fishing related purpose?

☐ Yes ☐ No

If yes, please specify purpose:_____

How much space would you require (sq.mt.)_____

Who sells the fish caught by your household members?_____

Where?_____

If you were to be relocated:

Please rank the following in order of importance to you (1 being most important and 9 being least important):

☐ Ownership of land (title)
☐ Direct access to the beach (coastal land)
☐ Easy access to public transportation and (non-fishing) jobs
☐ Improved water, sanitation and electricity provision
☐ Access to healthcare, childcare and educational facilities
☐ Permanent and safer house structure
☐ Larger house and/or land area
☐ Personal outdoor space on the ground level
☐ Continue to live with your extended family/community members

If your settlement were to be upgraded:

Please rank the following in order of importance to you (1 being most important and 6 being least important):

- [ ] Ownership of land (title)
- [ ] Easy access to public transportation and (non-fishing) jobs
- [ ] Improved water, sanitation and electricity provision
- [ ] Access to healthcare, childcare and educational facilities
- [ ] Permanent and safer house structure
- [ ] Larger house

If you were to be given access to affordable rental housing:

Please rank the following in order of importance to you (1 being most important and 7 being least important):

- [ ] Direct access to the beach (coastal land)
- [ ] Easy access to public transportation and (non-fishing) jobs
- [ ] Water, sanitation and electricity provision
- [ ] Access to healthcare, childcare and educational facilities
- [ ] Larger house and/or land area
- [ ] Personal outdoor space on the ground level
- [ ] Continue to live with your extended family/community members

Please rank the following in order of importance to you (1 being most important and 7 being least important):

- [ ] *Relocate to a plot of land on a coastal site* – small plot with land title and improved basic services upon payment (electricity, water, sanitation etc.), but no guarantee of keeping the community together
- [ ] *Relocate to an apartment on a coastal site* – apartment in a multi-level building with property title and good basic services upon payment, effort to keep communities together, but no guarantee of personal gorund-level space
- [ ] *Relocate to an inland site* – small plot or apartment with land/property title, good access to jobs, public transportation etc.
- [ ] *Upgrade existing residence* – improved basic services, but no guarantee of land title in the near future
- [ ] *Move to affordable rental housing on an inland site* – rent an apartment in a multi-storey building with good basic services upon affordable (rental) payment, and easy access to public transport, but no guarantee of title or personal ground space
- [ ] *Move to affordable rental housing on coastal site* – rent an apartment in a multi-storey building with good basic services upon affordable payment, but no guarantee of title or personal ground-level space
- [ ] *Not choose any of the above* – get reasonable compensation and make independent choice of moving to another place

If you were to be relocated or moved to a rental housing development, how important would it be for you to move with your extended family or members of your community?

- [ ] Very important
- [ ] Moderately important
- [ ] Not important

How much do you spend on maintenance / improvement of your house every month?_____

How much are you willing to pay per month, for a plot of coastal land?_____

How much are you willing to pay per month for a plot of inland land, with good access to public transport, jobs, etc.? _____

How much would you be willing to pay per month for rental housing ?_____

Basic Services

Please rank your current access to the following:

Water:	☐ Very good	☐ Average	☐ Poor
Sanitation:	☐ Very good	☐ Average	☐ Poor
Electricity:	☐ Very good	☐ Average	☐ Poor
Public Transport:	☐ Very good	☐ Average	☐ Poor
Health Facilities:	☐ Very good	☐ Average	☐ Poor
Schools:	☐ Very good	☐ Average	☐ Poor
Employment opportunities:	☐ Very good	☐ Average	☐ Poor

What is your main source of water?

☐ Private well (shallow) ☐ Public well (shallow) ☐ Private deep well ☐ Public deep well

☐ Other (specify)

What type of toilet do you use?

☐ Private (interior) ☐ Private (exterior) ☐ Public ☐ Other (specify)

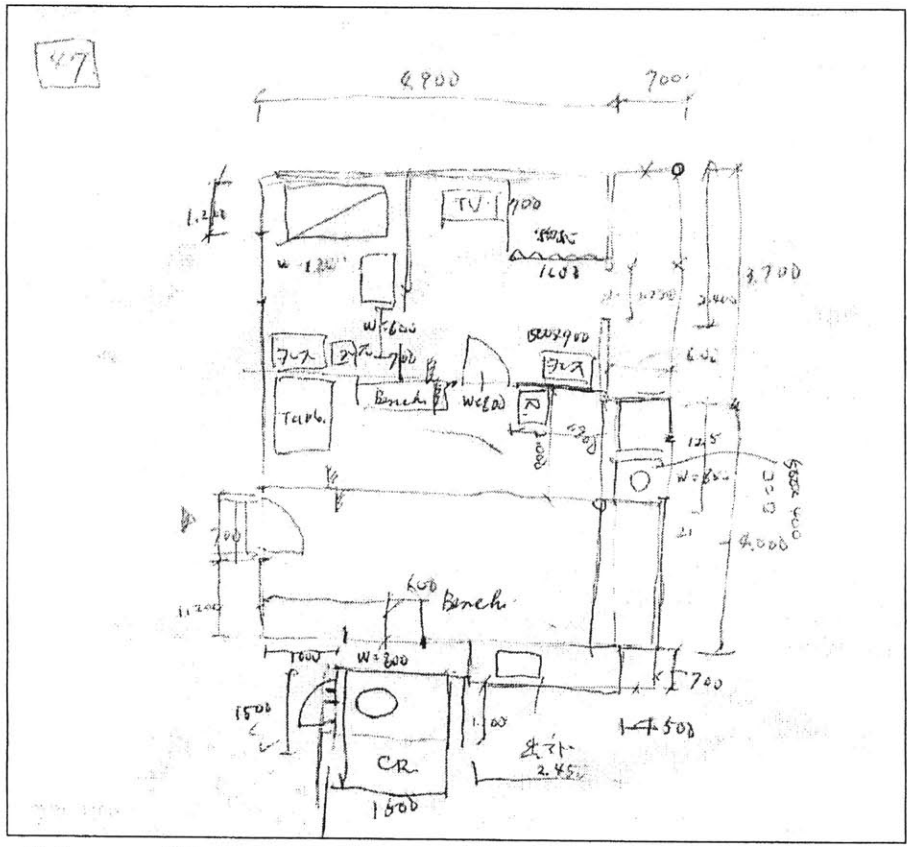
What is the distance between your new house and the nearest elementary school? km

Please rank your level of satisfaction with the level of government assistance in:

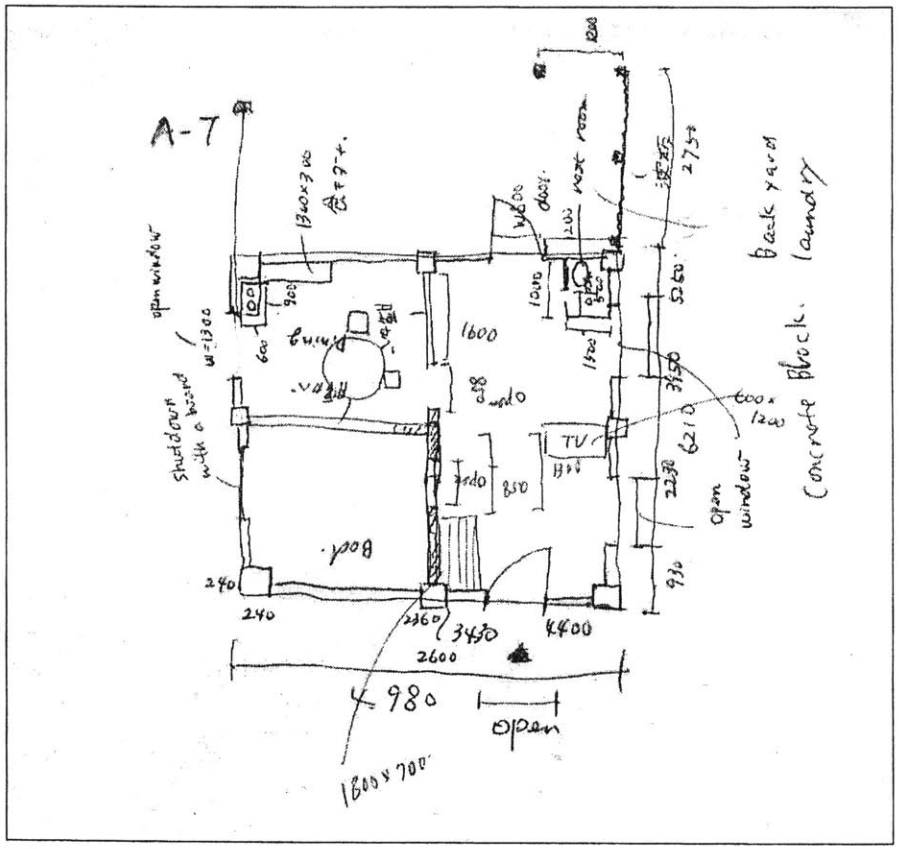
Upgrading	☐ Very good	☐ Average	☐ Poor
Water and Sanitation	☐ Very good	☐ Average	☐ Poor
Emergency Assistance (tornado)	☐ Very good	☐ Average	☐ Poor

Please write any comments and concerns that you may have with regard to your settlement:

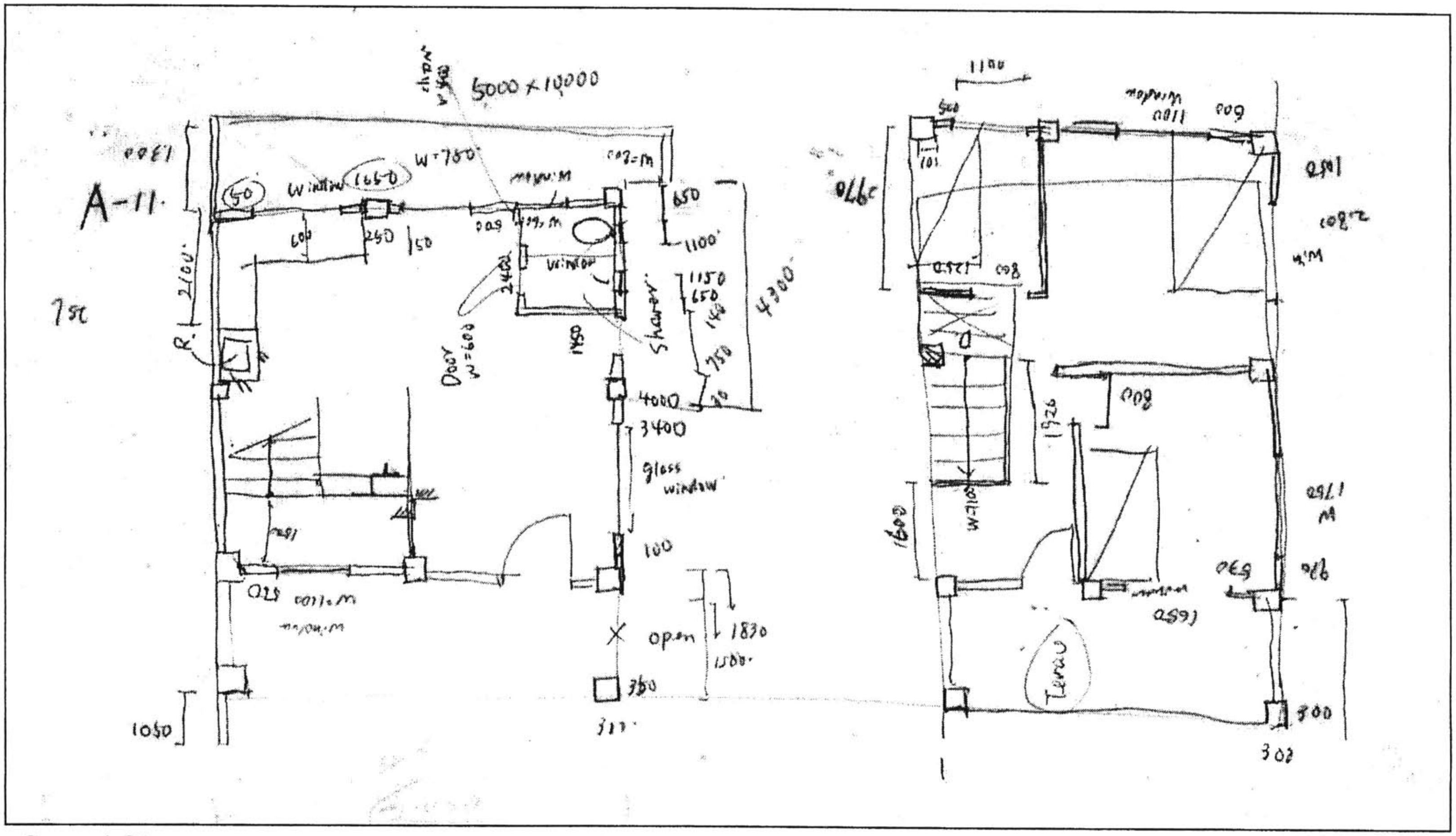
Appendix: 4 Field Note



Catbangen: C16



Sagayad: C13


5000 × 10000
A-11
Window 1650
Door W=600
Shower
glass window
open
Terrace

Sagayad: S6