

338
.9599
0614

PA-ABF-959

151 68043



"ECONOMIC CHANGE IN CASIGURAN, PHILIPPINES:
PERSPECTIVES ON GENDER, CLASS, AND DEVELOPMENT INITIATIVES"

Michael C. Clatts
Institute of Philippine Culture
May, 1987

ABSTRACT

This report describes the social and economic life of Casiguran, a small community in southern Luzon, Republic of the Philippines, and documents the effects of program of economic change in the community. The issues of gender and class are examined, particularly as these relate to the allocation of, and access to, production related resources on the household level. The project design and implementation are evaluated and recommendations are made, including detailed reference to the integration of women, selection of crop and livestock trials, credit, market development and the relation of population growth to technological change.

Agency for International Development
Library
Room 105 SA-18
Washington, D.C. 20523

TABLE OF CONTENTS

1. Introduction
2. Demography and Land Use
3. Economic Structure
4. Farming Systems Research and Development
5. Gender Issues
6. Contexts of Power Stratification
7. Population Growth and Technological Change
8. Summary and Recommendations
9. Case Studies
10. Map, Graphs
11. Bibliography, Acknowledgements

INTRODUCTION

This essay introduces the community of San Antonio, a "barangay" in the municipality of Casiguran which is located on the southern tip of the island of Luzon, Republic of the Philippines. The report describes the community, its physical resources, people, social organization and economy. The focus of the research being conducted beginning in September of 1986, has been to document the changes which have occurred in the community as a result of an economic development project (FSRDP) which is supported by the Philippine Department of Agriculture and the United States Agency for International Development. Specifically this essay is concerned with the following issues:

1. the allocation and use of physical (e.g. land), economic (e.g. capital), and human (e.g. labor) resources within farming households;
2. the process of decision-making in the household, especially with regard to resource investment and production;
3. the significance of gender and gender-related tasks, roles and attitudes, in the process of agricultural adaptation and change;
4. the identification of the economic opportunities and constraints which are in some fashion dis-aggregated by gender and which have consequence for male and female productive roles within the household; and
5. the socio-economic effects of the development project among project participants and its feasibility for the community as a whole.

The presentation which follows reflects a particular concern for the process of economic change, human cultural ecology and gender studies. Research methods have included participant observation, life histories, structured and unstructured interviews as well as some archival investigation. The goal of the effort is to identify and describe the structure of the socio-economic system and the function of each of its' major components. In order to properly understand the effects of the

project among participants ('cooperators'), it was necessary to understand the community as a whole, indeed to compare cooperator households with non-participants. This is important since little or no historical material on the community exists with which to examine and in some way measure socio-economic change in the community. It is anticipated that an analysis of both kinds of households will provide data which is suggestive of diachrony — since it is assumed that change will occur more rapidly (and in some expected ways) in cooperator households than in the community as a whole. There are certainly other changes, both internal and external, which have occurred, not the least of which was the revolution in February of 1986 which was followed by many personnel changes in local politics. Moreover, cooperator households do not exist in isolation. Indeed, a casual observer could probably not distinguish between them. There are a number of significant — social, economic and political linkages and networks between them. Thus while this essay is primarily concerned with technological transfer among project participants, these are interpreted in the context of the community as a whole.

An attempt was made to conduct research employing a variety of different techniques, in order to identify the relevant economic and socio-cultural variables, especially as these might relate to the issues of class and gender. Different interpreters were employed, sometimes no interpreter, case studies were produced, life histories were gathered and informants were interviewed in a variety of different settings and combinations. In addition to the members of actual farming households, other members of the community were sought out, including school teachers, shop keepers, local political official and individuals involved in various forms of production-related processes beyond the farm.

There are a number of methodological problems which make data regarding economic change difficult to collect and interpret. As has already been noted, neither the area in general, nor indeed the project itself are able to provide detailed diachronic information which is necessary for any assertion of a cause and effect relationship between project inputs and change. Moreover, farmers themselves were often unable to provide detailed quantitative data regarding their production activities (e.g. time spent on a particular activity, total harvest, profit etc.). Nevertheless, differences and similarities between household production strategies and decisions illustrate the function of the farming economy and are suggestive of the existing constraints to economic growth within the agricultural and livestock sectors. Much of this report is specifically concerned with describing these constraints and their relation to project design and implementation.

Farming households are composed of members who share in production tasks in many, though not always isomorphic ways. Each individual brings his or her own abilities and ambitions to any

enterprise and any particular enterprise occurs in the contexts of several other concerns. While there is certainly much common ground, there are nevertheless differences between and within farming households. Thus while the term "farmer" is used here to refer to any individual involved in crop and livestock activities regardless of economic status or gender, it is often necessary to specify the contexts which these variable ^{impose} on the economic viability of the farming household. Thus in this essay, change is described through an examination of both the similarities and the differences within and between farming households. Finally, as will be further detailed in subsequent sections, to refer to a "farmer" is to refer to an individual who is typically involved in numerous economic activities, not all of which are agricultural, ~~and is thus also to refer to someone who often has various other economic roles in the community.~~

Demography and Land Use

The municipality of Casiguran is located on the eastern shore of Sorsogon Bay, on the southern tip of the island of Luzon (see map). Approximately 3.5 kilometers east of the town proper is the barangay of San Antonio which is the site of the development project directed by the Department of Agriculture. The community is situated approximately 40-45 feet above sea level, along a roughly stone paved road which connects Casiguran with the neighboring municipality of Gubat. The single road at least partially traces the crest of a slight ridge, with homes and small farms flanking either side of the hillside.

The major agricultural products in the community are rice and coconut. The average farm size planted to rice is approximately 33 hectares. However, the dominant land use is that planted to coconut and these farms average only around 4 hectares. The land area totals 245 hectares, 233 of which is "planted to coconut". Rainfall is distributed relatively evenly throughout the year but peaks during the typhoon season during the months between September and December and ~~dropping~~ ^{dropping} between March and May (see figure 1). The rainfall is also characterized by frequent differences on an annual basis, often manifesting severe droughts during which the total rainfall is far below that expected and/or when either the rainy or the dry season occur much later when they are expected to occur.

The soil, classified as "Casiguran Clay Loam", has a moderate to hilly relief and ranges from clay to loam in consistency. It is deep, generally though sometimes excessively well drained and is locally considered to be excellent for the cultivation of deeply rooted crops. Seasonal storm disturbances however contribute to significant sheet erosion, leaving soil nutrients poor, top-soil thin and depleted of the bio-mass necessary for sustained agricultural fertility and intensive production in the absence of large amounts of agricultural inputs.

The temperature, generally moderate by Southeast Asian standards, lacks extreme seasonal variation. It is characterized by consistently high temperatures in which the amount of rainfall exceeds evaporation throughout much of the year. However the seasonal variation in rainfall often results in extreme droughts, greatly increasing the risks associated with production among farmers in rain-fed areas (i.e. those lacking irrigation technology). While there are some differences between harvests in the rainy and dry seasons due to rainfall and temperature, soil and water resources are generally "redundant", being relatively consistent throughout the community as a whole.

While these ecological conditions offer some kinds of agricultural opportunities (e.g. year round cultivation), they also impose a number of constraints (e.g. the proliferation of parasites, amoebas and other pests which represent significant threats to agricultural production). Moreover, ~~and~~ despite the fact that the ecological resources are largely redundant, factors within the the socio-cultural system condition their use. Farmers' abilities to exploit the environment, and to control potential damage to production from it, are not uniform. The implications of this for agricultural development and intensification are more fully explored in subsequent sections of this report.

There are an estimated 644 residents in the community of San Antonio, in a roughly equal male/female ratio, with a total of 92 households. The average family income ranges between P 6,500 and P 7,500 (P 1 = \$.05), although there are a number of households which earn substantially more as well as many which earn considerably less. While there is not a fixed socio-economic system of stratification in the community, class-related factors, especially with regard to the use of land, do exist. To the extent that these distinctions exist, they are made manifest in relation to access to resources, particularly land and capital. Both are significant factors for the prospects of agricultural intensification and growth since these ambitions are contingent upon sufficient economic power with which to invest in agricultural inputs necessary for intensification, and to control risk related to both production and marketing. Thus differential access to these resources has implications for a farming households' ability to adopt and effectively use technological inputs.

Households have an average of between 7 and 10 members and are generally in the form of a nuclear family. There are also a number of kinds of extended-kin relationships between households, primarily among siblings (both real and "fictive"). Residence is typically neo-local - a newly married couple establishing a new and "independent" household apart from that of their natal families. Many of the adults in the barangay were not born in it but moved there from neighboring barangays to establish their own homesteads. While there are significant inter-household

relationships, the basic socio-economic unit of production and reproduction is that of a single family.

Almost ninety percent of the households in the community are engaged in farming, although most augment their income through other income-generating activities such as seasonal fishing, carpentry, off-farm agricultural wage labor, driving a tricycle, operating a sari-sari store (neighborhood store), house repair and gathering tuba (coconut wine). It is difficult to assess the development of these off-farm activities for which there is no detailed historical data but these activities seem to have greatly increased in importance fairly recently and are certainly increasing at the present time. Farmers explain participation in these activities in terms of a decline in coconut prices, the instability of both rice and coconut prices and in the contexts of rising household ambitions, particularly education directed at preparation for non-agricultural vocations.

As in any agricultural community, the most basic resource is land. Consequently, land tenure, and the relationship, economic and otherwise between a tenant and a landowner, is of primary importance. Approximately ninety-five percent (95%) of the farmers in the community are tenants. Land tenure relationships are often quite complex and their arrangements differ between coco-based and rice-based lands. In addition to variation in the formal arrangements between these two kinds of farming enterprises, the relationships are often mediated by other factors such as blood affinity, fictive kinship, the length of the relationship, ethnicity affiliation and fluctuations in production and marketing.

There are two kinds of tenure arrangements for rice producing lands which total only about 5% of all the agricultural land in the barangay (approximately 10 hectares). The most prominent form of arrangement, which includes about 95% of the rice-producing land, is leasehold. Leaseholders pay a fixed share (typically from 9 to 17 cavans) of rice per harvest. The amount varies due to the success of any particular harvest as well as among slightly different relationships between the two parties. In contrast, share tenants which account for the remaining 5% of rice producing land is an arrangement in which the farmer retains $\frac{3}{4}$ of the harvest, giving the remaining $\frac{1}{4}$ to the landowner as his/her "share". Both kinds of arrangements are closely connected to the processing and marketing of harvested rice ("palay"), and to the credit structure of the community.

Coconut production is the most common form of land use in the community, accounting for 95% of all the agricultural land (approximately 235 hectares). Within coconut-based lands there are also two kinds of tenure relationships. The most common, referred to as share tenants, covers approximately 95% of the coconut producers while the remaining 5% are owner-cultivators. The

typical 'sharing' arrangement between owners and tenants on these lands is 50/40 (in favor of the owner). Despite a lesser share, most tenants assume all costs of production, harvest, and marketing. The implications of these tenure relationships, especially in relation to access to capital and for agricultural intensification, requires a close examination of the socio-economic structure of the community of Casiguran.

The Economic Structure

The most significant constraint to increased agricultural production, as well as to enhancing income derived from farming, is an acute lack of equitable and consistent capital in the community. Farmers are unable to use most forms of institutional credit since these are typically tied to the possession of collateral (e.g. land) which the farmers do not own. Both farmers and government agricultural extension officials also note the ineffectiveness of national credit programs for tenant farmers (e.g. 'Masangna 99'), though they have rather contrasting explanations for the cause of the ineffectiveness. Regardless of the causes of the failure of these programs, the resulting lack of equitable capital in the community has at least two important implications for agricultural production, economic decision-making at the household level, and for the prospects of the adoption of technological changes which are necessary for agricultural development to occur.

Production levels, relative to national standards, are decisively low in the community. This has been noted by the FSRDP materials on production as well as by the farmers themselves. In fact it was precisely this low production, and the resulting low incomes of farming households, which precipitated the selection of the community for the site of an economic development project. For example, coconut farmers report an average of less than 10 nuts per tree per harvest (approximately every 45 days), well below the national average of at least 15 nuts. Rice production levels are also well below national standards for rain-fed areas. In part, low production levels can be attributed to the areas' vulnerability to typhoons and other ecological hazards. Farmers consistently reported that weather, both in the form of actual damage and potential risk, was a significant obstacle to production. However, beyond these very real environmentally-based risks, lies a more fundamental difficulty within the production process itself which prevents what otherwise might be more effective management of these risks.

Farmers employ little or no fertilizer or pest control materials due to the high and consequently prohibitive costs of these inputs. Further, in terms of the investment of time, coconut trees (which supply the major agricultural product in the area) receive very little care. Trees are irregularly spaced and are seldom repaired after storm damage. Fertilizer and pest control

are seldom employed and underbrushing is rarely undertaken despite the farmers' recognition that all of these activities would likely enhance production. On the face of it, this apparent neglect appears very curious in the context of low incomes and rising economic expectations. Non-farmers (e.g. landowners) often explain low production in terms of the alleged unwillingness of farmers to work, and sometimes of a mistrust in the advantages of improved agricultural technologies and methods. Neither claim, nor similarly ill-informed explanations, successfully account for the disparity. A closer examination of the economic structure of the community, and more importantly of the totality of economic decisions which farming households engage in however makes more plausible sense of the low production patterns in the community.

There are various wage labor opportunities available on at least a seasonal or part-time basis, including work in rice production on farms in neighboring barangays (e.g. plowing, planting, weeding, harvesting). These off-farm activities are significant since the necessity to engage in them competes with the amount of time, labor and household capital which might otherwise be invested in on-farm agricultural pursuits. It also has the effect of increasing the household agricultural responsibilities of specific parts of the household which are not engaged for whom there are less off-farm opportunities, notably women and adolescents. Typically these off-farm activities are the domain of men, less as a function of a strict cultural norm and more generally as a result of women's domestic responsibilities. Women who do not have child-care responsibilities, or those who can entrust them to elder children or neighbors, often engage in some form of wage labor (e.g. weeding rice field). Similarly adolescents often leave school early, or attend irregularly, so that they can participate in some form of income-generating activity or take the place of an adult at home while the father or mother does so. In addition to reducing the amount of time in school and of quality infant care, off-farm activity successfully competes with time and labour which might otherwise be used for on-farm agricultural pursuits.

Off-farm activity is not simply an effort to generate more cash, although this is often the stated reason for pursuing such opportunities. The income generated from this activity is also often used to supply the minimum capital to meet the costs of agricultural inputs. There are a few informal sources of credit available to farmers and many households use these to augment the purchase of agricultural inputs or more typically pay other kinds of bills (e.g. medical care, education, etc.). However, these informal credit sources are highly exploitative and further engender the landless farmer in an economic system in which they have little power or mobility. There are a number of loan-sharks who regularly visit the barangay which are sometimes used by farmers but the two primary sources of credit employed are from the tenants' landowner or from what is referred to as "Chinese

businessman" (often these are the same individuals).

A number of individuals, who continue to identify themselves as ethnically Chinese, came to the community during the first half of this century and have established themselves (and their descendents) very prominently in the economic structure of the municipality. In addition to owning most of the agricultural land, they also frequently own the stores where farmers purchase agricultural inputs, and household needs (e.g. clothing, light oil, etc.), as well as the processing (e.g. rice mill) and marketing establishments where farmers must take their agricultural produce for retail sale.

As a consequence of this economic position, these individuals are among the wealthiest and thus most able to provide credit and in fact they function as the major source of credit in the community. Many farmers rely on these individuals for the capital with which to pay household bills between harvests and to obtain agricultural inputs prior to planting and/or harvest. A typical arrangement is for the lender to advance a farmer the capital needed for some purchase or activity prior to harvest. In exchange, and in addition to repaying the principal borrowed at high interest rates, the farmer is often required to bring the harvest to this same lender for processing in the lenders' shop and sale in the lenders' store. In doing so, the farmer obtains a reduced price for the produce than if the agricultural products were sold independently of the money lender and middleman.

Despite the fact that agriculture is the principal component of the economic structure of the community, most farmers have relatively little control over the economic processes which surround production and they receive disproportionately less profit from the profits derived from their agricultural labor. Given this economic structure, it is not surprising that farmers seek other means of generating income which is outside the control of the landowners and money lenders. Nor is it surprising that farmers are skeptical about the prospects of agricultural development in increasing their incomes since at least under present circumstances, farmers have little control over either the credit or the market structure which underpins their production. Production which disproportionately benefits landowners, money lenders and those who control the local agricultural market does not function to serve the needs and aspirations of landless farmers and consequently is not among their most important ambitions.

Agricultural development in the community is constrained by the structure of the economic system itself, a structure which does not provide incentives for increasing production or for engaging in technologies which are intended to do so. Thus, what appears to some individuals as a tenacity by farmers to cling to traditional farming technology and or as a pronounced lack of

ambition on the part of farmers, is actually an acute awareness of whom within the structure production primarily profits. Obviously under present circumstances, it is not the tenant farmer who increasingly must seek ways of augmenting agricultural income through off-farm activities.

The diagram marked figure 2 (see appendix) ^{diagrams} ~~maps in a~~ ~~conceptual manner~~ the process of production and exchange within household economy. The basic physical resource is land but its use and development is closely tied to an exploitative economic relationship between farmer and owner. The constraints on the use of this resource however are both ecological and economic. The environment affords relatively low potential for agricultural intensification and sustained economic growth in the absence of significant capital investment in agricultural inputs and labor which is beyond the means of and conflicts with the other income generating activities of most farmers in the community and under present circumstances, not in their interest.

Much of the same kinds of constraints which exist ^{in the} agricultural sector, also prevail in the livestock sector which exists on a much smaller scale. There are a number of different kinds of animal livestock maintained including carabao, cattle, swine, goat and chickens. Cattle, carabao and swine have been made available to some farmers through a program of the Bureau of Animal Dispersal on an offspring/return arrangement. Carabao are used primarily as draft animals, supplying the major source of animal labor in an area with little or no mechanized farm machinery. Cattle are seen primarily as a means of maintaining potential food for various ritual events or as a source of capital in extreme emergency. The same is true of swine and goats although these are more often used to augment an otherwise meatless household diet or to generate small amounts of cash. Most households maintain at least a few chickens which are sometimes sold in the market but most often used for household consumption. Most households report consumption of red meat only once per month and poultry only slightly more often. Chickens are largely self-supporting, roaming the yard in search of whatever they can find and sometimes being given table scraps. Cattle, goats and carabao are tethered, feeding on wild grasses along roadsides and beneath coconut trees. Swine are penned and fed rice bran, gabi and table scraps.

Most animals are ill-fed and under-fed and suffer from a number of diseases including intestinal parasites and various forms of species-specific cholera. Some farmers will seek medical assistance for larger animals which become ill but often the costs of treatment and required medication are beyond the means of most farmers in the community. Thus, livestock production is considered to be a high risk economic activity and is effectively beyond the means of most households.

Larger animals such as carabao are usually attended by adult

males while women and elder children often care for other animals. There is no gender-specific assignment of tasks in livestock management and many farmers had difficulty in identifying who in the household was primarily responsible for animal care. Farmers recognize the economic advantage of livestock production but are constrained by the high costs of maintenance and investment risks. Consequently, very little of the households' resources including labor, capital and time is given to their care and production.

The same kinds of challenges extent in agriculture, thus also constrain livestock production. One difference between them is that livestock are generally the property of the tenant, not the landowner, and the latter usually has no less formal rights to livestock grazed on tenant lands. However, many tenants are unable to purchase livestock without capital assistance from landowners and consequently animals are often co-owned. In addition to the lack of capital with which to purchase and care for livestock, a further constraint to their production lies within the relatively low market demand for their production. Due to the low capital power of most members of the community and the related infrequency of meat in their customary diets, there is little potential to sell livestock and consequently no incentive for its' production.

Farming Systems Research and Development Project (FSRDP)

Farming systems research and development, as it is undertaken by the Philippine Department of Agriculture, is charged with identifying the aspirations of farming households and with providing them with the technical assistance needed to improve production and increase household income from its' sale. Typically, as in the case of San Antonio, this involves fielding an interdisciplinary extention team which establishes an office in a rural area. The task of the team is to conduct research among farmers regarding the oppurtunities and constraints which they encounter in crop and livestock production. Subsequently, novel crop and livestock "trials" are established with selected households (cooperators) in an effort to test and demonstrate the feasibility of crop and livestock intregation and the technologies related to their production.

The primary thrust of FSRDP in San Anonio is to intensify the land use through the introduction of integrated plant and animal species, most of which are novel or as yet undeveloped in the area. In San Antonio this has necessitated estabalishing multi-crop and livestock trials which can be produced "under" the existing coconut trees which are predominate over most of the arable agricultural land. It also involves the selection of crops and livestock which are suited to local ecological conditions (i.e. soil, types, rainfall, sunlight, hazzards, etc.), which the farmers are willing and able to produce, and in terms of income, which are are appropriate for existing marketing opportunities. Thus ideally, extention involves not only tecchnical research

associated with crop and livestock production but also is dependent upon an adequate understanding of the economic and socio-cultural contexts in which production occurs.

With few exceptions (see Case Study no. 1), and these are themselves ~~are~~ instructive, neither the multi-cropping nor the livestock trials have been overwhelmingly successful. Production levels have remained low, some crops are not producing at all and serious difficulties persist with the maintenance of livestock. The so-called "womens' projects", a peripheral component of the project which was designed to develop the manufacture and sale of coconut by-products, has been a complete failure. In short, the project is not having the anticipated effect of increasing production, intensifying land use and enhancing household income among cooperator households. Nor has it successfully identified feasible technology, methods of land use intensification, or means of economic growth which are applicable for the community as a whole.

The reasons for this lack of success are complex but generally center on a failure in project design and implementation to adequately anticipate the economic conditions in the community and to target those individuals within the farming household who control the resources necessary to intensify resource use. The first is essentially a technical inadequacy in failing to integrate local economic conditions, and particularly local constraints, in the design of a technological package (particularly the prohibitive costs of inputs and an ill-defined market outlet for proposed production). The second is a difficulty in the character of implementation, exacerbated by an inadequate understanding of the socio-economic stratification and of the actual roles which women and men play in household production decisions and labor. Conceptually the two difficulties intersect at a number of points which need to be more fully described and inter-related.

Economic Constraints:

Despite considerable investment of both capital and time at the national, provincial and local levels, significant economic constraints persist in the barangay of San Antonio where development efforts are largely dependent upon the intensification of the use of various kinds of resources (e.g. land, labor). Constraints on the use of these resources are ecological (i.e. weather, soil fertility) as well as more generally socio-economic in terms of contexts in which resource users function. Changes in the use of one or more kinds of resources use at any point in the production system, will have consequences for (and often compete) with other parts. Directed changes in one part of the system such as technology transfer will thus be limited in effectiveness and potential by their compatibility with other components in the structure and these seem not to have been fully anticipated in the

project.

As has been noted already, most farming households find it necessary to engage in various kinds of off-farm activities in order to maintain an economically viable household. This necessity is a function of a land tenure system in which farmers receive a disproportionately smaller share of profit from their production. Off-farm activities have important implications for household production decisions and distribution of labor: First, it requires farming households to commit parts of their labor resources to activities other than cultivation of their own plots. This decreases the amount of time (and usually some amount of other resources such as very scarce capital) that any particular individual within the household can invest in on-farm activities and typically necessitates a re-alignment of the burden of household labor. Secondly, and as noted above, off-farm activities often involve the investment of some amount of capital resources which might have otherwise been used for on-farm agricultural pursuits. Thus these off-farm activities compete with the resources upon which agricultural intensification and development are dependent, not only in the sense of time, but also with regard to the allocation of scarce purchasing power.

The household economy is dependent upon an effective balance between resource expenditures and profit returns from the investment of its' resources. In actuality, this balance never exists. Households (and the individuals within them) are always either ahead or behind of such a balance, and the system is composed of an array of individuals in an on-going interplay with the internal and external forces which shape their ability to achieve their ambitions. In communities such as San Antonio where most households live at or below the poverty line, this achievement is negotiated the investment of resources in a way which effectively controls risk and which have a predictable consistent result (i.e profit). Typically decision-making is not based upon the potential to maximize profit from any one component of the economy (e.g. a particular crop) but rather the feasibility of any particular component (in terms of resource cost and potential risk) in relation to all other components in the household economy. This is accomplished differently in each household, and indeed by each individual, but the general strategy is to diffuse resources among a number of potentially profitable endeavors many of which are explicitly economic in character but not all of which can be measured or understood in strictly material terms.

There are a few exceptions to this strategy. However, all of these represent exceptional cases within the socio-economic structure of the community and all have been given preferential access to project resources including technology and exention. An examination of these cases supports, rather than conflicts with, the structure of economic constraints which have been outlined in this essay (refer to Case Studies). As details in the case studies

show, there are a few households which concentrate their household resources (including those whose source is the project) on a limited number of income-generating activities. These few cases however, are not representative of the community as a whole and whatever economic success they have managed is not reflective of the potential for development of the community as a whole. For most households, risk control necessitates the diffusion of resources both within the agricultural sector itself and the overall economic strategy of the household as a whole. Much of the need to diffuse resources is a function not simply of ecological hazards but more especially of the structure of agricultural marketing.

Market Access and Development:

Market opportunities in Casiguran are marginal, especially with regard to potential expansion. This low market potential is a function of the fact that most people in the community are agricultural producers themselves and because the vast majority of the community cannot afford to purchase additional agricultural products for dietary use. Most agricultural products available in the local market are grown throughout the community, are in excessive supply, and consequently sales of these goods command low prices. The low income which is derived from local agricultural sales undermines the farmers' ability to intensify production of any single crop or of production of numerous products since these sales do not provide as much income as do alternative sources of wage labor. Under present market conditions in which the farmers potential for profit is low, intensification of production is economically prohibitive.

This circumstance is a function primarily of the limitations of the local market in absorbing increased production but it is also related to the size of any single farmer's harvest. It must be remembered that almost all of the households in the community occupy extremely small plots and consequently produce relatively small harvests. The profitable sale of agricultural production requires that prices outpace the costs of production (including the potential income lost from opportunities like wage labor which are not taken) and the costs in terms of both time and capital in the processing, transporting, and marketing of agricultural products. It is this complex set of considerations which structure the decisions which farmers must make and most farmers find that they cannot produce sufficient quantities of goods to meet these related costs and still make a profit. The two agricultural exceptions to this are of course rice and coconut but here there is an established mechanism for taking excess production to larger markets. No such mechanism exists for the bulk of other agricultural products (with the possible exception of pili nuts), including the components of the FSRDP crop and livestock trials. Under present market conditions, there is little potential for the effective agricultural sale of the crops and livestock which

farmers are being asked to produce and consequently very little incentive (i.e. profit) and means (i.e. economic power) for and of doing so.

The lack of a diversified and price-stable market structure is a serious constraint for all farmers in the community but it specifically undermines the objectives of the FSRDP to intensify land use, increase production and enhance income derived from farming. Ultimately, it is likely that these market difficulties are more serious constraints than is the land tenure system though the latter is closely related to farmers' inability to invest in agricultural inputs necessary for intensification and development. The importance of an effective marketing structure cannot be emphasized enough. Increased income is not derived from increased production (which incidentally presumes sufficient capital power). It is derived from the sale of that production. With one or two exceptions, none of the farmers participating in the project report any increase in income due to their participation in the project agricultural and livestock trials.

Farmers cannot invest resources (e.g. time, labor, land, capital etc.) which they do not possess, either at all, or in sufficient quantity to result in sustained profitability. The role of women within the household farming economy will be detailed in subsequent sections of this report, but here in relation to the issue of market, it is noteworthy that it is women who are usually considered responsible for the marketing of non-tenure related crops and it is resources controlled by women which are invested in household economic endeavors, including land under coconut and the capital for the purchase of agricultural inputs. Earlier in this report it was noted that agricultural development was dependent upon the effective management of at least two variables, the first technical, in relation to the selection of ecologically appropriate crop and livestock components. The second variable, involving an adequate understanding of the farming economy but also of the socio-cultural contexts in which production occurs, of the way in which these socio-cultural conditions shape and give meaning to the choices, agricultural or otherwise, which men and women farmers make.

Component Design:

The adoption of novel technologies (i.e. the production of novel crop and livestock species and use of novel production methods) is dependent upon the identification of species and technologies which are environment. This involves not only the physical environment but the socio-economic one as well since production is dependent upon producers whom are often more diverse than the physical habitat in which they live. Consequently, crop and livestock trials must "fit" the potential producers as well as the needs and interests of potential consumers (cf. Hourihan 1986, Howe 1986). Unfortunately, the selection of crop and livestock

trials, as well as of the project cooperators has sought to 'fit' the producers to the components through the introduction of a uniform, inflexible and economically untenable set of project components and the targeting of households which are not representative of the productive abilities of the community as a whole.

Many of the crop trial which have been introduced in the project are not producing at all. This is due to to the insufficiency or absence resource investment, including labor and agricultural inputs. Labor resources are usually divided between numerous economic endeavors, often in order of relative risk and known profitability. Novel crops with unknown productive potential and ill-defined market potential are not production priorities. Consequently, the crop and livestock trials receive insufficient care and when they produce at all, they do so in quantities which preclude profitable marketing. Thus most households participating in the project are using the technology to augment their household diets, not as a source of increased productive means and enhanced income.

The use of crop and livestock trials for domestic use rather than market sale is a consequence of several factors, including the existing market opportunities which are negligible, the high and prohibitive costs of supporting inputs necessary for intensive production and more importantly of the individuals who are actually involved in their production (women). The first two issues have been elaborated already and the third receives discussion in the gender section of this report. Here it is sufficient to note that the use of crop and livestock trials for domestic use is consistent with the agricultural ambitions, productive abilities and market experience of the women who most often bear the largest burden of their production.

Several of the crops trials are highly labor and input intensive and both factors conflict with the existing distribution of labor in the household and its' ability to invest scarce capital resources among subsistence-based tenant farmers. The vast majority of households in the community cannot afford to allocate/risk large amounts of their productive time and labor on a single economic venture. Nor can they afford the high costs of agricultural inputs required to produce project components on an intensive scale due to their low incomes and the exploitative structure of credit available to them. Farmers consistently voiced the recognition that the selection of crop and livestock components and the expected scale of intensification was incompatible with the resources which they could allocate to their production and with the profit that they could expect from their sale.

The lack of resource allocation evident in agricultural trials (e.g. the absence of sufficient care--weeding, pruning,

poling, protection from sunlight and pestilence, etc.) is also made manifest in the neglect which livestock components receive. The livestock integration part of the project is focused on the production of goats which are supposed to graze on grasses planted for their consumption on land beneath coconut trees. Care of goats (i.e. tending grazing activities, building adequate shelters, etc.) is labor intensive. Moreover, goats are voracious eaters, consuming all available grasses in a matter of days and often creating significant damage to other crops. Goat meat is non-typical part of most household diets, primarily due to the high costs of meat rather than any cultural proscription or preference. Consequently, they bring a low price in the local market relative to the high costs which they require in terms of labor and risk.

Finally, the project included a component aimed at developing cottage-industries for women. Essentially, the plan was to provide a selected number of households with the technology with which to produce coconut by-products, notably coconut oil and nato de coco. This project is a marginal component of the project, most of which is directed at agricultural production from which women have been programatically excluded. The same constraints extant in the crop and livestock trials has undermined the success of this project and all of the women who participated in the component have ceased doing so. Women found that the profit derived from these activities was unequal to their expense in terms of time, labor and materials in relation to the low prices that these products earn in the local market.

In addition, the project included a modest attempt to form a mini-cooperative for women. Each member contributes an initial investment and monthly dues. The shared capital is available as credit to members of the cooperative at modest interest rates. The ideas of establishing an equitable credit system, and of targeting women for certain kinds of activities, are in principal good ones. However, upon closer examination the design of these components is less efficacious. One consequence of creating so-called cottage industry for women is that it perpetuates the fiction that since women are "homemakers", that they are not farmers and consequently need not receive agricultural extension services. Instead, they receive no or only secondary attention, in activities of marginal significance to the project as a whole, and are effectively disenfranchised from crop and livestock technology. The projects' failure to include an adequately viable component for women must also be examined by reference to the opportunity-cost of failing to target them in the mainstream of agricultural trials. These lost opportunities and their relation to the failure of the agricultural trials is considered in the following section which is specifically concerned with the significance of gender in household production and decision-making.

Gender Issues:

Socio-economic variables have been shown to have significant implications for change (e.g. land tenure, access to credit, market opportunities, etc). However, the socio-cultural contexts of these variables which shape the meaning to which they are assigned, often have importance for the way in which resources are used. Consequently, this research attempts to document the way in which the roles of men and women within the household have consequence for development extension and economic change. It was found that men and women bring distinct abilities and ambitions to many economic endeavors and that this divergence is an important component in household decision-making, resource use and economic viability. Even where these abilities and ambitions are relatively identical, men and women's functions within the household often are not. For example, the various forms of off-farm activities which men engage in, and its' consequences for limited time for on-farm activities, conflicts with agricultural intensification, particularly when this involves labor intensive crop and livestock trials like those in San Antonio. Women, are essential producers in both the agricultural and the livestock sectors, having marginalized from project activities, specifically, those directly concerned with crops and livestock. This omission, and the resulting absence of important resources which women control, continues to undermine project activities.

This section of the report details the actual roles and contributions which women make in the household economy. The purpose of this documentation is to provide a detailed basis upon which to build more effective project design and implementation strategies. Thus what follows is a general discussion of the activities which women are typically engaged in and specific documentation of the function of women within the household economy.

Labor:

Several authors (cf. Hourihan 1986, Howe 1986) have noted that resources used for domestic production and consumption (e.g. fuel wood, fodder, water, etc.) are primarily considered to be a female domain throughout most of southeast Asia. However the use of these resources is related to, and reflected in, domestic production activities as a whole. Thus for example, production of crops and livestock for domestic use are often primarily a female domain. This is significant for the project in San Antonio since the land targeted for agricultural intensification and development has traditionally been used for domestic production and has been under women's control. Despite the plan to produce crop and livestock trials suited to market sale, most households participating in the project are using the trials for domestic use exclusively. Consequently, these trials are within women's domestic domain, despite the fact that women are not receiving first hand agricultural extension in production technology.

The project is implemented on the basis of a misconception of the use of household labor resources. It has been assumed that males make decisions about crop selection and contribute most or all of the productive labor. In fact however, the very resources which the project is intended to exploit (i.e. land beneath coconut trees), are within womens' productive domain and have traditionally been the object of their deliberation and labor.

The process of agricultural decision-making is not uniform in the community and variation between households exists, particularly as a function of differences in access to economic resources and family-specific needs. It must be remembered that agriculture is but one activity within a constellation of activities, even when it is the primary source of income and related to residence, and that resources are distributed among all of these resources by the individuals which control them within the households. Thus, as been noted earlier, to refer to a "farmer" is also to refer to an individual who also engages in many of the other activities such as fishing, carpentry, child care, sewing, cooking, wage laborer etc. The project and technology are received in the context of the strategic use of all of these resources and endeavors and these other endeavors condition the households' possible response to programs of directed change.

As noted earlier, one possible response (possible at least for a limited number of households in the community) is to focus all of the project resources on project related activities. There are at least three households which have opted for this strategy although in each case they have had been given preferential access to project resources, technology and training prior to their doing so. However their access, and consequently their "success" (which remains limited), is uncharacteristic of either the access or the strategies of the rest of the cooperator households. Hence the performance of the crop and livestock trials on their farms is not reflective of the way in which most cooperator households have used the project, nor of the potential of the trials for community wide use and development. Decisions in these households appear to be largely concensual and in each case women exert exceptional control over the use of resources and the profits garnered from production. However, it must be emphasized that these few cases are exceptions in the community, which involves significant increases in womens' labor burden and are largely a result of politically-based access to project resources. Further details of these cases are detailed in the stratification and case study sections of this paper; here it is sufficient to note these cases do not represent effective "tests" of the potential of project trials.

A second response is simply to refuse participation in the project, a decision often erroneously interpreted as idleness,

ignorance and a lack of ambition. Apart from the misinterpretation of the motive for refusal and its' meaning, this response is directly related to a failure of the project to effectively reach women. The project' social presence in the barangay is controlled by males and all of its' assets are extended to and by males. Thus a woman is effectively deprived of access to the project if her husband does not wish to participate despite the fact that most of the resources in question are under womens' control.

A third kind of response, and by far the most predominate among cooperator households, is related to the high capital cost of agricultural inputs necessary for production of crops, the low profitability of small scale production in the context of limited market demand and expansion and the consequent need to engage in off-farm income generating activities. Most cooperator households are using project components to augment their household diets, not as a source of increased income. Since men in these households continue to pursue part-time off-farm employment, much of the burden for the use of project technology goes to women who do not receive first-hand training in its' use. Consequently the project increases the labor of many women, even as it marginalizes them from production-related technology.

Capital Investment:

The disposition of investment resources by capital-poor households is a significant challenge to development since agricultural intensification typically requires the purchase of seedlings, fertilizer, pest control, and livestock-related materials such as fencing and housing materials and medicine. The money for these investments comes from the household budget (which is typically controlled by women) and is derived from the income, which in an ideal world, represents all of the household assets. As noted however, men and women do not necessarily have uniform economic ambitions and abilities, despite cultural prescriptions to the contrary. Cultural ideals are often manipulated by individuals of either gender in the service of ends which are at least sometimes divergent.

Both men and women claim that all income in the household is held in common, and men explicitly deny having access to cash for their own personal use. However, these same individuals can be seen in circumstances which presume the possession of personal money. These activities involve exclusively make activities such as drinking sessions and various forms of gambling. The popularity of these activities among males, and their continual denial that they possess income directed to these activities, suggests that there is some income which is disaggregated by gender. The preference by many males to engage in off-farm wage employment supports such a conclusion. The significant point here is that the money which is used to support agricultural intensification efforts is derived not from this personal income but rather from

the household budget (i.e. money which women control). It is not surprising therefore that women who have been excluded from project extension are reluctant to invest scarce resources in activities over which they are not integrated and which they know there is limited market demand.

The point of this discussion is not to show that women and men have different values regarding the welfare and prosperity of their families but rather to show that they may share distinct, and sometimes divergent, opportunities and constraints in accomplishing what may or may not be the same ends. The same motivation and ambition may be expressed behaviorally with diverse solutions to challenges, including economic ones. This is true in relation to gender within the household and it is often the case among households which opt for very different solutions to similar economic challenges. As will be shown in the following section, socio-economic stratification conditions which are possible for any individual to accomplish, regardless of behaviors and attitudes which are associated with certain kinds of motivation and levels of intelligence.

The existence of gender-based income streams, a gender-based divergence in agricultural labor, and the absence of adequate access to equitable credit, represents a formidable set of challenges to a program of agricultural intensification and economic change. With the exception of a very few number of households which have been given exceptional access opportunity in relation to project assets (and hence both means and incentive), agricultural intensification for most of the community (including most cooperators) is an increasingly less viable income generating prospect. Consequently, farming increasingly becomes an end to means (i.e. directed to establishing tenure rights and domestic production rather than a means to an economic end itself in the form of solvency and growth). The latter reality, and its' consequences for the allocation of labor within the household, results in a deepening of existing gender inequalities in terms of access to the means of economic power. It also undermines the conditions necessary for increased agricultural production and development. This fact has consequences for farming households but also implications for a national economy and population which is heavily dependent upon agricultural production as a source of food and of economic growth.

Contexts of Power Stratification

The methodological perspective which has underpinned the research for this report focuses on the household as the basic socio-economic unit of production and reproduction. However, it is also recognized that individuals within these households do not share uniform access to resources or occupy identical social and economic roles. This was seen to be particularly significant with regard to gender within households in which women and men have at

least partially distinct economic opportunities and hence distinct means of accomplishing economic ends. This divergence is also extant in the structural relationship between households. Thus the differences, as well as the similarities, in and between segments of a community have consequence for the configuration of change within it.

Social science research of farming systems would be much more straightforward if social structure (a sociological abstraction) were an empirically stable phenomena, but in fact it is always in a process of change, negotiation reordering, and redefinition. This change is a function of the on-going manipulation of a social and cultural system, sometimes manifested by consistency and at others by at least the appearance of dramatic change. Both inevitably employ all the authority and power of moral obligation, religious conviction, historical precedent, ethnic distinction and cultural identity. Describing the life of a community, particularly in relation to economic change, involves the description of what empirically are dynamic processes, as if they were stable with consistent inter-relationships. In fact, this is not the case and thus the description is in some senses an illusion.

When a visitor enters the barangay, he or she is first struck by two things; first, the apparent isomorphism of households, and second, the apparent fluidity which seems to characterize the relations between them. The character of exchange between them is bounded by a complex series of meanings and implications which transcend economic exchange though it may be reflected in it. Thus behavior, economic or otherwise, is infused with interpretation and expectation, and is defined by a tentatively agreed upon structure of relations which is always changing. However, what first appears to be remarkable fluidity between households in the community, on closer examination is in fact an extreme 'brittleness' in the character of social relationships. Formal structural ties such as kinship, religious affiliation and civil law are a few of the ways in which this brittleness is mediated, controlled and defined. But the invocation and elaboration of these social controls is itself evidence that the brittleness exists, at least in potentiality and often in reality. This potential is apt to become especially made manifest under conditions of programatic change.

In terms of its' social and cultural implications, an economic development project is related to the socio-economic structure of the community in which it is implemented, and especially to any existing stratification in socio-economic power. A change in the structure of the distribution of power or of the (e.g. wealth, technology, knowledge, access, etc.) will have implications for the social relationships which exist, in effect exploiting not their fluidity between individuals but rather the brittleness between the structural units which they represent.

The development project has had implications for the character and distribution of power, both economic and political (at least in an informal sense). These implications are a consequence of a situation in which a limited number of individuals are given access to resources which are not available to others on what are considered a discriminatory basis amounting to 'favoritism'. The project has exasperated a number of the existing inequalities within the economic structure of the community. This has resulted in considerable conflict between non-participants as well as among cooperators themselves. The initial point of contention in the community was in reference to the to the criteria used in selecting cooperators but more recently conflict has developed between cooperators themselves who claim partiality in access to project resources which allegedly favors an exclusive group of cooperator families.

There are at least two kinds of disparity in the community. The first is manifested in socio-economic stratification between the poorest households and those which, by virtue of access to relatively greater resources, are less poor. The second is less obvious but no less real and concerns gender, specifically the complex attitudes and expectations which are associated and proscribed for men and women. Note that these two categories of class and gender are not mutually exclusive.

The project has established crop and livestock trials on cooperator farmsteads, presumably on the basis of a households' perceived ability and expressed willingness to participate. Thus, 'adequate' physical resources (e.g. land size and structure, labor, farm equipment, etc.) were used as necessary preconditions for resources presumably established. The supposition that a baseline or minimum control of production related resources is a necessary precondition to effective participation appears to be a reasonable one. However, in the light of how the project has been implemented, the logic proves specious. In practice, the selection criteria is class oriented and in fact, has enhanced existing political rivalries and economic disparities. Many of the households selected have affinal kinship ties and all are among the least-poor households in the community.

The second issue relevant to cooperator selection is gender. As noted earlier, women are only provided access to agricultural and livestock technologies through their husbands, not independently or co-terminus with them. Moreover, there are a number of households which due to death, divorce or (more typically) urban migration of adult males, are effectively managed by women alone. At least two of these households have relatively equivalent resources to those possessed by some of the cooperator households yet they have not been targeted for participation. Several other households, also headed by women, are among the poorest in the community and have also been omitted from project activities. Thus the project is effectively directed to households

(effectively males) which have the greatest economic power in the community and failed to systematically include women and the poorest of the poor.

One of the issues which has generated the most explicit dispute in the community involves both class and gender. The initial project design included a marginal attempt to develop a cottage industry for women. After the component failed and women withdrew participation, these same women (all of whom are members of households which receive crop and livestock technology as well) were given the opportunity to establish barangay nurseries on their farms and to function as brokers of FSRDP seedlings to other community farmers. The women who received this opportunity are all members of households which are already among the most economically powerful in the community. These women bought (and in some cases were given) seedlings at a very reduced price and sold them to other farmers at greatly inflated prices. The profits from the sale of these seedlings in at least one household exceeds the gross annual income of several other households in the community. The disparity in access to project assets has embittered many of the residents, including several of the families which previously had been among the most ambitious participants in the project but have now effectively discontinued participation.

The management of this project component reflects an inattention to at least one technical concern and several socio-cultural factors which underpin agricultural change and technological transfer. Farmers outside the project were sold at inflated prices technology which have not been adequately tested in the community and for which they were not been given adequate training. It is clear that the project has been implemented in a fashion which serves the economic interests of members of the upper most part of the economic scale. This partiality, in addition to undermining the sense of the word 'trial' in establishing technology applicable to the community as a whole, has enhanced the existing economic disparities, effectively placing greater distance between access to economic power among households. As such it has engendered both conflict and poverty, and functions as an obstacle to the adoption of development-related technology.

Population Growth and Technological Change:

A central aim of this essay has been to document the way in which rural households use whatever physical and human resources available to them in maintaining a viable household, however tenuously. It has been shown that men and women vary in their control over a number of critical resources and that this variation is reflected in economic roles and ambitions which are at least partially gender-distinct. This section considers briefly two variables whose association have been widely debated within academic circles but not as often deliberated in planning programs of economic development, namely the relationship between population growth and technological change. Of particular concern is the way in which population growth may impact unequally on the allocation of labor within farming households and the way in which it may condition the adaptability of programmed technological change within the socio-economic system as a whole. Of particular importance for the purposes of this essay is the way in which population growth, and the demographic changes which often accompany it, may particularly impact upon the productive roles of women and their labor in both the agricultural and livestock sectors of the farming economy.

Until recently the causes of technological change in human history have been explained by reference to independent invention and subsequent geographic diffusion of novel technology (Cf. Flannery 1973). Within this explanatory framework, technological changes (e.g. novel food-producing strategies) which increased food production and supply were considered causal factors in the evolution of the "complex" forms of socio-political organization which were followed by rapid population growth. Thus for example, the domestication of corn in Mesoamerica and the development of hydraulic systems in China, have been interpreted as causal pre-conditions to the subsequent growth of population and evolution of complex political systems in these areas.

More recently however, a number of researchers have argued the opposite causal relation. Boserup (1965, 1970) for example claims that it is population growth, resulting in population pressure, and the subsequent need to produce more food to meet the increased populations demands, which resulted in (caused) technological innovation and change. Thus in this framework it is argued that it is population growth resulting in pressure, not capricious innovation and the vagaries of diffusion, which is the primary causal factor in the evolution of agriculture and centralized political systems (i.e. the nation states).

The relative merits of these competing explanations will not be further deliberated here but it is noteworthy that these same variables (i.e. population growth and technological change) which have had importance for agricultural evolution in pre-history also have relevance for contemporary changes in the development and adaptability of novel food-producing technologies. The population in Casiguran between 1980 and 1985 increased at annual rate of 4%, a growth rate which is expected

to increase and probably double by the end of the decade. In the agriculturally-based barangays such as San Antonio, the growth rate is already in excess of the municipal average and is manifested not only in an increase in the number of persons but also in the number of households. Land area however has remained constant. The increase in the number of households occupying the same land area has accelerated the fragmentation of the already small (even by national standards) landholdings of these subsistence farmers. The already marginal productivity levels (i.e. "carrying capacity") of these landholdings and the population which exploit them are thus under increased pressure to meet growing consumption requirements as well as to continue to supply space for new households.

The increased strain on the productive capacity of increasingly small plots has impinged upon the economic viability of a farming economy which is based upon the fragmented resources of tenant farmers and necessitated the development of novel income-generating strategies to compensate for the lack of production expansion and economic growth in the agricultural sector. As has been noted in earlier sections of this essay however, most of the income-generating strategies being attempted by farming households are primarily oriented in off-farm, non-agricultural enterprises. The structure and development of these activities competes for resources with those necessary for agricultural intensification, particularly with regard to the distribution of labor within the household and the allocation of scarce capital resources by it. In most households in the community this pressure has resulted in an agricultural change which is actually characterized by less intensive use of agricultural resources, using tenancy on agricultural lands as a means to accomplish tenure and household consumption requirements, and less dependency by farming households on income derived from an agricultural market which their own farms supply. The production of coconut for example has decreased in the community as a result of the lack of productive care (i.e. investment of time, labor, agricultural inputs etc.) which coconut trees receive by tenant farmers. Farmers consistently report that the instability of copra prices (and of other coconut-derived products as well) is a serious disincentive for production intensification and that the potential profit from farming enterprises is increasingly inadequate in meeting the income needs of the household.

The effect of population growth and pressure has thus not been an impetus for agricultural intensification in the community but rather an obstacle to the innovation and adoption of intensification strategies. As the number of farming households has increased, fragmenting land holdings and undermining agriculturally-derived income, households have sought other economic means. Most of these means have involved some form of off-farm activity whose profitability is quickly out-pacing that which can be derived from the tenant-based agriculture. This pattern is particularly prevalent among males who are increasingly engaged in off-farm employment on at least a part-

time basis. The lack of expansion of these opportunities in the local economy however has required an increasing number of males to seek employment which requires them to live apart from the family farm (i.e. in urban areas such as Manila as well as in other countries, particularly in the Middle East such as Saudi Arabia). The effect of an increasing number of males seeking off-farm labor and some migrating to areas requiring them to reside elsewhere, is that it invariably increases the productive burden of women. The absence of males on a full or part-time basis increases the amount of time and labor resources which women must commit to agricultural production in order to at least meet the requirements of tenure and household consumption. This increased strain on women's labor requirement conflicts with the risks associated with the adoption of intensification technology (at least in the form provided by FSRDP), particularly under conditions of an unstable and incentive-deficient market structure.

Summary and Recommendations:

The design and implementation of the farming research and development project in San Antonio has been described in the light of the stated project goals of enhancing economic growth through the dissemination and use of production intensive technology and the unfortunate fact that neither production nor income has significantly increased as a result of project participation. The roles of men and women within the farming household have been documented and shown to have importance for the process of decision-making regarding the allocation of resources critical to production. Socio-political and demographic dimensions of the community have been described and related to the potential of households to effectively participate in a program of agricultural intensification.

Two factors, the absence of adequate capital power (a consequence of an agricultural market beyond the control of farmers which does not provide them economic incentive or means), and a concerted failure to integrate women in agricultural trials, have been shown to have significant and detrimental consequences for the adoption of project technology and achievement of project ambitions. Specifically, tenant farmers do not have (or at least cannot "afford") the resources with which to intensify production when this production increases economic risk, conflicts with other income-generating activities and requires the investment of capital resources which are unequally distributed in the community and which are effectively beyond the means of most households. The resources available from and controlled by women have not been effectively anticipated within the project design and very few women are benefiting from its implementation. Further, the implications of demographic growth and pressure on the productive capacity of small tenant farms is shown to conflict with the production expectations of the project, at least in the absence significant increases in the demand and profitability of agricultural products. The failure to adequately address the implications for production of such

issues as gender, socio-economic class and changes in demographic potential have been considered. In the light of the this discussion the following recommendations are made:

I. Component Design

The difficulties in the production and sale of many of the agricultural and livestock species in the project trials suggests that a re-evaluation of their viability in the community and the structure of their implementation is warranted.

1. Market prices for many of the crop trials are low and not economically profitable in relation to the costs of production (i.e. inputs, time, etc.). Consequently it is necessary to identify those products which can be produced and profitably sold in local markets. An effective marketing strategy will provide farming households with both the incentive (i.e. profit) and the means (i.e. capital power) with which to invest otherwise scarce resources in agricultural intensification efforts. At present, neither condition substantially exists for the vast majority of farmers in the community.

2. Many of the crop varieties selected for farm trials are excessively capital intensive (e.g. coffee) and consequently not effectively possible for most farmers, at least under the conditions of the present credit structure. In addition to, and perhaps in conjunction with, an effective marketing strategy, an equitable systems of credit must be made available. This will emancipate tenant farmers from the exploitative economic system which presently functions as one important obstacle to agricultural development.

3. Many of the crop trials require an excessively long growing season, especially in the absence of adequate agricultural inputs. A long growing season increases, and often makes prohibitive, the ecologically-based risks associated with production. The longer crops require to grow, the more likely the chance that they will be damaged or destroyed by environmental hazards such as weather and pestilence. Moreover, it must be recalled that almost all of the farmers in the community are tenants and at least under present land-reform programs are likely to remain so. The insecurity of tenant status conflicts with the required investment of labor and capital in crops which are not readily disposable (i.e. assets which can be quickly liquidated under times of distress or if the farmer is forced to leave the property). Further, an extended growing season requires an economic solvency while harvest is pending which is beyond the means of most households.

Crop trials must be developed which are comensurate with these prevailing ecological and socio-economic constraints on production and sale.

II. Market Development

Income is NOT derived from production, it is the result of sales (cf. Hourihan 1986, Howe 1986). The absence of market support for proposed crop and livestock trials will preclude their productive viability since they do not result in income.

1. The households in this community farm extremely small plots. Thus the scale of household production, even under ideal conditions, will remain limited on a per household basis. Often, the costs of production taken as a whole (e.g. agricultural inputs, transportation, labor, time etc.), exceed the possible profits and hence are not economically feasible. Consequently it is likely that some form of cooperative marketing will be required to off-set the limitations of production scales.

2. There is low demand for many of the crop and livestock trials in local markets and there is little or no potential under present economic conditions to expand this local potential. The possibility of exploiting external markets should be explored. As elsewhere, due to production scale, this will almost certainly require some form of cooperative marketing in order to absorb the high "costs" of transportation and time away from the farm which no single farmer in the community could afford.

At least one agricultural assistance organization exists in the province which has been effective in assisting farmers in neighboring municipalities with inexpensive agricultural inputs and cooperative marketing. Their assistance, or at least some comparable structure, needs to be developed in the community. It is noteworthy that the development of such an organization would possibly augment and enhance the development of other sectors of the economy, notably fishing.

III. Gender

The success of any program of change is dependent upon not only the ecological and economic compatibility of externally provided technological inputs; effective use of this technology is also dependent upon its' compatibility with the interests and abilities of producers. However, producers vary in relation to age, gender and relative socio-economic power. Consequently they are unlikely to be uniformly motivated or benefited by the same inputs and this is clearly the case in San Antonio. Two major problems related to gender exist with regard to project design and implementation: First the majority of extension services and project assets are directed by and to males. Women seldom receive training and assistance, despite the fact that production effectively requires use of resources which they control. Secondly, it should not be assumed that men and women will be able to make equal use of the same project components, nor that they will have an equivalent interest in doing so.

1. A disparity in access to project technology exists in the implementation of the project and has resulted in the effective marginalization of women from project activities. Women must be formally integrated into all project activities which require use

of resources which they control. Moreover, since men and women have distinct (and to some extent divergent) productive roles, as well as different functions in the household as a whole, it is necessary to tailor project components to the resources and productive potentials which each possess.

2. The original project design included a peripheral cottage industry component for women which effectively resulted in their exclusion from the agricultural and livestock components which comprise the major focus of the project. The design of this component, as well as its' implementation, seems predicated upon an assumption about what appropriate activities for women ought to be, despite the fact that women in San Antonio are essential producers in the agricultural and livestock sectors.

3. Any proposed change in the allocation of household agricultural resources will have consequences for the relation of these resources to the other income-generating activities of the household. Thus for example, labor intensive agricultural trials with low market demand and profit conflict with the necessity of males to generate income from off-farm activities. Proposed components may also conflict with the domestic obligations of women (e.g. child care, cooking, etc.) and this is one of the reasons why the cottage industry component of the project was a failure. Inputs must be structured so as not to result in disparity within the household regarding the cost and benefits accrued among household members.

IV. Economies of Scale:

The explicit goal of the project is to increase and expand the productive capacity of farming households which lack other means of access to "improved" production technology. The expectation of making this technology available is that the resulting increases in production from it will elevate household income. It also is assumed that the introduction of locally tested technology among a sample group of farmers (cooperators) will provide the community as a whole with the example and incentive to adopt novel production technology and thus have an effect on the economic conditions of the community as a whole. Ideally, this would have the added benefit of enhancing regional and national economic growth which is primarily dependent upon agricultural production.

1. The concept of establishing farm "trials" is predicated on the recognition that inputs must be suited to the productive conditions of the local community. In practice however, the trials established in San Antonio are suited to only a few farming households which, at least in relation to their neighbors, are the least in need of income-generating assistance. Moreover, the point of establishing farm "trials" is to TEST the feasibility of inputs and technology for community-wide use. Farm trials must consequently be directed to households which are adequate, but representative, productive power. Failure to structure the extension of project assets in a fashion which

adequately tests its' applicability, as is the case in San Anonio, has at least four consequences:

i. the feasibility of inputs and technology is not adequately verified and consequently scarce development resources are not efficiently utilized;

ii. technology not applicable for general use does not result in sustained and widespread increases in production and hence will not enhance regional and national economic solvency and growth;

iii. presently, the preferential structure of access to project resources benefits those households which already possess the most economic power in the community, effectively increasing existing socio-economic disparity and potential opportunities for exploitation;

iv. enhanced, and government subsidized, economic inequality engenders social and political conflict, both of which confound economic stability and growth.

V. The Research Component of FSRDP

It should be clear from the preceding discussion that inadequate research resources were utilized in the design of this project. Moreover, the research component of the the project implementation itself seems also not to have adequately identified the extant opportunities and constraints in the community. The deficiency in effective research of the process of technology transfer is basically of three kinds:

1. information regarding the economic structure of the community is not adequately reflected in project design, particularly as this relates to potential intensification under existing credit and market structures;

2. information regarding the local ecologically-based risks and varying farm potentials is not reflected in the selection of crop and livestock trials;

3. there is virtually no recognition and understanding of the socio-cultural factors which condition and give meaning to the use of resources, particularly as these factors relate to gender and socio-economic class.

On the whole, the project seems to be predicated upon four inter-related assumptions. First it seems to have been assumed that pre-fabricated technological packages can be effectively imposed on resource-poor farming households---that the farmers can be made to "fit" the technology. Secondly, it seems that the differences in the productive roles, capacities and ambitions of men and women (if they were recognized at all) were considered irrelevant to component design. Thirdly, the lack of economic power which manifests itself in the form of poverty seems to have been considered a general and uniform condition. Fourthly, it seems to have been assumed that the local agricultural market has an indefinite and undifferentiated capacity to absorb increases in production and consequently that it can itself provide sufficient incentive to adopt new technology which effectively increases farmers economic risk.

In San Antonio, all four of these assumptions are FALSE. Successful agricultural extension and development are contingent upon the use of several different kinds of resources. In terms of design and implementation, they are dependent upon a well-coordinated ability to provide members of farming households with technology in a fashion in which they can effectively use it. This presumes an understanding of the relevant technology, of the economic incentives which mitigate and motivate technology adoption, and of the socio-cultural realities which structure change and give it meaning. It is clear that the research undertaken in preparation for the design of this project was inadequate to these vital tasks and that the on-going research component of the project itself is similarly deficient.

Case Studies:

Case Study Number 1 The Roxas Family

One of the most successful cooperator households is that of the Roxas family whose participation in the FSRDP is largely focused on the production of pineapple, grown under coconut. The experience of this household is indicative of some of the agricultural opportunities which exist in the community. However the resources available to the family are not at all typical of most households and hence the example is instructive of the constraints to production as well as of opportunities for it.

The family obtained the farm they occupy (2,400 sq. mtrs.) having lived on another farm in the community as a tenant. Thus they are one of the few landowning households in the community and occupy one of the largest farms. The family has eight children, ranging from 7 to 21 years in age. Only five of these children are living in the household, four of whom share in economic enterprises by assisting their parents when they are not in school. The family began participation in FSRDP in 1983, soon after they moved to the recent farm, and around the same time that their siblings' households began participation. Both Mr. and Mrs. Roxas have siblings in the community and there is quite a lot of social interaction and economic cooperation between their households.

Most of the agricultural activities of the household (e.g. the production of gabi, coconut, pineapple, papaya, coffee, cacao, black pepper, guyavano, mandarin, banana, and castiva) are achieved by the intensive labor of the father of the family, with the help of his sons and the hiring of wage laborers for some agricultural activities such as harvesting rice. The families youngest daughter is handicapped, requiring the constant care and supervision of an adult. Consequently Mrs. Roxas is not as involved in productive activities as are most women in the community. However, because the household is uncommonly successful in the production of a number of crops, she spends a considerable part of her time preparing crops for market, selling them to agricultural middlemen who visit the barangay or taking them to the municipal market herself. Though a perhaps less obvious agricultural role, the time she spends performing these functions allows her husband to spend more of his time in production activities and hence is an essential component of the household economy since time in this household which is intensively engaged in agricultural activities is an important resource.

Although the scale with which this household produces is unusually high, the role of women in marketing farm production is typical of most households in the community. An exception to this is with regards to tenure related crops such as rice and coconut which are almost exclusively arrangements made between males, though women are often present. In part the role of women in marketing is a function of the way in which crops have

traditionally been produced. Generally males have been responsible for tenure related crops and women are responsible for the cultivation and disposition of any auxiliary crops grown under coconut. Thus the land under coconut functions as a kind of household garden from which much of the dietary needs of the household are supplied and which may be a secondary source of income if a surplus is produced and sold.

The use of potential land resources under coconut varies between households, depending on available labor resources and obligations, access to market (e.g. distance, transportation, etc.) and in some cases upon specific tenure arrangements with land owners. In the case of this household which owns its' own farm, the use of this land is perhaps the most intensive case in the community. The majority of land under coconut is "planted to" pineapple, whose harvest and sale is staggered so as to coincide with those periods when market supply is low and, because of high demand, prices are considerably higher. The ability to produce pineapple on a marketable scale and to stagger its' harvest and sale, is dependent upon the possession of a number of related assets including the knowledge that market opportunities vary throughout the agricultural season. It is also importantly dependent upon the possession of sufficient capital to purchase agricultural inputs as well as to supply the household with its' needs while harvest is pending.

As landowners the family possesses a number of assets which are not common among most households in the community. In addition to the land ownership which frees them from tenure related obligations, they possess a number of other assets including animal and machine technology which is unique in the community. These assets, especially with the assistance of the ASADCO, have been used very effectively, particularly with regards to the production of pineapple. The household reports an increase of income of almost thirty percent (30%) due to the sale of coconut, making it one of the less-poor households in the community and among the most profitable in terms of agricultural income.

This example is instructive of many of the economic issues raised in this report. First it demonstrates the relationship between land tenure/ownership and access to the capital necessary to make agricultural intensification both possible and profitable. It also demonstrates the function of capital liquidity in effectively exploiting limited local market conditions, an economic resource which is very rare in the community. Both factors are directly related to the role in which Mrs. Roxas plays since sale of agricultural production is largely within her domain and since the capital used to invest in agricultural inputs is under her control. While an entirely untypical example in relation to most other households in the community, the case demonstrates the relationship between access to economic resources and the ability to profitably intensify agricultural production. The household is

typical however with regard to women's control of capital resources and prominent function in relation to the sale of agricultural production, and hence their importance in any program of agricultural intensification.

Case Study Number 2 The Rizal Family

This family occupies as tenants approximately seven hectares of rice and coconut lands and both the husband and wife are active in all aspects of farming activities. They have one, highschool age daughter who assists in farming activities when not in school. In addition to rice, coconut and a number of other crops, the household raises a large number of livestock, particularly chickens. With the exception of hired wage laborers who assist in weeding and harvesting the rice fields, all other productive activities (i.e. planting, care of crops and livestock, etc.) is shared in relatively equal proportions by the husband and wife. The amount of time spent on the many agricultural and livestock enterprises is considerable and hence is a critical consideration in decisions regarding the allocation of labor to any particular enterprise and with regard to the adoption of novel technology. Decisions are made consensually but as in most households in the community, the wife controls the household budget, is responsible for the marketing of most production and was particularly articulate in discussing the investment of household capital in agricultural pursuits.

The household had initiated its' own attempts at agricultural intensification prior to the advent of FSRDP in the community, primarily as a means of growing crops which could be used to make chicken feed and thus support the large number of chickens they raise. Most of the households' income is derived from the sale of chickens or poultry-related products such as eggs. This case demonstrates the importance of a number of variables relating to agricultural intensification and extention. First the efforts of the household to expand its' poultry production betrays the myth that farmers are bound to traditional production systems of knowledge. The household had experimented with various combinations of crops and livestock as well as alternative productive methods prior to their participation in FSRDP and their farm already represented an example of one of the most intensive land use patterns on the community. Thus despite the fact that neither the husband nor the wife are gradeschool graduates, they demonstrate an acute awareness of the production processes of both the agricultural and livestock sectors as well as an ability to manage the risks involved in both in accomplishing a viable productive strategy.

Second, the relative success of the household in agricultural intensification of resources under coconut both before and after participation in FSRDP demonstrates the function of a number of other socio-economic variables in the structure of the community. Resources are not uniformly distributed throughout the community

and hence the results of their use also varies. While the household does not own their land, they do occupy one of the larger agricultural plots in the community and consequently have a larger potential interest and profit in agricultural and livestock production. The latter make it possible to intensify land use in a physical sense (i.e. the planting of additional crops under coconut) as well as in an economic sense (i.e. the ability due to higher income to invest in agricultural and livestock inputs as well as to risk investment in technology trials).

One of the interesting things about this household is that it has managed to manipulate the agricultural potential and profitability of their land to a much greater extent than most of their neighbors, despite the fact that they face relatively the same obstacles with regards to an ill-developed market for agricultural goods. This is accomplished thru a very strategic use of crop production. The household lists a greater number of crop varieties than does any other in the community. Some of parts of the harvest of these crops are sold by the wife in the market, some is used for household consumption. However much of what the farm produces is used to feed chickens which are raised on an extensive basis. At least eighty percent of the household income is derived from the sale of eggs, chickens and fighting cocks for which there is an ample demand in the local market. As a consequence of their ability to exploit this market potential, they are able not only to increase their income but also to afford the purchase of agricultural inputs and to absorb the risks involved in agricultural and poultry production. Moreover, the profitability of the strategy precludes the necessity of having to engage in off-farm income generating activities which would diminish the time available for on-farm labor. Unlike many of their neighbors who claim similar income levels, the income of this household is almost exclusively derived from farm production activities, involves less seasonal variation and is more effectively under their own control.

The households' liquidity is manifested in a number of ways which are exceptional in relation to their neighbors. Their diet is substantially more adequate than are the diets of most other residents, more often containing meat, fish, vegetables and dairy products. Their newly built home is roughly of the same quality of the home of the most economically powerful people in the community but what is particularly noteworthy is the vast degree of improvement that it represent on the original dwelling. In addition to the acquisition of electricity and a radio, their economic solvency is also evidenced in their ability to support their daughter with a private and very expensive education. This is an often voiced ambition of many of the residents in the community but one that few are ever able to afford.

Case Study Number 3 The Bonafacio Family

The case studies thus far have presented households whose standard of living is comparatively higher than most of the rest of the community. However these are not entirely representative of the community as a whole and the differences as well as the similarities between households can be instructive of the agricultural potential of the community. The following is a case study of a "non-cooperator" household. The study is concerned not so much with the effects of the project on this household but rather with the fact that the household is not effectively reached by the project. As will be made clear, this is specifically involves the issue of the selection process of "cooperators" and is particularly significant for women.

This household is composed of what outwardly appears to be a typical barangay family, a husband, wife and six children. They occupy what is by barangay standards a large plot of land (10 hectares), planted to coconut. Production is a partial source of income as well as a condition upon which their tenure status is dependent. However the household gains relatively little from the sale of copra (and related coconut products) and acquires most of its' income from the sale of "secondary" crops grown on the land beneath coconut trees - an extension of the household garden which is typical of most households but varies in size and intensity according to family specific needs and ambitions. The crops grown under coconut include cassava, camote, gabi, and beans. All are fairly common crops in the community, involve relatively little risk and are not usually labor intensive. However as a consequence of their commonality (and thus their high rate of supply), they draw relatively low prices in the municipal market.

An examination of the way in which agricultural labor is distributed in the household demonstrates the importance of women in the production process and household economy and also is suggestive of the inadequacy of the FSRDP selection process. In terms of physical resources, the household is on a par with all of those which were selected for project participation and in fact this household was invited to do so but declined.

Much of the ten hectares of coconut land is planted to the secondary crops that have been noted. However, except for some assistance in initial land preparation, all labor for these crops is provided by the woman of the household, in addition of course to her regular domestic duties. This is a remarkable work load on a farm this large. Unfortunately the crops and technology available to her do not result in profits reflective of her labor. The crops themselves are not labor intensive but since she alone is responsible for all tasks (e.g. planting, weeding, harvest, marketing), production become considerably labor extensive. What is significant is what it is the sale of these crops, and not the sale of copra, which comprises more than sixty (60%) of the household income.

There are numerous reasons for the existing disparity in labor within the household. It is not the task of this report to either document the causes, nor to pass judgement upon them. Rather it is to show that despite the strong family orientation of Philippine society, the viability of the family can depend upon one person and not untypically this is a woman. The husband decline to participate in FSRDP for the expressed reason that he did not wish to invest the necessary labor in agricultural activities. No one seems to have thought of asking the woman, who had effective control of the resources which would have been used.

It is true that many households in the community make decisions mutually and that the inequity in agricultural labor in this household is exceptional. There are however frequent exceptions to the general cultural ideals and an attention to these differences ought to be formally incorporated into the structure of extension service. This is clearly a case in which participation in the crop and livestock trials of the project could have made a significant difference in the productive potential of this household, particularly in view of the relatively low income that the woman is able to earn using non-intensive technology. The success of economic development programs may be measured in terms of opportunities lost as well as those taken. In this case the opportunities lost have a high cost and reflects the failure of the project to target the relevant sectors within the production process.

While the circumstance within this household are perhaps somewhat extreme, there are several similar cases in the barangay. The programmatic neglect of women in the extension services of the project is a serious miscalculation and use of scarce development resources. It results in further disenfranchisement of women from the agricultural sector despite the fact that the economy of this sector is often heavily dependent upon their labor. It is not simply a case of failure to identify needs with regards to this household. It is more generally a failure to establish trials among households whose use of resources represent the most effective tests of proposed technology. The household would ave been ideal for this in many respects, not the least of which is genuine need.

Case Study Number 4 The Aquinaldo Family

This household is an interesting case because it involves a number of social (i.e. gender) and political (i.e. access to economic power) issues which are directly relevant to the project. The family is composed of a father (who is disabled), a mother and nine children, seven of whom continue to live on the farm. The household owns a plot of land (1 hectare) but also occupies a large plot under tenancy. Both are planted to coconut and recently have been the sites of crop and livestock trials from the FSRDP.

The household has planted pineapple, papaya, coffee, banana

within this households economic means (they, and among the few less-poor households in the community), all is in a sense not in their best interest and is in fact not taking place on their farm. As will be elaborated on elsewhere in this report, the family was given preferential access to project resources, including agricultural inputs and seedling not made equally available to the community as a whole or even for that matter to most other cooperators. The household uses the crop and livestock trials as sources of domestic sustenance and exceptional access to other project resources as important sources of income. The first pursuit does not involve agricultural intensification beyond the needs of the household. The second, the barangay nursery, is a source of relatively risk-free income with modest labor costs. The decisions regarding the use of the resources and opportunities available to this family are largely a function of the woman's deliberation and primarily depend upon her labor. It is notable however that the households' use of project technology is not in accordance with stated project goals (i.e. agricultural intensification). This reflects an inadequacy on the part of the project to accurately implement technology pursuant to household production goals and to do so in the context of actual producers (i.e. women).

This households' income is primarily derived from the sale of livestock related products (e.g. milk) and from the sale of seedlings for FSRDP to other farmers. The details of this seedlings project are provided elsewhere in this report. For the purposes of the present discussion, it is noteworthy that the increased income which the family has achieved is not the result of agricultural intensification or production increases but rather is the consequence of untypical access to resources. As such, the modest successes do not represent an effective test of the adaptability of project components for the community as a whole. Conversely however, it is an ironically successful test of what proves to be inadequate design and implementation, particularly as this related to women but also in relation to the selection of cooperators for particular project components.

Case Study Number 5 The Capulet Family

The Capulet family, composed of husband, wife and three small children, are among one of the youngest families in the community. They occupy as tenants a two hectare plot, most of which is planted to rice. When the family moved to the plot in 1981, the wife developed a household garden, primarily for the cultivation of root crops to be used for household consumption. This garden was expanded when the household began participating in the project and includes coffee, camote, beans, corn, sili, eggplant and banana.

The patterns of land use have changed dramatically since the family originally moved to the plot. Some of these changes are related to FSRDP, some are a consequence of factors specific to the households labor and capital resources, all are indicative of the

constraints to intensification and development which are detailed throughout this report. Originally the primary land use goal was to produce a sufficient rice harvest to satisfy the expenses incurred in planting, producing and harvesting rice. Thus production decisions were closely tied to land tenure. The owner receives a fixed share after harvest (referred to as the "bades" system) and the household retains what it needs for household consumption. The remaining quantity of harvest is sold under an agreement (referred to as "gamit") in which the farmer receives loans to pay for agricultural inputs (i.e. hired workers, fertilizer, harvesters, etc.). In this agreement the farmer agrees to take the remaining harvest to the lender for sale, for which he receives a price for the "palay" (harvested rice) which is considerably less than if he sold it himself and less than what the lender will sell it for. This system, related to the capital poverty of most farmers and lack of access to equitable credit, engenders the farming household in a self-perpetuating system of production-related debt and economic powerlessness.

The households' response to these circumstances is typical of many of the households in the community. Currently the household is using approximately one fourth (1/4) of its' land for the production of rice, enough to meet tenure, consumption and production needs. The rest of the land, to the extent that it is used at all, is used for the production of crops for domestic use, including those introduced by FSRDP. As domestic crops they do not receive investment of agricultural inputs and consequently do not result in a scale of production which could be profitably marketed.

The husband is primarily responsible for clearing the land, planting and hiring laborers to assist in rice production and harvest. In addition to his farm activities, he spends much of his time engaged in part-time employment, particularly driving a tricycle and carpentry. This provides him, and usually the household, with additional though irregular sources of income which is distinct from the economic structure of tenant production.

Since the children are still small, and not yet in school, the wife necessarily spends most of her time in and around the farm. Much of this time is spent in domestic activities but a considerable portion is used for agricultural production of crops for household use since the husband is often engaged in off-farm activities and hence not available to do this work. This labor includes care of the crop trial of FSRDP, despite the fact that all extension relating to these crops has been directed to her husband.

The distribution of labor within the household is reflective of the economic structure of the community in general, and of the constraints of agricultural intensification in particular. Farming households increasingly seek ways of using their limited resources (e.g. labor) to generate income which does not related to tenure and which does not result in debt. This has consequence for labor

distribution since it typically involves the husband in off-farm activities, thus increasing the woman's agricultural burden. Consequently it was primarily the wife who was able to provide detailed information regarding production activities and decisions. The household reports no income generated as a result of FSRDP trials and in fact due to recent political disputes surrounding preferential access to project by some cooperator households, has effectively stopped participation. Both husband and wife acknowledge that production could increase if adequate resources were available and used. However it is their contention, and in this they are very typical in the community, that the structure and distribution of resources, particularly with regard to project implementation, do not result in as much profit as does their present arrangement. These conditions are a consequence of the absence of capital and a well defined market structure but they are also closely related to the political conflicts in which the project has become involved.

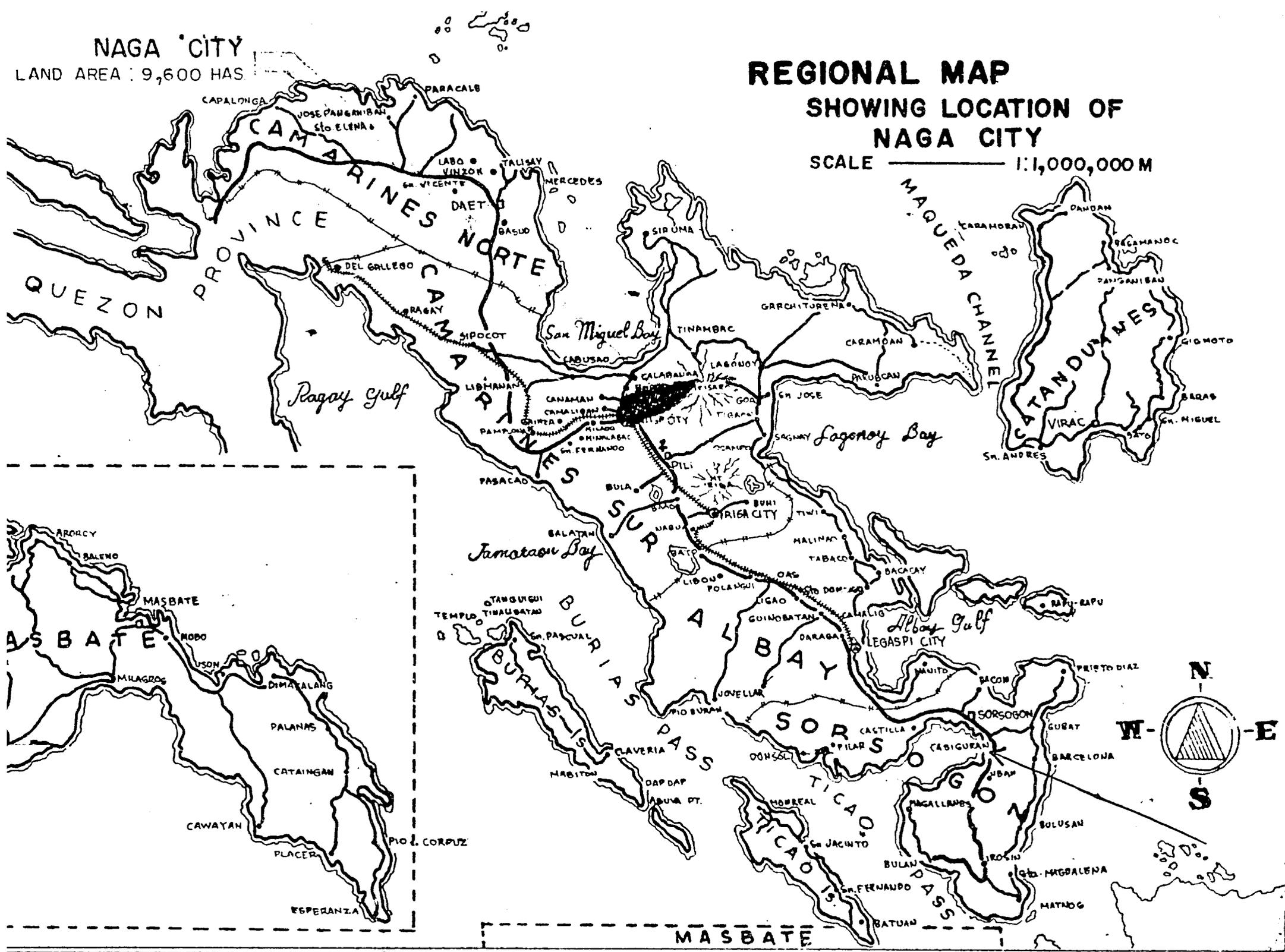
NAGA CITY

LAND AREA : 9,600 HAS

REGIONAL MAP

SHOWING LOCATION OF NAGA CITY

SCALE  1:1,000,000 M



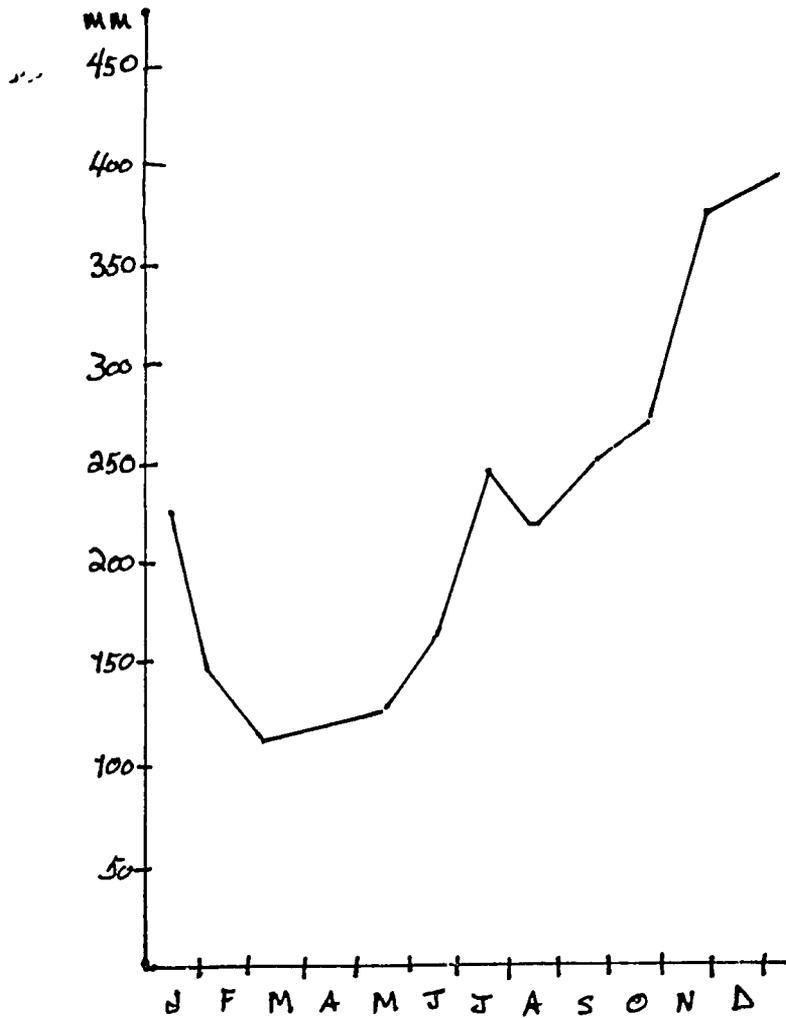


Figure 1. Rainfall Distribution of Sorsogon Area

Source?

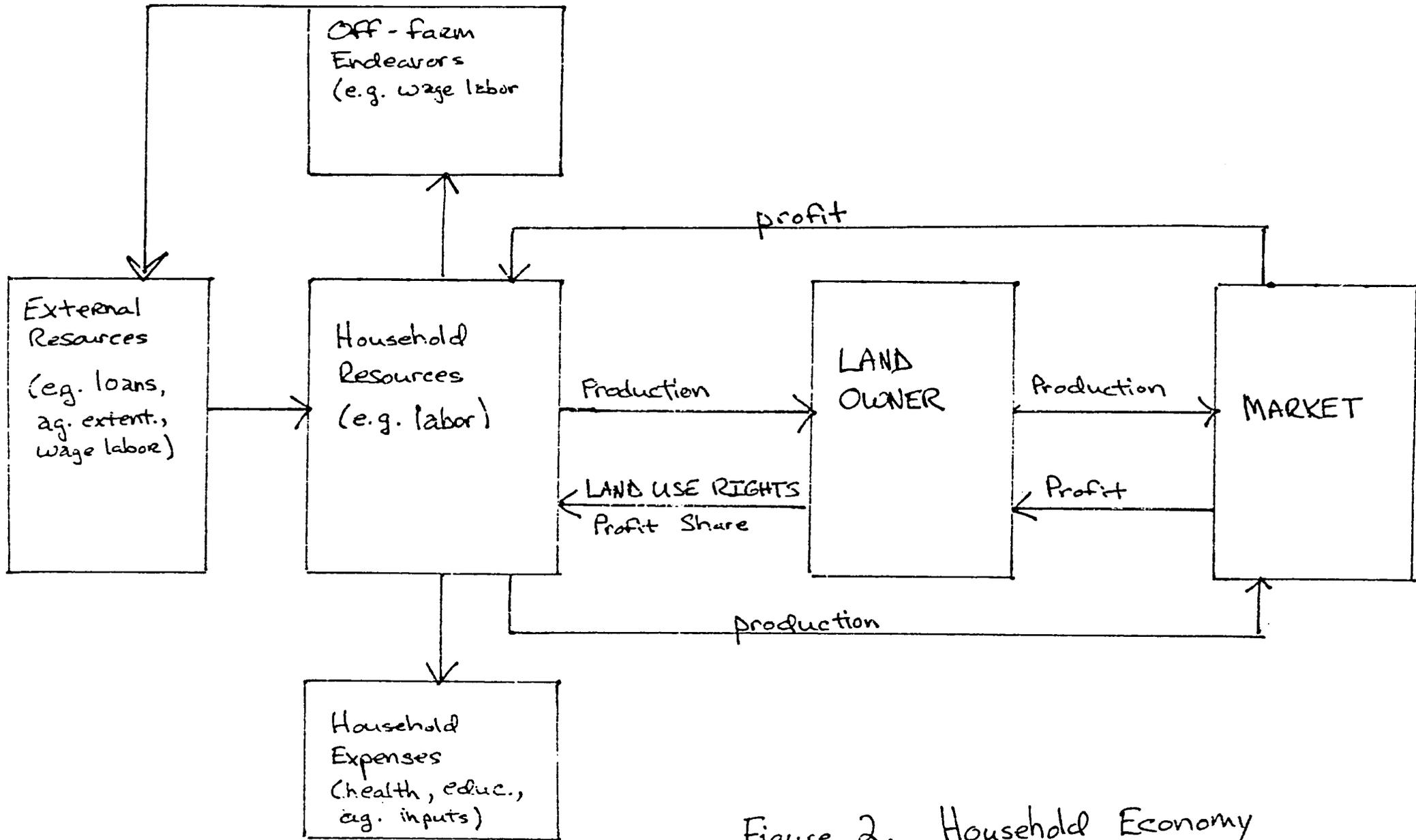


Figure 2. Household Economy

MS

References:

- Boserup, Ester
1965 The Conditions of Economic Growth. New York: St. Martin's Press.
1970 Women's Role in Economic Development. New York: St. Martin's Press.
- Firth, Raymond
1966 Malay Fisherman: Their Peasant Economy. 2nd. ed., Hamden Conn.: Shoe String Press.
- Flannery, Kent
1973 "The Origins of Corn in Meso-America", Scientific America.
- Geertz, Clifford
1963 Agricultural Involution: The Process of Ecological Change in Indonesia. Berkeley: University of California Press.
- Hourihan, John J.
1986 "Gender Issues in the Preparation and Implementation of Livestock Project". Asian Development Bank Consultants Report.
1986 "Gender Issues in the Preparation and Implementation of Livestock Projects". Asian Development Bank Consultants Report.
- Howe, Gary Nigel
1986 "Gender Issues In the Preparation and Implementation of Livestock Projects". Asian Development Bank Consultants Report.

Acknowledgments:

This research was supported by the Women In Development office of the U.S. Agency for International Development, The South Eastern Consortium for International Development and the Institute of Philippine Culture of Ateneo University de Manila. I wish to particularly thank Sonny Castillio, Fortunato Basilan and Rev. Fr. Benjamin Dogillio (and all their families), for their support, friendship and untiring patience. I am also indebted to the collegueship of Christina Raöch and Dr. John J. Hourihan as well as to Gwen Thomas and Ellen Fornolio.