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**Working Paper**

## The Impact of Comprehensive Agrarian Reform (CARP) on the Crop Sector

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## The Impact of Comprehensive Agrarian Reform Program (CARP) on the Crop Sector

*Ma. Piedad S. Geron*

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August 1994

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Philippine Institute for Development Studies

**The Impact of Comprehensive  
Agrarian Reform Program (CARP)  
on the Crop Sector**

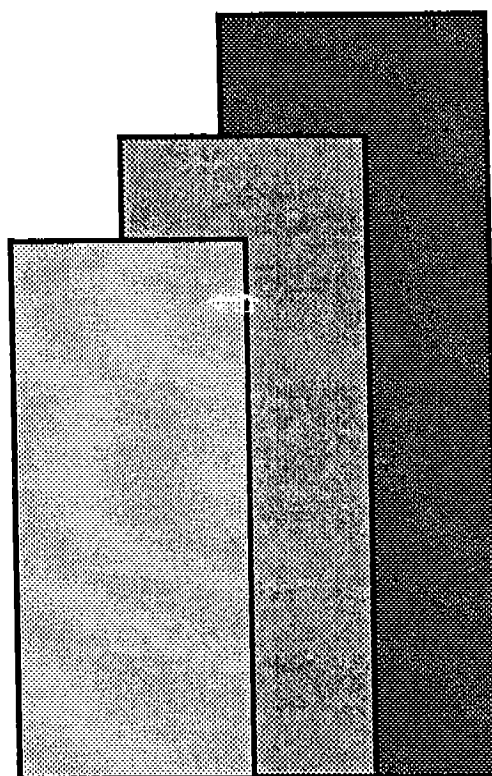
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# THE IMPACT OF COMPREHENSIVE AGRARIAN REFORM PROGRAM ON THE CROP SECTOR

*Ma. Piedad S. Geron*

The paper is part of the Dynamics of Rural Development (DRD)  
Project of the Philippine Institute for Development Studies.

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## The Impact of CARP on the Crop Sector (Summary)

Several studies have shown that land reform has a positive impact on rice and corn productivity. However, the question on the relationship of CARP and productivity in sugar and coconut areas covered by the CARP remains unanswered. This study attempts to verify the effect of the implementation of CARP on the productivity of sugar and coconut farms. To answer the productivity issue, the study examined whether ARBs have access to credit and new technologies and whether the transfer of ownership under CARP affected the collateral value of the land.

### Access to Institutional Credit

The Land Bank of the Philippines provides the credit requirements of the ARBs. Initially, LBP was engaged in both retail and wholesale lending. However, with the increasing number of ARB clientele vis-a-vis its limited field staff, LBP had to concentrate on wholesale lending. Under its wholesale lending scheme, the LBP channels its credit funds to cooperative banks and farmers' cooperatives for relending to individual farmer-members.

The presence of LBP field offices on the area had make it easy for the new landowners to acquire production loans at lower rates compared to that of the informal lenders. LBP imposes interest rates of 14 percent per annum for its wholesale production loans to Cooperative Banks and Farmers' Cooperatives which the latter relends to individual farmer members at the rate of 18 to 22 percent per annum.

The design of CARP allows ARBs to have access to institutional credit through the LBP. Aside from the mandate which prompts LBP to extend credit to ARBs, the price at which LBP loans are given out makes it also a better and an attractive source of funds for ARBs.

#### Acceptability of Land from CARP as Collateral

The ARBs proof of ownership of the land transferred under CARP comes in the form of EPs and CLOAs. The acceptability of these instruments among banks determine the access of ARBs to credit from formal financial institutions aside from the LBP. However, considering the restrictions imposed by law on lands acquired under CARP, these instruments are not widely accepted as collateral for loans. The unacceptability of CARP land as collateral may be another reason why most ARBs prefer to borrow from LBP or from cooperatives relending funds from LBP. Loans from LBP and cooperatives are granted on the basis of a certification from DAR and duly recognized farmers' organization or cooperative that a particular loan applicant is an actual or potential ARB who has under his control a parcel of land for cultivation.

#### Farm Productivity and the CARP

Aside from redistributing wealth, the CARP also seeks to improve productivity in the land areas covered. However, for most of the respondents, yield levels in both coconut and sugarcane farms fall below the national average. For coconut areas, around 51 percent of the farms have yield levels below the national average of 484 kg of copra per hectare and only 40 percent have yield levels comparable to

the national average. Similarly, in sugarcane areas, 60 percent of the farm have yield levels below the national average of 5.32 ton per hectare and only about 33 percent have yield levels comparable to the national average.

#### **Effect of Credit on Yield and Input Use**

Empirical evidence showed that there was no significant difference between the yield levels and intensity of input usage of sugar farmers who availed of credit and those who did not. However, among ARBs in coconut farms, average yield was significantly higher in farms of those who availed of credit than in farms of those who did not. Input use per area and hired labor expenses per area were also significantly higher among those who availed of a loan than those who did not. Despite higher input and labor expenses among those who availed of credit, average yield obtained by ARBs in this group was still significantly lower than the national average. The foregoing indicates that CARP did not have any significant effect in the yield of sugar and coconut farms in the Negros area.

#### **Policy Implications**

An examination of the design and provisions of CARP, coupled with empirical evidence, revealed that a number of restrictions inherent in the law itself limits the program in accomplishing the very purpose for which the law was enacted.

Among other things, the clause on non-transferability of ownership for a period of ten years and non-enforceability (confiscation of land in case of defaults on



land amortization) may prevent the access of ARBs to formal financial credit other than the LBP. Financial institutions are unwilling to accept EPs and CLOAs as collateral on loans inasmuch as these are not considered as negotiable instruments. This, therefore, results in credit rationing among banks leaving the ARBs to avail of loans from the LBP. Moreover, the relatively lower interest rates given by LBP on ARB loans make it the preferred choice by most ARBs. At these low rates and considering the risks involved in agricultural lending, lending by other banks is not really a competitive venture. The LBP is able to provide credit to ARBs at low rates since money from the Agrarian Reform Fund has lower cost. Given this, the question of sustainability becomes an issue.

## LIST OF ACRONYMS

ACA	Agricultural Credit Administration
ACCI	Agricultural Credit Cooperatives Institute
AO	Administrative Order
APCC	Asian and Pacific Coconut Community
ARB	Agrarian Reform Beneficiary
ARF	Agrarian Reform Fund
ASA	American Soybean Association
BAS	Bureau of Agricultural Statistics
BFAD	Bureau of Food and Drugs
BIR	Bureau of Internal Revenue
BOI	Board of Investments
BRW	Bureau of Rural Workers
CARL	Comprehensive Agrarian Reform Law (RA 6657)
CARP	Comprehensive Agrarian Reform Program
CB	Central Bank
CBC	CARP Beneficiary Certificate
CLOA	Certificate of Land Ownership Award
CLT	Certificate of Land Transfer
CNO	Coconut Oil
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DCN	Dessicated Coconut
DOLE	Department of Labor and Employment
EC	European Community
EO	Executive Order
EO 226	Omnibus Investment Code of 1987
EP	Emancipation Patent
LBP	Land Bank of the Philippines
MT	Metric Ton
NASUTRA	National Sugar Trading Corporation
PARC	Presidential Agrarian Reform Council
PCA	Philippine Coconut Authority
PD	Presidential Decree
PPB	Parts Per Billion
RA	Republic Act
SDO	Stock Distribution Option
SEC	Securities and Exchange Commission
SN	Samahang Nayon
SRA	Sugar Regulatory Administration
UCAP	United Coconut Association of the Philippines
VAT	Value Added Tax

# The Impact of CARP on the Crop Sector

MA. PIEDAD S. GERON\*

## I. Introduction

In consonance with the avowed policy of the state to promote social justice and to move the nation toward rural development and industrialization, the Comprehensive Agrarian Reform Law (RA 6657) was enacted on 10 June 1988. The law spells out the mechanism for the implementation of the Comprehensive Agrarian Reform Program (CARP) which aims to redistribute all public and private agricultural lands, including lands of the public domain suitable for agriculture. Under the program, landowners are allowed to retain a maximum of five hectares.

The CARP, which is primarily envisioned to accomplish equity objectives through land distribution, also aims to address efficiency issues by increasing farm productivity. Improved farm productivity is expected to be accomplished through the adoption of appropriate farming practices and technology by the new landowners and the provision of complementary support services. These include, among others, infrastructure support, credit, technical training

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and appropriate technology. The program is also designed to encourage production in idle and abandoned lands which is expected to increase overall land productivity.

After almost six years of implementation, the question of whether the program has moved towards the attainment of its efficiency and equity objectives may be asked. While the program's effectivity in improving farm productivity hinges on several factors, an investigation of the answers to the question may bring out policy issues whose resolution would contribute to the program's expedient and effective implementation.

Several studies have shown that land reform has a positive impact on rice and corn farm productivity. The negative farm size-productivity relationship has been validated in the production of these crops (Hayami et al, 1993). This is mainly due to the absence of scale economies in paddy production resulting from the difficulty of monitoring the work of farm laborers. Since paddy production is highly labor intensive, there is higher monitoring costs involved in large tracts of land compared to small farm sizes. The increase in paddy productivity accompanying the land reform program implemented in the 70s is mainly attributed to the massive technological support and credit infusion that accompanied land reform in the areas which are planted to these crops. The question, however, of whether there is also an increase in productivity in sugar and coconut areas covered by CARP still remains unanswered.

To answer the productivity issue in sugar and coconut farms, an examination of whether ARBs have access to credit and new technologies will be done. As in the 70's, access to these variables is presumed to have a positive effect in increasing farm productivity. This study, among others, attempts to answer the following empirical questions:

Are the ARB's able to access credit for production purposes? Due to the risks involved in lending to Agrarian Reform Beneficiaries (ARBs) which prompt formal financial institutions to ration credit, and the cutting of ties between the landlord (who used to provide credit to the tenant) and the tenant, what are the new institutional and credit arrangements that evolved in the village? How are the risks associated with sugar and coconut production handled by the new set of landowners? What is their dominant source of credit?

What is the effect of the property rights reform under CARP on the collateral value of the land? Does this result in an easier access of the new landowners to credit? How did CARP affect contractual arrangements in the rural areas? Did CARP encourage the intensified use of inputs, increased technology adoption and/or facilitated access to markets? And lastly, how did the changes brought about by the implementation of CARP affect individual farmer's productivity?

## II. Objectives of the Study

Given the above-mentioned considerations, the following are the specific objectives of the study:

1. To determine the impact of CARP on the institutional arrangements with respect to availment of credit by ARBs in sugar and coconut areas.
2. To determine the uncertainties arising from agrarian reform and its implications on the collateral value of agricultural assets.
3. To determine the availability and accessibility of funds for ARBs in sugar and coconut areas.
4. To determine the extent of ARBs' participation in the informal financial market.

### III. Analytical Framework

The effectivity of CARP and the accomplishment of its desired objectives of equity and improved productivity hinges on, among other things, the adoption and implementation of complementary and supportive policies and programs. For instance, the expeditious implementation of the program is highly dependent on the availability of funds from the Agrarian Reform Fund. Improvement in farm productivity and income will only be attained if the necessary basic and support infrastructure are made available to the countryside (e.g., technological support, credit, and marketing support to ARBs). These should, however, be accompanied by appropriate pricing policies (for both output and inputs) to enable farmers to sustain improvements in productivity.

The impact of the implementation of CARP on crop productivity will be examined via the impact of the program on the land and the credit market.

On the land market. CARP's primary objective is to distribute land to the landless and to maintain economic-sized farms in Philippine Agriculture. This results in a redefinition of property rights. Clont (1991) states that property rights define the owner's rights, privileges and limitations for the use of the resources. An efficient property rights structure has, therefore, to satisfy the following characteristics: exclusivity (all benefits and costs incurred as a result of owning and using the resource accrue only to the owner); transferability (all property rights may be voluntarily exchanged among individuals); and enforceability (property rights are secured from involuntary seizure or encroachment by others). Strong enforcement of these characteristics provides incentive to the owner to use resources efficiently since inefficient use of the resource will result in personal loss.

CARP, in essence, provided a new structure of property rights among landowners, tenants, hired laborers and landless workers since it transfers ownership of land from one party to another. However, the law which makes the program effective imposed certain prohibitions which affect the characteristics of the property rights given to the new landowners.

For instance, the characteristic of transferability of the newly assigned property right may not necessarily be true for an ARB. Section 27 of RA 6657 states that lands acquired by beneficiaries under the law cannot be sold, transferred, or conveyed except through hereditary succession or to the government or to the Land Bank of the Philippines

(LBP) or to other qualified beneficiaries for a period of ten years.

Enforceability, on the other hand, may also be affected inasmuch as Section 26 of the law provides for the foreclosure of the land should the farmer-beneficiary default on three annual amortizations. The Department of Agrarian Reform (DAR), after being notified by LBP, which collects the farmer's amortization payments, can award the forfeited landholding to other qualified beneficiaries. The beneficiary who defaulted on his payments shall, however, be permanently disqualified from becoming a beneficiary under CARP.

These provisions under the law affect the beneficiaries' access to other markets to which the land market is usually interlinked. For instance, sales restrictions affect the farmer's ability to obtain credit inasmuch as the restrictions affect the collateral value of the land. Restrictions on sales most often result in underground sales transactions or in disguise sales of the "land improvements" (Binswanger et al, 1992).

On the credit market. The effect of CARP on crop productivity via the credit market may be traced to the role of the landlord as the provider of credit to his tenants. The literature on market interlinkage argues that credit is provided by the landlord to his tenants either for extracting surplus (Bhaduri, 1977), screening tenants (Braverman and Guasch, 1984), monitoring effort of tenants (Braverman and Stiglitz, 1982), sharing risks in agri-



cultural production (Kotwal, 1985) and addressing the imperfections in the credit market (Basu, 1983). Interlinking the land and credit market, therefore, results in optimal tenancy contracts.

The implementation of land reform entails a change in the relation of the landlord and the tenant. The new landowner (formerly the tenant) is now faced with the problem of financing his farm operations and bearing the full risk of farm production. While the institutional change may seem to result in inefficiency, Braverman and Srinivasan (1981), showed that the effect of land reform on output depends on the elasticity of the tenant's marginal utility of labor. The tenant who is the new landowner will work more depending on whether his increased share of the output gives him incentive to work harder or not.

Dingcong and Llanto (1991) showed that the implementation of CARP resulted in credit rationing among banks. They found out that most banks require collateral. According to the study, the most commonly accepted collateral are titled real estate (non-agricultural) lands, and to a lesser extent, titled and untenanted farmlands. Emancipation Patents (EPs) and Certificates of Land Ownership Award (CLOAs) are not accepted as collaterals since these are non-transferable and cannot be sold by the bank in case of default. This, therefore, leaves out the small borrowers, who often does not have any collateral to offer, in the allocation of the bank's lending funds. The reluctance of banks to lend to agricultural clients is also brought about by the high transaction costs associated with

agrarian lending (Casuga, 1991).

In the rice sector though, Geron (1989) observed that the abolition of the landlord as the source of credit reinforced the role of traders as the new source of fund. She showed that this results in a maximizing behaviour of the trader which considers the farmer-borrower's optimum input demand.

While there may be evidence of emerging institutional arrangements in the grains sector as a result of the implementation of CARP, Teh (1992) raised an interesting issue -- are the credit needs of the new landowners met in the sugar and coconut sub-sectors? It should be noted that land reform in rice and corn were both accompanied by massive technological support and credit infusion thus, commercializing the sectors. This resulted in the growing interest among traders to enter into interlinked transactions. Technological support complementing land reform in sugar and coconut areas is, however, not very evident. There is still a dearth of information on how the new landowners in these crop areas are able to cope with the institutional changes brought about by CARP.

The changes in the land and the credit market are expected to affect the ARB's behavior on his demand for credit, use of inputs and technology adoption. These in turn affect his farm productivity.

#### IV. Hypothesis To Be Tested

Using the analytical framework in the preceding section and the issues raised in the first section, the

succeeding sections of the paper verify the following hypothesis:

1. The implementation of CARP resulted in an increased access of ARBs to institutional credit.
2. CARP intensified the bias against lending to ARBs due to uncertainties in land ownership while the process of land transfer is in effect.
3. Informal financial market plays a significant role in providing the financial requirements of ARBs, particularly in sugar and coconut areas.
4. The implementation of CARP improved farm productivity in sugar and coconut farms.

## V. Methodology

A sample survey of the agrarian reform beneficiaries (ARBs) was conducted to generate the data needed to address the issues raised by the study. The target universe for the sample are coconut and sugarcane farmers from selected municipalities of Negros Occidental and Oriental.

The survey employed a two-stage sampling scheme. In the first stage, survey areas were identified based on the following criteria: a) area planted to coconut and sugar; b) CARP area; and c) ratio of CARP accomplishment in the area. Each of the provinces were ranked in each criteria category. The average rank of each municipality using the various criteria was then taken. On this basis, the top eight (8) coconut and sugar municipalities were chosen as survey areas.

In the second stage, a list of ARBs in the identified survey areas was solicited from the Provincial Agrarian Reform Office (PARO). Twenty (20) beneficiaries per municipality were randomly selected from the list.

Tabular and descriptive analysis of the data were employed in the analysis. Test of differences of means was employed to determine the impact of credit made available through CARP on the farm productivity of CARP beneficiaries.

A number of problems were encountered during the field survey. For instance, the list of ARBs available in the PARO were not updated and classified as to the type of farmer resulting in some difficulty in drawing the samples. There were also cases wherein the sample-respondents have transferred to other barangays or was no longer planting coconut or sugarcane. These situations required replacements of respondents.

## VI. The Coconut and Sugar Sectors in Brief

This study, among other things, attempts to look into the impact of CARP on the performance of the sugar and coconut sub-sectors. Inasmuch as these crops play a key role in agriculture, agricultural trade and pricing policies in general and crop-specific policies in particular, affect the sub-sector's performance. It, therefore, becomes difficult to determine the impact of CARP alone on the performance of the sugar and coconut sub-sectors. Likewise, agronomic factors such as climate and weather conditions and type of land preparation also affect the sub-sector's performance. Developments in the international market also

have an effect on the crops' performance inasmuch as both are highly tradeable commodities. In view of this, the policies, programs and developments related to sugar and coconut production both in the local and international market are briefly discussed below.

The coconut and sugar sector continues to play a significant role in agriculture. It provides employment for some 25 million rural workers and accounts for 10 percent of the sector's gross value added. Twenty-seven percent (27%) of the total agriculture land area are planted to these crops. These crops also comprise 15 percent of the country's foreign exchange earnings.

#### A. Sugar

##### 1. Production Performance

The production of sugar, being a highly tradeable commodity, has largely been influenced by the developments in the world market for sugar. In particular, the performance of the sugar industry has largely been influenced by the preferential trade agreement of the Philippines with the United States. Under the agreement, the US allocates an import quota for Philippine sugar at prices above the prevailing world market prices. Any change in quota allocation is immediately translated to changes in the prices received by both sugar planters and millers.

For the period 1981-1992, sugar production grew at an annual average rate of 1.3 percent.

(Table 1). The largest decline in production was registered in 1985. This is largely attributed to the following: i) the emergence of a number of substitutes for cane sugar in the market such as high fructose corn sugar and beet sugar; ii) lack of domestic capital available to producers to finance their operations (largely due to NASUTRA's failure to pay sugar deliveries); and iii) reduction in the total volume of loans that went to the sector. Ratio of sugar production loans to total agricultural loan declined from 33 percent in 1982 to 16 percent in 1986. It further decreased to 15 percent in 1990 and 14 percent in 1991 (Table 2).

Production continued to decelerate from 1985 to 1987. It, however, registered an upward trend in the succeeding years except in 1990 when sugar production posted a negative growth of 12.9 percent. The drop in production in 1990 was largely due to the typhoons and drought that hit the country during the year.

The improvement in sugar production was largely due to the reforms undertaken in 1986, which among others, include the dismantling of the National Sugar Trading Corporation (NASUTRA) and the restoration of free trade in the industry. The increased quota allocation from the United States in 1989 also contributed to the improvement

in sugar production. The United States increased its quota allocation of imported sugar from 160,000 MT to 299,000 MT. which made the Philippines one of the biggest exporters of sugar to the United States, next to the Dominican Republic.

The notable increase in production in 1988-1992 was also brought about by the revived interest of growers to plant the abandoned sugarlands as a result of higher domestic demand and favorable domestic prices. The improvement in domestic demand was due to the increase in the use of sugar by the food processing industry. The area harvested to sugarcane increased by an average of 8.91 percent during the said period.

## 2. Prices

Domestic prices of sugar do not reflect trends in the world market due largely to the import quota allocation which the country enjoys from the United States. Table 3 shows that domestic prices have generally been way above world market prices. This is attributed to the preferential prices the country receives on its sugar exports to the United States. It may, however, be argued that world prices are not really reflective of the true market price. This is in view of the massive subsidies which most sugar producing countries extend to their sugar producers. The sugar market is one of the most

complicated agricultural commodity markets and, therefore, "prices" do not really measure efficiency in the industry.

3. Trade

Tables 4 and 5 show that most of our sugar exports go to the United States to fill in our quota allocation. It should be noted that the country imported sugar on a consignment basis in 1983, 1987 and 1988 only to fill in our export quota allocation (Table 6).

4. Recent Policy Developments

Since the deregulation of the industry in 1986, several policies and programs were formulated, issued and implemented which affected the performance of the industry. They are as follows:

Sugar Amelioration Program. Republic Act (R.A.) No. 6982 (Strengthening the Social Amelioration Program in the Sugar Industry) was promulgated on 01 May 1991. The measure aims to strengthen the rights of workers in the sugar industry to a just share in the fruits of production by augmenting their income through the institutionalization of a mechanism among the partners in the sugar industry. The R.A. imposes a lien of five pesos (P5.00) per picul of sugar on the gross production of sugar to primarily augment the income of sugar workers, and to finance social



and economic programs to improve their livelihood and well-being. Eighty percent (80%) of the lien shall be distributed as cash bonus to each worker in the sugar farm or mill based on the proportion of work rendered by him. The remaining 20 percent will be utilized in various socio-economic programs and in the provision of death, maternity and calamity assistance benefits. The amount is borne by the sugar planters and millers in proportion to their corresponding milling share and shall constitute a lien on their sugar quedans and/or warehouse receipts.

US Import Quota Allocation. In 1989, the U.S. increased its quota allocation for imported sugar from the Philippines from 160,000 MT to 299,000 MT (Philippine Development, 1989). The additional 139,000 MT resulted in some \$67 million savings for the Philippines at the price of 22 cents per pound in the world market.

The U.S. sugar quota allocation and the price at which domestic sugar is bought vary from year to year. The U.S. Farm Bill, signed into law by former U.S. President George Bush in 1991, assures the Philippines of a U.S. sugar import allocation of at least 200,000 short tons annually over the period 1991-1995. This represents about 16 percent of the minimum U.S. import quota of 1.25 million short tons (1.3 million MT) approved under the law. The Philippines has traditionally been

allocated a fixed share of 15.8 percent of sugar shipments to the U.S. The Farm Bill also assures sugar exporters to the U.S. a minimum support price of 18 cents a pound for imported sugar.

Import Restriction and Tariff. Executive Order No. 8, issued on July 24, 1992, includes among other things, the removal of quantitative restriction on the importation of raw sugar and imposed a 75 percent tariff thereon. The E.O. also provides for a gradual phase down of the tariff rate to 50 percent by 1996.

Domestic Pricing Policy. From 1986 up to October 1990 (except during the period when price ceilings were imposed in December 1989 to February 1990), pricing of domestic sugar was based on "free enterprise." In this pricing system, producers monitor four (4) different prices. These four different prices are based on how each of the four production quota allocations are administered/set by the Sugar Regulatory Administration (SRA). The quotas are as follows:

- A - U.S. market
- B - Domestic market
- C - Strategic reserves
- D - World Market

Production quotas are allocated to all planters in exactly the same proportions. This means that each producer faces the composite price.

While a free market pricing policy is claimed to be in place, it may be argued that domestic prices can be manipulated by the SRA whenever it sets the "B" and "C" production quotas (Geron and Castillo, 1992). By deliberately restricting supply to the local market, the SRA could force domestic prices to go up. Similarly, by fixing a relatively high "B" quota, the SRA could force the domestic price down.

Quedanning of Refined Sugar. Under this policy, refined "D" sugar are quedanned. This enables the SRA to effectively control the disposition of sugar which is primarily exported to the world market (e.g. Mexico, Pakistan, Indonesia).

Pursuant to this measure, all new "B" domestic sugar produced by integrated mills (i.e., those with sugar refineries) are authorized to be refined, while all other classes (including "B-1" domestic (reserve) sugar which has a maturity date) shall require the prior approval of the SRA. Only raw "B" sugar may be refined by non-integrated refineries and shall be issued refined sugar quedans.

Modernization/Rehabilitation Program. The program seeks to rehabilitate and modernize existing mills and establish internationally competitive mills. This program covers sugarcane

farms/cooperatives with obsolete technology/equipment and inadequate number of units of farm machinery. Under the program, farms/cooperative may apply for the upgrading, restoration, replacement of farm equipment and introduction of processes involving the following activities: (a) land preparation; (b) planting and cultivation; (c) irrigation and drainage; (d) power generation; (e) harvesting; and (f) research and development. They are eligible to avail of the incentives granted under E.O. 226 (Omnibus Investment Code of 1987), except the income tax holiday.

The incentives granted to sugarcane farmers under the program is expected to improve the quality of their output and increase sugar yield with the use of modern technology and appropriate techniques of production. This would enable them to receive better prices for their produce.

The incentives given for the modernization and rehabilitation of mills would result in improved milling recovery which will also translate to better prices for the farmers. This is due to the existing production sharing arrangement between planters and millers wherein planters received a fixed proportion of sugar, molasses or bagasse. Under this sharing arrangement, sugar planters who deliver cane to efficient mills are able to get higher recoveries

for their produce compared to those who deliver to less efficient mills.

## B. Coconut

### 1. Production Performance

Coconut production has continuously been on a downtrend since 1981 except in 1986, 1987 and 1990 when the commodity registered slight improvement in production (Table 7). Coconut yields and area planted to the crop have also been declining during the period. Prior to 1986, the decline in coconut production was largely attributed to agronomic and socio-economic factors. Occurrence of pests and diseases and unfavorable weather condition, particularly the drought which hit the country in 1983, coupled with the senile low yielding coconut stand accounted for the deterioration in the country's production of coconut. Socio-economic factors, on the other hand, include the lack of credit, inadequacy of extension services and tenure problems. The declining coconut production coupled with inefficient trading and coco-processing resulting from monopolistic and interventionist policies in the sector dampened farmgate prices. This further contributed to the deteriorating income situation of coconut farmers.

The reforms undertaken in 1986 which, among other things, include the dismantling of monopoly

in coconut trading, abolition of export levy and other taxes on coconut planters and millers, and the implementation of CARP were expected to improve efficiency in the sector. These reforms were expected to provide incentive to production by enabling farmers to avail of appropriate technology and adopt improved cultural practices with the perspective that they will now be receiving better prices for their produce.

The reforms undertaken were, however, not sufficient to improve the production of coconut. The industry apparently still suffers from agronomic problems. Most farmers do not tend the land in between harvests and refuse to practice appropriate agronomic practices such as the application of fertilizers, cleaning and voluntarily replanting senile low-yielding trees. The high cost of fertilizers and coconut seedlings and the lack of improved varieties of coconuts adaptable to certain locations make it difficult for coconut farmers to increase their yield. A UCAP report revealed that this is especially true for small farmers who own less than 3.5 hectares of coconut land.

The slump in production may also be explained by the significant decline in area planted to coconut yearly as a result of massive cutting of trees. The cutting of trees is

becoming a lucrative business for lumber and other business ventures. A significant number of farmers have indiscriminately been cutting down trees for coconut lumber with the selective log ban and relatively good prices for lumber. Earnings from the cutting of coconut trees can almost compensate for three years of coconut harvest.

The insurgency problem has also contributed to the increased cutting of coconut trees. The landowners prefer to cut down coconut trees and allow other ventures (e.g. real estate development) in their farm lands instead of letting the insurgents reap the fruits of the farm.

## 2. Prices

Prices for coconut products are largely characterized by large fluctuations (Tables 8 and 9). Aside from domestic supply considerations, prices of coconut products are also largely influenced by the behavior of prices in the world market. The Philippines supplies almost 75 percent of coconut oil in the fats and oils market. Coconut oil, however, only comprises around 5 percent of the total fats and oils market. This explains the wide latitude of coconut oil price fluctuations in the international market.

The international price of coconut is mainly determined by the world supply and demand for oil. Since coconut oil may be substituted by other fats and oils (e.g. soybean, sunflower, rapeseed, palm kernel, groundnut, and fish oils, lard, and tallow), the supply of these oils greatly affects the price of coconut oil. Aside from the highly volatile supply situation, the inelastic demand situation due to fixed needs of industrial users, also contributed to the large fluctuations and unpredictability of world prices.

In the domestic market, dessicated coconut commanded the highest millgate price among all coconut products, while husked nuts received the lowest during the 1981-1992 period (Table 8). The wide difference in price is partly attributed to the processing costs of the product.

### 3. Trade

Coconut comprises bulk of the Philippine agriculture exports. The value of coco exports to total value of agricultural exports has, however, been declining in recent years due to the downtrend in the world prices of coconut and its by-products.

The Philippines remains as the world's number one supplier of major coconut products (copra and coconut oil). It accounts for about 60 percent of the total world exports (Table 10). Among the



coconut product exports, coconut oil is the main source of export earnings. Other coconut export products are: coco-chemicals, dessicated coconut, copra, coco-shell charcoal and activated carbon. Major markets for these coconut products include the US, West Germany, Netherlands, Australia, Canada and United Kingdom.

Copra and coconut oil exports started to decrease in 1987 due to the stringent safety standards for aflatoxin levels imposed by the US as a result of the lobby of the American Soybean Association (ASA) (Table 11). The coconut oil industry was adversely affected by the campaign since most buyers shifted to substitutes such as soybean oil and palm kernel oil. From 1987-1991, copra and coconut oil exports declined by 7.0 percent and 2.9 percent, respectively.

The aflatoxin requirement of 20 parts per billion (ppb) or less in coconut export products imposed by the European Community (EC) took effect in November 1991. As a result, copra exports decreased by as much as 65 percent from January to October 1992. Exports of copra and copra meal are expected to contract further in the coming years as a result of this policy.

Exports of coco-chemicals also declined during the period as a result of EO 259 which was issued in 1987. This order mandated the substitution of petroleum-based alkylbenzene, a

known pollutant used as surfactant in detergents, with more bio-degradable coconut oil-based materials. This encouraged the local use of coco-chemicals resulting in a cut in the exported volume.

Meanwhile, dessicated coconut and activated carbon slowly gained stronger grounds in the world market. The high quality Philippine-made dessicated coconut is favored by the quality conscious US and European markets. These markets are willing to pay a premium for the commodity. From a negative growth in the pre-reform period, exports of dessicated coconut increased by 4.6 percent annually from 1987-1991.

Exports of activated carbon increased by 2.6 percent during the 1981-1992 period. This is primarily due to the increasing demand for coconut activated carbon brought about by environmental concerns that grip the world at present. Powdered coco shell activated carbon is used in industrialized countries as pollution control agents or as means of lessening carcinogenic components of some food products.

#### 4. Recent Policy and Program Developments

Value Added Tax (VAT) on Copra (EO 273 of 1988). Prior to 1988, the Bureau of Internal Revenue (BIR) listed copra as a non-food item subject to the 10 percent VAT. The tax is imposed

on traders and processors. Traders and processors pass the burden to the farmers by buying copra at discounted prices. Meanwhile, exporters are exempted from paying the VAT.

In view of this, the Department of Agriculture (DA) moved for the reclassification of copra from a non-food to a food commodity emphasizing that copra is produced from the meat of the coconut which is food and that more than 80 percent of products derived from copra are edible.

Thus, on July 15, 1988, the BIR declared copra as an agricultural food product in BIR Ruling 228 and was VAT-exempted. The ruling was, however, revoked last September 1991. This elicited renewed protests resulting in a request for reclassification, this time, addressed to the Bureau of Food and Drugs (BFAD).

The reclassification of copra and an exemption from the VAT would result in lower production costs. This is expected to result in better copra buying prices both at the farmgate and millgate. Higher copra prices would serve as an incentive for the farmers to increase their production and improve the quality of their produce.

#### Ban on Copra with High Aflatoxin Level.

Beginning November 30, 1991, the EC has imposed

the requirement that Philippine copra meal shipments destined for its member countries must not be infested with aflatoxin beyond 20 ppb if it is for direct feedstuff component and 200 ppb limit for copra meal as raw material. This new requirement was embodied in the EC Directive 91/126 with the objective of minimizing the aflatoxin level in feed inputs for dairy cattle to ensure that milk output stays within the limit of not more than 0.05 ppb of aflatoxin.

Such policy of the EC market was translated into PCA Administrative Order (A.O.) 003 which was made effective on December 1, 1991. The Order banned the exportation of copra meal, copra cake and copra pellets which exceed the required aflatoxin levels. Under the order, all exports of copra by-products were required to be certified by the PCA or other reputable institutions to contain the required aflatoxin levels.

At present, only 48 percent of Philippine copra meal exports to Europe fall below the 20 ppb aflatoxin limit. Local copra, according to the DA estimates, contains about 30 to 50 ppb aflatoxin level. With the ban, export volume of copra is expected to decrease by as much as 52 percent.

There were certain sectors, however, which opposed the implementation of A.O. 003. Uncertain copra meal values will force oil millers to slash the prices paid to farmers. The

poor farmers will again have to bear the heaviest burden.

Information Drive to Counter ASA Smear Campaign on Coconut Oil (CNO). The sharp debates over the health attributes of CNO began in 1986. ASA organized letter-writing campaigns to food processing companies on the alleged cholesterol-enhancing effects of tropical oils. In 1987, the smear campaign against CNO reached the halls of the US Congress wherein the influential ASA was able to obtain the nods of politicians to introduce legislations that would denigrate, malign and exclude coconut oil from the formulations of American food products and other consumables.

The smear campaign created a shift to substitutes such as soybean oil and palm kernel oil, thereby depressing world CNO markets and, consequently, retarding the growth of the industry. Since CNO is one of the country's biggest earners among the different coconut products, its market behavior exerted a tremendous influence on the coconut industry.

Various attempts have been initiated by the government and the private sector to counter this campaign. For instance, the United Coconut Association of the Philippines (UCAP), on its own, contracted a lobby firm, (Reichler-Applebaum, now

Reichler & Soble Attorneys at Law) to effectively carry out the task of correcting the misimpressions and unfounded accusations on coconut oil and the industry as a whole. The private sector also hired medical researchers to study the properties of CNO and disprove claims on its alleged cholesterol-enhancing effects.

In addition, the Asian and Pacific Coconut Community (APCC) which is composed of twelve (12) coconut-exporting countries, passed a resolution during its 26th Session held in Manado, Indonesia. The resolution called on the US government to immediately act on ASA's smear campaign branding coconut oil as a health hazard, which has been derailing the industries of coconut-exporting countries.

Since 1987, the government has allocated a special fund for the launching of intensive information campaigns in the country's biggest CNO market.

Import Tariff on Coconut Products. Executive Order (EO) 470 modified the nomenclature and rates of import duty of certain imported articles under section 104 of the Tariff and Customs Code of 1978 (PD 1464). This would be in effect from August 1991 until 1995.

Under this EO, imported coconut will be charged with a tariff rate of 50 percent from

1991 to 1995. The import tariff on copra and coconut oil, on the other hand, now stands at 50 percent (from 20 percent and 40 percent respectively). The tariff on copra cake remains at the previous level of 50 percent.

Meanwhile, palm nuts and kernels and palm oil will be subjected to a tariff rate of 50 percent (from 20% and 40%, respectively). The tariff on oil cake will remain at 50 percent.

The tariff rate on soybeans and soybean products, on the other hand, was generally decreased, compared with that on coconut products. The rates currently stand as follows: beans, 3 percent (from 30%); soybean oil crude, 20 percent and oil cake, 10 percent. However, oilseeds will be charged a higher rate of 30 percent (from 20%); and oils, 50 percent (from 40%). The rate on soybean meal is 10 percent.

The rates on soybean are apparently not acceptable. In fact, efforts are currently being exerted to restructure the new tariff duty for soybeans. The low tariff imposed on soybean might trigger massive importations of this commodity. It should be noted that soybean-based products are direct substitutes of coconut-based products. The current tariff structure on coconut and soybean might aggravate the already declining prices of coconut products.

Cocochemical as Substitute for Petroleum-Based Products. EO 259 which was issued in 1987, mandated the substitution of petroleum-based alkylbenzene, a known pollutant used as surfactant in detergents, with more bio-degradable coconut oil-based materials.

The order was implemented in three phases: (1) April 1989 (20% substitution); (2) April 1990 (40% substitution); and (3) April 1991 (60% substitution).

An inspection made by the Board of Investments (BOI) showed that 16 out of the 26 detergent firms have complied with the EO. The increased local use of cocochemicals is expected to protect exporters from erratic price movements in the world market.

Minimum Prices for Dessicated Coconut (DCN) Exports. The minimum prices for dessicated coconut exports was previously enforced by the Central Bank (CB). This policy restricted competition and protected inefficient DCN producers. The setting of minimum export prices has discouraged competition in the industry considering that no matter how cost-efficient a certain company may be, it would still have to follow the minimum export price. It is also considered a major reason for the decline of the Philippines' share of the DCN export market and



the accompanying expansion of the share of Sri Lanka, the Philippines' only competitor in the DCN export market. Since the limits do not allow DCN prices to be at their competitive level, the country is not able to maintain its market share. The limits have, likewise, caused the relatively higher prices of Philippine DCN exports compared with Sri Lanka. Exporters from Sri Lanka are able to offer lower prices since they incur lower production costs. Considering this, Sri Lanka is able to dominate the European market. Since the EC is especially price-sensitive, the Philippines' share eventually declined except for class "A" which accounts for about 30 percent of the total market.

In 1990, however, PCA issued a directive lifting all existing floor prices for exports of coconut products (including DCN) except fresh young coconut for the Taiwan market. This development is expected to regain the country's prime position in the DCN market.

Proposed Levy on Vegetable Oil Imports to the EC. This proposal is expected to create another serious threat to coconut oil trade. This levy is a consumer price stabilization mechanism which favors the EC's own agricultural products by making oils such as CNO much more expensive than soybean oil and European grown rapeseed oil. If

this measure is implemented, it could reduce the Philippines' European CNO revenues by as much as 50 percent. According to PCA's calculations, it would also cause a ripple effect which can drive down the price of local copra by as much as 40 percent.

## VII. CARP and the Crop Sector: Evidences from the Field

This study specifically attempts to verify the effect of the implementation of CARP on the productivity of sugar and coconut farms. Aside from redistributing lands, CARP aims to improve farm productivity by providing a package of support services to the beneficiaries. Among other things, this include the provision of credit which will enable ARBs to adopt the appropriate technology and apply the right kind of inputs to improve land productivity. The redistribution of land is also expected to improve bankability of the ARBs giving them greater access to financial credit from formal sources. This section provides empirical evidence and verifies the hypotheses which were discussed in the preceeding sections. A brief profile of the sample respondents is, however, first presented.

### A Brief Description of the Sample Respondents

Three-hundred twenty (320) sample ARBs were interviewed in the provinces of Negros Oriental and Negros Occidental, all of whom are engaged in planting sugar and coconut.

Table 12 shows the distribution of the sample respondents by size of farm and the type of crop they cultivate. The figures show that most of the sample

respondents cultivate land whose sizes range from 1.0 to 3.0 hectares. It should, however, be noted that most of the respondents own more than one parcel of land.

A delineation of land cultivated by respondents between those acquired through CARP and those which they cultivate under different tenurial arrangement shows that there are 17 respondents in the sugar areas and 5 respondents in the coconut areas (out of 320) whose land sizes exceed the distribution limit of 3.0 hectares (Table 12). DAR Administrative Order No. 5 series of 1985 stipulates that a farmer can own up to 10 percent in excess of the limit set under PD 27, i.e., 3.3 hectares if the land is irrigated and 5.5 hectares if the land is not irrigated. Likewise, under RA 3844 as amended by Section 16, R.A. 6389, DAR can award land up to 6 hectares within its Landed Estates and Land Settlements Projects.

Table 13 shows that out of the 320 respondents, three respondents have multiple tenurial arrangements. Thirty three percent of the respondents are amortizing owners and less than one percent are leaseholders. Majority, however, are owner-cultivators.

Table 14, on the other hand, shows that 43 percent of the respondents are EP holders inspite of the fact that EPs are supposed to be awarded only to PD 27 beneficiaries. It was observed that these respondents have shifted from rice and corn production to sugar and coconut. Only 19 percent of the respondents hold individual CLOAs, while 23 percent have been awarded with mother CLOAs. Respondents who have

more than one parcel of land hold a combination of EP and mother CLOA (4 percent) and EP and individual CLOA (less than one percent).

#### Access to Institutional Credit

Credit Access Under PD 27. Under PD 27, one is able to access institutional credit through the Samahang Nayons (SN), the official farmer organization of ARBs. The defunct Agricultural Credit Administration (ACA) was authorized to provide loans to ARBs and assume the role of the landlord in providing credit to tenant families. Credit was then available at subsidized rates.

Despite the infusion of cheap credit to the countryside, most of the ARBs are still not able to access the credit facilities of formal sources. In a survey conducted by the Agricultural Credit Cooperatives Institute (ACCI) in 1988, Rola (1988) reported that more than half of the 312 SN member-respondents borrowed from informal sources.

Aside from cheap credit coming from the government through the Samahang Nayons, beneficiaries under PD 27 were ensured of loan funds through PD 717. Under this PD, banks are mandated to set aside 5 percent of their loanable funds for agrarian reform lending. This, however, did not result in the desired objective of increasing the flow of funds to the ARBs. The mandated fund allocation resulted in an increase in the cost of financial intermediation, which further cringed the supply of credit to ARBs and resulted in credit rationing among banks. Moreover, the provision of

investing in alternative securities resulted in banks' compliance through the alternative mechanism, thereby forfeiting the purpose of the legislation.

Credit Access Under RA 6657. New credit arrangements evolved with the implementation of RA 6657. Under the CARP, the Land Bank of the Philippines (LBP) is mandated to provide the credit requirements of the ARBs. To fulfill its mandate, the LBP receives an annual budget allocation from the Agrarian Reform Fund (ARF). The LBP has, therefore, become the most important source of credit for ARBs.

Table 15 shows that for the period 1987 to 1992, PARC has approved P11.1 billion allocations to LBP to service the credit needs of the ARBs. However, actual disbursements made by LBP amounted to only P4.8 billion.

In the past, LBP was engaged in both wholesale and retail lending. However, with the increasing number of individual ARB clientele vis-a-vis its limited field staff, LBP had to concentrate on wholesale lending. Such shift in lending policy was further registered by the poor collection performance under retail lending compared with its wholesale lending.

Under its wholesale lending scheme, the LBP channels its credit funds to cooperative banks and farmers' cooperatives who in turn provide the loan to individual farmer-members. In areas where there are no farmers' cooperatives, LBP extends loans to farmers' organizations provided these are duly registered or accredited by concerned government agencies like the Security and Exchange

Commission (SEC), the Bureau of Rural Workers (BRW) of the Department of Labor and Employment (DOLE), and the Philippine Coconut Authority. In addition, the LBP makes it a condition that such farmers' organizations will be transformed into a duly registered cooperative a year after the loan is made to make them eligible to borrow in succeeding years.

Credit Access of Sample Respondents. Despite the availability of credit facilities under the CARP, most of the sample respondents still preferred to self-finance their farm operations. Only 46 percent of the sample respondents in sugar areas and 20 percent in coconut areas availed of loans in 1991 and 1992 (Table 16). Most of those who borrowed, about 90 percent in sugar areas and 72 percent in coconut areas, availed of loans from cooperatives and from the LBP itself. The relatively lesser number of coconut farmers getting loans from any of the sources was observed to be due to the less capital intensive nature of coconut farming. Moreover, most of the beneficiaries are able to avail of free fertilizers from the Philippine Coconut Authority (PCA). It is observed, however, that only 6 percent of the 320 respondents availed of loans from the informal credit market (e.g. friends, traders, private moneylenders). The presence of the LBP field offices in the survey areas had made it easy for the new landowners to acquire production credit at lower rates compared to that of the informal lenders (despite the fact that loans from informal sources are alleged to be accessed at relative ease

compared to those from formal sources). Organized farmers are also able to acquire postharvest facilities loan for the acquisition of hauling trucks.

Given the foregoing, it may be inferred that the design of the CARP allows its beneficiaries to have access to institutional credit through the LBP. Aside from the mandate which prompts LBP to extend credit to ARBs, the price at which LBP loans are given out makes it also a better and an attractive source of funds for ARBs. LBP imposes interest rates of 14 percent per annum for production loans and 16 percent per annum for fixed asset loans under its wholesale lending scheme. The Cooperative Banks and Farmers' Cooperatives relend the fund to individual members at an interest rate ranging from 18 to 22 percent. This is relatively lower compared to loans from informal sources which ranges from zero percent to 150 percent (Geron 1989). It should be noted that LBP rates are also below the prevailing market rates. This may indicate that ARBs preference for LBP as a source of loan is a result of its relatively low cost compared to other sources.

The question, however, of whether the program is able to integrate the ARBs into the formal financial system still remains an issue inasmuch as none of the respondents are able to borrow from formal sources outside of the LBP.

#### Land Ownership and its Acceptability as Collateral

Land ownership under CARP. The rights and responsibilities of the ARB as an owner commences from the time the land is awarded to him and is evidenced by a CLOA

for beneficiaries under R.A. 6657 or an EP for beneficiaries under PD 27.

In some instances where the EP or CLOA cannot be immediately issued pending fulfillment of certain legal and administrative requirements, the DAR issues a CARP Beneficiary Certificate (CBC) to provide the would-be beneficiary an intermediate document as evidence that he has been identified and has qualified as ARB under the CARP. The CBC attests to the inchoate right of the holder to be awarded the land or portion thereof which he actually possesses and to be entitled to receive the accompanying support services under the CARP.

Meanwhile, landowners of agricultural land subject to land acquisition and distribution may enter into a voluntary arrangement for the direct transfer of lands to qualified beneficiaries. The beneficiary shall make direct payments, in cash or in kind, to the landowner under terms to be mutually agreed upon by both parties and duly registered with and approved by the DAR. Under the arrangement, the ARB may seek financing assistance from LBP for purposes of acquiring the land. This mechanism/scheme includes the immediate transfer of the land in favor of the identified beneficiaries. CLOAs shall be issued to the beneficiaries with the proper annotations.

Acceptability of land from CARP as Collateral. The foregoing section discusses that an ARB's proof of ownership of the land transferred under CARP comes in either of the following forms: through EPs, CLOA (Individual or Collective) and the CBC. These instruments provide proof of



land ownership of the ARBs, thus improving the income position of the ARBs in two ways; i) by increasing his physical assets (and therefore his wealth), and; ii) by the improvement in income due to improved productivity in the land which he now owns. Its acceptability as a negotiable instrument among banks determines the access of ARBs to credit from formal financial institutions aside from the LBP. Section 27 of RA 6657 stipulates that lands acquired under CARP cannot be sold or transferred except through hereditary succession for a period of 10 years. During the ten year period, it may only be sold to the government, to the LBP or to other qualified beneficiaries. The law also provides for foreclosure of the land in case the ARB defaults on three consecutive annual amortizations.

These provisions of the law on the restrictions accorded to the proof of land ownership under CARP makes it less acceptable among banks other than LBP as collateral. Since the piece of paper which indicates land ownership cannot be sold or mortgaged due to restrictions imposed by the law, most banks are unwilling to accept it as collateral on loans extended to ARBs. Dingcong and Llanto (1991) showed that the implementation of CARP resulted in credit rationing among banks. Only those with collateral to offer other than the land from CARP are able to avail of loans from banks.

Aside from low interest rates, the insufficiency and unacceptability of CARP land as collateral may be another reason why most of the ARB respondents preferred to borrow

from LBP or from cooperatives whose seed money comes from LBP. Table 17 and 18 show that land owned by ARBs (evidenced by EPs, CLOAs) was accepted as collateral by the LBP and by cooperatives.

Table 18 also shows that a number of borrowers do not have any collateral for their loans. Loans are granted on the basis of a certification from DAR and the cooperative or duly registered farmers' organization that a particular loan applicant is an actual or potential ARB who has under his control a parcel of land for cultivation. The only form of guarantee required from the borrower is a deed of assignment to his quedan in the case of sugarcane planters, in favor of the LBP or the cooperative. Such cases were observed in both provinces where the DAR has not yet awarded any EP or CLOA to former tenants and farmworkers, but the latter have parcels of land, without the benefit of clear subdivisions, under their control for cultivation. The LBP, therefore, grants loans even to such borrowers whose rights to the property are merely inchoate. The LBP, however, requires land title as collateral for fixed asset loans.

#### Role of the Informal Credit Market

Table 16 shows that the informal financial market plays an insignificant role in meeting the credit needs of ARBs in sugar and coconut areas in the island of Negros. Only 18 out of the 320 respondents availed of loans from informal sources (e.g. private moneylenders, traders, friends). The availability of credit from the LBP as provided for by the law may explain this phenomenon. As discussed earlier, the relatively low cost of LBP loans prompts ARBs to prefer it

over loans from informal sources. This seemingly implies that CARP through LBP is able to provide for the credit requirements of the sample respondents. The question, however, of sustainability is an issue that must be dealt with.

#### Efficiency issues and the CARP

The literature on share tenancy argues that inefficient tenancy contracts arose out of the inability of the landlord to determine the labor input of the tenant. Due to the spatial nature of agriculture, the landlord is not certain whether the low output from the farm is due to the tenant's idleness or the unfavorable weather condition. Under this circumstance, there is no way for the landlord to enforce the required labor input from the tenant. The moral hazard of the tenant prevents the application of a pareto-optimal labor input by the tenant. Cheung (1969) questioned the empirical validity of the traditional thesis of inefficient share tenancy and, assumed that the landlord can observe the tenant's labor input. Otsuka and Hayami (1988) argued and provided empirical evidence that Cheung's reservation may be valid. They found out that the dummy variable representing share tenancy does not have any significant coefficient in a yield function analysis. They say that share tenancy exists in agrarian communities (despite some claims of moral hazard) since a relatively efficient mechanism of contract enforcement exists in these communities where personal ties are strong and highly developed. Arrow (1968) describes this as "the relations of trust and confidence between

principal and the agent so that the agent will not cheat even though it may be a rational economic behavior" to do so.

The foregoing shows that agents may prefer to engage in share tenancy contract provided the enforcement cost is low. Hayami and Otsuka (1988) further argued that the choice of contract which the principal and the agent will enter into will vary as the enforcement costs associated with various forms of contracts change, corresponding to changes in technology, market and social conditions. In view of this, scope of contract choice should not be limited or regulated to enable the agents to adjust their choice accordingly.

The organization of production, particularly in the sugar lands in the Negros areas, has essentially remained the same inspite of the CARP. A total of 39 corporate landowners with an aggregate land area of over 10,000 hectares have applied for the stock distribution option. To date, 10 of the proposals with an aggregate area of 3,141 hectares have been approved by the Presidential Agrarian Reform Council (PARC).

One may argue that the restrictions of the law imposed on choices of contract which the landlord and the tenant enters into may not be the most efficient arrangement. In coconut farms, for instance, the role of the landlord as the traditional source of credit, has not successfully been replaced by the LBP. Most of the ARBs in the coconut areas prefer to self-finance.

The relatively large number of farms availing SDO in sugar areas may also imply the preference by beneficiaries of contractual arrangements other than land ownership.

#### Farm Productivity and CARP

The CARP which was promulgated in 1987 covered all agricultural lands and abolished share tenancy as a form of contract. The program distributes land to tenants who are categorized as actual tillers of the land. In areas where tenanted lands are within the retention limit, the regulated leasehold system is enforced. Aside from redistributing wealth, the program also seeks to improve productivity in the land areas covered. It aims to promote cultivation of smallholdings and increase productivity thereof through the provision of the needed support services.

Survey results, however, show that in coconut areas, only 40 percent of the sample ARBs have yield levels comparable to the national average of 484 kg of copra per hectare. Around 61 percent of the sample ARBs, however, have yield levels which fall below the national average (Table 19).

Meanwhile, majority of the ARBs in the sugar areas have yield levels which fall below the national average of 5.32 MT/ha. (Table 20). A number (33 percent), however, have yield levels ranging from 5.1 - 10.0 MT/ha. Note that the prevailing yield levels in sugar and coconut areas fall below the potential yield in these areas.

Given the foregoing survey results, it is very tempting to conclude that CARP failed in improving the farm

productivity of ARBs. While this may be true to some extent, existing data is not sufficient to validate the claim. Data on yields of the farms tilled by the ARBs prior to CARP are not available. Moreover, improvement in farm productivity is a host to a number of factors aside from tenurial improvement. Prices of inputs relative to output determines whether a farmer would employ the material inputs necessary to increase yield. Since sugar and coconut are both export crops, policies on foreign exchange would also affect the crops' productivity. Knowledge of the right production and cultivation techniques is also an important factor for improved productivity. Accessibility to market and availability of market infrastructure (e.g., transport and storage facilities) also affect these crops' productivity.

Effect of Credit on Yield and Input Use. As discussed in the preceeding section, we hypothesized that productivity of farms owned by ARBs may be increased not just by the mere transfer of ownership but through the provision of appropriate technology, credit and other support services like transport and market facilities. Policies affecting the relative price of input and output are also relevant factors. Credit enables an ARB to use the desired inputs in his farm. The preceeding discussion shows that using survey results, yield levels of farms owned by ARBs still fall below both the national average and the crop's potential yield.

Regression runs with varying specifications (using different independent variables) were initially conducted to determine the effect of credit on yield levels. The results, however did not show very good fit. In all cases, credit did not have significant effect on yield. To determine the effect of credit on intensity of input use (i.e. input per ha, hired labor per ha) regression runs were also done. Results also showed very poor fit.

Since credit availed by ARBs is expected to increase intensity of input use and, therefore, increase the yield levels, a test for difference or means between ARBs who borrowed and those who did not was conducted. Table 21 shows that significant differences in yield and those variables indicative of input use (i.e. input use per ha, hired labor per ha and family labor per ha) only occurred among coconut farmers. There was no significant difference between the yield levels and intensity of input usage of sugar farmers who availed of credit and those who did not. Among ARBs, in coconut farms, average yield was significantly different between those who availed of credit and those who did not. Input use per area and hired labor expenses per area were also significantly higher among those who availed of a loan than those who did not. The lower amount of inputed family labor among those who availed of credit explains the higher amount of expenses for hired labor among this group. This is a clear substitution effect. Surprisingly, however, despite higher input and labor expenses among those who availed of credit, average

yield of ARBs in this group was still significantly lower than the national average. This may be attributed to the low productivity of old coconut trees in the sample area. A report by the United Coconut Associations of the Philippines, Inc. (UCAP) showed that small farmers who own less than 3.5 hectares of coconut land find it difficult to uplift farm conditions. Replanting may already be needed in some of the coconut areas in the Visayas. However, since Negros is not really a major coconut producing area, it may be inferred that replanting and rehabilitation in these areas may not be an immediate priority activity of the government.

The foregoing indicates that credit provided under CARP did not have any significant effect in improving the yield of sugar and coconut farms in the Negros area.

#### VIII. Summary of Findings and Policy Implications

The implementation of CARP resulted in the access of ARBs to institutional credit. However, this is attributed to the fact that the Land Bank was mandated to provide the credit needs of the ARBs with credit funds from the ARF. The issue, however, of whether the program is able to integrate the ARBs into the formal financial system still remains inasmuch as none of the respondents are able to borrow from other institutional sources outside of the LBP.

The bias against lending to ARBs by institutional sources other than the LBP due to uncertainties in land ownership while the process of land transfer is in effect is not at all felt by ARBs in view of the intervention of the



LBP. Pursuant to its mandate, LBP provides loan to ARBs even when the land transfer process has not been fully completed. For as long as an ARB is in control and possession of a definite piece of land suitable for production, he would be provided with a production loan by the Land Bank through his cooperative or a duly recognized farmers organization.

The active intervention of the LBP in providing credit to ARBs has decimated the role of informal financial market, particularly in the provision of loans for production purposes. The presence of LBP field offices had made it easy for ARBs to acquire production loans at lower rates compared to that of informal lenders.

The data on the effect of CARP on the productivity of coconut and sugar in the Negros area is not very conclusive. The mere transfer of land ownership and its operation in smaller parcels without the corresponding adoption of appropriate production technology had no impact on productivity.

The preceding discussion points to some policy implications. An examination of the design and provisions of CARP, coupled with empirical evidence revealed that a number of restrictions inherent in the law itself limits the program in accomplishing the very purpose for which the law was enacted.

It was pointed out that, among other things, the clause on non-transferability of ownership for a period of ten years and non-enforceability (confiscation of land in case of defaults on land amortization) may prevent the access of

ARBs to formal financial credit (aside from LBP). Studies indicated that banks are unwilling to accept EPs and CLOAs as collateral on loans inasmuch as these are not considered as negotiable instruments. The prohibitions of the law prevent the sale or mortgage of the land. This, therefore, results in credit rationing among banks leaving the ARBs to avail of loans from the LBP, which is mandated by law to provide credit to ARBs. Moreover, the relatively lower interest rates given by LBP on ARB loans make LBP the preferred choice by most ARBs. At these low rates and the risks involved in agricultural lending, lending by other banks is not really a competitive venture. LBP may be able to provide credit to ARBs at low rates since money from ARF has lower costs. Given this, the question of sustainability becomes an issue.

Limitations on contract choices which the landlord and the tenant can enter into may not also be the most efficient arrangement. Other forms of contracts may be studied and considered under the program so long as these contracts promote the objectives of social equity.

In view of the foregoing, there may be a need to further look at the provisions and restrictions of the law to weed out those which limits its effectivity.

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Table 1.

Volume of Production, Area Harvested and  
Average Yield, Sugarcane (1981-1992)

Year	Production ( '000 MT)	Area ( '000 has.)	Average Yield (MT/ha)
1981	22,651	402	56.3
1982	24,434	416	58.7
1983	24,014	411	58.4
1984	23,944	410	58.4
1985	17,542	368	47.7
1986	14,831	300	49.4
1987	13,797	269	51.3
1988	17,275	216	72.8
1989	21,425	262	81.8
1990	18,667	235	79.5
1991	21,988	272	80.8
1992	21,511	267	80.6
Ave. growth rate (%)	0.79	- 2.89	4.50

Source: Bureau of Agricultural Statistics

Table 2. Ratio of Sugar Production Loans to Total Agricultural Loans 1982-1992

Year	Sugarcane Loan (MP)	Total Agricultural Loan (MP)	Ratio
1982	8927.6	27332.7	32.66
1983	8200.3	28281.1	29.00
1984	6068.8	27070.1	22.42
1985	5048.5	27500.7	18.36
1986	4142.8	25114.4	16.50
1987	5512.9	27460.0	20.08
1988	5963.3	35290.0	16.90
1989	6536.6	31205.9	20.95
1990	6238.2	41292.0	15.11
1991	6552.6	46164.5	14.19
1992	10616.4	48182.6	22.03

Source: ACPC Annual Reports



Table 3.

Raw Sugar: Domestic and World Prices, Philippines  
(1981-1992)

Year	DOMESTIC (\$/MT)				World (\$/MT)	US Quota Price 1/ (\$/MT)
	Ex-Mill	Wholesale	Farmgate	Retail		
1981	279	279	203	308	357	430
1982	279	300	304	370	179	440
1983	300	258	243	328	185	480
1984	258	313	132	328	116	480
1985	313	373	253	312	90	450
1986	370	317	231	278	113	460
1987	317	346	315	370	115	480
1988	411	463	322	497	225	490
1989	358	444	396	502	275	500
1990	371	413	380	460	253	510
1991	409	414	426	478	201	400 2/
1992	n.d.a.	n.d.a.	411	n.d.a.	202	400 2/

n.d.a. - no data available.

1/ Based on monthly raw sugar prices, duty paid, New York, U.S. Dept. of Agriculture, March 1991

2/ Based on the price provision of the U.S. Farm Bill 1991

WHRQ/cr/3/02/93  
Fn: Rawsugar.wk1

Table 4.

Centrifugal and Refined Sugar: Exports  
(1981-1992)

Year	Export Volume ( '000 MT)
1981	1,222.0
1982	1,247.5
1983	962.8
1984	877.2
1985	571.6
1986	222.0
1987	162.9
1988	142.6
1989	210.3
1990	247.0
1991	274.1
1992	208.0
Ave. growth rate (%)	- 10.26

Source: Sugar Regulatory Administration

Table 5  
U.S. Sugar Quota Allocation for the Philippines  
(1984-1990)

Year	Quota Allocation (MT)
1984-1985 1/	342,900
1985-1986 2/	246,999
1987 3/	143,780
1988 4/	158,640
1989-1990	456,192

1/ Oct. 1, 1984 to Nov. 30, 1985

2/ Dec. 1, 1985 to Dec. 31, 1986

3/ Quota period Jan. 1, 1987 to Dec. 31, 1987

4/ Quota period Jan. 1, 1988 to June 3, 1990

Source: Foreign Agricultural Service, U.S.  
Department of Agriculture, June 1990.

Table 6  
Raw Sugar Imports

Crop Year	Import Volume ( '000 MT)
1983-1984	278.17
1987-1988	43.99
1988-1989	59.4

Source: Sugar Regulatory Administration

Table 7. Coconut Production, Area Harvested and Avera. 1981-1992

Year	Volume of Production ('000 MT)	Area ('000 has.)	Average Field (MT/Ha.)
1981	16,123	3,105	5.2
1982	13,938	3,162	4.4
1983	12,810	3,201	4.0
1984	10,906	3,223	3.4
1985	10,413	3,270	3.2
1986	11,675	3,284	3.6
1987	12,172	3,252	3.7
1988	12,482	3,222	3.9
1989	11,810	3,110	3.8
1990	11,940	3,112	3.8
1991	11,416	3,943	2.9
1992	8,468	3,093	2.7
Average growth rate (1981-1992)	-3.3	0.3	-2.9

Source : BAS

Table 8. Domestic (Millgate) Prices of Coconut Products. P/kg. (1981-1992)

YEAR	COPRA	COCONUT OIL	COPRA MEAL	DESSICATED COCONUT	HUSEED NUTS
1981	1.78	3.89	1.00	7.64	0.45
1982	1.76	3.53	1.04	6.91	0.49
1983	3.51	6.34	1.41	6.35	0.91
1984	9.18	15.41	1.92	----	2.15
1985	4.55	8.53	1.65	15.09	1.04
1986	2.88	5.30	1.94	14.66	0.64
1987	5.39	9.03	2.19	15.64	1.44
1988	7.30	12.39	2.91	17.19	1.79
1989	6.81	12.11	3.07	17.70	1.60
1990	4.57	8.39	2.64	16.82	1.14
1991	6.68	12.73	2.77	21.06	1.76
1992	7.89	15.78	3.39	23.10	2.10

Source : PCA

Table 9. International Prices of Coconut Products (1981-1992)

YEAR	COCONUT OIL		COPRA	COPRA CAKE	DESSICATED COCONUT	COPRA SOLVENT EXTRACTION
	USA (c/lb,CIF)	Europe (\$/MT,CIF)	Europe (\$/MT,CIF)	Europe (\$/MT,CIF)	USA (c/lb,FOB)	Europe (\$/MT,CIF)
1981	25.41	553.09	379.37	192.03	53.82	179.78
1982	21.36	464.07	317.70	180.25	34.99	171.99
1983	33.32	725.58	491.21	184.23	44.49	177.35
1984	52.76	1154.30	712.16	155.94	63.33	145.67
1985	27.01	593.29	391.91	129.91	55.29	116.73
1986	13.72	298.80	198.37	132.55	30.24	128.23
1987	20.63	442.16	309.21	140.86	36.61	124.47
1988	25.58	561.87	397.64	168.59	40.13	150.98
1989	24.04	515.58	346.89	152.68	35.58	139.62
1990	16.02	335.93	232.39	120.57	37.27	110.01
1991	20.29	428.11	272.60	137.95	40.23	124.77
1992	26.74	573.91	N.Q.	136.76	52.29	121.35

N.Q. - No Quotation

Source : PCA

Table 10. Comparative Coconut Export Performance, 1981-1992

YEAR	Total Coconut Exports		Total Copra & CNO World Exports of		Total Agric.		% Share of Phil.	% Share of Coconut Exports	
	Volume('000 MT)	Value(\$ M)	Exports ('000 MT)	Copra & CNO ('000 MT)	Exports ('000 MT)	Value (\$ M)	Copra & CNO to World Exports	Volume	Value
	(A)	(B)	(C)	(D)	(E)	(F)	(G/D)	(A/E)	(B/F)
1981	1,949	781	1,154	1,812	4,462	1,880	64	44	42
1982	1,694	642	1,140	1,766	4,452	1,576	64	42	41
1983	1,815	740	1,036	1,605	3,705	1,410	64	49	52
1984	1,179	824	603	1,234	3,196	1,584	49	37	52
1985	1,331	556	658	1,542	2,969	1,119	43	45	50
1986	2,447	565	1,372	1,918	3,789	1,460	72	65	39
1987	2,218	666	1,176	1,720	3,358	1,521	68	66	44
1988	1,718	697	876	1,528	2,950	1,713	57	58	41
1989	1,578	631	836	1,520	2,929	1,708	55	54	37
1990	2,042	547	1,249	1,886	3,098	1,761	66	66	32
1991	1,776	509	976	1,560	2,814	1,845	62	63	28
1992	1,670	712	943	1,811	N.D.A.	N.D.A.	52	-	-
Average							60	54	42
Share (%)									

N.D.A. - No Data Available

Source: PCA

Table 11. Volume of Coconut Products Exported, 1981-1992

YEAR	COPRA		COCONUT OIL		COPRA MEAL		DESSICATED COCONUT		COCO SHELL CHARCOAL		ACTIVATED CARBON		COCO-CHEMICALS		Total Vol. of Coconut Exports
	Volume	% Share	Volume	% Share	Volume	% Share	Volume	% Share	Volume	% Share	Volume	% Share	Volume	% Share	
1981	108	5.54	1,046	53.67	633	32.48	88	4.52	32	1.64	9	0.46	33	1.69	1,949
1982	192	10.19	948	50.32	588	31.21	89	4.72	22	1.17	9	0.48	36	1.91	1,884
1983	16	0.88	1,020	56.20	617	33.99	86	4.74	17	0.94	7	0.39	52	2.87	1,815
1984	0	0.00	603	51.15	376	31.89	70	5.94	29	2.46	8	0.68	93	7.89	1,179
1985	0	0.00	658	49.44	445	33.43	62	4.66	34	2.55	12	0.90	120	9.02	1,331
1986	136	5.56	1,236	50.51	822	33.59	68	2.78	27	1.10	12	0.49	146	5.97	2,447
1987	122	5.50	1,054	47.52	752	33.90	84	3.79	36	1.62	16	0.72	154	6.94	2,218
1988	79	4.60	797	46.39	559	32.54	88	5.12	33	1.92	16	0.93	146	8.50	1,718
1989	76	4.82	760	48.16	475	30.10	94	5.96	37	2.34	9	0.57	127	8.05	1,578
1990	91	4.46	1,158	56.71	631	30.90	75	3.67	32	1.57	10	0.49	45	2.20	2,042
1991	86	4.84	890	50.11	614	34.57	81	4.56	38	2.14	14	0.79	53	2.98	1,776
1992	39	2.34	904	54.13	499	29.88	85	5.09	45	2.69	16	0.96	82	4.91	1,670

Source: PCA



Table 12. Distribution of Sample - ARBs  
by Farm Size, by Crop Planted

Size	Sugar		Coconut	
	Total Area	CARP Area	Total Area	CARP Area
< 0.6	11	11	21	27
0.6 - 1.0	39	43	38	40
1.01 - 3.0	83	89	89	88
3.01 - 5.0	13	13	10	5
> 5.0	14	4	2	0
<b>TOTAL</b>	<b>160</b>	<b>160</b>	<b>160</b>	<b>160</b>

Table 13. Distribution of Sample - ARBs by Crop  
Planted, by Tenure Arrangement

Tenurial Arrangement	Sugar		Coconut		Total	
	No.	%	No.	%	No.	%
Owner-cultivator	120	75.0	89	55.6	209	65.3
Amortizing Owner	37	23.1	69	43.1	106	33.2
Leaseholder	2	1.3	0	0.0	2	0.6
Multi-tenurial Arrangement	1	0.6	2	1.3	3	0.9
<b>TOTAL</b>	<b>160</b>	<b>100.0</b>	<b>160</b>	<b>100.0</b>	<b>320</b>	<b>100.0</b>

Table 14. Distribution of Sample ARBs  
by Crop Planted,  
by Proof of Ownership

Proof of Ownership	Sugar		Coconut		Total	
	No.	%	No.	%	No.	%
EP	60	37.5	78	48.7	138	43.3
Mother CLOA	51	31.9	22	13.7	73	22.8
Individual CLOA	26	16.3	34	21.3	59	18.5
EP & CLOA	0	0.0	2	1.3	2	0.6
EP & Mother CLOA	3	1.8	9	5.6	12	3.9
Title Being Processed	20	12.5	15	9.4	35	10.9
TOTAL	20	100.0	160	100	320	100

Table 15. PARC Approved Allocation and Actual Disbursement of Credit Funds from ARF 1987-1992 (in Million Pesos)

YEAR	PARC APPROVED ALLOCATION	DISBURSEMENT BY LBP
1987	945.74	41.03
1988	3,961.47	82.30
1989	431.00	388.23
1990	606.60	1,255.96
1991	5,000.00	2,883.68
1992	148.17	148.17
TOTAL	11,092.93	4,799.37

Table 16. Number of Sample ARBs Who Availed of a Loan  
and Average Amount of Loan by Type of Crop,  
By Source of Credit

	SUGAR						COCONUT					
	Ever Availed			In 1991 and 1992			Ever Availed			In 1991 and 1992		
	Average Amount	No.	%	Average Amount	No.	%	Average Amount	No.	%	Average Amount	No.	%
No. of ARBs who availed of loan	14,986	83	52	13,890	74	46	5,878	33	21	5,421	32	20
No. of ARBs who self-financed		77	48		86	54		127	79		128	80
Source												
Bank	19,190	29	34.9	19,690	21	28.4	7,267	7	21.2	6,979	6	18.8
Cooperative	12,688	46	55.4	12,680	45	60.8	6,324	17	51.5	6,324	17	53.1
Friend	0	0	0.0	0	0	0.0	300	1	3.0	300	1	3.1
Farmer	0	0	0.0	0	1	1.4	5,625	4	12.1	3,667	3	9.4
Private Moneylender	5,617	6	7.2	5,617	6	8.1	3,600	3	9.6	3,600	3	9.4
Trader	0	0	0.0	0	0	0.0	2,000	1	3.0	1,000	2	6.2
Landowner	60,000	1	1.2	0	0	0.0	0	0	0.0	0	0	0.0
Parents	10,000	1	1.2	10,000	1	1.4	0	0	0.0	0	0	0.0
TOTAL	1,243,840	83	100	1,027,840	74	100	193,972	33	100	173,472	32	100

Table 17. Type of Collateral Required by Financial Institution, by Crop Planted, by ARBs

Collateral	Sugar		Coconut	
	No.	%	No.	%
Land	28	37.8	10	31.2
Jewelry	0	0.0	2	6.2
Cultivation Right	8	10.8	1	3.1
CLT	1	1.4	1	3.1
Farm animals-Jewelry	1	1.4	1	3.1
Farm Equipment & House	0	0.0	2	6.2
Character	14	18.9	5	15.6
No. Collateral	22	29.7	10	31.2
TOTAL	74	100	32	100

Table 18. Types of Collateral Required by Financial Institution, By Source

Source	Collateral							No Collateral	TOTAL
	Land	Jewelry	Cultivation Right	CLT	Farm Animals & Jewelry	Farm Eqpt. & House	Character		
Bank	12	0	6	2	1	1	1	4	27
Cooperative	20	0	2	0	0	1	17	22	62
Friend	0	0	0	0	0	0	0	1	1
Farmer	0	1	0	0	0	0	1	2	4
P. Moneylender	4	1	1	0	1	0	0	2	9
Trader	2	0	0	0	0	0	0	0	2
Landowner	0	0	0	0	0	0	0	0	0
Parents	0	0	0	0	0	0	0	1	1
TOTAL	38	2	9	2	2	2	19	32	106

Table 19. Distribution of Sample ARBs  
by Yield Levels

Yield (kg./ha.)	Coconut		Borrower		N-Borrower	
	No.	%	No.	%	No.	%
< 100	10	6.2	9	5.6	12	7.5
100 - 300	70	43.8	8	5.0	50	31.2
301 - 500	64	40.0	5	3.12	22	13.8
501 - 700	6	3.8	4	2.5	14	8.8
701 - 900	4	2.4	2	1.2	10	6.2
> 900	6	3.8	4	2.5	20	12.5
No. Reporting	160		32		128	
Average Yield	531		20.0		80.0	
National Average	484.2					
Potential Yield	800-1,500*					
	2,000**					

\* Without fertilizer application.

\*\* With fertilizer application.

Table 20. Distribution of Sample ARBs  
by Yield Levels

Yield (ton/ha.)	Sugar		Borrower		N-Borrower	
	No.	%	No.	%	No.	%
< 5	96	60.0	41	25.6	55	34.4
5.1 - 10	53	33.1	28	17.5	25	15.7
10.1 - 15	2	1.3	1	0.6	1	0.60
15.1 - 20	0	0.0	0	0	0	0
20.1 - 25	1	0.6	1	0.6	1	0.6
25.1 - 30	4	2.5	1	0.6	2	1.2
> 30	4	2.5	2	1.3	2	1.2
No. Reporting	160		74		86	
Average Yield	6.21		46.3			
National Average	5.32		53.7			
Potential Yield	12.65					

Table 21. Test of Differences for Means of Selected Variables

	Average With Credit	Average Without Credit	T - Statistics
Sugar			
Yield	10.6887	13.03	0.2681
Input Use per ha.	6,792.47	15,161.54	0.7194
Hired Labor per ha.	10,610.38	9,533.76	0.4587
Family Labor	1,475.81	1,632.11	0.6361
Coconut			
Yield	335.163	596.926	2.606 *
Input Use per ha.	1,698.76	516.45	6.280 *
Hired Labor per ha.	1,199.63	459.25	7.564 *
Family Labor per ha.	259.37	430.088	17.818 *

\* significant at 5% level