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**Working Paper**

## Comprehensive Agrarian Reform Program (CARP) and the Fisheries, Livestock and Crop Sectors: Adjustments in the Pasture Leases

PIDS Discussion Paper Series, No. 1994-16

**Provided in Cooperation with:**

Philippine Institute for Development Studies (PIDS), Philippines

*Suggested Citation:* Costales, Achilles (1994) : Comprehensive Agrarian Reform Program (CARP) and the Fisheries, Livestock and Crop Sectors: Adjustments in the Pasture Leases, PIDS Discussion Paper Series, No. 1994-16, Philippine Institute for Development Studies (PIDS), Makati City

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Philippine Institute for Development Studies

Comprehensive Agrarian Reform Program  
(CARP) and the Fisheries, Livestock  
and Crop Sectors: Adjustments  
in the Pasture Leases

*Achilles Costales*

DISCUSSION PAPER SERIES NO. 94-16

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August 1994

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COMPREHENSIVE AGRARIAN REFORM PROGRAM  
AND THE FISHERIES, LIVESTOCK AND  
CROP SECTORS: ADJUSTMENTS IN THE  
PASTURE LEASES

**Achilles Costales**

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

## **ABSTRACT**

The study focuses on how the pasture leases had been responding to the suggestions that the lands are to be subject to agrarian reform. As part of the public domain, the pasture lease areas were initially (but not formally) considered for inclusion in the spirit of the Comprehensive Agrarian Reform Program (CARP) of 1988.

The study involved a survey of 145 pasture leases in three regions in the Philippines where the pasture leases were concentrated, represented by the provinces of Masbate, Bukidnon, and South Cotabato. The survey instrument was designed to obtain information on the leases' history of investments; land use and carrying capacities; herd composition and transactions over a one-year period; as well as employment, variable inputs, and revenue patterns. The instrument also obtained information on pasture leaseholders' asset holdings and income patterns outside the pasture lease, their investment responses to reported major sources of uncertainties in the pasture leases, namely: the CARP, contending claims to their leases, and peace-and-order (insurgency) problems.

The study relies mainly on the descriptive method of analysis. The frequency distribution of pasture lease characteristics were analyzed and the patterns were compared among the three regions (provinces) selected. From these, inferences about the pasture lease performance in terms of investments designed to make the pasture leases productive were made.

The study has determined that over an average of a 15-year period, investments in improved pasture grass area expansion, maintenance, and management had remained insignificant. For this reason, the average carrying capacity of the leases have remained exceedingly low relative to minimum targets. Investments in the improvement of the genetic material of the breeding stock had also been minimal. The resulting calving rates by the breeding cows was deemed to be less than half of the normal rates.

## **TABLE OF CONTENTS**

	<b>Page</b>
<b>CHAPTER I</b>	
Introduction	<b>1</b>
Objectives	<b>9</b>
<b>CHAPTER II</b>	
Conceptual Framework	<b>11</b>
Analytical Framework	<b>14</b>
<b>CHAPTER III</b>	
Results and Discussion	<b>22</b>
<b>CHAPTER IV</b>	
Summary, Conclusions and Recommendations	<b>57</b>
<b>Tables</b>	
<b>Figures</b>	
<b>Appendix A</b>	
<b>Appendix B</b>	

## **CHAPTER I**

### **I. Introduction**

At first glance, the cattle industry seems to occupy a natural niche in Philippine agriculture in general, and the livestock industry in particular. Roughly 90 percent of the cattle population is raised under backyard-farm conditions where, on the average, two heads of cattle are raised and fed with residues from crop farming activities (Bureau of Agricultural Statistics, (BAS), 1990). Backyard raising appears to be a natural sideline activity where free labor hours are put to productive use. In cases where the children do the rearing, a productive economic activity is realized with minimal opportunity cost. Cattle could also be made to perform some light draft before finally being sold.

The apparent natural integration of cattle raising into the smallholder farms, however, has not led to such expected consequences as expansion of the cattle inventory and production of beef. Amid the rapid growth of economic activity in the swine and poultry business, which has propelled the livestock industry to its stature as the fastest-developing and most consistent growth sector in agriculture through the second half of the last decade, the cattle population exhibited, in contrast, a continuous decline in population during the same period.

Significant reductions in the cattle inventory had been taking place in the commercial sector of the industry, with a depletion rate of close to 20 percent of the standing stock every year (BAS, 1991). In the backyard sector, a consistent reduction in the population was also observed, although at a much slower pace. The commercial and backyard systems, in fact, are not independent of each other. The general case is

that the breeding and reproduction of cattle take place in the commercial farms, while fattening and a host of other cattle-raising activities are subsequently performed at the backyard level (Yazman, 1991). Thus, under a closed system, unless the depletion of reproductive stocks in the commercial ranches is arrested, concomitant reduction in backyard cattle-raising activities would be expected to continue.

### **1. The Backyard Cattle Raising Sector**

The backyard sector comprises the bulk of cattle fattening activity. The gradual decline in the stocks which this sector has been working with through the years has generated a lot of concern to industry planners. A survey of the literature of the problems that beset the backyard sector reveals that among others, the critical bottlenecks have been (i) the shortage and the high prices of feeder cattle from domestic sources (Winrock International, 1991); (ii) low level of technology in cattle raising (Molina, 1990); and (iii) lack of availability and high cost of credit, and the dependence in government credit for the acquisition of cattle to raise (Mangum, 1991; Molina, 1990; Dimaano, 1990; Department of Agriculture, 1990; Perilla, 1984; De Mesa, 1983; Medel, 1983).

### **2. The Commercial Ranching Sector**

The observed rapid reduction in economic activity and cattle stock in the commercial sector has been often attributed to the uncertainties imposed on commercial ranching activities by, among others, the Comprehensive Agrarian Reform Law (CARL or R.A. 6657 of 1988). Such uncertainties are also said to be compounded by the adverse peace-and-order conditions in the countryside. The extent to which these

claims have in fact contributed to the rapid reduction in the cattle population in the commercial sector, however, has yet to be established.

The uncertainty over the privately-owned commercial ranches, however, has temporarily been diffused. On the seventh of March 1991, the Supreme Court of the Philippines declared as final and executory its December 4, 1990 decision of declaring Sections 3(b), 11, 13 and 32 of RA No. 6657 null and void for being unconstitutional. These particular sections of the Comprehensive Agrarian Reform Law (CARL) of 1988 referred to the inclusion of the raising of livestock, poultry and swine in the Law's coverage. The Court Ruling therefore exempts, among others livestock activities, commercial cattle raising on private lands exceeding five (5) hectares.

### **3. The Pasture Leases.**

Apart from the private commercial ranches, the more significant magnitude of cattle ranching activity is undertaken under government lands classified as pasture leases.

Pasture leases are covered by long-term Pasture Lease or Forest Land Grazing Lease Agreements (PLAs or FLGLAs) granted by the Department of Environment and Natural Resources (DENR).

To date not much is known about the current state of the pasture leases in the Philippines. A systematic account of the performance of the pasture leases is unavailable. Holders of pasture lease agreements (PLAs) are required by the terms of the contract to submit a pasture development plan as well as annual reports on stocks and investments on improvements to the Department of Environment and Natural



Resources (DENR). The DENR in recent years, however, has experienced a secular decline in the submission of PLA reports. Less than 40 percent of PLA holders actually submit records, with reliability open to question. Furthermore, not all the reports reach the central office. As a result, reported investments account for less than five percent of all PLA holders (Yazman, 1990).

Pasture leases proliferate mostly in the main islands of Luzon and Mindanao. As of May 1991, Regions II, IV and V account for 70 percent total number of PLAs and 72 percent of total lease area in the island of Luzon. In Mindanao, Regions X and XI lead the rest, combining for a total of 88 percent of all PLAs and about 75 percent of leased area in the island. The average size of pasture leases is close to 400 hectares, with higher averages in Mindanao at 540 hectares, and least in Luzon at around 350 hectares (DENR, 1992).

The rate at which the pasture leases are currently stocked is not exactly known. Previous conjectures about the average stocking rate in the pasture leases are put at around 0.2 animal units (a.u.) per hectare (Quisumbing, 1987). Under improved pasture conditions, the stocking rate can be technically raised to 2.0 au. per hectare (PCARRD, 1985). Well managed pastures can carry up to 5.0 au. per hectare (Yazman, 1991).

As of 1991, the remaining active PLAs/FLGLASs was posted at 973 leases, a decline by 1,036 from its 1980 figure of 2,009 leases. In terms of area, the remaining PLAs/FLGLAs covered 377,400 hectares, a reduction of 504,600 hectares from its 1980 level of 882,000 hectares. Exit from the pasture lease is registered as cancellation

of lease by the DENR. From the viewpoint of the DENR, the cancellation of lease agreements were mainly due to failure of payment of rental fees and other charges, abandonment of the area by the lease holder, and failure to submit Annual Grazing Reports (AGRs).

In the originally targetted (i.e. regions IV,V,X and XI) study regions alone, a total of 241 leases covering 131,044 hectares were cancelled between 1980 to 1991. On the other hand, 187 leases were granted, covering 37,656 hectares over the same period. From the perspective of the commercial ranchers, the poor performance of the pasture leases which lead to either poor compliance of the conditions attached to the agreements or abandonment of the lease, were traced to the unstable peace and order conditions in the countryside and the inability to control illegal encroachment ("squatting") inside the lease areas (ADB-Winrock, 1991).

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Documents gathered from cattle ranchers from Regions III, IV and X provide some indications to the existence of serious problems that beset the pasture lease sector. Among others, the problems identified and ranked according to the order of importance were said to be (i) intrusion into the pasture lands by illegal occupants (squatters); (ii) unfavorable peace-and-order situation; (iii) lack of long term loans, high interest rates, and stringent collateral conditions; (iv) high cost of materials for investments in pasture lease improvements; and (v) high cost of animal health maintenance (Winrock International, 1991).

A more recent object of blame has been the uncertainty of tenure brought about by the Comprehensive Agrarian Reform Program (CARP) of 1988 (ADB-Winrock, 1991).

While the matter of security of tenure with respect to the privately-owned cattle ranches has been resolved by the Supreme Court in its March 1991 ruling, the same could not be said of the status of the pasture leases. The remaining areas affecting the livestock industry to which the CARL obtains effectivity are in the alienable and disposable public lands under pasture leases as provided for under Phase Two in

Section 7 of RA 6657 defining the priorities for acquisition and distribution of lands subjected to the CARP. Included in this section, among others, are all alienable and disposable public agricultural lands, all arable public agricultural lands under agro-forest, pasture and agricultural leases already planted to crops in accordance with Section 6, Article III of the Constitution. The Constitution declares that the state

“shall apply the principles of agrarian reform or stewardship, whenever applicable in accordance with the law, in the disposition or utilization of natural resources including lands of the public domain under lease or concession suitable for agriculture, subject to prior rights...”

The extension of the CARP to the public lands opens up to the access to pasture and agricultural leases to farmers interested in cattle raising or agro-livestock forestry farming.

The main objection to subjecting the cattle ranches to agrarian reform is the claim of the existence of economies of scale in cattle ranching (Abad, 1990; Alo, 1990; and Abellada, 1988). Taiwan is said to have exempted the cattle ranches from land reform (Abellada and Castasus, 1989).

The intrusion of illegal occupants into the pasture lands may arise from the inability of the DENR personnel to enforce property rights over an extremely vast area under its jurisdiction. The Department also administers and is supposed to enforce property rights over all forest lands, far wider in area than those covered by pasture leases. In some areas, there are other forestry programs of the DENR with designated areas which overlap existing pasture lease agreements. One such program cited has been the Integrated Social Forestry Program (ISFP) for landless upland dwellers. Where judicial cases of such conflicts drag on in the Courts, the ranchers involved

often prefer to liquidate their herd and give up their rights than wait for the resolutions of the cases (Yazman, 1991).

The peace-and-order condition in the countryside, as related to pasture operations, has often been linked with the insurgency problem. When the ranchers are unable to cope up with the pressures, the pasture lease rights are given up. Where the rancher decides to stay, he often is able to establish a *modus vivendi* with the insurgents which involves some kind of "taxes".

At the regional level, there has been at least one attempt to identify problems and issues confronting the PLA holders, the sources of these problems, and possible courses of action. Such was undertaken by the Federation of Cattle Ranchers (FEDCAR, Co.) of Region X, in a July 1991 Ranchers Consultative Workshop, participated in by the DENR, DAR, and other government agencies. The Workshop results identified three major problem areas from the viewpoint of PLA holders: (i) proliferation of illegal squatters inside the existing pasture lease areas; (ii) uncertainty of tenure due to the CARP; and (iii) prevailing peace and order condition in their respective localities.

Interesting to note in the Workshop proceedings was the conviction that the problems associated poor compliance with pasture lease regulations and production targets would naturally be resolved as long as the three major problem areas identified were dealt with. Moreover, although problems related to credit (insufficiency of credit extended by banks, high collateral requirements, and high interest rates and penalty charges) were expressed, no clamor for strong

government measures or assistance were requested or recommended by the pasture lease holders. This may stress the primacy of the environment of uncertainty as a more crucial factor in the viability of the pasture leases.

## II. Objectives

The study aims to describe and analyze how the pasture lease holders have been adjusting in response to the perceived applicability of the provisions of the Comprehensive Agrarian Reform Program (CARP) to the pasture leases.

In particular, the study aims:

1. to provide a profile of the pasture lease holdings, their locational concentration and size distribution;
2. to describe the patterns of investments in the pasture leases at the initial start of operations, obtain a profile of pasture lease holders and relate general lease holder attributes to investment behavior in the pasture leases, and to determine how the character of investments have shifted over time;
3. determine the extent to which the pasture lease holders have undertaken investments in pasture land improvement and improved breeding stocks, and relate these with achieved carrying capacities and pasture livestock productivity parameters;
4. determine the pattern of labor and material resource allocation in all activities within these pasture lease to obtain indications of shifts in relative importance of livestock activities vis-à-vis non-livestock (e.g. cropping) activities;

5. to provide a profile of the herd structure and composition of the pasture leases, their movement over a one year period, and relate these to the production and revenue generation potentials of the pasture leases;
6. determine current patterns of pasture lease holder investment decisions in response to circumstances that challenge their rights over the pasture leases; in particular, the CARP, the existence of contending claims on the pasture leases, and the experience of peace-and-order problems in the pasture lease sites;
7. to determine the profitability of pasture leasing activities and relate this to the achieved productivity parameters and patterns of resource allocation between livestock and non-livestock activities;
8. obtain alternative measures of the magnitude of economic rents being obtained by pasture lease holders in maintaining lease rights over the pasture; and
9. provide recommendations pertaining to access to the pasture leases which would pave the path towards making them more productive for the interest of both the cattle industry and beef consumers.

## CHAPTER II METHODOLOGY

### 1. Conceptual Framework

The rationale for introducing a reform in the holding of lands currently used as pasture leases involves both equity and efficiency grounds. From the distributional viewpoint, it is asked whether or not it is justified that holding large tracts of land (in some cases extending up to areas larger than 2,000 hectares), validated by 25 year lease rights sold by government at a rate of P1.00 per hectare per year, be in the control of the current holders. From the efficiency perspective, it is likewise asked whether the current lease arrangements induce a productive use of the pasture lands in terms of generating the relatively high sustainable rates of return from them.

The pasture leases, as pasture lands, can increase in productivity only in as far as investments in improved pastures - i.e., expansion in area devoted to the production of improved grasses (e.g., stylosanthus, stargrass, parafrass, etc.) - are undertaken. The pasture lands, left as natural pastures, are constrained to their natural carrying capacities in supporting the maximum number of cattle that can be grazed per hectare of pastureland. Investments in improved pastures will be undertaken by leaseholders if rates of return from higher stocking rates (per hectare) and higher livestock productivity are greater relative to non-livestock investment alternatives.

Given the respective carrying capacities of the pasture leases, the productivity of the pasture leasing activity would depend on the management of



the production processes. Productivity would vary depending on the intensity by which the variable inputs are used over the herd and the given pasture lease area. The relationship between inputs and output are depicted in Chart 1. It has to be noted that where non-livestock activities are also undertaken in the pasture leases, income may also be derived from them. It is to be expected that in the activities where the higher rates of return lie, pasture lease resources would flow towards that direction.

The acquisition of rights to holding grazing lands through PLAs or FLGLAs is an indication that at the time of application for rights, the pasture leasing activity must have been attractive enough to yield acceptable positive net returns. That such is possible rests partly on the rather low cost of rights acquisition, pegged at P1.00 per hectare per year, among others. It is, however, in the subsequent investments for improving the pasture grazing lands where investment behavior may respond to the prevailing economic environment.

Where investments in improved grazing areas are deemed attractive, the financing of such investments come into play. At the initial investment stage, the financial market may be utilized to bridge the gap between current demand for investment spending and future income. If the effective cost of borrowing, however, is deemed to be relatively high, the pasture lease holder would draw from his own resources. In the case where own resources are also limited, the desired magnitude of investments to be undertaken in pasture improvement

would not materialize. And as long as the pasture leases could still turn out acceptable positive net returns under a regime of pure natural pasture grazing, then the pasture lease would still be maintained, but with relatively low realized carrying capacities.

The schema for relating the size of initial investments in the pasture lease with financing from the loans market and/or from own resources is presented in Chart 2. Ceteris paribus, the area granted under the pasture lease contract would positively be related to the absolute size of investments made.

Over time, the investments in the pasture leases are expected to grow. From the administrative viewpoint, the non-improvement of the pasture leases - in terms of increasing the hectarage for improved grasses and increasing the carrying capacity of the land, among others - provides ground for cancellation of lease rights. Whether or not such rules are enforced, however, is an empirical matter. It is claimed that the unfavorable environment in the pasture lease areas, is the main reason why pasture leases are not as productive as they could be. In particular, the proliferation of contending claims to the pasture leases, the uncertainties provoked by the CARP, and the unstable peace-and-order conditions in the countryside, are claimed to have been deterring investments that would normally have been undertaken. If such indeed were the case, a diversion of investible resources into non-pasture activities would be expected to be observed. As a consequence, income from these other activities may emerge to be significant as a proportion to total leaseholder household

income. And as long as incomes from other sources are relatively higher, then the pressure to make the pasture productive may, in fact, be reduced.

The relationship between the existence of an unfavorable environment in the pasture lease areas and investments for pasture lease improvements is depicted in Chart 3. It may, however, be difficult to distinguish the independent effects of the three identified contributory factors to the unfavorable environment in the pasture leases.

It has to be recognized, however, that decisions to defer investment in improving the pasture leases may be traced to other reasons (economic, financial, weather-related, etc.) than those commonly cited in the literature.

## **2. Analytical Framework**

### **2.1. Sources of Data and Sampling Framework**

The primary data used by the study were obtained from the pasture lease survey enacted from February 8 to May 15, 1993. The set of pasture leaseholders were obtained from the master list of the Bureau of Forest Development (BFD) of the DENR as of 1991. The top five (5) regions in the Philippines in terms of the number of PLAs granted and area covered were initially considered as research areas, namely, Regions II, IV and V in Luzon, and Regions X and XI in Mindanao. Region II was eliminated from consideration due to relative difficulty of access. Region IV was also dropped due to additional information from the ocular inspection and pretesting stage that majority of the ranches in the sample province (Occidental Mindoro) had

temporarily ceased operations due to the unfavorable peace-and-order conditions.

The provinces with the highest concentration of pasture leases in each of the remaining regions were chosen as the study areas. These were Masbate of Region V, Bukidnon of Region X, and South Cotabato of Region XI. The relative positions of the study sites in their respective regions with reference to the number of pasture leases and area-covered are given in Table 1a.

From the chosen study sites, stratified sampling was applied. At the provincial level, a random sampling was employed using the validated provincial list. The structure of the sample is given in Table 1b.

## **2.2 Method of Analysis**

The major objective of the study was to establish how the pasture leases had been adjusting to the propositions that as part of the public domain, the pasture leases, barring exceptions to the general rule, would be under the scope of the Comprehensive Agrarian Reform Program (CARP). The study also wanted to determine whether livestock production is on efficient use of the land relative to other uses. Also, the study also aimed to establish whether or not significant investments had been and were being made to make the pasture leases productive. Lastly, the study attempted to establish the connection between the economic environment induced by the CARP and the level of investments that the pasture leaseholders were undertaking within their lease areas.

### 2.2.1 Efficiency of Land Use in the Pasture Leases

In essence, one measure of efficiency of the pasture leasing activity is profitability. Income from the pasture lease as an entity may, however, not be limited to income from livestock activity, but from non-livestock production activities as well. The value of output from livestock activities would be defined by revenue from sales of cattle plus the value of the change in inventory, priced at the respective market value of cattle according to major classification and age (or weight).

Income from non-livestock revenue would be given by the value of sales of non livestock output, priced at the farmgate level. Total pasture lease income is thus given by

$$(1) \quad Y = \sum_{i=1}^5 P_i L_i + \sum_{i=1}^5 P_i \text{INV}_i + \sum_{j=1}^5 P_j N_j$$

where

- Y - total pasture lease income;
- $P_i$  - farmgate price of livestock category  $i$ ;
- $L_i$  - heads of cattle of category  $i$  sold;
- $\text{INV}_i$  - change in inventory of livestock category  $i$
- $i = 1, 2, \dots, 5$ , where
  - 1 = breeding bulls
  - 2 = breeding cows
  - 3 = heifers
  - 4 = steers
  - 5 = calves
- $N_j$  - quantity of output of non-livestock output  $j$
- $P_j$  - price of non-livestock output  $j$
- $j = 1, 2, \dots, 5$ , where
  - 1 = palay
  - 2 = corn
  - 3 = sugarcane
  - 4 = copra
  - 5 = others

The significance of income from cattle production is revealed from the ratio of livestock to non-livestock income. Similarly, the relative importance of cattle raising as an activity would also be checked in the manner in which inputs are allocated between cattle and non-livestock activities. Thus, the structure of land use, allocation of material inputs, and allocation of labor inputs would give indications on the relative importance given to livestock production.

An indication of relative importance to various activities would be given the structure of variable costs. On the material inputs side, the items of expenditures for livestock and non-livestock production are to be identified. For cattle production, the structure of costs would reveal whether expenditures are geared towards simply maintaining the cattle stock or are also geared to increasing productivity of the stock. For all activities, magnitude of expenditures on material inputs for livestock and non-livestock operations could be compared. A similar analysis could be done for the distribution of labor inputs. The division of labor between livestock and non-livestock activities would reveal the relative importance of both activities.

It may, however, be the case that joint use of inputs between livestock and non-livestock activities would be a feature of pasture leases where function are not specialized. In such an event, a rough estimation of the division of material and labor inputs would be undertaken.

### **2.2.2 The Structure and Financing of Initial Pasture Lease Investments**

This section established the significance of the role of the financial market at the initial investment stage. The proportion of the value of the initial investments made financed through borrowing would be the indicator used to describe the relative importance of the financial market at the initial investment stage. The proportion of investment expenditures financed through the loans market in the last three years would indicate the growing or declining role of the financial market in the pasture lease business.

The structure of initial investments would indicate concentration of investment expenditures at the initial stage of the pasture lease. The relative importance of herd build-up, of establishing an improved pasture area, of securing the pasture lease by fencing, among others, would be revealed by the structure of initial investments.

### **2.2.3 The CARP, Contending Claims, Peace-and-Order Problems and Subsequent Investments in the Pasture Lease**

The pattern of subsequent investments in the pasture lease would provide information on which specific investment categories were given importance. The direction of change in the structure of investments would be obtained by comparing the pattern of subsequent investments with that of initial investments. The direction of investments may move towards herd build-up, expansion of improved pasture areas, purchase of capital equipment, purchase of vehicles, among others.

The pattern of subsequent investments are to be related with the current productivity of the pasture lease in terms of carrying capacity, cattle production per year, and profits from livestock production. In as much as subsequent investments would also have bearing on non-livestock production, income from non-livestock operations would also be related to the pattern of subsequent investments.

The relationship between the cited factors negatively affecting investments in the pasture lease and current investments are approached from the viewpoint of the pasture leaseholder. The instrument determines on whether or not, the often-cited factors (CARP, contending claims, peace-and-order problems) had independently or jointly made the pasture leaseholder defer particular items of investment. In the cases where none of the cited problems were a factor in deferring investments in the pasture lease, it is asked whether some other factor was a major determinant in deferring some investments in the pasture lease. Where none is identified, then the current pattern of investments, and the subsequent productivity of the pasture lease are deemed to be governed by the differential rates of return from all investments of the pasture leaseholder, i.e., including those outside the pasture lease.

The existence of investment in non-pasture ventures, and the deriving of income from the same, indicates the decision of the pasture leaseholder to spread his assets between pasture and non-pasture undertakings. The relative importance of the pasture leasing activity is to be obtained from the relative size



of investments placed in the pasture lease and the magnitude of income derived from it compared to size of assets held in some other forms and the magnitude of income derived from them.

In the final analysis, the gravity of the negative impacts of the often-cited factors as deterrents to investments, has to be revealed in the preferences of the pasture leaseholder to retain or let go off the pasture lease once the expiration of the contract arrives. A decision of no longer renewing the pasture lease agreement is an indication that holding the pasture lease is no longer profitable at all. This has to be reconciled with level of profits obtained from pasture and non-pasture operations. The preference to renew the lease agreement after the expiration of current contract indicates that the current lease rates (P1.00/ha per year), the expected net gains are positive even with the current atmosphere created by the CARP, contending claims, and peace-and-order problems.

Finally, the preference to renew lease agreements, even at a higher rate of P20/ha. per year, would reveal that the economic rents currently obtained from the pasture leases, even in an "adverse" climate described by them, are still rather significant.

Two measures of the rental value of the pasture lease are obtained. One is the maximum rate which the leaseholders are willing to pay for the privilege to renew the exercise of rights over the pasture lease after expiration of the contract. The second is the difference between the market value of the assets

within the pasture lease and the price at which the leaseholder is willing to sell the ranch. The computed difference between the two is taken to be the estimate of the size of economic rent obtainable from the pasture lease over the remaining lifespan of the lease contract.

Finally, the level of profits obtained the pasture lease as recorded in the observations by the ranch manager, is to be cross-checked with the reported ~~income from the pasture lease as reported by the leaseholder.~~ Consistent relations are to be established between the level of farm profits from all activities, farm income, estimates of rental value, and willingness-to-pay various rates for the rights to return the pasture lease after expiration of contracts.

The detailed description of the set of information to be obtained and the relationships to be established are provided in Appendix B (Design of the Instrument).

## CHAPTER III

### RESULTS AND DISCUSSION

#### I. The Pasture Lease

##### A. Characteristics of Pasture Lease Holders.

###### 1. Educational background

The average pasture lease holder, in general, is rather highly educated. More than 60 percent are holders of a college degree. More than 80 percent have finished at the very least a high school education, as could be observed in Table 1. Looking at regional differences, the pasture lease holders of Masbate and Bukidnon have the highest educational attainment, where at least 70 percent finished college. In contrast, in South Cotabato, those with only a high school education were a little greater than those who obtained a college degree. The comparison of educational attainment of leaseholders among the three locations is shown in Figure 1.

###### 2. Sizes of Pasture Leases of Leaseholders

The average size of pasture leases is 363 hectares. Among the regional locations, South Cotabato has the highest average size at 474 hectares. Masbate and Bukidnon are about even at 313 and 320 hectares, respectively. Pasture lease sizes range from 50 hectares (Bukidnon) to 2,708 hectares (South Cotabato) as shown in Table 2.

The pattern of distribution of pasture lease area is skewed to the left, as shown in Figure 2. Lease sizes cluster around the 100 to 300 hectare range, with 50 percent of pasture leases falling in this category. The distribution, however, is more skewed in Masbate, where close to 60 percent of the leases are less than 200 hectares.

###### 3. Start of Operations

Pasture leases have an effectivity of 25 years, renewable for another 25 years. Around a quarter of the leases are old contracts which had been renewed. Most of the

pasture leases were granted in the last two decades, with 35 percent obtained in the 1980s, and around 20 percent secured in the 1970s. The distribution of the start of operations is given in Table 3, and depicted in Figure 3. In contrast to Masbate, the Mindanao groups have more older leases.

The pasture leases started with an average carrying capacity of 0.2 (head of cattle per hectare), or around one head of cattle in every five (5) hectares leased. Most of the farms (about 60 percent) started with not more than 50 heads (Table 4). As could be observed in Figure 4, the greatest concentration of the farms which started with 10 to 50 heads were found in Masbate, consistent with the clustering of relatively smaller farms (less than 200 hectares) in the area.

At the initial investment phase, the loan market was not much utilized. Less than a quarter (23 percent) of the leaseholders availed of loans to finance investments for the establishment of the pasture (Table 5). Figure 5 shows the relative use of the loan market to finance investments to start pasture lease operations. In the last three years prior to 1992, the loan market has become even less resorted to, with only five (5) percent borrowing for financing pasture lease activities (Table 6).

These results were quite unexpected. The investment was not designed to capture what lay behind the non-utilization of the financial market. External sources of information are thus resorted to partly lend intelligibility to a rather puzzling result. In the literature, as well as from confirmations by officials of the Development Bank of the Philippines, pasture leases are not acceptable as collateral for loans obtainable from the formal sector. The pasture leases being government lands, the banks cannot obtain possession of the leases, nor the rights to them, in case the lease holder fails to repay his loan according to the terms.

A question arises on whether the pasture leases could have continued operations over time without the benefit of external financing in general. On this matter, information generated from other sections of the instrument may shed more light. The

pasture lease holder, as would be shown in the later sections, in general, also possess holdings of significant value (other agricultural lands, real estates) and/or are engaged in other business enterprises. While the instrument was unable to show this, external financing for certain operations in the pasture leasing activity could indirectly be generated from loans obtained in the name of other agricultural or business undertakings outside the pasture lease, with non-pasture assets used as collateral. Where no such "detours" are resorted to, the only way the financing needs of the pasture lease operations could be met would be for the leaseholders to use income from non-pasture agricultural and business activities for such purposes. The magnitude of such declared incomes from other sources, as would be shown in the later sections, indicate that such manner of financing is not far-fetched.

The drastic decline in the use of the financial markets could also be seen from a different perspective. As the later sections would show, the insignificance of more recent investments in pasture land improvements may in fact, signify the extent to which resources are infused into the pasture leasing activity. The ability to manage to subsist through an extensive mode of natural pasture grazing diffuses the pressure for need for external financing.

#### **B. The Patterns of Investments in the Pasture Leases.**

Investments in the pasture lease, valued at 1992 prices, total to around P325.1 million for all farms. In absolute terms, investments were largest in South Cotabato, accounting for about 43 percent of the total, and least in Masbate (26 percent). This is shown on Table 7. On the average, investments made was put at P2.2 million per farm. On a per hectare basis, P6,180 worth of investments were infused.

At mean values per farm, the highest investment value is recorded for Masbate, at P7.7 million. The values at the farm level do not radically diverge, as could be observed in Figure 6. The pattern of investments more or less follow the aggregate.

The distribution of initial investments in the aggregate indicates that investments in livestock ranks first, comprising about 73 percent of the total. Second comes investments in equipment and vehicles (9.4 percent). A far sixth is investments in pasture grass establishment accounting for just roughly two percent of the aggregate (Table 8 and Figure 7). It could be seen that apart from livestock investment, there are differences in the shares of investments across locations. In Bukidnon, investment in equipment and vehicle stand out. In South Cotabato, clearing, cut and burn, and, and destumping also are significant (Figure 8).

Comparing now the current pattern of investments to that at the initial investments at the start of operations (Figure 9), initial investments were rather homogeneous across locations, and heavy in herd build-up. Clearly, the direction of investments diverged over time. The bulk of investment growth apparently went to purchase of vehicles and 4-wheel tractors. Except for Masbate, investments in pasture grass establishment remained insignificant. So, too, with those in houses, buildings, and other facilities.

The insignificance of the growth of investments in pasture grass improvements could also be checked on the current land use pattern of the pasture leases. In Table 9 and Figure 10, the leases have roughly remained as natural pastures over the years, with only about 10 percent of the total area developed into areas for improved pastures and feed or fodder crops. Almost a quarter of the pasture leases have remained undeveloped.

## **II. Management of the Pasture Lease**

### **A. Land Use of the Pasture Lease**

Land use is an indication of the intensity of land utilization. It is indicative of the focus of resources in terms of the alternative economic activities that could be pursued.

There are, however, legal constraints with respect to the extent to which the area leased for pasture activities may be used for other economic activities. At most, only 10 percent of the area may be devoted to producing food crops.

Table 9 shows the distribution of land use of the pasture leases across locations. In general, more than half of the pasture leases have remained as natural pastures. The undeveloped portions occupy another quarter of the areas. To this classification may be included the even less productive natural pasture areas.

Note that the area devoted to food crops, posted at around two percent, does not even approach the legal maximum allowable portion. This is rather surprising, as would be discussed in the later sections. It is possible that the proportion devoted to food crops may be underdeclared for reasons of demonstrating compliance with the legal stipulations.

In figure 10 is shown the relative positions of various land uses of the pasture lease. Noteworthy is the information that in the aggregate, the area devoted to improved pastures is extremely small - less than 10 percent of the total pasture area. This is consistent with the information in investments where only two percent of investments were devoted to pasture grass establishment.

## **B. The Ranch Manager**

The day-to-day activities of the pasture lease is run by a ranch manager who, in most cases, is hired by the leaseholder. In certain cases, the leaseholder himself is the ranch manager. When the leaseholder decides to let his farm be run by manager, often, a relative (close or distant) is chosen.

On the whole, around 70 percent of the farms are run by a hired manager, not by the leaseholder himself. Forty-two (42) percent of the farms are managed by a relative of the leaseholder, while only 26 percent of all the farms are done so by a non-relative.

Across regions, the South Cotabato farms deviate from the common management structure of the other two (Figure 11). Half of the farms are run by the leaseholders themselves, while the rest is split evenly between a relative and non-related managers.

Most of the ranch managers (60 percent) fall in the age range between 30 and 50 years. The ranch managers in Masbate and Bukidnon are relatively younger with four-fifths and two-thirds of the ranch managers, respectively, falling in the 30-50 age range. In contrast, around 70 percent fall within the age range between 50 and 70 years in South Cotabato (See Table 10).

The ranch manager, like the leaseholder, is also likely to have finished a high level of education, with about two-thirds of the ranch managers having finished some kind of a college degree. The educational background of the ranch managers across regions is shown in Figure 12. Thus, one can say that ranch managers are also a generally highly educated group.

The monthly compensation of the ranch managers could not readily be obtained. Two thirds of the ranch managers refused to disclose monthly compensation (Table 11). For those declaring monthly compensation, the mean rates were close to each other in the Mindanao sites, placed at P4,310 and P3,567/month, respectively, in Bukidnon and South Cotabato. Relatively high rates occur almost only in these two locations (see Figure 13). If the Mindanao mean figures are indicative of the monthly compensation of a ranch manager, the reported compensation in Masbate may be seen to be grossly understated at P834/month.

Adjusting the monthly compensation by size of operations, the monthly compensation per head of cattle managed was derived. Compensation rates are now comparable between Masbate and South Cotabato, with Bukidnon paying the highest monthly rates per head of cattle managed. Average monthly rates are put at P27/head of cattle raised per month.



Aside from monthly salaries, ranch managers may also derive compensation from stipulated share of net sales. Most managers, however, do not get a share of net sales. Only 28 percent of them do. For those receiving such compensation, the mean share is put at around 23 percent of net sales (Table 12).

There are regional differences in the incidence of compensation by shares. This mode of compensation is least practiced in South Cotabato, and in cases where it is at all practiced, the percentage share is the lowest, with a value about half the average.

### **C. The Herd Composition of the Pasture Leases.**

The herd composition gives a picture of the relative importance of the categories of the stock, either as investment or as livestock for sale. Figure 14 provides the aggregate picture of the distribution of animal types age and sex, in the pasture lease. The most important stock kept is the breeding cow, comprising almost half of the herd. The heifers, the future breeding cows are the next most widely held. The proportion of calves provide an indicator of the productivity of the breeders (cows and bulls). The steers are those expected to be normally disposed for sale in the market. Figure 15 shows the relative composition of the stock, by location. In general, the patterns of composition are similar, with some deviations occurring in the proportion of breeding bulls and steers.

On the whole, a minor net decrease of 0.4 percent in livestock was registered over the period of one year in 1992. The sources of decrease were from significant reduction in heifers (-26 percent) and steers (-17 percent), (Table 13 and Figure 16). For heifers, gross reductions arise either from promotion to breeding cows or disposal for the market. These movements were tempered by an increase in calves.

On the regional levels, the general pattern of changes in herd composition is duplicated in Masbate (Table 14 and Figure 17), but with a greater proportional decline in heifers and steers, and in the whole herd. In Bukidnon, a different pattern for heifers and steers is observed, where a net increase was registered (Table 15 and Figure

18). Only in the Bukidnon pasture leases is a significant herd build-up registered (8.0 percent). For South Cotabato, the noticeable deviation is the increase in breeding bulls (Table 16 and Figure 19). Herd build-up, however, though positive, is not significant.

#### **D. Physical Performance Indicators of the Pasture Leases.**

##### **1. Carrying Capacity**

Carrying capacity refers to the number of heads of cattle supported by a hectare of pasture lease. The computed numerical values here had not been adjusted to age composition of herd.

The average carrying capacity for the entire sample was found to be 0.45; in other words, each head of cattle was supported by about 2.2 hectares. The highest carrying capacity was registered in Bukidnon (0.56), and the lowest is in South Cotabato (0.34), as shown in Table 17. Almost a third of the pasture leases could not reach carrying capacity of 0.20 (or requiring more than 5 ha. per cattle), with the highest incidence in Masbate (37 percent). About half of the sample could not reach a carrying capacity of 0.30 (requiring more than 3.3 ha. per head of cattle). Finally, around 60 percent of the pasture do not reach a carrying capacity of 0.40, using more than 2.5 hectares per head of cattle raised.

The norm stipulated for pasture leases by the Department of Environment and Natural Resources (DENR) is to reach a carrying capacity of at least 1.0 after five years of operation. In the aggregate, only 10 percent have achieved the minimum standard. There are marked regional differences in the achievement of this standard, with almost 20 percent of the Bukidnon pasture leases meeting or exceeding the norm. The incidence of achievement of the standard is least in South Cotabato. Figure 20 shows cumulative achievement of various carrying capacities.

## **2. Change in Stock**

The average opening stock for all farms was 159 heads of cattle per lease. On relative terms, the deviation from this figure across regions was not very great (Table 18).

In the aggregate, the rate of birth of calves is rather low at 11.3 percent per annum. Furthermore, death/loss rate of three (3) percent reduces a net increase of only 8.3 percent by natural means. Infusions to the stock by new blood from the outside is very insignificant at 3.8 percent. Sales of 13.2 percent of stock plus a slaughter rate of 0.6 yields an extraction rate greater than net additions to stock. In general, the average farm ended up with a lower stock level for the next period.

Again, the contrasting performances across locations are apparent. South Cotabato had the highest percentage of calves born at almost 18 percent of the initial stock, with Bukidnon following closely at about 15 percent. Fresh infusions from the outside is most significant for Bukidnon at about 7 percent of stock. Both Mindanao provinces realized relatively high sales rates (16 - 17 percent). Bukidnon realized a 1.7 percent increase in inventory.

Almost all indicators point out to a rather poor performance by the Masbate farms. Birth rates are lowest at 2.1 percent, negated by a death rate of equal magnitude. The sales rate is relatively low at 7 percent of the herd. Even with an external infusion rate of 2.1 percent, the stock falls by a large 8.4 percent for the next period.

## **3. Infusion of Herd with Stock from Outside.**

The introduction of livestock from external sources is designed to arrest inbreeding, thereby, preventing decline in productivity. For the production year in question, only 47 percent of the farms made a purchase of livestock from external sources. Of all farms, only 21 percent made a purchase of a breeding bull, and only 17 percent made a purchase of either a breeding cow or a heifer (Table 19).

Across regions, a significant proportion of the Bukidnon farms made a purchase of livestock from external sources. About a quarter purchased breeding bulls, while a fifth obtained either a breeding cow or a heifer. The lowest incidence of livestock purchases from external sources is registered in South Cotabato. The comparative purchasing behavior is depicted in Figure 21.

Most of the purchases for infusion of new stock into the herd is in the form of the breeding bull. For all purchases, breeding bulls comprised about 46 percent. This followed by new infusion in the form of breeding cows or heifers (Table 20). There are some regional idiosyncracies in the structure of purchases as shown in Figure 22. The South Cotabato farms appear to give premium to breeding bulls. The Masbate farms give a high importance also to breeding cows and heifers. The Bukidnon farms, on the other hand, also give attention to calves and steers. Although steers have no breeding value, they may be purchased for rapid fattening purposes, for resale in the market.

The most popular breeds sought for stock improvement is definitely the Brahman in the Mindanao farms. Most of the Masbate farms appear to have settled for non-exotic breeds (Figure 23).

The sources of new stock appear to be most varied for the Masbate farms, being able to obtain cattle from another ranch, via direct importation, or from the livestock auction market (LAM). The South Cotabato farms appear to have been the most limited in source (from another ranch). The Bukidnon rely mostly on traders for new stock. The regional differences are depicted in Figure 24. It appears that direct importation has been a remote possibility in Mindanao, except for an isolated case.

In all, 961 new livestock were purchased. The Bukidnon farms made the most purchases of new livestock, accounting for more than half (56.2 percent) of total livestock purchased (Table 21). South Cotabato made the least number of purchases. On a per farm basis, new additions were 12 heads per pasture lease in Bukidnon, more

than twice that of Masbate, and more than thrice that of South Cotabato.

#### 4. Sales of Livestock

##### 4.1 Disposal of Cattle

Sales of livestock is the main source of revenue for pasture leases. The non-occurrence of sales within any particular year must mean either that there are no livestock ready for sale or that the livestock are withheld in the current period as investment, in expectation of higher weights and/or better prices the next period. However, such behavior must be reflected in a significantly higher closing inventory over the opening level.

Livestock is sold either because the farm has exceeded the most efficient stocking rate, or because certain animals have outlived their desired productivity, and therefore would be better disposed in the market as "culls". The study, however, was unable to obtain accurate data of sales which categorizes surplus cattle from culled livestock with the corresponding price discrimination between them to reflect their true worth. The distinction is not strictly imposed.

As could be seen in Figure 25 about a third of all farms registered no sales of livestock at all. Most of these farms were in Masbate.

A total of 3,124 livestock were sold for the year. Most of the livestock sold were produced in the Mindanao farms, accounting for 80 percent of total livestock sold, split almost evenly between the farms of Bukidnon and South Cotabato (Table 22).

On the average, about 48 heads were realized sales per selling ranch. Bukidnon registered the highest average sales at 59 heads per farm. South Cotabato is lowest with 36 heads.

On the whole, sales were almost evenly distributed among heifers, steers, and breeding cows (Table 23). Across region, however, a relatively high sales of breeding bulls is observed in Masbate. For Bukidnon, a low share of calves is evident. In South

Cotabato, a relatively high share of calves stands out in contrast to a low share of breeding bulls.

Most of the transactions are done at the ranch level. In almost 90 percent of the cases, the buyer fetches livestock at the farm and shoulders transportation cost (Table 24). Thus, no significant transport expenses are hidden in the prices of cattle sold.

Average prices for various categories of livestock are shown in Table 25. On the whole, breeding bulls are most expensive at around P19,553 per head. Next comes the breeding cow at an average of P14,364 per head. Across regions, the Masbate livestock are, in general, less expensive than the Mindanao cattle (see Figure 26). The mature breeding bull and cow, and the full grown steer are most expensive in South Cotabato. This may probably be traced to the almost 100 percent Brahman breeds in South Cotabato.

#### 4.2 Pasture Lease Revenue from Sales

Sales of cattle obtained a total revenue of P3.38 million for the whole sample. More than 83 percent of total revenue were generated in Mindanao, almost evenly split between the two locations (Table 26). The average revenue per farm was P234,839. Bukidnon and South Cotabato realized a little higher than average farm revenues from sales. At P132,230, the average farm revenue in Masbate was way below the norm.

The sources of potentially large revenue could also be seen in Table 26 and Figure 27. On the whole, the largest single revenue was generated by sales of breeding cows. Second is the sales of fully matured breeding bulls. Across regions, the highest revenue earner in Bukidnon is the fully matured breeding bull. In South Cotabato, male calves have also been an important source.

Joining all categories of animals of all ages, the structure of revenue is summarized in Table 27. Breeding bulls and breeding cows dominate as major sources of revenue. Across regions, breeding bulls stand out as main revenue earner in Bukidnon (Figure 28). Steers also stand out. In South Cotabato, breeding cows

outperforms breeding bulls as source of revenue.

#### **D. Employment Generating Capacity of the Pasture Leases**

##### **1. Workload**

The capacity of the pasture leases to generate employment would be measured by the number of workers hired per unit area or the number of workers hired per unit output.

The 145 pasture leases employed a total of 1,290 workers. The average farm of 363 hectares with 152 heads of cattle employs about 9 workers. On the average, a worker is employed for every 40 hectares and 17 heads of cattle (Table 28). Across locations, almost all workers are externally hired (96 percent), not family members.

Across regions, the Bukidnon-farms are relatively the most labor intensive, accounting for almost half of the employment in the sample. Although the average farm size in Bukidnon lies midway between those of the two other locations, the Bukidnon ranches employ twice more workers than the two others.

The Bukidnon average worker operates on an area roughly half that of the average Masbate ranch worker, and an area less than a third of that of the average South Cotabato ranch worker. On the basis of the number of heads of cattle per worker, those in the South Cotabato ranches handle more than twice (27 heads) the number worked upon by the Bukidnon ranch workers (11 heads).

The mean values may not be reflective of the ordinary pasture lease employment behavior. A fifth of all ranches employ just a worker or two, and a large proportion (40 percent) employs only four workers or less. A large majority (60 percent) do not employ more than six workers (Table 29). Across regions, the South Cotabato ranches employ the least with 30 percent of the farms employing not more than two workers; almost half, not more than four, and 70 percent, not more than six workers.

In Figure 29, it could be observed that the Bukidnon farms generate the most employment per farm, having the lowest cumulative percentage at lower levels of

employment per farm. In terms of the area operated on per worker, Table 30 shows that about a quarter of the workers operate on an area greater than 125 hectares. More than a third works on areas greater than 75 hectares.

Locationwise, each worker covers a relatively wider area in the South Cotabato farms. More than a quarter cover an effective area greater than 150 hectares. More than a third cover an area greater than 125 hectares, and, more than half of the workers cover an area larger than 75 hectares (Figure 30). As could be seen, the Bukidnon workers have smaller effective areas to cover.

The workload of hired workers in terms of the number of cattle handles per worker, is shown in Table 31. Almost two-thirds of the workers handle more than 10 heads of cattle; close to 40 percent work on more than 20 heads each, and a quarter work on more than 30 each.

Across regions, a fifth of the workers in South Cotabato work no more than 50 heads each, and close to half handle more than 30 heads of cattle each. In contrast, more than three-fourths of the workers in Bukidnon handle less than 21 heads of cattle each, with a large portion (40 percent) working on about 10 or less heads of cattle each (Figure 31).

## **2. Worker Functions**

Of the total 1,290 workers, only about 20 percent are employed for purely livestock-related functions (Table 32). A little more than a quarter are engaged in mainly livestock-related functions but also do some other functions part of the time. About a third of the entire workforce are employed for non-livestock related work in the pasture lease. Another 20 percent perform mainly non-livestock related functions. This relative proportion of mainly non-livestock workers is almost duplicated across the three locations. Thus, overall, a greater majority (53 percent) of the workforce are either purely or mainly for non-livestock matters.



It was not determined what actual functions these segment of the workforce do, but indications are, these workers perform pasture lease security functions or cropping activities within the pasture lease in the production of either corn, sugarcane, palay, or copra. This set of information was obtained from the declaration of whether or not a security team exists, how many are employed in the team, and the proportion of pasture leases generating income from other agricultural activities within the pasture lease.

### **3.. Status of Workers**

On the whole, most of the pasture lease workers (62 percent) are hire on a contractual basis rather than on a regular basis (Figure 32). There are, however, variations among the three locations, with Bukidnon having the highest incidence of contractual workers (73 percent). On the other hand, South Cotabato has a majority of its workers hired on a regular basis.

### **4. Compensation of Workers**

The most prevalent compensation scheme is payment in both cash and kind. This applies to both regular workers (Table 32 and Figure 33) and contractual workers (Table 34 and Figure 34). Compensation by kind only, however, has a higher incidence in regular workers (29 percent) as compared to contractuels (12 percent).

Total cash compensation for all workers was P9.43 million for the year 1992. Most of these were paid to regularly hired workers (72 percent). Only about 9 percent was paid to family workers (Table 35). Across locations, the highest relative share for family workers is found in Bukidnon, (14 percent) ( Figure 35). It is also here where the highest cash expenditure was incurred.

The value of total compensation in kind is put at P842.070 (Table 36). The highest value of payment-in-kind was made in Masbate, accounting for about 60 percent of total in-kind payments (Figure 36).

Total cash and kind compensation for 1992 amounted to P10.27 million (Table 37). Across regions higher expenditures were made in the Mindanao locations (Figure 37)

On the average, worker cash compensation per farm amounted to P120,164 for the year 1992 (Table 38). Across regions, worker compensation per farm in Masbate was only half those made in the Mindanao ranches (Figure 38).

Average compensation-in-kind for all workers amounted to P61,983 per farm, about half the amount of cash compensation (Table 39). In contrast to the distribution of cash compensation, the highest amount of in-kind compensation per farm was registered in Masbate, more than five times than incurred in the Mindanao pasture leases. For Masbate, a disproportionate amount of the compensation in-kind went to the family workers (Figure 39).

On a per worker basis, cash compensation varied according to classification. On the whole, regular hired workers and family workers received disproportionately greater rates (almost 10 times) than contractual workers (Table 40). Locational differences are significant. Very high compensation rates for family and regular hired workers (greater than P20,000 per worker for 1992) were registered in South Cotabato, while lowest rates for the same category were recorded in Masbate (Figure 40).

Compensation-in-kind per worker for 1992 was very minimal. They were relatively significant only in Masbate, again with the family workers getting disproportionately higher rates than non-family workers (Table 41). Contractuals seemed to have received just tokens, not compensation (Figure 41).

### **5. Fringe Benefits for Workers**

Most of the pasture leases (65 percent) provide fringe benefits to the workers (Table 42). Fringe benefits are mostly in the form of meals, housing, and others, either singly or in combination. Fringe benefits, valued at P1.34, million was paid to the workforce (Table 43 and Figure 42). On the average, the value of fringe benefits

provided amounted to P18,348 per farm.

#### **E. Structure of Variable Expenditures for Ranch Operations, 1992.**

The structure of expenditures on variable inputs would indicate the inputs which the leaseholders or managers give relative importance to. Table 44 itemizes the components of variable inputs and the respective expenditures into them, by location. The list of expenditures excludes those incurred by the pasture leases for the purchase of livestock for replacements for deaths, losses, and/or culls. A separate section and discussion for livestock purchases has been provided.

Expenditures were classified into general categories such as: (i) pasture improvements; (ii) livestock care; (iii) equipment and facilities repairs and maintenance; (iv) rentals; and (v) others.

The pasture leases incurred a total of P8.99 million expenditures on variable inputs valued at 1992 prices. Expenditures on variable inputs were highest in Bukidnon, accounting for 50.7 percent of all expenditures (Table 45).

The bulk of expenditures went into livestock care, accounting for a large 45.6 percent of total expenditures, amounting to P4.1 million. Next comes expenditures on pasture improvement, valued at P2.54 million (28.3 percent of the total), then followed closely by expenses on repairs and maintenance on equipment's and facilities (21.4 percent). Across regions, the rather high relative position of expenditures on livestock care is maintained, except in Masbate, where expenditures on pasture improvement were also comparatively significant (Figure 43).

Table 44 shows that the main expenditures on pasture improvement were on repair and maintenance of fences, except in Bukidnon where expenditures on fertilizers were relatively significant. On livestock care, the major expenditures were on feed and concentrates, and veterinary items. Under the heading of equipment, facilities repairs and maintenance, expenditures of such on transport vehicles and on farm machineries

dominate. Under rentals, machine and vehicle rentals accounted for the bulk of expenditures.

The summary of expenditure shares by major category of variable inputs is shown on Table 46. On the whole, expenditures on livestock care is the most dominant single entry, accounting for 46 percent of all expenditures. Expenditures on pasture improvement and on repairs and maintenance of facilities come in with 28 percent and 21 percent of total expenditures, respectively. Both rentals and other expenditures have a rather insignificant share.

Variations across regions occur on the relative share of pasture improvement and repairs and maintenance (See Figure 44). Only in Masbate is pasture improvement also prominent (44 percent). For South Cotabato, repairs and maintenance costs are relatively high at 31 percent.

The composition of the various major expenditure categories are shown on Table 47. On the whole, it could be observed that the bulk of expenditures under pasture improvement were absorbed by repairs and maintenance of fences, especially in Masbate and South Cotabato (Figure 45). Only in Bukidnon are expenditures on fertilizers significant. Note that expenditures on planting material for grasses is negligible.

Under expenditures on livestock care, feeding materials and veterinary items dominate. The share of veterinary items in Masbate is rather extraordinary (Figure 46), raising the overall average share significantly. Expenditures on external professional service is very negligible in all locations.

Across locations, expenditures on the upkeep of machineries and transport vehicles eat up the bulk (90 percent) of expenditures on repairs and maintenance (Figure 47). This is consistent with the observation on the pattern of investments over time where the share of investments on farm machineries and vehicle were rather relatively significant. The figure also suggests that on the whole, buildings and

facilities for pasture lease operations are of such nature that their repairs and maintenance costs are very low.

#### **F. Income from Other Activities in the Pasture Leases**

Some areas within the pasture lease can, in fact, be used for some agricultural productive activities other than as pasturelands, where suitable. As a rule, however, the leasehold operators can only devote a maximum of 10 percent in the area to foodcrops, as stipulated in the contract. The declared land-use pattern in the pasture leases shows, however, that the maximum allowable seem not to have been exploited.

The main agricultural commodities where income was realized were corn, palay, copra, and sugarcane. In all, close to 48 percent of the respondents were able to realize income from non-pasture activities within the pasture lease. The most prevalent activity was corn growing, engaged upon by about 23 percent of the respondents (Table 48).

Across locations, the highest incidence of deriving income from other activities within the lease was highest in Bukidnon, where about 78 percent of the farms were able to do so. The most prevalent activity was corn production, with income realized by 44 percent of the Bukidnon farms.

In Masbate, the incidence of deriving income from other activities in the pasture was around 38 percent, with palay production the more popular activity. In South Cotabato, corn production is most resorted to.

The highest income from other activities were derived from corn. Most of the output (87 percent) were produced in Bukidnon (Table 49).

The next most important source of other income was copra. Masbate practically generated all the copra output in the sample (Table 50). On the other hands, sugarcane was practically produced only in Bukidnon (Table 51). Palay was produced in Masbate and Bukidnon, with roughly similar share of the output (Table 52). Incomes from other sources were generated in Bukidnon and South Cotabato (Table 53).

A total of P3,925 million was generated by the farms which engage in other production activities within the pasture leases. Corn production turned at the largest share of total income at around 46 percent (Table 54). Copra production contributed the next-highest, with around 26 percent of total income. The relative contributions of these non-pasture activities are shown in Figure 48.

On a per farm basis, highest absolute incomes were obtained in sugarcane production and copra production, generating P142,160 and P112,883 per farm, respectively. The weighted mean of incomes from other activities in the pasture lease was P56,882 per farm in 1992.

### **III Pasture Lease Holders Perceptions on CARP and the Pasture Leases.**

#### **A. Wealth Holdings and Sources of Income**

##### **A.1 Wealth Holdings**

The pasture lease holders, in general, own other assets of significance. More than 80 percent own a residential house and lot, and close to 70 percent own at least a parcel of agricultural land. A third own assets in a business enterprise, and about a quarter own some real estate property (Table 55). On Figure 49, the ownership of non-pasture assets have an almost similar structure across locations, with the Masbate leaseholders mostly holding the first three types of assets.

The average value of assets held by households by each type of non-pasture asset is shown in Figure 50. The highest average value were those related to real estate property. Second are those related to the business enterprises of the average leaseholder. The locational variations in wealth holdings is also very noticeable. In almost all types of assets outside the lease, the holdings of the average South Cotabato leaseholder are significantly higher in value than the rest. Furthermore, the value of wealthholdings of the average Masbate leaseholder poles in comparison to the other two.

### **A.1.1 Agricultural Land**

The total value of agricultural land holdings amounted to P122.4 million, most of which were held by the Mindanao pasture lease holders, accounting for about 83 percent of the total, almost evenly distributed between Bukidnon and South Cotabato (Table 56). The mean value of agricultural land holdings is about P1.9 million per lease holder. The South Cotabato leaseholders have the highest average value at about P2.0 million, followed by those of Bukidnon with about P1.5 million, both higher than the average. Figure 51 gives the average sizes of the value of agricultural wealth holdings, by location.

The distribution of wealth from agricultural land across locations is shown on Figure 52. The distribution is highly skewed to the left, with 66 percent of leaseholders owning a value not greater than P510,000-worth of agricultural land. South Cotabato, however, has almost a third of its leaseholders owning large properties between P500,000 and a million pesos.

### **A.1.2 Business Enterprises**

The value of assets in business enterprises of the leaseholders amounted to P101.4 million, at 1992 market prices. Most of these were held by the South Cotabato leaseholders, accounting for three-fourths of the whole wealth (Table 57). On a per leaseholder basis, the average wealth in business enterprises was P2.3 million. Across locations, the South Cotabato leaseholders had an average value of P4.8 million, dwarfing those of leaseholders in the other two locations (Figure 53). The distribution of business wealth holdings vary across locations, being most skewed to the left in Masbate and most evenly distributed in South Cotabato (Figure 54).

### **A.1.3 Real Estate Property**

Total wealthholdings in the real estate property had a total of P128.5 million. Most of the amount (71 percent) was again held by the South Cotabato leaseholders (Table 58). On the average, the value per leaseholder was about P3.8 million. Leaseholders in South Cotabato held an average of P5.7 million worth of real estate property. (For comparisons, Figure 55 is presented).

The distribution of wealth holdings in real estate property is highly skewed to the left, with the South Cotabato leaseholders as the sole ones holding business assets greater than P7.5 million (Figure 56).

### **A.1.4 Residential Property**

The total value of assets in residential properties is about P88.5 million (Table 59). The wealth in terms of residential properties, this time, more or less evenly distributed among the locations. On the average, residential property per leaseholder was valued at P797,015. Again, the average value of holdings of this form of asset was higher in South Cotabato (Figure 57).

The distribution according to value of wealthholdings reveals some bimodalities (Figure 58).

### **A.1.5 Total Value of Wealth Holdings**

The total value of non-pasture wealth holdings of the leaseholders amounted to P457.7 million (Table 60). A huge proportion of this wealth (88.5 percent) was held in the Mindanao, with more than half (55 percent) of this wealth was held by the South Cotabato pasture leaseholders. The proportion held in Masbate amounted to only P11.5 percent of the total.

The non-pasture wealth holding of the average leaseholder was about P3.5 million. The South Cotabato leaseholders had a significantly higher average value of wealth at P6.3 million (Figure 59). Figure 60 shows the distribution of non-pasture wealth within and across locations. The distribution is most skewed to the



left in Masbate. In contrast, wealth is relatively more evenly distributed among South Cotabato pasture lease holders.

## **A.2 Sources of Household Income, 1992**

Aside from deriving income from the pasture lease, two other sources of income are important to a significant proportion of the leaseholders. Close to two-thirds of the leaseholders derive income also from their business enterprises. In addition, more than half derive income from wages and salaries (Table 61). Locational differences exist. While more derive income from business enterprises in South Cotabato and Bukidnon, extra income derived from wages and salaries is relatively more widespread in Masbate (Figure 61). The structure and sizes of incomes from other sources, for the average household, vary among locations as shown in Figure 62. At once, the incomes of the South Cotabato leaseholders from all sources stand out.

### **A.2.1 Income from the Pasture Lease**

For 1992, total income accruing to the leases' households amounted to P30.5 million (Table 62). Almost 80 percent of this income was generated in the Mindanao pasture leases, with 42 percent made in South Cotabato.

Mean pasture lease incomes were computed to amount to about P254,000 per lessee household. The Mindanao households had mean pasture lease incomes above this average (Figure 63).

The distribution of pasture lease income shows that a large portion (40 percent) generated incomes not more than P50,000 in 1992. Majority had incomes not more than P100,000 (Figure 64). Incomes were more skewed to the left in Masbate. Relative to Masbate, the more Mindanao leaseholders were able to obtain pasture lease incomes at or above the overall average.

### **A.2.2 Income from Business Enterprises, 1992.**

Total income of lease households from their business enterprises for 1992 amounted to P49.7 million (Table 63). Most of this amount were generated by the

South Cotabato pasture lease holders, accounting for 71 percent of the business income.

Mean household income from business enterprises was put at about P534,000. The average South Cotabato leaseholders had about twice this amount at P1.04 million (Figure 65). On the other hand, the Masbate leaseholders generated business incomes 10 times smaller.

The distribution of business income is also skewed to the left, with two-thirds of the respondents earning not more than P200,000 in business income. The distribution is even more skewed in Masbate where close to 80 percent did not earn more than P100,000 in 1992. Again, it is in South Cotabato where the distribution is not so skewed, with a significant portion of the respondents (18 percent) earning more than P1 million in 1992 from their business.

#### **A.2.3 Salaries and Wages**

Total salary and wage income of the households amounted to P10.1 million in 1992. It is only in the salaries and wages as source of income that the Masbate pasture lease households obtain an advantage over their Mindanao counterparts,

obtaining 46 percent of incomes from this source (Table 64). Computed mean income over reporting households reveal, however, that the advantage did not necessarily hold on the average household level, where the Masbate mean income from this source was still slightly below the overall mean to P130,000 per household in 1992 (Figure 66). The distribution of income from salaries and wages in Figure 67 is shown to be more or less evenly distributed, for all locations.

#### **A.2.4 Various Other Sources of Income**

There were a few respondents who still had some sources of income other than those cited. Most of this income (90 percent) was generated in South Cotabato. Total income from these other sources was P2.7 million (Table 65).

### **A.2.5 Income from all Sources**

Total reported income of the pasture lease households from all sources amounted to P92.9 million for 1992. Most of this income (58 percent) accrued to the South Cotabato pasture lease holders. On the other hand, the share of the Masbate pasture lease households was only 14 percent.

The average household income was about P664,000 (Table 66). The average household income of the lessee households in South Cotabato was about twice this figure at P1.25 million (Figure 68).

Figure 69 shows contrasting distribution from income from all sources among the three locations. Masbate has the most skewed distribution, and South Cotabato the least. Bukidnon follows the average pattern.

The relative importance of the various sources of income, according to the magnitude of total income generated, is shown in Table 67.

On the whole, income from business enterprises dominated all other sources, accounting for more than half (53 percent) of total incomes generated. Income from the pasture lease was just one-third of total incomes.

Locational differences exist in terms of relative importance of various sources of income for the lessee households. As could be observed in Figure 60, pasture lease income is most important in Masbate, and still relatively important in

Bukidnon, where it is almost at par with business income. For Masbate, pasture lease incomes are supplemented mainly by wages and salaries. In South Cotabato, income from business enterprises towers above all other sources, including the pasture lease.

### **B. Contending Claims and Peace & Order Problems in the Pasture Leases and Lessee Investment Decisions**

The floating of ideas suggesting the pasture leases to be "CARPable" has been said to have encouraged other interested parties to stake their own claims on portions of

a pasture lease that are vulnerable to encroachment, or to legal counter-claims. On the legal side, landless upland dwellers can apply for land use rights under the Integrated Social Forestry (ISF) Program of the Department of Environment and Natural Resources (DENR). Where potential ISF areas and pasture lease areas overlap, speculations begin.

The existence of contending claims is most significant in Mindanao, affecting 44 percent of the leaseholders in Bukidnon, and about a third of those in South Cotabato (Figure 71). The low incidence of contending claims in Masbate is rather consistent with the certainty of the leaseholders that their holdings are not included in the CARP.

The incidence of any type of peace-and-order or security problems experienced, was also highest in Mindanao, with almost half of the farms in South Cotabato concerned with cattle rustling, and 42 percent of the farms in Bukidnon experiencing problems of illegal encroachment ("squattling") (Figure 72).

For Masbate, the concern of the leaseholders are on insurgency (34 percent) and cattle rustling (32 percent). Figure 72 suggests that the South Cotabato farms are beset all kinds of peace-and-order problems to a relatively more significant degree.

The higher reported incidence of peace-and-order problems in Mindanao is also consistent with the maintenance of a security team in the pasture leases. On the whole, more than half of the farms in Mindanao (54 percent) maintain a security team while only 15 percent do so in Masbate (Figure 73). For those with a security team, close to half (45 percent) of the farms in Bukidnon maintain a security force of about three-to-six people. In South Cotabato, most of the security teams comprise only about one or two persons (see Table 68).

### 1. Deferred Investments

The impact of the reported problems (CARP, Rival Claims, Peace-and-Order) on investments in the pasture leases across locations appears to have rather been selective. Only 30 percent of the leaseholders claim to have investments deferred by

any of the often-cited problems above, with the highest incidence of deferment in South Cotabato, placed at 36 percent (Figure 74).

The deferment of investments were also checked for other reasons (e.g. weather, financial constraints, etc.) but the incidence for such was significant only for South Cotabato, with a quarter of the respondents deciding not to invest due to prolonged conditions of drought.

The activities where the incidence of deferment were rather significant were investment in breeding cows (32 percent) and in pasture improvement (25 percent), as seen in Table 69. A more detailed inspection regional variations reveals that the incidence of deferred investments in breeding cows was most acute in South Cotabato (52 percent), as shown in Table 70. Total declared value of deferred investment in breeding cows put at P43.2 million. On a per lease basis, the value is around P940,000. In absolute magnitudes, the deferred investments in number of heads of breeding cows corresponding to the deferred investments were highest in South Cotabato. Computed, however, at investment values per hectare, the deferred investments do not diverge very much among locations, with an overall average of deferred investments around P2,800 per hectare.

For declared investments in improved pasture, the relative area coverage was highest for South Cotabato, put at 41 percent of leased area (Table 71). In absolute terms, as well as per hectare equivalents, the value of deferred investments were lowest in South Cotabato. In the aggregate, the value of deferred investments in improved pastures is just around P280,000. This just redounds to P240 per hectare, and an average of P7,000 per lease.

The value of deferred investments in breeding bulls are rather similar across regions, with an average value of P117,000 per lease, and about P372 per hectare of land occupied. Total value of deferred investments in breeding bulls was put at P3.4 million (Table 72).

The report on deferred investments in herd expansion seem to point out to rather ambitious plans beyond the current capacity of the pasture lands. In all, herds were to have expanded by 50 percent, or an additional 0.78 animals per hectare, in addition to current carrying capacity, at least for those leaseholders reporting. Total value of deferred investment in herd expansion was put at P47.7 million, averaged at P1.8 million per reporting farm, or about P5,875 per hectare (Table 73).

For investments in fencing, the inclusion of an additional 10 percent of the area of pasture leases seems to be realistic targets. Total projected value is about P3.9 million, computed at P177,000 per farm, and P602 per hectare (Table 74).

The projected value of investment in equipment is also large at P8.8 million (Table 75). This redounds to about P550,000 per lease, or P1,824 per hectare.

In summary, the declared value of deferred investments totaled to about P107 million. For pasture leases reporting, the investment value per lease is about P3.6 million. On a per hectare basis, the figure is put at around P11,700 per ha.

### C. Expenditures on Pasture Lease Security

The security occurrence of expenditures for pasture lease security purposes may be indicative of the necessity to privately enforce property rights over the pasture lease against parties who try to challenge it by encroachment, or against parties who operate outside the law (e.g. cattle rustlers, insurgents). The magnitude of expenditure may be indicative of the gravity of the problem. Table 76 show the incidence of capital outlay by farms on items used for security purposes of the pasture lease. Over 70 percent of all the farms provided expenditures on any significant item for farm security. About two-thirds of the farms incurred expenditures on horses and 29 percent on vehicles for making rounds over the pasture lease area. One third made expenditures on guns, ammunitions, and a fifth incurred expenditures on two-way radios.

Across locations, the farms in Bukidnon registered the highest incidence of expenditures for farm security purposes, involving 84 percent of the farms. The

Bukidnon farms also registered the highest incidence of expenditures on each of the security expenditure items (Figure 75).

Total outlay on farm security is significant at P16.16 million (Table 77). The Bukidnon farms incurred the highest expenditures (P8.16 million), accounting for roughly half of total expenditures. A third was accounted for by the South Cotabato farms. The sizes of the expenditure items are shown on Figure 76.

The major expenditure items were on patrol vehicles, at P9.6 million; on horses, at P3.6 million; and guns and ammunitions, at P1.92 million.

On the average, capital outlay for security purposes amounted to P158,402 per farm. The Bukidnon farms registered the highest average expenditures at P214,667 (Table 78).

#### **D. Willingness to Renew Pasture Lease Contracts after Expiration.**

##### **1. Willingness to Pay Rental Rate.**

Despite the many documented reports about the closing down of pasture leases due to unstable peace and order conditions in the pasture lease areas, almost all of the leaseholders (around 95 percent), have the intention of holding on to their lease holdings, and renewing their contracts after the year of expiration. In fact, none in Masbate, is willing to let go of their respective areas at the current rates of P1.00 per hectare per year (Table 79).

A figure of P20 per hectare per year has, in recent years, been floated around as the new proposed rate for renewal of pasture lease contracts. The new rates have not yet been imposed. At such rates, more than 80 percent of the leaseholders would still be willing to renew their contracts. Masbate, again, leads with more than 90 percent of holders willing to renew contracts at P20/ha. per year (Table 80 and Figure 77).

For those willing-to-pay at least P20 per hectare per year, the maximum rates they were willing to pay for the privilege of renewing their contracts after expiration were tested. The results may have been influenced by the starting value of P20. Table

81 shows the cumulative percentage of the distribution of willingness-to-pay at various rates.

On the average, only 28 percent remained to be willing to pay at least P30/ha./year. With a minimum of P50/ha./year rental rates, there are still about 20 percent willing to renew their pasture leases at those rates. Across regional locations, it appears that the Bukidnon leaseholders are willing to pay higher rates. The least willing are those from Masbate.

## **2. Value of Ranch**

### **2.1 Value of Assets Within the Pasture Lease**

On the average, the value of assets invested in the farm, excluding lease rights, is put at around P2.25 million per farm, in 1992 prices. The distribution is skewed to the left, with two-thirds of the leases having asset values not more than P2 million (Table 82). Consistent with the prevalence of relatively smaller lease sizes in Masbate, close to 60 percent of the leases have asset value of not more than P1 million (Figure 78). In contrast, half of the leases in South Cotabato have asset values ranging from P1 - 3 million.

### **2.2. Estimated market value of the pasture lease.**

The estimated market value of the lease does not only include the value of assets invested within the ranch but also the perceived value of the lease in its capacity of generating a stream of future incomes. Consistent with skewness of the distribution of lease sizes, most (56 percent) of the leases have a market value of not more than P3 million. In fact, more than 40 percent would have market value not greater than P2 million (Table 83).

There are noticeable regional differences, with Masbate ranches clustering about the P2 million-or-less mark (56 percent), and the South Cotabato ranches bundled around the P1 - P3 million or less figure (66 percent).



### 2.3. Estimated Value of Lease Rights

The divergence between the market value of the pasture lease and value of assets infused can be taken to indicate value of the rights to the lease from the viewpoint of the leaseholder. The lease rights for most (64 percent) of the leaseholders is put at a value no exceeding P1 million. Close to 40 percent would have rights values not greater than P500,000 (Table 84). The distribution is also skewed to the left (Figure 79).

### 2.4. Assets, Market and Rights Values: per hectare basis.

On a per hectare basis, the value of assets cluster about the range of P2,000 - P6,000 per hectare (Table 85). At the regional level, this pattern is observed in Masbate and South Cotabato. For Bukidnon, the clustering is about the figure not exceeding than P4,000 per hectare (Table 85).

Market values per hectare moves the distribution to the right, relative to that of asset values. On the whole, market values greater than P10,000 per hectare increase to 44 percent, compared to only about a quarter of the pasture leases, evaluated at asset values (Table 86 and Figure 80). The pattern is repeated on the regional levels (Figures 81, 82 and 83).

On a per hectare basis, the Bukidnon ranches emerge to be the most investment-intensive, with close to P10,000 per hectare worth of investments. The farms in the two other regions lag far behind. On the average, the value of assets is P6,347 per hectare.

Rights value, evaluated on a per hectare basis was put at an average of P6,576 per hectare. This may be an indication of the present value of lease rights, excluding the value of assets (Table 87). Comparing rights values across regions, the Bukidnon farms registered the highest average, placed at P7,568 per hectare.

The distribution of the value of lease rights per hectare is skewed to the left, but there is a more dispersed distribution as rights values go beyond the P10,000 per hectare mark (Figure 84).

The rental value of the pasture lease may be obtained by evaluating the rights value per hectare over the remaining duration of the lease until its expiration date.

A straightforward averaging of the values yields the following results: the rights value per hectare per year is about P800/ha. per year. This value may be taken to indicate that if this reflects the average net present value of the rents obtainable per year, then this must be, on the average the maximum "willingness-to-pay" for the pasture lease holder to retain the lease after expiration date.

The highest registered average rights value per hectare per year is in Bukidnon, placed at P966/ha per year. This result is consistent with the previous result that the Bukidnon leaseholders had the relatively higher "willingness-to-pay" values in terms of maximum rental fees to retain rights over the lease after expiration.

The results, however, are reversed for Masbate and South Cotabato. While the Masbate leaseholders were the least willing to pay rental rates higher than P20/ha. per year, they registered rights values rather close to that of Bukidnon, somewhat around P900/ha. per year. South Cotabato yield a relatively low figure at about P510/ha. per year. Nonetheless, even this figure is high, relative to the highest rental fees willingly offered for retention of lease rights.

The distribution of lease rights values per hectare per year is shown on Figure 85. In the aggregate, there is a skewed distribution of values off lease rights. A little more than half (57 percent) of the respondents have lease rights values/ha. per year between the P300/ha./year mark (Table 88). After the P400/ha/yr level, distribution becomes very widely dispersed.

### **E. Leaseholder Perceptions about the Comprehensive Agrarian Reform Program.**

By either indicator of the existence of economic rents in the pasture leases, i.e. by willingness-to-pay rental rates or by present value of lease rights, there is sufficient ground to state that there are significant interests to protect in the pasture leases over and above the value of physical investments incurred and designed for the duration of the leases.

The potential inclusion of the pasture leases in the CARP would in effect, reduce the absolute sizes of economic rents to that to be obtainable from pasture lease whose ceilings are to be stipulated by law. From the private interest viewpoint, the extension of the CARP into the pasture lease would understandably be opposed by the current leaseholders, except, of course, by those whose business have become non-viable.

There are diverging perceptions about the inclusion of pasture leases in the CARP. While on the average, 60 percent of the leaseholders are certain that the pasture leases are not included in the Program, only nine percent of the leaseholders in South Cotabato have that conviction (Figure 86). The leaseholders of Masbate appear to be the most unperturbed about the CARP. In Bukidnon and South Cotabato, the level of uncertainty is put at about a quarter of the pasture lease holders.

All leaseholder comments on the effect of CARP on the pasture leases were negative. Consistent with the higher degree of uncertainty in Bukidnon and South Cotabato, a greater portion of the negative comments were obtained from them. Observing Figure 87, a third of the leaseholders in Bukidnon perceive the CARP as discouraging to investments and improvements in the pasture leases. On the other hand, a quarter of the leaseholders in South Cotabato consider the CARP to be destructive to the cattle industry and would cause a reduction in the cattle population. Furthermore, about a quarter of the leaseholders of Bukidnon and a fifth of those in South Cotabato consider the pasture lease areas as unsuitable for crop production.

activities (by implication, subjecting them to CARP would make little sense).

### **III. Profitability Of The Pasture Leases**

A straightforward computation of the profits of the pasture leases reveals that in all locations, the pasture leases were on the average incurring substantial losses from pure livestock operations. The magnitude of revenues from livestock sales contrasted to the structure off costs of pasture lease operations as shown on Table 89. Reported operating expenditures in all locations were substantially higher than revenues from cattle sales. Total losses from livestock operations run to P4.3 million in Masbate up to P7.2 million in South Cotabato.

Livestock revenue, however, was not the sole constitution of farm revenue by the pasture lease holders as income was also generated from non-livestock activities within the pasture leases. Focusing on revenue from cropping activities within the farm (mainly corn, palay, sugarcane and coconut), it could be noted from row D1 of Table 89 that in two locations, revenue from non-livestock operations surpassed reported income from livestock operations to an extremely significant degree. In Masbate, non-livestock revenues was totaled P2.5 million as compared to P566,625 from livestock sales. In Bukidnon, non-livestock revenue reached P10.2 million compared to P1.45 million from livestock operations. In Bukidnon, income from cropping activities within the pasture leases was able to reverse the profitability position of the pasture leases in this location, registering a total profit of P3 million for 1992, or an average profit of P66,657 per farm in 1992.

In Masbate, the extent of reported losses was greatly reduced. The same holds true in the aggregate. Taking all locations, reported losses fall from P15.9 million to just P29 million, or an average loss of P19,712 per farm, or an insignificant P0.37 loss per hectare.

Still, the losses from pure livestock operations are rather intriguing. On the one hand, it has to be recalled that about a third of the sample reported to have made no sales of livestock for the year. One has to suspect that if this were indeed the case, one would have witnessed a significant increase in inventory, as sales are postponed for later months in anticipation of higher cattle prices. But no such surge in herd inventory is reflected. So, some degree of under-reporting of livestock sales may be suspected. The degree of under-reporting of revenue from livestock operations can only be made up to the maximum capability of the farms to turn out livestock for sale. It is thus asked whether some under-reporting, or even a greater degree of revenue from cropping activities on the pasture leases would have been in the interest of the ranch manager or pasture lease holder. Considering that there are legal stipulations on the extent to which the pasture lands could be used for other activities, a reporting of high incomes from non-livestock activities within the pasture leases would have generated suspicions about the possible violation of the existing rules. There was no systematic procedure in the survey instrument which would have checked for under-reporting of incomes from the pasture lease.

There was, however, a section in the instrument which inquired on gross income from all activities within the pasture lease from the pasture leaseholder's estimate. The declared estimates of all revenues are reported in Table 90. except in Mindanao, where reported income was almost identical to recorded revenues, reported estimates of gross income from all activities within the pasture lease were significantly higher. In Masbate, leaseholder estimates summed up to P6.3 million as compared to recorded income of P3.1 million. In South Cotabato, reported estimates run up to P2.8 million as compared to P1.8 million recorded revenues from all activities within pasture lease.

Using the leaseholders' estimates of gross income and recorded expenditures on all operations in the pasture lease, positive profits are revealed, as seen in Table 90.

In Masbate, estimated profits are placed at P1.4 million, with an average of P25.7 thousand per farm. In Bukidnon, the level is estimated at P2.7 million, with a mean of P49 thousand per farm. Finally, for South Cotabato, estimated profits sum up to P7 million, with a average of P125 thousand per farm.

In the aggregate, the estimated profit from the pasture leases is put at around P11.2 million, with an average of P77,233 per farm.

## **CHAPTER IV**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **1. Profile of Pasture Lease Holdings**

Pasture leases are, on the average, relatively large tracts of land, with a mean area of about 360 hectares. The distribution of leases are, however, skewed, with about 60 percent of the pasture leases smaller than 200 hectares in size. There exists large leases ranging from 1,000 to 2,700 hectares. The larger-sized pasture leases are mostly found in Mindanao, particularly South Cotabato. The smaller sized leases mostly proliferate in Masbate, Luzon.

Lease contracts are effective for 25 years, renewable for another 25 years. Most of the current leases in existence were those granted in the last two decades, although about a quarter were very old pasture leases which had been constantly renewed.

#### **2. The Structure of Initial Investments, Pasture Lease Holder Attributes, Financing of Investments, and the Character of Investment Shifts Over Time**

Initial investments in the pasture leases at the start of operations had rather been disproportionately placed in the purchase of livestock (more than 80 percent). The rest were minor expenditures on fencing the area, then developing some areas for improved pastures. On the whole, the average farm started with about 70 heads of

cattle, utilizing about 5 hectares per head of cattle, or about a starting carrying capacity figure of about 0.20, unadjusted for cattle class group. Distributionwise, about 60 percent held below 50 heads.

Formal loans market almost did not directly play a part at all in the finance of initial investments in the pasture leases, and even declined in incidence of use during the operational phase. In part, this was because pasture leases are not eligible as collateral for formal loans. The pasture leaseholders do not constitute the average "farmer". He is highly schooled, owns various assets as agricultural land, business enterprises, real estate property, and residential properties; repositories of wealth of even greater value than the assets sunk in the pasture leases. Substantially higher incomes also are earned from them than from the pasture lease activities.

That the loans market had little direct role in the finance of the initial investments and almost none in the operating phase of the pasture leasing activity may be understood in the light of the activity indirectly being financed from substantial income from and/or ability to obtain loans for other business activities.

Over time, the pattern of investments in the pasture lease, for those with recorded investments, deviated from the initial structure. The relative importance of the acquisition of livestock declined to just a third of subsequent investments. Increasing rapidly were the investments in vehicle and large tractors (and implements), until these two categories combined to about 40 percent of total investments.

For the establishment and expansion of areas for cultivating improved grass species, the investment in large (4-wheel) tractors would be understandable. Vehicles (trucks and other utility vehicles) would normally be used for transporting animals. The phenomenon, however, that over time, the area developed for improved pasture grasses remained stagnant at only about 10 percent of total leased area, makes the placing of heavy investments in large tractor implements rather puzzling.

Such behavior would have been a little better understood had it been generally acknowledged that significant areas within the pasture lease were declared to be cultivated for non-pasture activities. The land area declared to be in-use for food and other crops, however, was extremely miniscule as a percentage for the total area. On the other hand, it was determined that in the disposal of marketable cattle, the livestock was in general fetched by the buyer and shouldered transport costs.

It was pointed out, however, that there were strong indications that there are other significant non-livestock production activities taking place within the pasture lease, not declared in survey instrument, for which large tractors, trucks, and other utility vehicles would be rational to use. These indicators include (i) the acknowledgment that half of the workforce have either nothing to do, or relatively little to do, with livestock production; and (ii) the earning of a relatively substantial amount of pasture lease income from non-livestock production activities.

### **3. The extent of Investments in Livestock Productivity Enhancement**

The derived average stocking showed some improvement from the initial investment phase carrying capacity of the pasture lease, from 0.20 to 0.45 heads per hectare. The distribution, however, revealed that in fact, the larger majority had realized carrying capacities lower than the mean (about 60 percent). after an average period of 15 years.

A stipulation in every lease contract provides that within five (5) years after the start of the operation, the farm must be able to reach a carrying capacity of at least 1.0 (1 head/ha.). The inability to improve stocking rates beyond the current levels can thus, be traced to insignificant amounts of investment devoted to the expansion of areas for improved pasture grass production, among others.

Improving the starting levels of the productivity of the stock also requires that the breeding stock be genetically improved. This could be done by either purchasing improved breeds of cows and bulls, or exotic breeds of bulls could be rented for mating



with the breeding cows. Since no significant figures were obtained for expenditure on mating services by breeding bulls, the remaining resource for improving the stock would have been through the purchase of improved breeding stock.

The incidence of the purchase of new breeding stock, however, was shown to be very minimal, with only about 20 percent of the farms doing so. And among these, only the Masbate farms had some access to acquiring some fresh breeding stock via imports.

The relatively low incidence of purchase of breeding stock from the outside reveals that the pasture leases do not, in general, undertake the specialized function of cattle breeding, for which the use of large tracts of land would have been justified. Cattle raising and/or production (as opposed to breeding) thrives even in small and medium scale operations, using significantly smaller tracts of land.

#### **4. Management, Labor and Material Resource Use**

The pasture lease, in a certain sense, is labeled as an "extended family" of a "clan" enterprise. Almost a third of the pasture leases are directly managed by the pasture leaseholder himself, and close to half is managed by a relative of the leaseholder. In all, about three-fourths of the pasture leases are managed by somebody inside the extended family.

The ranch manager, like the leaseholders, are also mostly highly schooled. Most of the ranch managers were highly secretive about the amount of compensation they receive as ranch managers. For the few declaring the value of their compensation, the declared values are considered to be within the lower range of the time distribution.

Cattle production in the pasture lease, as currently managed, was found to be definitely not a labor intensive activity. Even the employment indicators at the mean, already in themselves not labor intensive - nine (9) worker per farm; an effective area of 40 hectares to a worker; or 17 heads of cattle to a worker - are rather deceptive. Distributionwise, a large majority of the farms employ no more than 6 workers.

The disclosure that over half of the workers employed in the pasture lease either have nothing to do, or have only little to do with livestock production, indicates that the total number of workers (1,290) in the 145 pasture leases cannot be directly related to livestock production in the pasture leases. Furthermore, with 63 percent of the hired workers employed as contractuels, hired only for specific functions and occasions, one cannot even say that the level of employment above could be directly related to the activities of the pasture leases.

Pasture leases, however, are not necessarily destined to be very land extensive per worker as the relatively more productive ranches of Bukidnon have demonstrated.

Compensation wise, the position of the contractuels - the large majority of the workforce, is rather extremely precarious with total compensation in cash and kind valued only at around P1,400 per worker for the duration of the entire year of 1992. This figure can only make sense if the contractuels in the pasture leases were grossly underemployed, hired and rehired at specific occasions, for particular functions.

Expenditures on variable inputs were about the same level as the expenditures on workers. The structure of expenditures, however, show that the bulk of expenditures are made on the "maintenance" of the livestock and the maintenance of vehicles and machineries in the farm.

The structure of expenditures on the maintenance of the stock, particularly on the relative importance of expenditures on feeds and concentrates, in contrast to the relative insignificance of expenditures on the maintenance of improved pastures for the production of improved grasses, reveals that leaseholders substitute nutrition from improved grasses with nutrition from market sources. With this in mind, the "necessity" to use wide tracts of land, such as an average of 160 heads of cattle per farm, arises not so much on rigid technical land-cattle coefficients but on the relative unproductiveness of the pasture lands due to the virtual absence of investments in improving their productivity.

The relatively large share of repair and maintenance of vehicles and machineries is seen as a natural offshoot of the relatively rapid growth investments of the same in proportion to other investment alternatives in the farm.

## **5. Herd Composition, Productivity and Livestock Revenue Streams**

The incidence of the absence of sales of livestock for the year, put at about one third of the pasture leases, is rather high. This phenomenon would have been intelligible had it been the case that a significant increase in livestock inventory occurred over end of the one-year period. But with the occurrence of a decline in total inventory of around four percent, the foregoing of positive revenue by a third of farms becomes puzzling. The only conclusions that could be made are either (i) no activity was taking place in fact; (ii) the leaseholder was just maintaining a token stock of cattle; (iii) a gross underreporting and/or unreporting of sales was being practiced; or (iv) the phenomenon is a fact, but the pasture leases are being used for other more productive activities, but not captured by the instrument.

The rate of sales of livestock in proportion to the opening of stock is directly related to the rate of birth of calves. The birth rate was put at around 11 percent while the sales rate was about 13 percent of the opening stock. This birth rate was an offshoot of a calving rate of around 30 percent, i.e., only 30 percent of the breeding cows were able to deliver a calf over the one-year period. On technical efficiency grounds, one should expect not less than two-thirds of the breeding cows to be giving a calf at any given year. Thus, even in the function providing cattle for the market, the pasture leases, it appears, had not exactly been very productive.

While the bulk of sales in terms of number of heads sold were a little more less proportional to the ratio of each cattle class to entire stock, the main revenue earners were the breeding bulls and breeding cows. This follows more from the fact that these classes commanded the highest prices.

On the criteria of volume, with relatively low calving rates, the pasture leases to had been relatively unproductive sources of feeder or breeding stock for the industry. On the basis of quality, the low incidence of infusion of new blood lines from external sources through purchases of new breeding cows and bulls point to a high probability that the genetic stock obtained from the pasture leases for livestock production purposes, may have less than desirable qualities, not immediately discernible by ocular inspection.

#### **6. Leaseholder Investment Behavior in the Face of the CARP and**

##### **Contending Claims, and Peace and Order Problems**

The reported problems associated with the CARP, contending claims to the pasture leases by other parties (legal or illegal), and peace-and-order were documented to exist in the areas covered. The impact on investments, however, have not been shown to be general or systematic. Though these may have caused the deferment of significant amount of investment by particular segments of the pasture leaseholders, they did not point to the hypothesized strong adverse effect on the majority of the leaseholders. In particular, only a fourth of the respondents claimed to have deferred investments in improved pastures. In the aggregate, the amount of deferred investments in pasture improvements was put at a mere P280,000. This translates to P7,000 per lease, or P240 per hectare. It appears, therefore, that with or without these often-cited problems, there would have still been very little investments in the development of the pasture leases into veritable improved pasture lands.

For the segment of the pasture leaseholders who declared experiences with the above problems to have contended with the "irritants" to pasture leasing activities by majority of them investing in private security, with about one-third also investing in guns and ammunitions. Total investments on security matters, at about P16 million, were mostly in Mindanao, where about 80 percent of the whole was spent.

## **7. Profitability of Operating and Maintaining Rights Over the Pasture Leases**

Total (reported) revenue from the sales of cattle, in general, and in all locations, were shown as not able to cover for total variable costs in operating the pasture lease over the one year period covered. Taking into account, however, revenues from other activities (cropping) within the pasture lease, losses are substantially reduced for two locations, and in one location (Bukidnon) profits turned positive.

The results presented a rather intriguing picture. First, in all locations, the pasture leasing activity, by itself, emerged as an entirely losing venture, whichever way it is looked upon. Second, in two locations, the income from non-pasture activities greatly dwarfed revenue from cattle sales. In the aggregate, non-livestock income outperformed livestock revenue by 4-to-1. Barring underreporting of cattle sales and over inflation of expenditures, it strikes one why the pasture leases are being kept at all.

A counter check of information using leaseholder estimates of pasture lease gross income from all activities provided the result that the average farm, in all locations was obtaining positive net income. Both results point a common conclusion: non-livestock activities in the pasture leases generate substantial amount of income.

## **8. Alternative Measures of Economic Rent from the Pasture Leases**

Despite the reported losses in operating the pasture leases, and despite the existence of external problems associated with the activity, almost all the leaseholders want to continue with their operations, and even 80 percent will renew their lease contracts at a higher rate of P20/ha. per year than the current P1.00/ha. per year. One only has to look at the revenue from cattle sales and losses in the pasture lease (without income from other activities), and one wonders why the pasture leases are kept at all, much less, to be renewed for another 25-year lease.

The proportion of non-livestock to livestock income indicates that the value of the pasture lease may not already lie on the potential income from livestock operations,

but from the use of the land for other agricultural activities such as sugarcane, copra, corn, and palay production. The substantial income obtain obtained from these could even be the reason enough to maintain a security force for keeping out, not mainly cattle rustlers or insurgents, but rather potential claimant by virtue of speculation on whether or not the pasture leases are to be subject to the CARP.

The worth of the pasture leases may be reflected in the value that the leaseholders have placed on just maintaining their present rights to the pasture lease for the duration of the remaining years of their contract.

While livestock production, by itself, appears to be a losing proposition, it cannot be discounted that many of the pasture leaseholders may simply be maintaining a token number of heads of cattle, just enough to ensure that the pasture lease does not appear "abandoned" - a reason for the DENR to cancel the lease - to be able to maintain activities in non-livestock operations which provide for greater net income than cattle raising. Furthermore, such non-livestock are effectively undertaken on an extensive scale, not subject to land ceilings by the CARP. The larger the size of the lease, the larger the absolute size of the economic rents obtained, with the financial cost of land placed at an insignificant P1.00/ha. per year.

Thus, it does indeed, make sense not to put investments in the expansion of improved pastures. Rather, investments would be better placed in non-livestock operations, but within the pasture lease. This may partly explain why about half of the pasture lease workers are reported to be neither partly, nor fully, involved at all in livestock production.

## 9. Recommendations

From the preceding discussions, it can be stated that the current arrangement for access and maintaining the use of the pasture leases, therefore, grossly distorts the scarcity values of the pasture leases. Definitely, the pasture leases are not just worth P1.00/ha. per year. Not even the floated rate of P20/ha. per year would approximate

the true economic value of the pasture leases. The current intensity of investment and use of the pasture leases are perpetuated because of the exclusivity of franchise given to pasture leaseholder, with validity that lasts for about a generation..

The granting of extremely scarce franchises to applicants, obtainable at artificially low rates, generates incentives to rent-seeking behavior on both sides - applicant and grantees - and would have as consequence the misallocation and maldistribution of land resources.

### 9.1.

It is recommended that the system of granting pasture lease rights be thoroughly reviewed to induce a more rational, more productive, and more transparent access to use of government property. Since the economic rents obtainable from the pasture leases appear to be substantial, a system of lease granting must be designed to obtain maximum government revenue from them. This implies that the lease rates be raised significantly, and that a systematic rates indexing be devised to reflect the growing scarcity value of land from year to year.

### 9.2.

It is also recommended that the pasture lands be opened for bidding to all interested parties, for all possible types of productive uses - provided only that they are economically and ecologically sustainable. It is also recommended that the current rule which limits non-livestock use to 10 percent of the area be recalled. As a rule which applies to all pasture leases regardless of topography and productive potentials, it has no scientific nor economic basis.

*Table 1. Level of Education of Leaseholder*

Educational Attainment	Ditribution			
	Masbate (n=56)	Bukidnon (n=45)	S. Cotabato (n=44)	All (n=145)
College grad. or higher	73	70	36	61
H.S. grad.	13	20	39	23
Elem. grad.	5	4	7	5
Elem. undergrad.	9	4	9	8
Not app.	0	2	9	3
Total	100	100	100	100



*Table 2. Pasture Lease Area Distribution*

Range (Ha.)	Percent Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Less than 100	13	13	5	10
100 - 199	46	18	16	28
200 - 299	11	29	29	22
300 - 399	9	11	9	10
400 - 499	5	9	14	9
500 - 599	4	7	9	6
600 - 699	5	2	0	3
700 - 799	0	2	9	3
800 - 899	2	7	0	3
900 - 999	0	0	0	0
1000 and above	5	2	9	6
Average (Ha.)	313.1	320.3	474.1	362.8
Minimum (Ha.)	60	50	70	50
Maximum (Ha.)	2,000	1,000	2,708	2,708
Total (%)	100	100	100	100

*Table 3. Year of Start of Operation*

Year Range	Percent Distribution			
	Masbate	Bukidnon	S. Cotabato	All
1991 and later	2	4	9	5
1981 - 90	38	27	39	34
1971 - 80	30	22	7	21
1961- 70	21	22	20	21
1951 - 60	5	21	20	15
1950 and Earlier	4	4	5	4
Total	100	100	100	100

*Table 4 Number of Heads at Start of Operation*

Range	Percent Distribution			
	Masbate	Bukidnon	S. Cotabato	All
Less than 10	7	18	7	11
<del>49%</del> 11 - 25	28	24	25	26
26 - 50	34	9	23	23
51 - 75	9	16	16	13
76 - 100	4	7	7	6
101 - 125	2	7	7	5
126 - 150	5	4	0	3
151 - 175	5	4	0	3
176 - 200	4	0	2	2
201 - 300	2	9	9	6
301 and above	0	2	4	2
Total	100	100	100	100
Mean	58	76	96	75
Standard Deviation	58	88	161	109

*Table 5. Availment of Loans for Initial Investment*

Response	Percent Distribution			
	Masbate	Bukidnon	S. Cotabato	All
Yes	20	20	32	23
No	80	80	68	77
Total	100	100	100	100

*Table 6. Availment of Loans for Pasture Lease Activities*

Response	Percent Distribution			
	Masbate	Bukidnon	S. Cotabato	All
Yes	2	7	7	5
No	98	93	93	95
Total	100	100	100	100

*Table 7. Total Market Value of Investments in the Pasture Lease, 1992*  
(In pesos)

Type of Investment	M	B	SC	ALL
1. Clearing/Cut & Burn/Destumping	4,090,297	4,356,072	13,092,500	21,538,869
2. Pasture Grass Establishment	1,769,000	2,101,910	2,521,080	6,391,990
3. Irrigation Canals	57,800	342,000	400,000	799,800
4. Fencing	3,766,205	3,332,492	10,975,400	18,074,097
5. Farm Houses & Other Bldgs./Facilities	2,283,150	1,911,560	3,809,500	8,004,210
6. Tractors (4-wheel) & Implements	2,101,500	7,607,800	5,926,000	15,635,300
7. Vehicles	880,000	5,723,400	8,280,000	14,883,400
8. Farm Implements/Tools	619,530	317,218	1,683,980	2,620,728
9. Livestock Acquired	66,344,788	86,166,350	84,638,350	237,149,488
10. Other Investments	10,000	24,000	16,000	50,000
TOTAL	81,922,270	111,882,802	131,342,810	325,147,882
Mean per Farm	1,462,898	2,486,284	2,985,064	2,242,399
Mean per hectare	4,673	7,762	6,297	6,180

*Table 8. Distribution of Investments in the Pasture Lease, 1992  
(In percent)*

Type of Investment	Masbate	Bukidnon	S. Cotabato	ALL
Livestock Acquired	81.0	77.0	64.4	72.9
Equipment and Vehicles	3.6	11.9	10.8	9.4
Clearing/Cut & Burn/Destumping	5.0	3.9	10.0	6.6
Fencing	4.6	3.0	8.4	5.6
Farm Houses & Other Bldgs./Facilities	2.8	1.7	2.9	2.5
Pasture Grass Establishment	2.2	1.9	1.9	2.0
Farm Implements/Tools	0.8	0.3	1.3	0.8
Other Investments	0.1	0.3	0.3	0.3
TOTAL	100.0	100.0	100.0	100.0

*Table 9. Land Use of Pasture Leases*  
*(As percentage of total leased area)*

Land Use	% of Total Leased Area			
	S. Cotabato	Bukidnon	Masbate	All
Improved pastures	5.7	11.0	11.1	8.9
Fodder/Feed crops	0.6	0.7	1.7	1.0
Food Crops	1.1	1.7	2.6	1.8
Natural pastures	59.1	55.0	53.3	53.1
Forested	18.0	7.8	5.9	11.3
Undeveloped	15.5	23.9	25.4	24.0
Total	100.0	100.0	100.0	100.0



*Table 10. Age of Ranch Manager*

Range (years)	Percent Distribution			
	SC (n=42)	B (n=45)	M (n=56)	Total (n=143)
21 - 30	0.00	6.67	5.36	4.20
31 - 40	14.29	26.67	42.86	29.37
41 - 50	23.81	40.00	32.14	32.17
51 - 60	30.95	13.33	12.50	18.18
61 - 70	21.43	11.11	5.36	11.89
71 - 80	7.14	0.00	1.79	2.80
Above 80	2.38	2.22	0.00	1.40
Total	100.00	100.00	100.00	100.00

*Table 11. Monthly Salary of Ranch Manager*

Range (In pesos/mo.)	Percent Distribution			
	M (n=56)	B (n=45)	SC (n=44)	ALL (n=145)
Refused to disclose	60.7	66.7	72.7	66.2
Less than 1,001	21.4	4.4	0.0	9.7
1,001 - 2,000	12.5	8.9	9.1	10.3
2,001 - 4,000	3.6	4.4	11.4	6.2
4,001 - 6,000	0.0	6.7	4.5	3.4
6,001 - 8,000	1.8	4.4	0.0	2.1
8,001 and above	0.0	4.4	2.3	2.1
Total	100.0	100.0	100.0	100.0
Mean (Per head of cattle)	23.3	38.3	20.7	27.0
Mean (Per Farm)	834	4,310	3,567	2,567

*Table 12. Share of Ranch Manager of Net Sales*

Response	Percent of Subsample			
	M	B	SC	ALL
Share	68	62	89	72
With share	32	38	11	28
Mean percentage share for those with share (%)	22	27	11	23

*Table 13. Changes in Composition of Stock, All Provinces, 1992*  
*(As percentage of opening stock figure)*

Cattle Class	% Change	Total ('000 heads)		
		Closing	Opening	Change
Breeding Cows	1.3	9.58	9.46	0.12
Heifers	(26.1)	1.61	2.18	(0.57)
Calves	23.40	3.48	2.82	0.66
Breeding Bulls	(1.8)	2.16	2.20	(0.04)
Steers	(17.0)	1.22	1.47	(0.25)
Herd	(0.4)	18.05	18.13	(0.08)

*Table 14. Changes in Composition of Stock, Masbate, 1992  
(As percentage of opening stock figure)*

Cattle Class	% Change	Total ('000 heads)		
		Closing	Opening	Change
Breeding Cows	0.6	3.38	3.36	0.02
Heifers	(59.8)	0.33	0.82	(0.49)
Calves	9.1	0.96	0.88	0.08
Breeding Bulls	(2.7)	0.71	0.73	(0.02)
Steers	(36.0)	0.32	0.50	(0.18)
Herd	(9.4)	5.70	6.29	(0.59)

*Table 15. Changes in Composition of Stock, Bukidnon, 1992*  
*(As percentage of opening stock figure)*

Cattle Class	% Change	Total ('000 heads)		
		Closing	Opening	Change
Breeding Cows	1.9	2.67	2.62	0.05
Heifers	7.0	0.76	0.71	0.05
Calves	47.2	1.31	0.89	0.42
Breeding Bulls	(7.8)	0.94	1.02	(0.08)
Steers	4.5	0.69	0.66	0.03
Herd	8.0	6.37	5.90	0.47

*Table 16. Changes in Composition of Stock, So. Cotabato, 1992*  
*(As percentage of opening stock figure)*

Cattle Class	% Change	Total ('000 heads)		
		Closing	Opening	Change
Breeding Cows	1.4	3.53	3.48	0.05
Heifers	(18.8)	0.52	0.64	(0.12)
Calves	16.2	1.22	1.05	0.17
Breeding Bulls	13.3	0.51	0.45	0.06
Steers	(34.4)	0.21	0.32	(0.11)
Herd	0.8	5.99	5.94	0.05

*Table 17. Average Carrying Capacity of Pasture Leases*

Carrying Capacity (Head/Ha.)	No. of Samples			
	S. Cotabato	Bukidnon	Masbate	All
Less than 0.10	9.5	17.8	24.1	17.7
0.10 - 0.19	21.4	6.7	13.0	13.5
0.20 - 0.29	14.3	24.4	11.1	16.3
0.30 - 0.39	11.9	11.1	11.1	11.3
0.40 - 0.49	16.7	2.2	7.4	8.5
0.50 - 0.59	7.1	4.4	3.7	5.0
0.60 - 0.69	9.5	0.0	5.6	5.0
0.70 - 0.79	4.8	8.9	3.7	5.7
0.80 - 0.89	2.4	4.4	3.7	3.5
0.90 - 0.99	0.0	2.2	7.4	3.5
1.0 and above	2.4	17.8	9.3	9.9
Total	100.0	100.0	100.0	100.0
Average Carrying Capacity	0.34	0.56	0.43	0.45
Ave. no. of ha./head	2.9	1.8	2.3	2.2



*Table 18. Herd Accounting Parameters  
(As percentage of opening stock)*

Entry	Provincial Percentage			
	M	B	SC	ALL
Ave. no. of heads for Opening Stock	143.0	175.0	163.0	159.0
Opening Stock	100.0	100.0	100.0	100.0
Calves born	2.1	14.9	17.8	11.3
Cattle purchased	2.1	7.4	1.8	3.8
Deaths/losses	2.1	4.0	3.1	3.1
Sold	7.0	16.0	16.6	13.2
Slaughtered	0.7	1.1	1.2	0.6
Closing stock	91.6	101.7	97.5	96.8
Change in inventory	(8.4)	1.7	(2.5)	(3.2)

*Table 19. Purchase for Herd, by Farms 1992*

Cattle Class	M	B	SC	ALL
Breeding Bull	24	21	18	21
Breeding Cow	7	16	5	10
Calves	13	4	5	7
Heifers	13	4	0	6
Steers	9	2	0	3

Table 20. Purchase for Herd, by aggregated cattle classes, 1992

Purchases by Cattle Class	Percent of Farms			
	M	B	SC	ALL
Calves	4	13	0	7
Steer	8	20	0	12
Breeding Cows & Heifers	42	30	33	45
Breeding Bulls	46	37	67	46
Total	100	100	100	100

*Table 21. Total Purchases of Cattle and Average Purchase Per Farm*

Entry	M	B	SC	ALL
Total No. of heads	274	540	147	961
Share of Total (%)	28.5	56.2	15.3	100
Ave. no. of heads of purchase/farm	4.9	12.0	3.3	6.5

*Table 22. Average Sales of Livestock per Farm, by Surplus and Culled, 1992*  
*(In number of heads per farm)*

Cattle Class	SC		B		M		ALL	
	Surplus	Culled	Surplus	Culled	Surplus	Culled	Surplus	Culled
Breeding bull 3	8.1	2.8	1.0	1.6	18.3	5.0	9.0	2.5
Breeding bull 2	5.6	9.0	2.5	1.3	0.0	15.0	3.9	6.2
Breeding bull 1	8.3	2.5	9.6	6.7	4.8	20.0	7.4	7.5
Breeding cow	6.0	8.3	5.6	19.4	4.9	16.3	5.4	12.2
Heifer 2	8.9	4.0	3.8	7.5	4.4	0.0	6.1	5.3
Heifer 1	14.3	1.3	17.6	3.3	10.4	0.0	14.9	2.3
Steer 3	2.0	2.0	5.4	33.2	11.6	0.0	5.6	24.3
Steer 2	8.0	0.0	5.3	12.5	9.7	2.5	7.6	7.5
Steer 1	5.0	0.0	22.3	0.0	6.1	2.5	13.4	2.5
Male calf	1.7	0.0	11.1	2.7	7.3	0.0	8.0	2.7
Female calf	3.0	0.0	5.9	1.0	6.3	19.8	5.0	1.0
Total	70.9	29.9	90.2	89.2	83.7	81.1	86.2	73.8

*Table 23. Distribution of Sales of Livestock: Surplus + Culls, 1992*  
*(In percent)*

Cattle Class	M	B	SC	ALL
Breeding bull 3	24.6	22.5	9.4	17.5
Breeding Cows	19.2	24.0	20.2	21.5
Heifers	20.8	26.5	23.6	24.2
Steer s	21.1	23.1	23.9	23.1
Calves	14.3	3.9	23.0	13.8
Total	100.0	100.0	100.0	100.0

*Table 24. Mode of Payment for Sold Cattle, 1992*  
*(As percent of livestock sold)*

Mode of Payment	M	B	SC	ALL
At farm, buyer shoulders transport cost	86.2	83.1	97.6	89.3
At buyer's centre, rancher shoulders transport cost	13.9	16.9	2.4	10.7
Total	100.0	100.0	100.0	100.0

*Table 25. Average Farmgate Prices of Sold Cattle, 1992*  
(In pesos per head)

Cattle Class	M	B	SC	ALL
Breeding bull 3	17,834	18,729	24,000	19,553
Breeding bull 2	10,000	14,653	15,850	14,163
Breeding bull 1	6,777	8,900	11,566	12,258
Breeding cow	11,887	14,024	23,511	14,364
Heifer 2	7,400	13,850	10,408	11,599
Heifer 1	7,000	9,719	9,360	9,307
Steer 3	6,200	13,375	14,300	11,777
Steer 2	5,500	11,465	9,783	11,001
Steer 1	5,969	8,750	9,000	7,858
Male calf	7,000	5,452	7,688	5,805
Female calf	5,167	4,625	6,929	5,015

N.B. - net of transport cost shouldered by rancher



*Table 26. Total Revenue from Sales of Cattle, 1992*

Cattle Class	M	B	SC	ALL
Breeding bull 3	77,000	310,666	159,780	547,446
Breeding bull 2	10,000	65,750	129,000	204,750
Breeding bull 1	55,875	130,750	90,500	274,125
Breeding cow	149,000	283,400	399,440	831,840
Heifer 2	74,000	207,500	129,450	410,950
Heifer 1	42,000	97,000	115,200	254,200
Steer 3	31,000	97,250	83,000	211,250
Steer 2	21,000	129,750	27,000	177,750
Steer 1	47,750	35,000	58,700	141,250
Male calf	31,000	57,000	123,000	211,000
Female calf	28,000	41,500	48,500	118,000
Total	566,625	1,455,566	1,363,570	3,382,561
Average per farm	132,230	244,066	248,011	234,839

*Table 27. Distribution of Revenue Among Cattle Classes, 1992*  
*(In percent)*

Cattle Class	M	B	SC	ALL
Breeding bulls	35.3	33.5	30.2	31.8
Breeding cows	31.3	23.9	33.5	29.7
Heifers	11.6	19.4	15.8	17.1
Steers	15.9	17.0	10.5	13.7
Calves	5.9	6.2	10.1	7.6
Total	100.0	100.0	100.0	100.0

*Table 28. Structure of Workers in Pasture Leases, 1992*

Category	Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Total no. of workers	395	626	269	1,290
Share (%)	31	48	21	100
Ave. no. of workers:				
* Per farm basis	7.0	15.0	7.0	9.0
Ave. workload per worker:				
* No. of hectares/worker	45.8	24.0	79.8	40.4
* Heads of cattle/worker	18	11	27	17
Hired Labor (%)	95.2	96.0	95.9	95.7
Family labor (%)	4.8	4.0	4.1	4.4

*Table 29. Distribution of Hired Workers in the Pasture Leases: Per Farm Basis, 1992*  
*(Cumulative percentages)*

Range	Cumulative Percentages			
	Masbate	Bukidnon	S. Cotabato	All
1 - 2	18.9	17.9	29.5	22.1
3 - 4	43.4	30.7	45.4	40.5
5 - 6	64.2	40.9	70.4	59.6
7 - 8	73.6	46.0	81.8	68.4
9 - 10	81.1	53.7	81.8	73.5
11 - 12	86.8	56.3	84.1	77.2
13 - 14	86.8	61.4	86.4	79.4
15 - 16	88.7	64.0	93.2	83.1
17 - 19	92.5	74.2	97.9	89.0
20 and above	100.0	100.0	100.0	100.0

*Table 30. Distribution of Workload of Hired Workers: Area Basis, 1992*  
*(Cummulative Percentage Basis)*

Range (No. of has. per worker)	Cummulative Percentages			
	Masbate	Bukidnon	S. Cotabato	All
Less than 25	100.0	100.0	100.0	100.0
26 - 50	64.2	50.0	85.4	66.4
51 - 75	43.4	30.0	65.9	46.3
76 - 100	28.0	27.5	51.3	35.1
101 - 125	16.7	17.5	44.0	25.4
126 - 150	5.4	12.5	34.2	16.4
151 - 175	3.5	10.0	26.9	12.6
175 and above	1.6	10.0	22.0	10.4
Total	100.0	100.0	100.0	100.0

*Table 31. Distribution of Hired Workers: Heads of Cattle Basis, 1992*  
*(In cumulative percentage)*

Range (No. of cattle per worker)	Cumulative Distribution			
	M	B	SC	ALL
Less than 10	100.0	100.0	100.0	100.0
11-20	57.4	59.5	77.5	64.5
21 - 30	31.8	24.4	57.5	37.9
31 - 40	21.2	10.8	45.0	25.8
41 - 50	16.9	10.8	27.5	18.5
51 - 60	14.8	8.1	20.0	14.5
61 - 70	12.7	5.4	17.5	12.1
71 - 80	10.6	5.4	15.0	10.5
Above 80	10.6	2.7	12.5	8.9

*Table 32. Distribution of Hired Workers According to Function, 1992*

Type of Activity	% Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Purely livestock-related	14.2	17.9	29.4	19.2
Mainly livestock/partly non-livestock-related	31.4	24.9	22.7	26.4
Mainly non-livestock/partly livestock-related	24.3	20.0	17.4	20.8
Purely non-livestock-related	30.1	35.6	28.6	32.5
Others	0.0	1.6	1.9	1.2
Total	100.0	100.0	100.0	100.0

*Table 33. Compensation Scheme for Regular Hired Workers, 1992*

Compensation Scheme	Distribution			
	M	B	SC	ALL
Cash and Kind	25	22	29	76
Cash only	1	2	1	4
Kind only	10	11	11	32
Total	36	35	41	112



*Table 34. Compensation Scheme for Contractual Hired Workers, 1992*  
*(As % of farms with regular contractual hired workers)*

Compensation Scheme	Percent Distribution			
	Masbate	Bukidnon	S. Cotabato	All
Cash only	0.0	0.0	0.0	0.0
Kind only	12.5	10.7	11.8	11.7
Cash and Kind	87.5	89.3	88.2	88.3
Total	100.0	100.0	100.0	100.0

*Table 35. Total Cash Compensation for All Workers in Pasture Lease, 1992  
(In pesos)*

Worker Type	Distribution			
	M	B	SC	ALL
Family Workers	120,100	529,960	240,000	890,060
Contractual hired	504,065	797,145	469,300	1,770,510
Regular hired	1,546,200	2,570,988	2,651,582	6,768,770
Total Cash	2,170,365	3,898,093	3,360,882	9,429,340

*Table 36. Total Compensation in Kind for All Workers in Pasture Lease, 1992  
(In pesos)*

Worker Type	Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Contractual hired	58,440	6,880	11,550	76,870
Family Workers	135,000	9,000	840	144,840
Regular hired	326,400	152,660	141,300	620,360
Total	519,840	168,540	153,690	842,070

*Table 37. Total Compensation, Cash and Kind for All Workers in Pasture Lease, 1992*

Worker Type	Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Family Workers	255,100	538,962	240,840	1,034,902
Contractual hired	562,505	804,025	480,850	1,847,380
Regular hired	1,872,600	2,723,648	2,792,882	7,389,130
Total	2,690,205	4,066,633	3,514,572	10,271,410

*Table 38. Average Cash Compensation for All Workers: Per Farm Basis, 1992*

Worker Type	Distribution			
	M	B	SC	ALL
Contractual hired	15,752	28,469	27,606	22,994
Family Workers	15,944	41,459	40,140	34,497
Regular hired	44,177	77,909	66,290	62,674

*Table 39. Average Compensation in Kind for All Workers: Per Farm Basis, 1992*

Worker Type	Distribution			
	M	B	SC	ALL
Contractual hired	14,610	2,293	5,775	8,541
Regular hired	29,673	11,743	11,775	17,232
Family Workers	67,500	9,000	840	36,210

*Table 40. Average Cash Compensation for All Workers: Per Worker Basis, 1992*

Worker Type	Distribution			
	M	B	SC	ALL
Contractual hired	1,720	985	1,980	1,322
Family Workers	5,798	14,567	21,895	13,100
Regular hired	9,486	16,170	20,241	14,942

*Table 41. Average Compensation in Kind for All Workers: Per Worker Basis, 1992*

Worker Type	Distribution			
	M	B	SC	ALL
Contractual hired	199	9	49	57
Family Workers	9,000	450	120	2,299
Regular hired	2,002	960	1,079	1,369



*Table 42. Provision of Fringe Benefits*

Response	Percent Distribution			
	M	B	SC	ALL
Yes	65	60	68	65
No	35	40	32	35
Total	100	100	100	100

*Table 43. Value of Fringe Benefits Provided to Hired Workers, 1992*  
*(In pesos)*

Type of Fringe Benefit	Distribution			
	M	B	SC	ALL
Meals	9,960	7,200	2,400	19,560
Housing	133,790	103,600	15,120	252,510
Others	400	8,100	93,800	102,300
Any type	497,020	277,300	190,730	965,050
Total	641,170	396,200	302,050	1,339,420

**Table 44. Structure of Expenditures on Variable Inputs**  
(In pesos)

Expenditure Type	Distribution			
	M	B	SC	ALL
A. On pasture improvement	930,898	1,171,692	435,580	2,538,170
1. Planting materials	21,945	118,720	17,730	158,395
2. Fertilizers	92,130	478,455	17,500	588,085
3. Repair/maintenance fences	805,185	483,077	400,350	1,688,612
4. Pesticides	11,638	91,440	0	103,078
B. On Livestock care	1,085,669	1,976,484	1,040,842	4,102,995
5. Veterinary items	794,039	668,865	192,888	1,655,792
6. Feeds/concentrates	290,030	946,869	536,785	1,773,684
7. Roughages	1,100	317,300	267,394	585,794
8. External professional services	500	43,450	43,775	87,725
C. Equipment repairs/maintenance	78,440	1,136,169	706,287	1,920,896
9. On farm machines/equipment	59,250	390,917	287,398	737,565
10. On transport vehicles	11,510	588,672	375,685	975,867
11. On buildings/facilities	7,680	156,580	43,204	207,464
D. Rentals	17,788	152,314	22,859	192,961
12. Pasture lease	17,338	14,414	20,859	52,611
13. Machine/vehicles	450	137,900	2,000	140,350
E. Others	19,865	122,375	90,600	232,840
TOTAL	2,132,660	4,559,034	2,296,168	8,987,862

*Table 45. Structure of Expenditures on Variable Inputs, 1992*  
*(As percentage of Total Expenditures)*

Expenditure Type	M	B	SC	ALL
A. On pasture improvement	43.6	25.7	19.0	28.2
1. Planting materials	1.0	2.6	0.8	1.8
2. Fertilizers	4.3	10.5	0.8	6.5
3. Repair/maintenance of fences	37.8	10.6	17.4	18.8
4. Pesticides	0.5	2.0	0.0	1.1
B. On Livestock care	50.9	43.4	45.3	45.7
5. Veterinary items	37.2	14.7	8.4	18.4
6. Feeds/concentrates	13.6	20.8	23.4	19.7
7. Roughages	0.1	7.0	11.6	6.5
8. External professional services	0.0	1.0	1.9	1.0
C. Equipment repairs/maintenance	3.7	24.9	30.8	21.4
9. On farm machines/equipment	2.8	8.6	12.5	8.2
10. On transport vehicles	0.5	12.9	16.4	10.9
11. On buildings/facilities	0.4	3.4	1.9	2.3
D. Rentals	0.8	3.3	1.0	2.1
12. Pasture lease	0.8	0.3	0.9	0.6
13. Machine/vehicles	0.0	3.0	0.1	1.6
E. Others	0.9	2.7	3.9	2.6
TOTAL	23.7	50.7	25.6	100.0

*Table 46. Summary Structure of Expenditures on Variable Inputs, 1992*  
*(As percent of total expenditures)*

Expenditure Type	Percent of Total Expenditure			
	M	B	SC	ALL
Pasture improvement	43.6	25.7	19.0	28.2
Livestock care	50.9	43.4	45.3	45.7
Equipment repairs/maintenance	3.7	24.9	30.8	21.4
Rentals	0.8	3.3	1.0	2.1
Others	0.9	2.7	3.9	2.6
Total	23.7	50.7	25.5	100.0

*Table 47. Composition of the Major Expenditure Categories*

Expenditure Type	Distribution			
	M	B	SC	ALL
A. On pasture improvement	100.00	100.00	100.00	100.00
1. Planting materials	2.36	10.13	4.07	6.24
2. Fertilizers	9.90	40.83	4.02	23.17
3. Repair/maintenance fences	86.50	41.23	91.91	66.53
4. Pesticides	1.25	7.80	0.00	4.06
B. On Livestock care	100.00	100.00	100.00	100.00
5. Veterinary items	73.14	33.84	18.53	40.36
6. Feeds/concentrates	26.71	47.91	51.57	43.23
7. Roughages	0.10	16.05	25.69	14.28
8. External professional services	0.05	2.20	4.21	2.14
C. Equipment repairs/maintenance	100.00	100.00	100.00	100.00
9. On farm machines/equipment	75.54	34.41	40.69	38.40
10. On transport vehicles	14.67	51.81	53.19	50.80
11. On buildings/facilities	9.79	13.78	6.12	10.80
D. Rentals	100.00	100.00	100.00	100.00
12. Pasture lease	97.47	9.46	91.25	27.27
13. Machine/vehicles	2.53	90.54	8.75	72.73
E. Others	100.00	100.00	100.00	100.00

*Table 48. Existence of Income from Other Farm Activities Within Pasture Lease, 1992*  
*(As percent of farms)*

Other Activities/Commodities	Percent Distribution			
	M	B	SC	ALL
Corn	10.7	44.4	15.9	22.8
Palay	14.3	11.1	0.0	9.0
Copra	10.7	0.0	6.8	6.2
Sugarcane	0.0	8.9	0.0	2.3
Others	1.8	13.3	6.8	6.9
Total	37.5	77.8	29.5	47.6

*Table 49. Existence of Income from Other Farm Activities Within Pasture Lease, 1992*  
*(As percent of farms)*

Other Activities/Commodities	Percent Distribution			
	M	B	SC	ALL
Corn	10.71	44.44	15.91	22.8
Palay	14.29	11.11	0.00	9.0
Copra	10.71	0.00	6.82	6.2
Sugarcane	0.00	8.89	0.00	2.3
Others	1.79	13.33	6.82	6.9
Total	37.50	77.78	29.55	47.59



*Table 50. Corn Output from Pasture Leases, 1991*  
*(In metric tons)*

Entry	Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Total	5.0	339.5	47.7	715.8
Highest Value	1.5	105.0	19.5	105.0
Lowest Value	0.5	0.5	2.0	0.5
Mean	0.8	17.0	6.8	21.7

*Table 51. Output and Income from Sugar Cane: Bukidnon, 1992*

Entry	Volume (m.t.)	Income (Pesos)
Total	104.5	568,647
Highest Value	70.0	340,000
Lowest Value	2.9	17,160
Mean	26.1	142,162

*Table 52. Palay Output from Pasture Leases, 1992  
(In metric tons).*

Entry	Distribution		
	M	B	ALL
Total	32.2	39.8	71.9
Highest Value	15.0	27.0	27.0
Lowest Value	0.8	0.3	0.3
Mean	4.0	8.0	5.5

*Table 53. Output and Income from Other Sources  
Bukidnon and South Cotabato, 1992*

Activities	Volume (m.t.)	Income (Pesos)
Cotton	2.5	75,000
Sorghum	3.5	14,000
Banana	0.2	1,150
Vegetables	1.6	5,790
Coffee	0.8	62,500
Peanuts	0.5	1,000

*Table 54. Output, Total Income, and Weighted Mean Farm Income  
From Non-Pasture Activities*

Activity	Volume of Output (In m.t.)	Total Income (Pesos)	Percent Share (%)	Mean Farm Income (Pesos)
Corn	392.2	1,797,847	45.7	55,170
Copra	218.8	1,015,950	25.9	112,883
Sugarcane	104.5	568,650	14.5	142,160
Palay	71.9	386,200	9.8	27,708
Others		159,440	4.1	15,944
Total		3,925,087	100.0	
Weighted Mean				56,882

*Table 55. Ownership of Non-Pasture Assets*

Asset Type	Percent of Sample			
	M	B	SC	ALL
Residential House & lot	80	89	73	81
Agricultural Land	68	73	59	67
Business/Enterprise	27	33	43	34
Real Estate Property	4	36	39	24
Other Assets	4	16	5	8

Table 56. Market Value of Agricultural Land Holdings, 1992.

Range	Percent Distribution			
	M	B	SC	ALL
510,000 or less	80.6	57.6	46.2	63.2
510,001 - 1,000,000	11.1	12.1	30.8	16.8
1,000,001 - 2,250,000	5.6	15.2	3.8	8.1
2,250,001 - 4,500,000	0.0	12.1	0.0	4.2
4,500,001 - 5,300,000	0.0	0.0	7.7	2.1
5,300,001 - 10,400,000	2.8	0.0	11.5	4.2
10,400,001 - 18,640,000	0.0	3.0	0.0	0.0
Total	100.0	100.0	100.0	100.0
Percent Share	18.0	40.0	42.0	100.0
Total	21,066,840	49,460,000	5,191,500	122,441,840
Mean	585,190	1,498,788	1,996,731	1,288,861

*Table 57. Market Value of Assets in Business Enterprises, 1992*

Range	Percent Distribution			
	M	B	SC	ALL
0 - 2,500,000	92.9	78.6	31.3	65.9
2,500,001 - 4,000,000	7.1	7.1	25.0	13.6
4,000,001 - 5,000,000	0.0	14.3	18.8	11.4
5,000,001 - 6,000,000	0.0	0.0	12.5	4.5
6,000,001 - 10,000,000	0.0	0.0	6.3	2.3
10,000,001 - 21,000,000	0.0	0.0	6.3	2.3
Total	100.0	100.0	100.0	100.0
Total	5,441,550	19,017,000	76,990,000	101,448,550
Percent Share	5.4	18.7	75.9	100.0
Mean	388,682	1,358,357	4,811,875	2,305,649



*Table 58. Market Value of Real Estate Property, 1992*

Range	Percent Distribution			
	M	B	SC	ALL
0 - 2,000,000	100.0	62.5	68.8	67.6
2,000,001 - 4,000,000	0.0	18.8	12.5	14.7
4,000,001 - 6,000,000	0.0	12.5	0.0	5.9
6,000,001 - 7,500,000	0.0	6.3	6.3	5.9
7,500,001 - 24,000,000	0.0	0.0	6.3	2.9
24,000,001 - 50,000,000	0.0	0.0	6.3	2.9
Total	100.0	100.0	100.0	100.0
Total	1,110,000	35,950,000	91,431,000	128,494,000
Percent Share (%)	0.9	28.0	71.1	100.0
Mean	555,000	2,246,875	5,714,625	3,779,235

*Table 59. Market Value of Residential Property, 1992*

Range	Percent Distribution			
	M	B	SC	ALL
0 - 500,000	67.4	56.4	44.8	27.7
500,001 - 800,000	4.7	17.9	10.3	10.8
800,001 - 1,000,000	11.6	2.6	10.3	8.1
1,000,001 - 1,500,000	4.7	2.6	20.7	8.1
1,500,001 - 2,000,000	2.3	7.7	3.4	4.5
2,000,001 - 2,500,000	7.0	2.6	3.4	4.5
2,500,001 - 3,000,000	2.3	5.1	0.0	2.7
3,000,001 - 6,000,000	0.0	5.1	6.9	3.6
Total	100.0	100.0	100.0	100.0
Total	24,591,680	32,383,000	31,494,000	88,468,680
Percent Share	27.8	36.6	35.6	100.0
Mean	571,900	830,333	1,086,000	797,015

Table 60. Market Value of Non-Pasture Major Assets of Leaseholders, 1992

Range	Percent Distribution			
	M	B	SC	ALL
1,500,000 or less	83.7	48.8	40.0	59.2
1,500,001 - 2,900,000	12.2	19.5	15.0	15.4
2,900,001 - 5,520,000	2.0	7.3	15.0	7.7
5,520,001 - 9,000,000	0.0	9.8	10.0	6.2
9,000,001 - 10,404,000	2.0	2.4	7.5	3.8
10,404,001 - 20,140,000	0.0	12.2	7.5	6.2
20,140,001 - 76,000,000	0.0	0.0	5.0	1.5
Total	100.0	100.0	100.0	100.0
Total	52,493,070	152,270,000	252,959,000	457,722,070
Percent Share (%)	11.5	33.2	55.0	100.0
Mean	1,071,287	3,713,902	6,323,975	3,520,939

*Table 61. Sources of Household Income*

Source	Percent of Sample			
	M	B	SC	ALL
Pasture Lease	91	71	84	83
Business/Enterprise	43	78	77	64
Wages/Salaries	66	49	41	53
Others	2	9	16	8

Table 62. Income from the Pasture Lease

Range	Percent Distribution			
	M (n=51)	B (n=32)	SC (n=37)	ALL (n=120)
0 - 25,000	11.8	21.9	5.4	12.5
25,001 - 50,000	31.4	25.0	21.6	26.7
50,001 - 100,000	25.5	9.4	18.9	19.2
100,001 - 202,500	17.6	12.5	13.5	15.0
202,501 - 318,000	5.9	12.5	10.8	9.2
318,001 - 500,000	3.9	9.4	8.1	6.7
500,001 - 657,000	2.0	6.3	8.1	5.0
Above 657,000	2.0	3.1	13.5	5.8
Total (P'000)	6,264	11,374	12,820	30,458
Percent Share (%)	(20.6)	(37.3)	(42.1)	(100)
Average Income (P'000)	122,814	355,424	346,495	253,811
Total	100.00	100.00	100.00	100.00

*Table 63. Income from Business Establishments*

Range	Percent Distribution			
	M (n=24)	B (n=35)	SC (n=34)	ALL (n=92)
0 - 100,000	79.2	45.7	29.4	48.39
100,001 - 200,000	8.3	20.0	23.5	18.28
200,001 - 300,000	4.2	2.9	11.8	6.45
300,001 - 500,000	0.0	8.6	8.8	6.45
500,001 - 1,000,000	8.3	17.1	8.8	11.83
1,000,001 and above	0.0	5.7	17.6	8.60
Total (P'000)	2,358	11,856	35,452	49,666
Percent Share (%)	(4.7)	(23.9)	(71.4)	(100)
Average Income (P'000)	98,242	338,743	1,042,712	534,043
Total	100.0	100.0	100.0	100.0

*Table 64. Income from Salaries and Wages, 1992*

Range	Percent Distribution			
	M (n=37)	B (n=22)	SC (n=18)	ALL (n=77)
0 - 48,600	29.7	22.7	38.9	29.9
48,601 - 97,200	32.4	36.4	11.1	28.6
97,201 - 200,000	21.6	31.8	22.2	24.7
200,001 - 400,000	8.1	9.1	22.2	11.7
400,401 - 600,000	8.1	0.0	5.6	5.2
Total (P'000)	4,678	2,411	3,044	10,133
Percent Share (%)	(46.2)	(23.8)	(30)	(100)
Average Income (P'000)	126,433	109,602	169,111	131,601
Total	100.0	100.0	100.0	100.0

*Table 65. Income from Various Other Sources, 1992*

Range	Percent Distribution			
	M (n=1)	B (n=4)	SC (n=7)	ALL (n=12)
Total (P'000)	16	238	2,433	2,687
Percent Share (%)	0.6	8.8	90.6	100
Average Income (P'000)	16,400	59,375	347,571	223,908



*Table 66. Income from Various Other Sources, 1992*

Range	Percent Distribution			
	M (n=54)	B (n=43)	SC (n=43)	ALI (n=140)
0 - 200,000	61.1	41.9	30.2	45.7
200,001 - 400,000	25.9	23.3	14.0	21.4
400,001 - 600,000	1.9	7.0	14.0	7.1
600,001 - 800,000	5.6	11.6	7.0	7.9
800,001 - 1,000,000	5.6	9.3	4.7	6.4
1,000,001 - 1,500,000	1.9	2.3	7.0	3.6
1,500,001 - 2,000,000	0.0	0.0	2.3	0.7
2,000,001 - 3,000,000	0.0	0.0	4.7	1.4
3,000,001 and above	0.0	4.7	14.0	5.7
Total (P'000)	13,316	25,878	53,750	92,944
Percent Share (%)	14.4	27.8	57.8	100
Average Income (P'000)	246,587	601,821	1,249,988	663,882
Total	100.0	100.0	100.0	100.0

*Table 67. Relative Importance of Sources of Household Income, 1992*

Source	M	B	SC
Business Enterprise	17.7	45.8	66.0
Pasture Lease	47.0	44.0	23.9
Wages and Salaries	35.1	9.3	5.7
Others	0.1	0.9	4.5
Total	100.0	100.0	100.0

*Table 68. Number of Security Team Members*

Range	Percent Distribution			
	M	B	SC	ALL
1 - 2	38	39	59	45
3 - 4	13	23	18	20
5 - 6	25	23	18	21
7 - 8	13	6	0	5
9 - 10	0	6	6	5
11 - 15	13	3	0	4
Total	100	100	100	100
Mean	1	3	1	2

*Table 69. Type and Incidence of Deferred Investments*

Investment Type	Percent Distribution			
	SC	B	M	ALL
1. Expansion of Improved Pasture	30	27	20	25
2. Increase in Breeding Cows	52	18	27	32
3. Increase in Breeding Bulls	18	16	25	20
4. Herd Expansion	25	11	20	19
5. Fencing	11	18	16	15
6. Equipment	11	18	5	11

*Table 70. Deferred Investments in Breeding Cows*

Indicators	Percent Distribution			
	M	B	SC	ALL
Incidence (%)	27	18	52	32
No. of Heads	1,286	1,030	3,306	5,622
Percent Increase (%)	3.6	1.7	2.8	2.7
Heads/Ha.	0.15	0.07	0.26	0.15
Total Value (P'000)	5,453	10,220	27,548	43,221
Mean Value per Lease (P'000)	364	1,278	1,198	940
Value per Ha. (P)	2,270	3,500	2,870	2,800

*Table 71. Deferred Investments in Improved Pasture*

Indicators	Percent Distribution			
	M	B	SC	ALL
Incidence (%)	20	27	30	25
As Percentage of Lease Area	32	9	41	28
Total Value (P'000)	273.2	350.2	219.6	279.5
Value per Ha. (P)	240	270	210	240
Mean Value (P'000)	24.8	29.2	16.9	7.8

*Table 72. Deferred Investments in Breeding Bulls*

Indicators	Percent Distribution			All
	Masbate	Bukidnon	S. Cotabato	
Incidence (%)	25	16	18	20
No. of Heads	159	62	42	263
Percent Increase (%)	34.6	83	21.1	43.6
Total Value (P'000)	1,527	1,010	856	3,393
Mean Value per Lease (P'000)	109	144	107	117
Value per Ha. (P)	398	379	325	372

*Table 73. Deferred Investments in Herd Expansion*

Indicators	Percent Distribution		
	M	B	SC
Incidence (%)	20	11	25
No. of Heads	1,363	490	4,033
Percent Increase (%)	82	46	23
No. of Additional Heads per Ha.	0.7	0.3	1.0
Total Value (in millions)	7.5	11.5	28.8
Mean Value per Lease (P'000)	677	2,878	2,617
Value per Ha. (P)	2,805	7,999	7,139



*Table 74. Deferred Investments in Fencing of Pasture Lease*

Indicators	Percent Distribution			
	M	B	SC	ALL
Incidence (%)	11	18	16	15
Percent of Leased Area (%)	9	12	10	10
Total Value (P'000)	1,730	1,870	295	3,895
Mean Value per Lease (P'000)	346	234	33	177
Value per Ha. (P/ha.)	1,140	740	120	602

*Table 75. Summary of Value of Deferred Investments*

Indicators	Percent Distribution			
	Masbate	Bukidnon	S. Cotabato	All
Total Value (In millions)	16.0	31.5	60.1	107.0
Mean Value per Lease (P'000)	1,783	5,387	4,282	3,630
Value per Ha. (P'000/ha.)	7.2	15.4	12.0	11.7

*Table 76. Incidence of Expenditures Related to Pasture Lease Security  
(Percent of farms)*

Expenditure Item	Distribution			
	M	B	SC	ALL
Horses	64	82	63	66.0
Guns	27	40	34	33.1
Vehicles	13	40	39	29.0
Radio	2	42	25	21.0
Others	2	4	2	3.0
Any of the above	57	84	73	70.3

*Table 77. Value of Capital Expenditures Related to Pasture Lease Security  
(In pesos)*

Expenditure Item	Distribution			
	M	B	SC	ALL
Vehicles	677,000	5,481,000	3,395,000	9,553,000
Guns	851,500	533,000	549,000	1,933,500
Radio	50,000	343,082	601,000	994,082
Horses	867,500	45,757	993,600	3,554,100
Others	50	107,280	15,000	122,330
Any of the above	2,446,050	8,157,362	5,553,600	16,157,012

Table 78. Average Expenditures Per Farm on Security Items

Expenditure Item	Distribution			
	M	B	SC	ALL
Guns	56,767	296,611	36,600	40,281
Radio	50,000	18,057	54,636	32,067
Vehicles	96,714	304,500	199,706	227,452
Horses	28,917	45,757	35,486	37,412
Others	50	53,640	15,000	30,583

*Table 79. Intention to Renew Lease After Expiration*

Response	Percent Distribution			
	M	B	SC	ALL
No	0	11	5	5
Yes	100	89	95	95
Total	100	100	100	100

*Table 80. Intention to Renew Lease At P20.00/ha/yr.*

Response	Percent Distribution			
	M	B	SC	AL
Yes	93	78	73	82
No	7	22	27	18
Total	100	100	100	100

Table 81. Willingness to Renew Lease Rights at Various Rental Rates

Rental rate (P/ha./yr.)	Percent of Sample			
	M	B	SC	Total
500 and above	0	3	3	2
150 - 449	0	3	0	1
100 - 149	0	6	13	5
50 - 99	12	17	6	12
40 - 49	2	3	0	2
30 - 39	5	8	3	6
20 - 29	34	36	19	31
10 - 19	10	8	10	9
5 - 9	27	8	30	21
1 - 4	10	8	16	11
Total	100	100	100	100



*Table 82. Estimated Value of Assets Within The Ranch, 1992.*

Range (In '000 pesos)	Percent Distribution			
	M	B	SC	ALL
Less than 501	30	24	7	21
501 - 1,000	28	19	18	22
1,001 - 2,000	20	19	33	24
2,001 - 3,000	6	13	18	12
3,001 - 4,000	8	3	5	5
4,001 - 5,000	2	3	7	4
5,001 - 10,000	6	11	7	8
Above 10,000	0	8	5	4
Total	100	100	100	100
Mean	1,596,852	3,685,729	2,739,058	2,504,253

*Table 83. Estimated Market Value of the Pasture Lease, 1992.*

Range (In '000 pesos)	Percent Distribution			
	M	B	SC	ALL
Less than 501	18	8	2	10
501 - 1,000	18	13	7	13
1,001 - 2,000	20	18	22	20
2,001 - 3,000	10	13	17	13
3,001 - 4,000	10	13	27	16
4,001 - 5,000	10	5	2	6
5,001 - 6,000	6	8	5	6
6,001 - 10,000	2	8	7	5
Above 10,000	8	13	10	10
Total	100	100	100	100
Mean	2,743,149	5,400,052	4,015,056	3,871,929

*Table 84. Estimated Rights Value of the Pasture Lease, 1992.*

Range (In '000 pesos)	Percent Distribution			
	M	B	SC	ALL
Less than 101	16	11	3	11
101 - 500	25	34	26	28
501 - 1,000	27	17	29	25
1,001 - 2,000	14	14	29	18
2,001 - 3,000	5	6	6	5
3,001 - 4,000	2	3	3	3
4,001 - 5,000	5	6	3	4
5,000 - 10,000	5	6	3	4
Above 10,000	2	3	0	2
Total	100	100	100	100
Mean	1,396,698	1,966,571	1,573,000	1,627,814

*Table 85. Value of Assets Per Hectare, 1992.*

Range (P/ha)	Percent Distribution			
	M	B	SC	ALL
2,000 and less	10	19	10	13
2,001 - 4,000	36	24	23	28
4,001 - 6,000	22	6	23	17
6,001 - 8,000	10	8	18	12
8,001 - 10,000	8	6	8	7
10,001 - 15,000	8	19	8	11
15,001 - 20,000	2	5	7	5
20,001 - 30,000	2	8	3	4
> 30,000	2	5	3	3
Mean	6,707.28	12,349.62	8,381.80	8,878.52
Total	100	100	100	100

*Table 86. Total Assets and Market Value per Hectare  
in the Pasture Lease, 1992*

Range (P/ha.)	Asset Value	Market Value
Less than 2,000	13	7
2,001 - 4,000	28	15
4,001 - 6,000	17	13
6,001 - 8,000	12	12
8,001 - 10,000	7	8
10,001 - 15,000	11	14
15,001 - 20,000	5	8
20,001 - 30,000	4	11
> 30,000	3	11
N.A.	0	1
Total	100	100
Mean	8,878.52	14,389.96

*Table 87. Rights Value of the Pasture Lease Per Hectare, 1992.*

Range	Percentage Distribution			Total
	Masbate	Bukidnon	S. Cotabato	
500 and less	11	16	9	12
501 - 1,000	16	14	17	16
1,001 - 2,000	11	3	11	9
2,001 - 4,000	16	28	14	19
4,001 - 6,000	7	9	11	9
6,001 - 8,000	14	9	11	11
8,001 - 10,000	7	3	7	5
10,001 - 20,000	9	9	14	11
> 20,000	7	9	6	7
*** N.A.	2	0	0	1
Mean	6,110.91	7,568.34	6,156.04	6,576.31
Total	100	100	100	100

Table 88. Rights value per hectare per year.

Range	Percentage Distribution				
	M	B	SC	ALL	CF
< 50	14	23	14	17	100
51 - 100	16	0	11	10	83
101 - 200	7	26	17	16	73
201 - 300	11	6	17	11	57
301 - 400	14	9	9	10	46
401 - 500	5	6	3	4	36
501 - 600	2	6	3	4	32
601 - 700	5	3	3	3	28
701 - 800	5	3	3	3	25
801 - 900	0	0	9	3	22
901 - 1000	0	3	3	2	19
1001 - 2000	5	11	3	6	17
2001 - 3000	7	0	3	3	11
3001 - 4000	2	3	3	3	8
4000 - 5000	2	0	0	1	5
> 5000	5	3	0	3	4
NA	2	0	0	1	1
Total	100	100	100	100	
Mean	903.03	966.59	512.82	801.86	

*Table 89. Profitability of Pasture Leases using Recorded Revenues, 1992*  
(In Pesos)

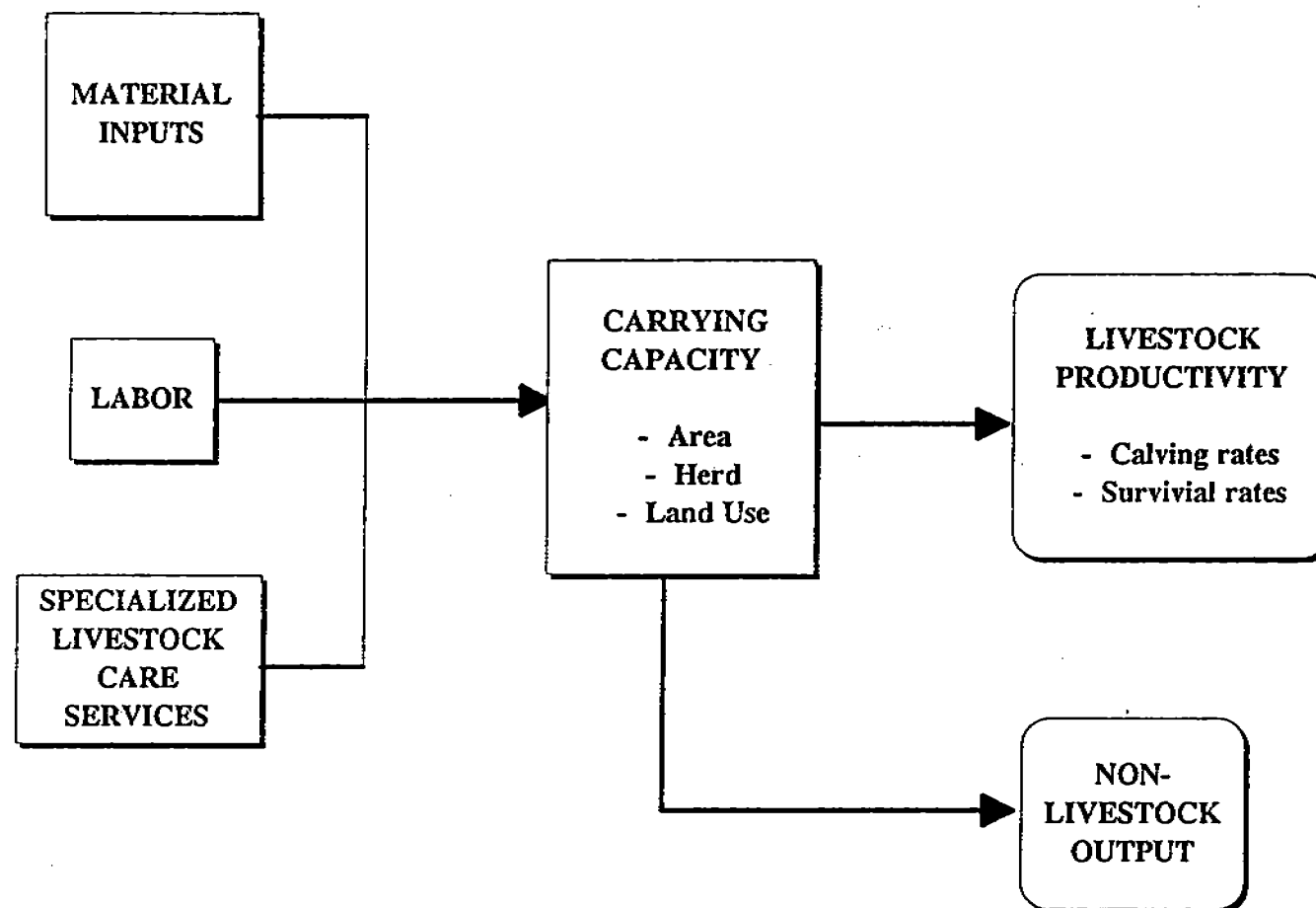
Entry	Masbate	Bukidnon	S. Cotabato	All
<b>A. Revenues: (1992)</b>				
1. Revenue on Cattle Sales	566,625	1,455,566	1,363,570	3,382,561
<b>B. Expenditures</b>				
1. Expenditure on Workers	2,690,205	4,066,633	3,514,572	10,271,410
2. Expenditure on Variable Inputs	2,132,660	4,359,034	2,296,168	8,987,862
3. Total Operating Expenditures	4,822,865	8,625,667	5,810,740	19,259,272
<b>C. Net Income from Sales of Livestock</b>	(4,256,240)	(7,170,101)	(4,447,170)	(15,876,711)
<b>D.1. Revenue from Other Agricultural Activities</b>	2,491,952	10,174,175	352,302	13,018,429
<b>D.2. Revenue from All Activities</b>	3,058,577	11,629,741	1,715,872	16,400,990
<b>E. Net Income from All Activities</b>	(1,764,288)	3,004,074	(4,094,868)	(2,858,282)
1. Per Farm	(31,505)	66,757	(93,065)	(19,712)
2. Per Hectare	(1.79)	4.63	(4.46)	(0.37)



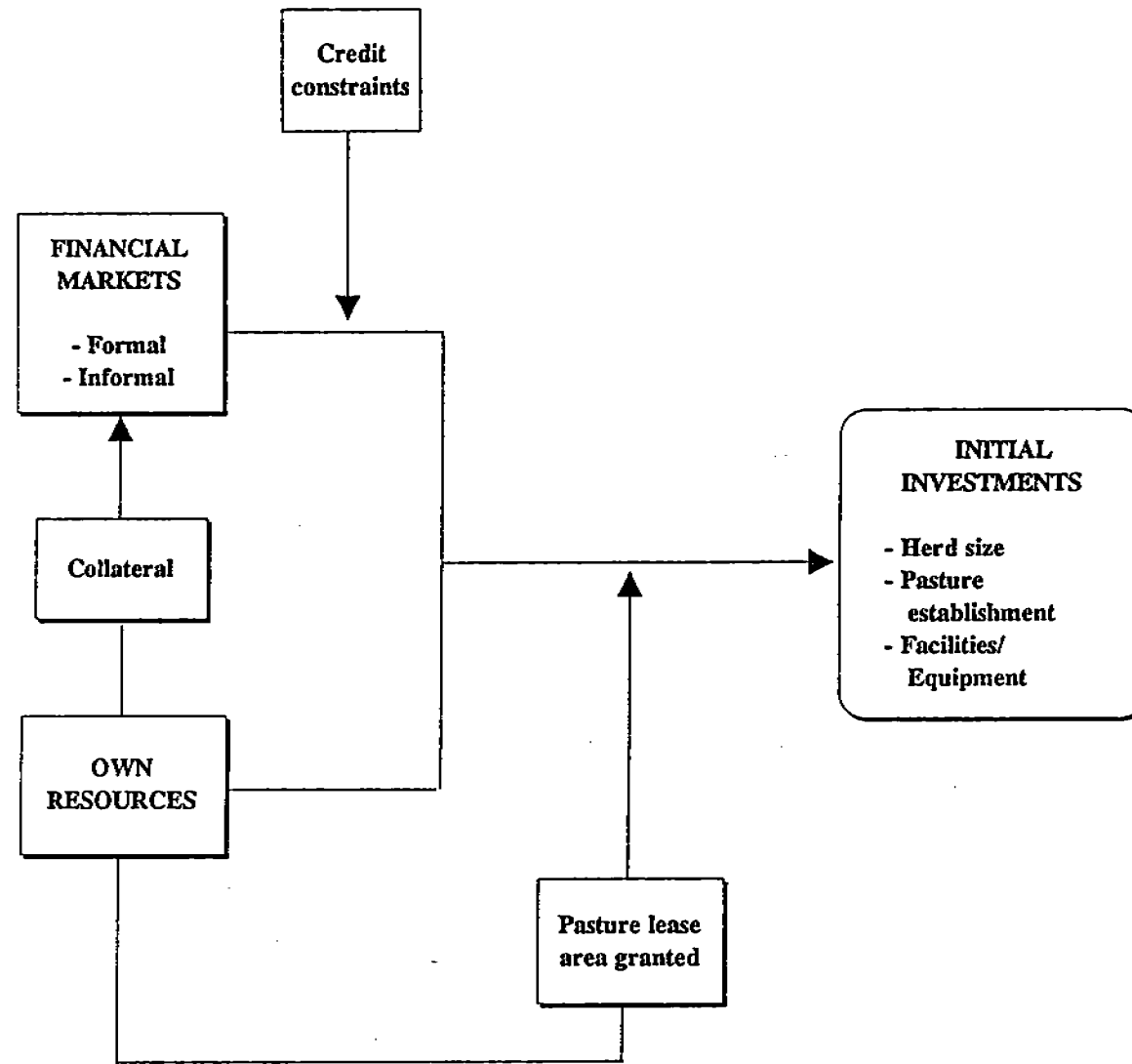
*Table 90. Profitability of Pasture Leases using Reported Income, 1992*  
(In Pesos)

Entry	Masbate	Bukidnon	S. Cotabato	All
<b>A. Revenues: (1992)</b>				
1. Reported Income from Pasture Lease	6,264,000	11,374,000	12,820,000	30,458,000
<b>B. Expenditures</b>				
1. Expenditure on Workers	2,690,205	4,066,633	3,514,572	10,271,410
2. Expenditure on Variable Inputs	2,132,660	4,559,034	2,296,168	8,987,862
3. Total Operating Expenditures	4,822,865	8,625,667	5,810,740	19,259,272
<b>C. Net Income from Farm</b>	1,441,135	2,748,333	7,009,260	11,198,728
1. Per Farm	25,735	49,077	125,165	77,233
2. Per Hectare	82.00	157.00	400.00	215.00

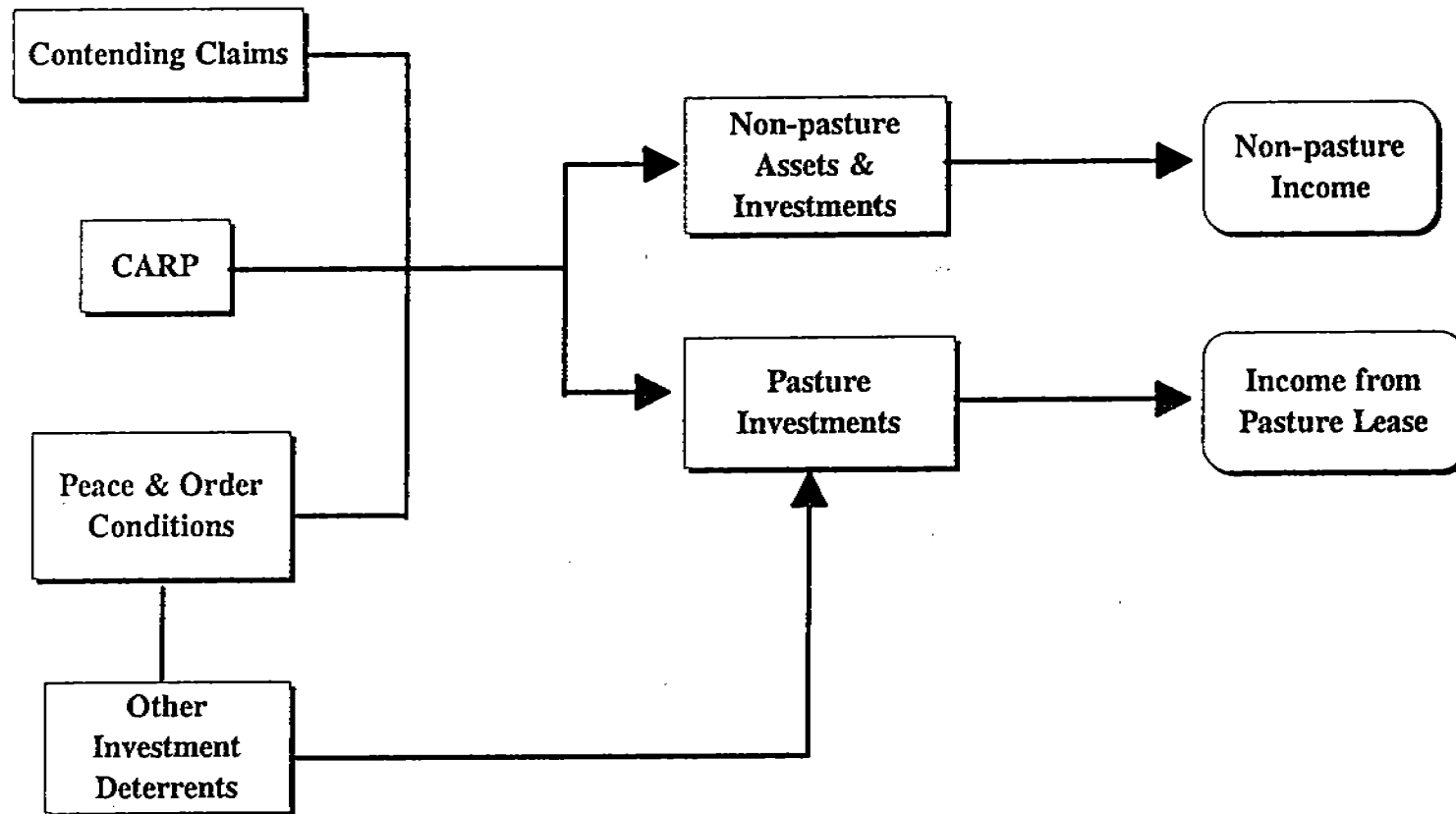
**Chart 1. Conceptual Framework for Analyzing Pasture  
Lease Productivity and Output**



**Chart 2. Schema for Analyzing Initial Pasture Lease Investments**



**Chart 3. Conceptual Framework for Analyzing the Effects of a Climate of Uncertainty on Investments in Pasture Leases and Holding Wealth in Other Assetes**



**Figure 1. Educational Attainment of the Pasture Lease Holder**

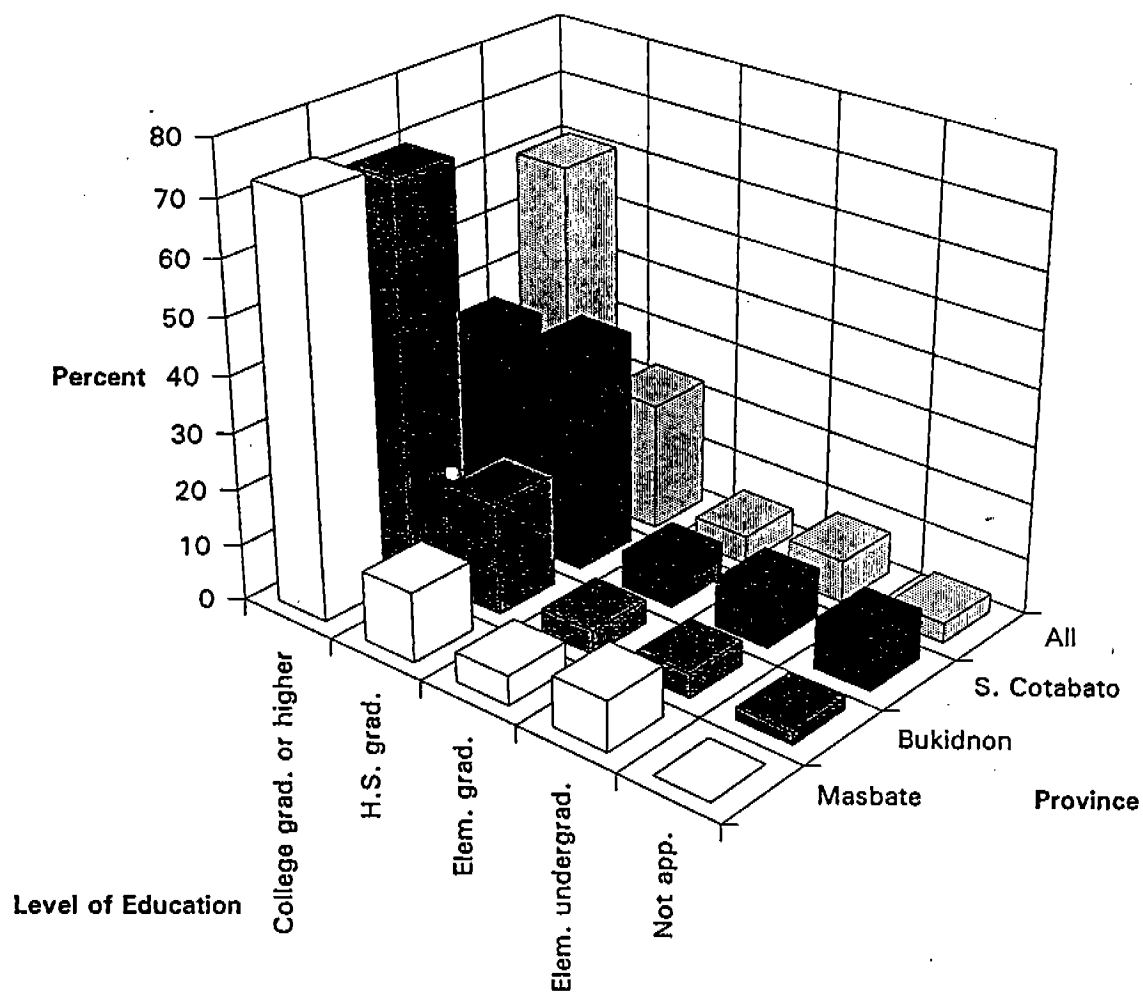


Figure 2. Pasture Lease Area Distribution

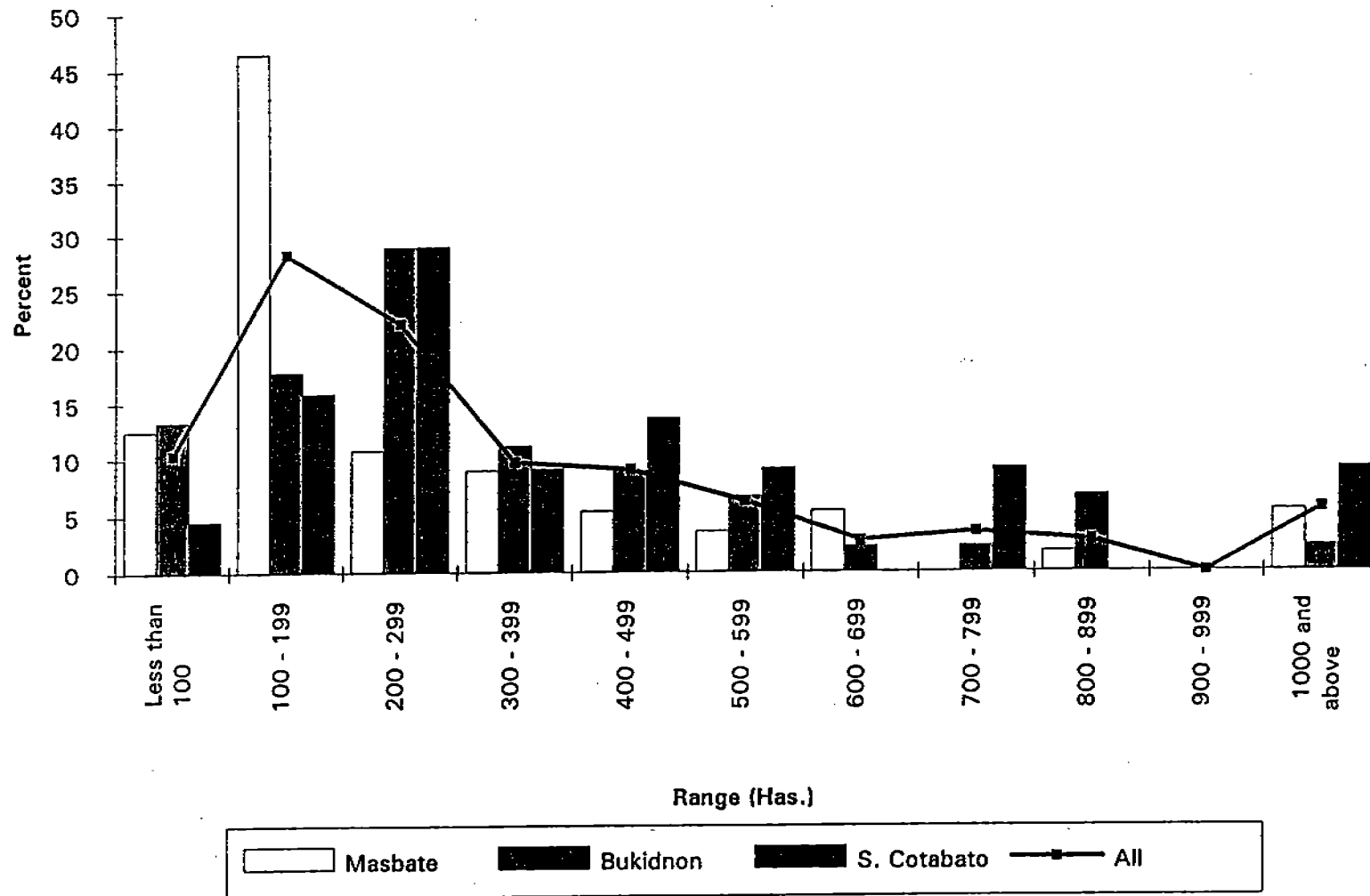


Figure 3. Year of Start of Operation

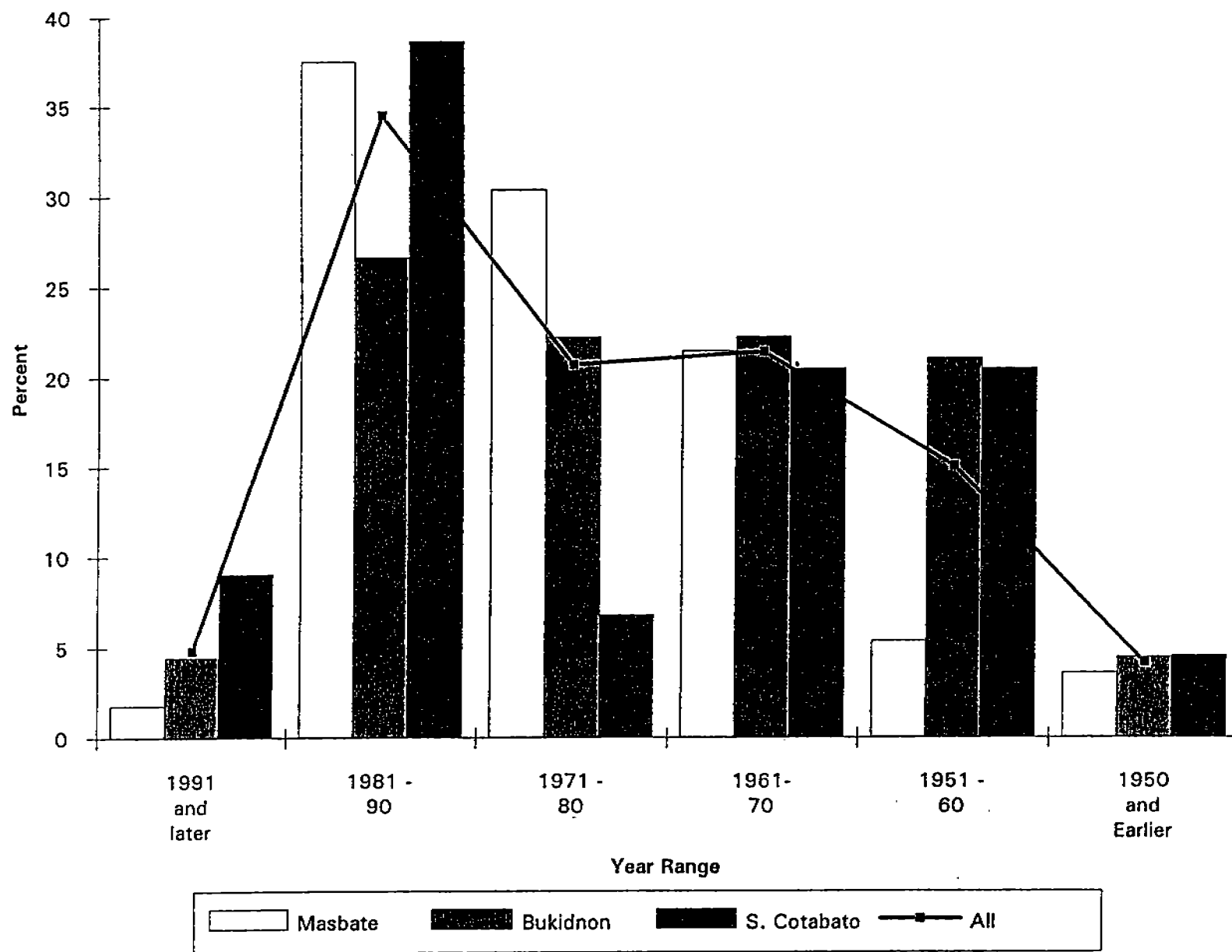


Figure 4. Number of Heads at the Start of Operation

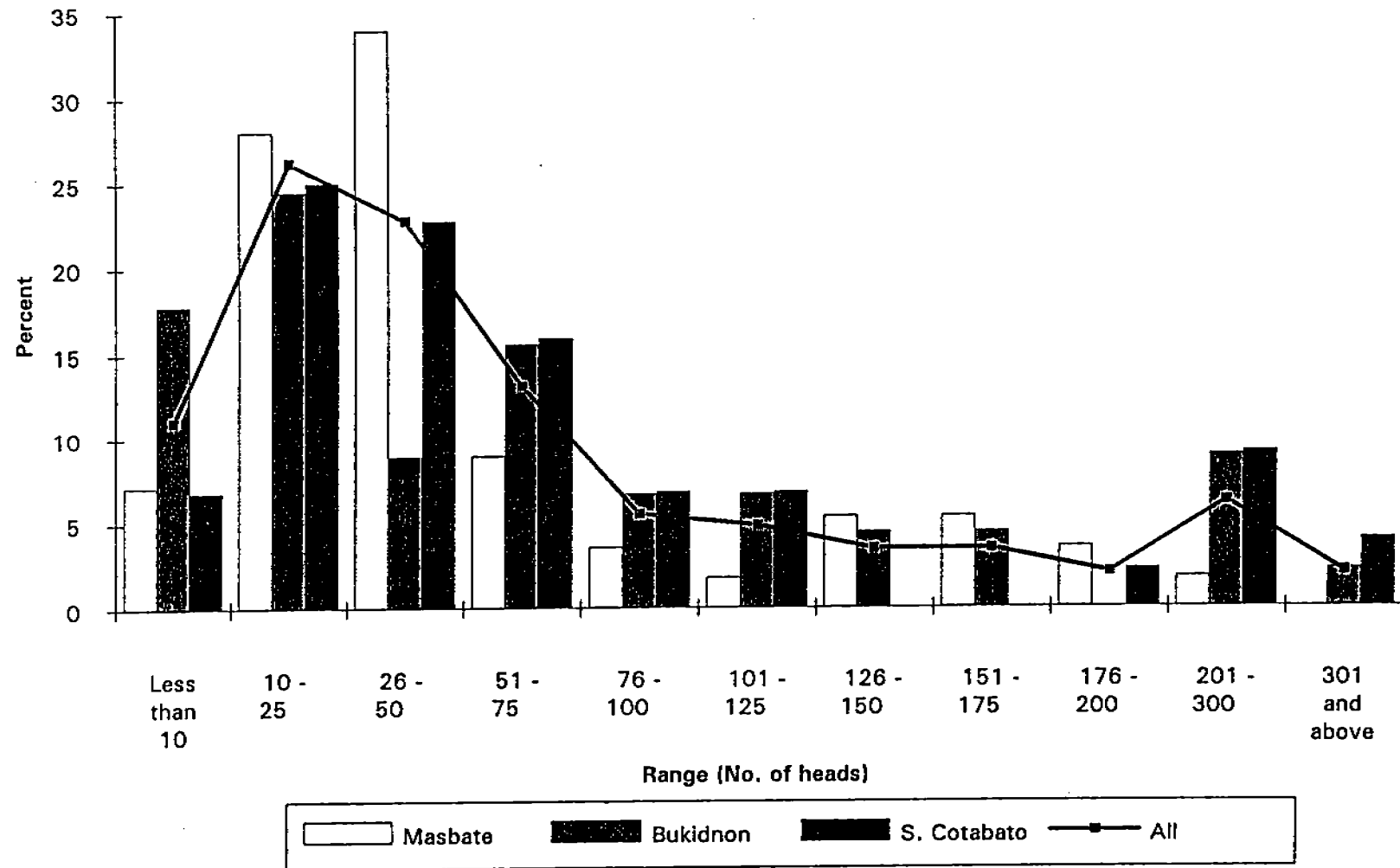




Figure 5. Ownership of Non-Pasture Assets

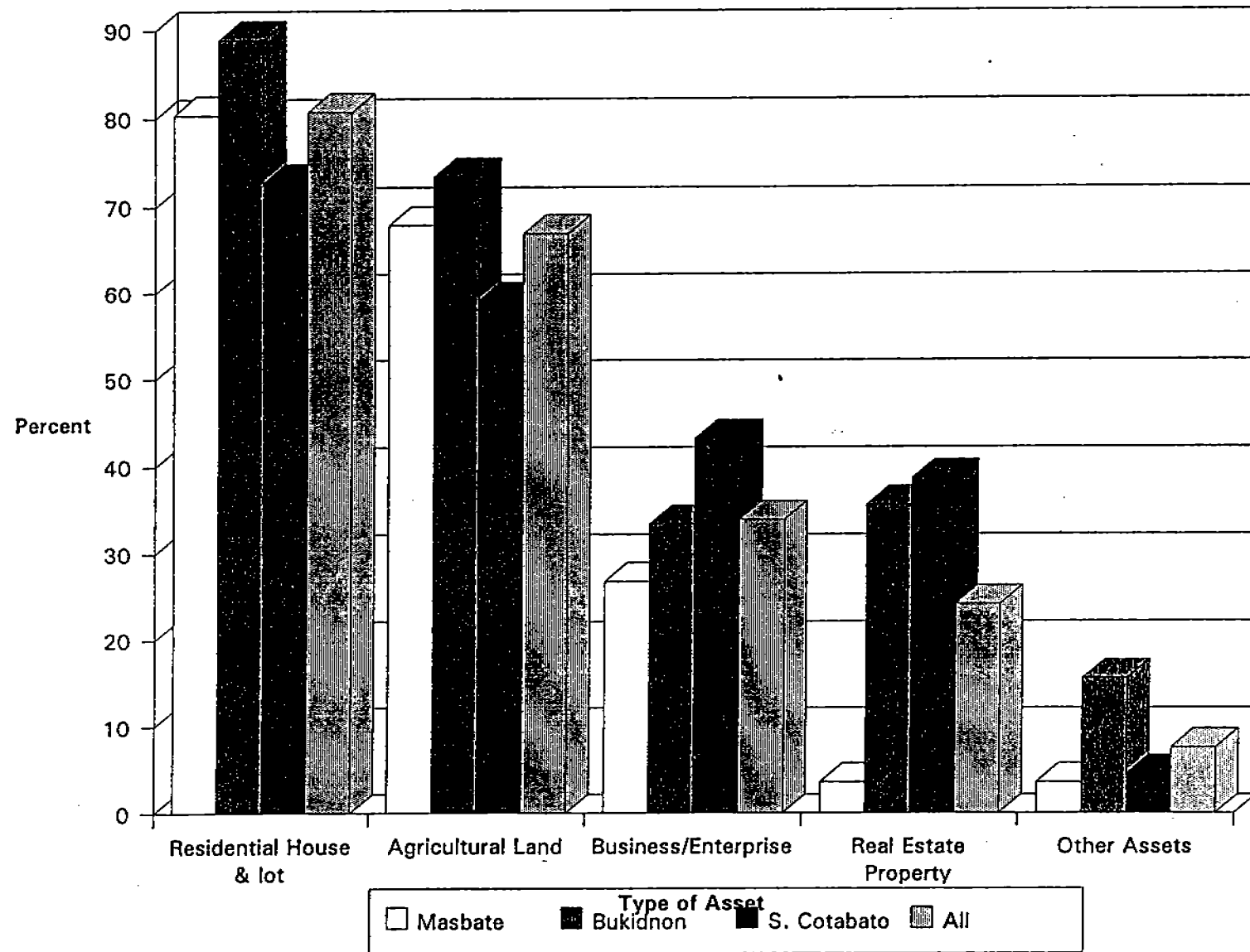


Figure 6. Value of Initial Investments on the Pasture Lease

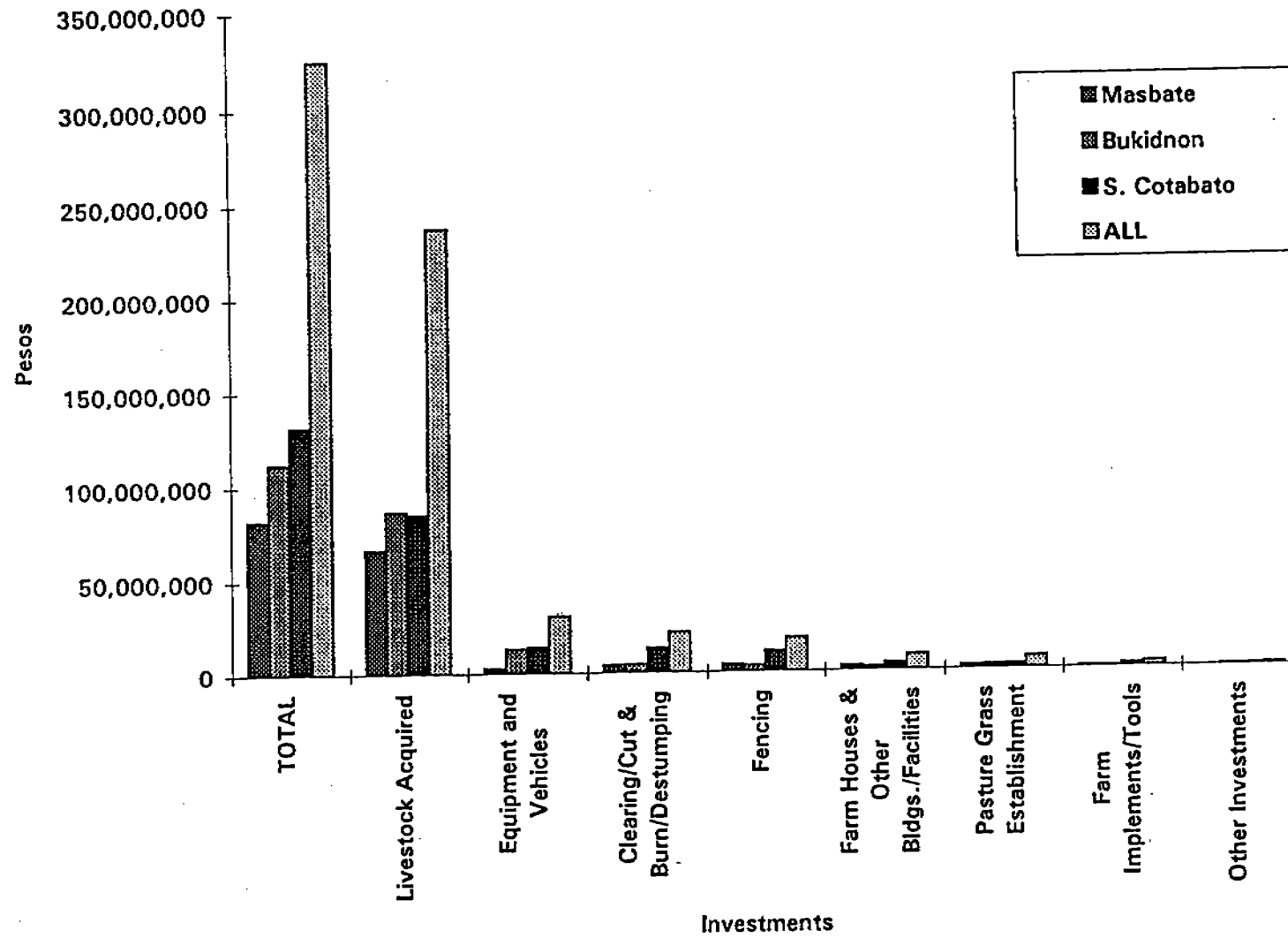


Figure 7. Distribution of Initial Investments in Pasture Lease

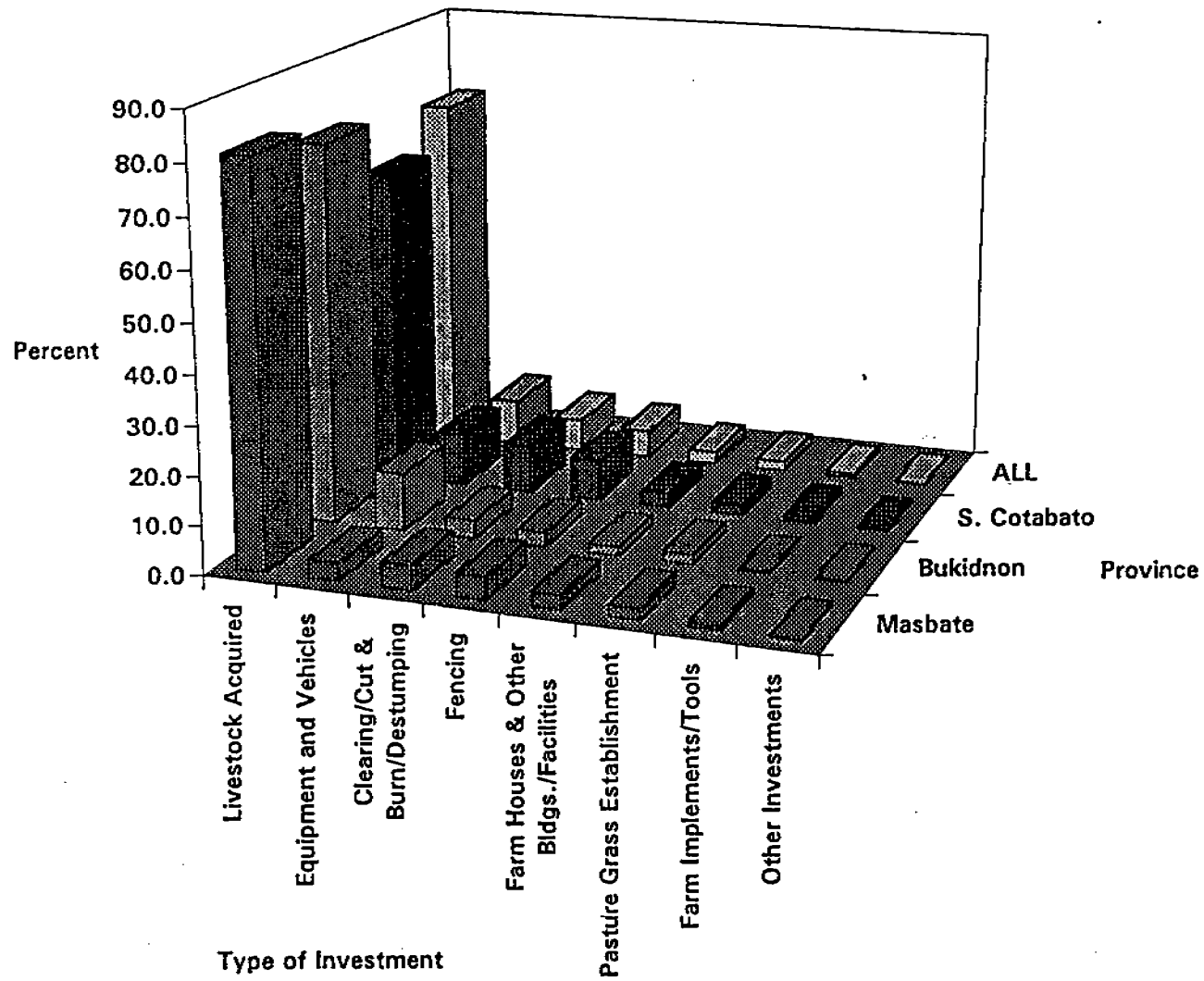


Figure 8. Distribution of Investments in Non-livestock Assets

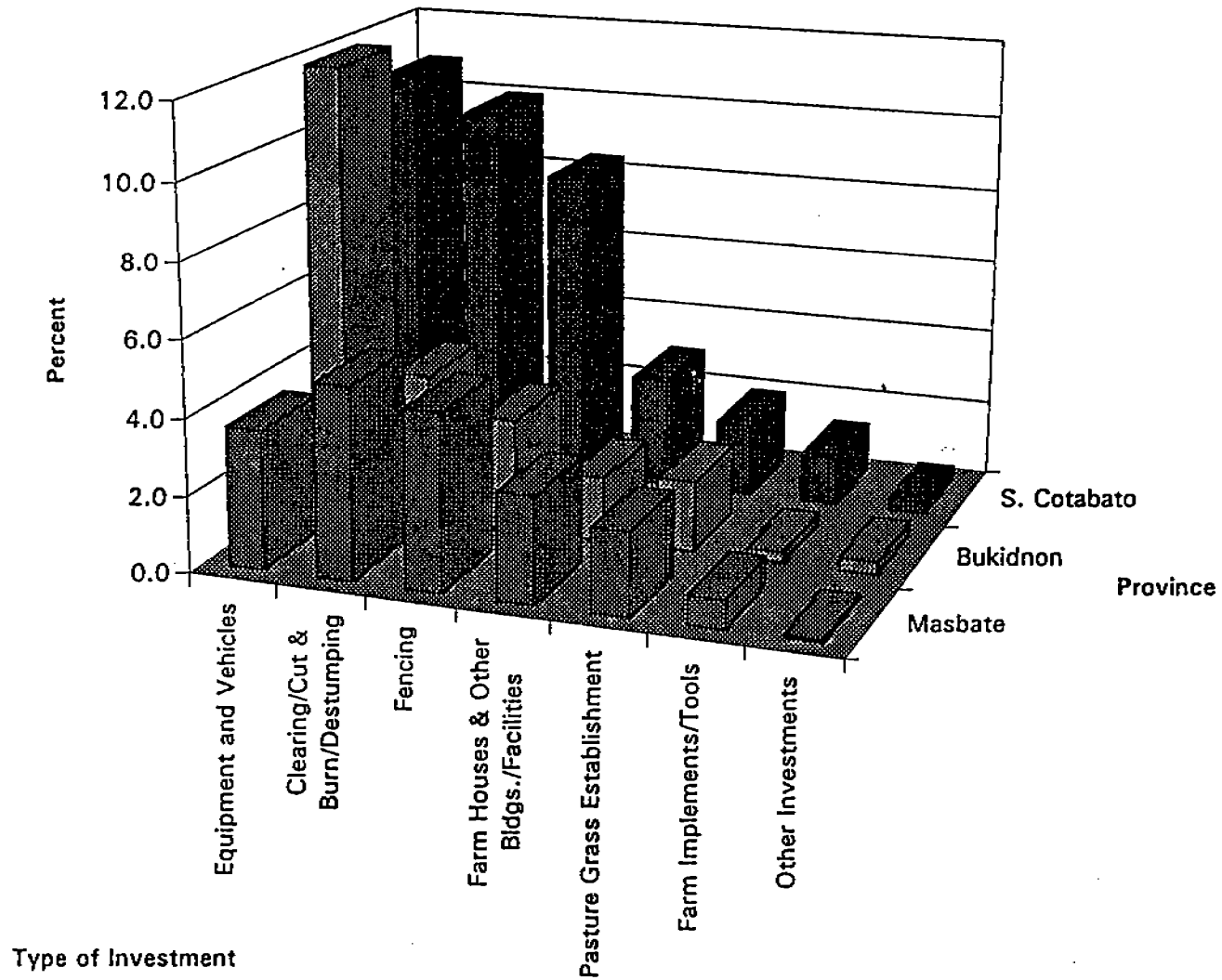


Figure 9. Average Market Value of the Initial Investment

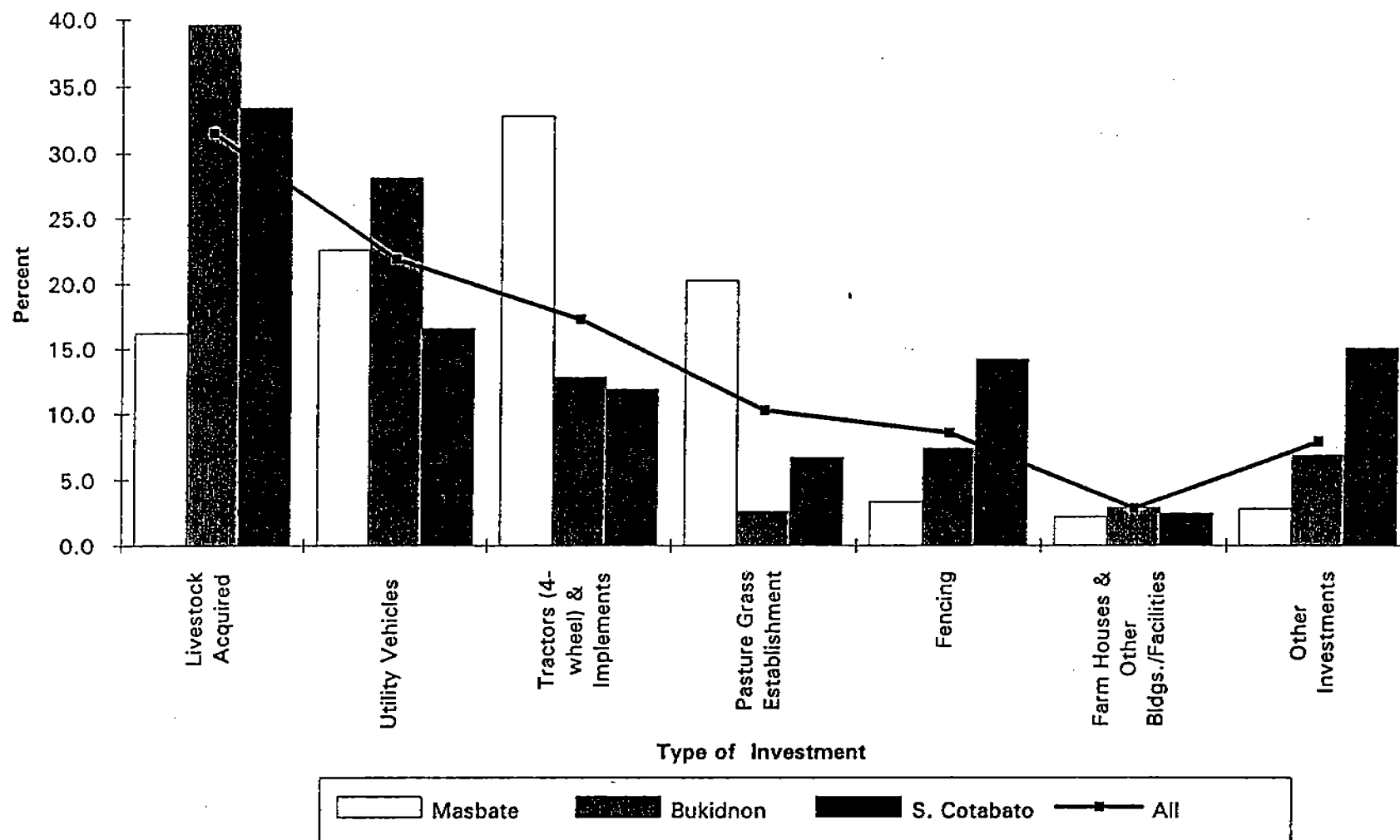


Figure 10. Land Use of the Pasture Lease

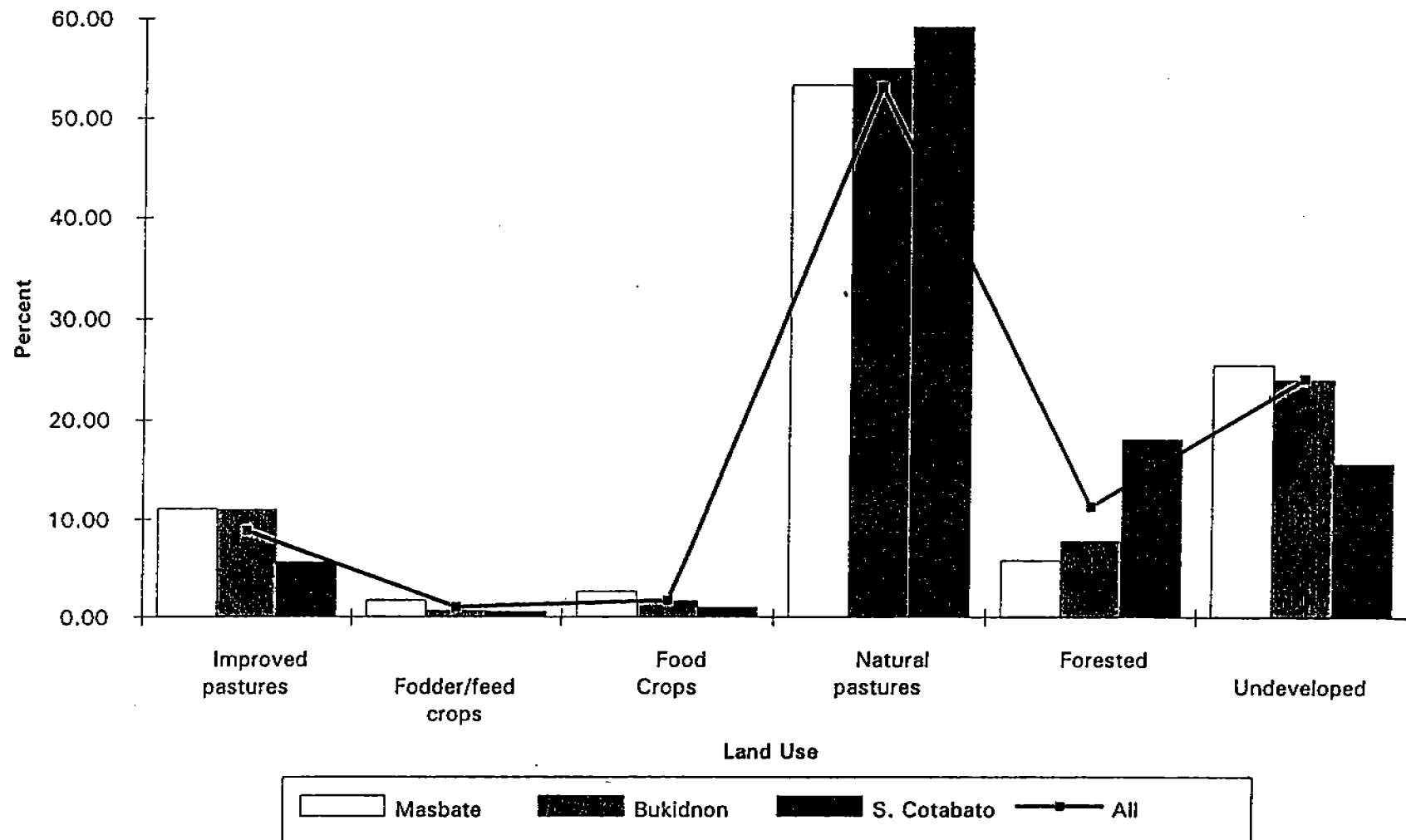


Figure 11. Relation of the Ranch Manager to the Leaseholder

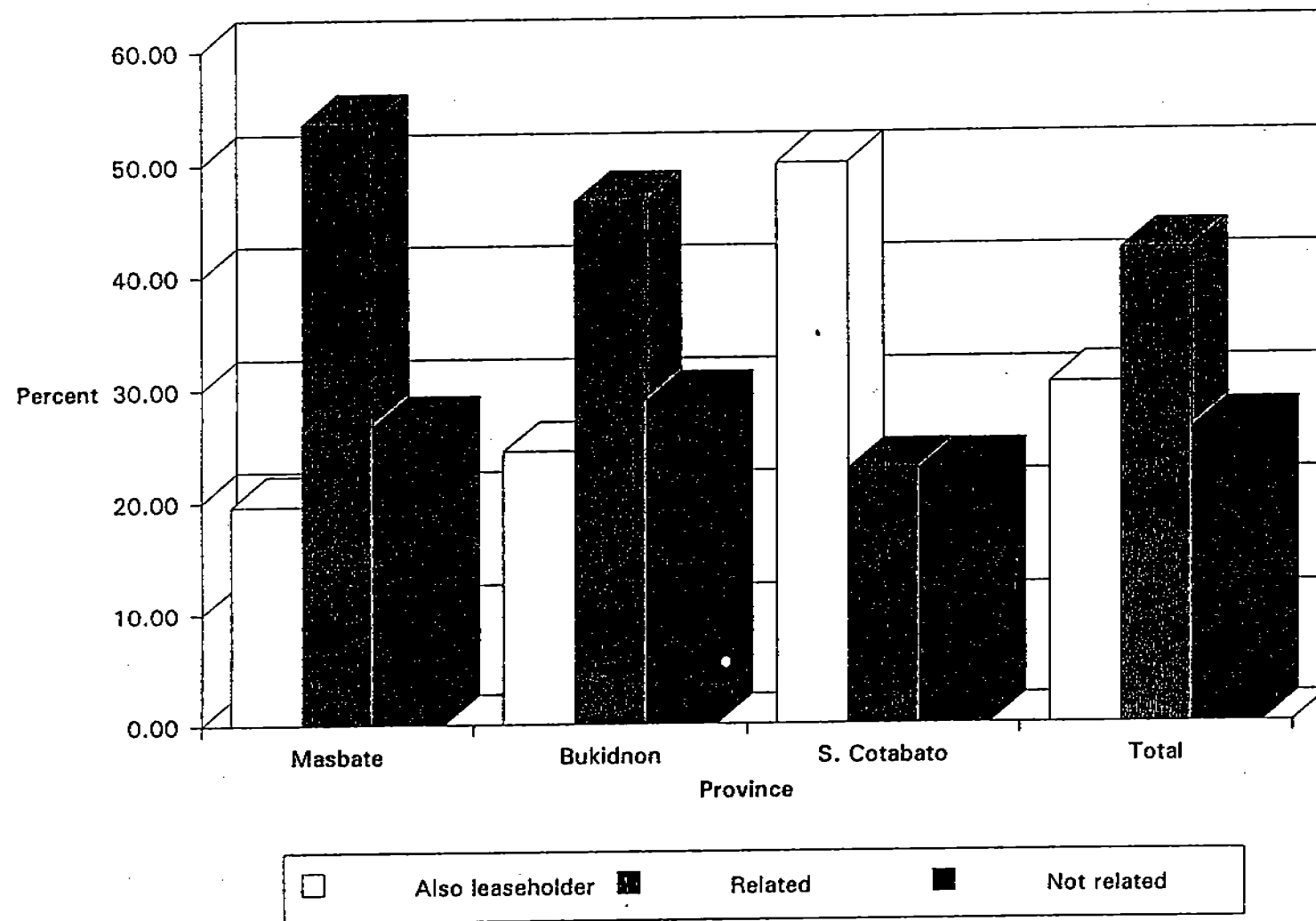


Figure 12. Educational Attainment of the Ranch Manager

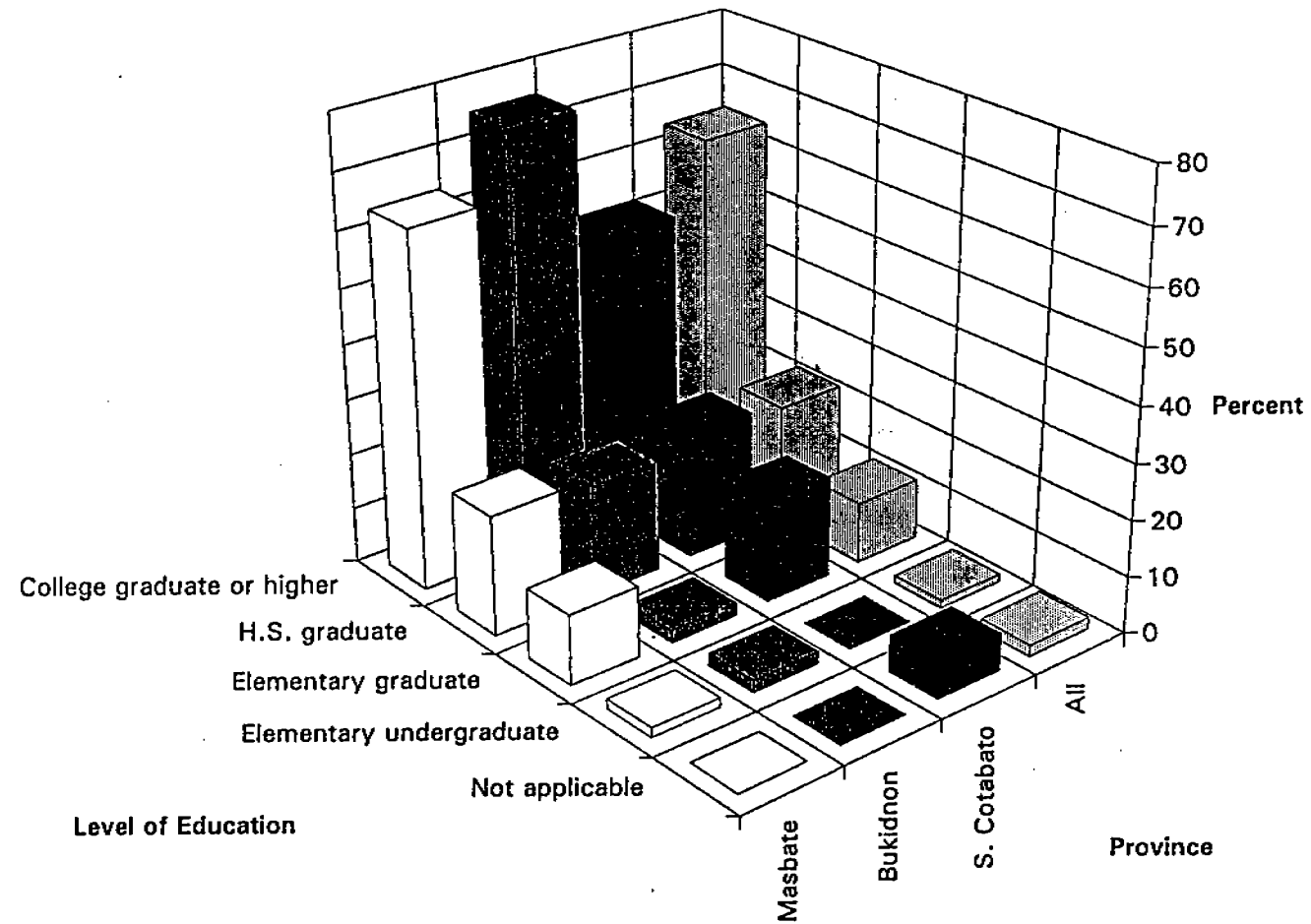




Figure 13. Monthly Compensation of the Ranch Manager

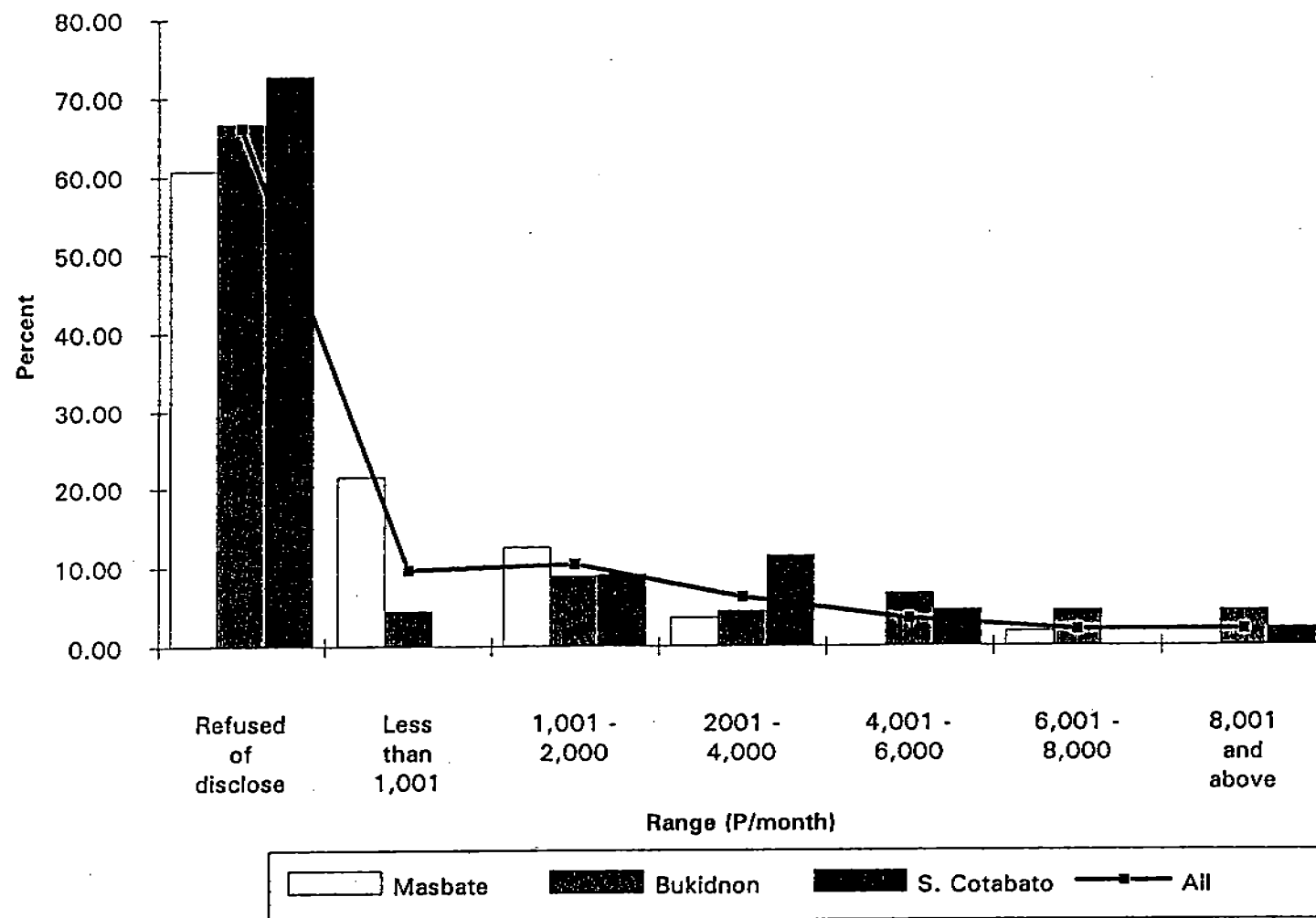


Figure 14. Aggregate Composition of Stock

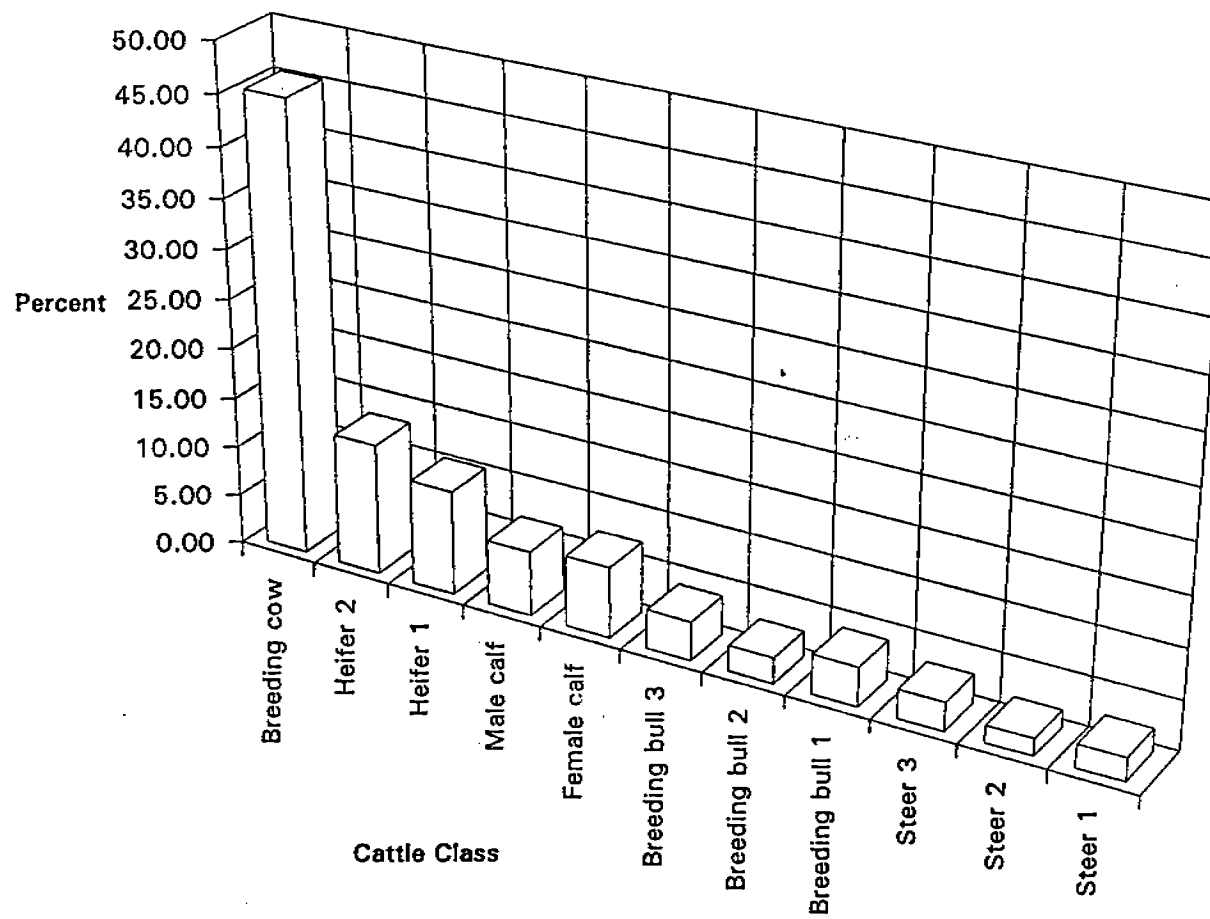


Figure 15. Relative Herd Composition

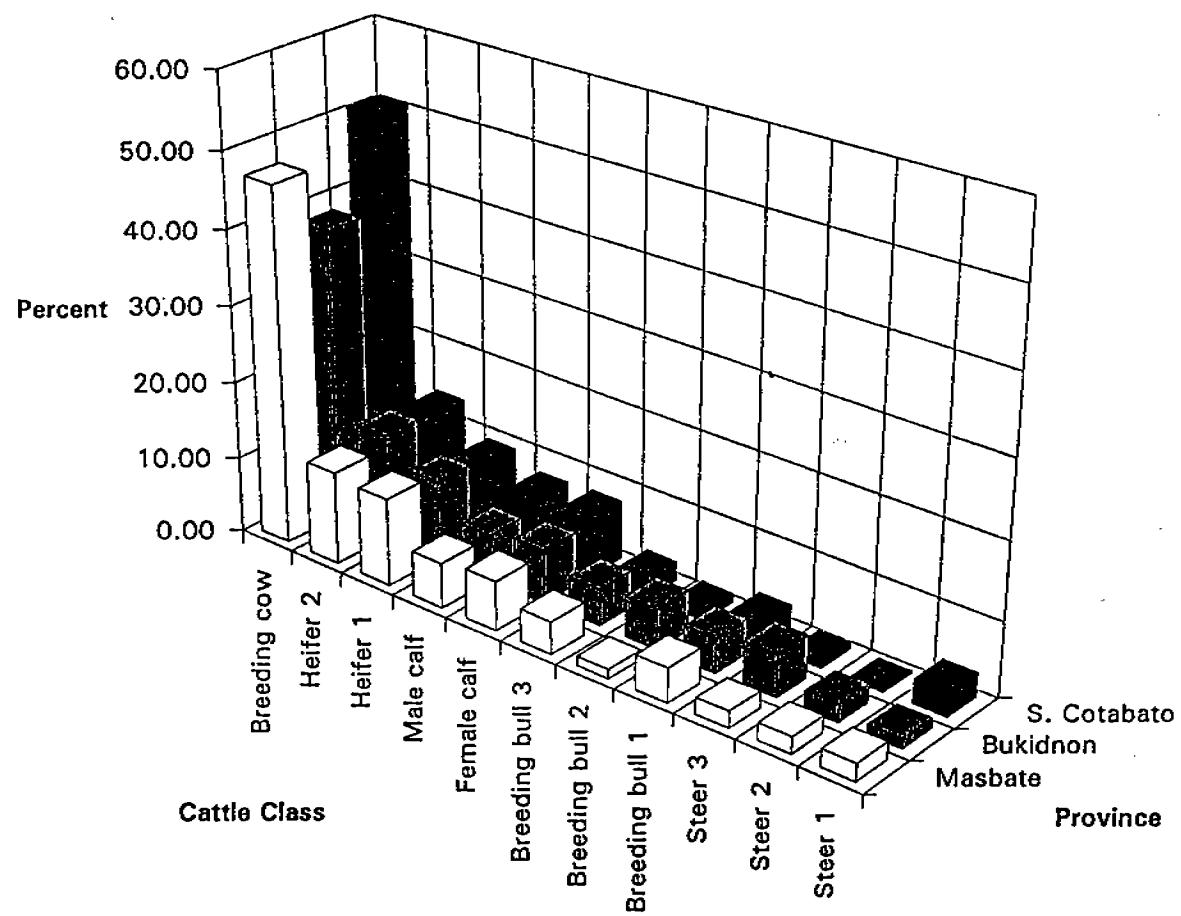


Figure 16. Change in Herd Composition

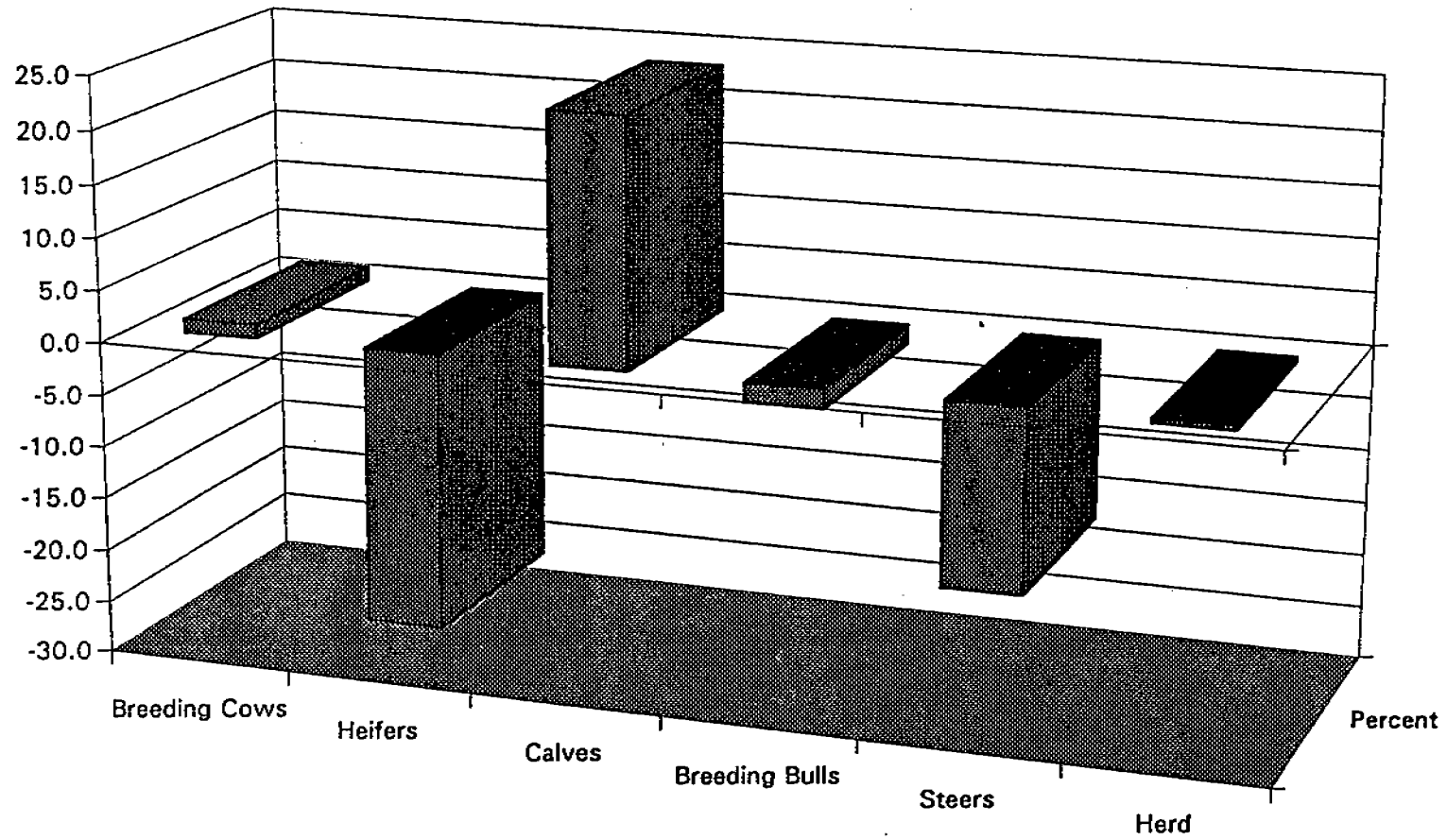


Figure 17. Change in Herd Composition in Masbate

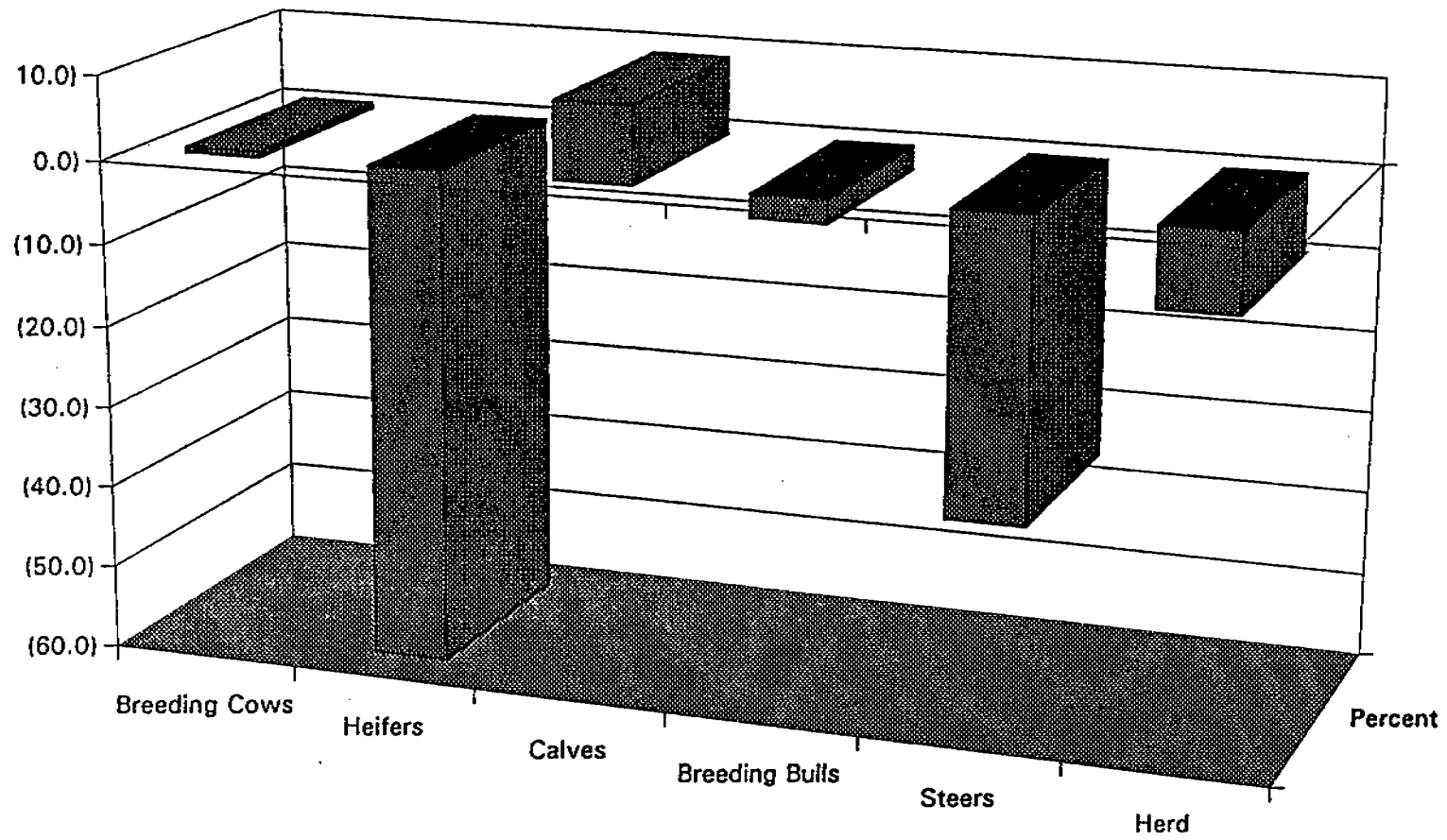


Figure 18. Change in Herd Composition in Bukidnon

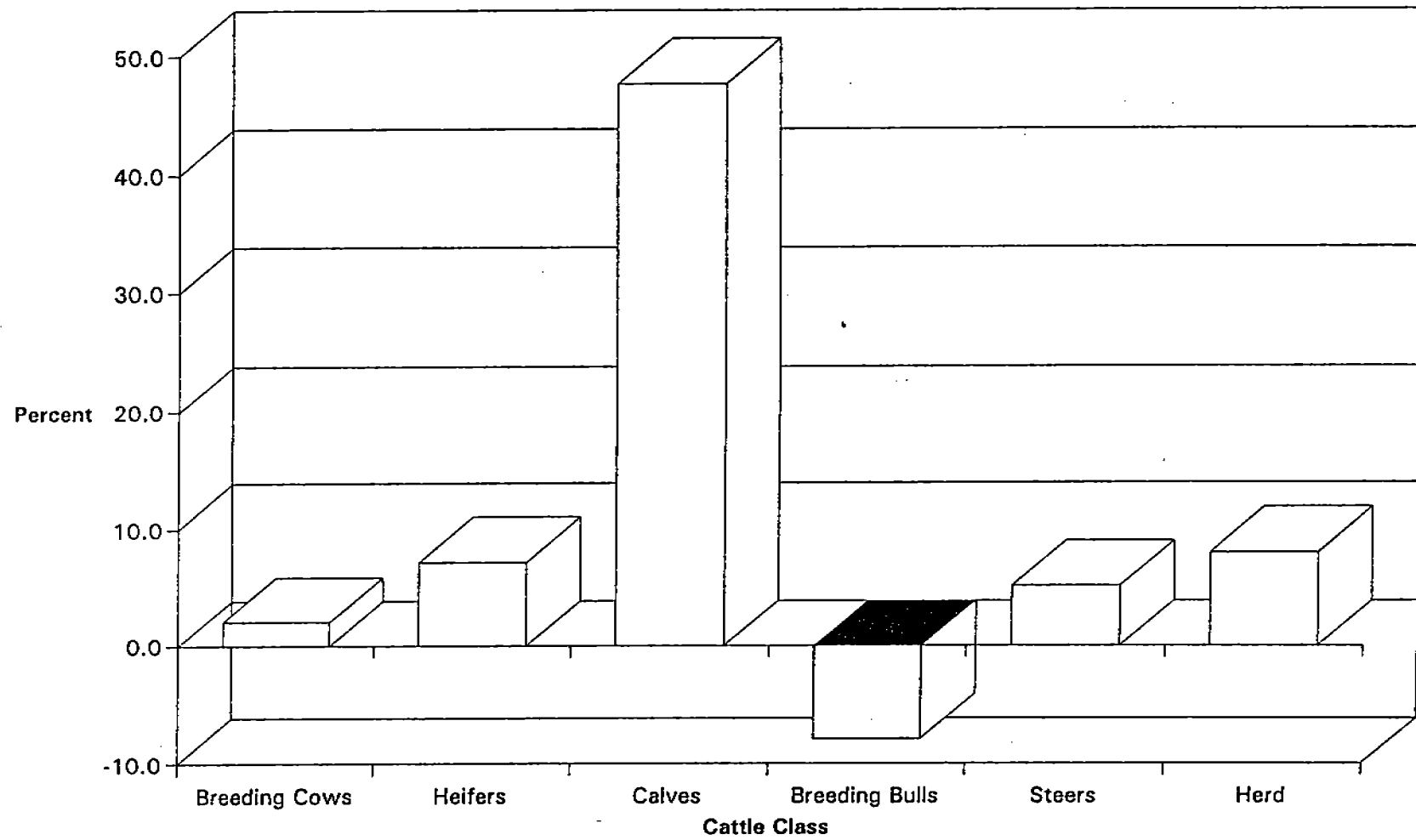


Figure 19. Change in Herd Composition in South Cotabato

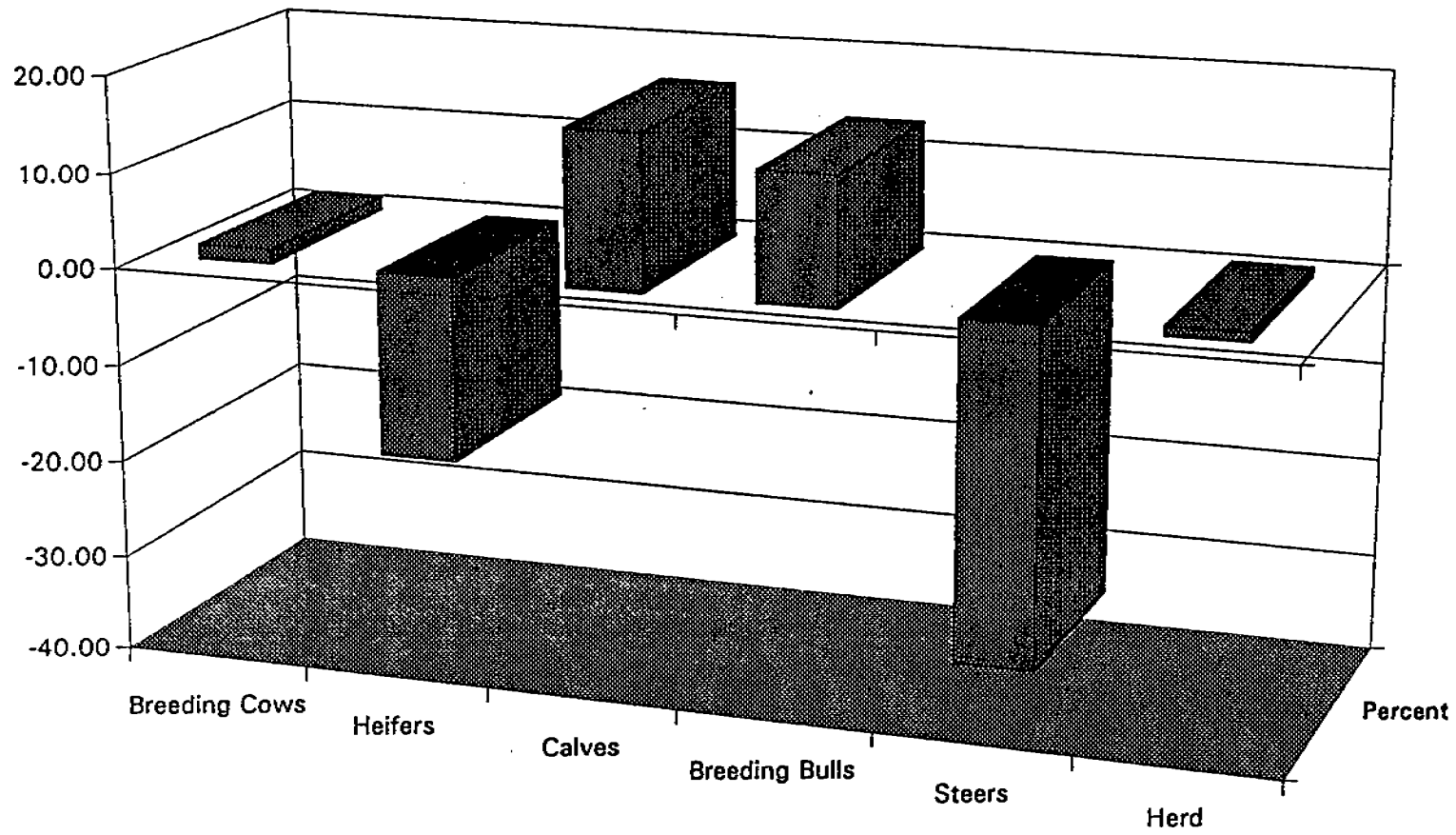


Figure 20. Carrying Capacity of the Pasture Leases

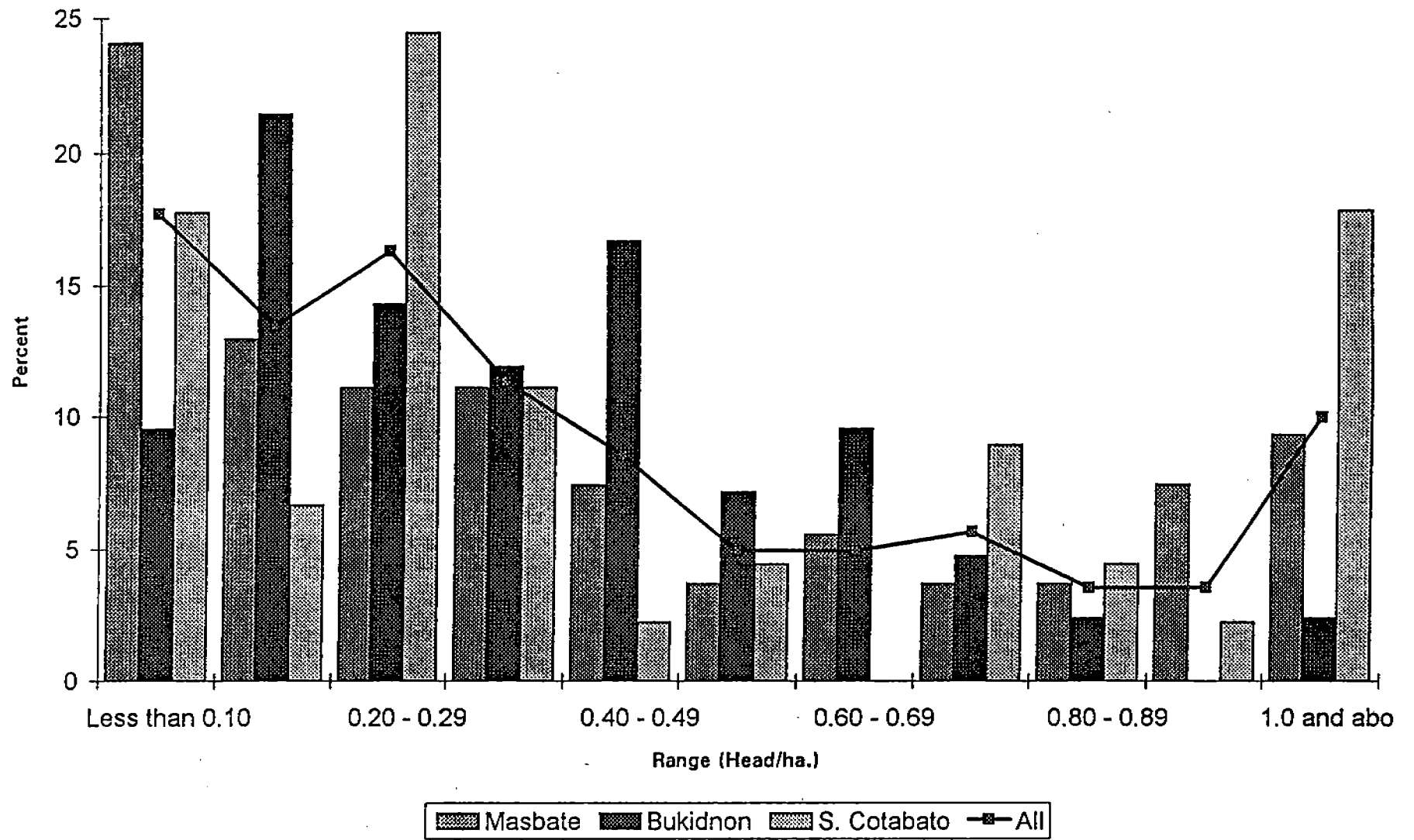




Figure 21. Purchase of Herd

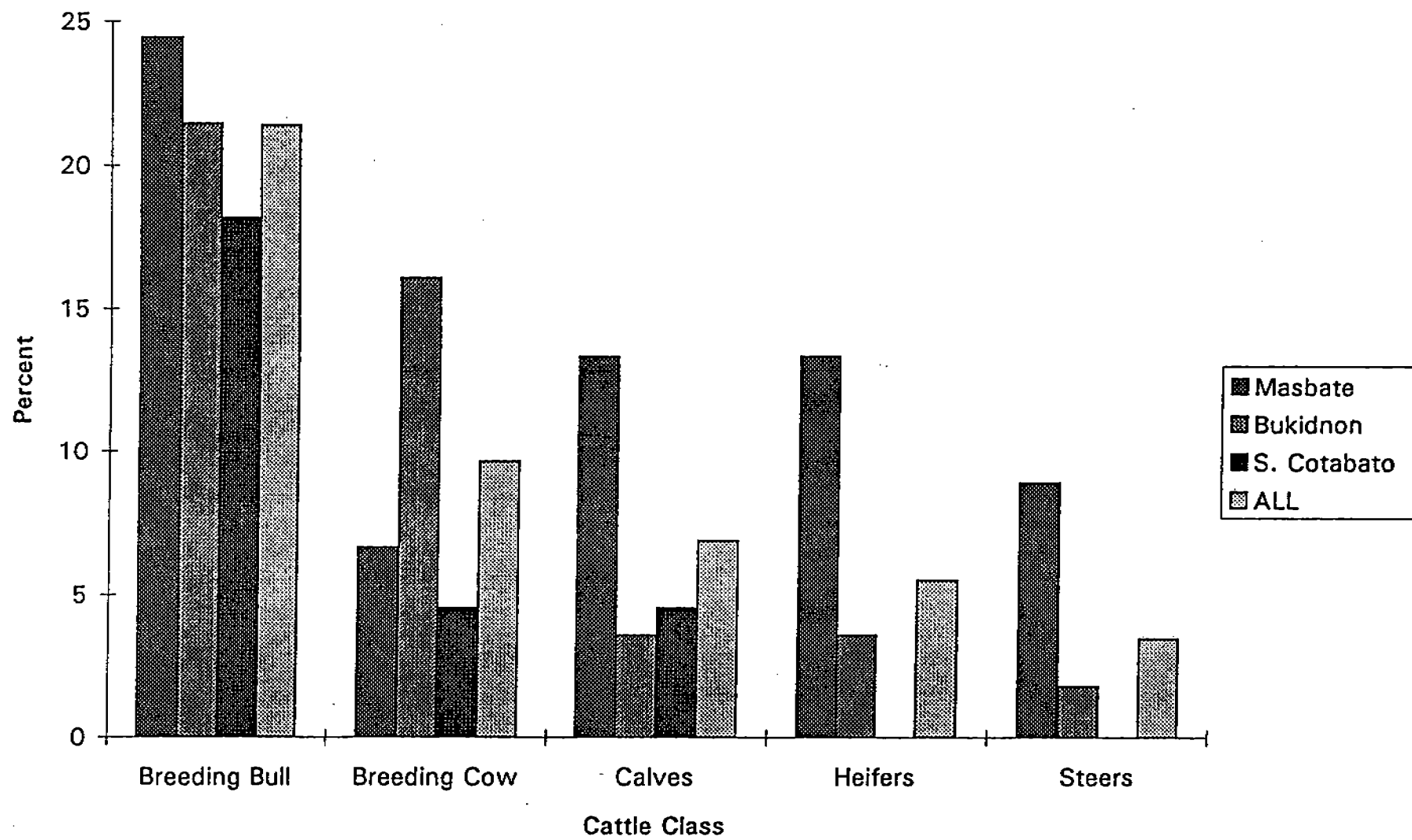


Figure 22. Purchase for Herd (Aggregate Level)

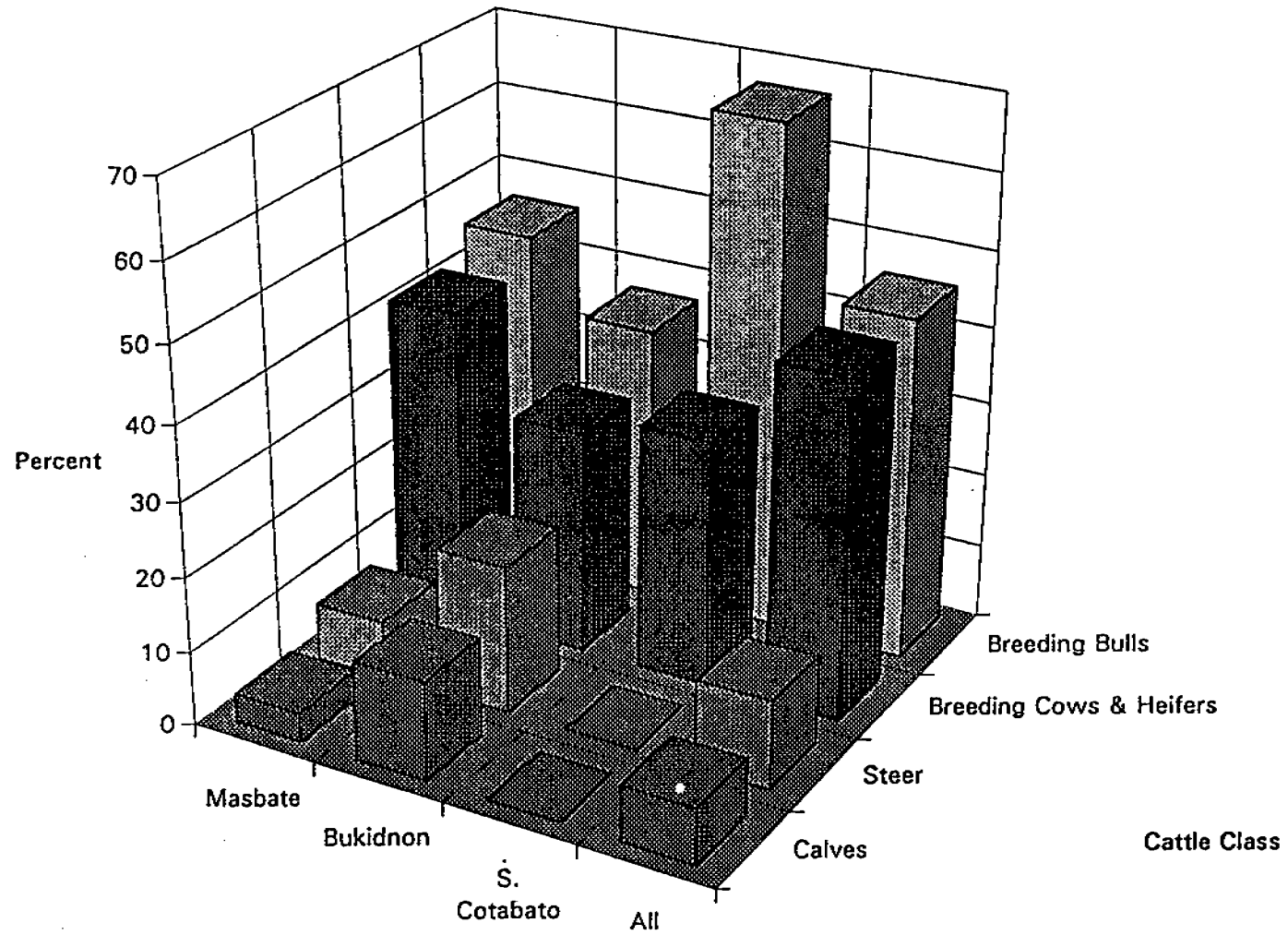


Figure 23. Breed of Herd Purchsed by Farms

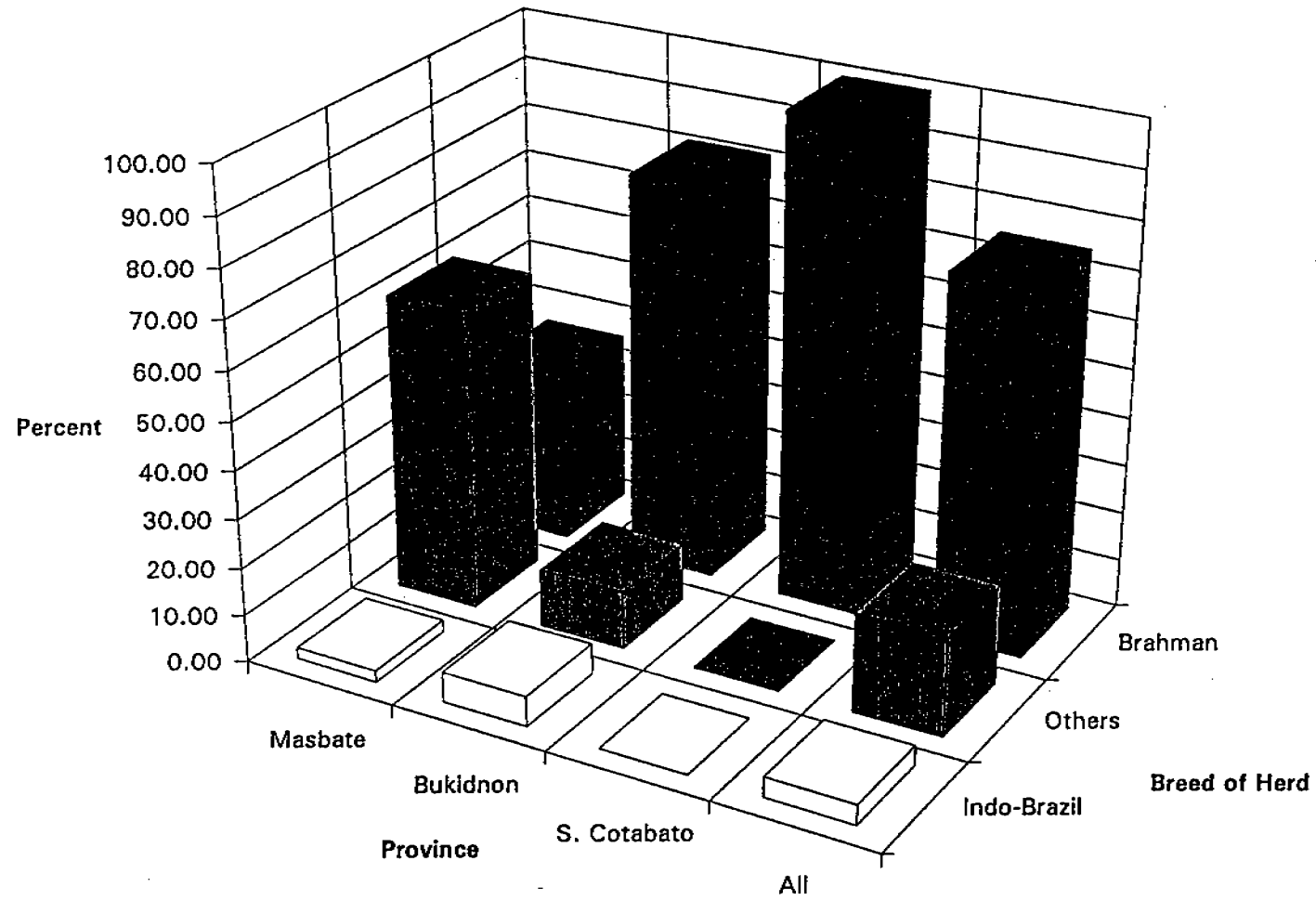


Figure 24. Importation of Livestock

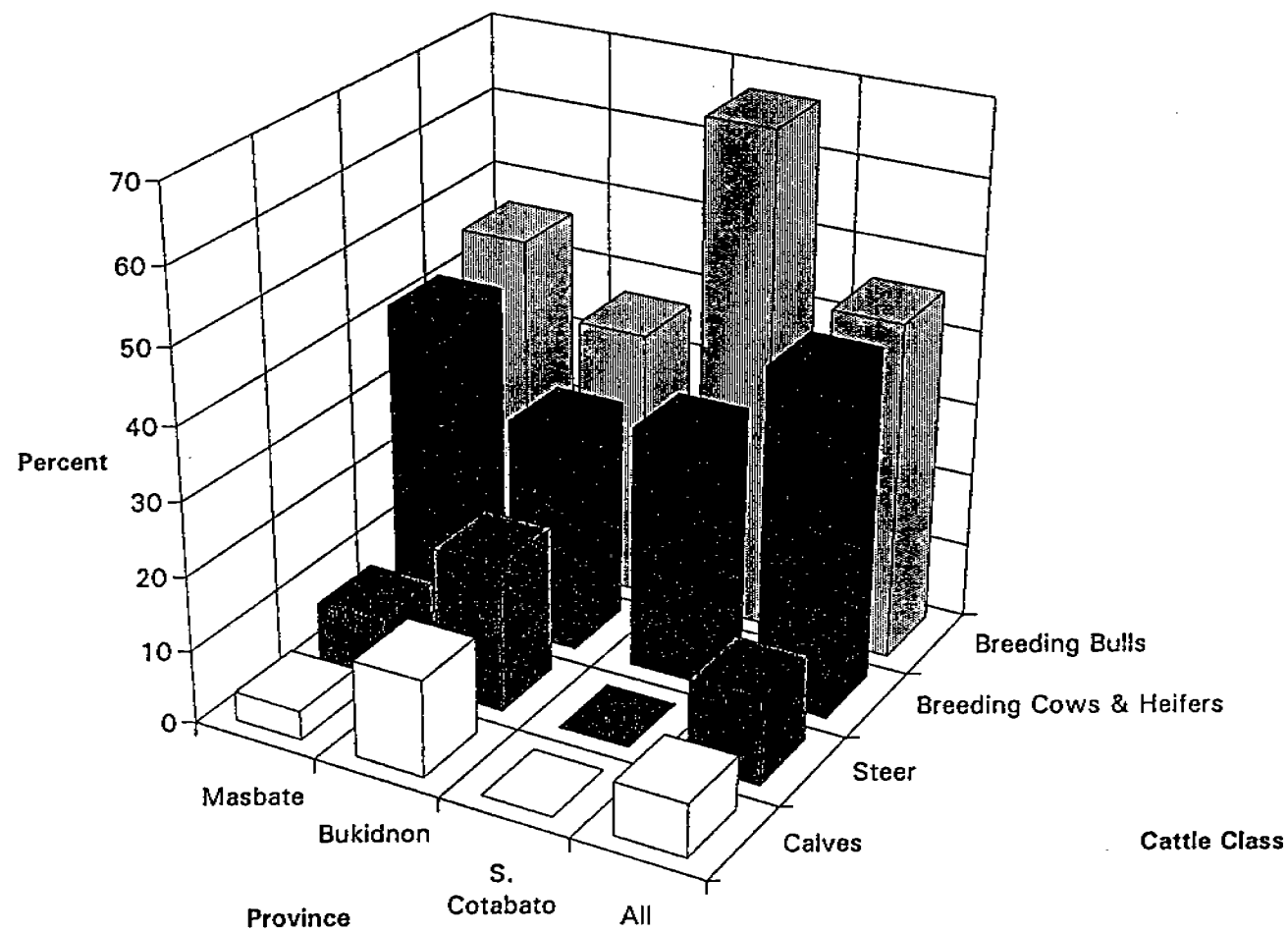


Figure 25. Incidence of Sales of Livestock

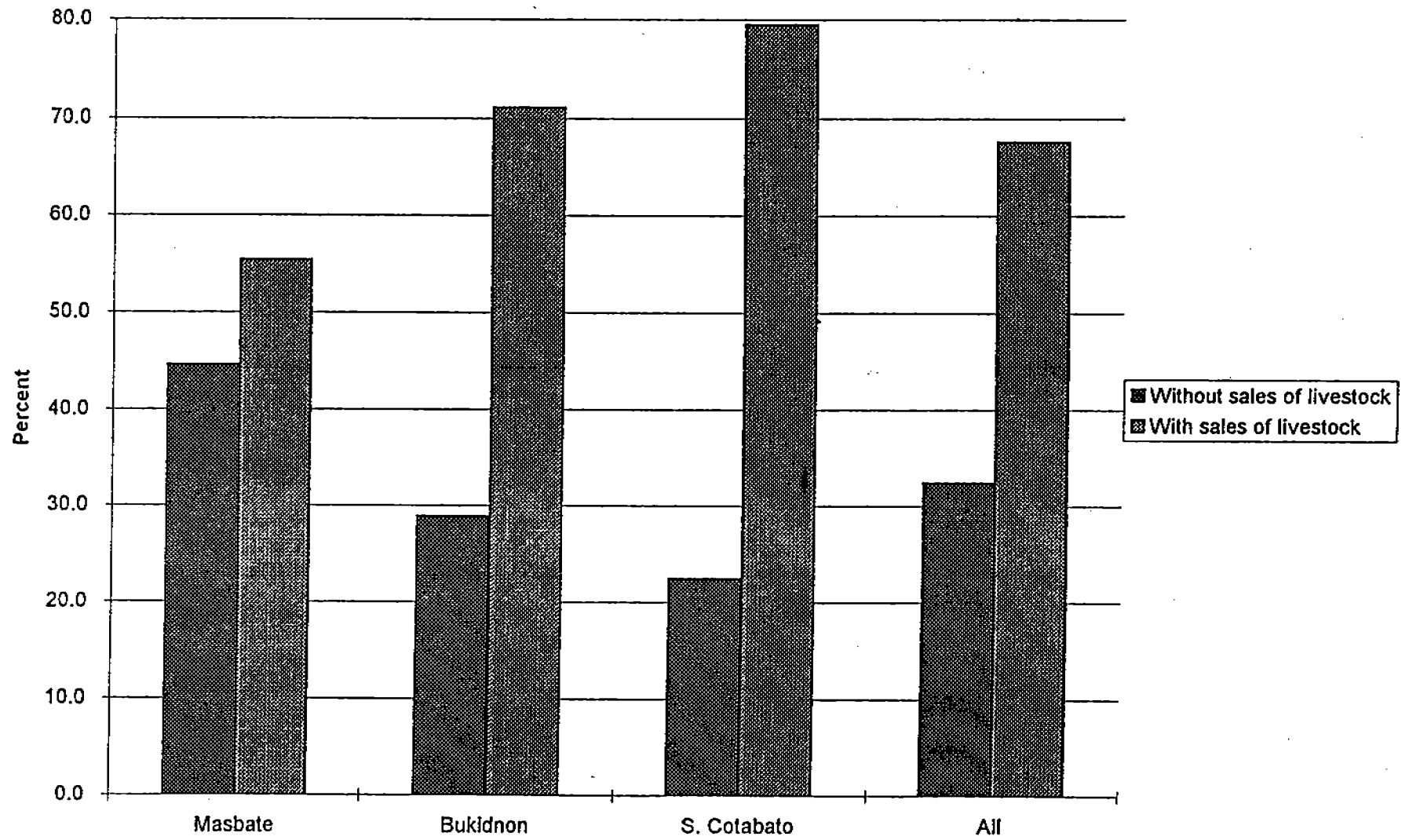


Figure 26. Average Price of Livestock

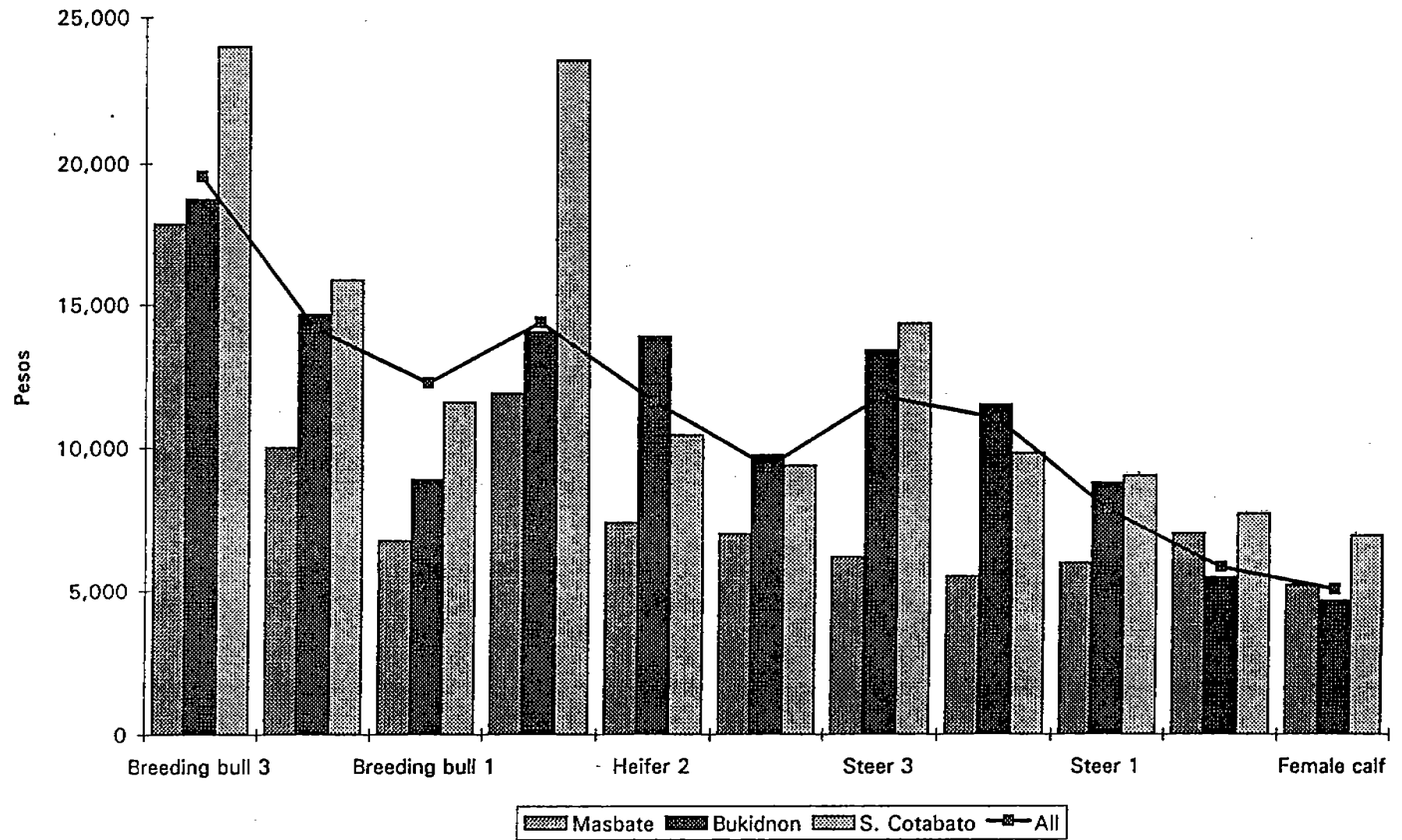


Figure 27. Sources of Revenue from Sales

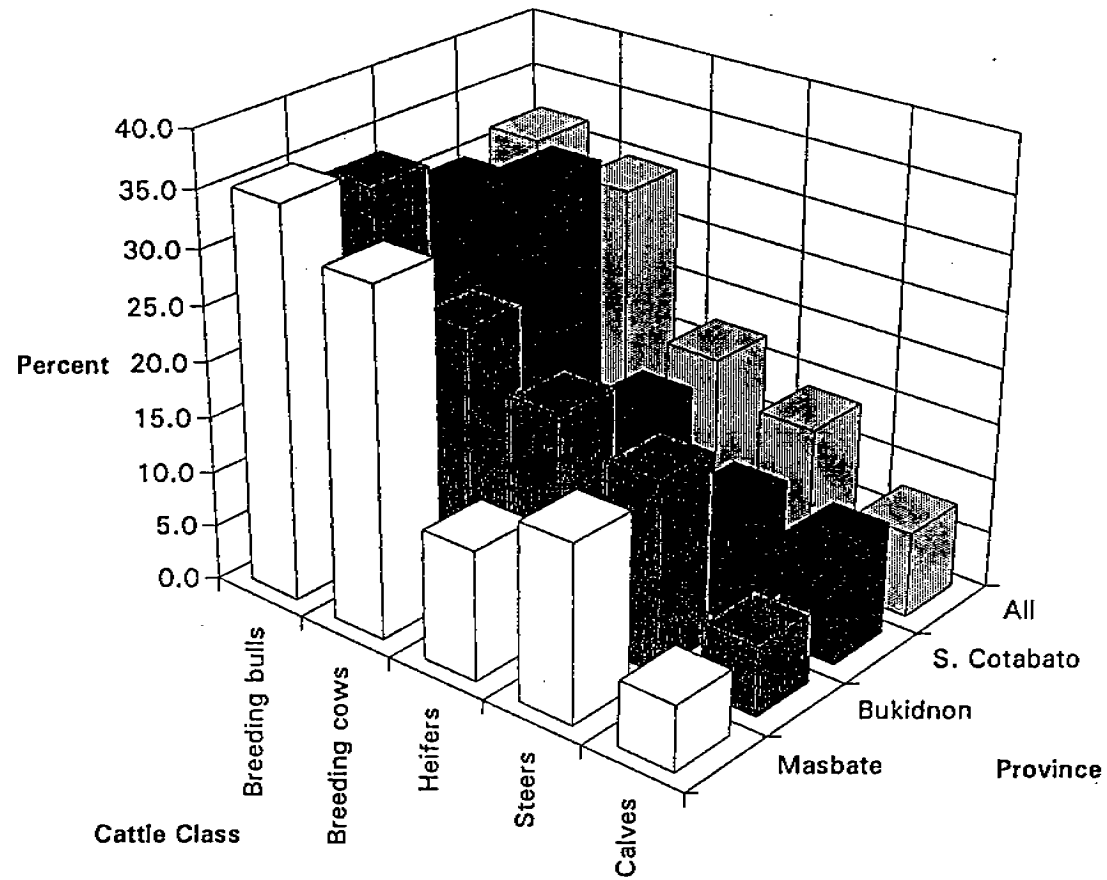


Figure 28. Revenue from Sales of Cattle

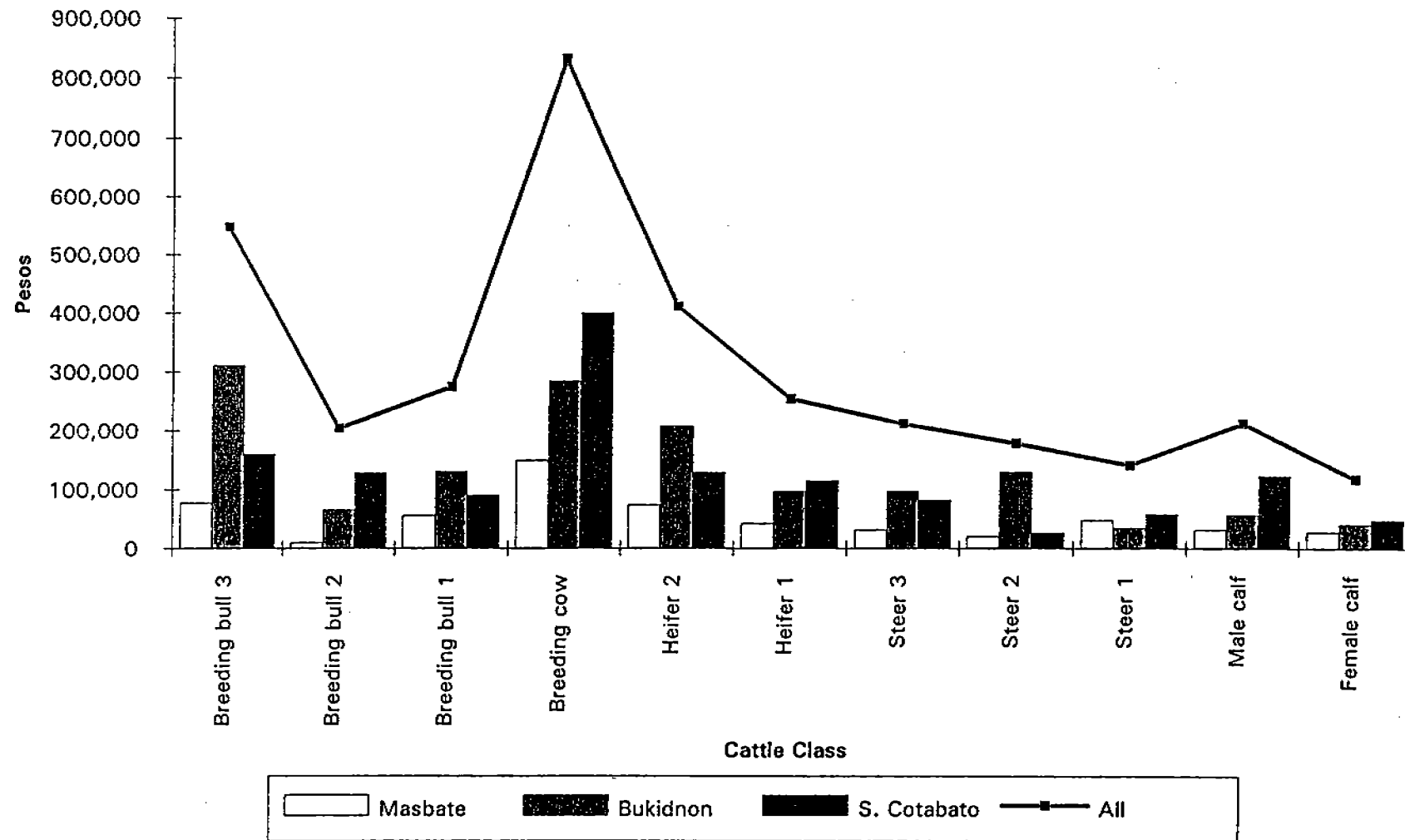




Figure 29. Cumulative Distribution of Hired Worker in the Pasture Leases: Per Farm Basis

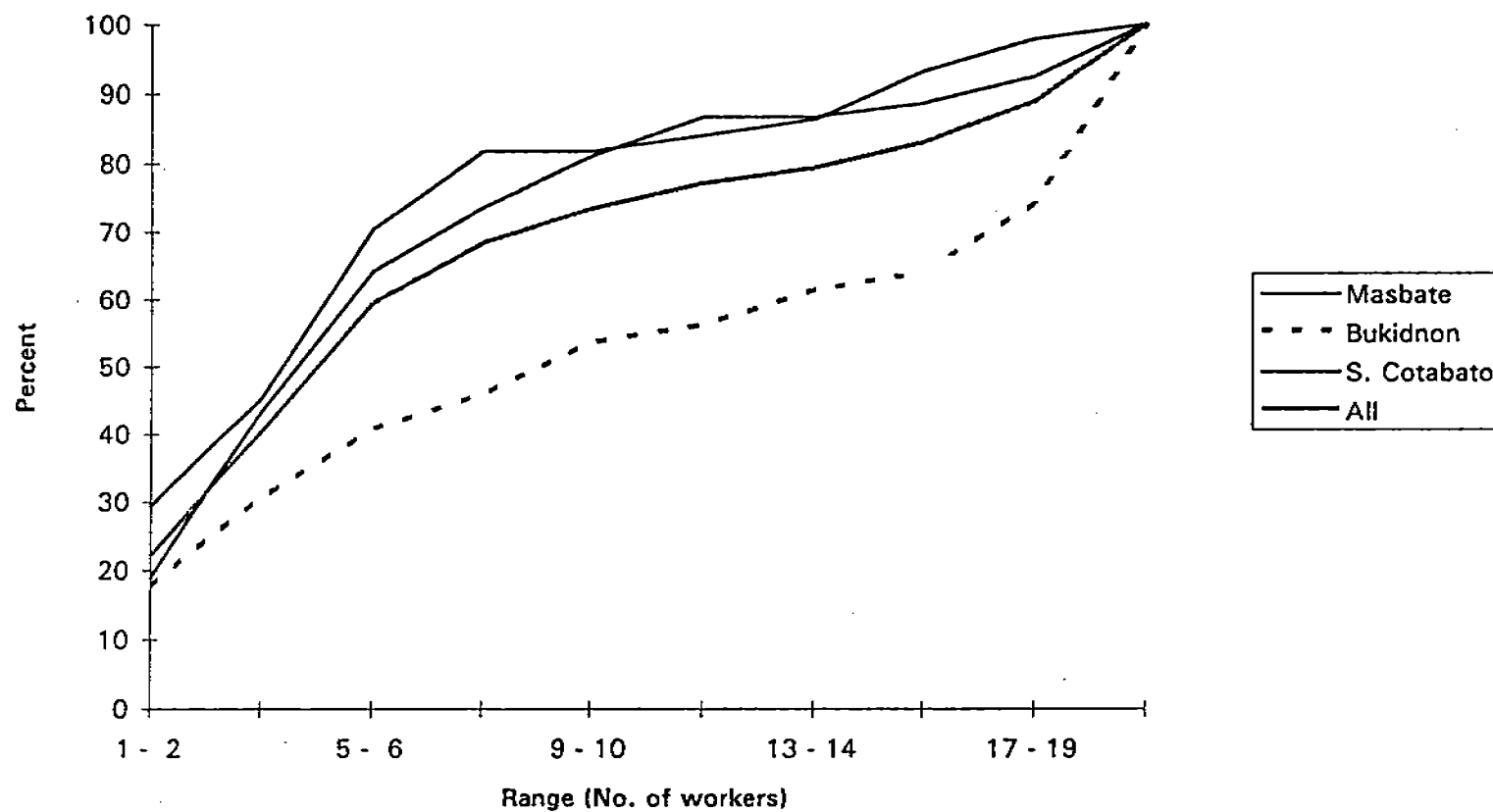


Figure 30. Distribution of Workload of Hired Workers: Per Area Basis, 1992

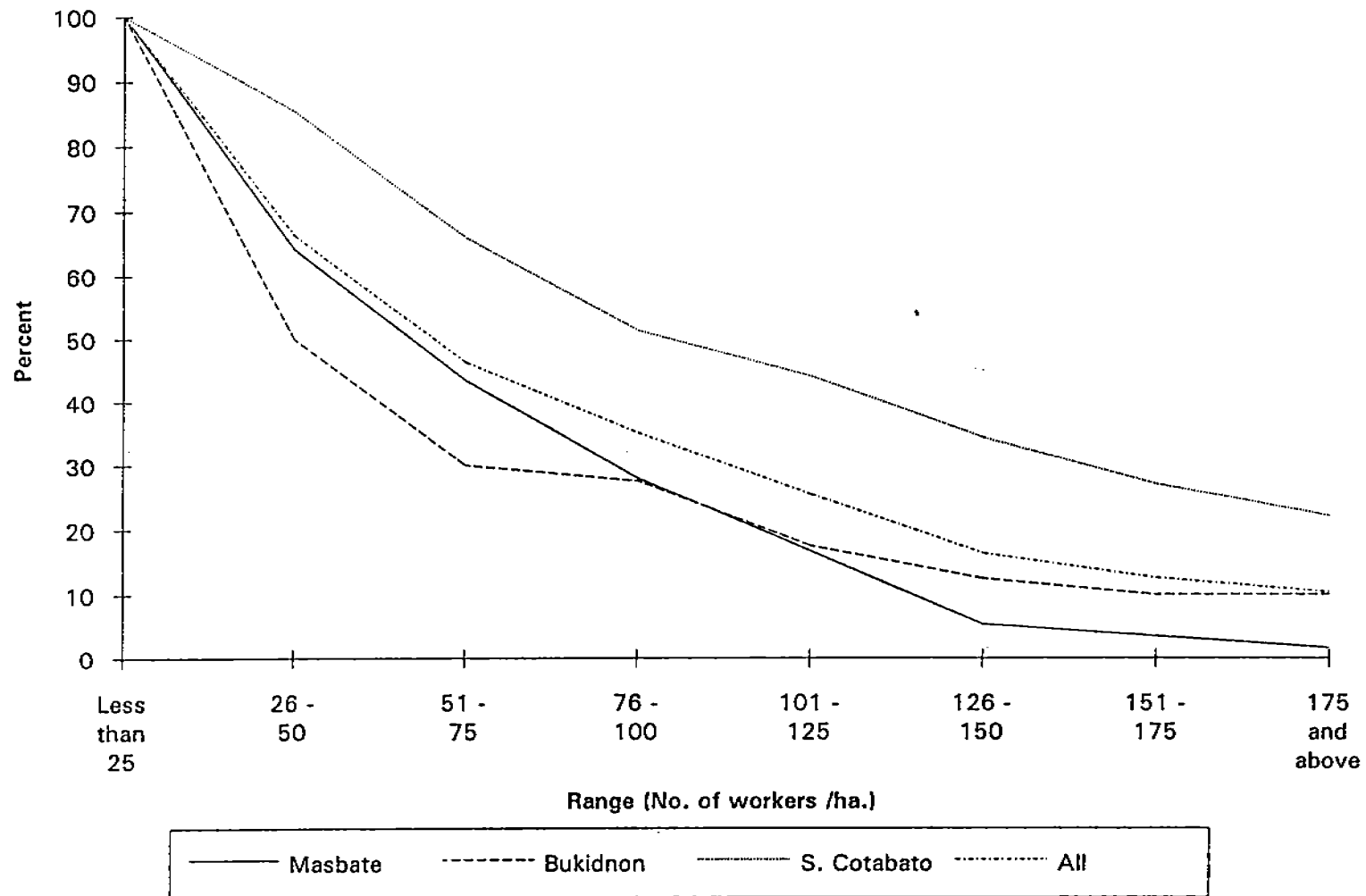


Figure 31. Distribution of Hired Workers: Head of Cattle Basis, 1992

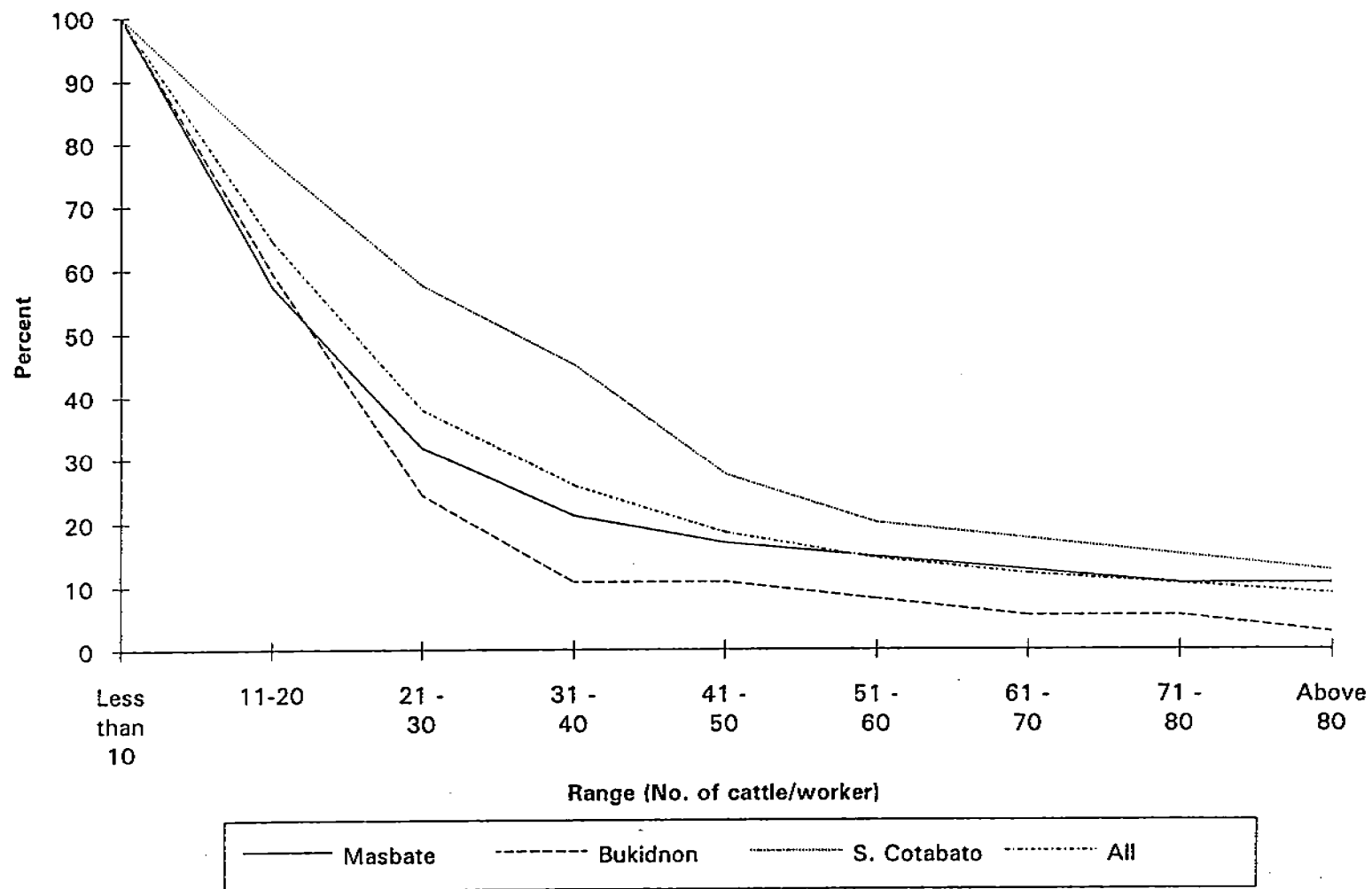
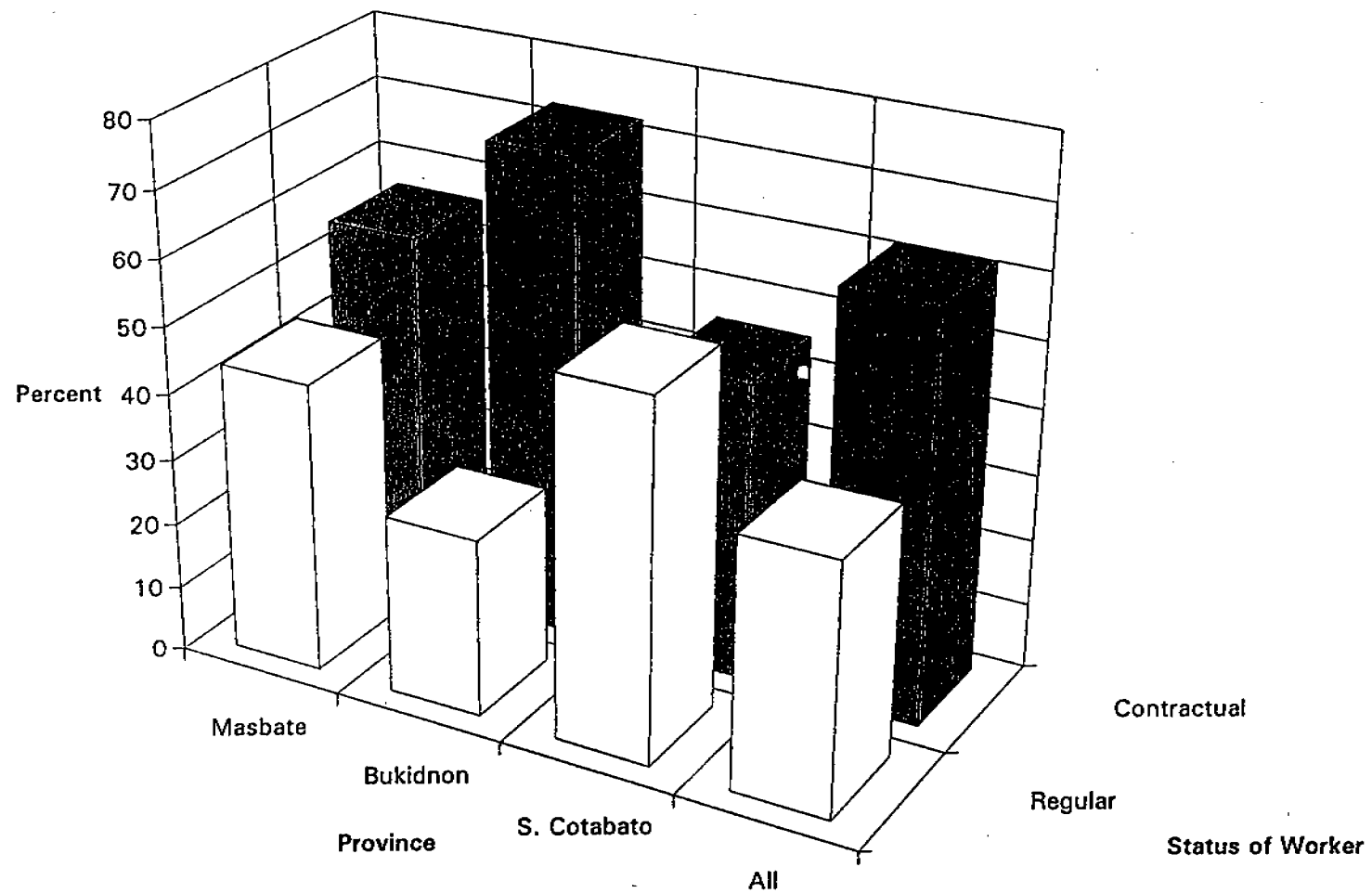


Figure 32. Structure of Hired Workers, 1992



**Figure 33. Compensation Scheme for Regular Hired Workers, 1992. (As percent of farms with regular hired workers)**

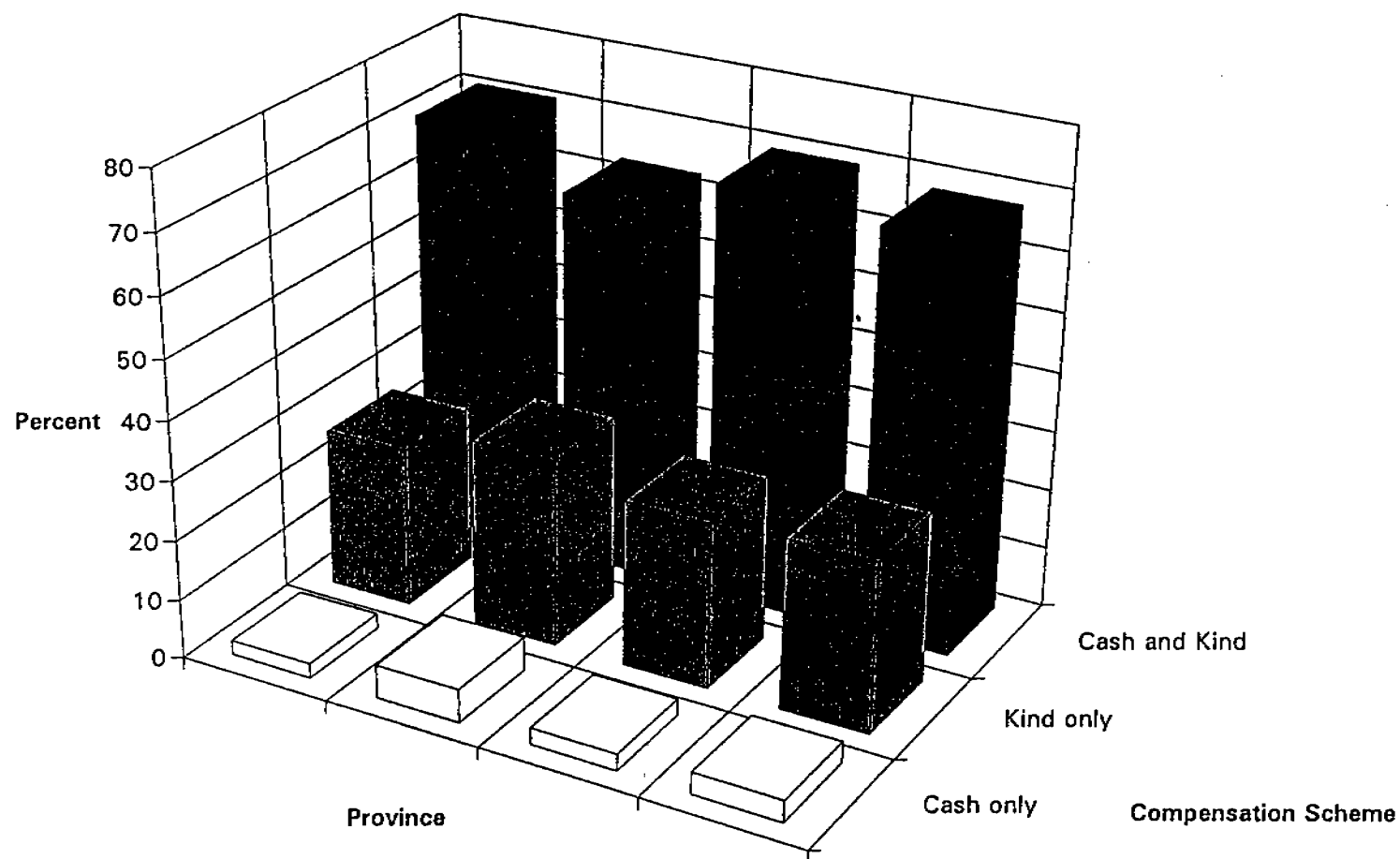


Figure 34. Compensation Scheme for contractual Hired Workers, 1992 (As percent of farms with contractual hired workers)

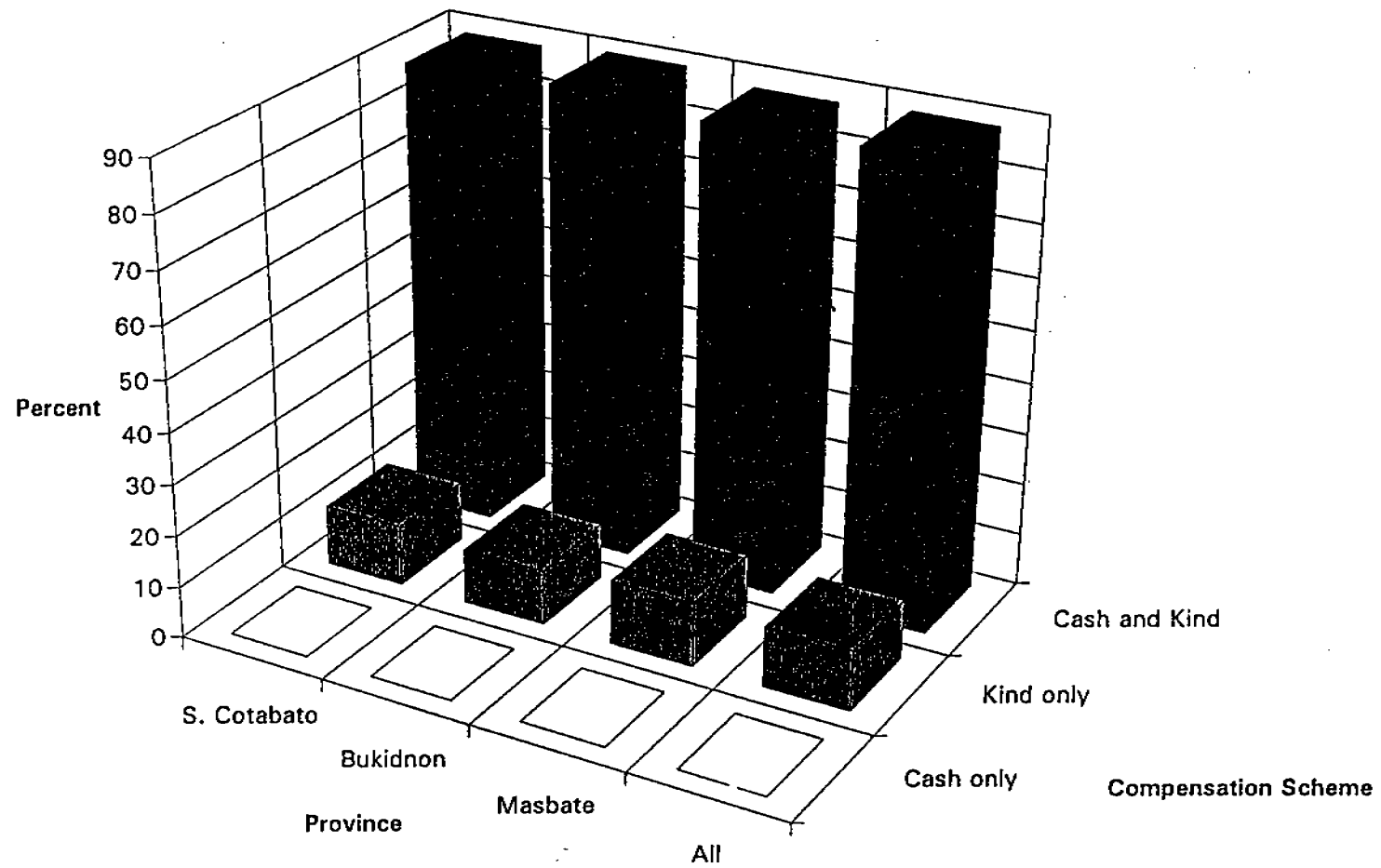


Figure 35. Total Cash Compensation for All Workers in Pasture Lease, 1992

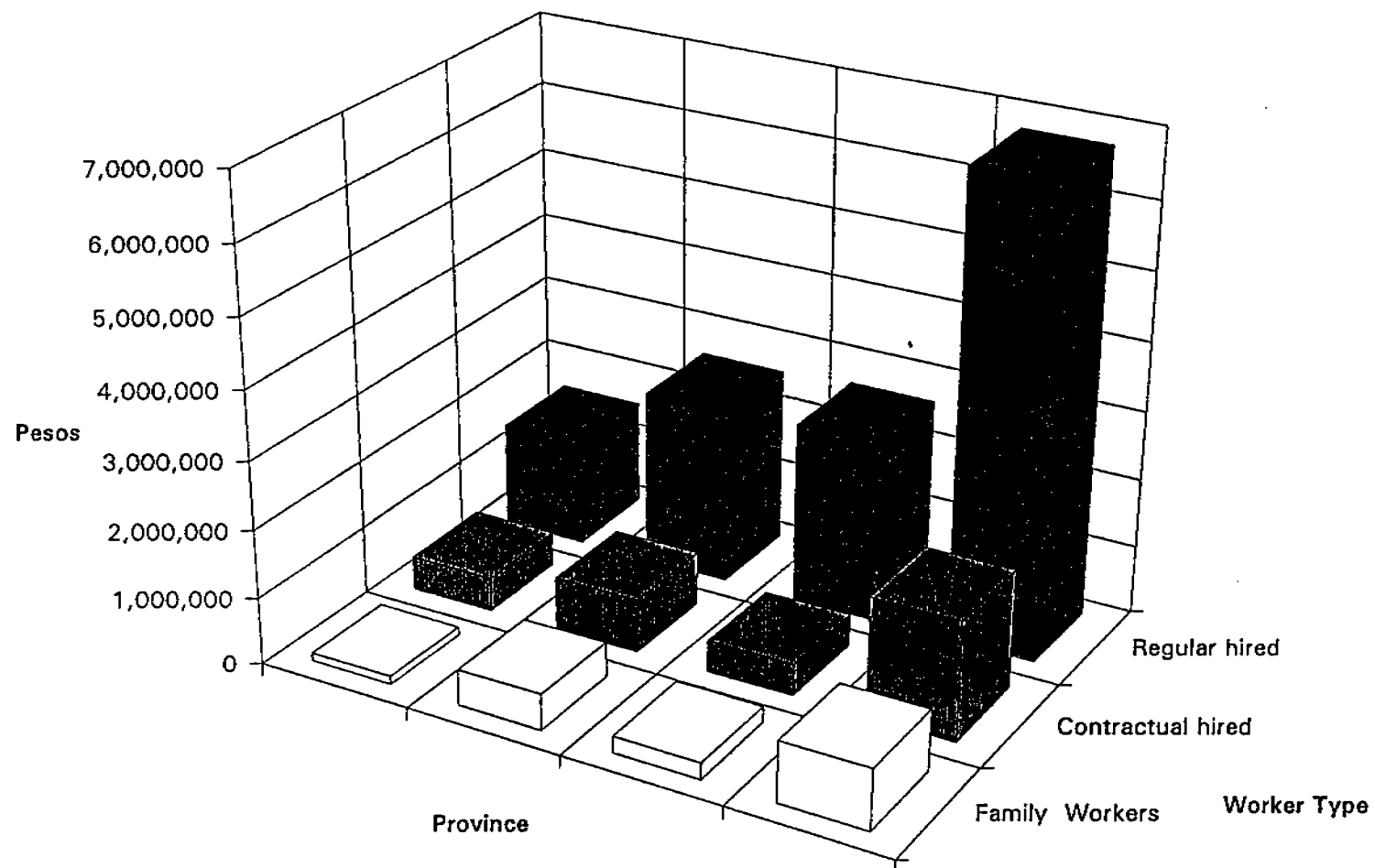
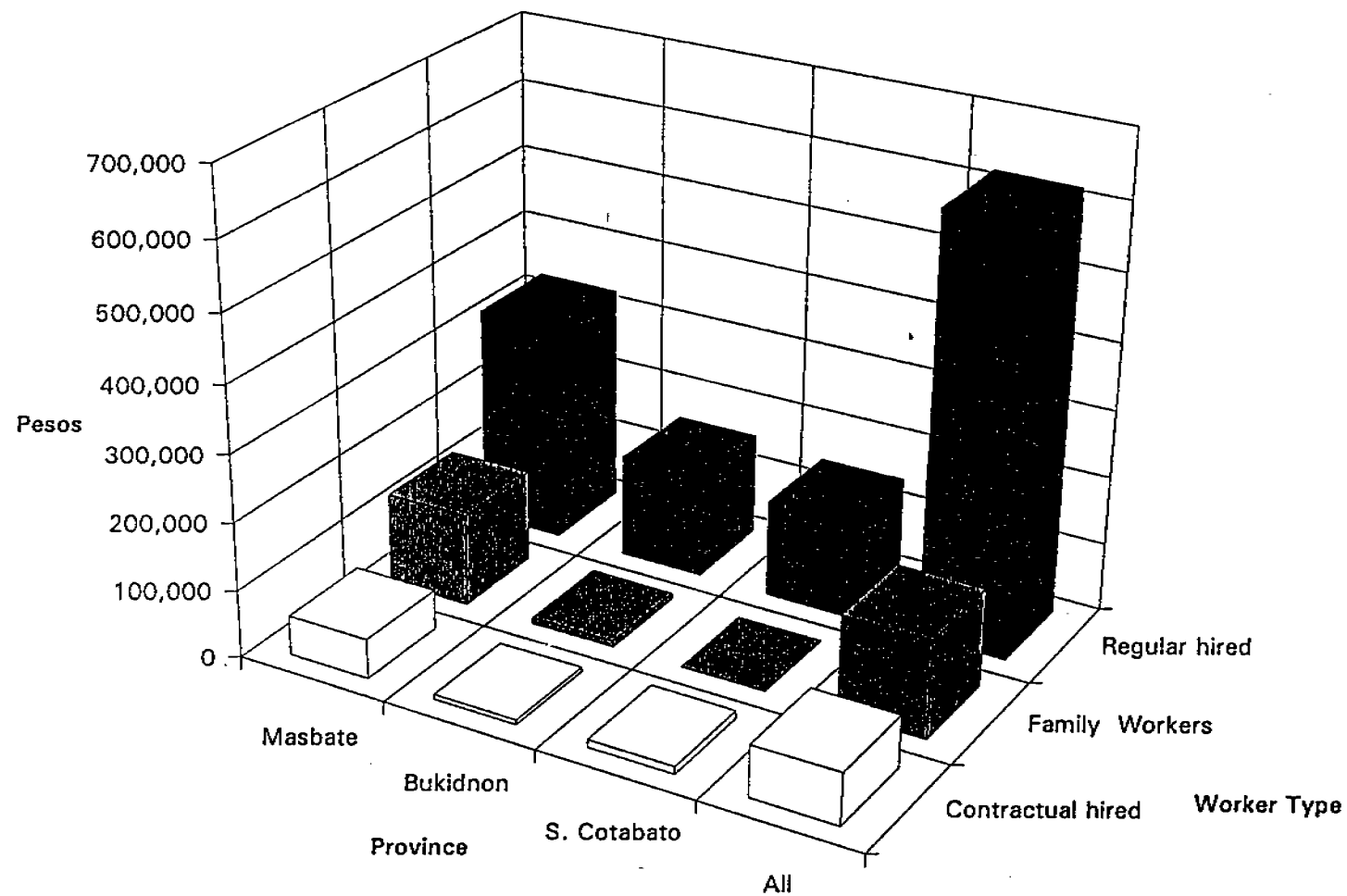


Figure 36. Total Compensation in Kind for All Workers in Pasture Lease, 1992





**Figure. 37 Total Compensation, Cash and Kind, for All Workers in Pasture Lease, 1992  
(In pesos)**

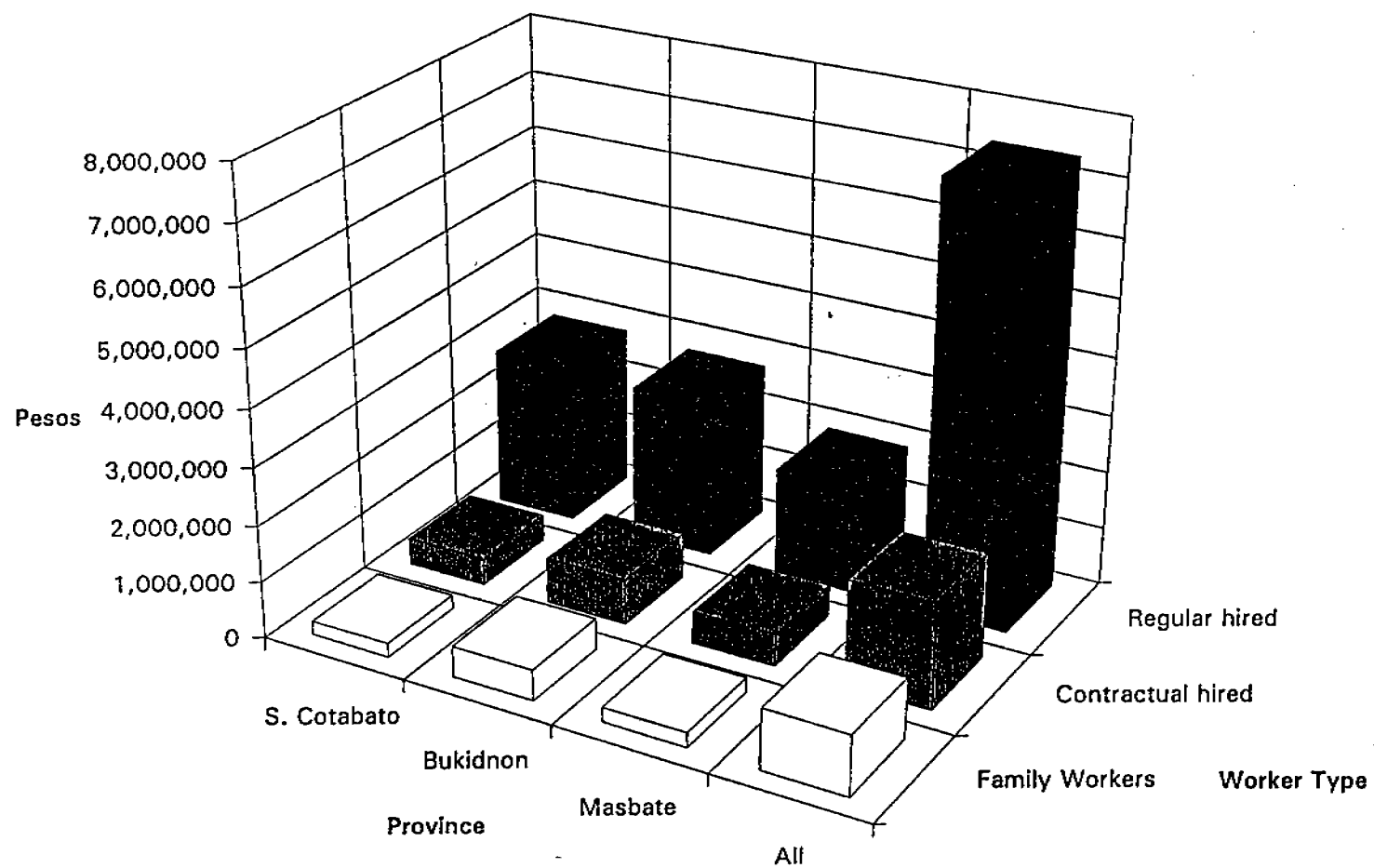


Figure 38. Average Cash Compensation for All Workers: Per Worker Basis, 1992

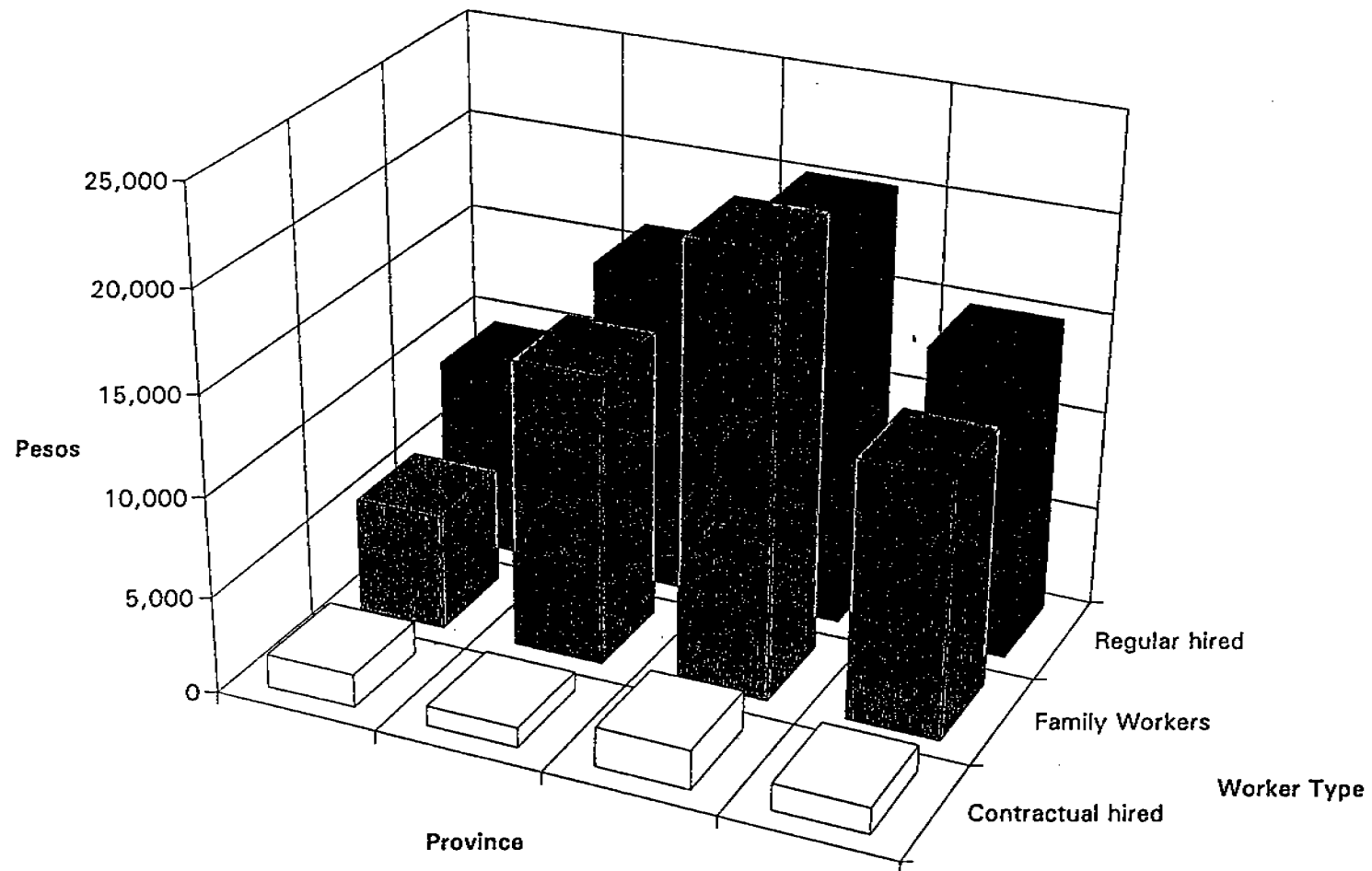


Figure 39. Average Compensation in Kind for All Workers: Per Farm Basis, 1992

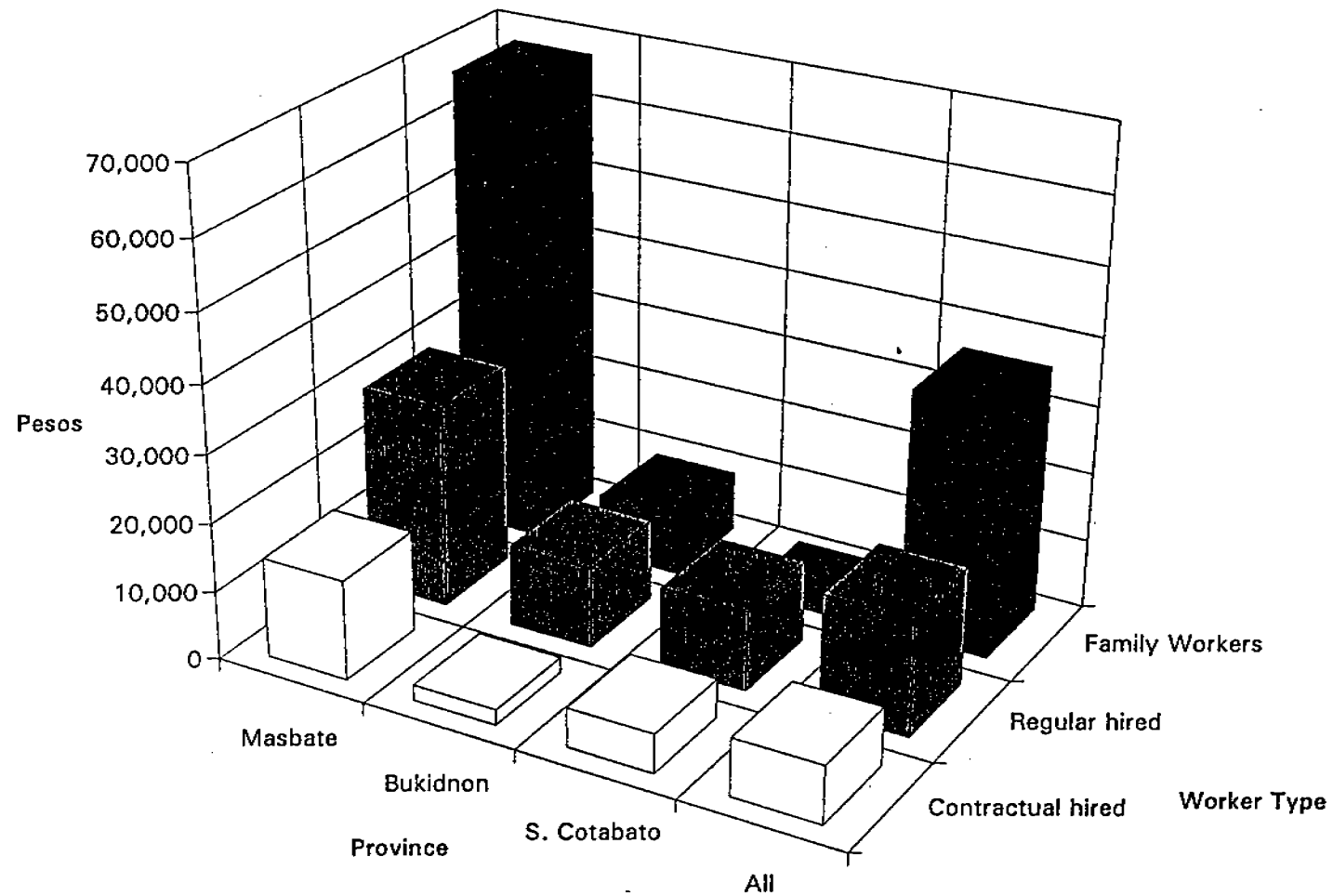


Figure 40. Total Compensation per Worker Basis

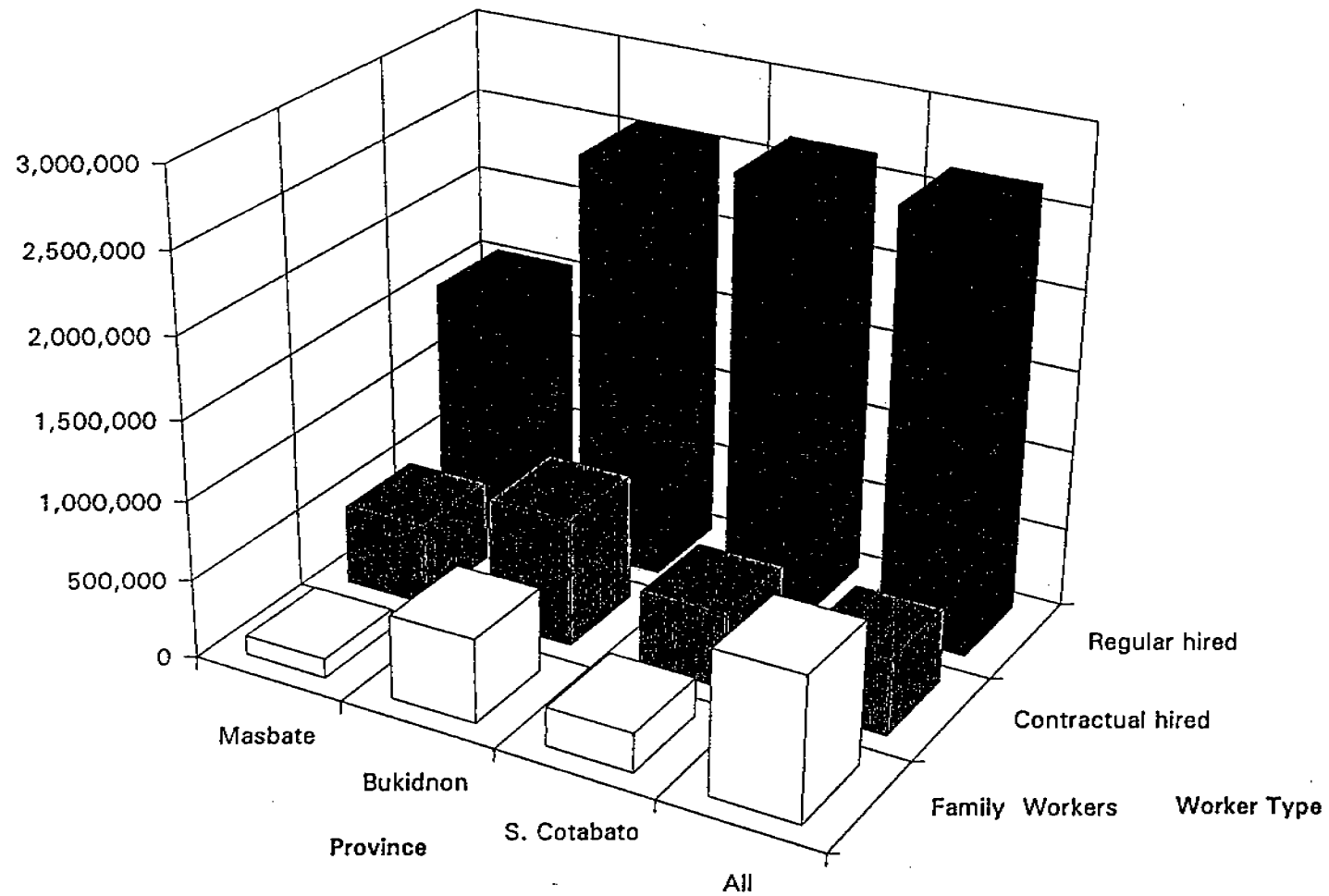


Figure 41. Average Compensation in Kind for All Workers: Per Worker Basis, 1992

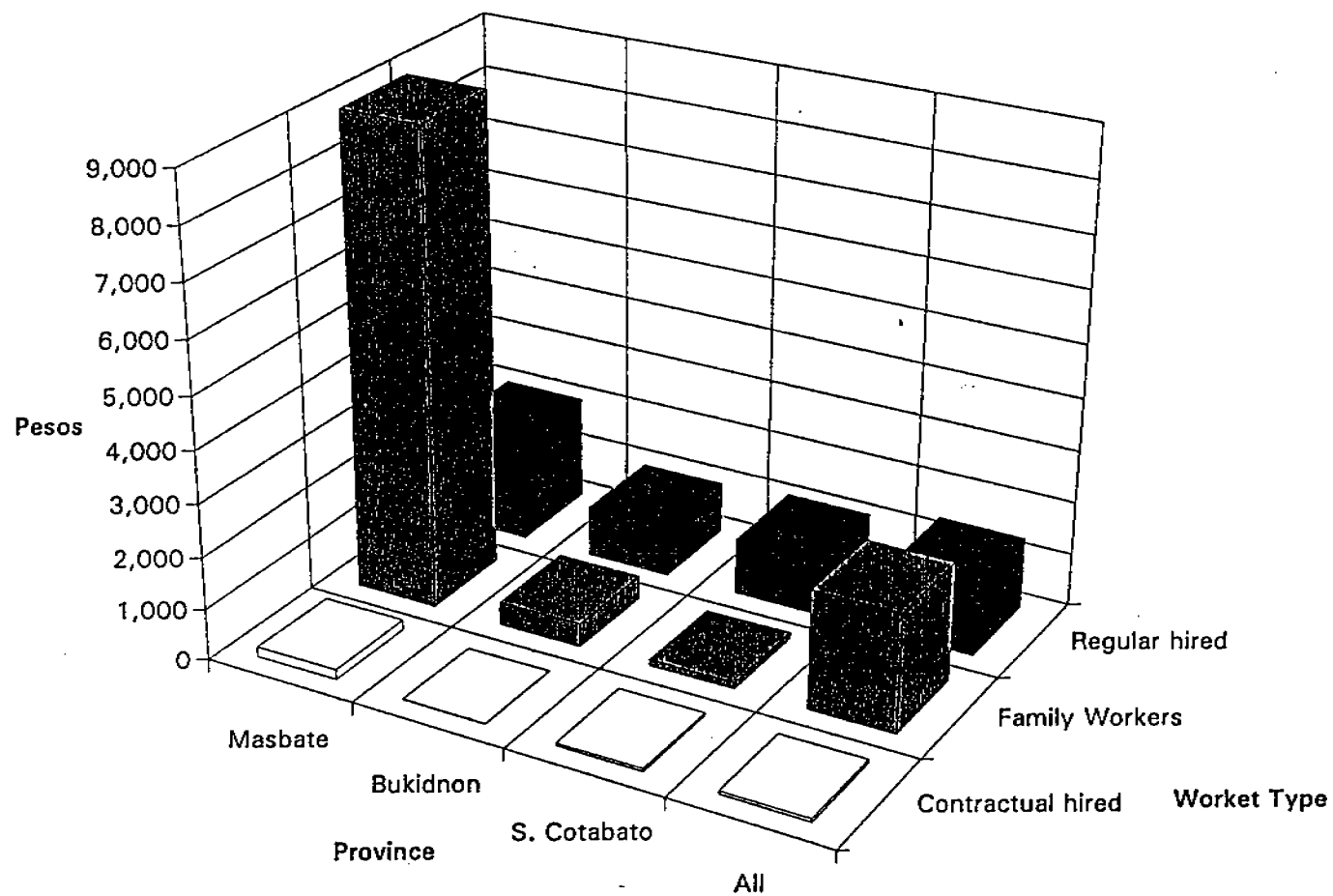


Figure 42. Value of Fringe Benefits to Hired Worker, 1992

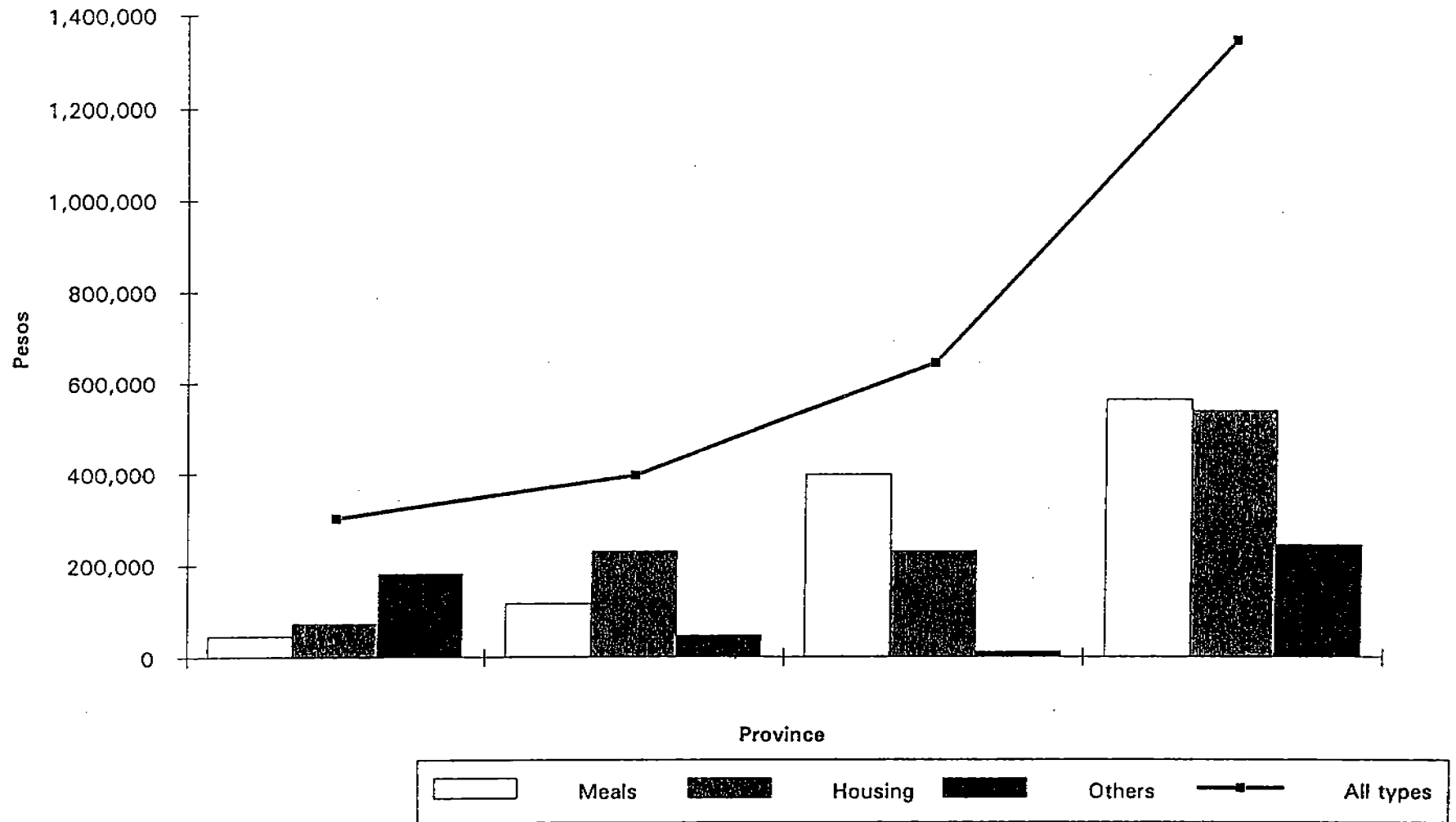


Figure 43. Investment in Variable Inputs

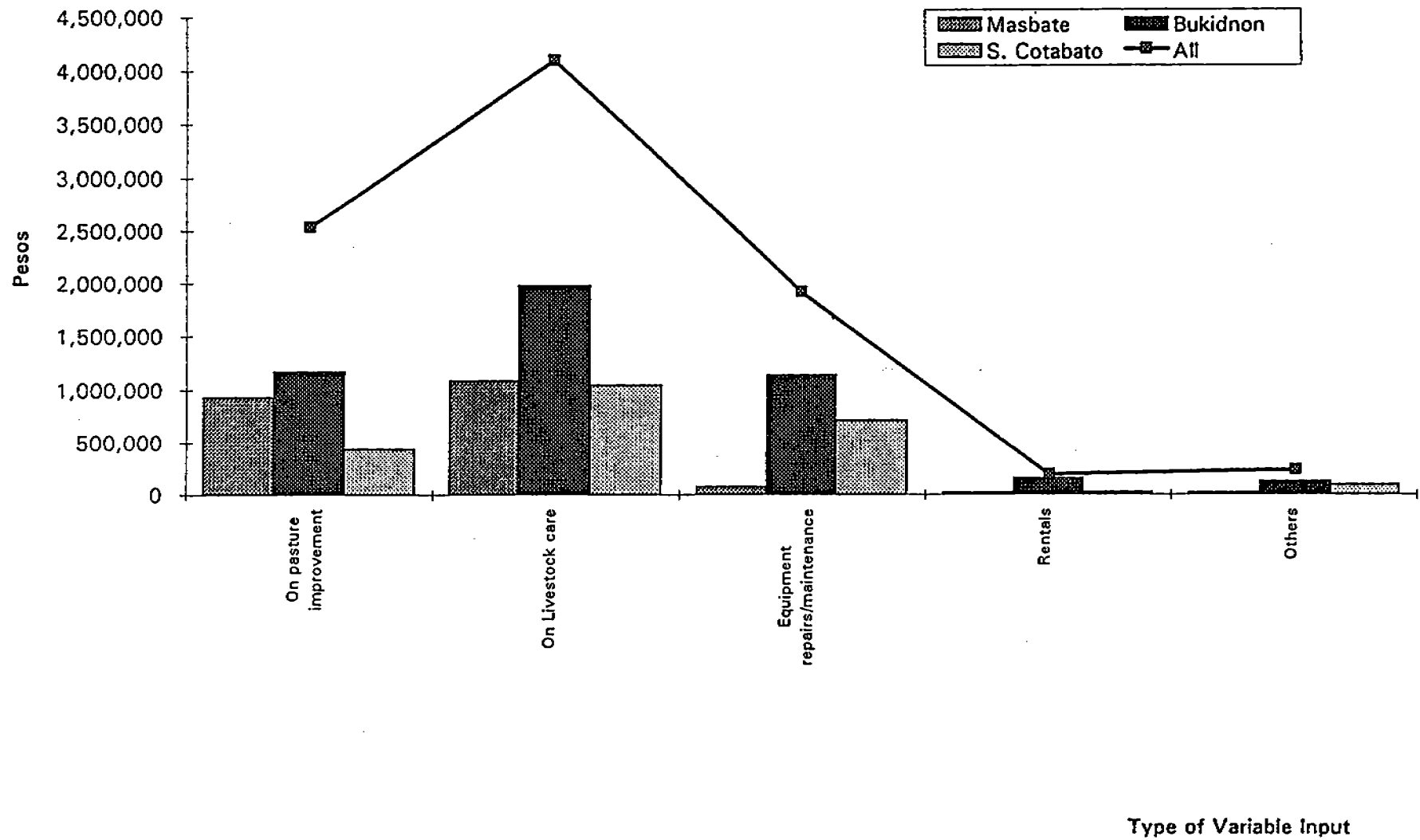


Figure 44. Summary of Expenditure Share by Major Category of Variable Inputs

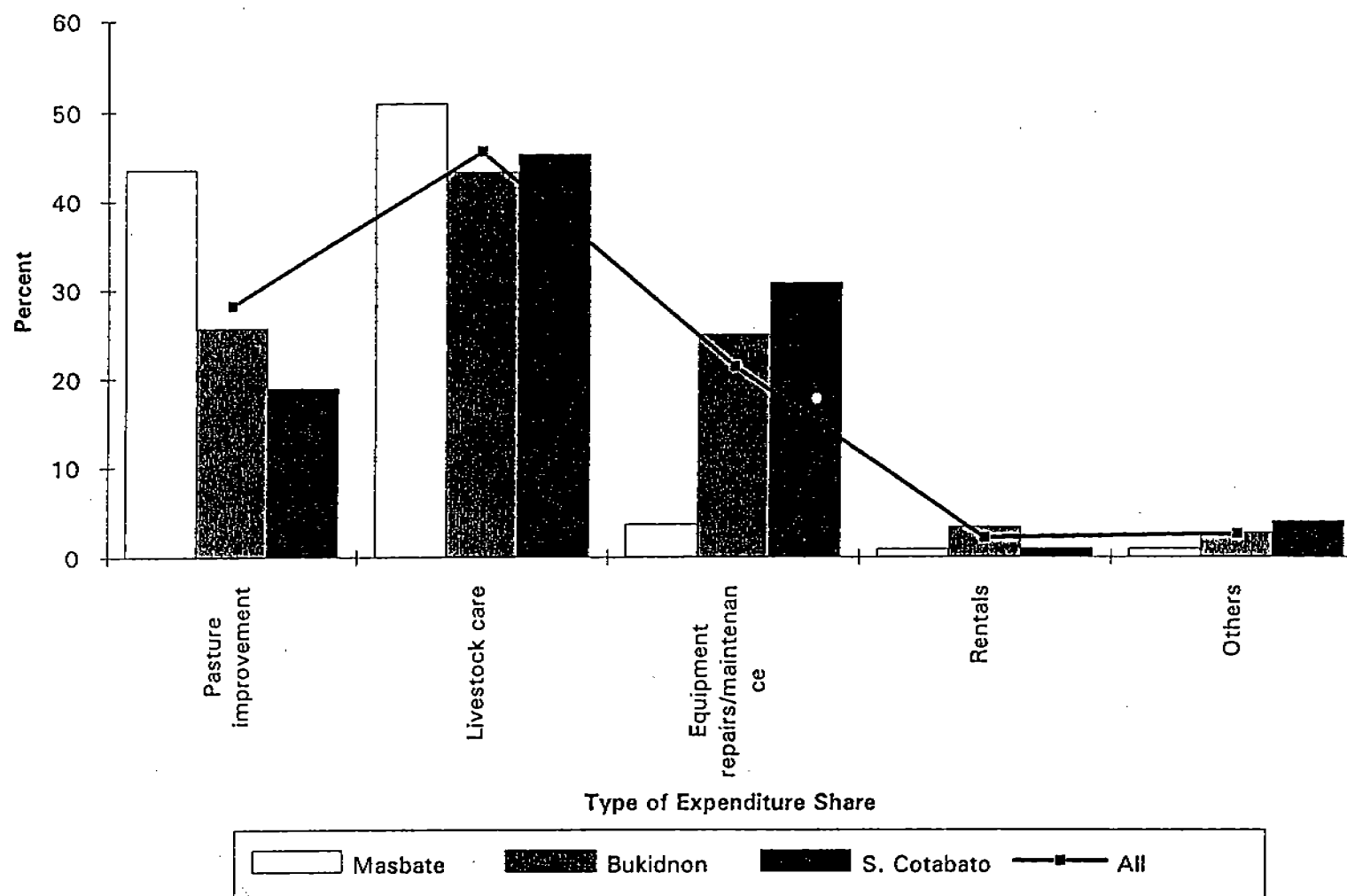




Figure 45. Composition of Expenditures in Pasture Improvement

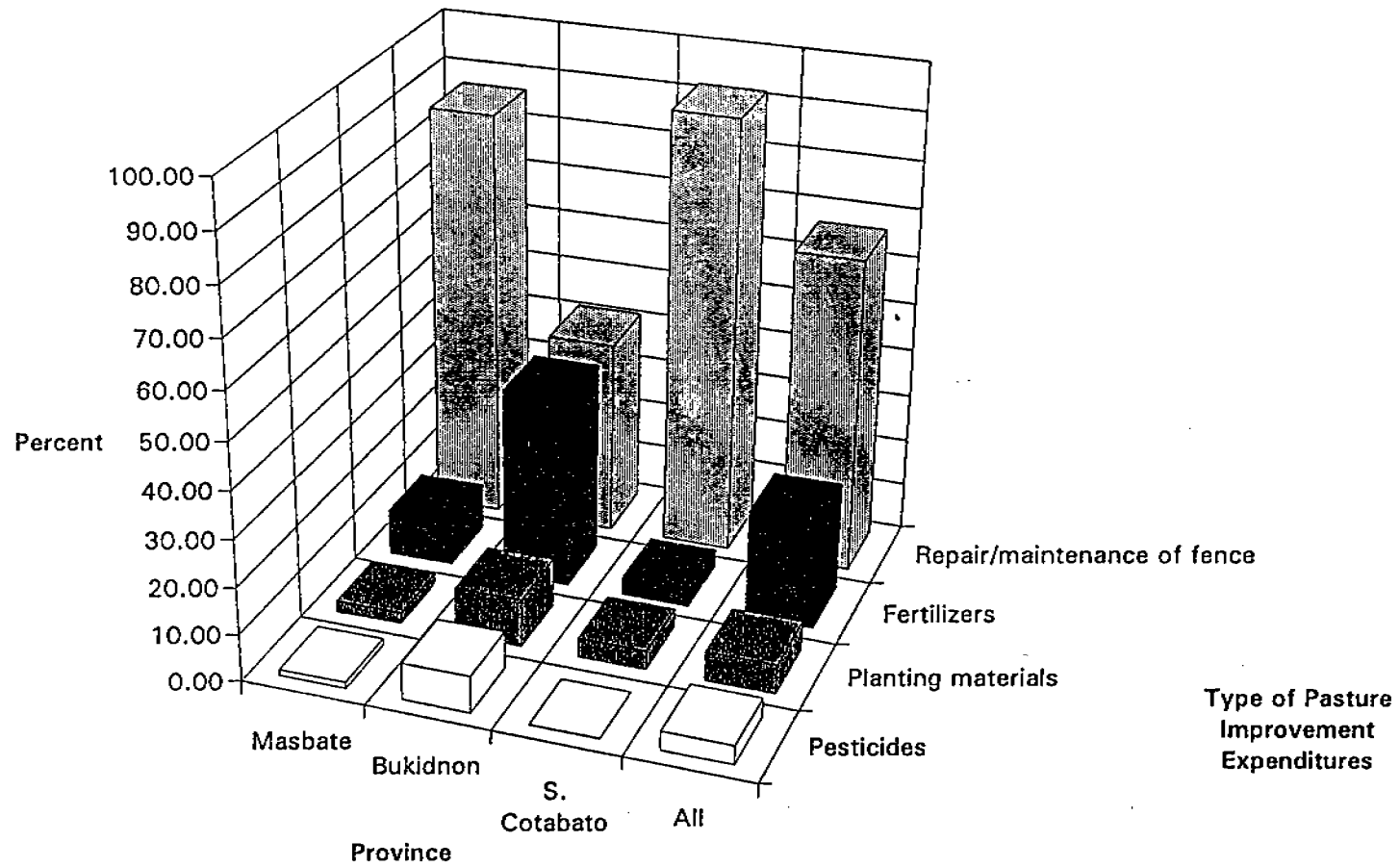


Figure 46. Composition of Expenditures on Livestock Care

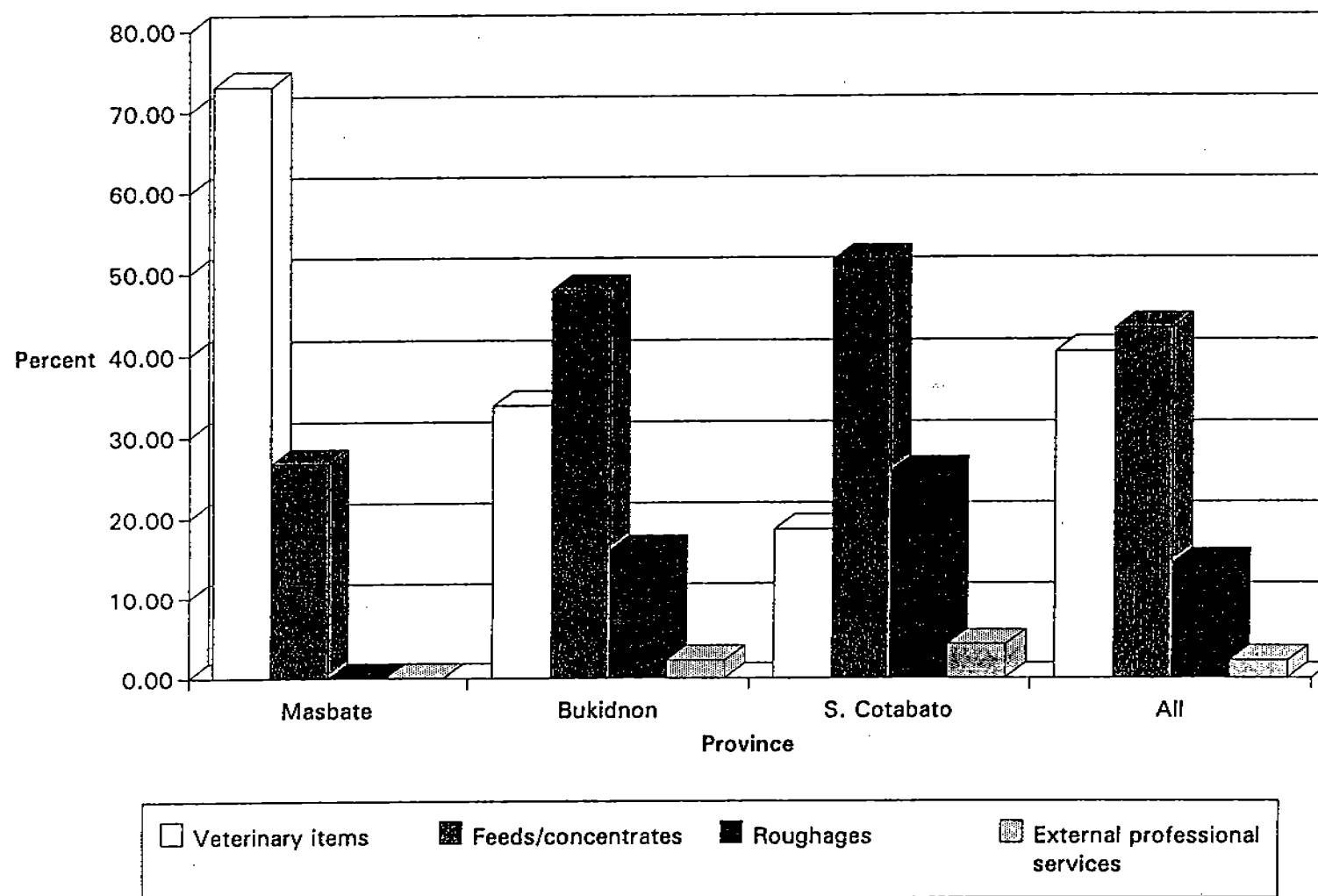


Figure 47. Composition of Expenditures in Repair/Maintenance of Equipments

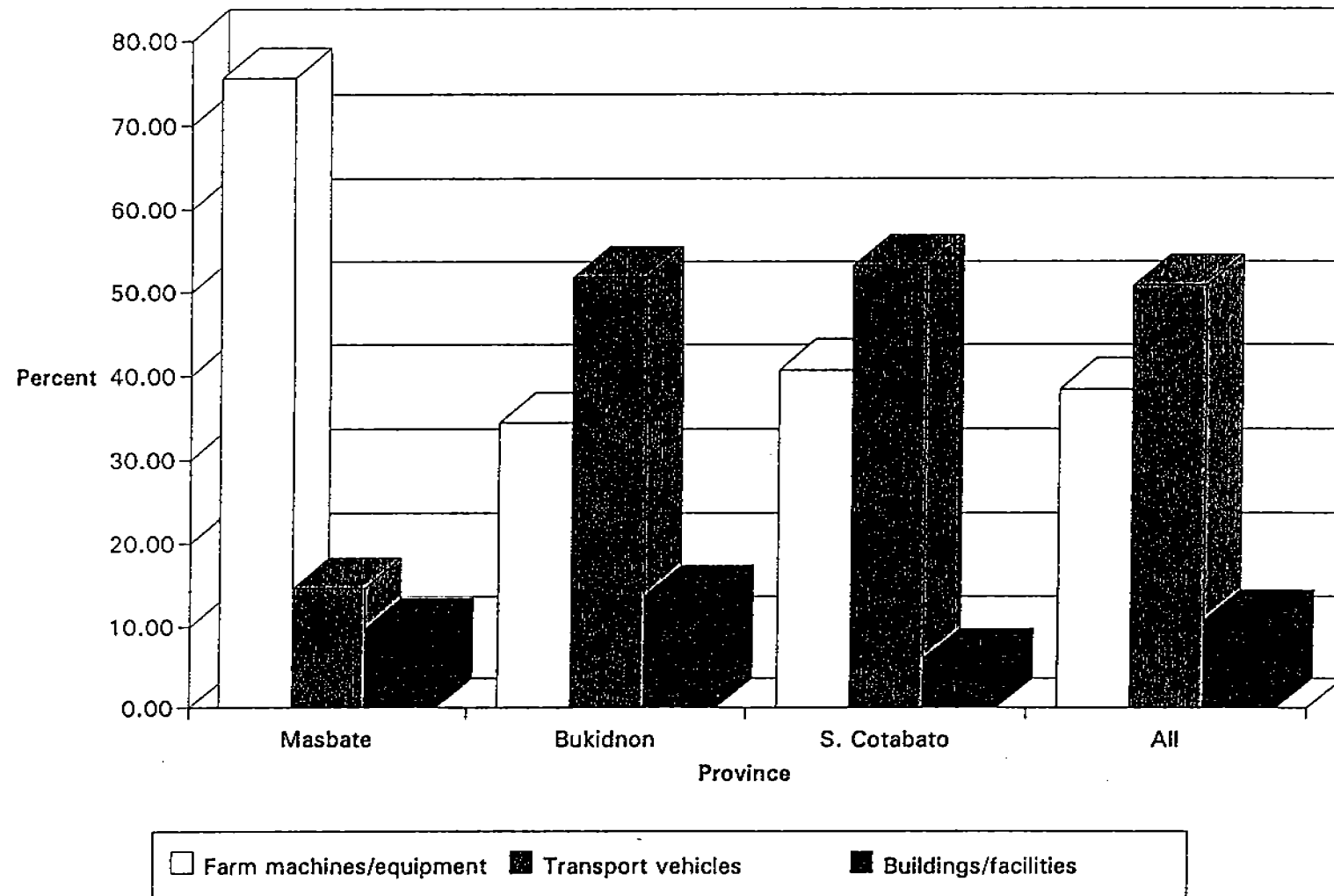


Figure 48. Income from Non-Pasture Activities in the Pasture Lease

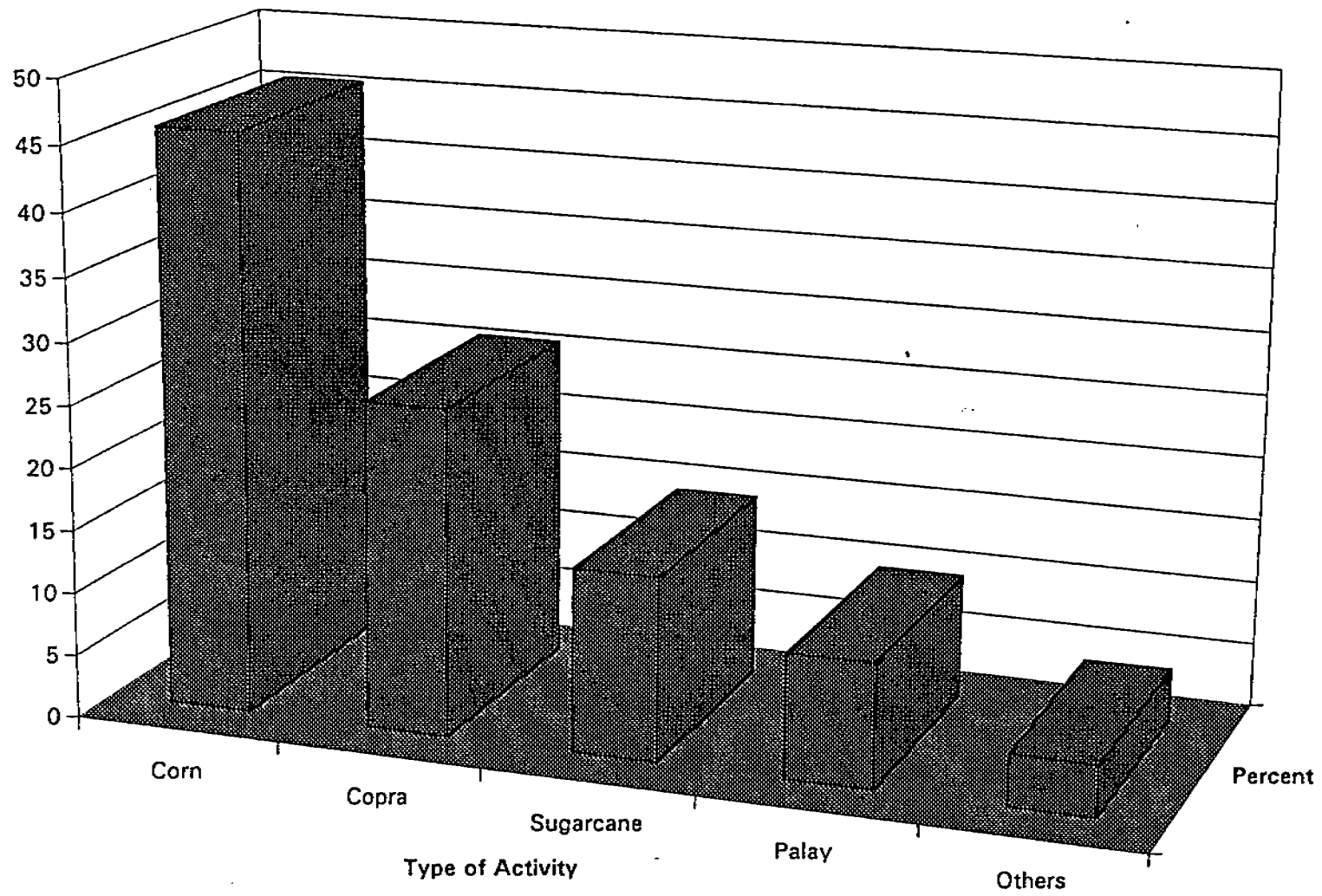


Figure 49. Ownership of Non-Pasture Major Assets

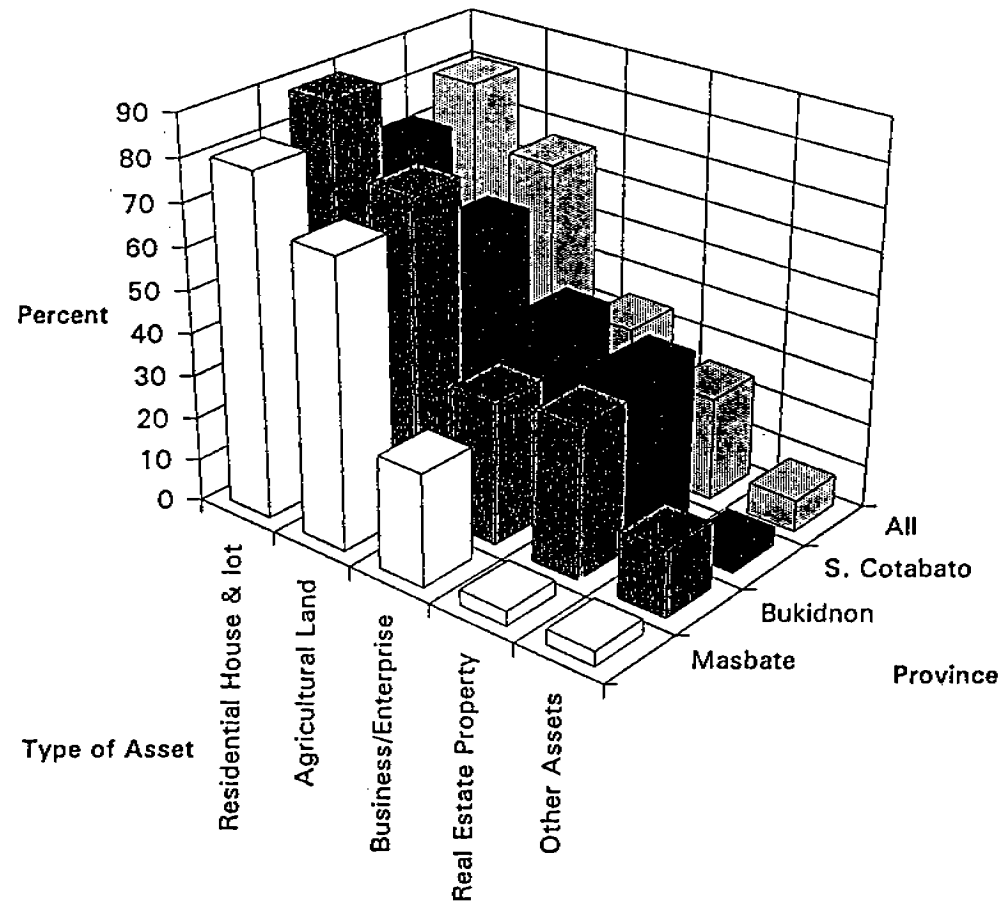


Figure 50. Average Value of Non-Pasture Assets

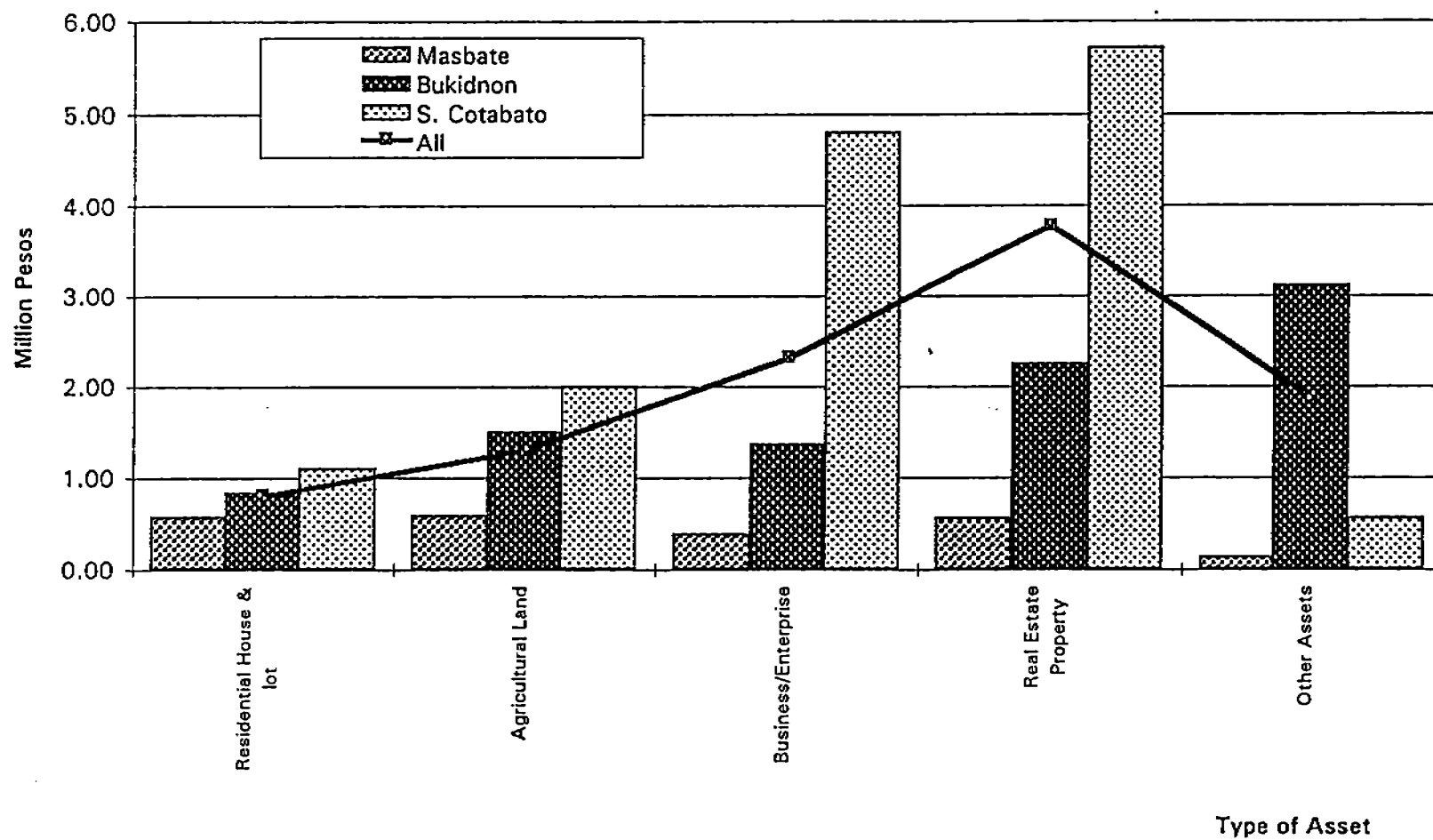


Figure 51. Mean Value of Agricultural Land at 1992 Market Prices

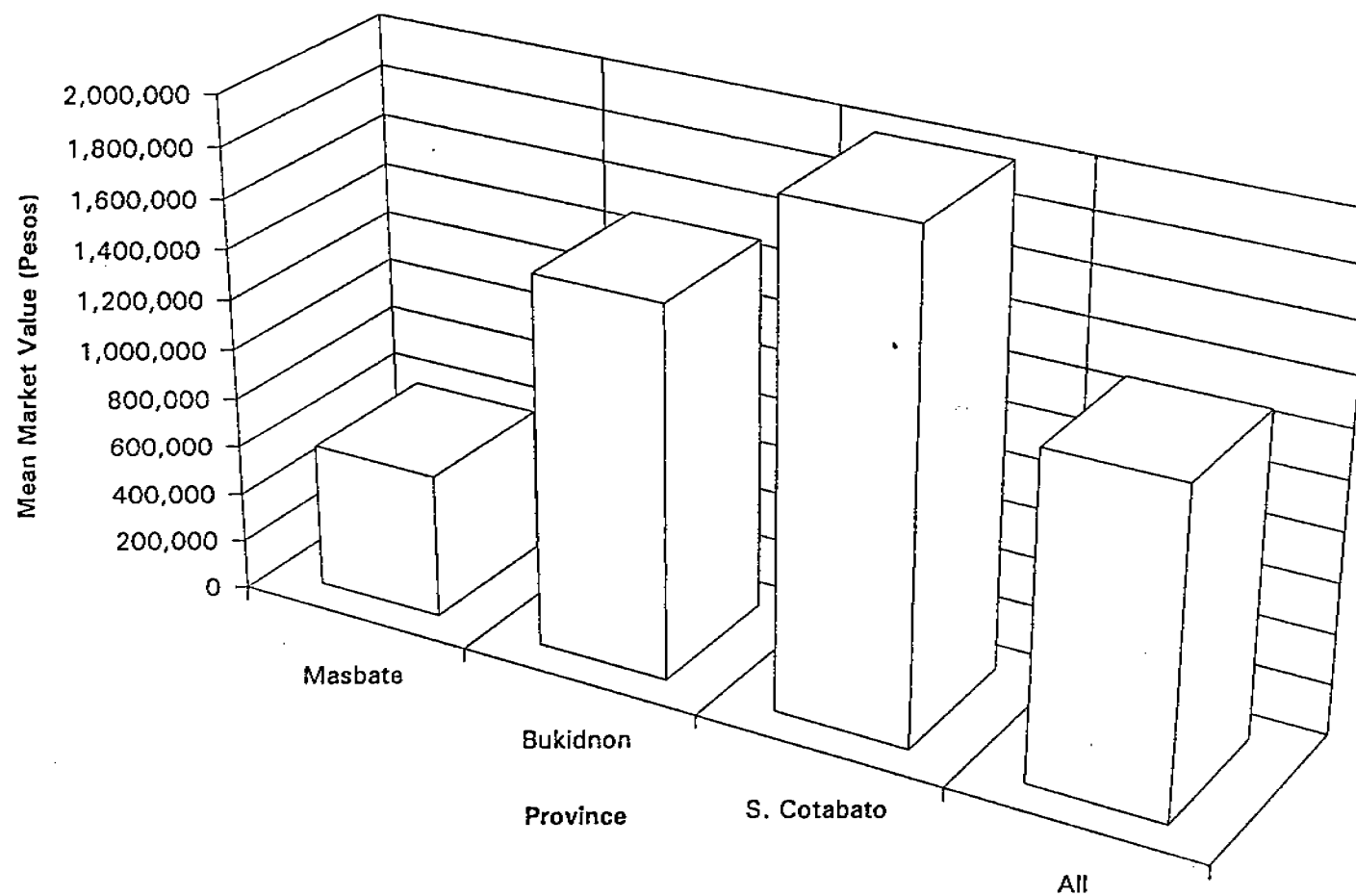
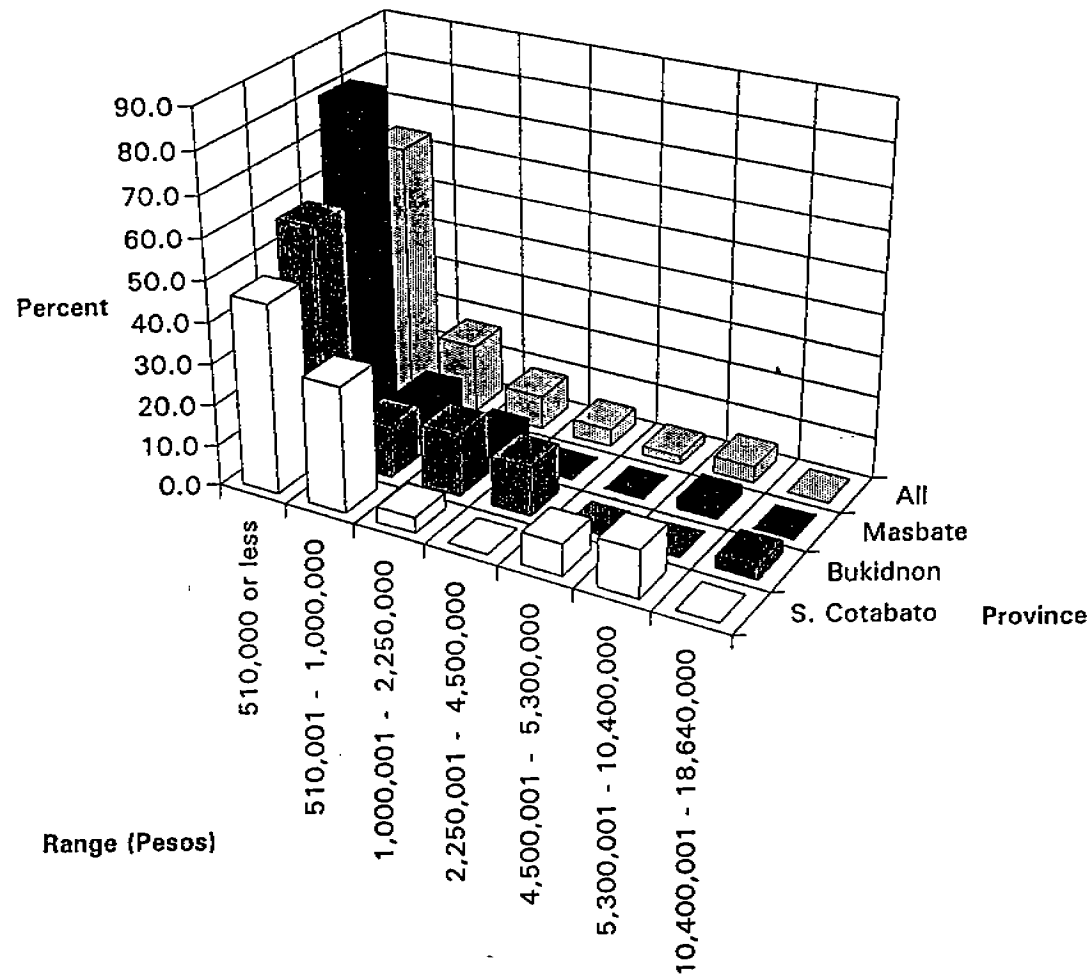


Figure 52. Market Value of Agricultural Land.





**Figure 53. Average Value of Business & Enterprises at 1992 Market Prices.**

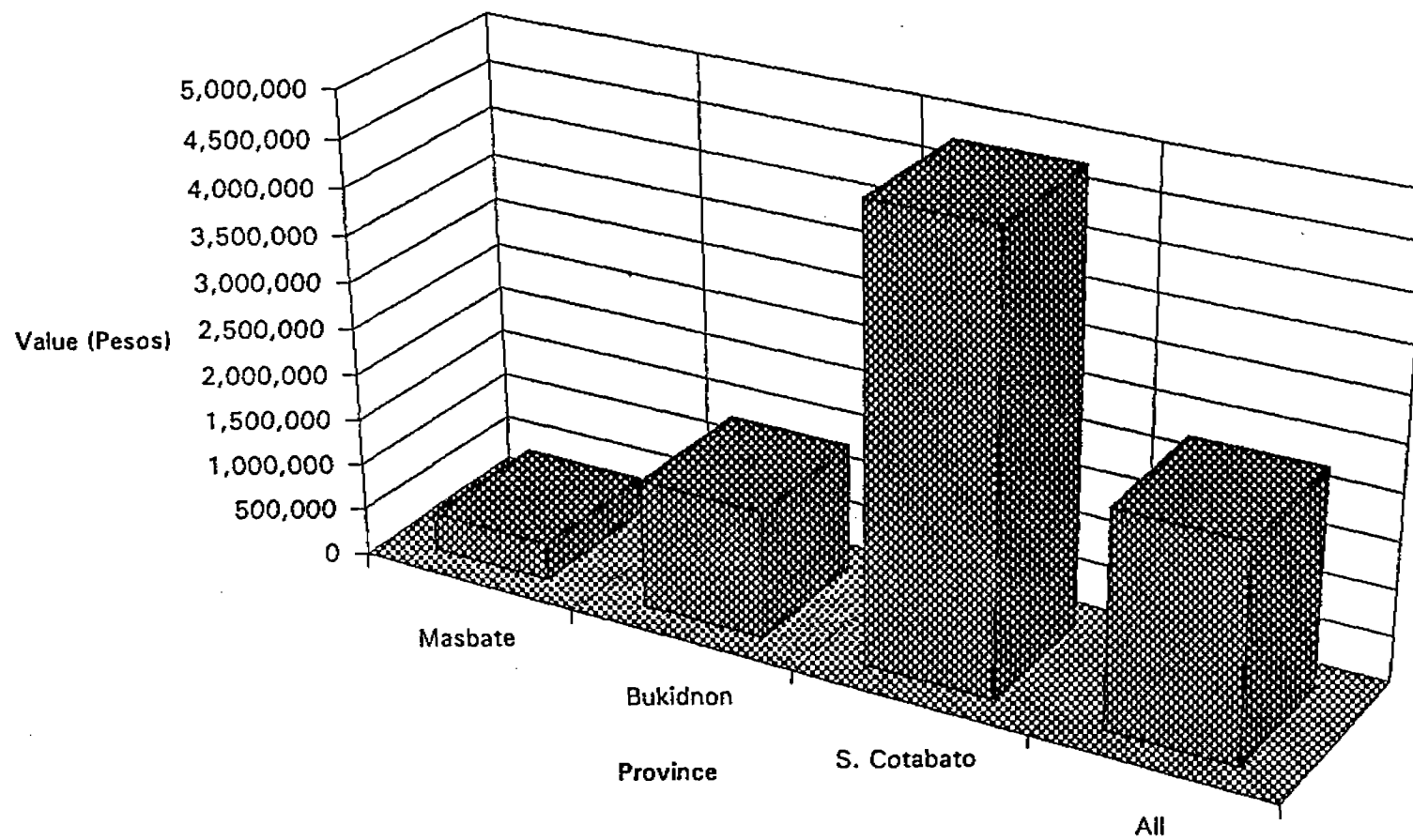


Figure 54. Market Value of Business Assets

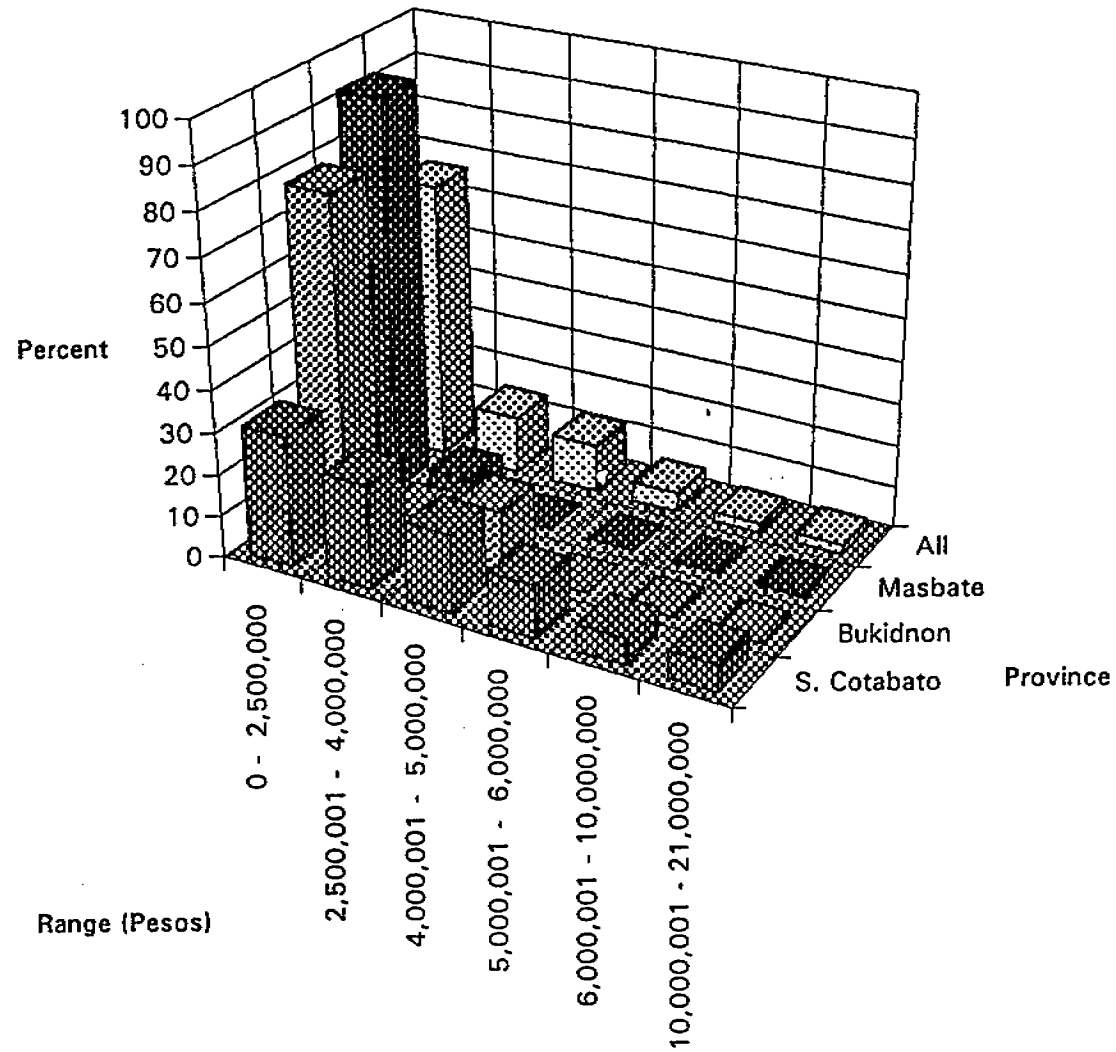


Figure 55. Average Value of Real Estate Property, 1992

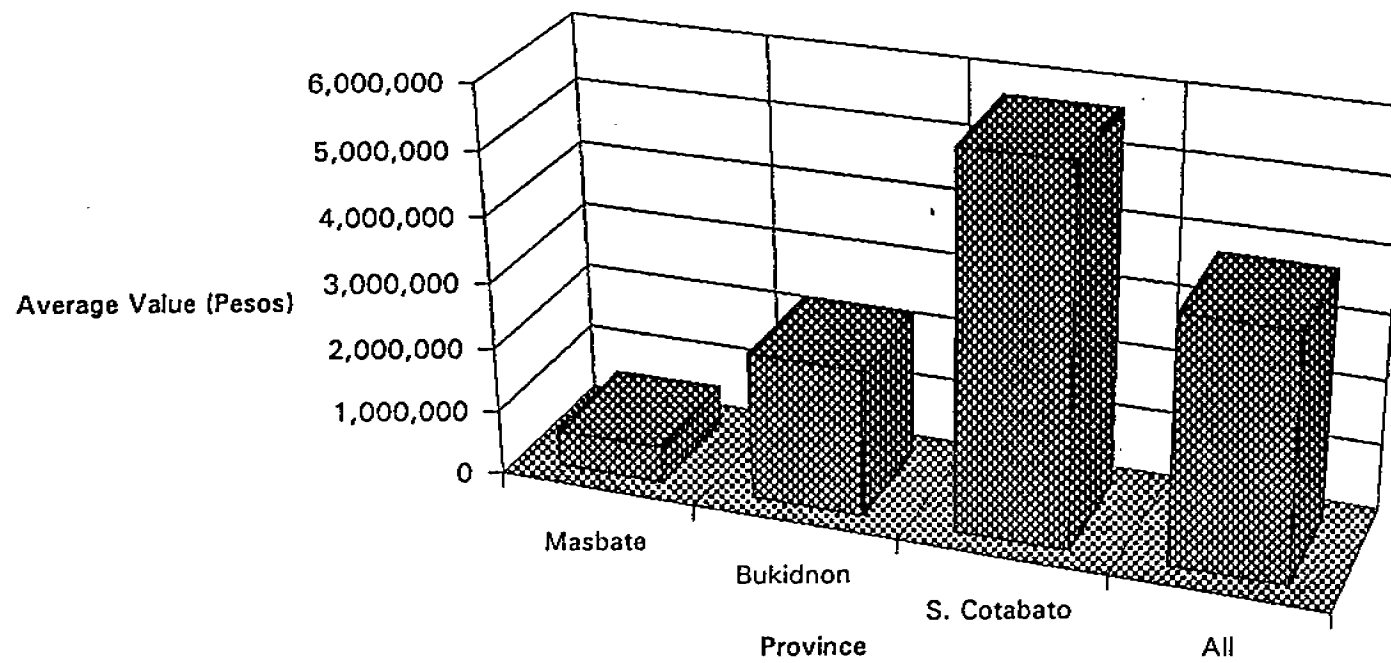


Figure 56. Distribution of Leasholders by Value of Real Estate Property

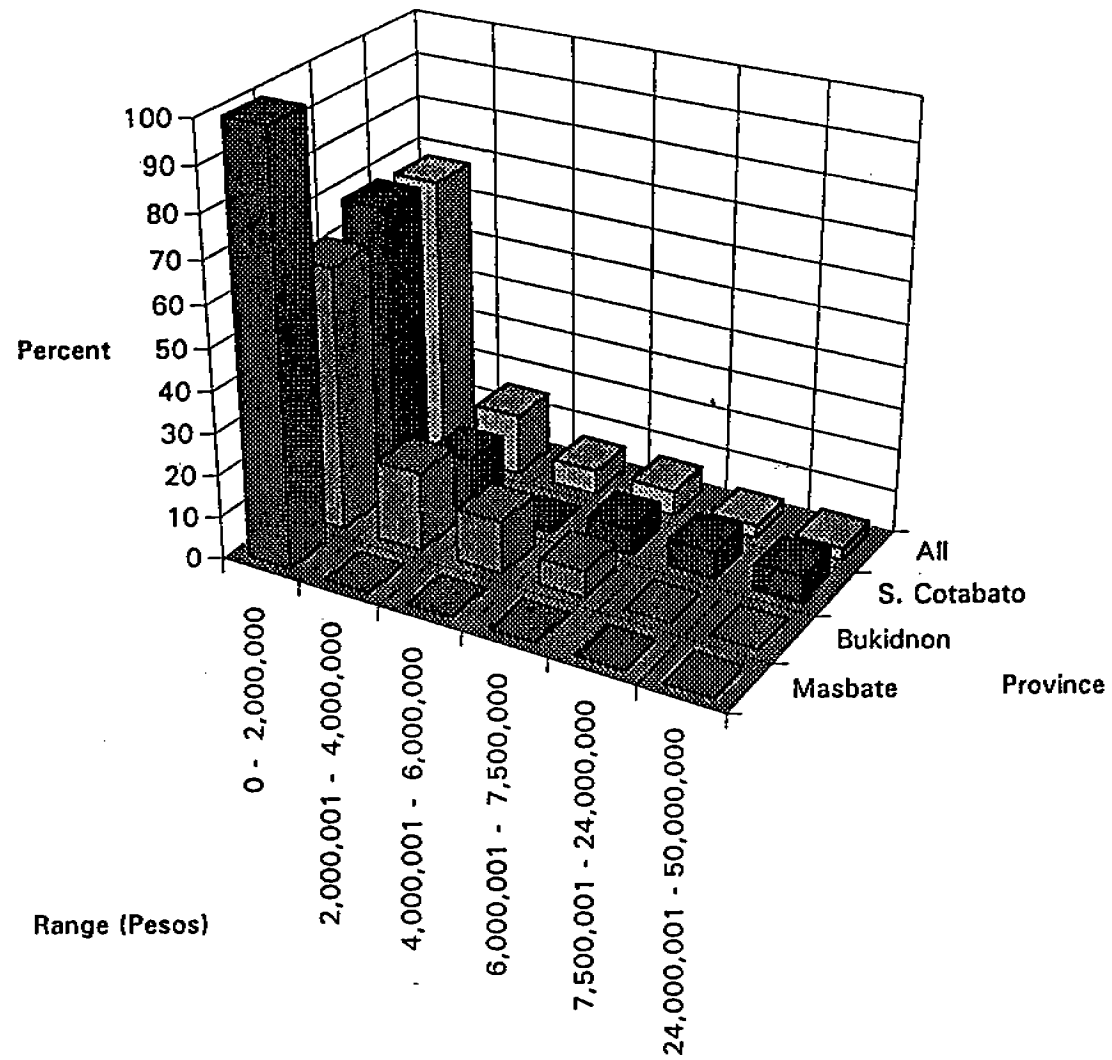


Figure 57. Average Value of Residential Property, 1992

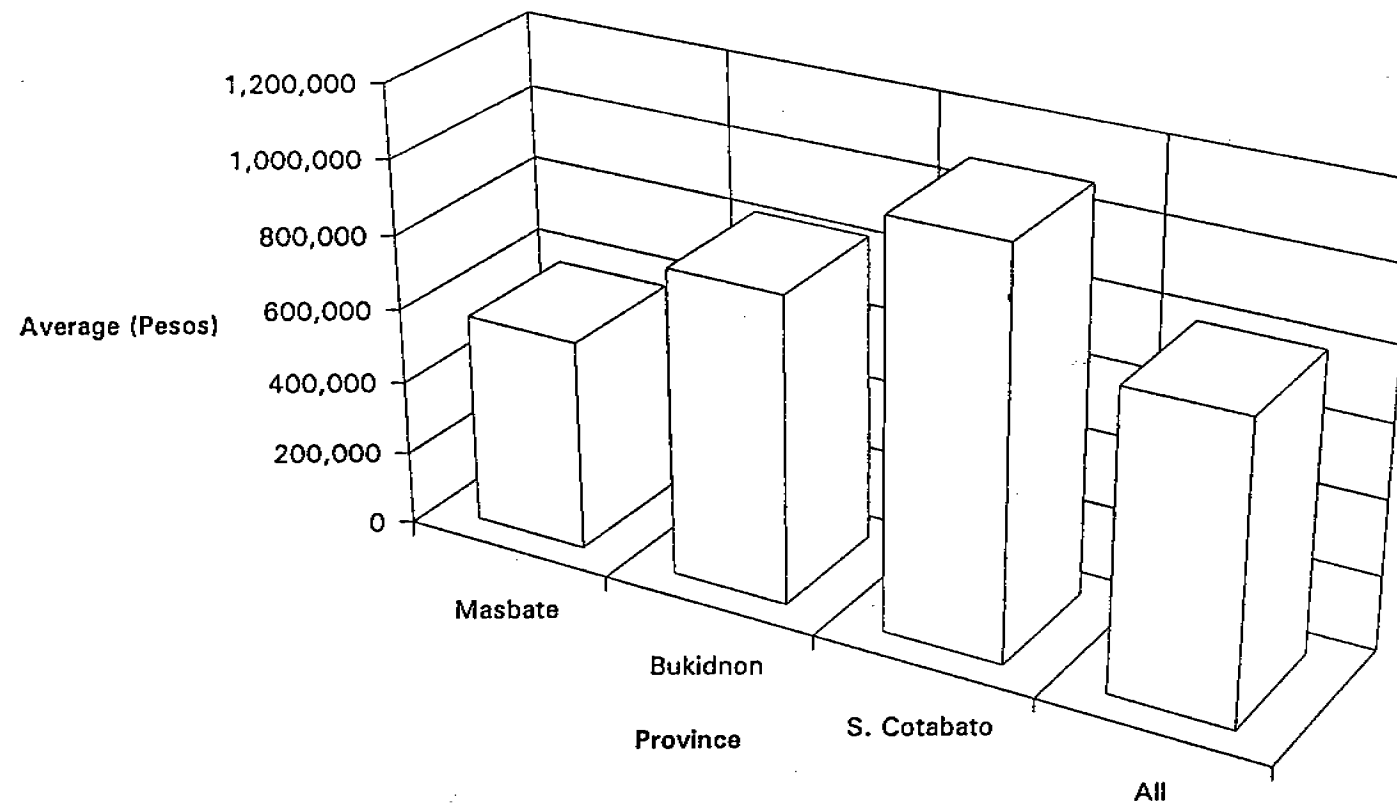
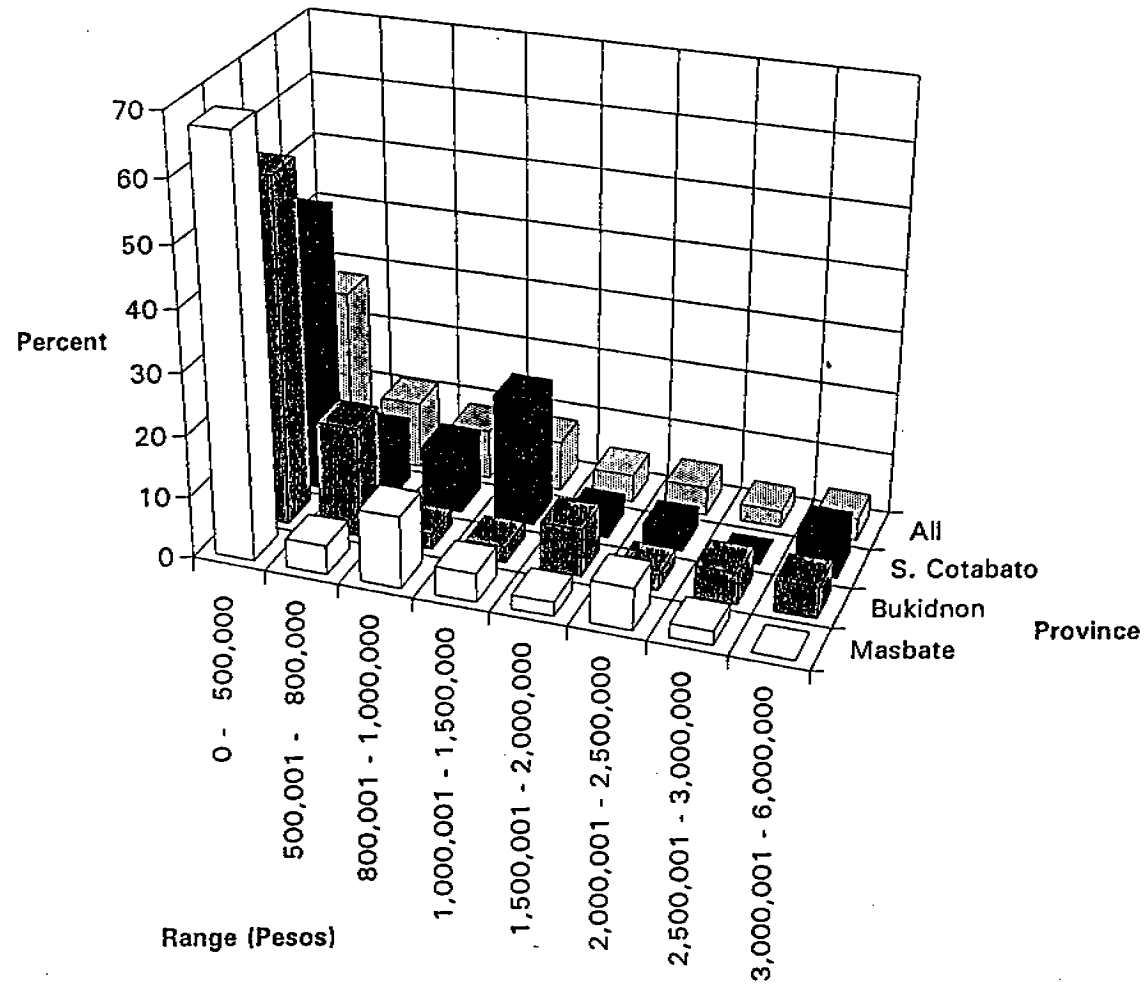


Figure 58. Distribution of Leaseholders by Value of Residential Property



**Figure 59. Average Value of Total Non-Pasture Assets**

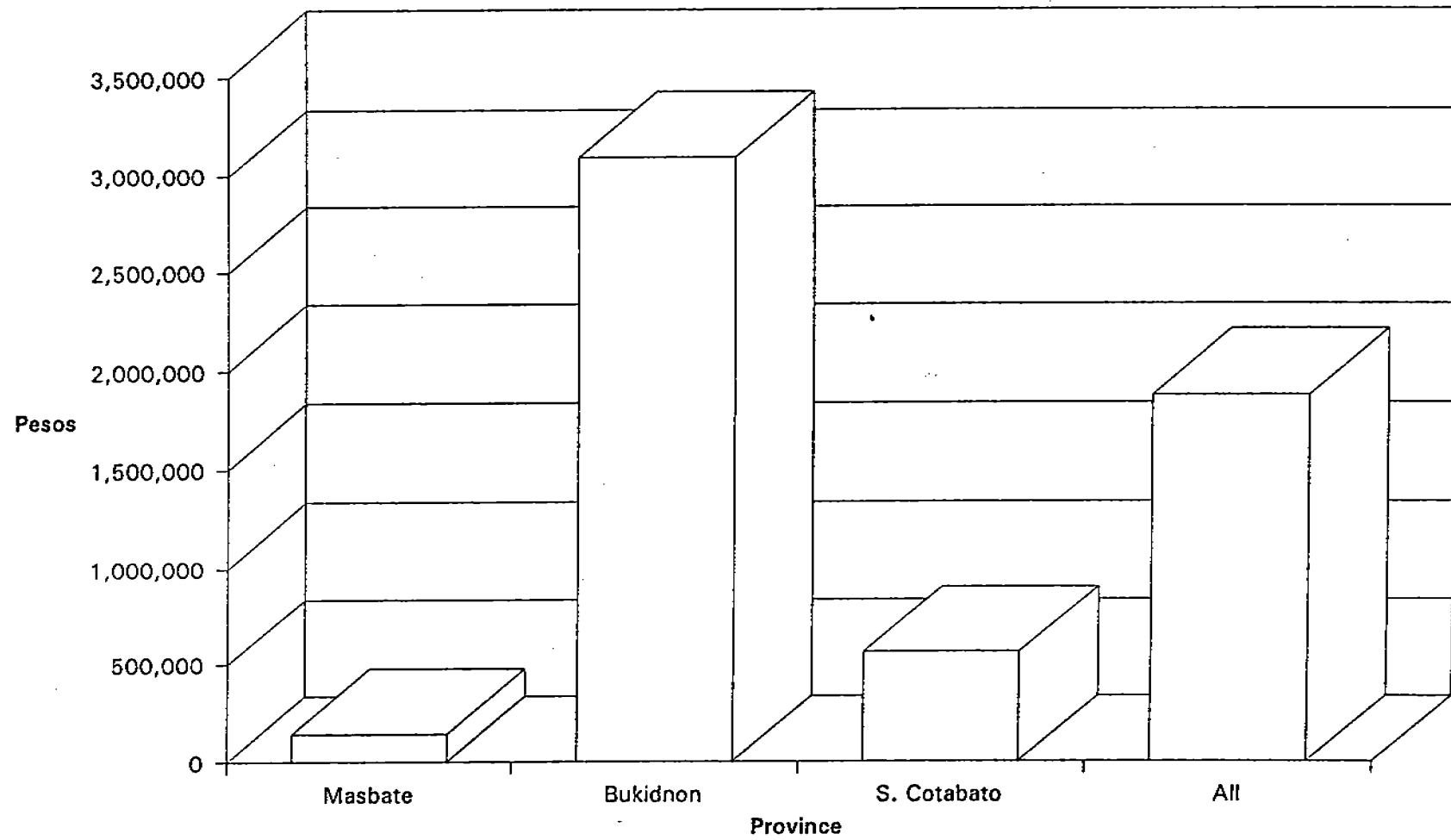


Figure 60. Distribution of Non-Pasture Major Assets, 1992

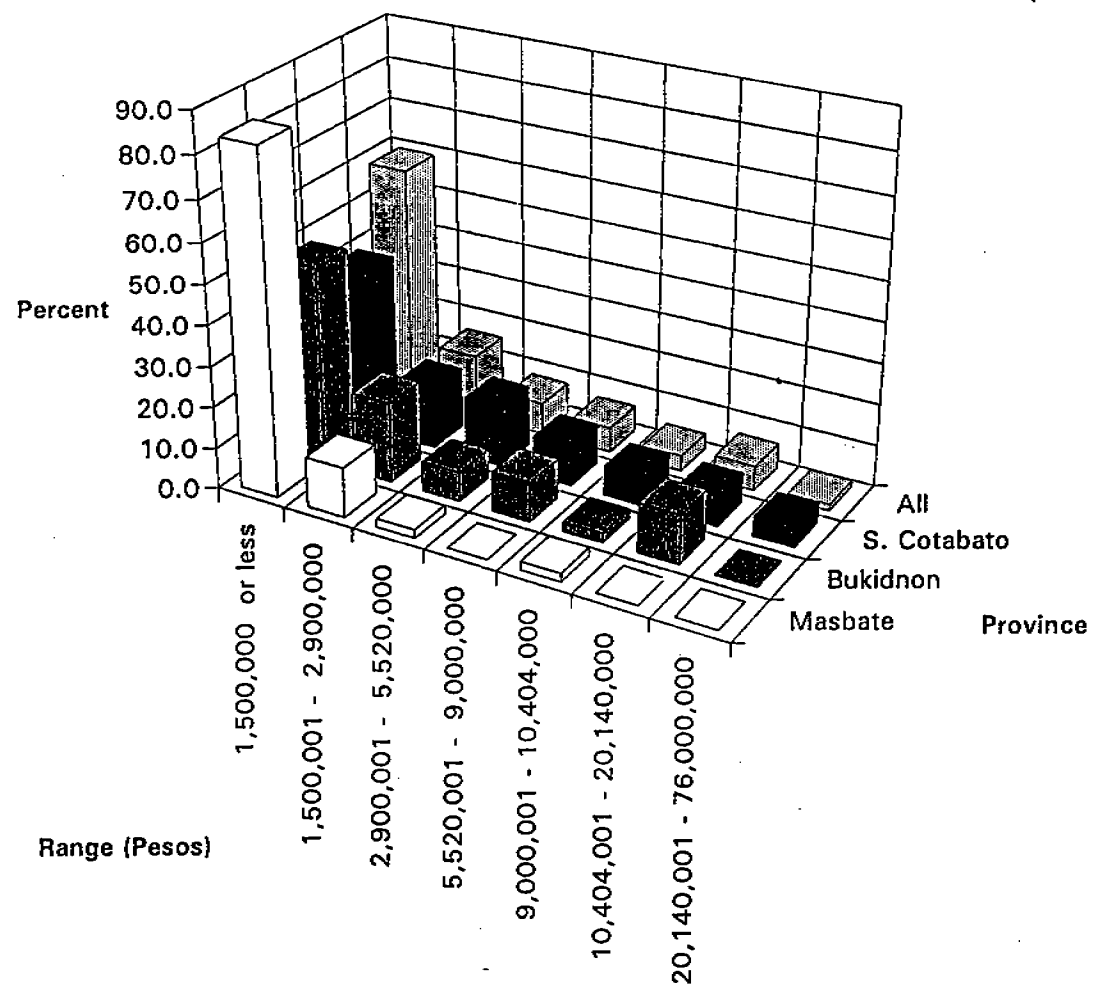




Fig. 61. Other Sources of Household Income

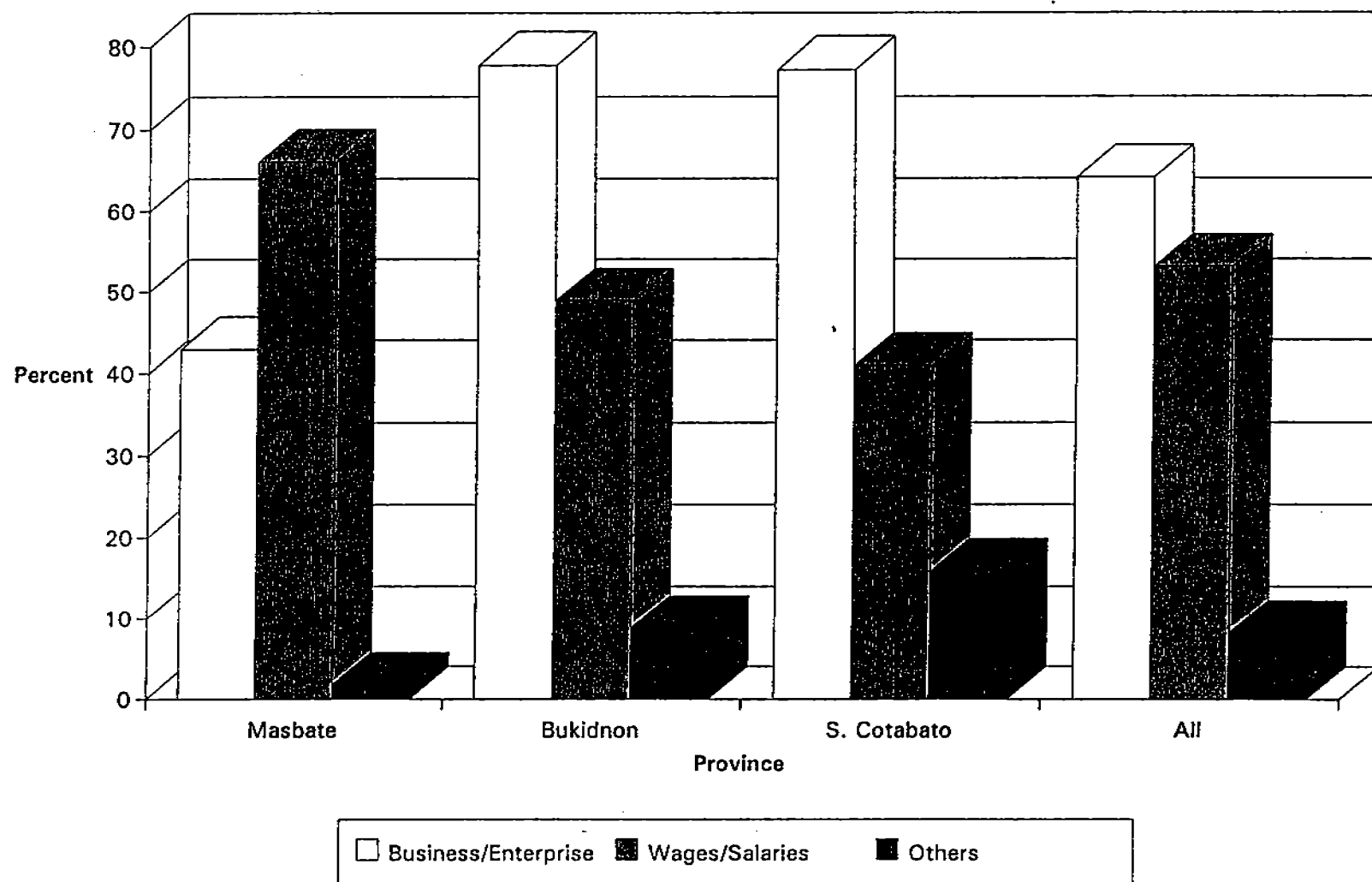
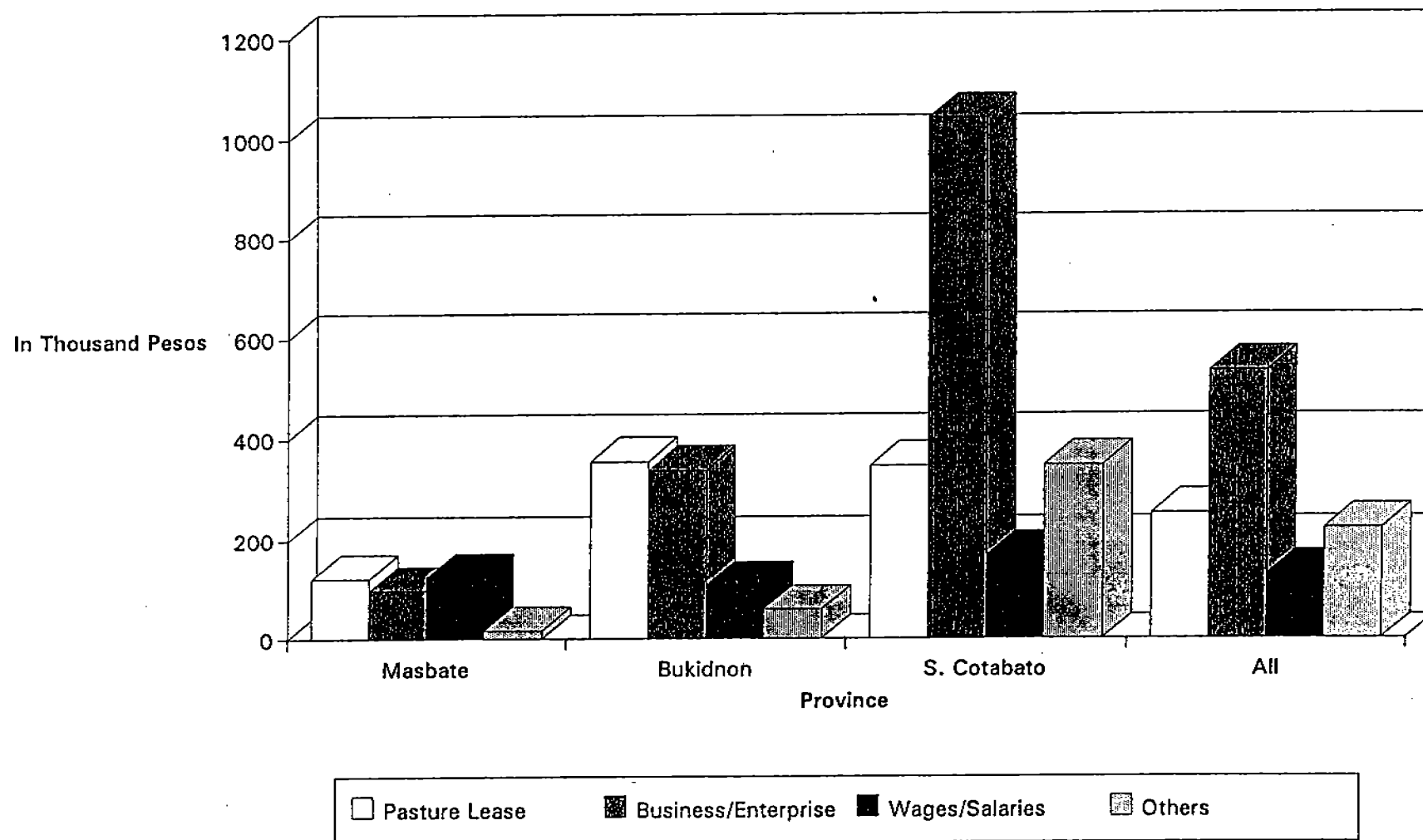


Fig. 62. Average Household Income from Major Sources, 1992



**Figure 63. Average Income from Pasture Lease, 1992**

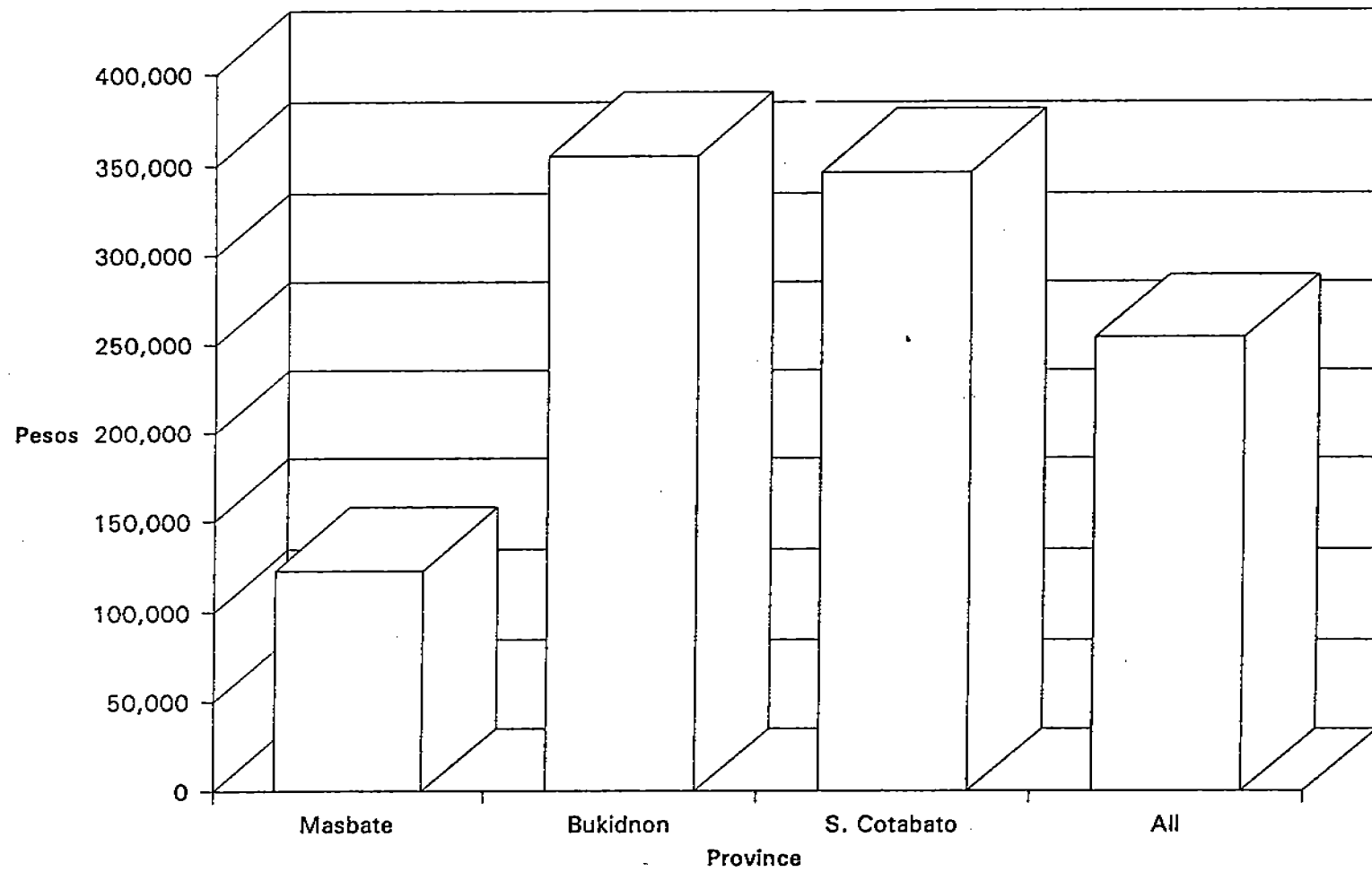
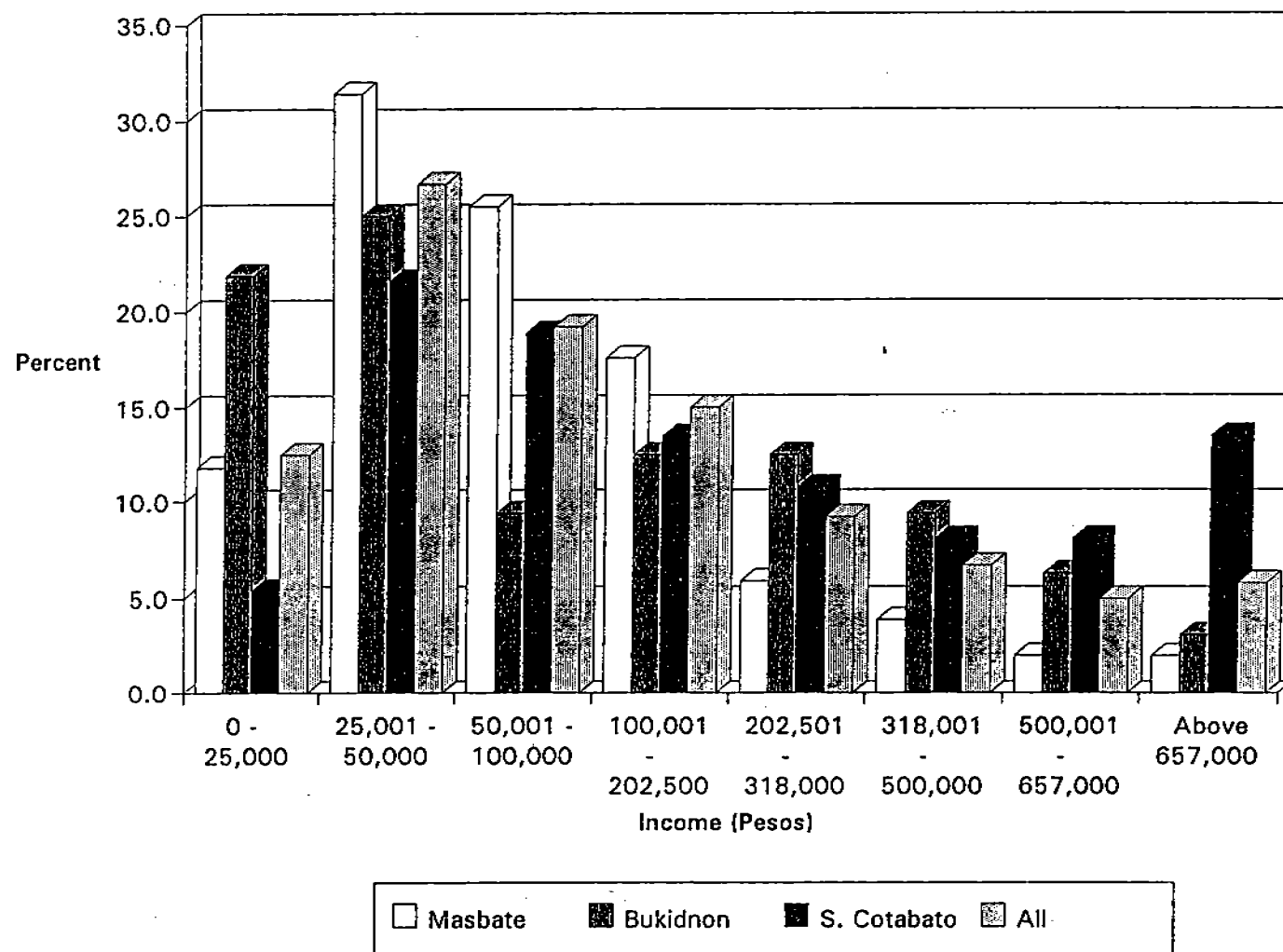
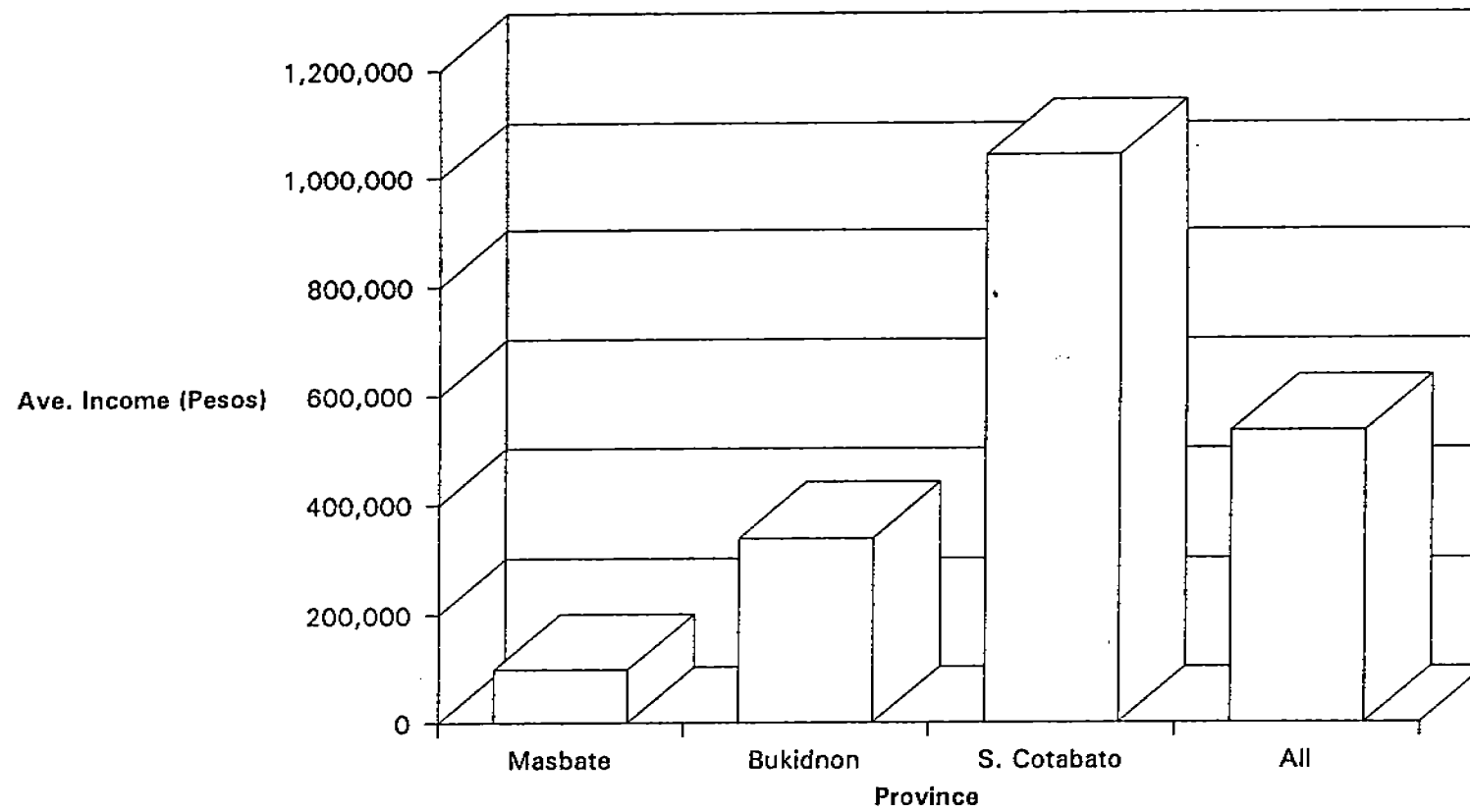


Figure 64. Distribution of Income from Pasture Leases, 1992



**Figure 65. Average Income from Business Enterprises, 1992**



**Figure 66. Average Income from Salaries and Wages, 1992**

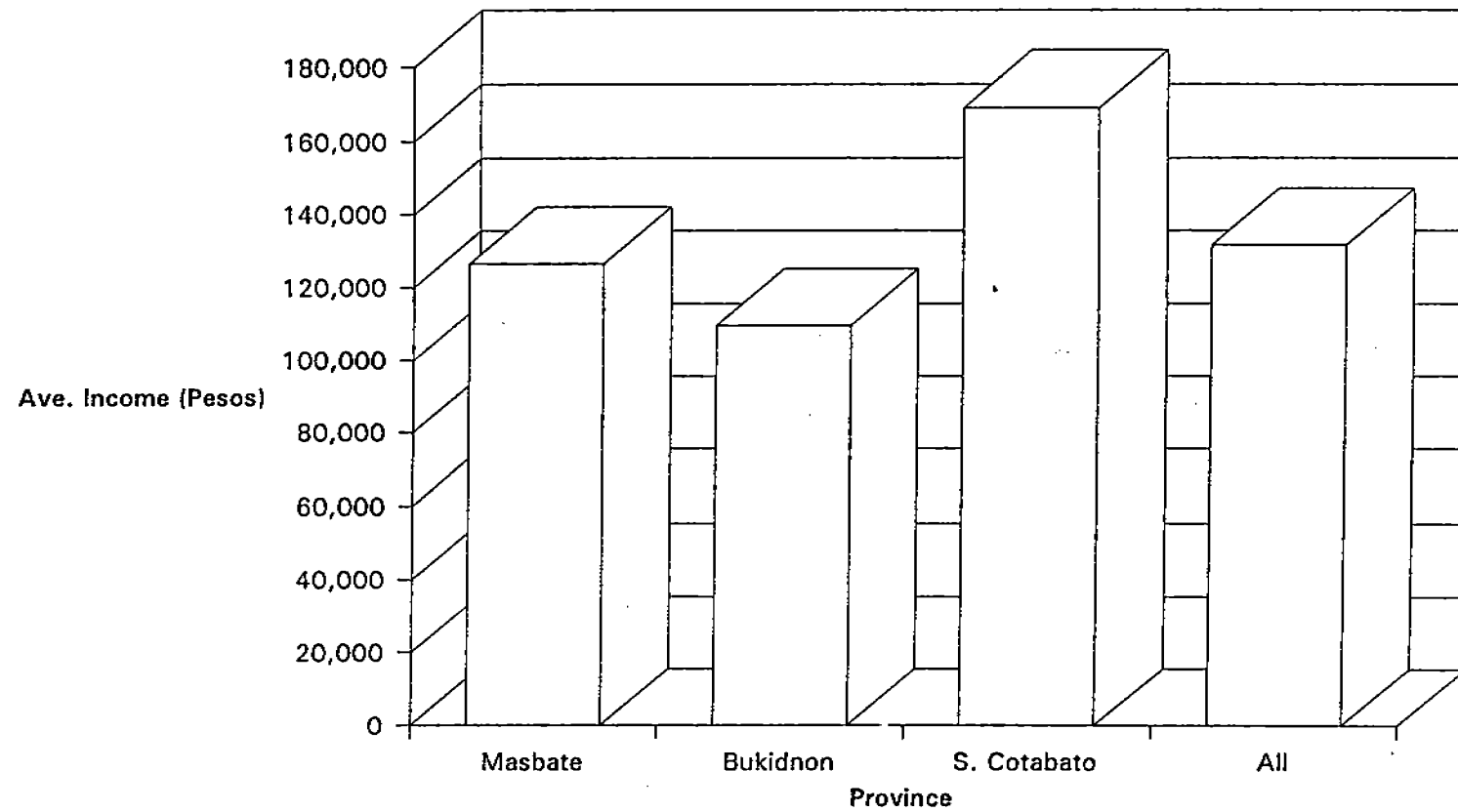
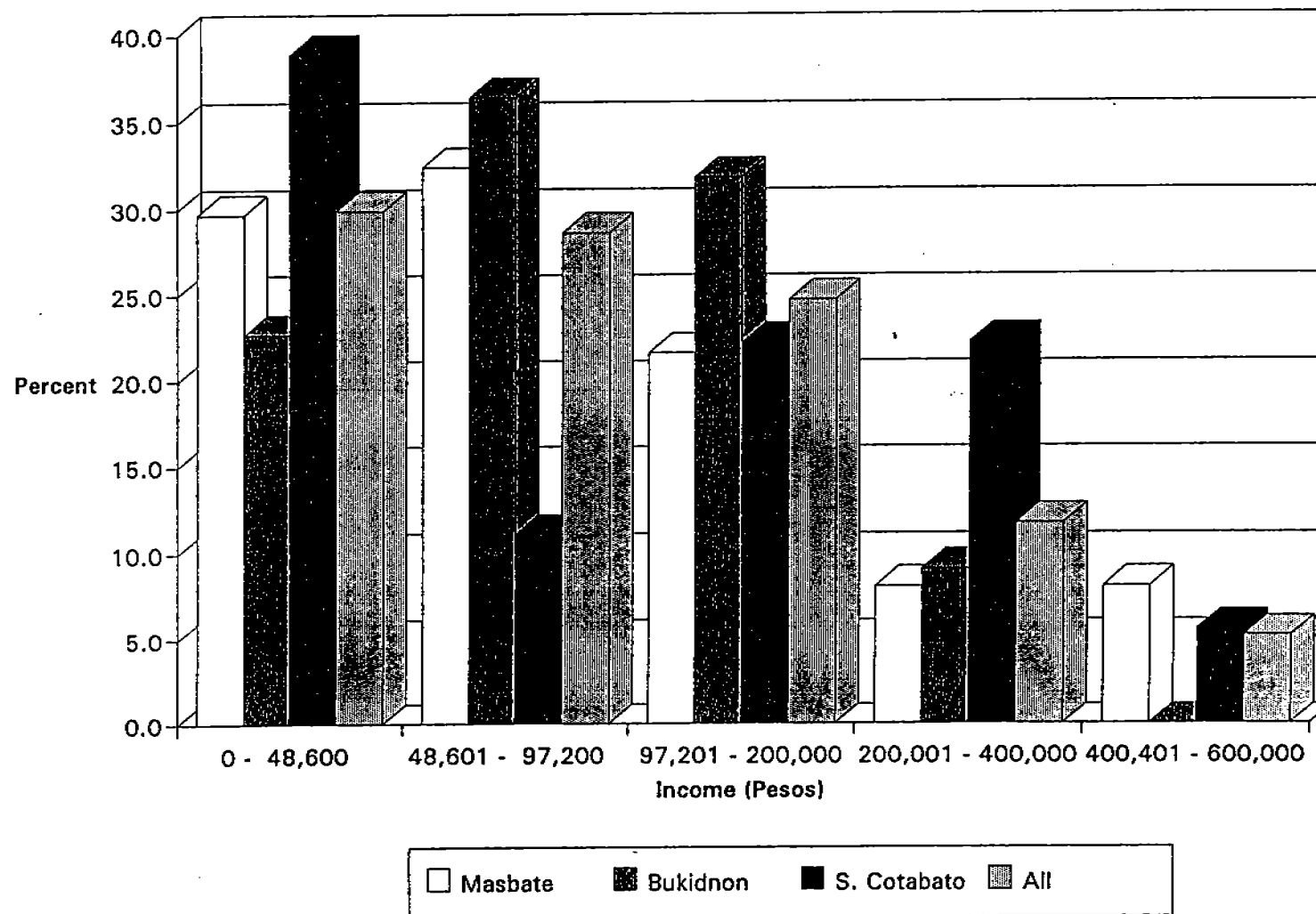
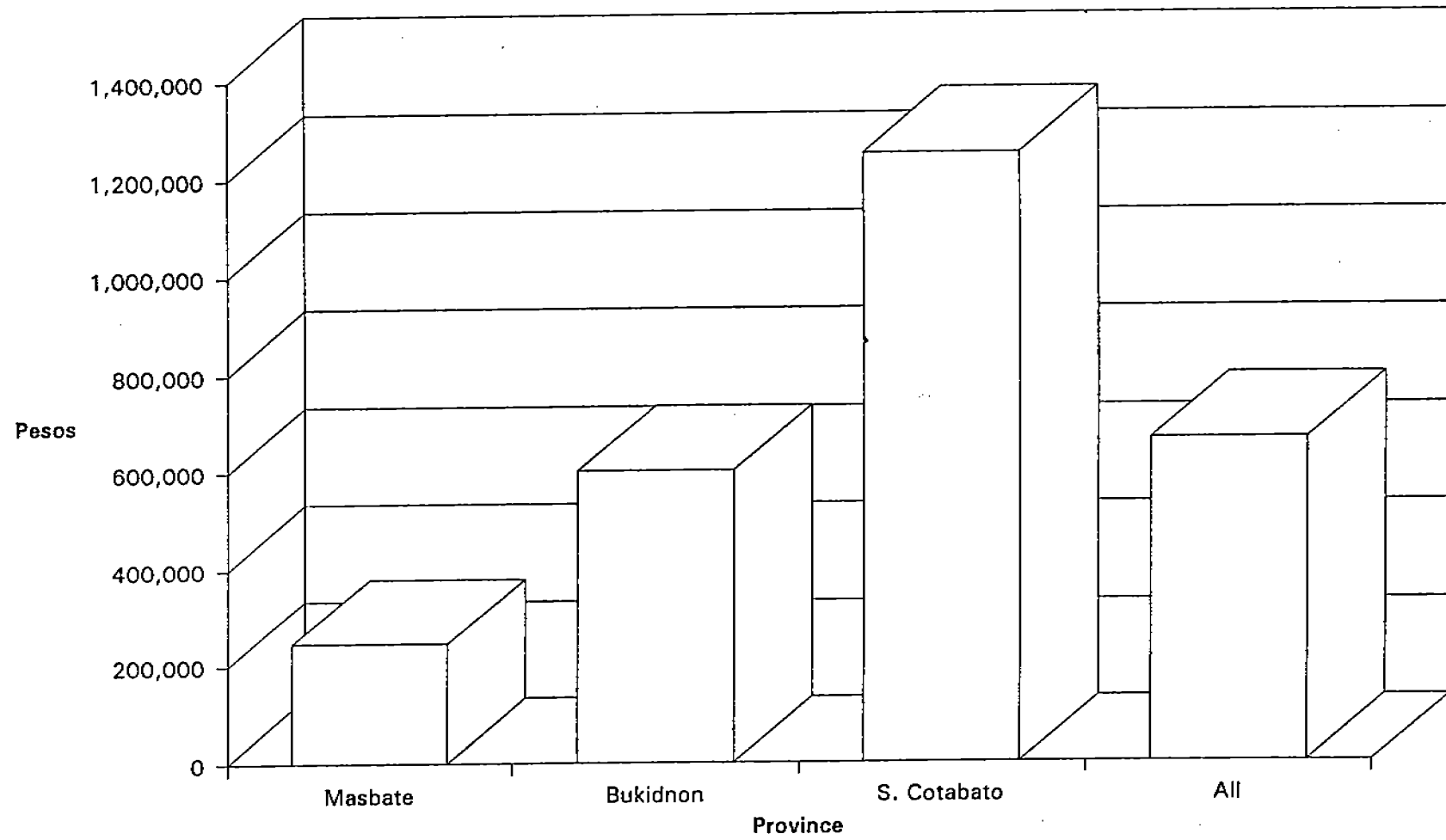


Figure 67. Distribution of Income from Salaries and Wages, 1992



**Figure 68. Mean Income from All Types of Sources**





**Figure 69. Distribution of Pasture Lease Household Income from All Sources, 1992**

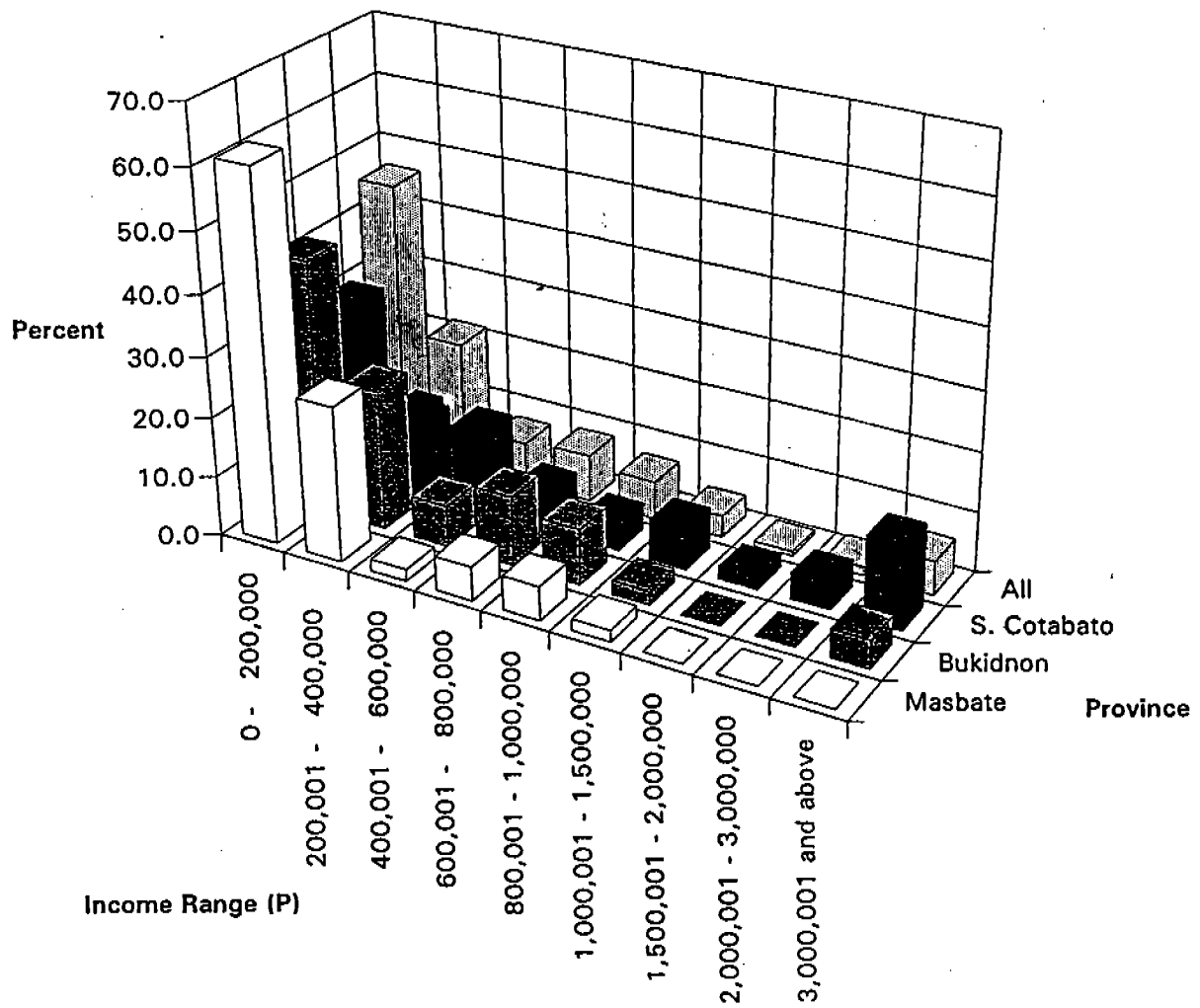


Figure 70. Relative Importance of Other Sources of Income

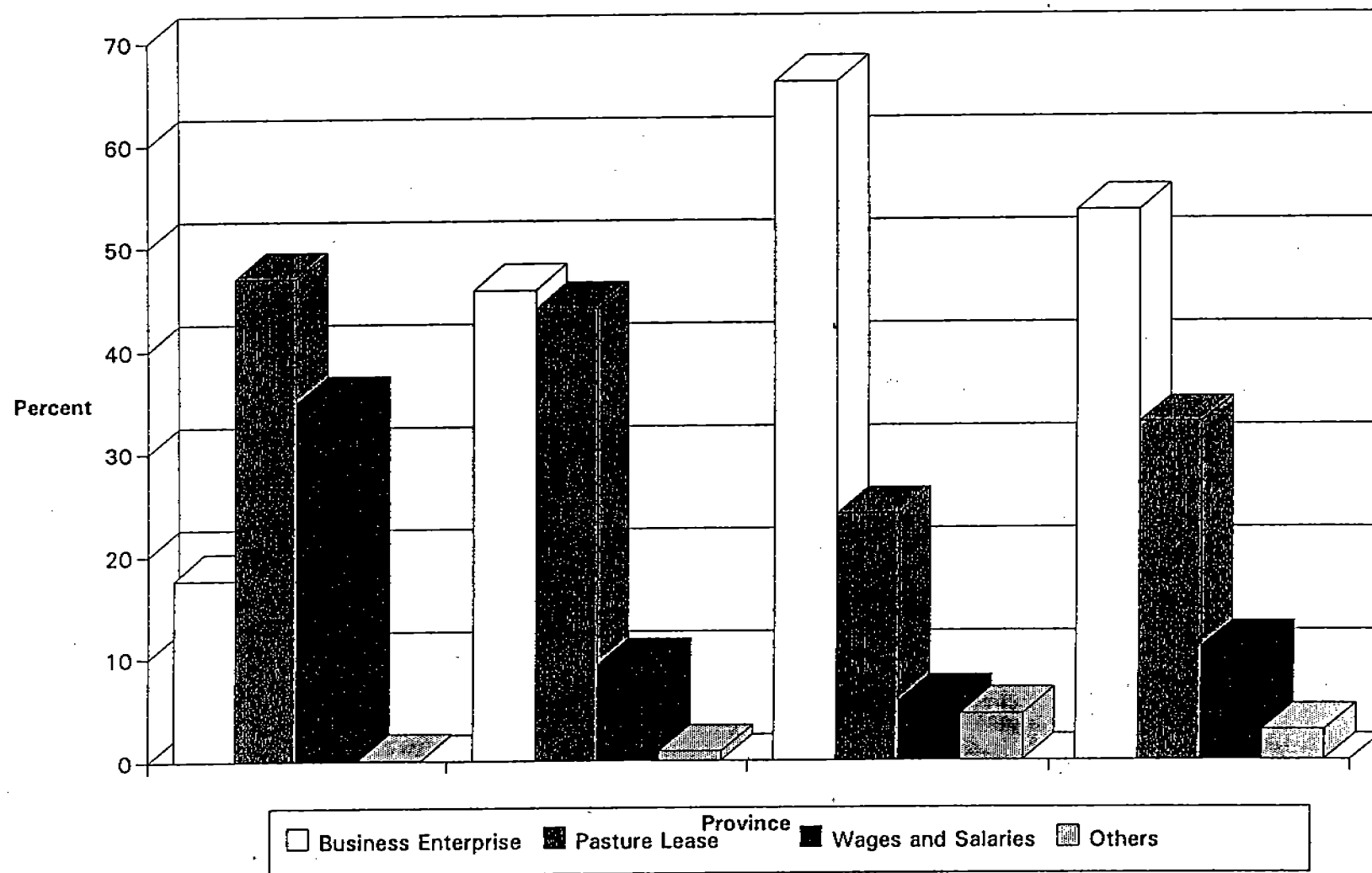


Figure 71. Existence of Contending Claims on Own Pasture Lease

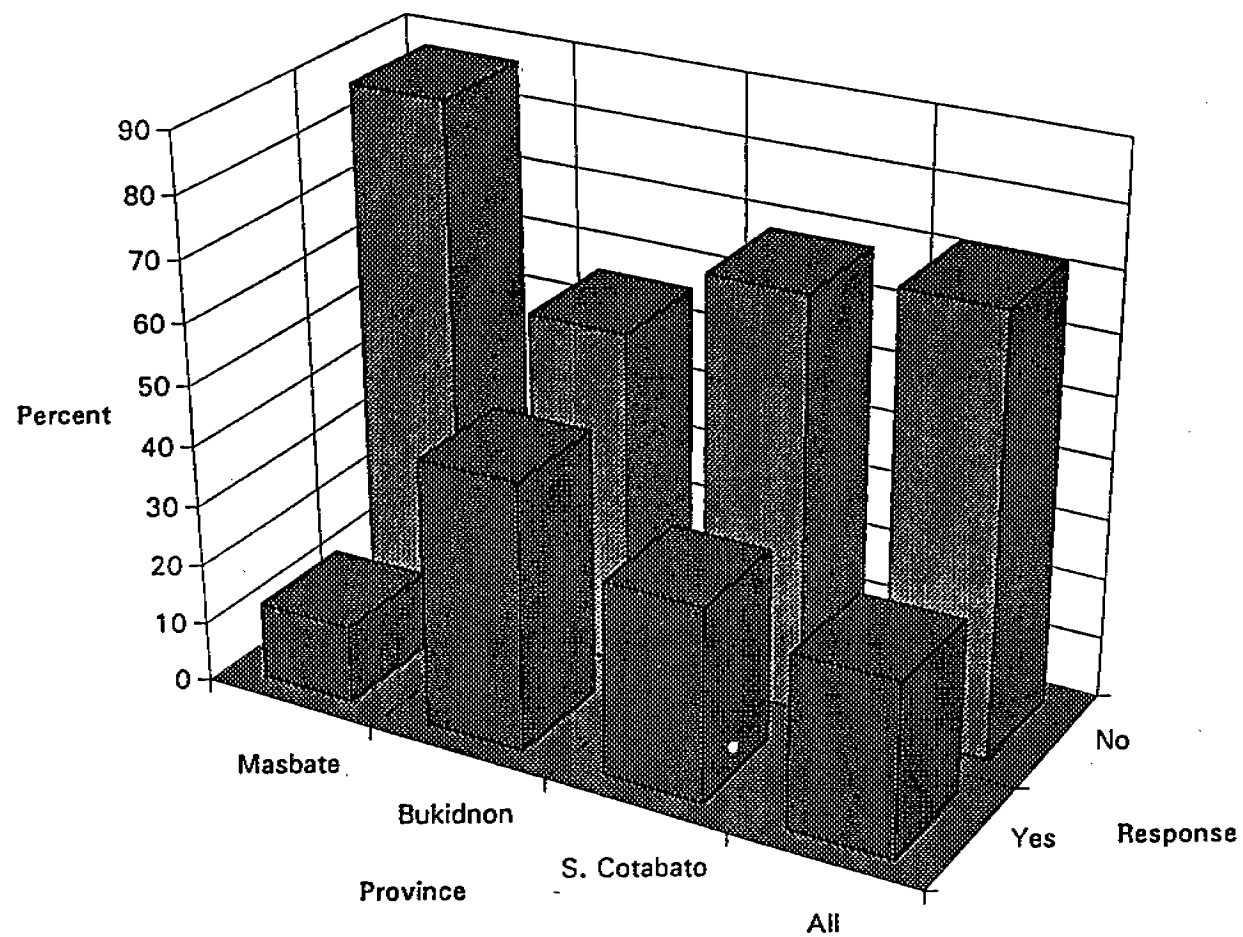
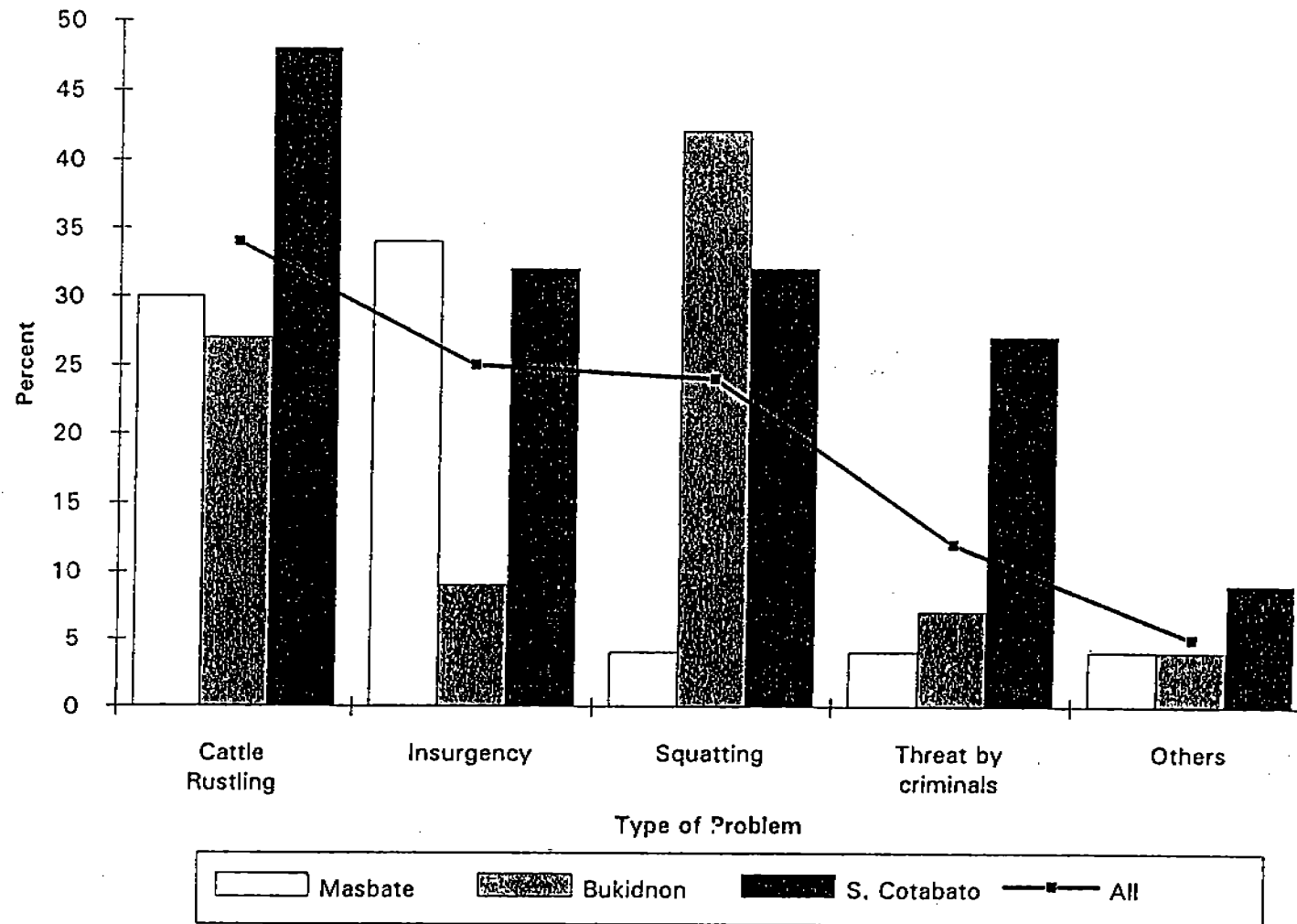
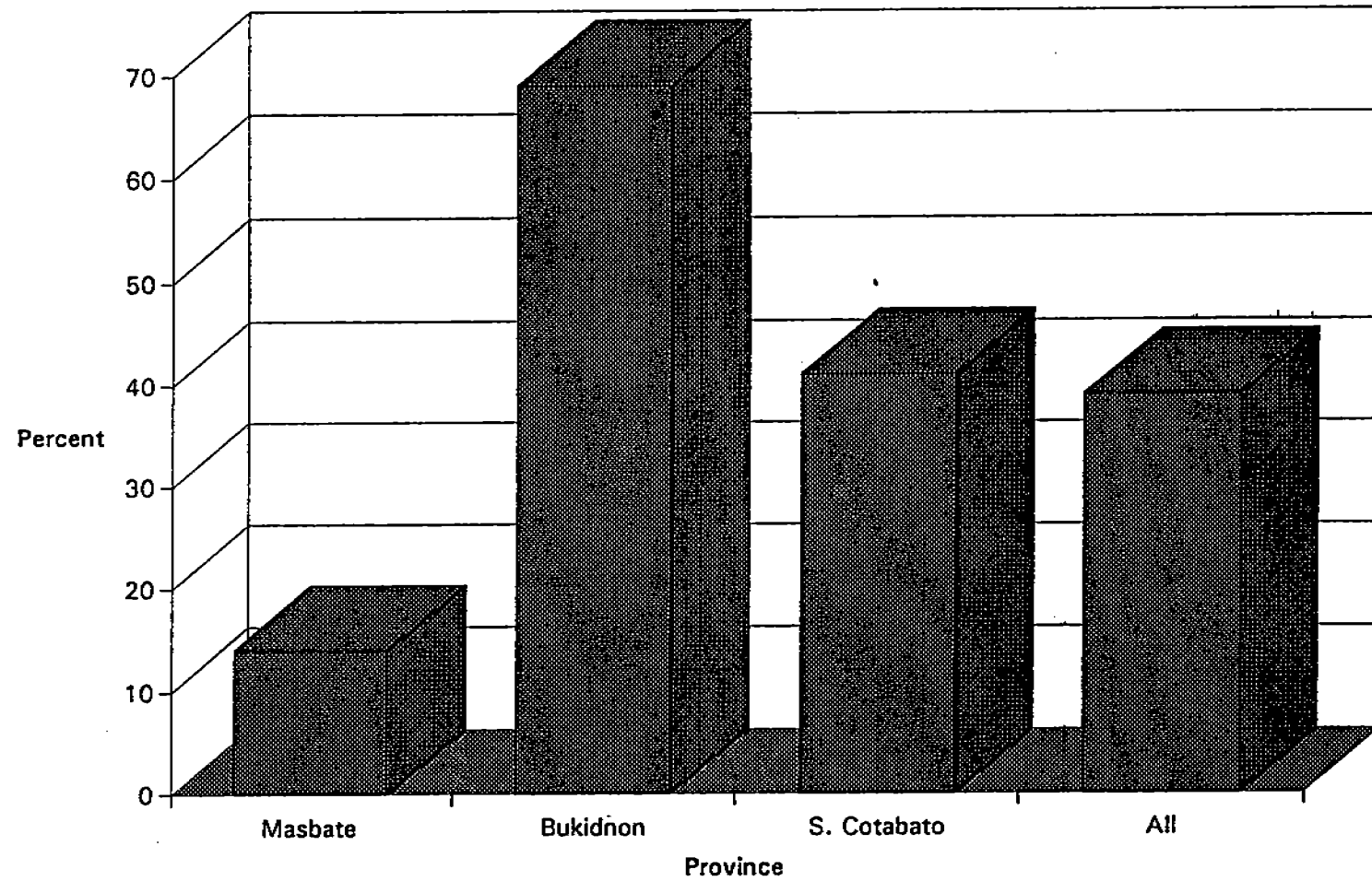


Figure 72. Kinds of Peace & Order and Security Problems Experienced



**Figure 73. Distribution of Pasture Leases with Security Teams**



**Figure 74. Experience of Deferment of Investments in Pasture Lease due to:  
CARP, Rival Claims, or/and Peace & Order Problems**

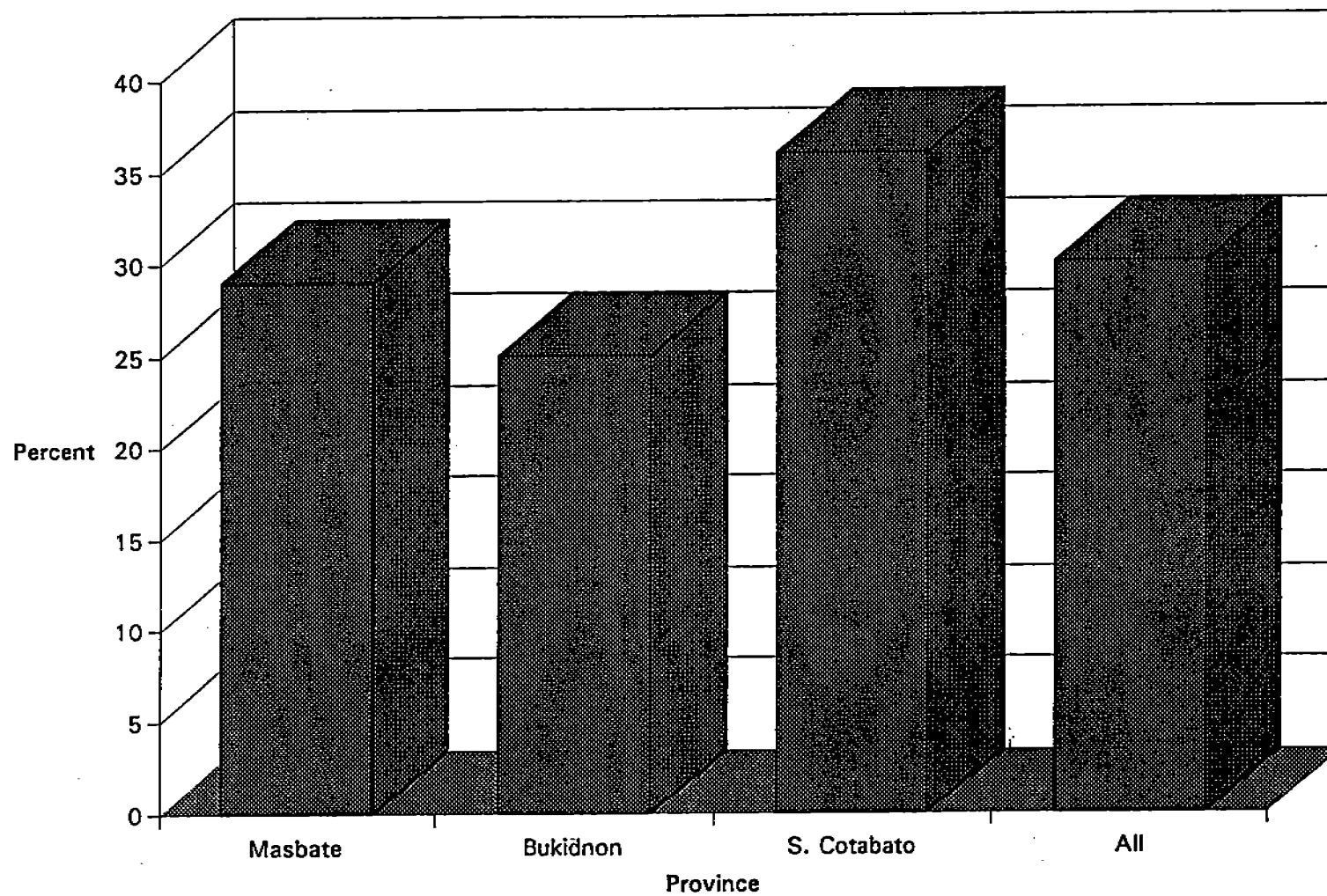


Figure 75. Incidence of Expenditures and Capital Outlay for Farm Security

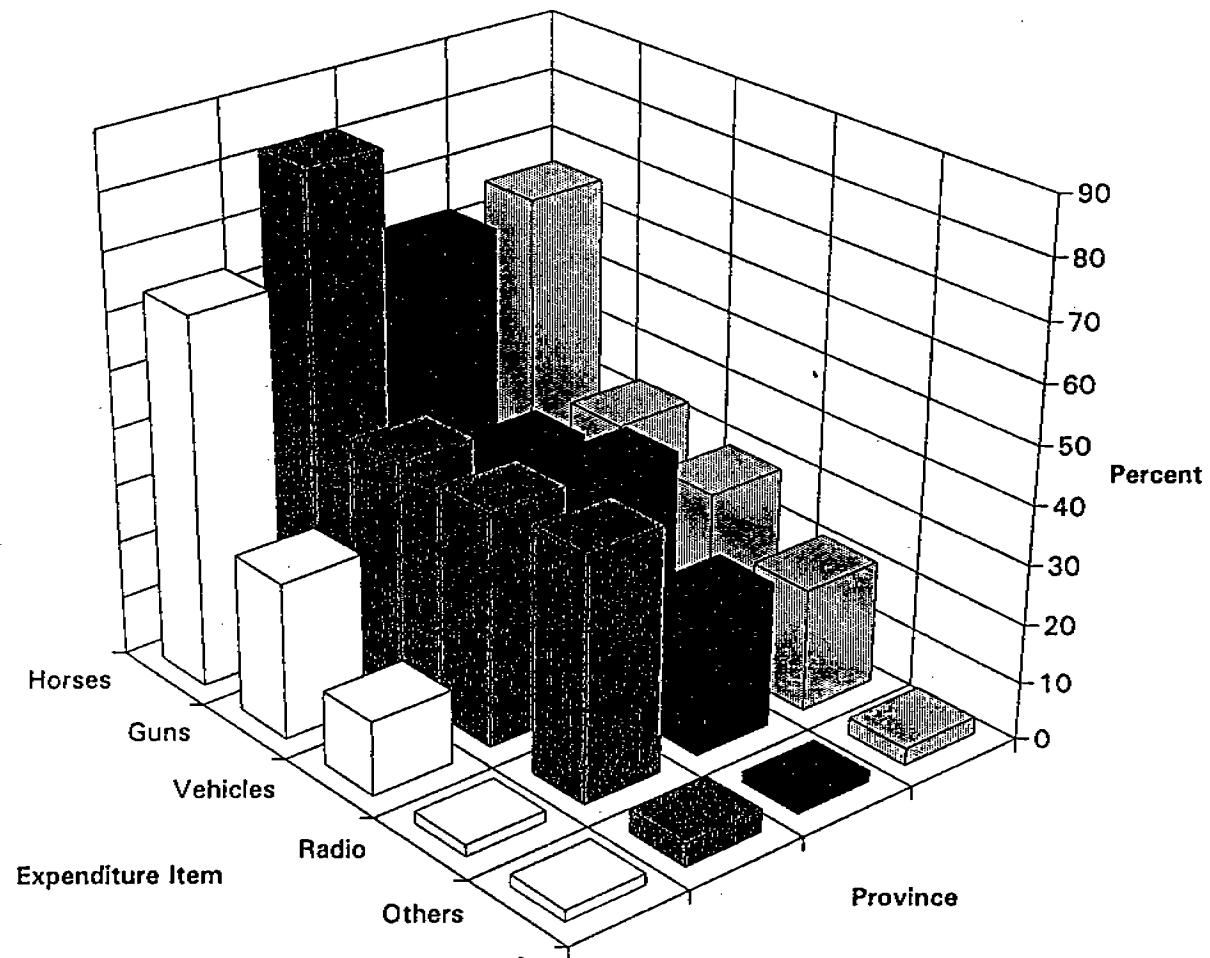


Figure 76. Expenditures on Security Items

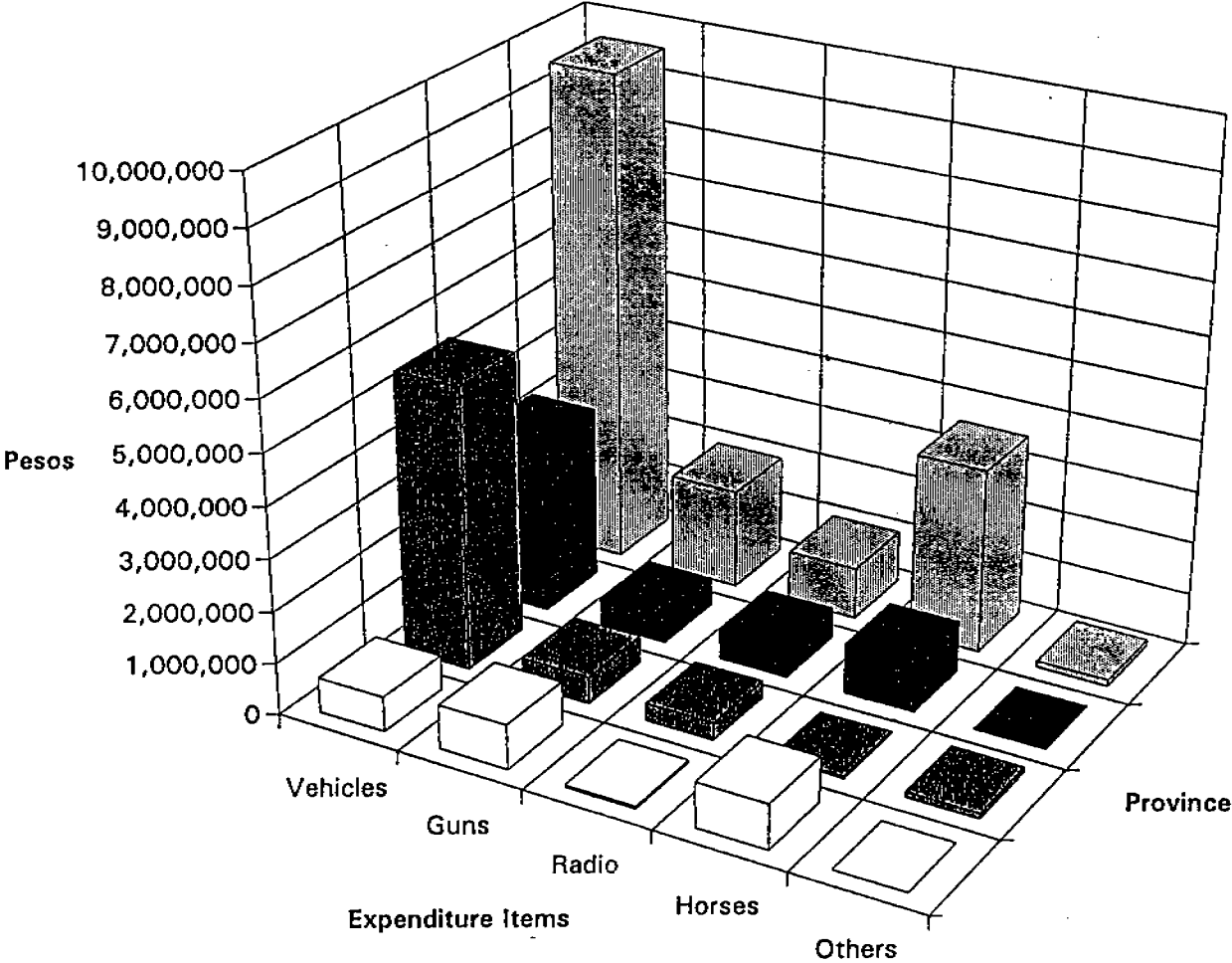




Figure 77. Willingness to Renew Contract at P20/ha./yr.

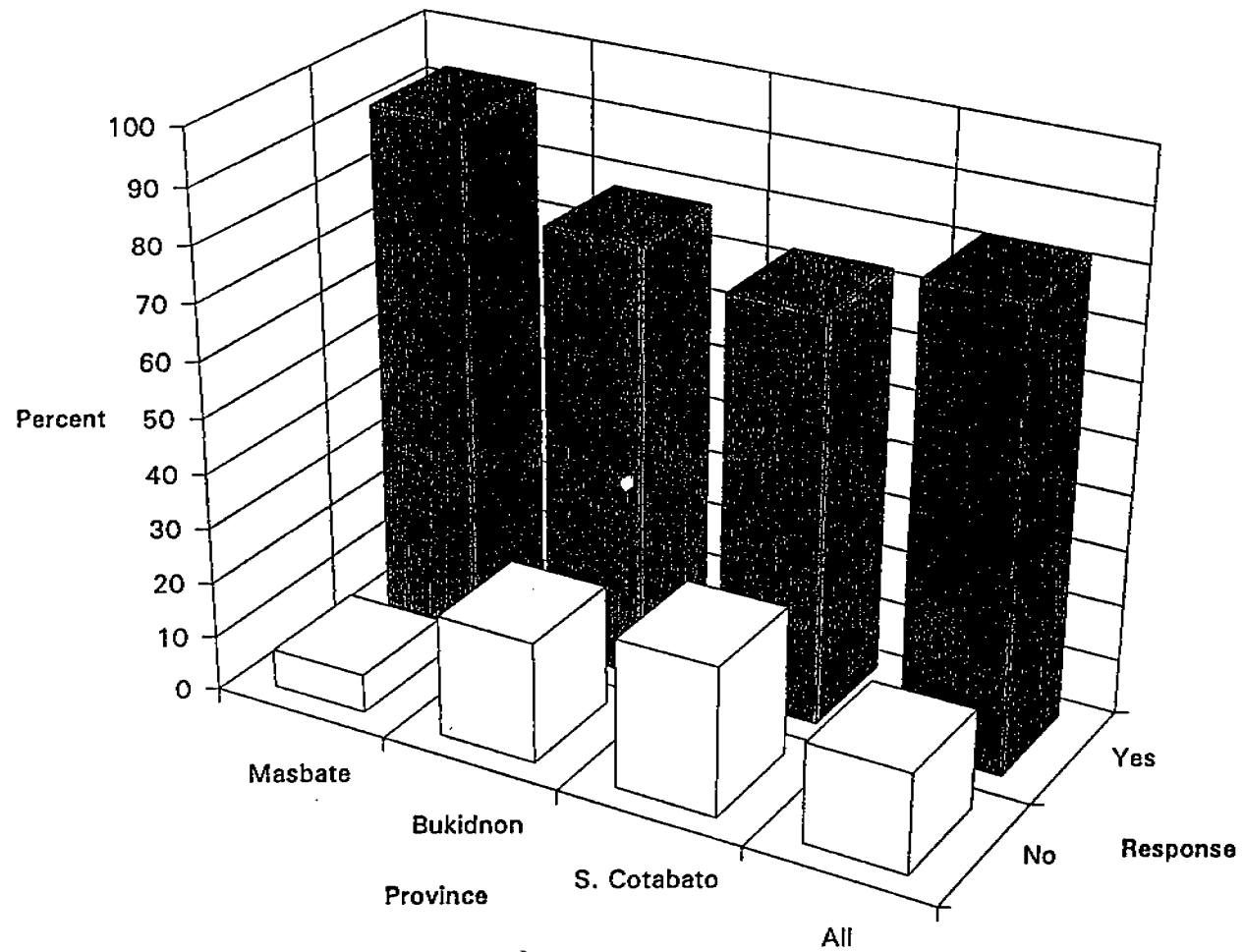


Figure 78. Assets Value of the Pasture Lease

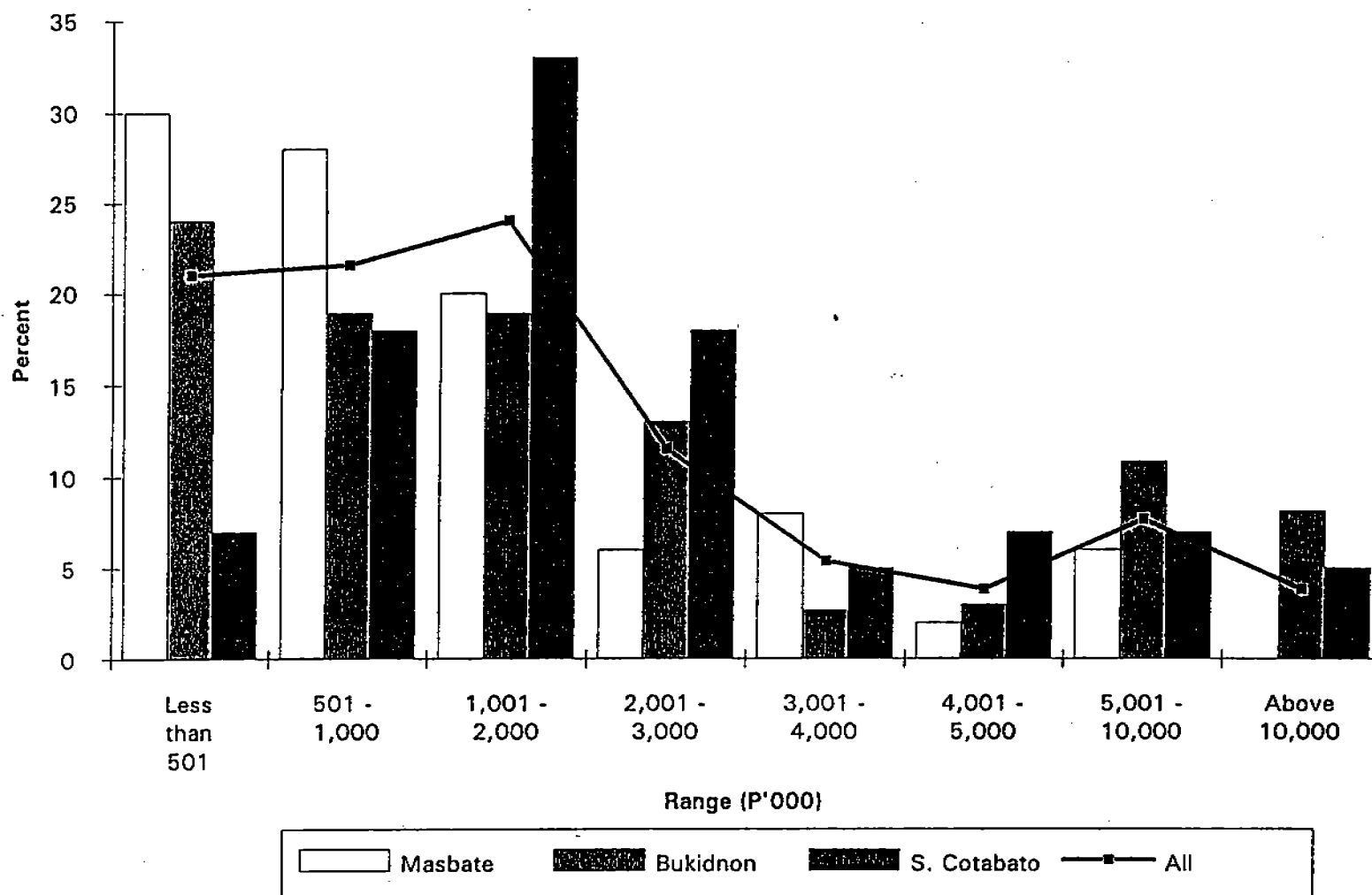


Figure 79. Rights Value of the Pasture Lease

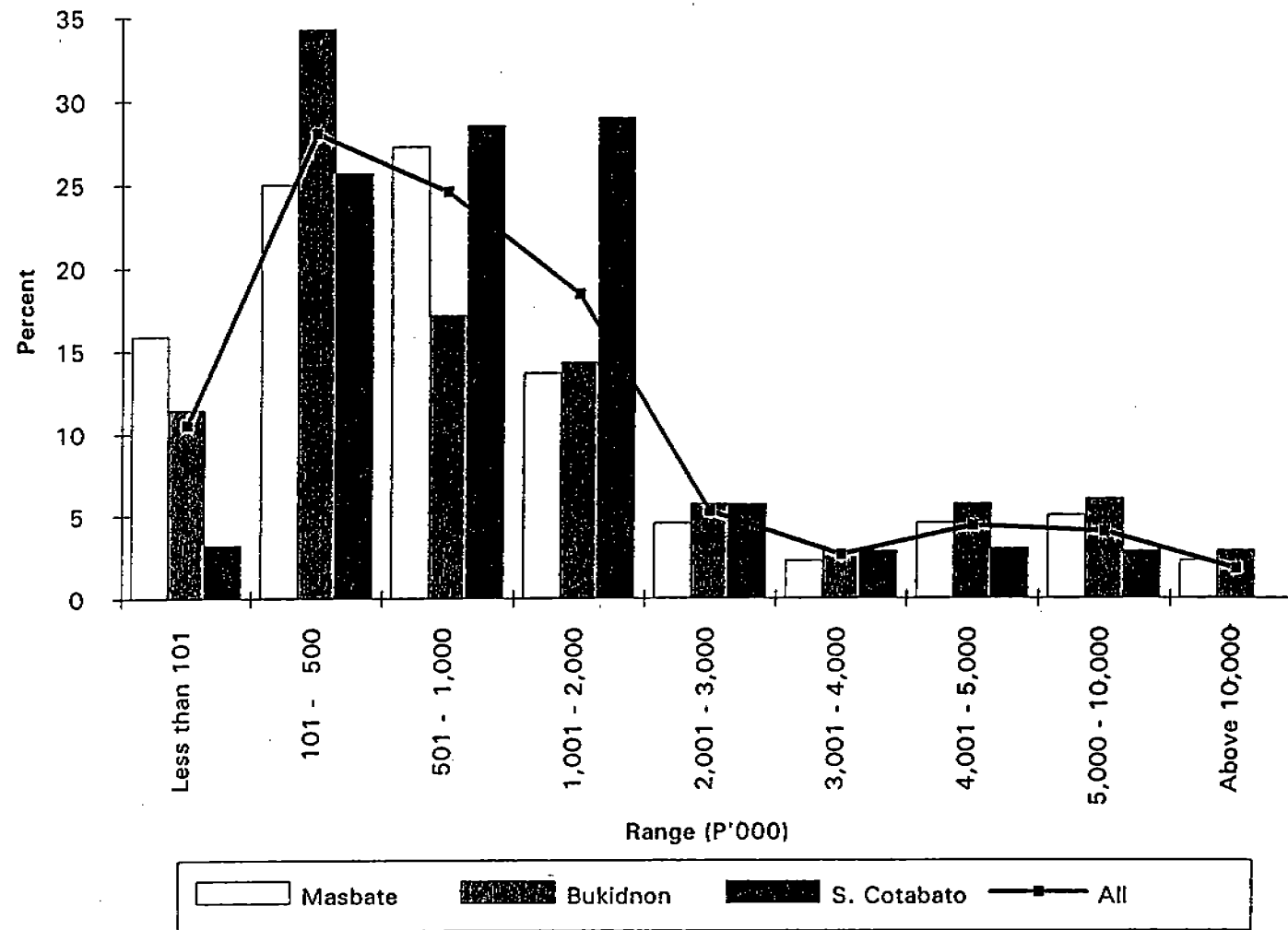


Figure 80. Total Asset Value and Market Value per Hectare of the Pasture Lease

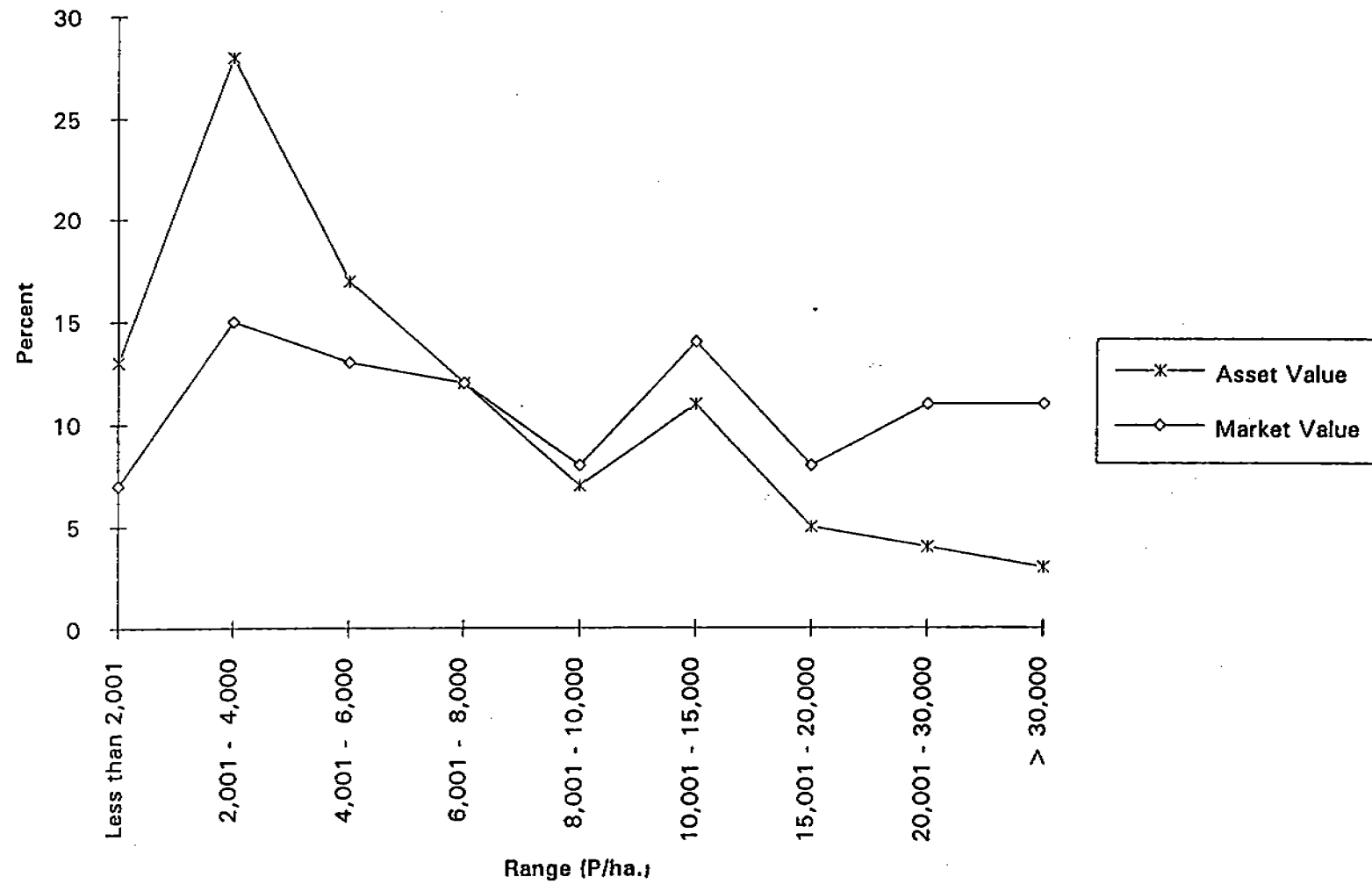


Figure 81. Asset and Market Value per Hectare of the Pasture Leases in Masbate

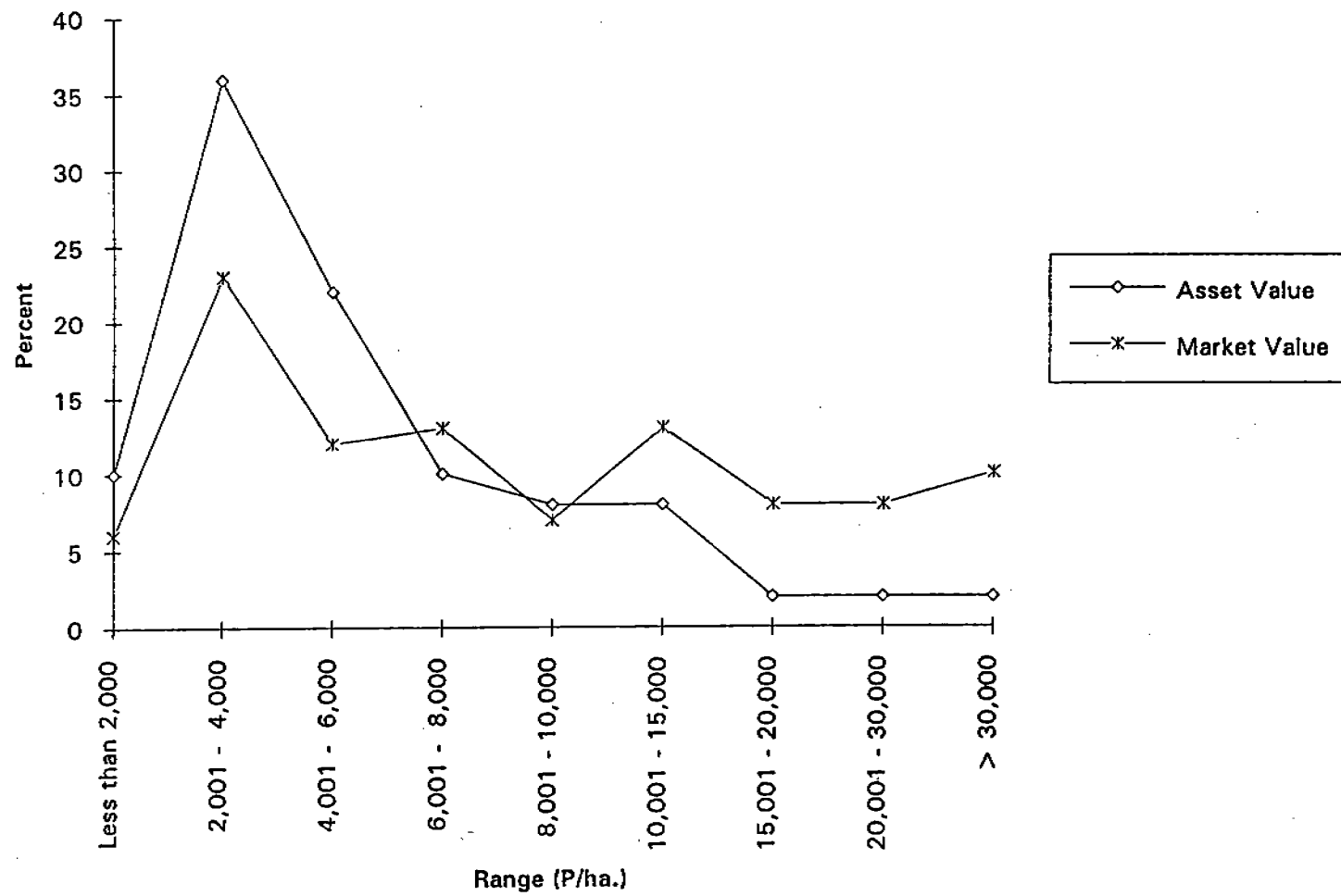
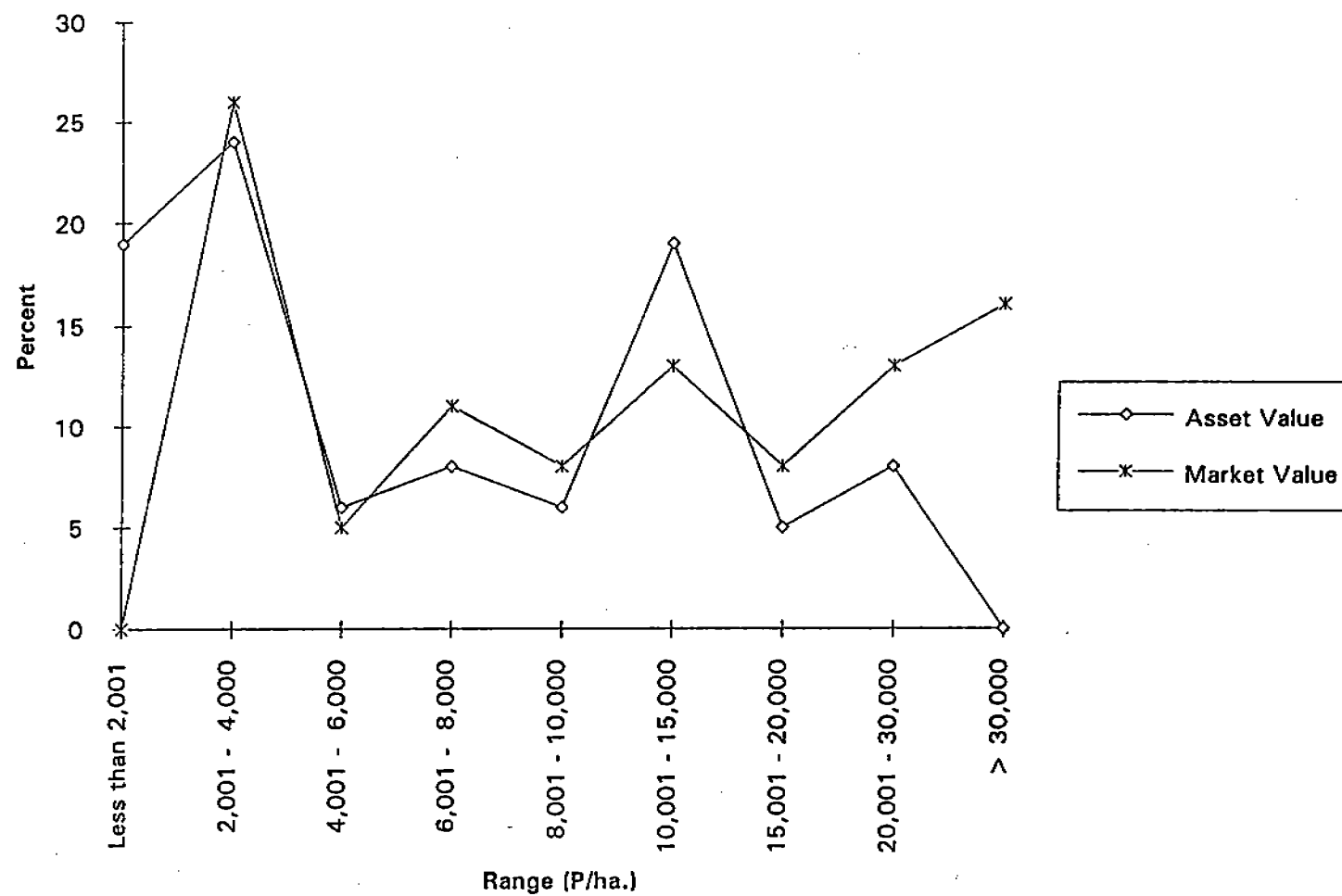


Figure 82. Asset and Market Value Per Hectare of the Pasture Leases in Bukidnon



**Figure 83. Asset and Market Value per Hectare of the Pasture Leases in South Cotabato**

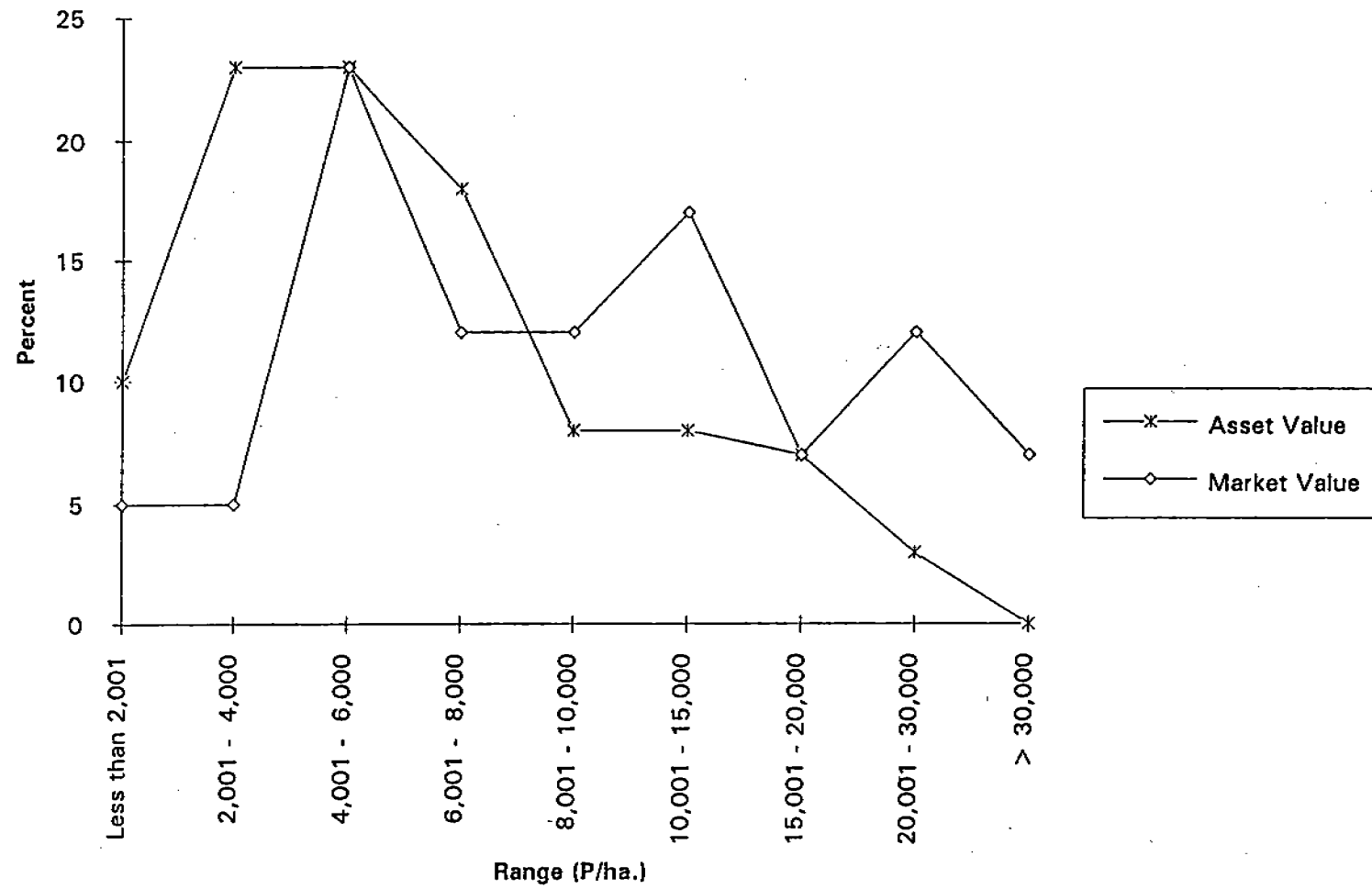


Figure 84. Rights Value per Hectare of the Pasture Lease

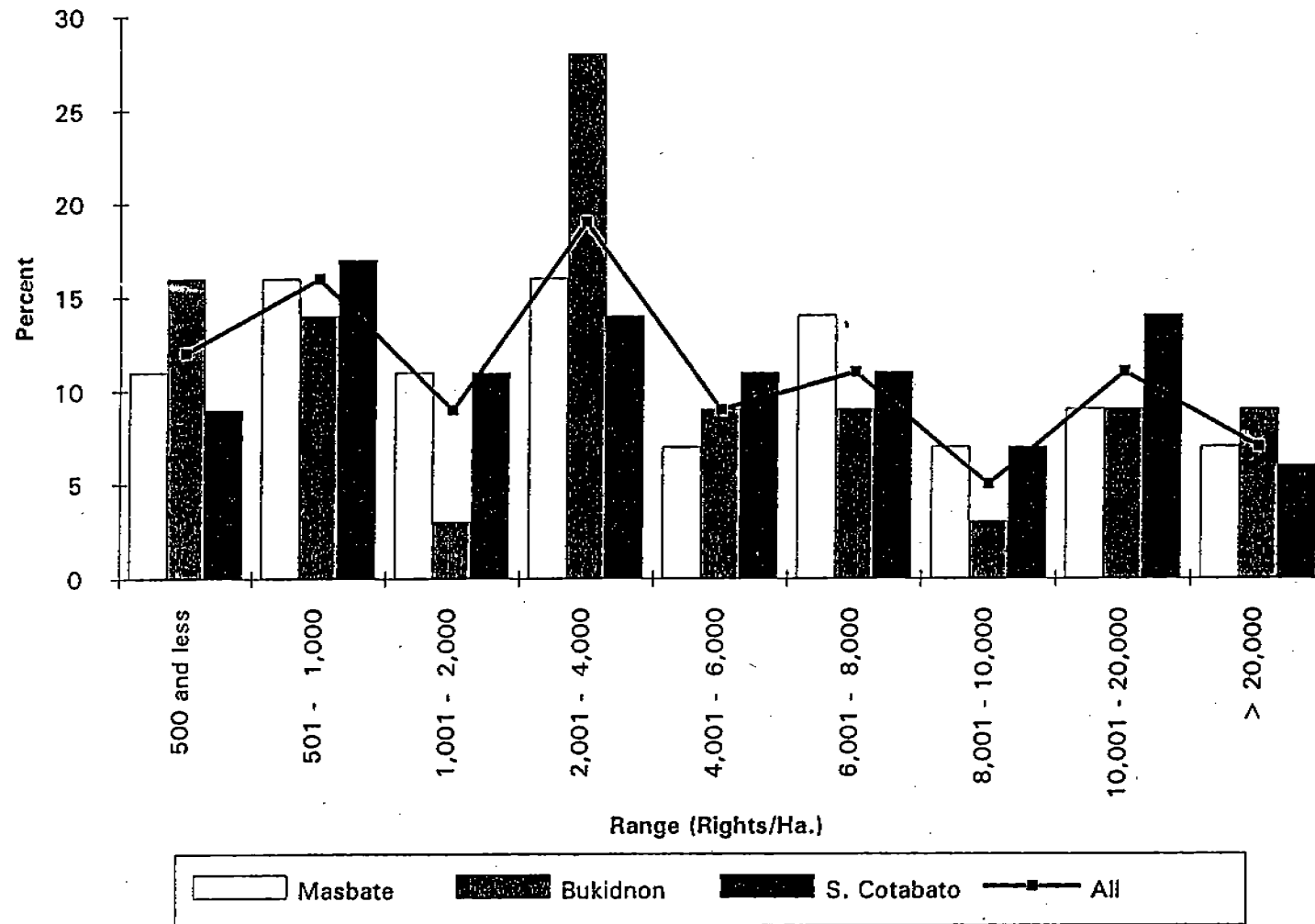




Figure 85. Rights Value per Hectare per Year of the Pasture Lease

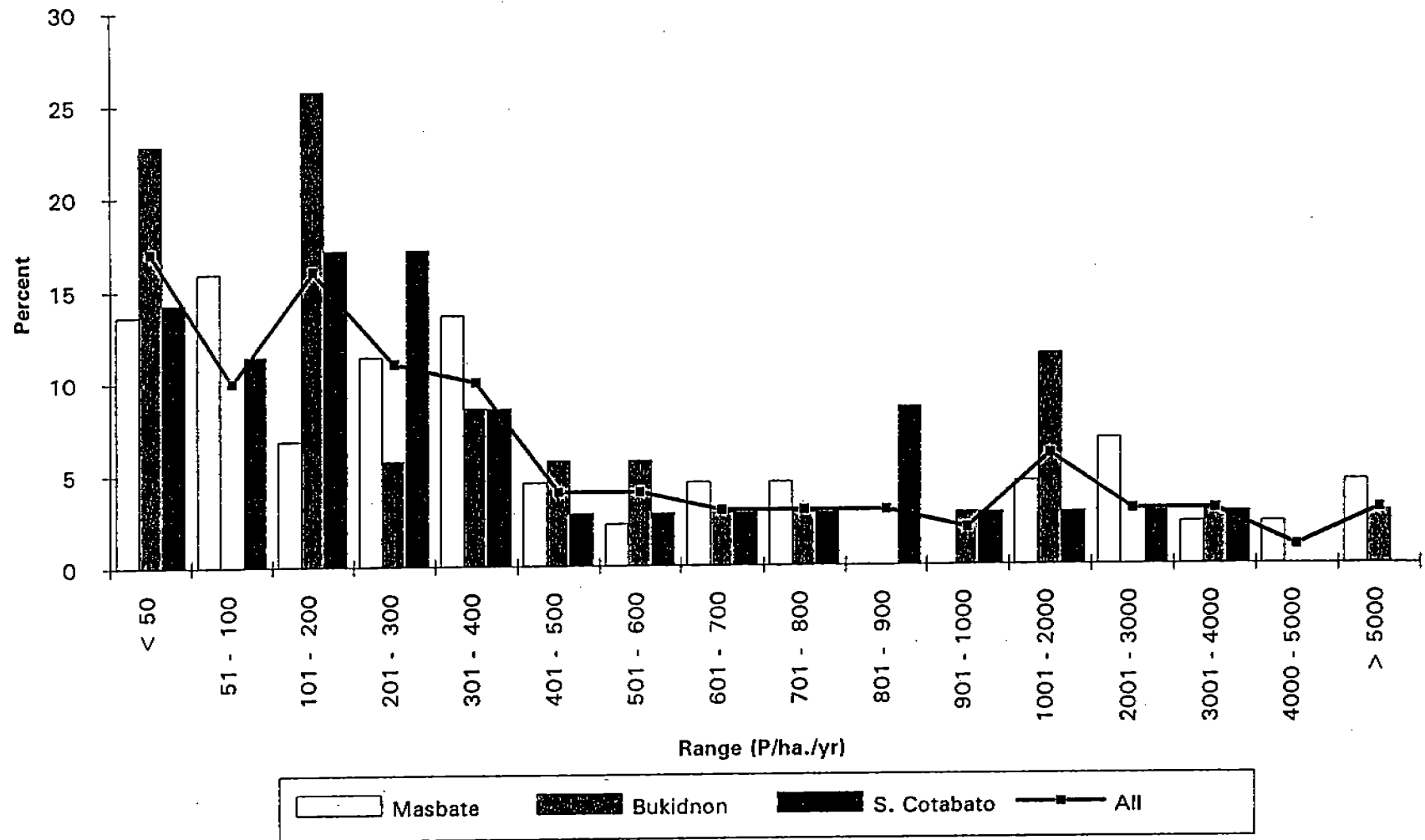


Figure 86. Perception About the Inclusion of Pasture Lease to CARP

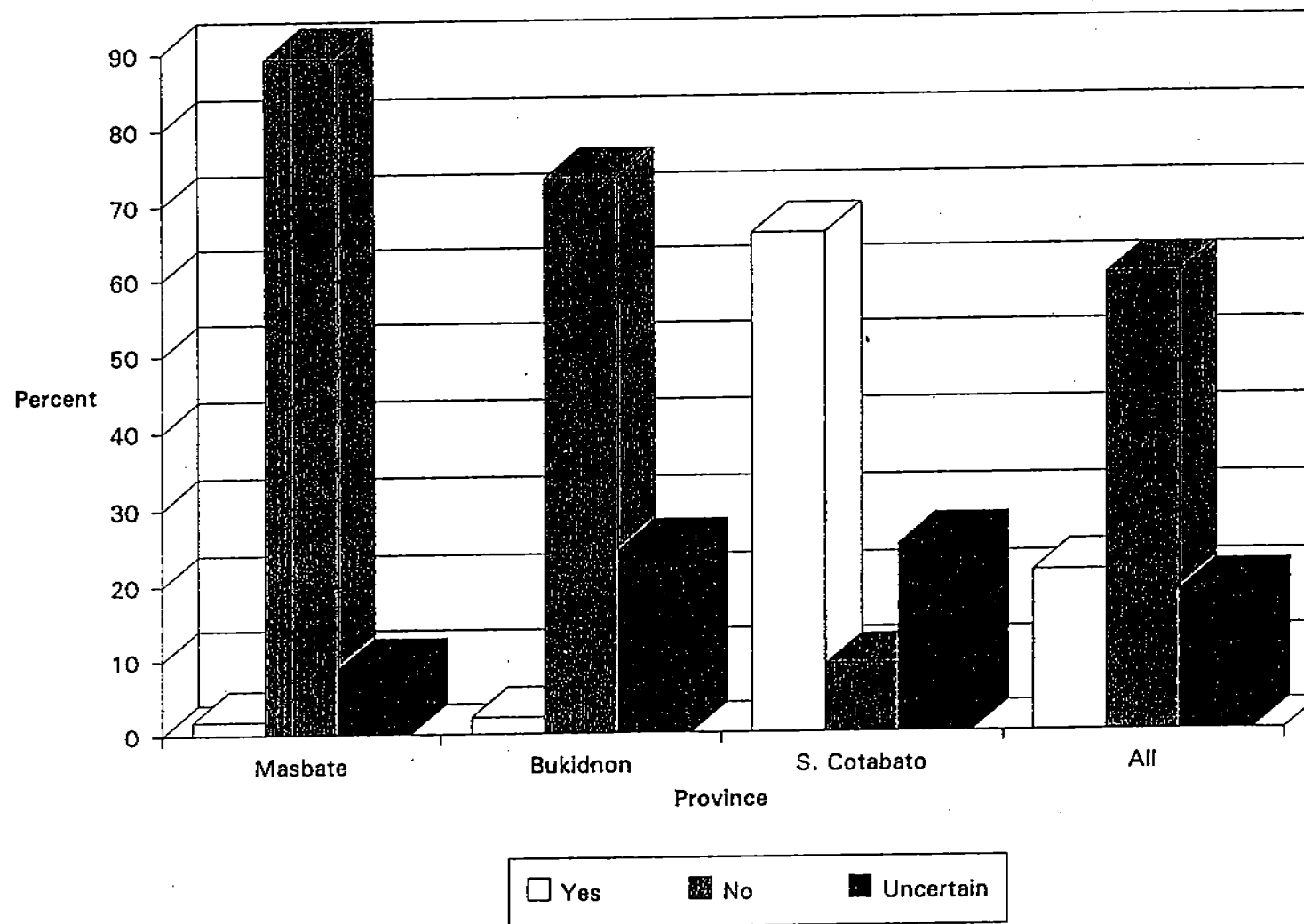
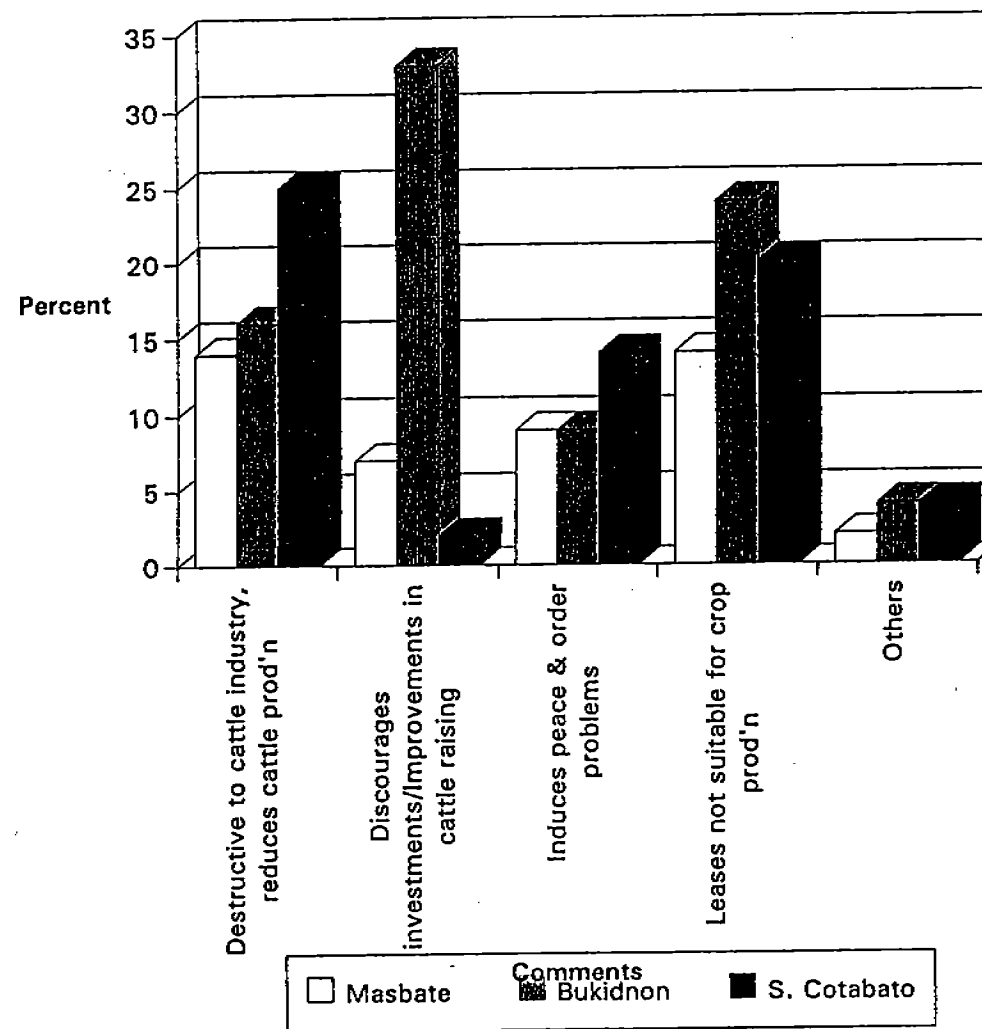


Figure 87. Comments of Leaseholders About CARP



## **APPENDIX A**

### **SAMPLING DESIGN**

The universe of pasture leases for the whole Philippines was obtained from the records of the Department of Environment and Natural Resources (DENR) on the updated list of holders of Pasture Lease Agreements (PLAs) and Forest Land Grazing Lease Agreements (FLGLAs) as of 1991. The list provided information on the number of leases and area covered by municipality, province, and region. The distribution of PLAs and FLGLAs across regions was generated to obtain a sense of the structure of the leases in terms of their incidence and average lease sizes. The resulting distribution of leases across regions and major island groups is shown in Appendix A: Table 1.

The identification of possible survey areas where the samples were to be taken made use of the information given by the population distribution. The regions where pasture leases were relatively prevalent in terms of the number of existing leases were identified. The initial choices were Regions II, IV, V, X and XI. Region II was taken out from the possible sample set with the information that the access to the region was hampered the destruction of the main arterial highway due to the 1991 earthquake. With the remaining regions identified, the structure of lease distribution by province was generated. In each region, the province where pasture leases were most prevalent were identified and chosen to be the set of sample provinces. The provinces chosen were Occidental Mindoro for Region IV, Masbate for Region V, Bukidnon for Region X, and South Cotabato for Region XI. Having chosen the provinces from which to

Appendix Table 1. Distribution of Pasture Leases by Region, Philipines, 1991

Region	Number of Pasture Leases	Area ( <sup>1</sup> 000 ha)	Average Size (ha)
CAR	86	26.4	307.0
I	56	14.0	250.0
II	201	69.5	345.8
III	75	31.0	413.3
IV	204	76.7	376.0
V	110	37.6	341.8
<i>Luzon</i>	732	255.2	348.6
VI	28	8.3	296.4
VII	13	7.1	546.2
VIII	2	0.8	400.0
<i>Visayas</i>	43	16.2	376.7
IX	2	2.8	1,400.0
X	88	30.2	343.2
XI	86	49.0	569.8
XII	22	24.1	1,095.5
<i>Mindanao</i>	198	106.1	535.9
PHILIPPINES	973	377.5	388.0

Source: Department of Environment and Natural Resources, 1991

APPENDIX TABLE 2 List of Pasture Leases in Selected Major Pasture Lease Areas, by Province, 1991.

No.	Region	Province	Location	Lessee	Lease No.	Area (Ha.)	Expiry Date	
							(Mo/Day)	Year
1	5	Albay	Manito	Rene Imperial	2953	383	06-30	1994
2	5	Albay	Rapu-Rapu	Antonio Palomo	594	577	12-31	2016
3	5	Camarines Norte	Labo	J.S. Rodriguez, Inc.	2969	1665	06-30	1994
4	5	Camarines Sur	Lagonoy	Nilo Roa	3116	286	12-31	1995
5	5	Camarines Sur	Sipocot	Luis Villaluerte	3178	280	06-30	1996
6	5	Camarines Sur	Siruma	Romeo Reyes	1966	280	06-30	1998
7	5	Catanduanes	Balo & Baras	Felipe Torrecampo	3106	114	06-30	1995
8	5	Masbate	Aroroy	Rosalio Bonagua	F342	420	06-30	1999
9	5	Masbate	Aroroy	Benilda Bueno	356	200	06-30	1992
10	5	Masbate	Aroroy	Andres Corpuz	410	501	12-31	1992
11	5	Masbate	Aroroy	Lily D. Duran	380	65	12-31	2011
12	5	Masbate	Aroroy	Romeo Escuarda	404	186	12-31	2011
13	5	Masbate	Aroroy	Ramiro Esparrago	322	184	12-31	1996
14	5	Masbate	Aroroy	Arminda A. Espinilla	2846	566	06-30	1993
15	5	Masbate	Aroroy	Arminda A. Espinilla	4035	234	06-30	1996
16	5	Masbate	Aroroy	Josephine Espenilla	225	420	12-31	2009
17	5	Masbate	Aroroy	Belen dela Fuente	3020	240	06-30	1994
18	5	Masbate	Aroroy	Jose Layco	3837	102	06-30	1990
19	5	Masbate	Aroroy	Orlando Manalo	3655	137	06-30	1999
20	5	Masbate	Aroroy	Vicente Maristela, Jr.	209	179	12-31	2009
21	5	Masbate	Aroroy	Heirs of Aquilino Mauleon	186	271	12-31	1993
22	5	Masbate	Aroroy	Roberto Miguel	3351	244	06-30	1997
23	5	Masbate	Aroroy	Ramon Panique	197	312	12-31	1998
24	5	Masbate	Aroroy	Orlando de los Santos	3720	128	06-30	1999
25	5	Masbate	Aroroy	Anelyn S. Lopez	585	109	06-30	1997
26	5	Masbate	Aroroy	Abraham Velasco	3626	304	06-30	1990
27	5	Masbate	Balud	Vicente Albay	F407	86	12-31	2012
28	5	Masbate	Balud	Rosales Dev't Ent. Corp.	132	119	06-30	2000
29	5	Masbate	Balud	Estrella Ruado	F451	125	12-31	2012
30	5	Masbate	Baleno	Ruben Relova	F371	312	12-31	1997
31	5	Masbate	Cawayan	Anastacio Pecson	205	1827	12-31	2011
32	5	Masbate	Claveria	Alfredo B. Alim	14	108	12-31	2007
33	5	Masbate	Mandaon	Miguel Montenegro	2035	120	06-30	1998
34	5	Masbate	Mandaon	Soleda Vda. De Clemente	F469	76	12-31	2013
35	5	Masbate	Aroroy	Fe C. Bitara	498	129	12-31	2013
36	5	Masbate	Mandaon	Amado A. Estipona	503	121	12-31	2013
37	5	Masbate	San Pascual	Amanda S. Del Rosario	450	379	12-31	2012
38	5	Masbate	Masbate	Jose Torres	508	126	12-31	2013
39	5	Masbate	Aroroy	Asuncion Vda. de Manlapas	519	105	12-31	2013
40	5	Masbate	Mandaon	Rafael Letada	600	102	12-31	2013
41	5	Masbate	Mandaon	Consolacion Arcenas	2035	120	06-30	1998
42	5	Masbate	Mandaon	Carmelita Vda. de Alanacio	4112	428	12-31	1997
43	5	Masbate	Mandaon	Isabel Belgica	463	122	12-31	2012
44	5	Masbate	Mandaon	Graciano Cornejo	53	109	12-31	2008
45	5	Masbate	Mandaon	Graciano Cornejo	3296	128	06-30	1997
46	5	Masbate	Mandaon	Thomas Dalanon	3554	561	06-30	1999
47	5	Masbate	Mandaon	Renato Espinosa	13	1601	12-31	2011
48	5	Masbate	Mandaon	Raul Estrella	3375	169	06-30	1997
49	5	Masbate	Mandaon	Manuel Estipona	3536	190	06-30	1998
50	5	Masbate	Mandaon	Arcadio Reyes	3577	273	06-30	1998
51	5	Masbate	Mandaon	Hilda Romano	72	108	06-30	2008
52	5	Masbate	Masbate	Dolores Arcenas	3612	230	06-30	1999

Cont'd

No.	Region	Province	Location	Lessee	Lease No.	Area (Ha.)	Expiry Date	
							(Mo/Day)	Year
53	5	Masbate	Masbate	Jose Motila	417	102	12-31	2013
54	5	Masbate	Masbate	Emilio Espinosa	3487	385	06-30	1998
55	5	Masbate	Masbate	Benjamin Magallanes	3413	686	06-30	1999
56	5	Masbate	Milagros	Norma Vda. de Bajar	44	196	12-31	1998
57	5	Masbate	Milagros	Luz Bacunawa	2899	582	06-30	1994
58	5	Masbate	Milagros	Heirs of George E. Bartolabac				
59	5	Masbate	Milagros	Consuelo Caballes	57	322	12-31	2009
60	5	Masbate	Milagros	Ma. Fe Carandang	405	220	12-31	2011
61	5	Masbate	Milagros	Catanduanes Agr. & Ind'l Corp.				
62	5	Masbate	Milagros	Norman K. Cortez, Jr.	382	376	12-31	1997
63	5	Masbate	Milagros	Emiliano Espinosa	2847	629	06-30	1995
64	5	Masbate	Milagros	Alberto Floresca	3378	271	06-30	1998
65	5	Masbate	Milagros	Jose Avelino Agri. Farms, Inc.				
66	5	Masbate	Milagros	Ludivina Katigbak	3284	671	06-30	1997
67	5	Masbate	Milagros	Capitalina Vda. de Legaspi	101	285	12-31	1995
68	5	Masbate	Milagros	Maristela Dev'l Ent. Corp.	328	883	12-31	1997
69	5	Masbate	Milagros	John Miller	2340	567	06-30	1992
70	5	Masbate	Milagros	Jovencio T. Revil	F467	132	12-31	2013
71	5	Masbate	Milagros	Jovencio T. Revil	F468	140	12-31	2013
72	5	Masbate	Milagros	Oscar Eligario	1865	160	06-30	1993
73	5	Masbate	Milagros	Antonio Pusing	3196	355	06-30	1995
74	5	Masbate	Milagros	Antonio Rosero	3350	104	06-30	1997
75	5	Masbate	Milagros	Ludivina Katigbak	220	925	12-31	1998
76	5	Masbate	Milagros	7R Enterprises(Royalties)	3438	1173	06-30	1993
77	5	Masbate	Mobo	Susana V. Lim	126	117	12-31	1993
78	5	Masbate	Mobo	Vicente Lim	127	265	12-31	2000
79	5	Masbate	Mobo	Edencio Nunez	276	112	12-31	2010
80	5	Masbate	San Pascual	Benito Chua	4065	323	06-30	1998
81	5	Masbate	San Pascual	Senen A. Cleole	2671	112	12-31	2010
82	5	Masbate	San Pascual	Juan Cojuangco	60	370	06-30	1992
83	5	Masbate	San Pascual	Jose Largo	345	75	12-31	2011
84	5	Masbate	San Pascual	Amelia Vda. de Lazaro	3808	609	06-30	2004
85	5	Masbate	Uson	Juanito Lorena	564	140	06-30	1995
86	5	Masbate	San Pascual	Bok Tiao Ong	3510	504	06-30	1998
87	5	Masbate	San Pascual	Leopoldo Padilla	3167	158	06-30	1996
88	5	Masbate	San Pascual	Leopoldo Padilla	266	174	12-31	2010
89	5	Masbate	San Pascual	Gelacio Rivera	3747	344	06-30	1999
90	5	Masbate	San Pascual	Vicente del Rosario	2665	380	06-30	1998
91	5	Masbate	San Pascual	Celerino San Pascual	F426	164	12-31	2012
92	5	Masbate	San Pascual	Felicitas Vda. de Sta. Ana	141	198	12-31	2009
93	5	Masbate	San Pascual	Braulio Siozar	2944	160	06-30	1994
94	5	Masbate	San Pascual	Honesto de Vera	195	660	06-30	2000
95	5	Masbate	Uson	Jose Sanchez	3624	257	06-30	1995
96	5	Masbate	Milagros	Felimon Abelita III	490	128	12-31	2013
97	5	Masbate	Mandaon	Salvador Vda. de Arcinas	514	188	12-31	2013
98	5	Masbate	Mandaon	Linda R. Altarejos	517	77	12-31	2014
99	5	Masbate	Mandaon	Fermin Asilum	416	88	12-31	2014
100	5	Masbate	San Pascual	Benjamin Lucena	236	233	12-31	2014
101	5	Masbate	Aroroy	Jose Medina	565	565	12-31	2015
102	5	Masbate	Balud	Perfecta Vda. de Lopez	570	435	12-31	2012
103	5	Masbate	Mandaon	Manuel Estipona	580	105	12-31	2015
104	5	Masbate	Balud	Renato Fajardo	591	123	12-31	2015

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No.	Region	Province	Location	Lessee	Lease No.	Area (Ha.)	Expiry Date	
							(Mo/Day)	Year
105	5	Masbate	Balud	Flaviano Palmares	598	65	12-31	2016
106	5	Masbate	Mandaon	Corazon E. Osorio	599	76.2	12-31	2016
107	5	Masbate	San Pascual	Rolando Fuentes	605	100	12-31	2016
108	10	Agusan	Buhuan City	Prosperidad Rodriguez	1307	90	06-30	1994
109	10	Agusan del Norte	Tubay	Napala Andres	3969	946	06-30	1992
110	10	Agusan del Sur	Esperanza	Simeon Espedido	3283	480	06-30	1997
111	10	Bukidnon	Camp Philips	Abelardo Baclig	336	472	12-31	2011
112	10	Bukidnon	Don Carlos	Lilia Bischocho	2868	534	06-30	1993
113	10	Bukidnon	Impasugong	George Baula	113	308	12-31	2008
114	10	Bukidnon	Impasugong	Andres Okinlay	160	72	12-31	2010
115	10	Bukidnon	Impasugong	Teresita Roxas	397	61	12-31	2011
116	10	Bukidnon	Kalilangan & Dancaga	Cesar Ceballos	131	1190	12-31	2009
117	10	Bukidnon	Kalilangan & Dancaga	Rita C. vda. de Judilla	F476	131	12-31	2013
118	10	Bukidnon	Libona	Melecito Alquitela	74	120	12-31	2009
119	10	Bukidnon	Libona	Ernesto Calingasan	104	222		2008
120	10	Bukidnon	Libona	National Dev't Corp.	384	309	12-31	2011
121	10	Bukidnon	Libona	Virgilio Neri	112	328	12-31	1998
122	10	Bukidnon	Libona	Emmanuel Pelaez	1736	328	06-30	1998
123	10	Bukidnon	Libona	Paz Vda. del Rosario	162	91	12-31	2009
124	10	Bukidnon	Libona	Ramcar, Inc.	2933	280	06-30	1994
125	10	Bukidnon	Libona	Celestino Tugot	751	224	06-30	1997
126	10	Bukidnon	Libona	Dante Verendia	96	327	12-31	1994
127	10	Bukidnon	Libona	Espcasio Villalor	156	895	12-31	2010
128	10	Bukidnon	Libona	Rosalinda Vasquez	3154	280	06-30	1995
129	10	Bukidnon	Malaybalay	Filomena Vasquez	1651	296	06-30	1998
130	10	Bukidnon	Malaybalay	Flora Dacion	97	89	12-31	2010
131	10	Bukidnon	Malaybalay	Gloria Escano	2999	502	06-30	1994
132	10	Bukidnon	Malaybalay	Laurence Lim	3616	530	06-30	1994
133	10	Bukidnon	Malaybalay	Jesus Ocaya	374	242	12-31	2011
134	10	Bukidnon	Malaybalay	Victoriano Tan	3050	439	06-30	1994
135	10	Bukidnon	Malaybalay	Raymundo Villahermosa	2949	360	06-30	1994
136	10	Bukidnon	Malibog	Rebalado Quilans	4074	100	12-31	1997
137	10	Bukidnon	Malibog	Teodora Vda. de Seno	2951	220	06-30	1993
138	10	Bukidnon	Malibog	Salvador Sison	2262	160	06-30	1995
139	10	Bukidnon	Manolo Fortich	Salvador Albarece	09	1108	12-31	2008
140	10	Bukidnon	Manolo Fortich	Alfredo Angeles	3591	479	12-31	1997
141	10	Bukidnon	Manolo Fortich	Eliseo Angeles	152	255	12-31	2011
142	10	Bukidnon	Manolo Fortich	CD Corporation	37	300	12-31	2009
143	10	Bukidnon	Manolo Fortich	Precioso Cordovez	787	300	06-30	1997
144	10	Bukidnon	Manolo Fortich	Manuel Fortich, Jr.	308	789	12-31	1998
145	10	Bukidnon	Malaybalay	Felomena Balbon	1651	296	06-30	1998
146	10	Bukidnon	Manolo Fortich	Augusto Lopez	222	1538	12-31	2006
147	10	Bukidnon	Manolo Fortich	Elsie Montano	08	500	12-31	2007
148	10	Bukidnon	Manolo Fortich	Climaco Mosqueda	2888	80	06-30	1993
149	10	Bukidnon	Manolo Fortich	Hilario Paasanos, Jr.	F448	50	12-31	2012
150	10	Bukidnon	Manolo Fortich	Daniel Sindo	2849	112	06-30	1993
151	10	Bukidnon	Manolo Fortich	Eugenio Quiray	F418	68	12-31	2012
152	10	Bukidnon	Manolo Fortich	Jose Uchuan	2839	524	06-30	1993
153	10	Bukidnon	Maramag	Fe Baclig	3629	468	06-30	2012
154	10	Bukidnon	Maramag	Circle T. Agricultural Dev't Corp.	333	820	12-31	1992
155	10	Bukidnon	Maramag	Rancho Mercedes, Inc.	66	876	12-31	2009



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No.	Region	Province	Location	Lessee	Lease No.	Area (Ha.)	Expiry Date	
							(Mo/Day)	Year
156	10	Bukidnon	Maramag	Teodoro Israel	319	87	12-31	2009
157	10	Bukidnon	Maramag	Vicente Garcia	2964	518	06-30	1994
158	10	Bukidnon	Quezon	Cesar Fortich, Inc	122	958	12-31	1994
159	10	Bukidnon	Quezon	Michael Fortich	285	277	12-31	1994
160	10	Bukidnon	Talakag	Ramon Aberasturi	618	420	06-30	1998
161	10	Bukidnon	Talakag	Enrique Dy	3836	396	06-30	2000
162	10	Bukidnon	Talakag	James Frias	1716	165	06-30	1998
163	10	Bukidnon	Talakag	Jesus Locsin	2387	504	06-30	1994
164	10	Bukidnon	Valencia	Carul Agricultural Corp.	192	510	06-30	1995
165	10	Bukidnon	Valencia	Leonila Gamboa	3818	204	06-30	2000
166	10	Bukidnon	Valencia	Demetrio Hechanova, Jr.	115	108	12-31	2001
167	10	Bukidnon	Valencia	Sofia Vda. de Javier	42	115	12-31	2008
168	10	Bukidnon	Libona	Juliana Gamba	479	108	12-31	2008
169	10	Bukidnon	Valencia	Demetrio Calva	492	68	12-31	2013
170	10	Bukidnon	Maramag	Fe Baclic	589	456	06-30	1999
171	10	Bukidnon	Malibog	Dario Yap	595	545	12-31	2016
172	10	Bukidnon	Cagayan de Oro	Manuel Roa	417	281	12-31	2012
173	10	Bukidnon	Talakag	Betty Sotelo Munoz	601	140		
174	10	Misamis Oriental	Cagayan de Oro City	Constantino Jaraula	3749	113	06-30	1999
175	10	Misamis Oriental	Cagayan de Oro City	Federico del Puerto	1635	452	06-30	1999
176	10	Misamis Oriental	Cagayan de Oro City	Pedro N. Roa	F417	350	12-31	2012
177	10	Misamis Oriental	Claveria	Ramcar, Inc.	2919	1000	06-30	1994
178	10	Misamis Oriental	El Salvador	Antonio Dongolito	165	88	12-31	1995
179	10	Misamis Oriental	El Salvador	Aureo Castrence	1813	260	06-30	1994
180	10	Misamis Oriental	El Salvador	Cecilio Lituanas	3506	100	06-30	1998
181	10	Misamis Oriental	Opol	BJS Dev'l Corp.	3247	360	12-31	1996
182	10	Misamis Oriental	Opol	BJS Dev'l Corp.	4096	620	12-31	2007
183	10	Misamis Oriental	Opol	Ella Y. Denosta	F367	74	12-31	2012
184	10	Misamis Oriental	Opol	Azucena Elloso	239	144	12-31	1998
185	10	Misamis Oriental	Opol	Marcelino Maagad	259	95	12-31	1996
186	10	Misamis Oriental	Opol	Romana Vacabres	F367	192	06-30	1998
187	10	Misamis Oriental	Opol	Amado Velez	4098	232	12-31	1997
188	10	Misamis Oriental	Opol	Raymundo Yanez	F402	67	12-31	2011
189	10	Misamis Oriental	Tagoloan	Mabini Achas	F356	96	12-31	2011
190	10	Misamis Oriental	Tagoloan	Lizardo Yap	F413	92	12-31	2012
191	10	Misamis Oriental	Cagayan de Oro	Angela Vda. de Carmelo	4100	121	12-31	1997
192	10	Misamis Oriental	Cagayan de Oro	Guanzon Rodriguez Dev'l	3164	191	06-30	1996
193	10	Misamis Oriental	Misamis	Antonio Serina	571	149	12-31	2015
194	10	Misamis Oriental	Claveria	Gerardo P. Orcullo, Jr.	592	120	12-31	1994
195	10	Misamis Oriental	Jasaan	Carmen Zayas	613	64	12-31	2016
196	11	Davao del Sur	Davao City	L.S. Sarmiento & Co. Inc.	2885	445	06-30	1993
197	11	Davao del Sur	Malalag	Heirs of Emmanuel Buenviaje	2861	516	06-30	1993
198	11	Davao del Norte	Sto. Tomas	Manuela S. Arandia	251	54	12-31	2010
199	11	South Cotabato	Bawing	Angelina Vda. de Acharon	85	518	12-31	2011
200	11	South Cotabato	Gen. Santos City	Alejandro Alcantara	103	1228	12-31	2001
201	11	South Cotabato	Gen. Santos City	Felicesimo Alcantara	552	2000	06-30	1993
202	11	South Cotabato	Gen. Santos City	Nicasio Alcantara	524	1000	06-30	1993
203	11	South Cotabato	Gen. Santos City	Tomas Alcantara	543	683	06-30	1992
204	11	South Cotabato	Gen. Santos City	Alsons Dev. Inc. Corp.	546	1467	06-30	1992
205	11	South Cotabato	Gen. Santos City	Minda Atendido	278	152	12-31	1996
206	11	South Cotabato	Gen. Santos City	Heirs of Lintang Banisil	3326	430	06-30	1997

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No.	Region	Province	Location	Lessee	Lease No.	Area (Ha.)	Expiry Date	
							(Mo/Day)	Year
207	11	South Cotabato	Gen. Santos City	Beverly Hills Cattle Ranch Co. Inc.	2995	1224	06-30	1994
208	11	South Cotabato	Gen. Santos City	Buayan Cattle Ranch	541	1314	06-30	1994
209	11	South Cotabato	Gen. Santos City	Heirs of Hermogenes Cahilso	111	207	12-31	1994
210	11	South Cotabato	Gen. Santos City	Pedro Changco, Jr.	445	1000	06-30	1994
211	11	South Cotabato	Gen. Santos City	Rodrigo E. Rivera	528	500	12-31	1994
212	11	South Cotabato	Gen. Santos City	Leopoldo Dacera, Jr.	1401	1088	06-30	1996
213	11	South Cotabato	Gen. Santos City	Caridad Denoga	4039	317	12-31	1995
214	11	South Cotabato	Gen. Santos City	Lucio Fernandez	F386	528	12-31	2011
215	11	South Cotabato	Gen. Santos City	Dionisil Gutierrez	551	480	06-30	1993
216	11	South Cotabato	Gen. Santos City	Hacienda San Jose	2092	605	06-30	1993
217	11	South Cotabato	Gen. Santos City	Jacovino Java	288	260	12-31	2010
218	11	South Cotabato	Gen. Santos City	Jose Kho	282	200	12-31	2010
219	11	South Cotabato	Tambien, Gen. Santos	Pantaleon K. Cababayao	504	58	12-31	2013
220	11	South Cotabato	Gen. Santos City	Bernardo Lozano, Jr.	F390	400	06-30	1998
221	11	South Cotabato	Gen. Santos City	Eduardo Leyson	527	755	06-30	1992
222	11	South Cotabato	Gen. Santos City	Eduardo Leyson	526	568	12-31	1996
223	11	South Cotabato	Gen. Santos City	Bernardino Lozano, Jr.	2193	226	06-30	1998
224	11	South Cotabato	Gen. Santos City	Mariana Lozano	1024	405	06-30	2003
225	11	South Cotabato	Gen. Santos City	Voltaire M. Flores	534	400	06-30	1994
226	11	South Cotabato	Gen. Santos City	Pablo Sunglao	118	336	12-31	2006
227	11	South Cotabato	Gen. Santos City	Heirs of Adan de las Manas	2233	510	06-30	1998
228	11	South Cotabato	Gen. Santos City	Dolorio Mejorada	3069	530	06-30	1995
229	11	South Cotabato	Gen. Santos City	Ismael Ngilay	3290	122	06-30	1997
230	11	South Cotabato	Gen. Santos City	Nazario B. Guinto	561	203	12-31	1992
231	11	South Cotabato	Gen. Santos City	Palacios Cattle Ranch	291	520	12-31	2010
232	11	South Cotabato	Gen. Santos City	Melania Romero	1330	416	06-30	1993
233	11	South Cotabato	Gen. Santos City	Zufragia Vda. de Salazar	2996	624	06-30	1994
234	11	South Cotabato	Maasim	Francisco Giron, Jr.	F464	1096	12-31	1997
235	11	South Cotabato	Gen. Santos City	Sarangani Cattle Ranch	548	1987	06-30	1992
236	11	South Cotabato	Gen. Santos City	Tula Sulanting	4128	108	12-31	1998
237	11	South Cotabato	Kiamba	Anita Carino	2924	670	06-30	1996
238	11	South Cotabato	Kiamba	Chainsaw Service, Inc.	3269	1935	06-30	1996
239	11	South Cotabato	Kiamba	Antonio Diya	1802	756	06-30	1996
240	11	South Cotabato	Kiamba	Gregorio Yabes	2906	680	06-30	1994
241	11	South Cotabato	Koronadal	Arturo Uy	40	155	12-31	2008
242	11	South Cotabato	Maasim	Arcal Development Inc.	2471	780	06-30	2001
243	11	South Cotabato	Maasim	Hadji Ahmad Bajunaid	3074	340	06-30	1995
244	11	South Cotabato	Maasim	Priscilla Florentino	F458	564	06-30	1996
245	11	South Cotabato	Maasim	Domingo Carino	851	626	06-30	1994
246	11	South Cotabato	Maasim	Rubi & Sons, Inc.	482	598	12-31	2013
247	11	South Cotabato	Maasim	Floremar Agricultural Dev't Corp.	02	772	12-31	1993
248	11	South Cotabato	Maasim	Floremar Agricultural Dev't Corp.	67	370	12-31	2011
249	11	South Cotabato	Maasim	Julio Olarte	120	240	12-31	2009
250	11	South Cotabato	Maasim	Alfonso Rivera	2889	557	06-30	1993
251	11	South Cotabato	Maasim	Alfonso Rivera	873	533	06-30	1993
252	11	South Cotabato	Maasim	Siqel Cattle Ranch Corp.	3234	1467	06-30	1998
253	11	South Cotabato	Maasim	Belen Vda. de Sison	3119	720	06-30	1997
254	11	South Cotabato	Maasim	Purita Yu	383	500	12-31	2011
255	11	South Cotabato	Maasim	Esperanza Albano	2926	470	06-30	1994
256	11	South Cotabato	Maasim	Allado Construction Corp.	2826	1440	06-30	1992
257	11	South Cotabato	Malungon	Romeo Apante	83	280	12-31	2000

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No.	Region	Province	Location	Lessee	Lease No.	Area (Ha.)	Expiry Date	
							(Mo/Day)	Year
258	11	South Cotabato	Malungon	Gregorio Daprosa	3266	1185	06-30	1997
259	11	South Cotabato	Malungon	Jose Natividad	3532	155	06-30	1998
260	11	South Cotabato	Malungon	South Davao Dev't Corp.	261	1614	12-31	1997
261	11	South Cotabato	Malungon	Teopisto Buenaventura	290	87	12-31	2010
262	11	South Cotabato	Polomolok	Felix Enojado	07	445	12-31	1998
263	11	South Cotabato	Polomolok	Fermin Gatdula	3553	530	06-30	1999
264	11	South Cotabato	Polomolok	Norberto Javellana	2825	880	06-30	1993
265	11	South Cotabato	Tiboli	Sison Dev't Inc.	3065	740	06-30	1995
266	11	South Cotabato	Tiboli	Castor P. Gerosano	489	70	12-31	2013
267	11	South Cotabato	Tampakan	Antonia Baguio	502	220	12-31	2013
268	11	South Cotabato	Gen. Santos City	Julio Olarte	459	150	12-31	2014
269	11	South Cotabato	Gen. Santos City	Annie F. Martinez	455	220	12-31	2013
270	11	South Cotabato	Gen. Santos City	Solita de Jesus Sunglao	529	130	12-31	2006
271	11	South Cotabato	Polomolok	Nemesio C. Fernandez	532	172	12-31	2014
272	11	South Cotabato	Maasim	Atty. Dolores M. Fores	578	234	12-31	2013
273	11	South Cotabato	Maasim	Gabriel O. Estocarpio	590	252	12-31	2015
274	11	South Cotabato	Koronadal	Aniceto Silvederio	596	200	12-31	2016
275	11	South Cotabato	Gen. Santos City	- Segera S. Agustin	288	288	12-31	2010
276	11	South Cotabato	Bawing	Arturo A. Aguilar	386	528	12-31	2011
277	11	South Cotabato	Gen. Santos City	John Flores	604	240	12-31	2016
278	11	Davao Oriental	Manay	Emitio Dayanghirang, Jr.	550	332	12-31	2013

obtain the samples for the planned survey of pasture leases, ocular inspections and a pre-testing of the survey instrument were first undertaken in these provinces.

The ocular inspection in Mindoro Occidental revealed that more than half of the pasture leases were not being operated as they were supposed to be, where the cattle were being brought down from the pasture lease areas to their lowland farms or even to the towns for enclosed feeding; or rented out to small farmers for fattening on a profit-sharing basis. The most prevalent reason given was the inability to operate in the hills due to peace-and-order (insurgency) problems. No successful pre-testing of the instrument for farm managers was enacted as even the farm managers were not in the pasture lease sites. With these problems met with the planned sample province, Mindoro Occidental was deleted from the final set of samples. Thus, Region IV was not represented in the final choice of provinces to be subjected to the pasture lease survey.

The final set of provinces chosen as survey sites were Masbate, Bukidnon, and South Cotabato. For these provinces, the updated master list of pasture lease holders were obtained from the central office of the DENR, and validated with the updated records in the regional and provincial offices of the DENR. The list of pasture lease holders in these provinces are shown in Appendix A: Table 2. From the list of pasture lease holders in each province, samples were drawn randomly, with replacements for possible non-response also drawn randomly. The number of samples obtained from each of the provinces are shown in Appendix A: Table 3.

Appendix A: Table 3. The Sample Structure of the Pasture Lease Survey,  
by Province, 1992

Region	Representing Province	Sample Size (number)	Percent of Pasture Lease in Province (percent)	Percent of Pasture Lease in Region (percent)
V	Masbate	56	53.8	50.9
X	Bukidnon	45	66.2	51.1
XI	South Cotabato	44	54.3	51.2
	All	145	57.3	51.1

It could thus be noted that the sample size was fairly adequate relative to the provincial population of pasture leases. With respect to the regional population of pasture leases, the respective sample sizes were a little over 50 percent of the regional totals.

## **Appendix B**

### **CARP and the Livestock Sector - Adjustments in the Pasture Leases**

#### **DESIGN OF THE INSTRUMENT**

##### **Overview of the Study and its Objectives**

The cattle industry has been observed to be on a stage of decline throughout the 1980's. While the backyard sector of the industry has experienced modest reductions in cattle populations, the commercial sector has shown to have exhibited a more rapid decline, both in the number of farms and in cattle population. A significant number of commercial farms exist as pasture leases.

The reduction in commercial cattle raising activity has been blamed squarely on the uncertainties brought about by the Comprehensive Agrarian Reform Program (CARP) and the Peace and Order Problem related to insurgency in the countryside. To what extent these reasons are significant is to be established in the study.

The study would not be able to include those ranches that have already closed down. Thus, the survey will try to determine how the remaining ranches have been adjusting in matters of allocation of assets, i.e. between investments in the pasture leases and investments in some other non-pasture activities. Incomes derived from investments in non-pasture enterprises would indicate the return from alternative activities relative to that from the pasture lease.

The study also aims to establish whether the pasture leasing business is still profitable or not, and determine which factors significantly affect the profitability of the enterprise. These would mainly be: cattle prices, input prices, carrying capacity of the pasture (i.e. efficiency of land use), herd productivity, and other non-price factors. The private costs incurred ensuring security of farm assets and the rights to exclusive enjoyment of the benefits from the lease is also to be obtained.

The extent to which resources are devoted to non-pasture activities in the farm (e.g. cropping activities) and the significance of their contribution to total farm income is also to be established. Initial observations seem to indicate that the lessees may have been expanding cropping activities to areas suitable to crops as response to changing comparative advantage between pasture and non-pasture activities.

It is ideal that the dynamics of pasture and non-pasture (e.g. cropping) activities within the pasture lease be captured. Thus, the area devoted to cropping activities, in relation to the area devoted to pasture be accurately obtained. In like manner, the resources (material inputs and labor) and corresponding costs allocated between pasturing and cropping activities should be accurately obtained. Finally, the respective incomes obtained from these activities should also be accurately established. This would reveal the relative profitability of pasture and cropping activities within the pasture.

## **The Major Section of the Interview Schedule**

### **A. PASTURE LEASE CHARACTERISTICS AND LEASEHOLDER DECISIONS**

- I The Pasture Leaseholder
- II Initial Investments, Sources of Financing, Involvement in Other Economic Activities, and Sources of Household Income
- III The Pasture Lease: Leaseholders' Investments; Reactions and Decisions in Response to CARP and Peace-and-Order Problems; Future Options for the Pasture Lease.

### **B. PASTURE LEASE UTILIZATION, INVESTMENTS, and PERFORMANCE**

- IV The Ranch Manager
- V Lease Area Utilization
- VI Herd Accounting
- VII Farm Investment
- VIII Labor Requirements for the Pasture Lease for Both Pasture and Non-Pasture Activities (1 January - 31 December 1992)
- IX Operating Expenses for Pasture and Non-Pasture Farm Production (1 January - 31 December 1992)
- X Income from Other Farm (Non-livestock) Activities (1 January - 31 December 1992)



### **The Choice of Respondent**

#### **1. The Pasture Leaseholder.**

The leaseholder is to be the respondent for the section on Pasture Lease characteristics and Leaseholder Decisions.

#### **2. The Ranch Manager.**

The ranch manager is to be the respondent for the Pasture Lease Utilization, Investments, and Performance.

**Note:** If the leaseholder is also the ranch manager, he would be the respondent for both sections.

**SECTIONS/  
QUESTION  
NUMBER**

**RATIONALE AND OBJECTIVES**

**SET A. PASTURE LEASE CHARACTERISTICS AND DECISIONS**

**I.A THE PASTURE LEASE HOLDER**

**Objective:**

To obtain socio-demographic characteristics of the pasture lease holder, information on the beginnings of his pasture, and his involvements in a profession or business outside the pasture leasing activity.

**II. INITIAL INVESTMENTS, SOURCES OF FINANCING, INVOLVEMENT IN OTHER ECONOMIC ACTIVITIES, AND SOURCES OF HOUSEHOLD INCOME**

**A. Initial Investments and Loans for the Pasture Lease**

**1 - 4** This section would provide an idea on the following:

1. How long it took the respondent to undertake the initial investments;
2. How large were these investments relative to the area leased;
3. Which were the major investment items; and
4. How much of the investments had to be financed from borrowings.

**5** This section traces the structure of these loans made as to their  
**respective** sources, value, and terms.

**6 - 7** These sections try to capture if the problems of obtaining credit  
**have** remained the same or changed through time.

**B.,**  
**B.1, B.2** This section also traces the structure of loans made in the last two  
**years** (1991 - 1992) and determine:

1. how loans for the pasture lease have changed over time and
2. how loans for the pasture lease differ from loans for other purposes or business

**C. Involvement in Economic Activities Outside Pasture Leasing**

The degree of involvement in non-pasture economic activities may be reflected in the investments in non-pasture assets, the composition of liabilities, and the composition of the sources of income.

**C.1 Non-Pasture Major Assets**

Section C.1 is designed to yield information on the size and value of the lessee's assets outside the pasture lease, its geographic concentration or distribution, and the income derived from it for the whole year of 1992.

**C.2 Liabilities**

Information on liabilities is needed to obtain the respondent's net worth.

**D. Sources of Household Income for Year 1992**

Section D is designed to obtain the structure of income sources of the household of the pasture lessee. This would provide a picture of the relative importance of the income from the pasture lease, compared to other sources.

**Definition:** Household income, per source, refers to the take-home pay of the income earner before taxes and other deductions are paid.

**III. THE PASTURE LEASE**

**A. The Lease Contract and its Terms**

Section A is designed to obtain information about the leasehold's characteristics, the status of improvements within the pasture, the adjustments that are taking place in reaction to perceived unfavorable developments in the environment such as: invasion into the lease by other contending parties, the Comprehensive Agrarian Reform Program (CARP), and the peace and order situation.

**1 - 2 Information about the Lease**

### **3                    Grazing Management Plan (GMP)**

Each lessee is required to formulate a GMP which indicates the projections about the development of the lease, specifying targets from the start of the contract and onwards into the future, perhaps stabilizing after a certain number of years.

Thus, the GMP must reflect that by the end of the year 1992, certain relevant targets must apply in terms of numbers of hectares developed as improved pastures, heads of cattle produced per year, cattle inventory, portion of the perimeter fenced, and others.

### **4 - 5                Willingness to stay in the pasture lease/cattle raising business under current                rules and regulations, social and business environment.**

#### **Objective:**

To elicit certain factors which determine the decision to stay in or move out of the business.

### **7                    The Scarcity of Rental Value of the Pasture Lease and the Rights granged                to it by the PLA/FLGLA.**

#### **Objective:**

To obtain an estimate of the current rental value to the pasture lease.

#### **Rationale:**

Since the opening of forest lands to PLAs, the lease rental rates had always been P1.00/ha./year. Over the years, it has never increased with inflation. The investigator is convinced that P1.00/ha./year is no longer the scarcity value of the lands but much higher. An estimate of such a scarcity value would be greatly informative for policy on future lease rental rates.

**7 - 8                    The Capitalized Value of the Pasture Lease until its Expiration Date**

**Objective:**

This section aims to capture that part of the value of the pasture lease, which, after accounting for all non-and values, would purely be attributable to the value of the land itself (e.g. improvements) and the privilege of operating it.

This would be a fair estimate of the capitalize value of the lease until its expiration date.

**9 - 12                   Problems Related to:**

- a. Rival claims on the pasture lease or a portion of it.
- b. Uncertainty brought about by the CARP (Comprehensive Agrarian Reform Program)
- c. Peace and order; personal security and safety.

**Rationale:**

The three problems above had always been blames for the closure of many commercial ranches and pasture leases, and for the poor performance of the pasture leases in terms of investments on improvements and cattle inventory.

**Objective:**

These questions are designed to specify the nature of these problems and obtain information on how real these expressed reasons are in retarding investments in the pasture leases.

**13 - 15                   Investments and Expenditures as a Response to Peace and Order  
Problems;                   Investments and Current Expenditures to Enforce Property Rights  
Over the                   Pasture Lease.**

**Rationale:**

The enforcement of rights of private citizens is the duty of the government through its police powers. But if the government is unable to

enact its functions, then private citizens (e.g. PLA holders) are forced to incur expenditures for the protection of their rights.

**Objective:**

This section aims to obtain information on the magnitude and value of resources that the leases are allocating for the security of their household and farm assets.

**SET B: (For the Ranch Manager)**

**PASTURE LEASE UTILIZATION, INVESTMENTS, and PERFORMANCE**

**A. The Ranch Manager**

**Objective:**

To obtain some socio-demographic characteristics of the farm manager and to obtain consistency of information on the leaseholder and the Lease.

**IV. Lease Area Utilization**

**1 - 5 Objective:**

Section IV would provide information on the status of development of the pasture lease, especially in terms of area devoted to:

- (i) Improved pasture
- (ii) Crops

**V. Herd Accounting ( 1 January - 31 December 1992)**

Section V tries to account for the composition of the herd, classified as (i) breeding bulls, (i) breeding cows (at reproductive stage), (iii) heifers (females not yet at reproductive stage), (iv) steers (males), and (v) calves. Non-cattle animals are also to e accounted for.

The various cattle groups are also identified according to their age bracket, designed mainly to facilitate the pricing or valuing of the whole herd. The accounting period is from 1 January to 31 December 1992.

**A. Herd Inventory, Purchases and Sales (1 Jan. - 31 Dec. 1992)**

**Objectives:**

- (i) To obtain an accurate accounting of the number of heads and the value of the opening stock (1 Jan. 1992) and closing stock (31 Dec. 1992), respectively.

- (ii) To obtain a measurement of the productive capacity of the lease in terms of the numbers of cattle sold and change in inventory;
- (iii) To obtain an accurate accounting of the flows that determine changes in inventory.

#### Accounting Identity

For each group and age category, the following accounting identity should hold:

$$\text{Closing Stock} = \text{Opening stock} + \text{births} + \text{purchases for herd} \\ - \text{deaths/losses} - \text{sold cattle} - \text{slaughtered/given away} + \\ \text{transfers from younger class} - \text{promotions to older class}.$$

#### Notes on Price/Head:

The price/ head refers to the estimated value of the animal at that point in time, if it were sold at the farmgate level.

- (i) For the opening stock, this refers to the 1 January 1992 prices. For the closing stock, this refers to estimated value/head at 31 December 1992 prices.

Increases in the price per head area expected due to inflation and/or increase in the real value of the animal due to weight gain.

### B. Purchases for Herd (1 Jan. - 31 Dec. 1992)

#### Note:

The information on the number purchased and price/head is already obtainable on the previous section (V.A). The new information that would be extracted from this section would thus be:

- (i) Name of breed of the cattle purchased,
- (ii) Source/origin of cattle,
- (iii) Stated price reference, and
- (iv) Transport cost per head.

The stated price reference is important to obtain information on true cattle prices at the farm level, adjusted for transport costs.



**C. Sale of Livestock (1 Jan. - 31 Dec. 1992)**

The initial information on livestock sold are already in section V.A. The sold cattle are to be classified as SURPLUS or CULLED cattle.

**Notes on distinction between SURPLUS and CULLED livestock:**

- (i) **Surplus** - those produced and grown as planned and programmed for sale at a designated time or month. From the viewpoint of optimality, a longer stay at the farm would be uneconomical, or would not be warranted by the pasture's carrying capacity.
- (ii) **Culled** - those that are disposed-off for reasons of less than expected productivity. It may include animals who have passed their prime, injured cattle, or simply unproductive heads. They are sold for all they are worth.

**Notes on respondent being unable to distinguish between SURPLUS and CULLS:**

If no distinction is made between surplus and culled livestock, then all sold livestock are to be classified as SURPLUS.

**C.1,  
C.2**

**Sales of Cattle (Surplus, Culled)**

These sections intend to obtain for each category, information on the following:

- (i) Numbers and weight ranges of cattle sold
- (ii) Characteristics of the point of sale referring to:
  - a. site of sale (farm, livestock auction market, or buyer's centre or location)
  - b. what the buyer is (rancher, small farmer, trader, a company/firm, etc.)
  - c. distance of point of sale to farm.

- (iii) Prices and pricing methods, specifically:
  - a. actual price received;
  - b. price reference (whether price refers to that received at farm or received at buyer's location); and
  - c. pricing method (i.e. per kilogram liveweight, by age, by ocular inspection or "eyeball calibration", per head, etc.)
- (iv) Transport cost - applicable only if the price reference is that received at buyer's location with the rancher shouldering the transport cost.

## **VI. FARM INVESTMENT**

Farm investments are categorized into:

- A. Fixed investments and
- B. Supplies/stock of variable inputs as of end December 1992.

### **A. Fixed Investments**

Fixed investments should refer to assets of structures in the ranch on which expenditures were made in pursuit of the production objective of the farm.

Fixed investments are classified into expenditure on:

1. Land Improvement
2. Construction of Physical Facilities
3. Equipment
4. Other Physical Structures
5. Livestock information obtained from opening inventory (1 Jan. 1992) plus net additions to the stock.

These should include only assets which still had productive value until the end of 1992. Thus, the list should exclude structures or equipment which are already obsolete or exhausted productive life.

**Notes on the information required for each investment item:**

**a. On year(s) undertaken/acquired**

The schedule allows for investments that have been staggered. If the staggering exceeds four years, then just the three major investment years according to expenditure incurred.

**b. On size/quantity/number of investment items**

The physical units in which the investment items would be measured differ depending on the type of investment. As a general guide, the following units of measurement should be followed:

- (i) area covered; in hectares - for land related improvements as well as for fencing structures
- (ii) number of units for physical facilities, equipment, and other structures
- (iii) number of heads - for livestock.

**c. On Cost/Expenditure Incurred**

This refers to the peso value of the investment item at the time of investment.

**d. On years more to last (from 1992)**

This refers to the estimated remaining productive life of the asset. If the asset's life expires this year (1992), then the correct entry should be zero (0).

**B. Supplies/Stock of Variable Inputs (as of 31 Dec. 1992)**

Section B includes the stock remaining, as of end 1992, of the variable inputs the farm uses in the production of cattle and other crops. This includes the stock of the following:

- 1. Feed concentrates
- 2. Roughage

3. Planting materials for pasture grasses (seeds, cuttings)
4. Fertilizers (for grasses and other crops)
5. Veterinary supplies
6. Other supplies (for cattle and crop production).

The supplies have either been bought or produced at the farm. If bought, the market price should be obtained. If produced at the farm, the value of the stock as input to the production process, at the farmgate level, should be imputed. From here, the value per unit could be obtained.

## **VIII. LABOR REQUIREMENTS**

### **A Composition of Workers**

#### **1 - 3 Objectives:**

This section aims to obtain information on the following:

- (i) The total number of workers employed - i.e. the employment generating capacity of the farm - both family and hired;
- (ii) The structure of hired workers according to status: regular or contractual;
- (iii) The division of labor resources between livestock/pasture activities and non-livestock/non-pasture activities e.g. cropping activities).

**Note:** The division of labor between livestock/pasture activities and non-livestock/non-pasture activities will serve as check on the relative importance of non-livestock income generating activities in the pasture lease.

### **B & C Labor Utilization (1 Jan. - 31 Dec. 1992)**

- B.1 Regular Hired workers
- B.2 Contractual/Seasonal Hired workers
- B.3 Regular family workers
- B.4 Contractual family workers

**Objective:**

This section aims to obtain information on the following:

1. The common classification of workers into groups according to major functions;
2. The distribution of regular hired, contractual/seasonal, and family workers according to such major groupings;
3. The average wage rate (P/day) or salary (P/month) for each worker for each category; and
4. Labor expenditures for each category, to arrive at total labor expenditures for the year 1992.

**Note:**

In the final analysis, the important set of information that is desired to be extracted are:

- (i) Number of workers employed
- (ii) The relevant compensation (wage/day or salary/month) and
- (iii) The annual equivalent of the compensation.

Thus, the grouping from the viewpoint of the employer (or manager) should work as an aid to simplifying classification and aggregation purposes. From the perspective of simplification in computing annual labor expenditures per group, homogeneity according to wage rates or salary per group would facilitate calculations.

**IX****OPERATING EXPENSES FOR PASTURE AND OTHER FARM PRODUCTION ACTIVITIES (1 JAN. - 31 DEC. 1992)**

The major categories of operating expenses identified are those associated with the following:

- A. Pasture improvement
- B. Livestock Care
- C. Operation, maintenance, repairs of equipments, machineries, and facilities
- D. Rentals

- E. Interest of loans
- F. Other material expenses for other farm production activities, e.g. cropping.

The items identified in this section excludes labor expenditures associated with putting to use these material inputs. The non-material inputs included here are "External Professional Services", measured in number of heads of cattle serviced for the year.

Notes on the following information required:

- (i) Quantity, number - unless specified, the respondent should specify the appropriate units used.
- (ii) Price, Cost per unit - this refers to the buying price actually paid.
- (iii) Price reference - the stated price either refers to that paid if:
  - 0 - the material is delivered to the ranch/farm by seller and seller shoulders transport cost, or
  - 1 - the material is fetched by buyer from the market and buyer shoulders transport cost.

Notes on Dealing with transport costs

There is no separate entry for transport costs incurred for fetching the material inputs to the market. There is, however, information on transport costs incurred in purchasing from, and selling to, the market.

Expenditure items in IX should embody all transport costs incurred in fetching and delivering cattle and in fetching production supplies from the market. After deducting cattle transport costs, the remaining should be attributed to transport costs incurred in fetching material inputs from the market.

## **X. INCOME FROM OTHER FARM (NON-LIVESTOCK) ACTIVITIES**

### **Sales of crops and other farm output.**

When part of the pasture lease is devoted to crops for either fodder (animal feed) or food purposes (or both), then the farm generates additional income.

If the output is sold to another party, the price received per unit is to be directly obtained.

If the output is used or consumed within the farm, the value per unit if purchased at the farm level is to be imputed.