

A2631310

AGRICULTURAL LAND TENURE ARRANGEMENTS ON THE NORTHERN COAST OF PERU

Delbert A. Fitchett

April 1966

P-3342

CLEARINGHOUSE FOR FEDERAL SCIENTIFIC AND TECHNICAL INFORMATION			
Hardcopy	Microfiche		
\$2.60	\$0.50	28 pp	10
ARCHIVE COPY			

Circle 1

Approved for release by the Clearinghouse for
Federal Scientific and Technical Information

AGRICULTURAL LAND TENURE ARRANGEMENTS ON THE NORTHERN COAST OF PERU

Delbert A. Fitchett*

The RAND Corporation, Santa Monica, California

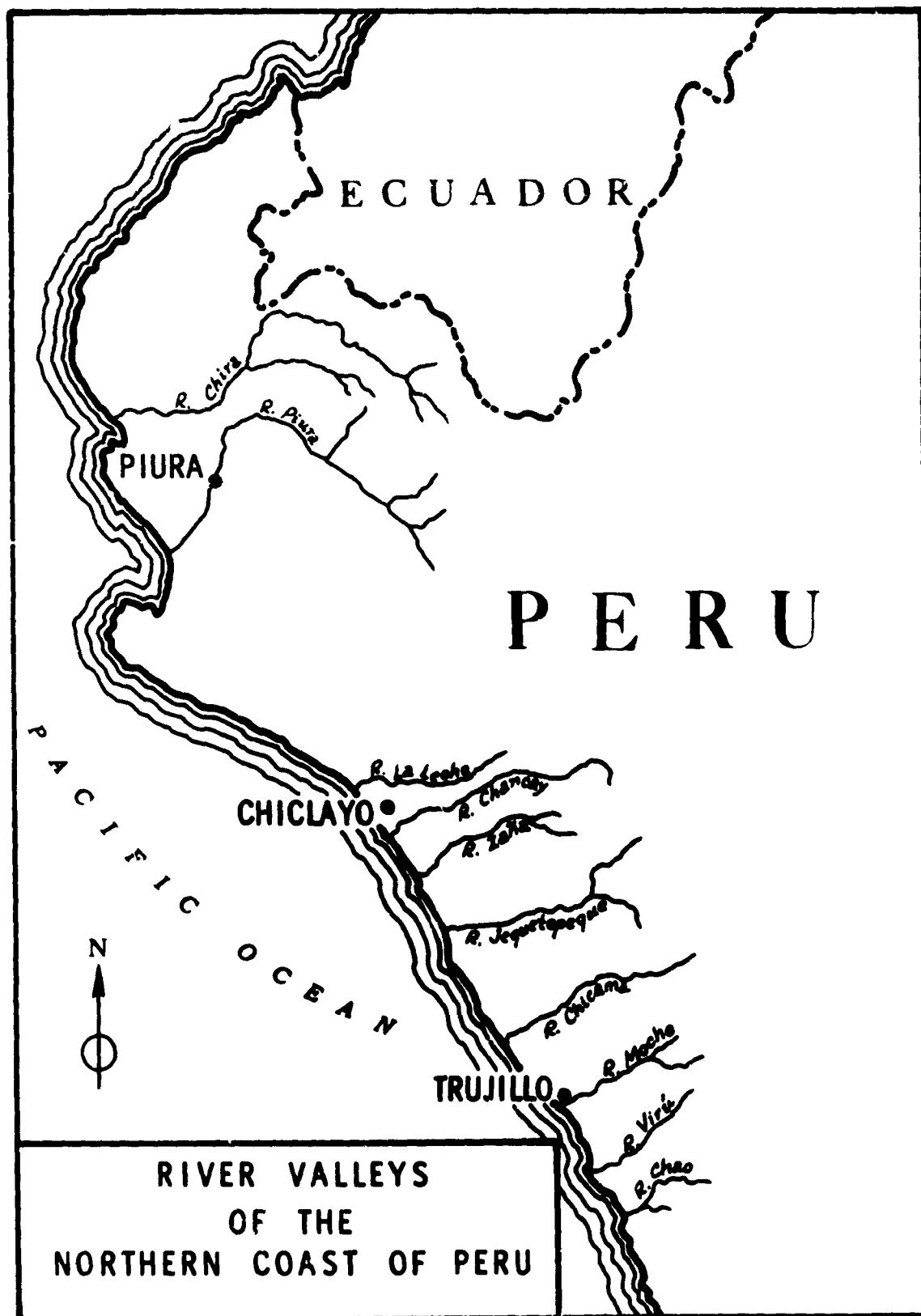
I. INTRODUCTION

That portion of Peru lying in the coastal zone of the Departments of Piura, Lambayeque and La Libertad forms the unit of investigation for this study. This region is well-defined both topographically--the Andes Mountains form its eastern boundary, the Santa River (and Ancash Department) its southern one and the Pacific Ocean its western one--and climatically, as northernmost Tumbes Department is part of the humid tropics so distinct from the remainder of the arid Peruvian coast. The national census of 1961 revealed that about 11 percent (1.1 million) of the country's population lived in this zone and classed 48 percent of these persons as rural.¹ Approximately the same proportion of the nation's cultivated land lies within this region. The Northern Coast's contribution to national agricultural output is probably appreciably larger, however, as the three high value crops cotton, sugar cane and rice accounted for about 70 percent of this region's land under cultivation in 1959 and their areas were, respectively, 24 percent, 86 percent and 72 percent of the country's totals for those crops in 1959.²

Within this region there have evolved and continue to evolve various institutional relationships between men and the resources they control and agricultural land. In part these relationships, which we usually refer to as land tenure arrangements, may be unique

* Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of The RAND Corporation or the official opinion or policy of any of its governmental or private research sponsors. Papers are reproduced by The RAND Corporation as a courtesy to members of its staff.

to this zone and in part a reflection of similar arrangements in other parts of the country. In this study we are going to examine these relationships and discuss some of their more important implications for the economic and social development of the agricultural sector of the Northern Coast of Peru.



II. DEVELOPING A TENURE TAXONOMY

Before proceeding with our discussion of these tenure arrangements, we must present some schema to classify the various relationships observed. A prior attempt to develop a tenure taxonomy applicable to all of Peru--a more ambitious project than our present undertaking--was made by Professor T. R. Ford over a decade ago.³ The classification was in many respects similar to that utilized by the United States Bureau of the Census.⁴ In this study we will use a tenure taxonomy differing in some respects which we believe is more applicable to and descriptive of the region. We distinguish between two major categories, active elements in the tenure structure and passive elements. The former consist of those participants in man-land relationships who supply managerial ability, labor, and perhaps land and capital resources. The latter refer to those who contribute land and capital resources. Thus the basic distinction is between the provision of human (labor and managerial ability) and non-human (land and capital) resources. The general classification system is as follows:

I. Active elements in the tenure structure

A. Direct exploitation

- 1. Real persons**
- 2. Institutions and juridical persons**

B. Indirect exploitation

1. Real persons

a. Renters

- (1) Cash renters**
- (2) Share renters**
- (3) Standing renters**

b. Farm laborers

- (1) Full time**
- (2) Part time**
 - (a) Tenants and sharecroppers**
 - (b) Other seasonal laborers**

2. Institutions and juridical persons

II. Passive elements in the tenure structure

A. Real Persons

B. Institutions and juridical persons

1. Government
2. Comunidades
3. Financial institutions
4. Religious institutions

The following discussion will demonstrate the utility of this land tenure taxonomy.

III. LAND TENURE ARRANGEMENTS ON THE NORTHERN COAST

ACTIVE ELEMENTS - DIRECT EXPLOITATION

The group of non-real (i.e., juridical) persons is relatively easy to account for on the North Coast. These invariably have generally large landholdings. They are the rule in sugar cane cultivation and the usual case in large cotton, rice, and livestock operations. An examination of the Padrón de Regantes for 1957 in this region reveals that of the seventy-nine operating units over 500 hectares in size, fifty (or 65 percent) are incorporated.⁵ With the exception of one foreign-owned hacienda (Hacienda Cartavio of the Grace interests), stock ownership is distributed among a small number of persons, usually members of the same family. Incorporation eases participation of a widening circle of family members in the returns of the enterprise while the operating unit is not disintegrated.

It is not uncommon for some members of the family to be employed in the administration of the hacienda, but they are a very small proportion of the total labor force. Often the operations are part of a variety of industrial or commercial activities as diverse as small shipyards, liquor distilleries, cotton gins, rice mills and commercial houses. Accionistas (shareholders) in these agricultural enterprises are often also active in industrial, commercial and financial circles.

Occasionally the corporation is not the owner of the land it cultivates, but rather rents it from another person, usually a member or members of the family which are the major or sole stockholders of the corporation. Haciendas are usually known by or associated with the names of the families that own them, e.g., Chiclin and Salamanca with the Larco Herrera, Casa Grande and Laredo with the Guildemeister, Tumán, Patapo and Pucalá with the Pardo, Pomalca with the de la Piedra, Cayaltí with the Aspillaga Anderson, Mallares with the Romero, Pabur with the Seminarios, etc.

Most of the directly operated farms of real persons on the North Coast are small; 80 percent are less than five hectares in size and 91 percent are less than ten hectares. The latter amount to some

11,820 farms. Not all owner-operators may devote all of their time to their unit because of its small size; this may especially be so for the 54 percent of the owner-operated units in this region which are less than two hectares in size.⁶

Also forming part of this tenure class are those members of the registered indian comunidades in this region who are cultivators of their own or communal lands. According to law, the members should all have usufruct of a plot of land belonging to the comunidad.⁷ There were 20,817 adult males who, as comuneros, were eligible to receive a plot of the North Coast in 1961. Usually there is insufficient comunidad land to distribute among all the claimants, and often none at all. Almost all of the comunidad land is not registered in the Padrón de Regantes and thus has no permanent irrigation water rights. Those comuneros who receive a plot are ordinarily granted a title which can be transferred by inheritance. The land must be worked by the grantee and cannot be sold to anyone outside the comunidad. Occasionally the grantee must pay an assessment of ten to fifty soles a year for each hectare he has to the comunidad's treasury to support general administrative expenses and any legal proceedings it may be pursuing (which is a common occurrence).

The actual state of tenure in the comunidades is far from that envisaged by the relevant legislation. Some members have considerable private property as well as their share of comunidad land. Distribution of comunidad land is quite unequal, some having ten or twenty times as much as others; the large landholders in the comunidades often provide their comunero-peones with a small plot of this land to cultivate. Many of the comunero plots are very small, as in the lower Chira Valley where most of them are one-quarter to one-half hectare in size. A survey of six comunidades in the Department of Lambayeque revealed that they disposed of 0.94 hectares of cultivated land per family.⁸ On the North Coast many or most comuneros have no land and work as peones on nearby haciendas. Those members with larger plots often enter into sharecropping arrangements with landless comuneros. The prohibition against renting or selling the land to outsiders (nonmembers) is not always observed and there is occasional

pressure from some comunidad directorates to rent communal land to both members and nonmembers. On the North Coast the comunero refers to the land to which he has been granted usufructuary rights by the comunidad as "my land." There is no evidence of communal undertaking of cultivation activities. In those instances that we were told that mutual help does exist, it appears to be confined to relations based on consanguinity or friendship. A rare instance in which all comunero-farmers may be obliged to participate is in the annual cleaning of an irrigation ditch serving an area.

ACTIVE ELEMENTS - INDIRECT EXPLOITATION: Renters

Even more complex a component of the tenure structure of this region are those elements engaged in indirect exploitation of the land. According to the Padrón de Regantes, there were 4,053 indirect operating (i.e., non-owner-operated) units; 78 percent of these units are less than ten hectares in size.⁹ These data are misleading, however. In the Jequetepeque Valley, for example, there are 175 registered indirect operations, but another source reports the existence of 3,379 colonos (sharecroppers). In the Province of Trujillo (Chicama, Moche, Virú, and Chao Valleys) the Padrón de Regantes recorded 223 indirect operations, but there were 6,038 colonos.¹⁰ We cannot be certain whether these colonos are only renter-cultivators, i.e., sharecroppers, or also provide labor services to the landlord or hacienda which provides them with land to till. We can be certain that the Padrón de Regantes does not cover the majority of the non-owner-operated units on the Northern Coast.¹¹

Land rents are usually calculated and collected on the basis of production in this zone. A hacienda will typically collect 20 percent to 25 percent of the product (quinto or cuarto) for providing the land and the water, with other inputs provided by the colono. If the hacienda supplies an habilitación (seed and perhaps fertilizer and a plow as well) it claims one-third of the crop (tercio). (These are shares of gross, not net, output.) Another form of renting is en sociedad, in which

one member of the partnership (the habilitador) provides the land, water and perhaps an habilitacion or partida to the habilitado or operator. At harvest time the crop is divided in half. Occasionally the habilitador may abuse his position, as it is claimed that he lends money or goods to the habilitado and charges excessive prices and interest rates.

Cash rents in the rice fields of the Department of Lambayeque (La Leche, Chancay and Zaña Valleys) run from 500 to 900 soles a hectare annually. Yields are about 20 to 25 fanegas (of 300 pounds each) per hectare.¹² In 1959-1961, the government paid 250 soles per fanega for rice delivered to the mills,¹³ giving a gross value output of 5,000 to 6,250 soles per hectare. Thus cash rents appear to be somewhere in the range 8 percent to 18 percent (and perhaps more likely were 10 percent to 14 percent) of the gross yield per hectare in this area, not an excessive proportion.

Laborers

In discussing farm laborers we again encounter the problem of statistical uncertainty. We have divided the group into two categories, full-time agricultural laborers and part-time agricultural laborers.

Often farm laborers live on the hacienda where they work, in facilities provided by their employer. The conditions vary widely. Invariably the better (although not necessarily good) conditions are observed on the larger sugar cane haciendas. It is the exception rather than the rule for there to be many full-time laborers on haciendas devoted to other crops because of the greater seasonal variations in labor demand.

In the past decade there has been increasing activity among the workers on the sugar cane haciendas for unionization. Up to the end of 1961 there was a local unit of the Federación de Trabajadores Azucareros in each of the haciendas in the Moche and Chicama Valleys. Organization has moved more slowly in the Chancay and Zaña Valleys, where by 1962 only Pomalca and Cayaltí were the major haciendas whose laborers were organized. There has been occasional violence in the process of organization and the exercise of union activities. A recent case occurred on the Hacienda Pomalca in January 1962 when seven workers

were shot to death by the police when a protest against salaried workers continuing to work during a strike erupted into violence.¹⁴

Agricultural wages vary between the various crops and districts. Cane haciendas start field hands and factory workers at 15 to 21 soles a day. Hacienda administrations calculate that the approximate value of the social services the workers and their families receive--housing, medical care and the bono or ration of meat, rice, dried fish, salt, butter, coffee, chocolate, cooking oil, soap and cloth--amounts to another 25 soles daily. The working day is normally eight hours long; irrigators may occasionally work longer.

For full-time wage laborers living off the haciendas wages may reach up to 25 or 30 soles daily. The amount depends very much on the skills involved and the season of the year. A skilled tractor driver may receive 3 to 6 soles an hour; a plow with a yoke of oxen or mules may earn up to 70 soles daily and 30 percent to 60 percent less without the animals.¹⁵ In the rice fields unskilled laborer wages may fluctuate from 15 soles daily in the off-season to 40-50 soles at the time of transplanting or harvesting when the need for workers increases. Women and children receive 50 percent to 60 percent as much as adult males.

The part-time worker provides an observably very important but statistically unascertainable proportion of the agricultural labor supply in this region. His impact is probably less important in sugar cane, although there are two or three thousand workers who descend from the Sierra to the Chancay and Zaña Valleys for short periods to work as sugar cane cutters on the haciendas there. They receive the usual wages and bono referred to above. Migrant laborers also work in the cotton harvest in the Chira and Piura Valleys during the late winter and spring months. They too come from the Sierra, but also as far as from the south-central Department of Ica. They earn about 15 to 20 soles a day, are given wood and water and live in canchones, quarters little better than animal stalls. They are paid piece work rates and men, women and children participate.

There is a further class of agricultural workers, a large but uncounted group who are not seasonal laborers but can neither be

strictly considered as full-time farm workers. We refer to those agricultural laborers who also cultivate a small plot of land belonging to their employer. These relationships exist under a wide variety of conditions and in diverse forms. We will describe below some of the cases we encountered in this region.

In the Chao Valley, which essentially consists of the Hacienda Buena Vista, one-half of the cultivated area of the hacienda is under colono operation. There are perhaps two hundred families involved, with the size of the plots ranging from 1 to 10 hectares. The larger colonos employ peones. There are two rent arrangements, the quinto (20 percent of the crop) and the tercio (one-third of the crop). Those paying the tercio receive an habilitación, including oxen and a plow, from the hacienda and must sell their products to the hacienda. Those operating under the quinto need not sell their crops to the hacienda. 90 percent of the colonos operate under the tercio arrangement. The regular hacienda work force consists of 8 to 10 persons; colonos with land are employed at 15 soles, a day for the major work force. A similar arrangement we encountered on a smaller scale in Paiján, a registered comunidad in the Chicama Valley. Medium-sized farm employers pay their peones 14 soles a day and give each one of them about one to one and one-half hectares of land to cultivate, but without charging them rent.

On the haciendas Limoncaro and Talambo in the Jequetepeque Valley one observes two interesting tenure arrangements. The boyero pays one-quarter of his crop to the hacienda, must plant what the hacienda directs and receives an habilitación from the hacienda. The huertero pays 200 soles and 20 days of work each year for every three hectares he receives from the hacienda. He must obtain his habilitación from elsewhere than the hacienda, but must sell his crop to the hacienda. The haciendas Lurifico and Calera have arrangements under which the hacienda provides the seed and prepares the land, the colonos care for the crop and harvest it, and are then compensated at the end of the harvest, similar to the "croppers" in the United States.¹⁶

In the Chancay and Zaña Valleys, which contain considerable rice hectarage, to give a piece of land to the peones to cultivate is much

less common. On the larger sugar cane haciendas, however, we observed that stable workers such as field crew chiefs, irrigators and other field and factory workers are often provided with a plot of land ranging from one-half to four hectares in size to cultivate. Usually no rent is charged, except in one case where the levy was a low 30 soles per hectare. The haciendas provide no habilitacion. The cultivator must raise foodstuffs and sell them in the hacienda marketplace. In this manner the hacienda complies with the government panllevar decree requiring it to devote a certain proportion of its cultivated area to foodstuff production. Of the 1,000 workers on the Hacienda Capote, some 600 cultivate land thusly; 17 of the 250 workers on the Hacienda Mamape have plots; 250 of the 3,000 laborers on the Hacienda Cayaltí and 450 out of some 2,400 laborers on the Hacienda Tumán farm plots under this type of arrangement.

In the Lower Chira and Piura Valleys the stable or resident peones are often given one-half to two hectares of hacienda land to cultivate. These are usually marginal or riverbank lands. There is no assistance from the hacienda. These persons are not a large proportion of the agricultural labor force in these two valleys. In the Upper Piura Valley the Hacienda Pabur has about 500 colono families (locally called yanacunas) working one to four hectares each. The rent of three sacks of corn per cuadra (about 0.7 hectare) is some 15 percent of the yield per cuadra. All the colonos work on the hacienda, earning 15 to 20 soles per day worked. Many or most of the hacienda's peones do not have plots to cultivate. The Hacienda Morropón in this same valley has similar arrangements. Some of the cultivators pay 150 to 180 soles a hectare or three sacks of corn, as well as three work-days a year per hectare for cleaning irrigation canals. Some, but not the majority, of the hacienda's peones receive a plot of one hectare to cultivate under this arrangement.

Institutions and Juridical Persons

This group plays a relatively small role as non-owner-operators in this region. As noted earlier, when an agricultural corporation rents land it usually belongs to the family which controls the enterprise.

There are no farms operated by religious, fraternal or charitable organizations in the zone.

PASSIVE ELEMENTS - Real Persons

The passive elements in the tenure structure are distinguished from the active elements discussed above by the fact that the former contribute only land and capital (non-human) resources to the production processes. The real persons involved in these activities would be the landlords who provide land, and perhaps an habilitación, to their colonos as described above. It also includes the numerous relatives, friends, merchants and general money lenders who provide credit to the small peasant owner-operator or colono.

Government

The final depository of rights to land and other natural resources in Peru is the State, according to the Constitution of 1933, which will recognize only rights legally acquired by other entities (Article 37).¹⁷ As such it retains considerable potential power and latitude which it might exercise with respect to determining or guiding the institutional limits and content of land tenure arrangements. All property must be utilized in conformance with the social interest (Article 34). According to Article 47, "The State will promote the conservation and diffusion of medium and small rural property; and may, by means of legislation, and with compensation, expropriate privately owned lands, especially those not cultivated, in order to subdivide them or dispose of them as the law provides." Little use was made of this provision in the two decades following its promulgation.

Prior to the passage of the Agrarian Reform Law No. 15037 of May 1964 the government had enacted several laws and decrees relating to rental and yanacónaje arrangements. Law No. 10841 of 1947 contains several regulations on farm renting. It stipulates that annual rental payments cannot exceed 6 percent of the farm value as shown in the assessed valuation for the rural land tax. Rents paid in products cannot exceed 20 percent of the gross crop. Sale prices of land cannot be substituted for assessed valuations in the computation of

land rents. The renter will not pay the rural land tax (which is actually a tax on presumed income from farmland). Farms cannot be rented for more than six years (although a minimum period for the rental contract is not established) and the rental contract must be written and registered in the Registro de Propiedad Inmueble.¹⁸

Preceding the rental law by five days in 1947 was the Law No. 10885 regulating yanaconaje contracts. It defines yanaconaje as all rental arrangements in which the renter receives 15 hectares or less of irrigated land. Traditionally the yanacona is a member of the farm labor force who is allowed to cultivate a plot of hacienda land in return for an obligation to work on the hacienda; he may also be known locally as boyero, huertero or colono. The Law of Yanaconaje encompasses all the small cash renters and the share tenants and the croppers such as sparceros, compañeros, medieros, etc., on the North Coast.

All yanaconaje contracts must be written and deposited with the Ministry of Justice and the Ministry of Agriculture. A contract cannot be for less than six years, with the exception of those arrangements in which the yanacona also provides labor services to the yanaconizante, in which case the minimum period is three years. The contract must contain the location, area and boundaries of the farm rented. The crops, trees, fences and buildings must be listed and their condition noted. The form and amount of the rental payment must be specified and and, where applicable, the division of the harvest noted. There must be a description of the factor contributions to the production process of each party, e.g., seeds, water, oxen, etc. There must be a listing of the improvements the yanacona is authorized to undertake, together with their value. It is prohibited that the yanacona be compelled to sell his products to the landlord, work without remuneration off his parcel of land, undertake improvements of the plot without compensation or purchase in a specific store. The rent in kind cannot exceed 20 percent of the gross product of the farm, or 6 percent of the assessed value for tax purposes if the rent is paid in money. The interest rate on the habilitación granted by the yanaconizante cannot exceed 12 percent annually. The law also specifies the improvements for which the yanacona

may receive remuneration at the end of the contract. The contract can be terminated before its stated date when the yanacóna does not pay his rent, does not repay the habilitación or abandons the farm.¹⁹

The appearance of this law caused such an upheaval in some rural areas and led to so many expulsions of yanaconas that on December 3, 1948 there was passed Law No. 10922 prohibiting further dislodgements of yanaconas.²⁰ Law No. 11042 of June 27, 1949 prohibited the increase of rents on lands devoted entirely to foodstuffs, including those cultivated by yanaconas. With respect to such lands it also suspended all dislodgement actions in the process of being executed or before the courts or pending.²¹

The general characteristic with respect to this battery of legislation was the lack of compliance with its provisions, which prompted Professor Ford to observe that in Peru, "the most likely way to perpetuate a particular [tenure] practice is to pass a law forbidding it."²²

To some extent changes have taken place in both the incidence and form of yanacónaje. It is today less prevalent on the North Coast than twenty-five or even ten years ago, and the term is often now used to refer to sharecroppers in general. In part these changes owe to the actions of the yanaconas themselves, and the middle class professionals and intellectuals--some of them active in the Socialist Party--who supported or organized the yanaconas around the 1930's. Many of the first gains were in the Department of Piura, where agreements were signed between the yanaconas and the haciendas abolishing non-remunerated work, limiting the working day to eight hours and allowing them to sell their products to whomever they wish.²³

Our investigations suggest that the classical yanacónaje system, i.e., compulsory labor-land relationships, today exists only to a limited extent on some of the rice haciendas in the Jequetepeque Valley and in the Upper Piura Valley. (While the instance where the colono is actually remunerated for working on the hacienda may not be the traditional yanacónaje relationship, it certainly may be a transitional phase in the process of moving from the classical yanacónaje arrangement to the formation of a full-fledged landless rural proletariat.) This relationship no longer exists in cotton cultivation as large

operating units can use a level of modern technology largely beyond the means of the very small operator and because of the stimulation given by a vigorous (although occasionally precarious) world market to direct operations by the large haciendas. As the domestic market for rice has been expanding in recent years, the same changes have been taking place in the cultivation of this crop but at a slower pace owing to such factors as the large labor supply, lesser mechanization requirements and--at least prior to 1961--uncertainty as to the government's price policy.

The government is not only the final authority on tenure rights and author of various regulations governing these relationships, it is also a substantial landlord in its own right. In the Department of Lambayeque it owns 41,787 hectares of farmlands. In the Department of La Libertad it has 97,243 hectares of farmlands, although not all of these are in the coastal provinces.²⁴ These properties largely belong to the municipalidades (county governments) and the Sociedades de Beneficiencia, the latter using the returns to support public welfare activities and hospitals. The farms are rented out on diverse terms, usually at the going local rental rates.

Comunidades

The constitution of 1933 gives the comunidades legal status, declares that they cannot dispose of their land and provides that the land cannot be attached for debts. It promises to supply those comunidades with insufficient land an amount suitable for their population, relying on the expropriation of private property where necessary (Articles 207-212).

The comunidad has been a problem since the arrival of the conquistadores. In the last half-century there has arisen something of a cult of indigenistas, and one author has asserted that²⁵

the indian community conserves two great sociological principles that up to now neither sociological science nor the empiricism of the great industrialists have been able to resolve satisfactorily: the mutual labor contract and the performance of work with less physiological effort and in an environment of pleasantness, emulation and fellowship.

In decrees of April 8, 1824 and July 4, 1825 Simon Bolívar declared that the Indians were owners of the lands they cultivate, but could not dispose of them for 25 years. A law of 1828 allowed the Indians to sell their lands, provided they could read and write. The policy of legally ignoring the comunidad was continued in the Civil Code of 1852. With the arrival of the twentieth century the indian comunidades were given recognition in several judicial proceedings and the Código de Aguas of 1902. The Constitution of 1920 officially recognized their presence, declared their lands to be inalienable and reversed a century of attempts to ignore or undermine their existence. These rights and protection are continued in the Constitution of 1933.

On the North Coast the comunidad probably does little more than what could be better accomplished by a good cadastral system.²⁶ It attempts to protect the comuneros (fortunate to receive a plot of land) against the infringements of neighboring comunidades or haciendas and to mediate between members of the same comunidad in their not very infrequent boundary disputes. It does not enter actively into the production process, other than occasionally providing hereditary rights of usufruct to the insufficient amounts of irrigated land recognized as belonging to the comunidad. It appears to be neither a necessary nor a sufficient condition for the organization of agricultural cooperatives of the production, marketing or purchasing type.

Financial Institutions

There are three general domestic sources of credit for the agricultural sector of this region. The first, the commercial banking system, typically deals only with medium and large operators, especially those producing for export markets. While technically legally controlled, interest costs are supplemented by commissions and service charges which may as much as double the effective interest rate. A second credit source is the government's Banco de Fomento Agropecuario. Here too, however, the major part of the resources are directed towards larger-scale operators. Smaller loans are predominantly of the short-term type. Again the greatest volume of credit is directed to the cotton and sugar cane (i.e., export) crops and rice cultivation, with

relatively little assistance for small-scale producers of crops intended for domestic consumption.²⁷ The third credit source could have been treated in our discussion of real persons rather than be included here with institutions and juridical entities, for it consists of relatives, friends, landlords, merchants, etc., who loan both cash and in kind to cultivators. There may occasionally be some requirement on the disposition of the subsequent crop. Effective interest rates may range from a "moderate" 40 percent per annum up to 200 percent or more.²⁸

Religious Institutions

This final element of the tenure taxonomy is of little importance in this region. It is difficult to come across data on the holding of agricultural lands by this group. We have relied on the Padron de Regantes, which records all gravity-irrigated land in this zone. We have found that the only units registered belonged to several parishes and were of small size. The total for the entire North Coast is probably considerably less than 100 hectares.

SOME QUANTITATIVE ESTIMATES

We have no direct information on the numerical distribution of the agricultural population of the North Coast among the several major tenure categories we have discussed. By making a few reasonable assumptions, however, we can obtain some relatively reliable estimates. The census of 1961 revealed that about 32 percent of the national population could be classified as economically active.²⁹ If this proportion is representative of the North Coast, as we might reasonably assume, then the region's economically active population would number some 360,000 persons. Also according to the census, 49.8 percent of the economically active population was engaged in farming, livestock, hunting and fishing activities.³⁰ In this region 48 percent of the total population was classified as living in rural areas.³¹ If we accept that about 50 percent of the North Coast's economically active population was engaged in agricultural pursuits, the resultant number

is 180,00 persons. Of this total probably some 30,000 persons can be accounted for as owner-operators and family laborers on about 15,000 small and medium-sized owner-operated units in this region.³² If the data for Trujillo and Pacasmayo Provinces³³ (which account for 25 percent of the North Coast's population) are indicative, the remaining 150,000 persons economically active in the agricultural sector could be divided into about 30,000 colonos and working family members and 120,000 landless laborers, in which case this last group is about 67 percent of the economically active population in the agricultural sector of this region.

IV. AN ECONOMIC EVALUATION OF THE TENURE ARRANGEMENTS

What are some of the implications of the tenure arrangements we have observed to be common on the North Coast? Consider the share-cropping or colono system, probably one of the most prevalent forms of cultivation in the zone. Compared to the cash lease or owner-operation the share arrangement will normally lead to an underutilization of variable inputs if their supplier (tenant or landlord) bears their full cost but receives only a part of the marginal value product attributable to the added input. He will therefore provide it only up to that point where its marginal cost to him is equal to his share of the total marginal value product. A similar problem arises if one party supplies a factor which is administered by the other, without the latter having to bear part of the cost of the input.

To some extent this problem of imbalance between costs and returns could be alleviated by each party contributing to the cost of variable inputs in the same proportion as his share of the product. If one party or the other must pay the entire cost of irrigation water, seeds, fertilizer, plowing, etc., and is rewarded with only part of the pay-offs, the factor in question will almost always seem to be in short supply as far as his counterpart is concerned. Perhaps some progress can be made towards an optimal sharecropping arrangement which requires a close partnership agreement and a fine accounting of all economic costs.³⁴

With respect to the laborer who is allowed to cultivate a small plot or a comunero who receives usufructuary rights to comunidad land and pays nothing or a minimal sum for it, while he may bear the total cost of variable inputs, the land input in the production process, while fixed to him in the short run will appear to be insufficient. As it is costless, he would prefer to increase its input at that price, perhaps up to the point of absolute declining returns. The same is true of irrigation water supplied without cost to the cultivator.

The hacienda operator who gives marginal or unsuitable land (from his point of view) to his workers and requires their labor services at less than the wage these laborers could obtain in occupations where the workers are not allowed to supplement earnings by cultivating a small plot will misallocate resources. He will utilize labor inputs to the point where their marginal cost to him will equal their marginal value product, a point beyond which they would be utilized by an employer who, not having land to provide to his workers at no opportunity cost to himself, would have to pay a higher money wage. Thus yanacónaje (where labor is a free resource) and colono arrangements where the part-time cultivator also works as a hacienda laborer tend to contribute to a misallocation of resources and very labor-intensive operations.

The minifundista who works as a part-time agricultural laborer is another interesting case. Owing to the smallness of his plot, there may be no alternative or opportunity cost to working on an hacienda owing to the very low marginal value productivity of the minifundista's additional labor inputs on his diminutive plot. The employer need not bid very high to attract him for seasonal work.

In making investment decisions the sharecropper or his landlord will consider relevant only the discounted value of his share of the increased output arising from the investment, although he may bear the full cost. For the non-contributing party the addition is a free resource and will be desired and handled as such. The sharecropper's investment decisions are further dependent on the assurance he has of recovering his investment. He must be relatively certain of either staying on the farm over the period of the productive life of the potential investment or of being compensated for the remaining value of the investment should he depart earlier. In the face of tenure insecurity, he will not only underestimate the discounted value of the investment (considering only his share of the increased product), but will also have a relatively short time horizon. Hence he will tend to make insufficient investments in the farm and those he does make will be of a short-term nature.

The farm laborer who cultivates a small plot on the hacienda and the comunero-cultivator also experience an imbalance of costs and returns to improvements they may make on their plots owing to tenure insecurity (so long as the comunero has only usufructuary rights to the plot). One is subject to the whims of his employer and the other to the whims of the comunidad directorate or its ability to protect comunidad lands from usurpation by neighboring comunidades or haciendas. The yanacona who has compulsory labor services works in a similarly insecure environment and the future values he discounts for arriving at an investment decision may be further lowered by the requirement that he sell his products to the hacienda at a reduced price.

Along with the above tenants, the minifundista owner-operator faces the problem that his miniscule farm can only absorb a reduced amount of investment, even were it of the relatively simple labor-intensive type, in the absence of technical assistance and advice. The low discounted present value of this investment, perhaps in the form of additional plowing to maintain soil fertility, improving an irrigation canal, etc., or his unfamiliarity with the possibilities of improvement may lead him to spend his time off the farm as a part-time laborer.

The presence of yanacona arrangements and minifundista owner-operators provides a low cost labor supply. This reply to the hacienda's large seasonal variations in labor requirements encourages the haciendas to continue cropping patterns and production techniques which are relatively labor-intensive. The transplanting of rice sprouts from nurseries to the field by hand and the practice of irrigating and fertilizing cotton fields after each hand picking so as to allow a series of four pickings on each field are examples. Mechanization of these and similar activities would mean large changes in the relative proportions used of labor, irrigation water and other resources, as well as a possible decrease in the number of peones employed.

V. CONCLUSIONS

It is not surprising that returns to unskilled human resources tend to be relatively low in the agricultural sector of this region. Not only are these resources unskilled, they are available in such large quantities for much of the year. An improvement in the earnings of farm laborers can only come once the level of productivity of agricultural wage workers is raised by putting at their disposal training in and use of improved methods and tools. The minifundia must be eliminated and the peasant farmer given access to information and stimulated and aided to utilize better seeds and planting practices, fertilizers, irrigation improvements, insecticides and provided proper facilities for marketing the increased output.

A tenure structure which encourages or rests upon minifundia, whether owner or tenant operated, as appears to be the case on the North Coast, must be altered to remove these characteristics. But no amount of land redistribution can achieve improved levels of living unless levels of resource performance are also raised. Some of the major obstacles to increased levels of performance arise from the current distribution of returns to resource use or insecurity of sharing in the flow of increased returns owing to improvements in the level of performance. Raising levels of performance and improving living conditions in the agricultural sector of the Northern Coast of Peru will depend very heavily on (1) the elimination of the minifundista owner-operator or usufructuary, whether he be a comunero, yanacona or a peon cultivating a plot granted by his employer under one of the several arrangements discussed above and (2) more strictly enforcing tenancy regulations.

It would seem from the preceding discussion that even prior to the passage of the Land Reform Law of 1964 the government had sufficient legal power to attempt to correct these tenure defects. As an example of the continued caution (or reluctance) with which these problems are approached, the Land Reform Law exempts sugar cane haciendas (and up to 20 percent of their lands which may be in foodstuff cultivation) from afectación (Art. 38-43). Perhaps of equal or even greater potential

significance for agrarian institutions on the North Coast will be the new Irrigation Water Code, currently (early 1966) in the form of a Proyecto de Ley. Among the controversial topics are the volumetric distribution of irrigation water and water charges based on quantity used. The vigorous application of such regulations in this arid region where irrigation water is a sine qua non for cultivation would not only contribute to a more economic use of irrigation water but may also reduce the power of the large landowners in these valleys and their alledged ability to control the major part of the area's irrigation water.

FOOTNOTES

1. Population data are drawn from Ministerio de Hacienda y Comercio, Dirección Nacional de Estadística y Censos, Resultados Preliminares del Censo de Población de 1961, Lima, 1962. For a more detailed discussion of some of the North Coast's demographic characteristics, see Delbert A. Fitchett, "Population Patterns on the Northern Coast of Peru," Estadística, Dic., 1963, Vol. XXI, No. 81, pp. 699-706.
2. For more detail on land use in this area, see Delbert A. Fitchett, "Land Use and Land Control on the Northern Coast of Peru," Land Economics, November 1964, Vol. XL, No. 4, pp. 441-443.
3. T. R. Ford, Man and Land in Peru, Gainesville: University of Florida Press, 1955, p. 76.
4. T. Lynn Smith, The Sociology of Rural Life, 3rd Ed., New York: Harper and Brothers, 1953, p. 279.
5. Padron de Regantes de 1957, Library of the Sociedad Nacional Agraria, Lima (typescript).
6. Comisión para la Reforma Agraria y la Vivienda, La Reforma Agraria en el Perú: Documentos I, Lima, Tables 10-13, 17.
7. Constitución de la Republica del Perú de 1933, Artículo 211, Lima: Imprenta D. Miranda.
8. Comisión para la Reforma Agraria y la Vivienda, La Reforma Agraria en el Perú: Documentos II, p. 69. Table 2.
9. Comisión para la Reforma Agraria y la Vivienda, La Reforma Agraria en el Perú: Documentos I, Tables 10-13, 17.
10. José García C., La Población en la Zona Económica de La Libertad, Servicio Cooperativo Interamericano de Fomento, Lima, 1960, (typescript) Table 9.
11. Landlords often reported their irrigated area as directly operated in the fear that to record their land as being cultivated by someone else may possibly be used by the cultivator to support a claim to the land or to require enforcement of tenancy regulations.
12. Robert Arrasco S., Estudio de Costos de Producción del Cultivo de Arroz en el Departamento de Lambayeque, tesis de grado de Ingo. Agrónomo, La Molina, 1959. 27 soles = 1 dollar.
13. Sociedad Nacional Agraria, Memoria 1960-1961, Lima: Imprenta Gil, 1961, p. 59.

14. La Prensa, "Muertos en Pomalca llegan a 7: Hubo Paro General en Chiclayo," Vol. LIX, No. 27429, January 23, 1962, p. 1.
15. Ministerio de Agricultura, Oficina de Investigación y Análisis Estadísticos, Servicio de Investigación y Promoción Agraria, Cultivos, Cosechas y Mercados, Lima, Marzo, 1961, pp. 33, 36.
16. Gene Wunderlich and Walt Chryst, "Farm Tenure and the Use of Land," in Land: the 1958 Yearbook of Agriculture, Washington: U. S. Government Printing Office, 1958, p. 296.
17. Constitución de la República del Perú de 1933. Lima: Imprenta Miranda.
18. Luis Angel Aragon, Inquilinato, Cuzco: Imprenta Garcilaso, pp. 33-38.
19. Ibid., pp. 72-80.
20. José Francisco Giraldo Prato, El Contrato de Yanaconaje, tesis de grado de Bachiller, Facultad de Derecho de la Universidad Católica del Perú, Lima, 1960, pp. 122-123.
21. Luis Angel Aragon, op. cit., pp. 40-41.
22. T. R. Ford, op. cit., p. 84.
23. J. F. Giraldo Prato, op. cit., pp. 101-102. For further details by one of the members of the Socialist Party actively involved in process, see Hildebrando Castro Pozo, El Yanaconaje en las Haciendas Piuranas, Lima: Compañía de de Impresiones y Publicidad, 1947.
24. Comisión para la Reforma Agraria y la Vivienda, La Reforma Agraria en el Perú: Documentos I, Lima, Table 29.
25. Hildebrando Castro Pozo, approvingly quoted by José Carlos Mariátegui, Siete Ensayos de Interpretación de la Realidad Peruana, 7th Ed., Lima: Editorial Amauta, 1959, p. 74.
26. For an examination of the cadastral systems of this area, see Albert A. Fitchett, "Cadastral Systems on the Northern Coast of Peru: Some Problems and Proposals," Journal of Inter-American Studies, October 1964, Vol. VI, No. 4, pp. 537-548.
27. Cf., Banco de Fomento Agropecuario del Perú, Memoria 1962-1963, Lima, Anexos 15, 118.
28. Great detail on credit sources in this region is contained in the author's unpublished Ph.D. dissertation, "Defects in the Agrarian Structure as Obstacles to Economic Development: The Case of the Northern Coast of Peru," University of California at Berkeley, 1967, Chapter 12.

29. Instituto Nacional de Planificación, Sexto Censo Nacional de Población, 2 de Julio de 1961: Resultados de Primera Prioridad, Lima, Marzo, 1964.
30. Eduardo Watson Cisneros, Población e Ingreso Nacional, Lima: Universidad Agraria y Ministerio de Agricultura, Dic., 1964, Table 8.
31. Ministerio de Hacienda y Comercio, Dirección Nacional de Estadística y Censos, Resultados Preliminares del Censo de Población de 1961, Lima, 1962, pp. 2b-4b, 12b-17b.
32. Comisión para la Reforma Agraria y la Vivienda, La Reforma Agraria en el Perú: Documentos I, Lima, Tables 10-13, 17.
33. Jose Garcia C., op. cit., Tabl 1.
34. Earl Heady, The Economics of Agricultural Production and Resource Use, Englewood Cliffs: Prentice-Hall, 1952, p. 600.