

# Research Paper

PUESTO GRANDE : A CASE STUDY OF AGRARIAN REFORM  
ON MARGINAL LANDS IN THE DOMINICAN REPUBLIC

David Stanfield  
Ana Teresa Gutiérrez de San Martín  
David Perez



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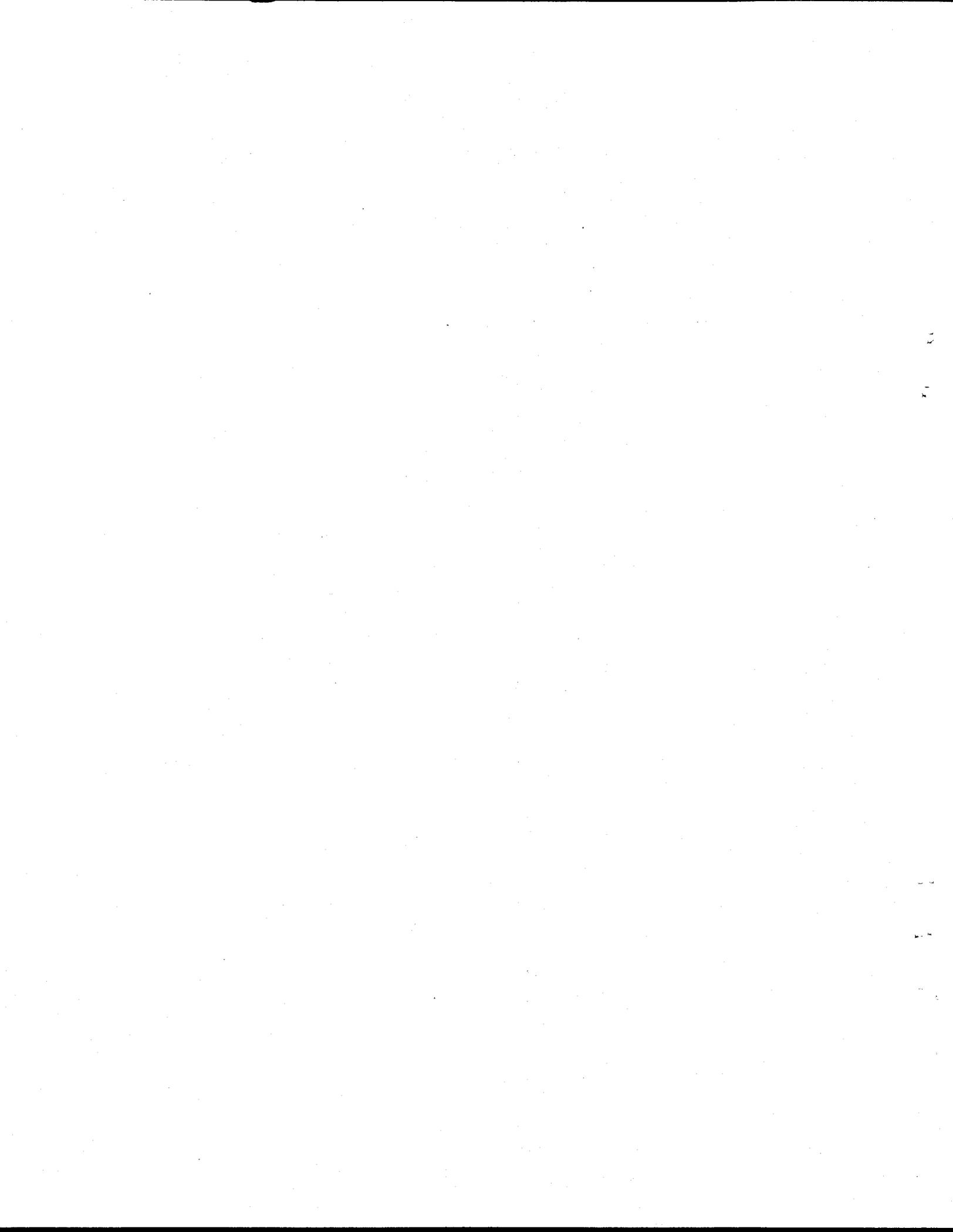
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An Institute for Research and Education  
on Social Structure, Rural Institutions,  
Resource Use and Development

Land Tenure Center  
1300 University Avenue  
University of Wisconsin-Madison  
Madison, Wisconsin 53706

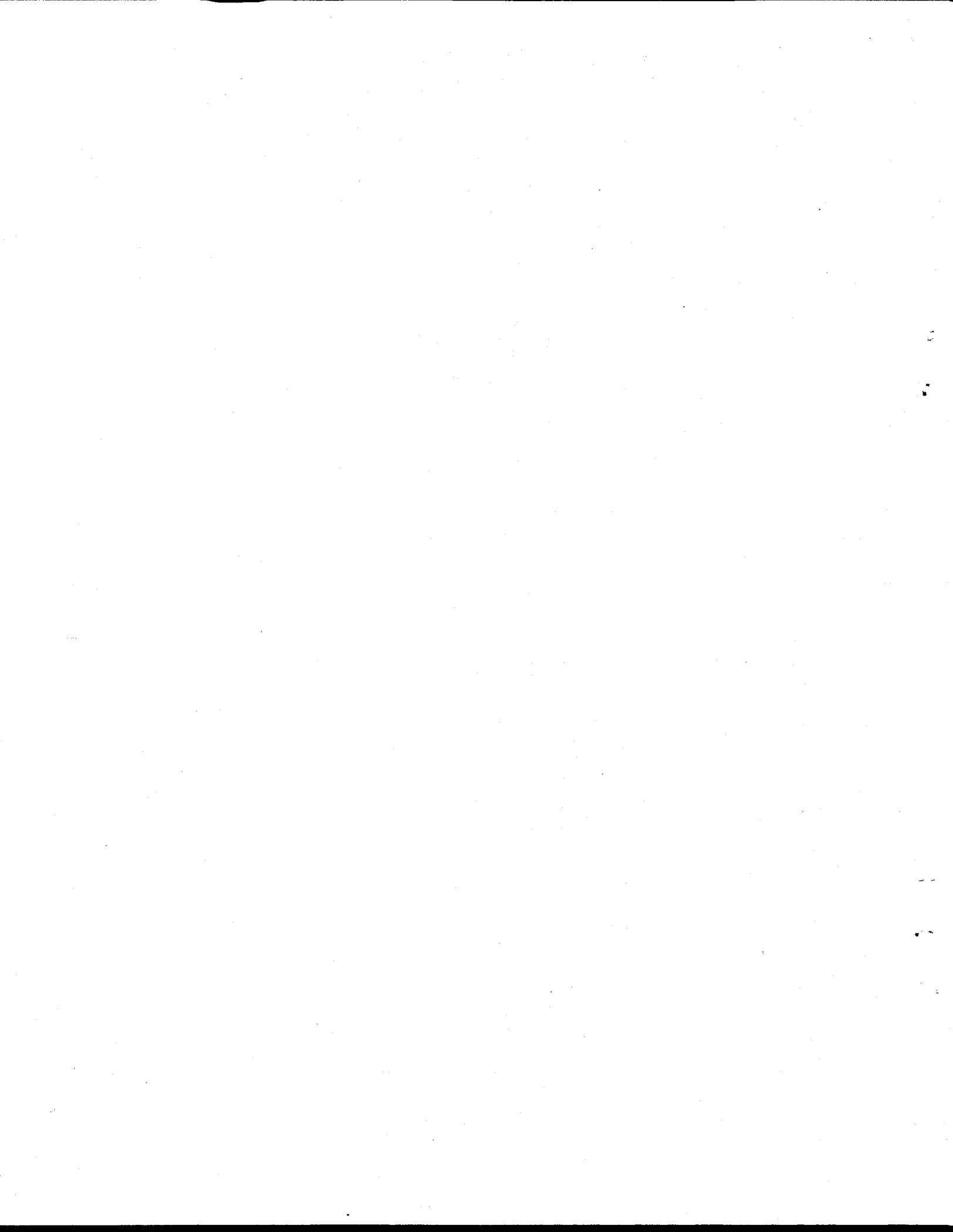
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by

David Stanfield, Ana Teresa Gutiérrez de San Martín, and David Perez\*

I. INTRODUCTION

Agrarian reform in the Dominican Republic has involved a variety of attempts to restructure property rights to land. The Instituto Agrario Dominicano (IAD) is the administrative unit responsible for agrarian reform and at present deals with approximately 50,000 people who have received nearly 6 million tareas\*\* of land through its programs. The restructuring of basic rights to land has been firmly based in the political process in the sense that it has been necessary to take account of the goals and aspirations of several different groups including the original landowners, those who wished to acquire the land, and food consumers interested in plentiful and cheap food.

The political rationales for the various phases of the Dominican reform program have usually been different--if not contradictory--for these different groups. A specific reform program, such as the purchase and parceling of private lands, may have taken a particular functional form, but it was the product of merging varying interests into a single reform effort. There are several common rationales for agrarian reform in the Dominican Republic:

(1) Large expanses of privately owned lands have, for a variety of reasons, often not been used efficiently to provide employment or to produce sufficient food and fiber. The justification for agrarian reform in this case is that such land should be expropriated and turned over to individuals who are more motivated to make it produce. This is the "production" rationale of reform. Article 8, No. 13 of the Dominican Constitution states that "the dedication of land to useful purposes is declared to be in the social interest," an idea which has meant that the state is empowered to expropriate certain lands and pass them to other people to use and eventually own. (See Law 290 on the expropriation of rice land; see also the general discussions of Barraclough and Dorner for expressions of this logic.)

(2) The second rationale for agrarian reform is the social and political integration of marginal groups into the society. Probably more powerful historically in the Dominican Republic, this argument acknowledges the existence

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\* The authors are associated, respectively, with the Land Tenure Center, University of Wisconsin; Centro de Administración del Desarrollo Rural (CADER) of the Instituto Superior de Agricultura, Santiago; and the Instituto Agrario Dominicano, Santo Domingo. This study was funded by AID/Dominican Republic under contract no. AID/DSAN-CA-0183.

\*\* Sixteen tareas equal 1 hectare.

of legitimate political pressures from a variety of sectors, particularly the land poor, for more economic opportunities in agriculture. Law 5879 expressly recognizes the social purpose of reform to produce more rural employment and to slow rural-urban migration. Some observers of agrarian reform have argued that this responsiveness of reform to political pressures from the land poor may diffuse pressures for far reaching social change through the cooptation of a segment of the politically mobilized (see de Janvry and Garcia). Such a diffusion of efforts may, in fact, so weaken the reform that significant changes are not achieved. These arguments, despite their contrasting conclusions, provide the "integration" rationales for the agrarian reform.

Both the production and integration rationales, however, while directed toward the land poor, have typically tended to reflect the survival and development strategies of social groups other than the land poor. The political symbolism needed to sway segments of the elite to permit an agrarian reform often does not match the realities of the reform's meaning for the land poor. A general problem is that, for a variety of reasons, the lands distributed by the reform have often been marginal in quality or insufficient in quantity for the needs of the beneficiaries. Without enough productive land, little can be done to improve the levels either of production or of integration of agrarian reform beneficiaries. Distributing lands with severe restrictions on their productivity or limited in size means that the reform is destined for failure from the production point of view since productivity is very difficult to increase. Moreover, in terms of the integration rationale, the beneficiaries of the reform rarely become truly incorporated into the wider society as a result of their farming activities on their land, and sooner or later return to their marginal social status.

(3) A third rationale for agrarian reform is more directly related to the strategies of the land poor, particularly under conditions where the land distributed by the reform is insufficient or of marginal, limited productivity. This strategy involves the creation of a temporary haven for the beneficiaries of the reform, one which provides the beneficiaries some land and, more importantly, is accompanied by significant state investments in health, schools, and transportation which can help prepare the next generation to find careers outside of farming. We might call this rationale of reform the "launching platform" strategy.

This third agrarian reform rationale is at least in part exemplified in the Puerto Grande asentamiento project. This study of the Puerto Grande project outlines some of the achievements of the "launching platform" strategy and also describes some of the limitations of this strategy in the Dominican context. The sections that follow discuss the history of the the Puerto Grande asentamiento\* project in terms of its food and coffee crop production, land tenure patterns, and infrastructure.

## II. THE HISTORY OF THE PUESTO GRANDE ASENTAMIENTO AND ITS LANDS

The Puerto Grande asentamiento project lies 40 km. from Santiago in the mountains north of Tamboril, near Moca in the Province of Espaillart. The land

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\* An asentamiento in the Dominican Republic is a settlement of reform beneficiaries.

averages about 370 meters above sea level. It was once part of a larger farm owned by the Cáseres family. Until the early 1900s these hills and valleys, known as "Alto de los Posos" and claimed by the Cáseres, were sparsely settled. The few residents lived along the scarce roads or in the villages, in the relatively fertile plains.

The first settler in the hilly and remote area now called Puesto Grande was Santos Mendoza, who arrived in 1915 at age 14. At that time the land was owned by Ramón Cáseres, president of the country in the early 1900s. Santos received permission from Ramón Cáseres to clear land and to build a small hut and plant some food crops. Other people followed Santos into the area in the early 1900s and under arrangements with the Cáseres cleared the land and grew food for a few seasons either on a share basis or in return for seeding their parcel in grass for the farm owner to use as pastures.

Today Santos is 82 years old, but he still works a small piece of rocky land in the asentamiento. His house is well constructed of cement blocks and has electricity and running water. With 32 great-grandchildren, he is related to many of the families in the community, which now numbers approximately 1,000. Santos and the rest of the community continue to struggle to make the land produce and to secure some of the benefits of the Dominican society. This struggle is rooted in very poor land and displays some of the challenges of making marginal lands produce, the inventiveness of people in finding ways to survive, and the role of the agrarian reform in these processes.

Coffee was introduced into the area in the 1920s, along with a strict sharecropping system. Under that system, the sharecropper or colono was responsible for planting, caring for the trees, and harvesting the crop, while the owner of the land provided the land and seedlings. The owner received half and bought half of the coffee harvest from each cropper and deducted from the cropper's share any production costs and any money which might be owed the owner. Although this calculation often left the colono with a third or less of the value of production rather than the expected half, it was partially offset by the fact that the cropper had the use of additional land for growing food crops. The landowner assumed total control of the marketing of the coffee and as a result controlled the prices paid to the colonos for their production.

In 1972-73, sensing a political climate which would permit them to change the widely disliked sharecropping system, 10 colonos on one of the Cáseres' farms refused to turn the coffee over to the landowner. Soon after, a majority of the 59 sharecroppers on another farm, the main Cáseres farm, organized a group to pressure for the transfer to them of the ownership of the parcels they had cleared and planted. The Balaguer government reacted favorably and arranged a cash purchase of the coffee parcels as well as the surrounding pastures from the Cáseres family, a transfer of 5,904 tareas.\* The bulk of the land in the parcels which had been previously sharecropped (principally in coffee) was assigned under individual provisional title to the 69 people (59 + 10)

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\* There is some doubt about the total tareas in the project. A census carried out by the administrators in 1983 yielded the figures used in this report. According to data in the Statistical Section of IAD, however, there are 6,872 tareas.

who sharecropped the parcels at that time, and to some 10 additional people who came from other areas. (It is important to note that these 10 extra people reduced the per capita assignment of land on the smaller estate from about 50 tareas of coffee to about 25 tareas, much to the disappointment of the original colonos.)

Of the purchased 5,904 tareas, about 2,900 were planted in coffee trees. The parcels assigned to reform beneficiaries ranged in size from 20 to 100 tareas, depending usually on the amount of land which the sharecropper had cleared and planted in coffee trees; some coffee land, however, was assigned to noncolonos. The rest of the lands purchased by the government, about 3,000 tareas, had been previously used only sporadically as pasture by the Cáseres. That land was divided among 37 sons or relatives of the 69 original sharecroppers plus 36 people\* from outside the immediate area. The amount of land in these 73 noncoffee parcels ranged from 20 to 40 tareas. Twenty-three more people each received the right to farm less than 20 tareas of noncoffee lands but did not receive the provisional title which the 142 other parceleros\*\* had received.

In the years since the reform a significant portion of the noncoffee lands has been planted in root crops such as yucca, yams (yautía), and sweet potatoes (batatas) and in beans (habichuelas), corn, and other food crops. At times and on some land, pastures have been seeded, while other lands are commonly left fallow for 2-5 years. Other land which was in natural pastures when the farm was purchased, has been planted with coffee trees. (About 23 of the 83 noncolono but titled beneficiaries of the agrarian reform have done so.) According to the census carried out by the IAD administrator of the asentamiento in 1983, 3,384 tareas are now in coffee, 712 tareas in food crops, and 280 tareas used to pasture cattle. Of the remaining land, 390 tareas are occupied by roads, rivers, or houses and 1,138 are largely unused.

Since the 1972-73 redistribution of property rights, many very steep and rocky areas have been cleared and planted repeatedly without either a fallow or a pasture period. A serious fall in the productive potential of much of this land has occurred, and some of the parceleros are aware of the declining fertility of their lands. When we spoke about what the yields from food crops were nine years ago, nearly all those we interviewed maintained that the soil had had much more life in 1973 and 1974, that it had been richer, and that the plants had prospered much more than today. Why is this degradation occurring? To answer this question, we will first consider the land used for food crops and then discuss the coffee parcels.

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\* In the words of one parcelero, in reference to some outsider given land, "esos casos aislados tuvieron en ocasiones influencia política partidista" (these isolated cases had on occasion political party influence).

\*\* A "parcelero" is a holder of a parcel of land assigned to him by the reform agency, the Instituto Agrario Dominicano. According to IAD records, the households of the 142 "titled" parceleros averaged six people.

### III. FOOD CROPS AND LAND EXHAUSTION

The parceleros constantly search for ways to improve their seasonal income from agricultural production. The yam (yautía) market has recently been good, apparently because of the export market provided by Dominicans and other Caribbean people living in New York. Many parceleros are going into yam production heavily, and the harvested area increased from 27 tareas in 1981 to 149 tareas in 1983. Prices for yautía varied in 1983 from RD\$22 to RD\$35 per hundred-weight, and buyers have been plentiful, often coming to the parcels to purchase yautías.

But planting yautía has not been without its costs, and gains are offset by important losses. The plant puts out an extensive root system which enables it to thrive under limited rainfall and in thin soils, and its tubers can remain in the soil after maturity until the price is right, until the weather is dry, or until the farmer can mobilize labor to dig them out. On the other hand, the plant leaves the soil depleted and drained of nutrients. According to the farmers, it "heats" the soil; it cannot be planted with other "hot" crops such as beans which are less demanding of nutrients. Traditionally, yautía has been planted in association with coffee trees while the trees are small. It has also been planted in more open areas around the edges of the coffee plantations, where it is not in competition with other crops and can even benefit from the foliage and rotting debris from the coffee trees, as well as from the fertilizers applied there. The necessity for a cash crop, however, has encouraged the widespread planting of yautía and has resulted in a loss of soil fertility. About the only positive ecological aspect of intensive yautía production is that the destructiveness of the yautía can be used to get rid of weeds and grasses in a particular field, which in turn permits the seeding of pangola for permanent pastures or the planting of coffee or fruit trees.

Although most parceleros recognize that the yautía plant leaves the soil depleted in a couple of years, few of them have acted to remedy the situation. Few parceleros appear able or willing to fertilize, probably because of the cost of fertilizer and a lack of bank credit for food crops. Moreover, few have invested the time necessary to build waterways or even rudimentary terraces to help maintain soil fertility where land is plowed and planted in yautía. Fundamental to this problem is the limited amount of land assigned to each parcelero by the reform. In many fields we saw large mounds of stones, almost like burial cairns. When we asked why these stones were not used to make terraces and thereby to control water runoff and erosion, the farmers answered that terraces would occupy too much land. By piling up the rocks, more space was available for planting.

Having very little and very poor land is itself an obstacle to soil conservation techniques. While we were on the project, an extension agent approached one parcelero about constructing diversion canals in a field with an approximate slope of 40° and which the farmer was preparing for planting yautía. The suggestion was for diversion ditches every 10 meters at least. The parcelero answered:

Look, it's not worth it for me to do all the work of digging ditch after ditch. Only one planting of yautía is possible on this land, and then

it must rest for at least two years. Why make so many ditches when next season I'm going to plant "pangola" and turn some cows in here?

On the land used for food crops, then, there is a gradual but constant decline of fertility and a high rate of soil loss brought about by the need for day-to-day survival. As one parcelero put it,

When I began to work here 40 years ago, everything I planted produced well. But the production is less every year. This year I could not plant yautía in the same place as last year because the land would not bear it. One has to let the land rest, but in the meantime, how can we survive?

Over the past four years, there have been important changes in both the proportion of each crop planted and the overall yields. Particularly dramatic has been the shift from corn and beans to yautía. These changes are shown in Table 1. It is also apparent that the soil is becoming increasingly impoverished in Puerto Grande and that yields for the project are substantially below those of the Northern Zone, where there is a high use of fertilizer. Table 2 illustrates this contrast.

Land use in the asentamiento contrasts greatly with that of the hilly farmland, of similar topography and quality, still held by the Cáseres family on the other side of the road leading to Tamboril. That land is devoted almost exclusively to pastures. Seen from the road, the Cáseres cattle ranch is composed of gently sloping, green hills, with a few head of cattle scattered across the pasture fields and no houses or people in sight. In contrast, the Puesto Grande asentamiento, with probably steeper hillsides and thinner soils, is a patchwork of cultivated parcels set on steep slopes and hacked out of the rocks and brush by hand. Houses, people, and work animals are scattered across the asentamiento landscape. The Puesto Grande lands are much more intensively cultivated, undoubtedly produce more food, and provide more people with subsistence and income than does the Cáseres' privately held large farm.

Whether the Puesto Grande system is viable over the long term as an ecologically sound, permanent agricultural settlement, however, is in doubt. Almost all the asentamiento's lands are sloping, with thin and rocky soils. The noncoffee slopes are visibly deteriorating: the cleared areas are covered with much less soil than in the recent past. The abundance of rocks and the poor-ness of the soil challenge a casual observer to understand the pressures which force people to extract what must be a very meager existence from such land. And yet the farmers continue to struggle with the land. They have to break the soil with picks, since the slopes are too steep and the rocks too plentiful to permit even plowing by oxen. At each planting season farmers calculate not whether to plant a crop on these poor soils, but what to plant to get at least some production from the land.

#### IV. THE COFFEE ALTERNATIVE

The replacement of annual crops on these fragile soils by permanent tree crops such as coffee seems to most technicians to be the way to maintain permanent agriculture under the conditions of Puesto Grande. However, there are

TABLE 1  
Production of Food Crops in Puesto Grande, 1979-83

YEAR	CROP	HARVESTED AREA (tareas)	PRODUCTION (quintales)	YIELDS (quintales per tarea)	AVERAGE SALE PRICE* (RD\$/quintal)
1979	Beans	246	497	.39	34.50
	Corn	457	317	.68	9.50
	Sweet potato	75	360	4.8	9.00
	Yucca	35	500	15.15	-
	Subtotal	813	1,674	21.02	53.00
1980	Beans	52	46	.88	47.25
	Corn	166	201	1.21	8.20
	Sweet potato	233	848	3.81	8.50
	Yautfa	38	155	4.07	12.50
	Subtotal	489	1,250	9.97	76.45
1981	Beans	269	182	.67	44.25
	Corn	181	266	1.46	9.00
	Sweet potato	45	311	6.91	3.90
	Yautfa	27	188	6.96	11.50
	Subtotal	522	947	16.00	68.65
1982	Beans	158	128	.81	45.0
	Corn	204	350	1.71	9.95
	Sweet potato	29	138	4.75	7.75
	Yautfa	118	494	4.19	10.70
	Yucca	22	103	4.68	10.00
	Subtotal	531	1,213	16.14	83.40
1983**	Beans	26	32	1.23	56.50
	Corn	38	58	1.52	12.00
	Sweet potato	88	374	3.25	7.80
	Yautfa	149	799	5.36	28.00
	Subtotal	301	1,263	11.36	104.30

\* Data from the monthly production reports of the IAD administrator.

\*\* Data for a partial year only.

TABLE 2

Comparison of Yields for Puesto Grande and the Northern Zones, 1982-83

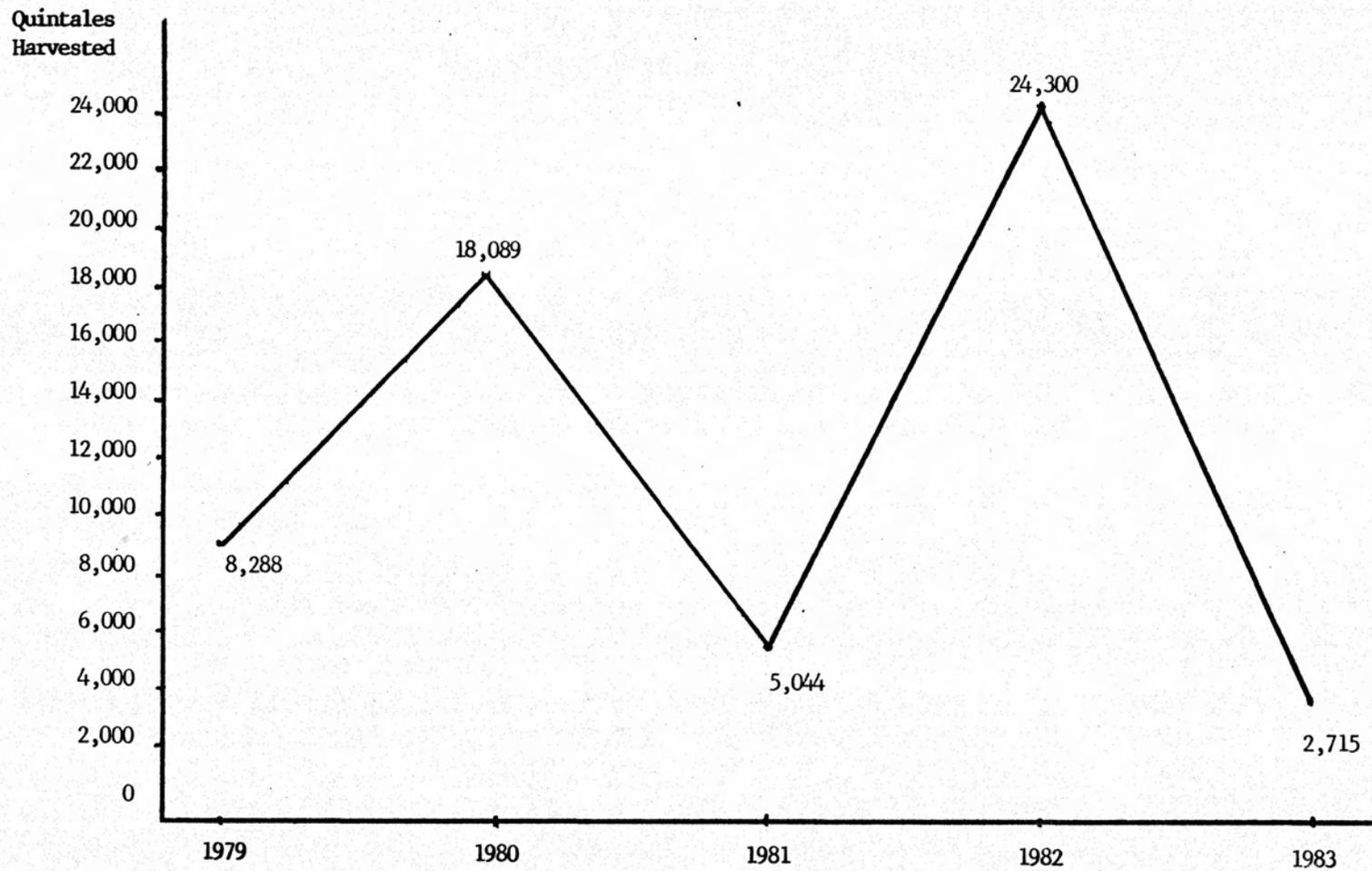
CROP	AVERAGE YIELDS IN QUINTALES/TAREA		
	Northern Zone	Puesto Grande	% of Yields in Puesto Grande Compared with Northern Zone
Beans	1.4	.87	62
Corn	3.3	1.69	47
Sweet potato	15.0	2.67	18
Yautfa	12.0	4.84	40
Yucca	12.0	4.68	39

SOURCE: Centro Norte de Desarrollo Agropecuario (CENDA), Costos de producción y rentabilidad de los cultivos (Santiago, febrero de 1983). The Northern Zone yields assume recommended fertilizer applications for maximum yields. No data were available on the economic implications of those recommendations.

several factors which militate against this strategy. First, in many years there is an overabundance of coffee in the market. The Dominican Republic frequently produces more than its quota in the world market, and as a result, the Agricultural Bank often has limited funds available for financing the planting of coffee trees. However, even if coffee could be established, its profitability is not guaranteed, since coffee prices vary from year to year. Perhaps more importantly, production seems to be highly variable, with a "good" year followed almost invariably by a "bad" year, one with little or no production, and thereby with little or no income. Figure 1 shows this yearly variation in Puesto Grande. The reasons for it are not completely clear: some agronomists blame poor pruning and ancient trees, while others attribute it to poor harvesting techniques, such as ripping the beans from the branches, which damages next year's buds. Whatever the reason, the low yields every other year mean limited cash incomes and thus a great risk for the farmer of not being able to feed the family.

The meager amount of land in most parcels and the needs of the farmer's family also weigh heavily in the decision whether or not to divert land to coffee. When the family is young and growing there are many mouths to feed (7-10 children are common among the parceleros), and a substantial part of the land worked by the parcelero must be in food crops such as beans and yams. Little if any land can be left idle or even partially given over to tree crops. For such families, most of their land must be dedicated to food crops for a

FIGURE 1  
Coffee Production in Puesto Grande, 1979-83



SOURCE: Monthly reports by the asentamiento administrator.

period of 10-15 years. And such young families appear to be typical for the parceleros originally assigned noncoffee lands. The coffee parcels were assigned to men who had previously sharecropped the land and had been on the farm for a long time, while the other lands were assigned to younger people who had largely been day laborers.

It is possible that as these younger families mature (but while most children are still at home and often working off the farm), the parcelero can begin to transform the parcel's lands and devote more area to coffee and fruit trees. Such crops take less labor throughout the year, and their peak labor demands correspond to the periods when people seeking day labor are attracted to the region where coffee is an important crop. The input requirements are low; the parcelero can worry less about buying seeds and fertilizer, and even what he does buy can be financed through the Banco Agrícola, which usually has lines of credit for coffee and fruit production (but not for food crops).

The coffee strategy also appears to be appropriate ecologically. Coffee trees are often shaded with "guama" trees, which have a large and deeply penetrating root system. They grow rapidly and produce a large canopy of leaves and begin to deteriorate only after about 20 years. All these attributes enable "guama" trees to regenerate the soil, with the roots drawing nutrients from deep underground to the leaves, which in turn drop to the soil surface and work into that surface. The guama tree also has nitrogen-fixing capabilities. The branches which fall, or are pruned, form organic material as they rot, and can be arranged in ridges and barriers to control water runoff.

The establishment of this system appears to be of substantial interest to the parceleros, since many are planting guama and coffee trees while still dedicating most of their lands to food crops. Yet the transformation that can be made is limited. And perhaps more importantly, those who have older coffee plantations seem to be letting them deteriorate by not planting new trees, not pruning those left, and not attempting to control water runoff. To some degree, these failings appear to be related to the land tenure system created, in part, by the agrarian reform.

## V. LAND TENURE

In 1973 when the agrarian reform in this asentamiento was carried out, the procedures for distributing land were as follows. A particular piece of land, identified on a map of the project, was assigned to a particular individual. This assignment was recorded on a "provisional title," a single-page document given to each beneficiary. On the provisional title was noted the number of the parcel, the name of the project, and the name of the parcelero, the number of the parcel corresponding to a numbered parcel on the map of the asentamiento. Each parcelero carefully keeps his title in his home, although many titles are becoming a little tattered. Titleholders are very knowledgeable about what land belongs to each parcel, although many cannot read the title and have not seen the map. This personal knowledge of boundaries is adequate at present for identifying boundaries and allocating responsibility for what is planted, but conflicts may well arise in the future as the usufruct rights pass to the next generation. (Intra- and inter-family conflicts about

inherited land rights and parcel boundaries are said to be common already in other asentamientos in the area.)

Some formal system for linking the titles to a well-drawn and carefully preserved map may prove to be highly important in the future. The provisional title has only a number on it and not a description of the boundaries nor the parcel's surveyed location. A map of the parcels was prepared by a survey team in 1973, which drew in the boundaries of the already existing sharecropped parcels and then divided up the noncoffee land for distribution to the non-sharecroppers. The whereabouts and condition of this map, the basic record of land rights, are of some concern to the parceleros. Nowhere in the asentamiento is there a copy of the original map of the parcel boundaries, nor is there a list of the original parceleros. The original map is in the IAD central office in Santo Domingo, but there is reason to doubt its accuracy for describing actual land access and use. The new regional office of IAD in Santiago plans to get these records and to update and maintain them, but such local availability of maps is not typical of the reform.

The provisional title, the single-page document handed out to each beneficiary, is thus the only written record that the parcelero has access to, and on the reverse side are stamped sections of two laws that define the conditions under which the parcelero may hold the land. The first set of articles, Articles 1, 2, 5, and 6 of Law No. 145 of 1975, states that no one may buy, rent, or otherwise acquire any land which has been distributed by the agrarian reform. These articles are a clarification of those in Chapter VI of Law 5879, which state that the parcelero cannot abandon the land and that the parcel is his while he works it. This principle is clearly understood. We asked one parcelero if the parcel was really his, and he replied that it was . . . as long as he planted crops on it. Should he abandon or otherwise alienate the land, IAD can revoke his use right.

Title is provisional not only in that the holder must cultivate the land, but also in that his right of use can be transmitted to another only under specific arrangements. The beneficiary's wife can inherit the use right should he die, as can his children, but it cannot legally be divided among them (Articles 42 and 43 of Law 5879). Should the parcelero decide to leave the parcel, he can negotiate the sale of the improvements he has made, but the procedures for estimating the value of such improvements are not too clearly defined on this point. The final transaction must be approved by IAD, and the new "owner" must be issued a provisional title. Presumably the sale price of the improvements alone would be substantially less than the price on the open market for the land and improvements, although in practice the price of parcel improvements might include the value of having access to the land as well as the improvements themselves; such transactions could yield prices close to those for privately held titled land. (We were not informed of sales in the project to date, although some parcels have been transferred from their original holders to other beneficiaries.) Also, there are apparently some individuals in the asentamiento who farm fields for which there are no titles. At the time the original settlement was made, some land was not assigned. The parceleros have agreed among themselves to give the use of this land to specific, otherwise landless individuals, who hold it without provisional title and without official sanction from the IAD.

Provisional title, for those who have it, provides a usufruct right to the parcelero, the right to cultivate a particular piece of land. It also can, under certain circumstances, provide access to state-controlled resources other than land. One such resource is credit. With a provisional title the agrarian reform beneficiary can secure production credit, and at times long-term investment credit, from the Banco Agrícola. The title certifies the parcelero as a reform beneficiary whose production debts are guaranteed by IAD; a guarantee could mean that IAD will repay the loan if the parcelero could not do so. Such repayment by IAD is not common, but the principle is that it might do so. The local bank manager could always deny a parcelero further loans if he believed they would not be repaid, yet the repeated access of indebted beneficiaries to credit indicates that the provisional title can continually help to open doors at the Agricultural Bank, but not at private banks.

The provisional title also makes the titleholder a beneficiary of the agrarian reform in other ways. He has the right at least to expect the state to provide him with housing, water, schools, roads, clinics, etc. (Of course, whether or not he gets such services is another question, but the basic agrarian reform statutes [Law 5879] explicitly give IAD the responsibility for providing such services.) Relatively impressive governmental investments in housing, foods, water, school, and other infrastructure on asentamientos, and in Puesto Grande in particular, give support to the notion that the provisional title provides a "services-demand right" as well as a land use right to the agrarian reform beneficiary.

Article No. 38 of Law 5879, which is also stamped on the title, discusses the conditional sale of parcels to beneficiaries, allowing at some point in the future the beneficiary to acquire full property rights. This transaction has not yet occurred, but its possibility clearly implies: (1) that the state retains substantial interests in the land at present, and (2) that those state interests are transferable to the individual holder should he continue to work the land adequately and should the state develop procedures for this transfer--which it has not done to date. This possibility of the state transferring to the beneficiary something like the legal ownership of land held by those in the rest of the country's private land sector is an incentive for the parcelero to work the parcel and prove his commitment to it. The possibility of a future transfer, conditioned on satisfying the state's changing bureaucracies and requirements, however, is also an irritation to the parcelero, since he remains dependent on the state and party politics for keeping his parcel.

The tentative nature of rights to land may be one factor obliging the parcelero to plant crops which produce immediately and not to make long-term investments in the land such as those required for tree crops like coffee and fruit. Insecure, partial property rights often seem to discourage the kind of investments which poorer lands require (see Salas et al.). Furthermore, the lack of criteria in the reform legislation for determining what is "acceptable use" of the distributed land has not permitted IAD to insist on investments in soil conservation, nor even on tree crops as a condition for future acquisition of property rights. As the Puesto Grande asentamiento administrator mentioned, when the lands were originally distributed a golden opportunity was lost to define the "acceptable use" of the land to include soil conservation practices and tree crops where appropriate.

The limited nature of property rights as they now stand is apparently well understood by the parceleros. Only a few have attempted to rent or sell their parcel outside of the regulations governing these transactions. In the few instances which have occurred, community pressures have led to a return to the original situation or to a transfer of the parcel to someone else. There are enough people in the community who have insufficient or no land or who themselves have been frustrated in renting or selling their parcels that, should a parcelero attempt to alienate his parcel, IAD is informed and the parcelero is pressured to resume working his parcel or to pass the parcel to another person.

Although the parcels are not privately owned--i.e., the "titled" access to land is conditional--their boundaries are usually clearly marked, often by expensive three-strand barbed wire fences. Such fences not only help keep animals out of cropped area, but they also provide a fairly permanent boundary mark to separate one parcel from another. The substantial financial investment in posts, wire, and labor gives some indication of the importance of boundaries (and of the parcels themselves) to their present holders and to IAD.

There is a wide variation in the size of parcels held in this asentamiento, although most are small, less than 50 tareas or 3 hectares. A few parcels are around 100 tareas in size, but over 40 percent of the beneficiaries work less than 20 tareas of hillside land of very limited inherent productivity. Only a handful of parceleros have more than 20 tareas of coffee trees, which in a good year may yield a net income of RD\$2,240.\* In a poor year gross income may amount to RD\$640, which probably would not pay production and harvest costs. Yautía production is slightly more stable from year to year--although it cannot be grown too many seasons. Net value of production of yautía per tarea is about that of coffee (see Annex 1).

There are a number of families in the community who have no land at all and must work as day laborers for other parceleros or for the larger farm owners in the area (one of whom is rumored to own over 1 million tareas). Several landless families were given space around the settlement area to build their houses. The heads of many of these families had not participated with the original group in pressuring for the land and were left out when it was distributed. A few of the landless, such as the present IAD administrator, had been leaders in the land reform movement but had not been in the dominant political party at the time of the land distribution and for this reason apparently were excluded from receiving a parcel when the farm was divided. Other landless families are of more recent origin, those of the children or other relatives of the original parceleros. These people, for one reason or another, have not succeeded in getting permanent work outside the community and have been forced to seek employment at home. Such families may become more numerous if the crisis in the national economy as a whole continues to worsen and job opportunities outside of farming become more scarce.

In our meetings with some of the leaders of the community, the problems of the landless were discussed, but there appeared to be little interest in

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\* Up until 1983, a peso was worth about US\$1.00.

helping them to get land through a new effort at land acquisition and distribution. Despite the present parceleros' practical experience at "doing an agrarian reform," those who benefited from the movement of the early 1970s do not now appear to be very anxious to do battle again to secure land for, and in alliance with, those left behind or left out. There may be some self-interest operating among the beneficiaries which contributes to their reluctance: at least some of the parceleros have become hirers of labor on their parcels, either because they have other businesses or work interests or because they are growing old and less able to do the work. One parcelero we met had just taken over the operation of a small store in the community and was hiring for work that had to be done on his parcel. Another had reached 65 years of age, had some health problems, and had sent all his children off to the city to work and study (one to New York); he had to hire laborers to do the work on his parcel.

This emerging stratification, however, goes beyond a distinction between those who received land and those who have none. Among the parceleros there are at least four groups with different levels of resources: (1) those who have 20 or more tareas of coffee plus some land used for food crops; (2) those with some food crop land as well as some coffee trees, but less than 20 tareas in coffee; (3) those with at least 20 tareas of land only used for food crops; and (4) those with very small parcels (less than 20 tareas) of rocky land at elevations too low for coffee. We do not know the relative numerical importance of these different types of parceleros, but we do know that the original land distribution produced highly variable parcel sizes. Table 3 shows that 12 parceleros in the original plan received about 23 percent of the land, an average of 70 tareas per parcelero, most of whom already had coffee trees in production. By contrast 83 parceleros got just 40 percent of the land, about 18 tareas each and very little of which was planted in coffee. From the initial design, then, there were differences in resources and privileges among the parceleros. In the words of the present administrator, "The distribution of land was a real disaster, done without the criteria which the law stipulated." Whether this was the case may be debated, but certainly the lack of land resources is a problem which affects many of the reform beneficiaries.

TABLE 3  
Land Distribution in 1974

SIZE OF PARCELS (tareas)	NO. OF PARCELEROS	% OF TOTAL	NO. OF TAREAS	% OF TOTAL
1 - 30	83	64	1,403	40
30 - 50	35	27	1,341	37
50 - 104	12	9	839	23
Total	130	100	3,583	100

SOURCE: Data from the original plot map of the asentamiento. División de Estudios, Sección de Mensura y Catastro, Instituto Agrario Dominicano, 7 de enero de 1974.

In summary, the tentative and conditional nature of the provisional title given for parcels of land inhibits more ecologically sound production systems involving investments in soil conservation techniques or in permanent tree crops. Secondly, the small parcel sizes do not give much margin for experimentation or much hope for a future improvement in living standards from the available agricultural options. Third, the number of landless or near-landless in the community helps stimulate the intensive, short-term use of the soil to meet the food needs of the community; the landless also provide the labor force for the present beneficiaries of the agrarian reform to use the land intensively.

## VI. INVESTMENTS IN INFRASTRUCTURE

These limitations on the productivity of the land and the tenure form which govern its use have been partially overcome, however, and despite limited incomes, the level of living achieved in Puesto Grande is not generally low. Many modern conveniences are available to the parceleros. This section discusses what these conveniences are and how they have been obtained.

Prior to the agrarian reform's distribution of parcels in 1973, the community was fortunate to have a primary school, but there were few other amenities. The houses were pieced together from mud and sticks and were scattered and often overcrowded. Water had to be carried from the river; there was no electricity. The road from the settlement to the "highway" was barely a path. When someone became ill or had an accident, a trip of several miles on foot was required to reach the nearest doctor.

The formation of the asentamiento, however, introduced several ingredients into this situation which began to unravel this web of poverty. The most important factor in this process was probably the improvement in the levels of organization achieved by the parceleros as a result of their struggle for the land. The moral and political basis of the struggle exemplified the Lockean principle of land "ownership" being established by the mixing of labor with the soil and not by mere possession. Parceleros felt strongly (and continue to do so) that they had earned the ownership of their land, and this conviction helped to forge a strong group commitment toward acquiring the land for themselves. The political environment at the time of the reform was also in their favor; new agrarian reform legislation had recently been passed and there were several campesino organizations which provided legal assistance and political support to those demanding land from the landowners and the government. The battle for the Puesto Grande land was serious, but neither bloody nor overly protracted, principally because the landowner apparently recognized the wisdom of finding a just solution, one which also got him a relatively fair price for the land. The result of the struggle was a community organizational base and a group of politically mobilized farmers both familiar with the means for negotiating with governmental and private agencies and successful at this negotiation.

Another factor which contributed to the development of this asentamiento was the competition among the political parties for the allegiance of this mobilized group of agrarian reform beneficiaries. In the eyes of the parceleros,

the initial problem they faced was how to make the holders of political patronage aware of their demands. The solution was practical enough; the parceleros got together and built a new road, the first collective action after the initial struggle for the land. The previous road into the community was a narrow path that was almost impassable during certain periods of the year. During 1975 the beneficiaries began to organize themselves into work groups, and with picks and shovels they prepared a roadbed about 1.5 km. long (which was later widened and paved by the Secretariat of Agriculture). Once the road was constructed, it enabled the community residents to gain access more easily to the outside world. But more importantly, it helped outside agencies to get to the community. As one parcelero observed, "Once the road was constructed, political and church authorities and commercial people visited us much more frequently. Also once the road was constructed, the school, the health clinic and the housing project were completed." Indeed, the road has symbolic as well as practical significance. Both ends are equally important; at the one end there is the organized, demanding group of beneficiaries and at the other are the governmental agencies who can respond to these demands.

It is difficult to estimate the amount of the investments in infrastructure, but it is clear that important changes have come about. The state built seventy houses in 1977 and put electricity in most; a system for a water supply to each house was installed when the houses were built. These houses were turned over to the present occupants at no charge, but only after a period of some tense negotiation about who was to receive each house--there were over 165 parceleros and only 70 houses. A new school house was constructed for grades 1 through 8, and a health clinic with facilities, including a doctor, for most emergency treatment was inaugurated 18 months ago. A new water system, which pipes water by gravity from a distant spring, was installed using state and private foundation resources, but is being maintained almost entirely from community resources and labor. There is a farmer association for the processing and marketing of coffee and for managing credit, and it has received state support to construct a building for its activities.

The attentions of the governmental and political authorities have certainly changed the environment of the community and the prospects of the residents. A high proportion of the school-age children in the community attend the school, whose sessions are timed so as not to interfere with the coffee harvest. Many of the grown children of the original parceleros have continued their education and gotten high-school diplomas. In each family we visited, at least one child had enrolled in some form of post-secondary education. A substantial proportion of adult children have jobs in the service and industrial sectors. It is also common for families to have at least one child or other near-relative working in the U.S. The changes between generations have been dramatic. Most of the original parceleros still have difficulty reading, and yet many of their children are university-educated. Most parceleros grew up in poverty, and their parents were forced to demand of them long hours in the fields. Now these same parceleros encourage their children to study rather than to work in the fields. They scrape together their resources to hire labor and pay the costs of sending their children off to school. Before the reform the colonos lived in very simple huts without much contact with the outside world. Today, the mass media have followed electricity into the homes of the community, nearly everyone having a radio and many a record or tape player;

some houses have a TV antenna on the roof. Before the reform the present-day parceleros earned money as day laborers or sharecroppers for an income which amounted to a fraction of their present earnings. The reform provided the farmers with an income almost double their earlier earnings.

Incomes increased in the initial period after the reform, but since then, the parceleros believe, their economic progress has not continued. Income apparently has not significantly increased over what it was eight years ago. Perhaps the comparatively bleak long-term prospects have provided the incentive for the beneficiaries of the agrarian reform to focus much of their energies in getting state investments in community services which can provide their children with the health, education and desire to try their luck outside of agriculture. The prevalence of emigration among the youngest generation certainly seems to support this hypothesis.

Of course it is not possible in this case study to make general statements about how most people have benefited from the reform and what their prospects are. It is possible that people who started off 12 years ago in the conditions of poverty in the Puesto Grande area, but who were not incorporated into the agrarian reform, might have bettered their lives and the prospects of their children equally or even more. It seems unlikely, however, even though since the death of Trujillo the extension of educational, health and transport, water and electric infrastructure has been notable throughout the region. The case also does not permit the assessment of how successful the infrastructure development has been in other asentamientos located on marginally productive lands. Without further study the generalization of the Puesto Grande case to other cases is not justified--except in the sense that the interlinked processes of production, land tenure and state investment in Puesto Grande demonstrate some of the general strategies and dilemmas of those involved in the agrarian reform on marginal lands.

As we have seen, in Puesto Grande the reform beneficiaries have secured resources from the state for getting their children new opportunities outside of agriculture, at least outside of the kind of agriculture they themselves practice. It is also true that the beneficiaries certainly "own" the land, poor and degenerated though it is, in the Lockean sense. Moreover, it is true that most families are not likely to abandon their claim to the land. Nor is it likely that the state will oblige the residents of Puesto Grande to leave the area, something they probably would not do without a battle. Nor will the country's need for internally produced food decline. Watersheds like that where Puesto Grande is located will probably increase in importance as sources for the nation's water and power supplies. The basic issue facing the reform today, as in the past, is how to transform the tenure and production patterns in combination with infrastructure, investment and technical assistance to achieve a permanently viable agriculture as well as a decent life for the people who make the land produce.

Discussions in the community today on this question seem to be focusing once again on the road. There are several reasons for this. The parts of the asentamiento which have been devoted primarily to growing food crops since the reform are now being transformed; one aspect of this transformation is the change to permanent crops, coffee and fruit trees. To meet the harvest and

transport demands of such crops, there is a critical need for a new road that shortens the distance to the main road. Second, some of the parceleros seem also to be reorienting themselves to the land by attempting to find alternative or additional employment. The resulting part-time dedication to farming cuts into the time available for working the parcel, which in turn gives added importance to better and quicker access to their parcels. Finally, not all children are able to find work off the farm, and many new households are formed in the area each year. Some of these households are constructing homes on the only land available, that of their fathers, and the bulk of this land lies some distance from the settlement and the existing road.

In our conversations with the parceleros, the need for a new road was a recurring theme. The response of the community to the challenge seems to be typical of Puesto Grande: work groups are being formed to help clear the land and to negotiate with the holders of that land to secure access for the road. At the same time the leaders of the community are using their experience at manipulating governmental agencies to get the heavy equipment necessary for carving the road out of very difficult terrain. But the road is in many respects a symbol of past successes. It remains to be seen whether the second generation of reform beneficiaries in Puesto Grande will resolve the challenges it faces from the changing nature of the marginality of the community's lands and people.

## Anexo 1

## SOME DATA ON THE ECONOMICS OF YAUTIA AND COFFEE

1. Yautfa (or Yam) Production

IAD assigned Manuel Olivarez a parcel in 1975 of about 30 tareas of non-coffee land, land which had been given originally to a man who had left the area. Manuel, 34 years old, had worked in the early 1970s as a day laborer, making about 1.50 pesos per day when he could get work. After receiving the parcel, he married and now has two children, the older a boy of seven, and the younger a girl of two. Manuel attended school locally through the fifth grade, and is an obviously intelligent, vigorous young man. He claims to have no work outside of his parcel, although he is trying to get into a trucking business with his brother-in-law.

Manuel's parcel is located about 2 km. from the main village, reached via a narrow, rocky path, which is nearly impassable after a rain. He has planted beans and corn on the land, which has been cleared and is gently sloping. In addition, he now plants 18 tareas of yams (yautía) and intersperses a variety of squash (ayama) on about 6 of those 18 tareas. Last season he harvested 155 quintales (15,500 lb.) of yautfa and sold his entire production for about RD\$3800 to private buyers. He had to carry over 150 sacks of yautía by mule to the nearest road, where the buyer graded, weighed, and purchased them. Manuel estimated that his total cash outlay for that production was about 1800 pesos, almost entirely in labor costs for plowing (the land is level enough to get a team of oxen in to plow), planting, weeding, and harvesting. He purchased no fertilizer and got the seed from a previous planting. Manuel also inherited from the previous parcelero about 4 tareas of coffee trees, recently planted. But last year's harvest was a disaster: the yield was only some 11 boxes of coffee beans, worth about RD\$80. Nonetheless, he is planting an additional 6 tareas of guama trees and wants to expand his coffee enterprise. He sold the squash for about RD\$300 last season. Along with a few fruit trees around the edges of the parcel, Manuel has some peas and beans growing for family consumption.

This parcelero is one of a very few in the asentamiento who has put in water-runoff control terraces, in this case small embankments and ditches for slowing the flow of water. He seems to be convinced of the usefulness of such devices, and periodically cleans and maintains them. The soil itself, however, is very depleted, especially in the upper levels of the parcel. Much of the soil has washed away. In the lower levels, where the soil is deep and moist, the yautfa is as high as a person's shoulder, and the foliage is abundant and a deep green in color. In contrast, in the upper areas the plants barely reach knee-height and are yellowish in color; the poorly developed leaves show the stress the plants have experienced from lack of water and nutrients. Proportionally, about 80 percent of the area planted in yautía is covered with these sickly plants.

## 2. Coffee

Neftali Olivarez was one of the sharecroppers on the old hacienda. His father had cleared the land which Neftali works today and had planted most of the 20 tareas now in coffee. Some of the coffee trees are 60-70 years old, the remains of the "típica" variety of coffee planted in those early years and still favored by many farmers (they plant seedlings which sprout in the coffee plantations). The costs of production vary from year to year, depending on how abundant the blossoms are and how plentiful the beans. The costs include:

- RD\$8/tarea for clearing, weeding;
- RD\$10/tarea for pruning;
- RD\$20/tarea for fertilizer (about 8 ozs. of 14-16-0 per tree);
- RD\$7/tarea for fertilizer application;
- RD\$30/tarea for harvest;
- RD\$5/tarea for transport, etc.

● These costs amount to about RD\$80 per tarea. During a good year, the farmer can harvest 25 boxes of coffee/tarea, valued at about RD\$200, which leaves about RD\$120/tarea profit. On a typical parcel of 20 tareas, a total net income of RD\$2,400 can be earned. These cost figures are, of course, high estimates, since many expenditures during any given year can be postponed or the work done by family members. It should be noted also that a bad year means that the harvest can amount to only 3 boxes/tarea, and prices can fall. Both yields and prices fell two years ago, leaving a gross income of only RD\$24 per tarea, which could have meant substantial losses if the parcelero had hired much labor or bought much fertilizer.

Bad years seem to follow good ones. A number of reasons may account for this phenomenon, including poor harvest techniques, which can damage the buds for the succeeding year's production. Since the pickers are paid by the box, insistence by the parcelero that the worker take more time can earn the owner the reputation of being fussy and difficult, which in turn can mean no workers when the coffee is next ripe. For whatever reason, production of coffee is highly variable. Prices for coffee also fluctuate because of the international market. About 25 of the parceleros have formed a coffee-producers association, which is affiliated with the cooperative in Moca. That cooperative attempts to get more favorable prices, but initially pays the farmer a fixed price for the coffee he sells to the cooperative. Should the cooperative get a higher price for the coffee, most of the difference is theoretically passed on to the association, but so far the cooperative is two harvests in arrears in even informing the Puesto Grande association of past sales and prices.

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