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Vol. 7

LAND REFORM

in

MEXICO

by

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University of Illinois

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SR/LR/C-1

AGENCY FOR INTERNATIONAL DEVELOPMENT

SPRING REVIEW OF LAND REFORM

MEXICO

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AID Spring Review 1970 - Land Reform

MEXICO: EJIDOS AND SMALL HOLDINGS

Folke Dovring

SUMMARY

Mexico, a country of wide variations in geography and climate and a corresponding wide choice of crops to grow, has undergone profound changes in its land tenure system since the revolution of more than a half century ago.

Before the revolution, Mexico had an unusually high degree of concentration of rural property in comparatively few hands. Around 1900, nearly all the land of the country belonged to some 40,000 large estates. Small-scale or peasant property held only a tiny fraction of the country's land resources, and the vast majority of the rural population (some 10 million) were landless - mainly day laborers, to a much lesser extent tenant farmers on uncertain lease conditions or holders of minifundia parcels. Colonial history and deliberate policy of mobilizing the land market in the late 19th century had together produced this result. Agricultural production expanded slowly, more or less at par with the growth of population, thus per-capita income remained nearly unchanged over a long period. Income distribution was extremely unequal, agriculture's services were mainly in the hands of the large landowners, and peasant association and power at a very low level.

The land reform program was initiated in 1915 and had its principal objective in redistributing wealth and increasing the security of the common man. The basic law is in Paragraph 27 of the Constitution of 1917, followed by several application statutes, most of them consolidated in the Código Agrario of 1942. Most of the land reform program has consisted in the creation of ejido's, or communal holdings - large coherent land tracts established as inalienable property of the ejido or village community. Individual small holdings have also been protected, and the

ceilings imposed upon large private land holdings have both directly and indirectly contributed to transforming the residues of the latifundia into moderately large, often family-sized, farm holdings.

The land redistribution program was slow to start, gained some momentum in the middle and late 1920's, achieved its quantitatively largest results in the 1930's and has thereafter continued at a slower pace; the 1960's again have marked a somewhat accelerated reform activity, now more than before associated with the creation of new settlements and reclamation of virgin land for cultivation. In the late 1960's, only a limited amount of land redistribution remained feasible under the provisions of the 1942 law.

Financing has been largely circumvented; most landowners received no compensation for the land taken from them. The peasants, as a rule, paid nothing for the land.

One of the most striking features of the ejido system is the inalienability of land, which the membership holds only in usufruct from the village community, thus they have no recourse to real estate credit. A special system of ejido credit, backed by the Federal government, has been put in place to remedy this difficulty of the ejido system.

The peasantry, on the whole, took an active part in initiating reform measures each in their locality. Transfers of ownership took place upon request from the potential beneficiaries who also had the burden of proof to show that their request was justified. In many cases transfer was preceded by "invasion" of an estate, but final disposition of each case was up to a Federal authority which in fact denied numerous requests.

The reform has led to an essentially new land tenure structure. Ejidos hold not far from half of all the cropland of the country and a much smaller

part of the pastures and forests. Private holdings of small proportions are also of considerable importance, so that together about two-thirds of all cropland is in small or, in any event, family-sized holdings. Only a minor part of the private holdings are under leasehold or sharecropping, the large majority is owner-operated. There are still numerous landless farm workers, principally on the larger private estates but to some extent also employed on ejido land.

Although it is illegal to rent ejido land parcels, this does occur, to an extent which is difficult to ascertain. However, since ejido land cannot be sold, the holders (ejido members) are in any event assured of some minimum income in this way.

Contrary to what is often believed, land reform in Mexico has not been to the detriment of agricultural development and rising productivity. In the early phases of the reform, agricultural production continued to rise more or less at par with the growth of population, but since the years around 1940 (or somewhat earlier), Mexico has had unusually rapid agricultural development, with gross output rising more rapidly than in any other Latin American country over a comparably long period. Details from the censuses of agriculture (particularly the 1960 census) by tenure category (private holdings under 5 hectares, private holdings over 5 hectares, and ejidos) show that land productivity is highest on the small holdings and nearly the same on ejidos and larger farms, despite the fact that ejidos evidently are pressing harder on the margins for cultivation (they include more low-grade land in their cropland).

In the context of the national economy, small-scale agriculture in Mexico is clearly more productive than large-scale agriculture, because the ejidos (and the small holdings) produce their output with much less inputs of the kinds that are scarce in the Mexican economy (the "external inputs" of agriculture). This observation is still valid when the comparison is limited to the part of the output that reaches the market.

The ejido system has beneficial effects on employment and income distribution inasmuch as it guarantees to all ejido member households the option of a minimum level of employment as well as the actual access to a minimum level of income (even in the case where the ejido plots are illegally leased). The vigorous agricultural development which has taken place in the framework of the land tenure structure created by the reform, also has contributed to raising real incomes of the agricultural population, if not as yet at the same rate as that of all incomes in the country. Peasant participation in decisions, particularly those of the local community, has in many cases first been rendered possible by the reform. The broader effect on Mexican society has been that of a catalyst.

## II. PRE-REFORM PERIOD

### A. Introduction: Economic and political background

Mexico before the revolution was a backward agricultural country with a slowly growing population. Political liberation from Spain early in the 19th century had not brought either political liberty or economic progress to the country. There were several prolonged periods of dictatorship, notably that of Porfirio Diaz (1877-1910). Some departures toward economic development were based on exports of raw materials (both agricultural products and minerals), and some beginnings were made to build up the infrastructure for modern development (e.g., the first railways were built). Political unrest leading to the revolution following the end of the Diaz period was in large measure due to the inequitable land system. The revolution was a drawn-out and bloody struggle which cost approximately a million Mexicans their lives; the total population around 1920 was about as large as it had been in 1905. The most immediate results of the revolution were the new Constitution and the land reform.

## B. Land Tenure Structure

### 1. Characteristics

The land system of Mexico before the revolution was aristocratic in an extreme degree. Some forty to fifty thousand large estates (many of them very large) occupied the lion's share of all agriculturally used land in the country. Small holdings existed mainly in such among the traditional Indian communities which had not been absorbed in the estate system, and these holdings were very small indeed and between themselves occupied only a tiny fraction of the country's agricultural resources. Of the working agricultural population around 1900,  $2\frac{1}{2}$  to 3 million were designated as "peones," i.e., landless laborers, while a category labeled "agricultores" (apparently own-account workers of some description) are returned with figures erratically varying between 235 thousand in 1895, 578 thousand in 1900 and 410 thousand in 1910.<sup>1/</sup> To what extent these people were tenant farmers on the estates or subsistence peasants in the Indian communities is not clear.

### 2. Changes<sup>2/</sup>

The tenure situation had been changing some time before the revolution, and on the whole in the direction of further strengthening the dominant estate system. To the original large estates from the colonial period, the liberal era of the late 19th century added many more through its land policy. First, there was the "desamortización" enacted in 1856-57, which turned both church estates and village communal lands into private property; because of the ways in which this was done, most of it quickly became property of those who were already landed and moneyed, often terminating both the leaseholds on church lands and the previously existing occupancy rights of villagers. Subsequently, late 19th century legislation to promote internal colonization also tended to favor the estate system, among other

things because of the scarcity and low reliability of land records, causing many de facto occupants to be dispossessed in favor of the large landowners who organized the colonization ventures. The numbers of estates during the Diaz period grew considerably, as shown in the following figures:<sup>3/</sup>

	Haciendas	Ranchos	Total
1877	5,869	14,705	20,574
1900	5,932	32,557	38,489
1910	8,431	48,633	57,064

Thus the expansion of agriculture led mainly to an expansion of the estate system.

### C. Land Resource Information

#### 1. Land availability

No direct data can be obtained from the pre-reform period, as even the agricultural statistics indicate only production but not cropped areas. Data in subsequent agricultural censuses (those of 1940 and 1960) indicate that the margin for expansion in the early 1900's was still quite large, especially in the northern parts of the country but also to a varying extent in most other states, but least so on the central plateau where population density for historical reasons was by far the highest.

#### 2. Classification

Out of pre-reform sources not much can be learned about land classification, but for obvious reasons, later information about natural resources apply to this period as well. Mexico is a country of great geographical variety, both because of altitude, latitude, and rainfall zones. From the sea to the plateau, one

distinguishes roughly three altitude zones: tierra caliente ("hot land") in the coastward lowlands, tierra templada ("temperate land") in the higher valleys and the intermountain plateau, and tierra fria ("cold land") on the higher altitudes of the mountains. As for rainfall, some of the tropical lowlands have very high precipitation, while the intermountain plateaus are sparsely watered and the north of the country goes from subarid in the northeast to desert in the northwest. In the state of Sonora (bordering on California and Arizona) and some adjacent areas, crop farming is possible only by the help of irrigation, and in most other parts of Mexico, irrigation will greatly enhance the productivity of the land. The most important classification of cropland is that between regadio (irrigated) and temporal (moderately rainfed); only a small portion of the cropland is characterized de jugo o humedad, i.e., so abundantly watered by nature that irrigation would not make much difference. Vast areas of subarid to arid land, for which no usable sources of irrigation are in sight, must, as in adjacent parts of the United States, remain **extensive** pastures (agostadero).

### 3. Identification and titling

Much of the encroachment of large estates upon peasant property in the 19th century reflected difficulties of establishing just what belonged to whom. Colonization work at the time which, as mentioned above, tended to favor large estates, led to clear title and, presumably, somewhat precise delimitation of areas granted. Data for alienation of public domain land between 1867-1910 (most of it 1877-1910)<sup>4/</sup> indicate the granting of more than 43 thousand titles for a total of more than 40 million hectares. Some large grants appeared not to be known as to their location, but of the specifications given, the largest areas were in states to the northwest such as Chihuahua, Sonora and Sinaloa, but also in the deep south bordering on

Guatemala (Chiapas, Tabasco). Apparently most of these land grants were for wilderness land intended immediately for ranching and having at best a potential future value as cropland. Thus the titling established in this connection was of little consequence for the more densely settled areas, those where land reform was to become the most immediate concern.

D. Rural Production and Productivity

In the years around 1900, agricultural production in Mexico was still mainly for direct consumption on the estates and in the villages where produced; as will be seen below, agriculture continued to receive its share in population growth. A small export sector showed somewhat more rapid growth than agriculture as a whole, and this is the main source of a slight excess of growth in agricultural production over population. Some data are shown in Table 1.

Table 1. Agricultural, livestock, and forestry production in selected years, data in million pesos of 1900.

	Total	For export	Export as % of total
1877-78	288	10.5	3.6
1897-98	320	43.6	13.6
1907-08	390	57.5	14.7

Source: Estadísticas economicas del Porfiriato. Fuerza de trabajo y actividad economica por sectores, Mexico (no date; around 1965), p. 61.

Of the total, livestock products accounted for about one-third and were hardly increasing at all in the last ten years (the figures for 1877 are the most uncertain of these very uncertain data). Of the crop portion, increasing more than the livestock portion, the basic staple foods (corn, beans, and wheat) occupied close to two-thirds, with a slightly declining percentage, because these crops hardly increased

over the period shown; thus the per-capita supply of these staples was declining somewhat. Other food crops expanded more vigorously, notably rice, potatoes, cocoa and sugar cane, as did also tobacco and cotton, both of which were mainly for the domestic market.

Several export crops were also expanding at a rapid rate, among them coffee, henequén (agave fiber) and vanilla, as well as some wild products (rubber, istle gum). Another wild product, cochineal, had recently been wiped off the market by a synthetic substitute.

Use of these data may require some explanation, for it is widely believed that the initial phases of land reform in Mexico caused agricultural production to go down. A statement to this effect is included in the recent study by Venezian and Gamble.<sup>5/</sup> Their conclusion is based on insufficient scrutiny of their source: the Nacional Financiera clearly indicates that its national crop production indices 1901-1925 are borrowed from an article by Humberto G. Angulo, published in 1946 with indices 1843-1925.<sup>6/</sup> In this article, the reader is warned about the low quality of the data used, especially for the years 1909-19.<sup>7/</sup> How weak these data really are is best appreciated by looking at those from the late Porfirio Diaz years as shown in annual routine publications up to 1907.<sup>8/</sup>

The index computed by H. G. Angulo shows very sharp fluctuations for the years 1907-13, contrasting against the much smoother flow of national crop output from 1925 onwards. The first of the sharp peaks is in 1907 - the last year of the published data from the Porfirio Diaz period, and only the second year on Venezian and Gamble's reading of the series. This high index for 1907 must be rejected as based on patently erroneous reporting: not only is the corn harvest reported as 5 million tons (more than twice any previous peak year), but 2 million of this

is in the state of Jalisco and  $1\frac{1}{2}$  million in a single cantón in the same state! These and similar reporting errors are implicitly corrected in a recent publication of historical statistics<sup>9/</sup> showing crop production for 1907 only slightly above that of previous years, with corn not much over 2 million tons. The data for subsequent years which Angulo used<sup>10/</sup> also show the peak years with giant corn harvests, no doubt as erroneous as that for 1907.

Comparison of these observations with the following data on population and employment will show that no appreciable gains in agricultural productivity were made during the Diaz years. The case was one of slow expansion over virgin territory but as yet very little development.

E. Rural Population, Employment and Underemployment

A few selected data on population and labor force are shown in Table 2.

Table 2. Population, total and rural (= in localities with less than 2,500 inhabitants), and labor force, total and agricultural, censuses of 1895, 1900 and 1910. (Thousands, 000's omitted).

	Population			Employed active population (= labor force) with well defined type of work		
	Total	Rural	Rural as % of total	Total	Agricultural	Agricultural as % of total
1895	12,632	..	..	4,442	2,976	67.0
1900	13,607	9,758	71.7	4,819	3,178	66.0
1910	15,160	10,812	71.3	5,272	3,584	68.0

Source: Estadísticas económicas del Porfiriato, pp. 26 sqq., 38 sqq.

Apparently, total population grew by something in excess of 1% per year. The rural and agricultural percentages agree in indicating that there was no appreciable tendency toward sector differentiation in the economy. The figures for employment in industry underscore this, as they too show a nearly static

percentage through the period (15.6, 16.7 and 15.2 percent, respectively, as did also the service occupations over the same period. This industrial percentage is somewhat exaggerated, however, since the data as presented here do not include either the unemployed or those whose work was not well defined, the two categories totaling a half million in 1895 and 1900 and 300 thousand in 1910; comparison with other figures makes it likely that both of these categories were mainly landless farm workers.

The incipient tendency toward a more intensive land use pattern which the production data indicated was evidently not enough to cause any appreciable increase in per-capita output among the rural population.

The degree of underemployment is not known. From the rate of intensification in later years, as well as the still substantial level of underemployment, it can only be concluded that underemployment at the time was even more pronounced, if perhaps somewhat more (than now) mitigated by local crafts.

#### F. Income Distribution

No direct data are available from the period. Still today, income distribution in Mexico is rather unequal, mainly on account of the rural-urban contrast but also because land reform is far from having removed all of the large inequality in the distribution of rural wealth. In the pre-reform period, income inequality must have been even greater, both because of the extremely unequal distribution of rural wealth and because it is known that farm workers were paid below even the lowest urban wages. Available data on minimum wages do not show this, but they reflect the essentially unchanged level of per-capita income during the whole period 1877-1911.<sup>17</sup>

#### G. Supplementary Services and Supplies

On all of these items (1 through 5 of the outline) no information was available to the writer at the time of drafting. Because of the strong concentration of land

ownership, and the subsistence character of agriculture outside the estates, it may be assumed that all of these services, to the extent they were provided at all, belonged to the private affairs of the estate owners. Only in the domain of export trade is it likely that the public powers extended some assistance to the producers of agricultural export commodities.

#### H. Peasant Association and Power

On these points too, there is not much to report from the pre-reform period. Cooperatives could hardly exist under the circumstances, and any attempts from among the peasantry or farm workers to exercise political power would most likely be suppressed. The traditional hacienda was in many ways a local political unit under the direction of the estate owner, and often it also functioned as a basic welfare organization; but the latter function, to the extent it was effective, was at best paternalistic.

### III. LAND REFORM PROGRAM

#### A. Legislation

Mexico's land reform has a long and complex legislative history. The principal documents and their essential bearing is as follows.<sup>12/</sup>

Law of January 6, 1915, enacted at the height of the Civil War, had the limited objective of bringing redress of injustice to village communities (ejidos) whose land had become private property through misuse of the 1856 law on "desamortización" or other 19th century legislation, or through other unlawful acts of authorities or individuals, particularly since 1870. To bring back such land to the dispossessed ejido, the law proposes to use either "restitución" or "dotación." The scope is thus explicitly limited, and other aspects of the agrarian question are relegated to laws still to be enacted. The 1915 law was revised in 1931 and abrogated in 1934 when the relevant article of the new constitution was revised.

Article 27 of the 1917 Constitution. This article, which with some revision is still the basis of land law in Mexico, originally incorporated the 1915 law as part of the constitutional law of the country. In general terms, Article 27 lays down the law of eminent domain in its "patrimonialist" form (eminent domain deriving from the patrimony of the kings of Spain) and declares four general objectives to be pursued on the basis of eminent domain:

1. Continuous action on the part of the State to regulate the use and distribution of landed property, in the public interest;
2. "Dotación" (grants) of land to local communities in need thereof;
3. Limitation of the size of (private) property, and subdivision of latifundia; and
4. Protection and development of small-scale property.

Law on ejidos of December 28, 1920. A first attempt at formulating the ways in which ejidos were to acquire and hold land; because of numerous defects, it was replaced by:

Decree of November 22, 1921, which in more firm language establishes how to define ejidos, as well as several procedural rules for the reform work. As a further follow-up statute, there came:

El reglamento agrario, of April 17, 1922, with several provisions about the practical modalities of the reform work and its desired ends.

Law of "dotaciones" and "restituciones" of land and water, of April 23, 1927. This statute attempted to remedy some of the legal defects in its predecessors, to reduce the risk of decisions rendered being nullified. Specifically it also endeavored to regulate the possible conflict when land adjacent to an ejido community belonged to a small private property. This law was recast, under the same name, on March 21, 1929.

These and several statutes in between were codified as the Código Agrario of March 22, 1934, replaced by the Código Agrario of December 31, 1942, which with some subsequent modifications is still valid.<sup>13/</sup>

In addition to the basic land reform laws, there are a number of more recent statutes treating related subjects, thus the law on vacant lands (baldíos) and national land of December 30, 1950, a statute on consolidation of fragmented land of 1945, and a statute of 1962 abrogating the colonization laws of the 19th century as having too often led to circumvention of the land reform laws.

#### B. Institutional Arrangements

The authorities who make decisions in land reform affairs are:

1. The President of the Republic;
2. The Governors of the States and Federal Territories, and the Chief of the Department of the Federal District;
3. The Chief of the Departamento Agrario;
4. The Secretary of Agriculture; and
5. The Director of Indigenous Affairs (now under the Secretary of Education).

The President holds ultimate authority, i.e., all final decisions in land reform matters take the form of presidential resolutions. The matters on which such resolutions may bear are:

1. "Restitución" and "dotación" of land or water;
2. "Ampliación" (supplementing) of grants previously made;
3. Creation of new settlements of farm people;
4. Recognition of the property rights in communal property; and
5. Recognition or location of property which may not be touched by land reform measures (especially "small holdings").

Land reform organs or agencies at the national and state levels are:

1. The Departamento Agrario, with all its subordinate offices, among which the Cuerpo Consultivo Agrario (this whole department reports directly to the President);
2. The Comisiones Agrarias Mixtas (State level);
3. The Agriculture Department, acting through the "Dirección General de Organización Agraria Ejidal"; and
4. The Directorate of Indigenous Affairs.

In addition, the President may appoint still other agencies to implement his policy; thus President Lázaro Cárdenas appointed a Commission for the Small Property which reported directly to him.

At the local level, the ejidos and other rural communities have their own authorities for land reform issues, namely:

1. The General Assemblies;
2. The "Comisariados Ejidales y de Bienes Comunales"; and
3. The "Consejos de Vigilancia".

A group of applicants not yet recognized as an ejido or as a rural community may, as an interim step, appoint its "Comité particular ejecutivo".

The procedure in land reform matters is administrative; it does not normally go to court, but the outcome has the nature of a verdict. In all proceedings to establish or enlarge ejido or other communal property, the first step is normally to file a request with the office of the State (or Territory) Governor. No particular form is prescribed, this to protect the often illiterate peasants against the risks of committing formal errors. The Governor normally transmits the request to the Comisión Agraria Mixta. If the Governor does not do this immediately, the applicants may speed up the procedure if they send a copy of the request directly

to the Comisión, which can then act upon it even without the Governor's cooperation. The Comisión studies the case, identifies the property and investigates other relevant circumstances, among other things by means of a local Census carried out by a Junta Censal consisting of a member of the Comisión and a member of the applicant group. The Comisión's findings are presented to the Governor who may issue a provisional resolution. If this resolution is in favor of the request, implementation procedures may start through the Comité Ejecutivo Agrario (State level) without awaiting Presidential resolution which always is formally required. If the Governor's resolution is negative or is not forthcoming, the request is forwarded to the Departamento Agrario for second-stage treatment, at which stage the Department of Agriculture, and where necessary the Directorate for Indigenous Affairs, cooperate in further fact finding and analysis of the merits of the case. There are also cases where the Departamento Agrario may intervene directly in the first stage of the proceedings.

### C. Program Objectives

#### 1. Economic

The principal purpose of Mexico's land reform was not so much in the enhancement of output as in the desire to provide the peasantry with a minimum assured income, which we treat as a social objective (see below).

The desire to boost national production was at best secondary and the attitude on this point has been ambivalent. Classical (18th century) land tenure theory expects a transition to independent peasant farming to bring also a transition to more labor intensive methods of production, hence to higher levels of national output. This economic motive was to some extent present also in the early debates about land reform in Mexico; it was pointed out, among other things, that the latifundia system was not particularly efficient, since the country suffered a chronic deficit in domestic food production and had to import basic foodstuffs

for the cities, to be paid for out of the scarce foreign-exchange earnings from export crops and minerals.

The motive of land reform as improving production has on the whole been kept low key, especially since the reform work got going and even more since the larger farms began to be mechanized. Even the most ardent defenders--in and out of Mexico--of this land reform have usually been rather apologetic of its short- and medium-term effects on agricultural production. Emphasis has been on the social and political as well as the long-range economic effects of the reform, effects which, it is argued, more than outweigh the more immediate disadvantage to production which most writers seem to acknowledge or imply. The long-range economic effect would be in the upgrading of a long downtrodden peasant population as a precondition for a large supply of capable manpower in later stages of development. The alleged low level of productivity and sluggish rate of improvement on ejidos are thus largely blamed on the previous deprivations of the peasantry. Only by a transitional period of education, extension experience, and better living conditions, can the campesino become the competent farm manager which he is not to start with - so the reasoning goes, in the least apologetic version of the leading line of thought.

As will be seen later in this paper, such a defensive attitude was unnecessary. A far stronger case for land reform could have been made and maintained also on grounds of improving economic productivity.

## 2. Social and political

In these realms, the program objectives have been the most explicit and aggressive. The purpose was not merely to secure a source of regular income for the rural poor. Along with this, the building of the ejido as a communal entity also aimed at strengthening independence, self-reliance and a democratic spirit among the peasantry, all of it necessary both to individual human dignity and to the functioning of democratic institutions.

The income distribution motive was to some extent articulated through the rules under which rural communities could claim land. The land, normally, had to be adjacent to their settlement, and it also had to be sufficient to secure to the individual household an income which stood in a stated proportion to the local wage level. This placed a floor under the minimum claim which the local community could make. A ceiling was often imposed by the concomitant rules to protect "small holdings," for under these, even the neediest local community could not claim land in such a way that a "small holding" would be eliminated or excessively reduced in size.

The socio-political motives also found expression in rules about organization of the village community with its general assembly and other local organs, and their initiative and participation in land reform measures concerning themselves.

Another social motive is embodied in the rules about ejido land being inalienable. In fact it is part of the national domain entrusted to the local community to be used as community property and not to be sold or mortgaged. Further there are rules about the equitable distribution of community land among the members of the community. The constraint against mortgaging which follows from the communal and inalienable status of the land is to some extent eased by the provision of special-term credit through the Banco ejidal.

As will also be seen in the evaluation (part V below), it is in these socio-political motivations that Mexico's land reform has been the least successful, largely on account of its part-way character.

#### D. Program Implementation and Enforcement

##### 1. Redistribution of Ownership

The program was off to a slow start, at least in appearance (some transfers were made de facto, by invasion, before they were confirmed). Table 3 shows the

transfers by Presidential periods. Since these data are in total hectarage without any classification, they do not show the rates at which cropland was transferred. Some data on this are shown in Appendix 2, some others in the census data (see below under IV A).

Table 3. Land transfers, by Presidential periods.

Presidents	Years	Land, thousand hectares
Venustiano Carranza	1915-1920	132
Adolfo de la Huerta	May-Nov. 1920	34
Alvaro Obregón	1920-1924	971
Plutarco Elías Calles	1924-1928	3,088
Emilio Portes Gil	1928-1930	1,173
Pascual Ortiz Rubio	1930-1932	1,469
Abelardo Rodríguez	1932-1934	799
Lázaro Cárdenas	1934-1940	17,890
Manuel Avila Camacho	1940-1946	5,519
Miguel Aleman Valdés	1946-1952	3,845
Adolfo Ruiz Cortines	1952-1958	3,199
Adolfo López Mateos	1958-1964	16,004
Gustavo Díaz Ordaz	1964-1968	10,252
Total land transferred until the 31st of August, 1968		64,375

Sources: Reports from the President and from the Departamento Agrario.

By far the largest amount of transfers occurred under President Cárdenas. The census data also show that the largest part of the cropland of the ejidos had come to them by 1940. The late forties and early fifties represent a lull in reform activity. The resumption of transfers under the two most recent presidents is not to be underrated but is exaggerated in the figures of the table

because a larger part (than before) of the land transferred is pastures and other land of low productivity. Even so, these recent transfers include some 2 million hectares of cropland, bringing the total to over 12 million hectares of ejido cropland, which is not far from half of all the cropland in the country and is equivalent to about 80 percent of the cropland Mexico had around 1930. The figures do not include the land in new settlements (see below).

When the transfers up to 1968 are included, the total scope for continued land reform, under the present law and other present circumstances, appears rather limited.<sup>14/</sup> The reason is mainly in the rather large allowances for "small holdings" which private landowners are allowed to keep: 100 hectares of irrigated land, or 300 hectares of rainfed cropland, or 50,000 hectares of arid pasture land. Up to these limits, the property can be made "inafectable." The import of these limits was further widened by application of "colonization" provisions in 19th century laws, up to 1962 (see below). In addition, even the largest properties can be expropriated only if they are adjacent to an ejido or other qualified rural community; this feature tends to prolong the life of large estates in areas where no strong peasant communities have been formed (this is especially striking, at least up to 1960, in the States of Guerrero and Oaxaca, in the South Pacific region).

## 2. Changes in tenancy systems

Mexico's land reform is a reform of land ownership. Basically, it makes no attempt at changing tenancy conditions. It is plausible that expropriation of private estates for the creation of communal property often must have led to the abolition of existing tenant contracts. Be this as it may, the remaining private farms are for the most part run by the owners themselves, with or without the help of a hired manager. Tenancies, including both leaseholds and sharecropping

arrangements, are a minor feature in the land system of the country as it is reflected in the census statistics. Illegal renting of ejido parcels is presumably not included in these data (see below).

### 3. Colonization

Under this heading come two sharply different sets of activity which may be most conveniently designated as being before and after 1962.

As already mentioned, the colonization laws of the 19th century continued to be in force up to 1962. What was done in pursuance of these laws, along with the land reform activity, was to a large extent in the nature of parceling out existing large private landholdings into smaller units. In many cases this meant that a private landowner could spread the formal ownership of his land on two or more members of his family, thus obtaining the protection afforded "small holdings," where the undivided estate would have been subject to partial expropriation in favor of some ejido, as exceeding the maximum limits for "small holdings." Thus under the guise of "colonization" - which continued to figure prominently in the official statistics alongside those related to land reform activity - large areas have been made unavailable for transfer to otherwise qualified claimants to communal land under the land reform laws. At last, the 1962 law put an end to this system, but much of the damage had been done by then. An additional paragraph to the Código Agrario now states, among other things, that colonization cannot take place on land which is private property. Thus new colonization ventures now can only be started on land which either is public domain to begin with, or has been expropriated or purchased from private owners in order to be turned over to a new rural community. The new paragraph also foresees better supervision of existing "colonies," so as to provide more strict enforcement of the laws including, apparently, sanctions for fraud. To the extent that fraud can be proven, some of these "colonies" may

henceforth become available for ejido formation or, in case of colonies on public-domain land, revert to the public domain for further disposal.

Pursuant to other provisions in the new law, a number of colonization ventures have been started, usually on public initiative and with public aid, but some spontaneous, bona-fide ones have also been encouraged and helped. These new colonization projects are mainly located in the tropical lowlands of southern Mexico and are expected to be precursors to more large-scale land reclamation projects in these wilderness areas. The total impact is as yet not large, but the departure appears promising.<sup>15/</sup> This departure is not a substitute for continued reform activity in other parts of the country, but rather a badly needed supplemental source of new employment and income. Due to the varied geographical character of Mexico, the colonists in these areas are usually recruited from nearby localities similar in climate, rather than from faraway ones.

Up to 1968, 733 new population centers have been created, endowed with about 6 million hectares of land (not included in Table 3). Two-thirds of these new centers were created after 1960.<sup>16/</sup>

#### 4. Consolidation and enclosure

The problem of consolidating fragmented farms is naturally of limited scope in Mexico. Half the cropland is in ejidos, where the arrangement of individual plots is recent, being subsequent to the creation of the communal holdings. The other half is mainly in fair-sized private farms which are often the residuals of curtailed latifundia, or else new settlements created in connection with large-scale, publicly financed irrigation projects. The privately owned minifundia represent a small sector of Mexican agriculture and one with which public policy takes relatively little action.

The writer has encountered no statistics on the consolidation of fragmented farm holdings in Mexico.

The law of 1945 (see above) which introduced the subject in Mexico's agrarian law system, appears to be both ill-conceived and inconsequential.<sup>17/</sup>

5. Classification, identification and titling

These subjects have largely been taken care of through the various procedures discussed above. Both the creation of new communal property, the declaration of immunity to reform ("inafectabilidad") of "small holdings," and the "colonization" proceedings under the 19th century laws have regularly led to the establishment of legal papers in regard to each property. No other type of action under the Código Agrario has reached such comprehensive coverage as documentation. Thus there is material enough for the Registro Agrario Nacional which the law now requires to be maintained as a basis of documentation for further land transfers (in its Art. 334).

E. Financial Aspects

1. Valuation Procedures

Taken seriously, the clause about indemnifying dispossessed landowners would have required elaborate valuation procedures. For reasons that will be evident from the next passage, the subject is in practice of small interest and has therefore not been pursued here.

2. Program Financing

a. Landowner Compensation

The principle of landowner compensation has on the whole not been upheld in Mexico's land reform. Foreign landowners (mainly North Americans) were dispossessed of all their landholdings in Mexico (the Constitution forbids foreigners to own Mexican land) and they were paid, apparently, somewhat less than half of the

estimated value of the land.<sup>18/</sup> Mexican landowners were on the whole treated even less kindly. Even though the land bonds were negotiable and would be accepted in payment of taxes, bureaucratic delays in recognizing landowners' claims were such that most landowners apparently never bothered to file the claims, and only a small minority were ever paid anything, and these at a fraction of the market value of the land that was taken from them. Thus most of the expropriations have been, in reality, outright confiscations.<sup>18/</sup> Edmundo Flores, in commenting upon these data, maintains that the outcome was basically right.<sup>19/</sup> The landowners were not totally dispossessed, they were parting with some portions only of their holdings, keeping for themselves generously sized "small holdings" (see above), and often evading the full measure of the law by "colonization projects" and similar schemes. Since only part of the properties were taken, the measure might be construed as a form of taxation (payment of excess wealth). Economically, there may be some merit in this reasoning, but it is certainly not what the law intended, nor could it be upheld if the land reform were to be made more radical.

In this connection it might also be noted that the law foresaw the possibility that landowners might be compensated, instead of by bonds by shares in the water rights in new publicly-financed irrigation projects.<sup>20/</sup> It is not clear how far this procedure was explicitly applied, but it is clear that large private landowners have benefited greatly from such use of public funds, particularly in the northwest of the country (the States of Sinaloa and Sonora).

In connection with colonization projects such as those in Veracruz in recent time (Papaloapan, etc.), the financial accounts mention prices paid for land that was acquired for the purpose, but these being wilderness lands (tropical forest), the per-hectare values are very small.

b. Peasant repayment

Originally the recipients of ejido land were supposed to pay for the land, but this was soon abrogated and apparently never applied. In cases of "restitución," at least, it may plausibly be argued that the community should not pay for getting back what ought to have been its property in the first place. Now the form of "restitución" is used in a minority of all cases only, mainly because this procedure requires a type of documentation about pastland history which is often not available. Thus "dotación" is used in many cases where the realities of the case might have called for "restitución," had the documents permitted it. On the other hand, many cases of "dotación" have no such basis, especially among the more recent ones which concern villages that may not have existed at the time when old communities were deprived of their property under 19th century procedures.

In any event, and since the purpose is to provide the rural poor with a minimum basis of income, no payment for the land is made on the part of the peasants.

c. Government expenditures

The visible costs of land reform in Mexico have on the whole been modest. In the early periods, the Mexican state simply did not have the financial means for an elaborate program of investment in agriculture, and even later the emphasis has remained on giving the village communities land, while other improvements have been relatively slow in coming.

Table 4 shows some Federal budget data from recent years.

When reading these figures it should be kept in mind that these are the years when transfers of private land to ejidos gained some new momentum, and these are also the years when colonization (in the sense of founding new villages) gained much more importance than before. The latter activity requires many more outlays in the nature of investment than does the simple transfer of ownership. Even so,

the budget of the Departamento de Asuntos Agrarios y Colonización was the equivalent of only about one-third of that of the Agriculture Department, and both taken together occupied a quite modest share of all Federal outlays, even when the debt service is kept apart.

Table 4. Federal budget data, total and selected items, 1961-66.  
Data in million pesos.

Year	Total	Department of agriculture	Departamento Agrario	Public debt service
1961	20,362	233	78	7,365
1962	20,398	251	84	5,497
1963	20,295	267	94	3,472
1964	28,976	306	110	6,898
1965	64,283	291	120	9,871
1966	66,619	332	126	6,978

Source: Anuario estadístico compendiado, 1966, p. 286.

#### F. Supplementary Measures

Most of the sub-headings under this item have no independent data for land reform holdings in Mexico. The exception is credit, for which a special institution was created in 1926: the Banco de credito ejidal. As counterparts, there are local credit unions on ejidos, the "Sociedades locales de credito ejidal."

On the whole, this system has had a relatively weak development. Still in the early sixties, the Banco Ejidal reached merely about one-fourth of the ejidos, and not all of the members in these.<sup>21/</sup> Table 5 shows selected data.

From further specifications it is evident that most of this credit went toward current production expenses, only a minor portion was for investment. Recovery by the bank appears to have been incomplet

Table 5. Local ejido credit societies and their members, (in thousands) in total (A) and those to whom some credit was extended by the Banco Ejidal (B), and total credit so extended in millions of pesos.

Year	Societies		Members		Credit
	A	B	A	B	
1953	7,434	4,757	565	313	420
1954	7,991	5,808	471	348	544
1955	8,114	4,992	574	335	605
1956	8,459	4,642	591	337	834
1957	8,359	4,367	585	273	844
1958	8,599	4,353	610	271	822
1959	9,014	5,009	654	347	1,080
1960	9,069	4,922	668	370	1,249
1961	6,602	..	531	241	968

Source: Albornoz, op. cit. (note 21), p. 289, 290.

How modest these credit amounts are can be seen by comparison with the general volume of credit. Some recent data are shown in Table 6.

Thus ejido credit claimed one-tenth to one-fourth of all agricultural credit through the banking system, and agriculture as a whole for its part only a similar fraction of all bank credit for productive purposes, which in turn was on the magnitude of 60 percent of all bank credit in the country.

Information, supplies, infrastructure and crop procurement and marketing are on the whole the same for reform beneficiaries as for other farmers, except in the case of new settlements, where more extensive government services are given for a period of years. Crop procurement and marketing, through organs such as CONASUPO, have been extensive in the cases of major commercial crops, both as a

marketing device and as a vehicle for price supports, and the benefits from these arrangements have been, if anything, more advantageous for the large private farmers than for the ejido peasantry.

Table 6. Total financing through the banking system in Mexico, data in million pesos.

	Total	Thereof for production	Of which for agriculture
1956	19,659	12,350	3,239
1957	22,464	14,130	3,605
1958	26,583	16,680	4,043
1959	31,269	20,158	5,036
1960	39,780	25,666	5,801
1961	46,056	31,085	6,583
1962	53,320	38,003	7,361
1963	61,252	41,251	8,237
1964	74,435	48,261	9,318
1965	87,374	52,911	10,635
1966	104,631	60,120	12,547

Source: Anuario estadístico compendiado, 1966, p. 297.

#### G. Mobilization of the Peasantry

The Mexican revolution got much of its impetus from the land problem, and parts of the peasantry were very much mobilized in the armed struggle, as well as in the political struggle that followed. Economic ideas of the epoch were not widespread among Mexican peasants, but among their leadership there were those who had heard of Marxism, or of Krapotkin, and other contemporary thought in the land question. For the level of literacy, Mexican peasantry must have had a relatively high level of political consciousness. Peasant organizations flourished

under various names, among these the Confederación Nacional Agraria, which mustered some 300,000 members in the mid 1920's, and later the Confederación Nacional Campesina. Here is not the place to recount the ins and outs of these organizations, which have recently been described in a rather detailed history of the movement.<sup>22/</sup> Politically, the peasant movement eventually got overtaken by interests more centrally placed, in the leading political party, as will be mentioned in the following section. But the degree of mobilization of peasant opinion and aspirations that took place was essential to the relative success of land reform because, as has been described above, initiative for land transfers normally rests with the local community to be benefited. To some extent these initiatives took the form of "invasion" of estates, which sometimes were confirmed and sometimes not. Whether these acts on the whole furthered land reform or not is hard to tell, but apparently they were not disruptive enough to bring some discredit to it.

#### H. The Politics of Implementation

The long drawn-out history of land reform implementation in Mexico already suggests a variety of political influences. In rough features, these are reflected in Table 3 above, which also shows the names of the Presidents under whom the various land transfers took place. Again, the minor details must be omitted here.

After an initial impetus to reform work in the mid-twenties (which could occur only after land reform legislation had reached some maturity), there was a serious setback in the years around 1930. To some extent this may have been due to the impact of the world crisis, but more importantly for Mexico, the first wave of reform activity had produced no obvious results in the form of increased agricultural production, and the general uncertainty probably had contributed further to hold back any willingness to invest in agriculture. Thus there was some sense of disillusionment, and it was easier for the forces hostile to land reform to use their

influence.<sup>23/</sup> In this, as in the following slowdown period around 1950, it was of some consequence that many State governors were closely enough allied with local vested interests of landowners to try to stop land reform actions as they came to their office; hence the subsequent refinements on the procedure which allows the petitioning communities to choose one of two or three routes for their action.

The slowdown around 1930 was met by intensified agitation through the peasant organizations, and these contributed to the election of President Cárdenas, with his renewed commitment to land reform, as is evident from the numbers in Table 3.

The bulk of reform having been achieved by 1940, there were again second thoughts among the leading circles of the all-powerful Party of the Revolution, and some kind of informal decision was reached to go slow on continued reform and give a second chance - not to the old-style "feudal" latifundia, but to a more modern concept of "capitalist" farming. The results are reflected partly in the data on credit shown above and partly in those on expansion of farm production and capital intensity by farm tenure categories shown below.

Whether because of this policy, or whether just concomitant with it, the successes of farm production in the 1940's and 1950's generated a new confidence in the existing farm system, as well as less urgency about domestic food production. The very success of this past policy thus gave renewed scope for land reform agitation around 1960 which to some extent succeeded in speeding up what remains of the land reform program under the existing law, as well as the abolishing of the traditional concept of "colonization" and the drive toward more vigorous founding of new settlements.

At present, the open political problems include the question whether to let the criteria of the present law stand in the way of continued reform, or whether to revise the law so as to expand the scope for further transfers of ownership.

IV. EFFECT OF THE LAND REFORM

A. On Land Tenure Structure

The Mexican land reform, although only partial in scope, has caused a profound change in the land tenure structure of the country. Instead of predominant latifundia, there is now a large communal or ejido sector, with egalitarian distribution of land usufruct rights within each community. The remaining private-farm sector is much less than before dominated by very large units - the small and the medium-sized ones are both absolutely and relatively much more important than previously.

Data from the four censuses of agriculture, for the country as a whole, are shown in Table 7. Land transfers after 1960 are shown in Appendix 2 C.

Table 7. Number of Holdings and Their Total and Cropland Area, According to Censuses of Agriculture (Areas in Million Hectares)

Sector	1930	1940	1950	1960
<u>Number of holdings</u>				
Over 5 hectares	277,473	290,336	360,798	447,334
5 hectares and under	576,588	928,593	1,004,635	899,108
Ejidos	4,189	14,680	17,579	18,699
<u>Total holding area</u>				
Over 5 hectares	122.4	98.7	105.3	123.3
5 hectares and under	0.9	1.2	1.4	1.3
Ejidos	8.3	28.9	38.9	44.5
Total	131.6	128.7	145.5	169.1
<u>Cropland area</u>				
Over 5 hectares	11.9	6.8	9.9	12.2
5 hectares and under	0.8	1.1	1.3	1.3
Ejidos	1.9	7.0	8.8	10.3
Total	14.6	14.9	19.9	23.8

Private farms over 5 hectares have increased more rapidly in number than in area, thus their average size fell. To some undetermined extent, this is due

to nominal subdivision of larger farms as a means of forestalling land reform action. It is also known, although not to what extent, that ejido lands are (illegally) leased to private operators. Most ejido lands are cultivated as small private farms; only a small fraction of all ejidos are run collectively by their membership.

Ejidos were created above all where the population was dense. This left the private farms with the lion's share of the nation's virgin land resources. The 1940 census includes data on areas that could easily be converted to cropland - 5.6 million hectares on private farms and 2.4 million on ejidos. The 1960 census indicates that the private farms still have the largest room for expansion. They have also had most of the expansion of irrigation: their share rose (1940-60) from 3/4 million to 2 million hectares, that of the ejidos from 1 million to 1.4 million.

Individual holdings of ejido members are small farms, but they are not all parvifundia. On the average, there are about 27 hectares of land per ejido member, of which close to 7 hectares are cropland. Fifteen percent of the members belong to ejidos where there are more than 10 hectares of cropland per member. Many ejido members cultivate land that they own as private property or lease from private landowners. Some ejido members employ hired labor. The scatter of holdings around the mean appears to be far less wide among the holdings of ejido members than among private farms - in other words, there is more distributive equity within the ejido sector than within the private sector, as would be expected from the purpose and nature of land reform.

The impact of land reform has been substantial in all parts of the country, but it is far from being the same everywhere. Table 8 shows 1960 census data by States, grouped into census regions.

Table 8. Census 1960 Cropland (000 hectares), total and in ejidos and in private holdings with less than 25 hectares of cropland, by states.

1	2	3	4	5	6
Regions	Total cropland	Thereof in <u>ejidos</u> and holdings under 5 ha	Col. 3 as % of total	<u>Ejido</u> plus private holdings under 25 hectares of cropland	Col. 5 as percent of total
Total Mexico	23,817	11,598	48.7	14,036	58.9
Northern region:					
Coahuila	707	355	50.2	406	57.4
Chihuahua	1,148	438	38.2	577	50.3
Durango	974	382	39.2	496	50.9
Nuevo León	556	188	33.8	305	54.9
San Luis Potosi	786	482	61.2	547	69.6
Tamaulipas	804	262	32.6	403	50.1
Zacatecas	958	484	50.5	694	72.4
Gulf region:					
Campeche	474	185	39.0	188	39.7
Quintana Roo	322	56	17.4	65	20.2
Tabasco	447	195	43.6	285	63.8
Veracruz	1,973	1,011	51.2	1,247	63.2
Yucatán	1,040	522	50.2	558	53.7
North Pacific region:					
Baja California Norte	380	146	38.4	196	51.6
Baja California Sur	60	37	61.7	40	66.7
Nayarit	438	293	66.9	305	69.6
Sinaloa	836	441	52.8	497	59.4
Sonora	775	236	30.5	384	36.6
South Pacific region:					
Colima	169	80	47.3	87	51.5
Chiapas	1,176	730	62.1	841	71.5
Guerrero	1,502	574	38.2	637	42.4
Oaxaca	1,744	568	32.6	664	38.1
Central region:					
Aguascalientes	144	106	73.6	119	82.6
Distrito Federal	39	29	74.4	32	82.1
Guanajuato	1,092	568	52.0	724	66.3
Hidalgo	544	377	69.3	439	80.7
Jalisco	1,322	606	45.8	839	63.5
México	612	457	74.7	517	84.5
Michoacán	1,180	716	60.7	829	70.3
Morelos	143	121	84.6	131	91.6
Puebla	984	653	66.4	743	75.5
Querétaro	258	164	63.6	192	74.4
Tlaxcala	229	167	72.9	181	79.0

It is clear that the reform has reached farthest on the central plateau, which includes much of the old Indian village areas. It is the least comprehensive in the northern areas which have received much of their agricultural settlement in recent time. The data in Appendix 2C show that certain states have been the scene of particularly large reform activity - among these the large tropical state of Veracruz and the small territory of Quintana Roo. All told, the Gulf region now also ranks high in land reform accomplishment. The new data cannot be directly shown as percentages of the total, since they include some new cropland (thus especially in Veracruz, where some of the new settlement projects are located). There have also been substantial land transfers in several other states, but naturally least in the central plateau. It is characteristic that the remaining private farms are on the whole the largest where they still occupy the majority of the cropland, as in Guerrero, Oaxaca, and Sonora, and smallest where they are in the minority (thus especially on the central plateau). This connection between "reform percentage" and the size of remaining private farms is of the utmost importance for the political and sociological consequences of the transfers.

The dominant tenure forms are ejido (collective tenure) and private owner-operated land. Tenancy (leasehold and sharecropping) occurs to some extent but is not a major feature in the land system. The illegal leasing of ejido lands, to the extent it is to private farm operators and not just to other ejido members (which is merely a breach of the egalitarian principle) constitutes an irregularity which is on the whole most serious in states where large private farms are important, specially in the State of Sonora. In states where the small-farm system is predominant (as on the plateau) the scope for such "penetration" of "capitalist" farming into the ejido sector is much smaller.

Few ejidos function as some kind of collective farms (about 2%). The great majority of ejido members thus are individual small-scale producers, enjoying de facto tenure to their individual pieces of ejido land. Many ejido members are engaged in other forms of cooperation; the credit unions were mentioned above. Coverage of such institutions is on the whole quite incomplete as yet.

B. On Production and Productivity

As related above, it has been erroneously believed that the late part of the Diaz period had achieved rather spectacular gains in farm output, and that these were lost during the revolution and the early phase of the land reform. This however has proven to be a myth. So is the reduction of output in the early reform period. When prerevolution data are screened for their grossest errors, it is found that aggregate crop output in 1925-29 is about one-tenth larger than in 1903-07;<sup>24/</sup> and so was population. Per capita domestic supply of farm products in the 1920's was thus on essentially the same level as before the revolution.

The Civil War is likely to have caused temporary disruptions and some reduction in output, among other things because of losses of human lives - about one million. There is no evidence to show that the early land reform measures had any negative effect on production.

At the state level, there were increases in some parts of the country and decreases in others;<sup>24/</sup> in part at least, this is connected with similar differential changes in population numbers.

Production changes since 1930

Agricultural production in Mexico has risen rapidly in recent decades. Table 9 shows data from F.A.O. index numbers.<sup>25/</sup>

Table 9. FAO Indices of Agricultural Production, 1934/38 to 1964/66, Countries in Latin America for Which Long-Term Series Are Available

Country	Average 1952/56 (index base 1934/38 = 100)	Average 1964/66 (index base 1952/56 = 100)	Average 1964/66 (index base 1934/38 = 100)a/
Argentina	111	116	129
Brazil	138	155	214
Chile	133	124	165
Colombia	179	136	243
Cuba	147	105	154
Mexico	190	176	334
Peru	151	135	204
Uruguay	138	104	144

a/ Linked index.

The index numbers give Mexico a special place in Latin America and indeed in the world. The more than trebling of gross production (or net output) in three decades represents an exceptionally high rate of long-term growth.

For the census years 1950 and 1960, the F.A.O. indices are 148 and 281, respectively. When indices of gross output are computed from census data (see below), 1950 gets an index (1940 = 100) of 165 and 1960 an index of 256.

What happened to production in the 1930's - the period when land reform activity was at its height - is not entirely clear. From annual crop data, it appears that crop output 1935-39 was about the same as 1925-29, thus there would have been some decline in per capita output. But too much depends on the choice of years to compare. 1938-42 appears to have risen over 1928-32 by a higher percentage than population growth 1930-40, and the same holds when aggregate crop output in the censuses of 1930 and 1940 is compared.

Some apparent decline in crop output around 1930 is blamed by Venezian and Gamble on the world crisis.<sup>26/</sup> Detailed data show that most of this reported decline was in corn, mainly a subsistence crop at the time, thus more vulnerable to reporting errors than to influences from the world market. That fall in corn

production is contradicted by the censuses of 1930 and 1940, both of which report much higher corn totals than corresponding annual data. Censuses of agriculture are known often to understate crop output and seldom to overstate it. The annual returns of the 1930's are therefore likely to be somewhat on the low side. This observation may cause a slight reduction in the apparent rate of progress as shown by the older F.A.O. index series; but at the same time it takes away the notion that land reform activity was to have held back progress in Mexican agriculture.

Census data by categories of farms

The Mexican censuses of agriculture report crop and animal production separately for ejidos and for private farms over and under 5 hectares of total area. From the censuses of 1940, 1950 and 1960, price weighted aggregates were computed <sup>27/</sup> as basis for index numbers shown in Table 10.

Table 10. Indices of Gross Output of Crops and Animal Products, 1960 Over 1950 and 1940, and 1950 Over 1940, by Main Categories of Farms

Category of farms	1	2	3
	Crop production	Animal products <sup>a/</sup>	Total of 1 + 2
	<u>1960 over 1940</u>		
Over 5 hectares	323	531	364
5 hectares and under <sup>b/</sup>	168	135	142
Ejidos	223	176	210
Total	262	237	256
	<u>1960 over 1950</u>		
Over 5 hectares	166	253	184
5 hectares and under <sup>b/</sup>	112	87	93
Ejidos	170	105	154
Total	163	137	155
	<u>1950 over 1940</u>		
Over 5 hectares	195	210	198
5 hectares and under <sup>b/</sup>	150	155	152
Ejidos	131	168	136
Total	161	173	165

a/ Animal products do not include sales of live animals or village slaughter, for which comparable data by farm categories are lacking; they do include milk and milk products, wool, eggs, honey, and wax.

b/ Including backyard production ("en las poblaciones") of animal products that in the 1940 census cannot be separated from production on farms of 5 hectares and under.

Over the 20 years, gross output appears to have increased  $2\frac{1}{2}$  times. The output of ejidos doubled, that of private farms over 5 hectares increased more than  $3\frac{1}{2}$  times. The differences are largest in animal production and somewhat smaller in crop production. Between 1940 and 1950, private farms above 5 hectares would seem to have nearly doubled their output, while ejidos registered only a modest increase. In animal production, the differences in rate of increase was much smaller. For the period 1950-60, the advance in crop output appears about the same for both categories, while the private farms above 5 hectares had almost all the increase in animal production. Most of the resources for animal production belong to the larger private farms, hence crop output is most indicative of relative resource productivities.

The differences between farm categories are still further reduced when crop output is shown as composite yield of all cropland and still more when some principal categories of cropland are distinguished (Table 11).<sup>28/</sup>

Table 11.--Value of Gross Crop Output, at 1960 (Census) Prices, of Selected Classes of Crops, by Main Categories of Farms. Data in Pesos per Hectare

Categories of farms	1	2	3	4	5
	Crops on arable land	Fruit crops	Agaves for alcoholic beverages	Agaves for fibers	Total 1 + 2 + 3 + 4
		<u>1960</u>			
Over 5 hectares	490	2,920	4,332	1,286	609
5 hectares and under	507	2,818	a/	a/	635
Ejidos	483	2,736	3,080	1,279	558
Total	488	2,851	3,974	1,281	588
		<u>1950</u>			
Over 5 hectares	379	2,527	3,726	1,370	467
Ejidos	348	2,037	677	883	388
		<u>1940</u>			
Over 5 hectares	243	2,815	762	2,475	340
Ejidos	318	2,250	1,431	1,402	366

a/ Small numbers.

The differences between farm categories are smaller in each of the special columns (1-4) than in the total (Col. 5). Thus some of the disadvantage of ejidos comes from their having inherited some of the more low-productive land areas. When private farms were reduced in size through expropriation for land reform, they could choose which lands to retain; naturally, they retained the best. Further scrutiny of crop yields per hectare underscore this type of conclusion. There are some crops where the highest yields are found on ejidos, and some where they are on private farms under 5 hectares, just as there are some where private farms over 5 hectares have the apparent advantage.

The facts in no way lend support to the long-standing contention of the critics of Mexican land reform: that ejidos were to have lower yields than private farms. Typical is the contradiction of Venezian and Gamble who state that "private farms are more productive than ejidos" (p. 82), just after saying that on "differences in the quality of cropland controlled by each of these groups...no data...are available" (p. 80). If no data were available, then no statement could be made on relative productivities, which of course must relate to comparable resources to have any meaning. But we are not entirely without data on this. As mentioned above, the private farms over 5 hectares have received the bulk of new irrigations as also of new cropland generally. That ejidos are pressing harder upon the margins of cultivation as hinted vaguely by Venezian and Gamble (p. 80), hence use resources of lower average quality, is strongly indicated by their higher incidence of crop losses through frost, drought and flooding, as well as by their lower rate of fallowing.<sup>29/</sup>

As the data stand, they give no clear indication of any significant difference in crop yields between the ejidos and the private farms over 5 hectares in 1960. Private farms under 5 hectares had higher yields of several crops, indicating more intensive tillage.

In 1940, the ejidos had higher yields than the private farms; in 1950 the reverse held. Both categories improved their yields in both periods, the private farms the most 1940-50 and the ejidos most 1950-60. The yield levels according to the 1940 census can be logically explained. The private sector was obviously depressed in 1940. Ongoing land reform in the thirties, and consequent uncertainty of many landowners about how much land they could count on to retain must have acted as a deterrent against expanding production or even maintaining it at normal levels - or at least against reporting the result. With the reduction in land reform activity in the 1940's, the private farms could rapidly recapture some slack capacity. Their expansion in cropland acreage since 1940 is evident and depends on their larger scope for such expansion; but their advantage in yield improvement rate belongs to this early period of "picking up slack." The ejidos, by contrast, were (most of them) in a position to produce "to capacity," by the standards of the period, already in 1940.

It is a common mistake to regard crop yields per area unit of unweighted land as indicators of resource productivity. Pressing on the margins of cultivation, as the ejidos do, will lead to lower average area-unit yield but to higher aggregate yield from comparable resources. The point can be further illustrated on the basis of state level data.

#### Crop output indices by states

To trace the possible incidence of land reform upon crop output and its growth, indices at the state level were computed for 1927-64, using the annual returns as source of data<sup>30/</sup> for the 29 states and 3 territories. The censuses of 1940, 1950, and 1960 were also used for comparison. For the annual data, average prices for 1925-29, 1938-42, and 1958-62 were used alternatively to gauge

the scope of the "index number problem"; for census data, similarly, country-average prices from the censuses. The differences between the indices computed with these alternative price weights were small and can be disregarded for our purpose.

The indices were first brought in relation to the percentage of a state's cropland that was in ejidos and private holdings under 5 hectares (the reform sectors) in 1960. The result clearly reflects the amount of expansion (of cropland and of irrigation systems) that had taken place. The highest indices were on the whole found in states where there had been much expansion of cropland and irrigation since 1940. As mentioned above, most of the land clearance took place in the less densely settled areas which are the same where ejidos do not dominate. The data therefore give the impression that to some (not very high) degree there was more progress in areas where private farms over 5 hectares dominated over the land reform sectors. This finding is not an indication of relative productivities, only of previous density of occupation.

The next step is to compare the yield level in 1960 in total and by tenure sectors with the share of the reform sectors in total cropland. Listing the states in descending order by this criterion, two conclusions stand out. One is the neutral one, that cases with average yield higher or lower than the country-wide average occur side by side along the entire scale. Statewide yield level is thus not correlated with the tenure situation, but is likely to reflect the prevalence of high- and low-value crop enterprises in one region and the other. The other conclusion is a seeming paradox: the reform sectors have the higher yield level mainly where they hold a lesser share of all the cropland; conversely, the private farms over 5 hectares have the higher yield level more often where they hold the lesser share of the cropland. The explanation can once more be given in terms of margin theory: the "majority sector" in each case is also the most likely to have the bulk of the state's low-grade land. Wherever the ejidos have

most of the land, the remaining private farms over 5 hectares have usually managed to retain their most valuable land, thus they now use resources which, while smaller, are of higher average quality. As can easily be demonstrated, the private farms also tend to be smaller when they are the "minority sector," and thus intensity of land use is negatively correlated with size of farm. Conversely, where the large farms have retained the bulk of the land, they also still have much of the low-grade land and get lower yields than the ejidos (the states of Guerrero and Oaxaca are cases in point). The occurrence of high-value specialty crops, sometimes heavily concentrated in one tenure sector, also distorts the picture here and there.

Somewhat better indications might be expected from analysis of area-unit yield and its changes over time. Studying this over the period 1940-60, changes in yields are placed in relation not to the share of the reform sectors at either end of the period (which again merely would reflect the rate of land clearance) but to the change which the share of the reform sectors underwent in the meantime. This shift in relative shares should indicate how far land reform activity was still a factor in the 1940's and 1950's. For the country as a whole, cropland in private holdings over 5 hectares rose (1940-60) by 64 percent, that of the reform sectors by 27 percent, thus there is a "differential index" of 129 to indicate the pace at which the private farms over 5 hectares increased their cropland base faster than did the reform sectors.

Two groups of states were singled out for close scrutiny: those where the differential index was over 150 and those where it was under 100. The former category includes seven states (Chihuahua, Durango, Morelos, Oaxaca, Sonora, Tabasco and Yucatán), in which apparently land clearance on the larger farms by far outweighed any impact of continued land reform. The latter group includes nine states (Aguascalientes, Colima, Chiapas, Hidalgo, Jalisco, México, Michoacán, Tlaxcala and Veracruz) in which there either was continued land reform activity

sufficient to outweigh land clearance on the larger farms, or else the ejidos may have inherited cultivable virgin land to a larger extent than usual. In three states (Aguascalientes, Hidalgo and Michoacán) private farms over 5 hectares actually suffered some decline in cropland. Aggregate crop yields (per hectare of all cropland in the state) were used both from the annual returns of 1938-42 and 1958-62 and from the censuses of 1940 and 1960.

Comparing these two groups of states as groups, it appears that the reform sector group had kept up with the national crop yield trend somewhat better than the group in which the private farms over 5 hectares expanded vigorously. The difference is not large enough to base any positive conclusion on, and the margin argument could here work the other way around: very large expansion of cropland might mean adding mainly land of below-average fertility (the state of Oaxaca could be a case in point). In any event, the data lend no support to any conclusion about inferior productivity trends in states affected by land reform measures 1940-60.

The same conclusion comes out of comparing data on continued land reform in the 1960's with available production figures. For instance, in 1960-61 through 1963-64, implementation of presidential land reform decrees transferred 5.4 million hectares, of which over 1.2 million hectares was cropland, or about 5 percent of the cropland of the country. States where the cropland transferred in those four years was a considerably larger share of the state's cropland base than in the country as a whole include Campeche, Chiapas, Chihuahua, Tabasco, Veracruz and Yucatán. Production data for 1963 and 1964 reflect progress in these states to at least the same extent as in Mexico as a whole.

Some explanatory factors

The rapid development of Mexican agriculture since the close of the main phase of the land reform, and the apparent differences in performance of its main categories of farms, have usually been explained by reference to factors believed to be particularly significant on large private farms: improved seed (especially of corn and wheat), chemical fertilizers, machines and mechanical power, in addition to the obvious ones of expanded cropland and expanded irrigation. We can scrutinize these factors one by one.

Hybrid corn? The Rockefeller Foundation has sponsored and financed research on corn varieties to produce improved strains adapted to Mexican conditions. The results may have made some impact in the form of rapidly rising corn yields in the years since 1960. Until 1960 the impact was small, however. In the 1960 census, improved corn varieties accounted for 8 percent of the corn production of the country, which was less than 1<sup>1</sup>/<sub>2</sub> percent of all the crop and livestock output. Hybrid seed as such can be credited only with the increment of yield over and above the level of common or indigenous corn. The yield proportion was about 1:1.75 in 1960, and hence 3/7 part of the hybrid corn output was incremental, or about 2/3 percent of the national agricultural output. Nearly half of this amount was grown on the ejidos.

Improved wheat strains? Wheat production in 1960 accounted for close to 4 1/2 percent of all agricultural output; of this proportion, 30 percent was produced on the ejidos. The 1940 census reported a wheat crop close to 35 percent of that of 1960. The importance of irrigation in the level of wheat yields was mentioned above; the importance of expanded hectarage should also not be forgotten. Incremental yield due to improved varieties probably accounts for less than 1 percent of the national agricultural output.

Chemical fertilizers? Mexico has in recent years achieved a relatively high application rate for nitrogen fertilizers and much lower ones for phosphate and potash. About 1/10 of the cropland received chemical fertilizers. A table of expenditures in the 1960 census (Table 20, pp. 128 sqq.) shows that private farms over 5 hectares spent three times as much on fertilizers as did the ejidos, and more than twice as much on pesticides and herbicides. And yet there is no appreciable difference in the level of crop yields!

Machines and power traction? The use of many kinds of machines has been expanding rapidly in recent years, but as yet not even the large farms are anywhere near to being highly mechanized. In 1960 Mexico had 55 thousand tractors, nearly a million draft horses, over 800 thousand mules, and 1 2/3 million draft cattle. Private farms above 5 hectares had over 43 thousand tractors and still over a million draft animals.<sup>a/</sup> The proportion of the value of machinery capital to livestock inventory is about 1:4 in Mexico as a whole and is 1:3 on private farms over 5 hectares. In the United States, with a relatively more prominent animal industry, the proportion is close to 1:1. Power traction and other mechanical means of cultivation have probably been significant in clearing certain areas for cultivation and in keeping them in profitable production; but by no stretch of the imagination can they be considered a major factor in the agricultural development of Mexico up to 1960.

<sup>a/</sup> This number represents a rise from the 1950 census. More precisely, the numbers of draft cattle have decreased somewhat both on farms over 5 hectares and on the ejidos, but in both sectors the increase in horses and mules offset this decrease. The data in the 1940 census are not fully comparable with those of the 1950 census, but by inference we can conclude that all kinds of draft animals increased between 1940 and 1950 both on the ejidos and on private farms over 5 hectares; for draft cattle, comparable figures are at hand to prove that they increased from 1940 to 1950.

All of this only further underscores the fact that until 1960 the basic factors of agricultural development in Mexico were land clearance, new irrigation systems, and intensification of farming. Intensification has been the main key to the capacity of the ejido sector to keep up with the general development. Excess manpower was put to work there to till the land more intensively and to apply higher value crops to larger parts of the total cropland.

C. On rural employment and underemployment

Throughout the period since the land reform, farm population and labor force in Mexico have continued to increase. Table 12 shows some data from the censuses of population.

Table 12. Male Workers, 12 Years of Age and Over  
(Data in Thousands, 000's Omitted)

Year	Agriculture	Other occupations	Total	Agriculture as percent of total
1930	3,580	1,401	4,981	72
1940	3,763	1,663	5,426	69
1950	..	..	7,208	..
1960	5,481	3,816	9,297	59

Although the agricultural labor force has increased, the non-agricultural numbers have risen much faster, and the percentage employed in agriculture has therefore fallen consistently. The decline in percentage share has been rather normal for a country at the level and pace of development and the high rate of population increase that has characterized Mexico during the past few decades. If the same trends continue, around 1970 or 1975<sup>31/</sup> agriculture will reach the position where it employs no more than half of the total labor force. At about that time, the agricultural labor force should also cease to increase in absolute numbers. A decline in absolute numbers can be expected only at some later date.<sup>32/</sup>

The increment in farm population and labor force have come mainly to the private sector. The number of ejido members has remained rather stable, close to 1.6 million in all three censuses. The ejido population (total of both sexes and all ages) rose from five million in 1940 to 6.7 million in 1950 and to 7.5 million in 1960. Male workers (all ages) on ejidos totaled 2.6 million in 1950, probably not far from the same as in 1940, and rose to 3.2 million in 1960. These numbers are, however, not identical with the labor input in ejido agriculture: many members of ejidos and their families work outside the family holding, either in agriculture or elsewhere. Some ejido members also hire labor.

The private farms over 5 hectares increased their labor force most rapidly in the first decade. Male workers (all ages) on these farms numbered 1,051 thousand in 1940, 1.6 million in 1950, and almost 2 million in 1960. Of these figures, hired workers, sharecroppers, etc., represented 742 thousand in 1940 and 1.1 million in 1950 and 1960. The number of male family workers rose from 309 thousand in 1940 to 511 thousand in 1950 and 834 thousand in 1960. Family workers have thus represented a rising share of the total labor force on these farms, especially since 1950. Along with the decreasing size of private farms, these data confirm the story that these farms are gradually becoming family farms to a relatively higher degree than before and that a considerable part of their development belongs to the lower size strata.

The figures for male workers are not directly comparable with those of the population censuses. For one thing, the age strata are different. More important, however, these worker categories overlap, inasmuch as many ejido workers work outside the farm, often in agricultural work, and most of this outside agricultural employment must be on farms over 5 hectares. There is also no point in comparing the number of ejido workers with the workers on farms under 5 hectares, because

the very large number of workers attached to private farms of 5 hectares and under are in part included among hired workers both on private farms and on ejidos.

Such intricacies cannot, however, blur the striking fact that agricultural expansion on the ejidos took place under only a moderate rise in farm population and employment in the sector, while on the private farms over 5 hectares the labor force increased more rapidly.

The ejidos doubled their farm output from 1940 to 1960, while their labor force rose much less and their use of capital and other externally generated factors of production remained at a low level. It cannot be denied that this higher output with little change in labor and capital must have meant some modest increase in the level of net income of the ejido population. The private farms over 5 hectares, on the other hand, nearly doubled their use of labor while their output rose by 3 2/3 times and their use of capital and other purchased inputs were much higher than those on the ejidos. It is therefore difficult to say whether the rate of net product per worker on the private farms over 5 hectares rose more or less than that on the ejidos. Since, to begin with, the rate was higher than that of the ejidos (because ejidos were established principally in congested areas), the difference in rate between them and the private farms may have diminished somewhat.

#### D. On Income Distribution

Detailed information is lacking, except in some special reports on colonization projects in recent time. It is obvious however that the "floor" placed under villagers' incomes by their allotment of ejido land has made the income distribution somewhat less unequal than it otherwise would have been. Distributive equity remains low, however, in those states and areas where private farms remain large.

E. On Services and Supplies

On this item, no distinction can be made between reform farms and other farms.

F. On Peasant Participation in Decisions

The reform has undoubtedly made the peasants' voice heard in public affairs much more than would have been the case without it. Democratization is as yet incomplete, especially in the areas where the private-farm sector is still in the majority. At the national level, compromises have had to be struck between peasant desires and the possibilities of national development.

G. On Character of Rural Society

Obviously, the character of Mexican rural society is now quite different from what it would have been without the land reform. Large areas are now peasant society with very little influence from large landowners. Other areas, again, are dominated by large private landowners and other moneyed interests which often succeed in frustrating the intended socio-economic effects of the land reform.

H. Broader Effects on the Economy, Society and Polity

National account data for Mexico indicate that in 1950-60 gross domestic product (at constant prices - the market prices of 1960) rose by about 6 percent per year. In the same years, the contribution of agriculture rose by about 5 percent per year. The same growth rates continued at least 1960-65. Thus growth in agricultural production ran ahead of the growth of population (about 3 percent), and even more ahead of the growth in agriculture's labor force (about 2 percent per year, or rather less in recent years).

As is normal in low-income countries, there is a wide income disparity between the agricultural sector and the rest of the economy. In the case of Mexico, this comes more from the very rapid expansion of the urban sectors rather than from any failures of agriculture. The question may be asked, how well have the main tenure sectors served the national economy and its development.

Let us first dispose of the argument about the market contribution of large and small farms. It is often said that large farms sell a larger part of their output on the market and hence are more useful to the national economy than are the small-scale producers. Such reasoning overlooks the fact that the small-scale producers themselves are also part of the national economy. In any event, the argument lacks validity in Mexico as of 1960 when ejidos are compared with farms over 5 hectares. Data are shown in Table 13.

The percentage of gross output marketed from ejidos is surprisingly close to that of the private farms over 5 hectares. The high incidence of commercial crops in ejido production is part of the explanation; the likelihood of a somewhat lower level of living on ejidos may be another part of it. From the viewpoint of the national economy, it is of interest to compare the absolute size of these marketed quantities with the volume of external inputs used by tenure sectors.

Most farm capital consists of land and livestock, neither of which has drawn many resources from other sectors of the national economy. Buildings may have drawn on such resources, but to an extent which is very difficult to ascertain. What is certain to have been supplied by other sectors of the economy are the stocks of machinery and implements as well as the use of fertilizers, pesticides, machine repair and hire, and motor fuel. Census data on these costs are compared with the marketed quantities of agricultural products in Table 14.

Since the land and the labor are free goods, from the viewpoint of the Mexican economy, it is evident that the small-scale, labor intensive production of the reform sectors is less costly than large-scale production, in terms of the goods that are scarce in the Mexican economy. The large farms are using more of the hardware that might have been invested toward even more rapid industrialization of the country. The same is doubtless true of the establishing of new irrigation

systems, since the private farms over 5 hectares received by far the largest part of new irrigated land, and therefore also have higher irrigation costs in proportion to their market sales than the ejido sector.

Table 13. Production and Marketing of Farm Products, by Tenure Sector. According to the 1960 Census of Agriculture. Data in Millions of Pesos.

	Farms over 5 hectares	Farm under 5 hectares and backyards	Ejidos	Total
Crop and animal production	10,832	2,528	7,038	20,398
Portion sold	6,725	551	4,543	11,818
Marketings as percent of total	62.1	21.8	64.5	57.9
Add:				
Sales of live animals	1,997	52	235	2,284
Slaughter on farms	61	30	57	148
Grand total: gross output	12,890	2,610	7,330	22,830
Portion sold	8,722	602	4,778	14,102
Sales as per- cent of total	67.7	23.1	65.2	61.8

This is not to say that all of the expansion in production could have been achieved without at least some of these external costs - particularly those in irrigation works. Those in machinery and equipment remain somewhat more problematic in a labor intensive situation. There is no doubt that the owners or holders of large private farms make a good income by using more machines and somewhat less labor, but they render a less useful service to the struggling and developing economy of a low-income, capital-scarce country.

Table 14. Sales of Agricultural Products, and Expenditures on Selected External Farm Inputs, According to the 1960 Census of Agriculture. Data in Million Pesos.

	Farms over 5 hectares	Farms of 5 hectares and under	Ejidos
Total sales (grand total)	8,722	602	4,778
Sales less live animals	6,725	551	4,543
Machine capital	2,951	93	1,344
Annual expenditures for external inputs	635	..	251
Machine capital per 1,000 pesos of total sales	338	154	281
Machine capital per 1,000 pesos of sales less live animals	439	169	296
Annual expenditures per d:o (ditto)	85	..	55

In summary it is clear that the sociopolitical gains of the land reform have in no way been at the expense of economic progress. Land reform steered more of the nation's resources into labor intensive growth in agriculture, which is precisely what the country needed at the time and still needs for some time to come. <sup>33/</sup>

#### V. CRITIQUE AND EVALUATION

Mexico's land reform has often been attacked on economic grounds and defended on sociopolitical ones. In trying to evaluate its results to date, this writer concludes that the judgment should be reversed. As an agent in Mexico's economic development, land reform has had an impressive measure of success. As a means of making society and polity more democratic, its success to date is half way at best, and in many areas problematic.

Analysis of productivity by tenure sectors shows that small-scale farming in Mexico produces cheaper - in social account - than large-scale farming. The reasons are not very complex in themselves, but they are often overlooked, as are the differences between private and social account on the whole. Capital intensive farming on large-scale private farms undoubtedly produces a higher rate of return in private account, but it serves the capital-scarce economy less well than does labor-intensive peasant farming.

This is not to say that the increases in agricultural production that were achieved in the last three decades could all have been achieved solely by labor intensive methods on peasant farms. But the opposite situation would also not have done as well: with latifundia dominating the scene, it would have become apparent that the nation's scarce resources just could not have mechanized them all, and the extensive methods of pre-reform large farms would then also have been a drag on development.

It is thus quite plausible to say that development has been served particularly well by the dual farm size and tenure structure that resulted from the land reform. It is also quite possible that this dualism and the unfinished character of the reform served as an incentive to private large-farm owners to modernize their farming business, so as to create the argument against continued land reform.

The dual structure is the result of necessity, not design. Part-way expropriation was resorted to because only then could landowners be persuaded to accept the reform and even abstain from filing claims for compensation.

This compromise, necessary as it may have been for both economic and political reasons, is also the chief reason why the effects of the reform in the social and political fields is less impressive than in the domain of economic production. Total income distribution in the country is still very uneven,

and this goes for the rural sector too: many of the old landlord families are still there as a strong aristocratic element in Mexican rural society. In many areas, large landowners, directly or through local moneylenders associated with them, still have a firm grip on the affairs of the local community, and public credit may even be held back because the local moneylender maintains his monopoly on a lucrative line of business. Many of these landowners long acted through the offices of the State Governors to restrain land reform activity. This key position of large landowners is checked mainly where the reform sectors have grown to the point of holding the large majority of all the land, as in several of the central states and some others; this situation also means that remaining privately owned farms are generally of modest size and their owners less in a position of acting as community leaders to the detriment or partial exclusion of peasant farmers.

It is also well known from many countries that peasant cooperation thrives best when the cooperators are somewhat equal in wealth. The presence of a landed aristocracy often has a negative influence on the development of farmer cooperation.

Part-way reform being all that Mexico could afford at the time, it was definitely to be preferred to no reform at all. Today the Mexican economy is of course far better equipped to take what alternative route it desires. But it is a long way from affluence, and it is also a long way from the day when the agricultural population may begin to decline in absolute numbers. With the necessity to keep large numbers on the land for at least another thirty years or more, the ability of the ejido to keep its people rather than letting large numbers of rootless proletarians drift into the cities where they are not needed, may still for a long time prove to be one of the really important benefits from Mexico's land reform.

NOTES

- 1/ Estadísticas sociales del Porfiriato 1877-1910, Mexico 1956, p. 40.
- 2/ This section is largely drawn from L. Mendieta y Nuñez, El problema agrario de Mexico, 8 ed., Mexico 1964. See also Martha Chavez Padrón de Velazquez, El derecho agrario en Mexico, México 1964.
- 3/ Estadísticas sociales del Porfiriato, p. 41.
- 4/ Estadísticas económicas del Porfiriato. Fuerza de trabajo y actividad económica por sectores. Mexico (no date; around 1965), p. 42.
- 5/ Eduardo L. Venezian and William K. Gamble, The agricultural development of Mexico. Its structure and growth since 1950. (New York: Praeger, 1969), pp. 52-54. Cf. also the same authors, "Agricultural development and policy in Mexico," in International Studies in Economics, Monograph No. 8, "Latin American agricultural development and policies," ed. by Lehman B. Fletcher and William C. Merrill (Ames, Iowa: Department of Economics, Iowa State University, September 1968), pp. 75-85, and same authors, "El desarrollo de la agricultura mexicana: estructura y crecimiento de 1950 a 1965," Investigación económica Vol. 27, N:os 105-106, Jan-June 1967 (printed 1969), pp. 41-108.
- 6/ Humberto G. Angulo, "Índice de la producción agrícola," Revista de economía (México, D.F.) Vol. 9, No. 1, Jan. 15, 1946, pp. 19-24. Cf. Nacional Financiera, La economía mexicana en cifras, Mexico, D.F., 1965, p. 57, and 1966, p. 61.
- 7/ For the years 1909-19, production data - such as they are - exist for only 5 crops, all the rest had to be estimated free hand. Angulo also makes clear that his indices are value indices computed by Fisher's formula (Volume index times price index); thus the supposition by Venezian and Gamble, op.cit., p. 52, footnote, is incorrect.

- 8/ Anuario estadístico de la República Mexicana... a cargo del Dr Antonio Peñafiel. (México: Secretarín de fomento), the 1907 returns (Vol. 15) published 1912.
- 9/ Estadísticas económicas del Porfiriato. Fuerza de trabajo y actividad económica por sectores (Mexico, D.F.: El Colegio de Mexico, no date - around 1965).
- 10/ Secretaria de relaciones exteriores. Departamento de publicidad. Boletín de información No. 35 (1923), gives data on output of corn, beans, and wheat, 1908-22; data for 1917 are lacking, those for 1913 are erroneously the same as for 1916.
- 11/ Estadísticas económicas del Porfiriato, pp. 147 sqq.
- 12/ Mendieta y Nuñez, L., El problema agrario de Mexico, 8 ed. pp. 177 sqq. Cf. also Chavez Padrón, op. cit., pp. 227 sqq.
- 13/ Código Agrario y leyes complementarias, 12 ed., Mexico, D.F. 1964.
- 14/ Reyes Osorio, S., "Aspectos de la problemática agraria nacional, "Revista Mexico agrario, 5, Jul-Aug. 1968, pp. 71-95.
- 15/ Franco Become, J., Los nuevos centros de población, Chapingo 1965.
- 16/ Departamento de asuntos agrarios memoria 1968, Appendix table.
- 17/ Mendieta y Nuñez, op. cit., pp. 490 sqq.
- 18/ Flores, E., Tratado de economía agrícola, México 1961, pp. 327 sqq.
- 19/ Ibid., pp. 343 sq. See also idem, "On financing land reform: A Mexican casebook," Studies in Comparative International Development, Vol. 3, No. 032, Beverly Hills, Cal., 1967/68.
- 20/ Cf. Mendieta y Nunez, op. cit., p. 497.
- 21/ Albornoz, A. de, Trayectoria y ritmo del crédito agrícola en México, México 1966, p. 143.
- 22/ Detailed account in M. Gonzalez Navarro, La Confederación Nacional Campesina, Mexico 1968.
- 23/ M. R. Gomez, La reforma agraria de México. Su crisis durante el periodo 1928-34. México 1964.

- 24/ Crop output indices for the country and each of its states for 1903-07 and 1925-29 were computed from comparable data for 19 crops using 1950-62 prices; subsequently the exercise was repeated on the basis of the corrected data for 15 crops for the country as published in Estadísticas económicas del Porfiriato, which gave a closely similar result. A similar proportion comes out when national product in agriculture is compared for the same two five-year periods; see Enrique Pérez López, "The national product of Mexico: 1895 to 1964," in Mexico's recent economic growth, The Mexican View (Austin, Texas: University of Texas Press, 1967), pp. 28-29.
- 25/ The F.A.O. index numbers were used because they cover a longer period than most other index series. See also E. Vargas Torres, "El producto y la productividad agrícolas," El Trimestre Económico (Mexico, D.F.) No. 126, Apr.-June 1965, pp. 265 sq., and N. L. Whetten, Rural Mexico, Chicago (Chicago University Press) 1948, p. 255.
- 26/ Venezian and Gamble, op. cit., p. 54. The expression "...the world depression, which hit largely agricultural Mexico's exports hard" seems to confuse the cash value of exports and the physical volume of production, which suffered least in the export crops.
- 27/ On details of the weighting procedure, see D. E. Horton, Land Reform and Agricultural Growth in Mexico, unpublished MS thesis, University of Illinois, Oct. 1967, pp. 70 sqq.
- 28/ Cf. D. E. Horton, op. cit., Table 16. Other indicators of gross output per hectare are given in Vargas Torres, op. cit., p. 257. As his data relate to area harvested and to 1950 prices, they are not comparable with those in Table 4.

- 29/ On rate of cropping and crop losses see IV Censos agricola-ganadero y ejidal, 1960. Resumen general (Mexico, D.F. 1965), Tables 22 and 30.
- 30/ On procedure and price weights, see D. E. Horton, op. cit., pp. 86 sqq. and Appendix 2-4.
- 31/ Other projections are given in R. Benitez Zenteno and G. Cabrera Acevedo, "La población futura de Mexico - total, urbana y rural," El Trimestre Economico No. 130, Apr-June 1966, pp. 163-170.
- 32/ On longer-term projections of sector proportions, see F. Dovring, "El papel de la agricultura dentro de las poblaciones en crecimiento. México, un case de desarrollo económico reciente," in El Trimestre Economico, 35:1, No. 137, Jan-Mar 1968, pp. 25-50.
- 33/ The above result on productivity was published in preliminary form in F. Dovring, "Land Reform and Productivity: The Mexican case," University of Illinois Department of Agricultural Economics, AERR 83, Nov. 1966, reissued by the University of Wisconsin Land Tenure Center as LTC 61, Jan. 1969. Cf. also D. E. Horton, "Land Reform and Economic Development in Latin America, the Mexican Case," Illinois Agricultural Economics Vol. 8:1, Jan. 1968, pp. 9-20. Since then, the finding that smallholdings and ejidos have higher factor productivity than large farms in Mexico has also been set forth independently (in preliminary form) in Solomón Eckstein, El marco macroeconómico del problema agrario mexicano. Comité interamericano de desarrollo agrícola (CIDA) and Centro de investigaciones agrarias, México, their Trabajos de investigación agraria, No. 11, Jan. 1969, mimeo, pp. viii, 119 sq. The approach and analytical technique are different (and more elaborate), but the result is essentially the same as set forth above. Similar results in regard to factor productivity have recently been released in R. Hertford, Sources of change in Mexican agricultural production, 1940-65. Unpublished PhD thesis, University of Chicago, March 1970.

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Appendix 2 A. Summary of land transfers, 1915-52.

RESUMEN GENERAL DE POSESIONES DEFINITIVAS POR ENTIDADES  
1915-1952\*

ENTIDADES	Número de Posesiones	ACCION			Número de Ejidos	Beneficiarios	Superficie entregada	Superficie de labor	Superficie no laborable	Sup. media por beneficiario	
		Restitución	Dotación	Ampliación						Laborable	No laborable
TOTALES	22,223	207	16,943	5,068	17,155	1,807,925	34,518,285-69-60	8,915,094-12-12	25,603,221-57-48	1-9-17	14-16-17
AGUASCALIENTES	117	...	213	129	215	15,079	210,519-72-51	95,541-01-10	145,994-71-41	6-33-69	9-01-66
B. CALIFORNIA NOROCC.	75	...	73	2	75	6,172	378,106-64-00	38,931-04-60	339,175-60-00	6-30-76	54-25-40
B. CALIFORNIA SUR	39	1	33	...	39	3,439	70,698-19-16	5,712-03-00	64,986-16-16	1-07-07	19-00-73
CAMPECHE	104	2	122	77	124	19,491	159,911-14-96	80,873-73-16	371,037-37-00	4-55-97	19-03-44
COAHUILA	811	2	630	179	632	61,168	1,805,587-00-72	312,227-03-26	1,493,360-39-46	5-34-32	22-00-52
COLIMA	132	...	98	31	35	3,759	152,913-36-64	55,759-68-46	97,223-68-18	6-36-59	11-09-99
CHIHUAPAS	698	3	622	83	625	61,834	835,972-19-66	...	...	...	...
CHIHUAHUA	610	24	477	139	593	51,229	3,400,241-63-19	279,123-14-03	3,121,118-52-02	5-34-42	59-75-83
DISTRITO FEDERAL	103	7	69	27	70	18,353	27,360-62-80	15,605-41-10	11,754-81-10	0-85-09	0-64-58
DURANGO	985	13	614	358	627	66,920	2,916,481-26-77	317,960-52-09	2,598,520-74-77	5-19-65	38-30-20
GUANAJUATO	1,200	1	1,070	209	1,074	90,300	923,559-97-81	505,487-56-27	418,072-41-54	5-59-79	1-02-96
G. FERRERO	851	5	723	124	723	67,306	1,319,970-73-48	325,135-69-59	994,835-04-89	4-82-85	14-77-42
HIDALGO	970	3	642	325	617	61,806	649,887-00-71	209,565-16-39	440,321-82-32	3-24-37	6-61-01
JALISCO	1,462	4	1,046	362	1,050	29,045	1,478,158-99-73	707,131-11-66	771,027-88-07	5-18-10	6-37-02
MEXICO	1,359	12	972	366	981	61,703	800,702-97-63	375,304-03-08	425,398-94-60	2-32-09	2-63-03
MICHOACAN	1,570	10	1,221	349	1,231	31,596	1,592,573-85-56	635,500-59-15	957,073-26-41	4-82-92	7-27-28
MORELOS	309	6	192	111	190	29,470	283,680-00-32	126,207-17-58	163,472-82-74	1-07-90	5-51-71
NAYARIT	426	8	273	140	250	36,447	810,466-05-54	183,719-76-27	626,746-29-27	5-04-66	17-10-19
N. V. LEON	614	3	530	110	531	30,439	1,402,445-74-60	208,070-95-15	894,374-79-15	6-69-22	29-62-59
OAXACA	666	2	548	56	550	64,150	931,005-32-77	344,194-79-81	586,810-52-96	5-36-55	9-14-74
PUEBLA	1,301	16	393	392	908	20,444	1,031,416-76-59	400,664-21-41	631,152-55-18	3-31-64	5-22-44
QUERETARO	375	...	278	97	274	27,914	145,934-63-15	148,978-96-44	266,955-67-01	5-34-13	9-58-33
QUINTANA ROO	66	...	57	9	50	3,399	1,256,367-13-96	2,500-18-73	1,256,367-13-96	0-73-55	368-89-29
SAN LUIS POTOSI	1,434	13	610	311	622	87,502	2,930,354-15-29	434,046-92-05	2,496,307-23-24	5-37-50	27-26-16
SINALOA	613	22	470	121	391	17,255	990,397-93-78	324,348-18-81	666,049-74-97	6-06-38	14-09-48
SONORA	335	11	261	60	272	26,080	1,060,965-34-25	139,125-75-15	921,839-59-10	5-33-45	55-34-67
TABASCO	364	3	335	26	338	32,021	485,206-80-87	346,579-22-82	485,206-80-87	11-17-23	3-98-04
TAMAULIPAS	962	1	890	192	80	38,825	1,442,491-85-52	259,040-03-90	883,451-81-62	6-67-20	22-75-47
TLAXCALA	272	3	179	59	18	35,464	170,590-22-38	120,514-93-73	50,076-28-65	3-39-81	1-11-21
VERACRUZ	1,927	25	1,660	242	1,688	130,001	1,198,477-80-42	776,122-06-13	422,355-74-29	5-93-36	3-22-90
YUCATAN	603	2	422	179	42	67,833	1,356,045-32-55	313,801-54-62	1,042,243-78-93	4-62-60	15-36-49
ZACATECAS	793	2	600	191	60	68,666	2,259,194-09-02	421,446-16-60	1,837,747-92-42	6-19-17	26-99-95

\* Datos obtenidos exclusivamente de las Memorias publicadas por el Departamento Agrario.

Appendix 2 B. Summary of land transfers, 1953-58.

RESUMEN GENERAL DE POSESIONES DEFINITIVAS POR ENTIDADES  
1953-1958\*

ENTIDADES	Número de posesiones	ACCION			BENEFICIADOS				TOTAL DE HECTAREAS	Superficie de Labor Hs.	Superficie no laborable Hs.	Superficie media por beneficiados	
		Restitución	Dotación	Ampliación	Con tierras de Labor	Con tierras de uso colectivo	Con tierras de ambas clases	Total de Beneficiados				Laborable Hs.	No laborable Hs.
TOTALES	1,656	18	1,283	956	65,337	85,274	54,614	205,222	3,198,780-95-82	813,875-00-19	2,381,863-91-63	3-96-58	11-62-08
AGUASCALIENTES	7		3	7	53	16	16	85	1,007,480-00	523-70-00	136-10-00	5-50-05	5-12-91
B. CALIFORNIA NORTE	3		3		140	140	140	129	25,019-77-19	2,817-20-00	22,202-57-19	6-70-71	52-86-19
B. CALIFORNIA SUR	27		11	16	1,816	1,561	1,191	1,601	290,914-12-11	19,689-28-39	211,312-13-00	1-27-92	45-93-39
CAMPECHE	29		19	24	927	1,266	927	3,140	119,059-16-71	1,574-69-21	114,851-17-00	1-15-66	46-13-18
COAHUILA	10		6	14	391	503	394	1,291	11,576-53-71	5,024-20-00	9,551-93-00	3-09-15	7-39-01
COLIMA	340		246	113	17,158	17,852	14,171	49,181	443,680-61-32	219,364-01-24	225,325-78-05	4-53-21	4-58-15
CHIHUAHUA	44		37	31	1,753	3,190	1,753	6,695	361,222-61-65	21,089-12-06	343,142-49-69	3-15-00	51-24-58
DISTRITO FEDERAL													
DURANGO	54		14	59	750	2,119	673	3,502	155,077-50-08	8,236-59-08	146,476-99-00	2-45-24	11-02-63
GUANAJUATO	92	3	97	129	1,312	3,063	1,060	5,441	46,781-48-03	11,575-72-01	32,161-63-03	2-67-87	5-91-14
GUERRERO	84	3	126	74	3,014	6,121	2,893	12,058	152,511-39-36	42,797-13-61	109,803-65-75	3-51-92	9-10-62
HIDALGO	54	1	31	24	1,376	1,706	543	3,625	21,382-10-00	12,708-01-70	8,674-39-00	3-50-56	2-39-28
JALISCO	16		29	17	1,520	2,479	925	4,751	66,614-17-71	12,349-96-10	11,271-81-37	2-05-36	10-21-91
MEXICO	24		1	13	60	64	43	319	3,625-31-36	9,179-51-36	2,605-00-91	11-04-71	3-14-09
MICHOACAN	78		38	41	2,742	4,938	2,308	8,938	90,253-17-24	27,993-27-15	62,259-47-82	3-11-44	6-92-69
MORELOS	6		1	5	33	373		606	2,917-37-06	266-30-00	2,711-67-06	0-33-99	4-17-35
NAYARIT	31	1	23	27	1,110	1,834	1,069	4,012	65,122-54-77	11,110-84-77	54,230-88-60	2-77-66	13-51-94
NUevo LON	18		30	13	539	1,685	962	3,636	123,515-84-27	16,975-24-00	106,510-59-27	1-00-85	29-30-11
OAXACA	51		33	6	2,691	2,841	1,764	6,699	87,321-09-00	30,416-32-75	56,875-76-50	4-54-48	8-19-00
PUEBLA	58	3	35	70	1,917	5,053	1,834	8,004	12,323-16-78	13,937-16-27	1,399-97	1-09-62	
QUERETARO	21		11	10	360	931	272	1,503	56,340-33-05	2,529-57-19	19,285-69-33	1-68-26	12-31-10
QUINTANA ROO	5		5	1	251	264	225	740	94,362-00-00	989-20-00	92,720-80-00	1-34-64	125-30-81
SAN LUIS POTOSI	26	5	18	5	1,528	1,996	1,493	5,013	107,940-00-00	12,664-89-70	95,155-98-10	2-52-47	16-96-27
SINALOA	83		69	25	3,804	4,871	3,931	11,703	182,181-00-22	62,114-38-86	120,466-05-36	5-30-75	10-23-50
SONORA	23	2	17	12	776	1,623	544	2,749	121,617-11-63	15,142-93-63	106,474-18-00	5-52-62	38-05-91
TABASCO	5		1	1	153	128	128	409	3,349-00-00	1,782-20-00	1,557-60-00	4-55-69	3-80-68
TAMAULIPAS	51		12	21	1,572	1,594	1,313	4,479	110,028-10-95	20,196-50-00	89,854-69-24	1-50-90	20-06-05
VERACRUZ	262		249	75	11,049	10,055	9,522	30,616	224,545-01-27	177,733-66-13	46,812-15-15	5-80-52	1-52-90
YUCATAN	25		16	12	1,566	962	962	3,490	48,675-00-73	23,516-02-37	25,221-38-32	6-73-80	7-22-66
ZACATECAS	75	18	27	69	1,756	6,047	4,323	15,156	194,553-45-96	34,326-63-73	160,226-71-55	2-26-48	10-57-17

\* Cuadro formado exclusivamente con los datos de las Memorias del Departamento Agrario, 1953-1958

Appendix 2 C. Summary of land transfers 1960/61 - 1967/68. Transfers in numbers, areas in thousand hectares.

State	Total Transfers to communities	Total land area (000)	Thereof cropland
MEXICO	3601	15 267	2030
Aguascalientes	21	28	3
B. California N	16	416	11
B. California S	13	1049	--
Campeche	65	410	48
Coahuila	125	1568	45
Colima	20	20	8
Chiapas	275	444	241
Chihuahua	213	2117	126
Distrito Federal	--	--	--
Durango	254	1177	36
Guanajuato	24	59	21
Guerrero	213	928	142
Hidalgo	122	100	56
Jalisco	126	435	46
México	20	22	7
Michoacán	172	262	66
Morelos	4	1	0
Nayarit	77	596	49
Nuevo León	63	157	13
Oaxaca	127	1621	74
Puebla	31	25	4
Querétaro	82	59	10
Quintana Roo	74	503	110
S. Luis Potosí	53	127	32
Sinaloa	110	635	63
Sonora	57	491	5
Tabasco	135	206	105
Tamaulipas	130	215	88
Tlaxcala	10	2	2
Veracruz	679	648	420
Yucatán	43	257	104
Zacatecas	157	618	95