

RETURN TO  
REPORTS DESK  
WITHIN  
ONE WEEK

*E. M. Schubert*  
RESTRICTED  
Report No. WH-164b

This report was prepared for use within the Bank and its affiliated organizations. They do not accept responsibility for its accuracy or completeness. The report may not be published nor may it be quoted as representing their views.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT  
INTERNATIONAL DEVELOPMENT ASSOCIATION

---

CURRENT ECONOMIC POSITION  
AND PROSPECTS  
OF  
MEXICO  
(in five volumes)

VOLUME IV - ANNEX VII - AGRICULTURE

October 26, 1966

Western Hemisphere Department

CURRENCY EQUIVALENTS

U.S. \$1	=	12.50 pesos
1 peso (Mex\$)	=	U.S. \$0.08
1 million pesos	=	U.S. \$80,000

ANNEX VII

AGRICULTURE

TABLE OF CONTENTS

<u>PART I. PERFORMANCE AND POLICIES</u>	<u>Page No.</u>
INTRODUCTION	1
I. <u>Sector Performance</u>	2
A. Rates of Growth	2
B. Factors Associated with Past Growth	9
II. <u>Sector Objectives and Policy Formation</u>	22
A. National Needs for Agricultural Production	22
B. Income Distribution and Productivity	25
C. Public Policy Issues and Instruments	26
D. A Concluding Note on Policy	35
III. <u>Investment Opportunities</u>	37
A. Current Account Expenditures	37
B. Public Investments	38
<u>Statistical Tables</u>	
<u>PART II. TRADITIONAL AGRICULTURE AND THE EJIDO</u>	
INTRODUCTION	41
I. <u>Origins of the Ejido</u>	43
II. <u>Principal Features of the Ejido</u>	45
III. <u>Reform Achievements - Agrarian and Non-Agrarian</u>	49
IV. <u>Evaluation of the Ejido System</u>	55
V. <u>The Private Sector, the Landless, Ejidos and Official Attitudes</u>	81
VI. <u>Concluding Remarks</u>	92
<u>Statistical Tables</u>	

This Annex was prepared by Messrs. Donald K. Freebairn (Part I) and Wolf Ladejinsky (Part II).

## INTRODUCTION

1. In this Annex, the structure and recent performance of Mexican agriculture are reviewed as a background for understanding the policy issues facing the government in this sector. The impressive production record of the past three to four decades serves as vivid testimony to the effectiveness of a public policy designed to develop a new and modern agriculture through an integrated program of water resource development, agricultural research, selective channelling of agricultural credit and the provision of the required supplementary inputs. This concentration of effort and programs to a limited number of regions and to a selected group of farmers has effectively demonstrated the power of technical developments in agricultural growth. Inevitably, it has also resulted in concentrating the benefits of this growth among a relatively small group of farmers. The central problem facing Mexico's agricultural policy makers today is therefore how to broaden the base from which the agricultural output is generated, without at the same time reducing the growth rate of this output. Therefore, to the extent that the conditions of the past can be expected to prevail in the future, this argues for making additional efforts in the sector that in the past has been more or less by-passed by modernization and progress, without, however reducing the programs that in the past have amply proven their effectiveness. In this report, the policy instruments available to the authorities are reviewed from the point of view of their adequacy to reconcile these two aims; it need hardly be stated explicitly that (1) the nature of the problem is such that only tentative and suggestive conclusions can be arrived at, and (2) the social and political dimensions of the problem are considerable but lie exclusively within the purview of the Government of Mexico. The report focuses first (Part I) on the overall performance of the sector and on the factors accounting for its growth as well as those constituting bottlenecks and impediments to growth, and on the general strategy suggested by such an analysis. In the light of the great quantitative importance of the population in the ejido sector, and in view of the very special problems posed by this sector and by what may loosely be referred to as Mexico's traditional agriculture, in Part II an attempt is made to diagnose that experience and situation of this sector in some detail, and to consider some possible lines of approach open to the government.

## PART I

### PERFORMANCE AND POLICIES

#### I. SECTOR PERFORMANCE

##### A. Rates of Growth

###### Aggregative Results

2. During the past several years Mexican agriculture has continued to produce ever increasing supplies of food and fiber for domestic and export needs. The 35 year record, from 1929-65, with an approximate 5 percent rate of growth in crop production places Mexico among the leading performers for long-term agricultural product growth; few other countries, particularly in the Western Hemisphere, have maintained a comparable growth rate. For the period 1959-65, the agricultural sector seems to have maintained a slightly higher rate of growth than this long time average.

3. Livestock production records are not as complete and are considered to be of much more questionable validity than those for crop production, although it is perhaps appropriate to mention that crop production, yield, area and price data also have their limitations. For the purpose of calculating broad overall indices of total crop production during several decades, the census figures were employed for the years 1929-59, with only minor adjustments made for obvious reporting errors, and the crop reporting service data (Direccion de Economia Agricola) were used for 1965, with substantial adjustments made to the estimates relating to corn and bean production for this latter year. (See Table 1). This procedure yields a rate of growth in total crop production of 4.7 percent for the period 1929-65, with an estimated 5.3 percent rate of increase during 1959-65. When broken down between crops principally sold on domestic markets and those exported, the rates were respectively 4.7 percent and 4.8 percent; the same breakdown for the period 1959-65 showed a 5.5 percent rate of growth for crops destined to home consumption and 5.1 percent for export crops.

4. Over the last 36 years about 40 percent of the increased crop production has been a direct consequence of increased harvested acreage, with the associated increases in manpower, simple tools and other traditional agricultural inputs. (See Table 2). At the same time that increasing acreages were being harvested, physical yields were also on the increase; about doubling over the same time period, and also accounting for about 40 percent of the increased crop production. (See Table 3). Shifts in cropping patterns from low to higher value crops have accounted for the rest of the increase. It is now generally held that there are only limited further opportunities to increase the cultivated acreage, and that most of the increased product is going to have to be obtained through more intensive use of existing lands and increasing crop yields. The data for the past few years, 1959-65, support this observation. While crop production increased at an annual average rate of slightly more than 5 percent, the area harvested increased only about one percent, and yields

between 3-4 percent. It is worth noting that no very significant differences occur in these relationships between the predominantly export crops and those destined for domestic consumption.

5. These aggregative rates of growth are significant and highly satisfactory when measured against a rate of population increase currently estimated at between 3.1 and 3.6 percent, and all the more so when viewed against the background of generally weak international export markets for agricultural commodities. Nevertheless, perhaps a better appreciation of the magnitude of these gains can be obtained by reviewing a few of the more important crops.

#### Principal Commodities

6. Corn. Corn continues to be the most widespread crop in Mexico. By 1965 over 6.5 million hectares were harvested, compared to about 5.5 million hectares in 1960. Yields were also up more than 10 percent. In the last few years both greater harvested acreages and higher yields have been associated with better than average rainfall conditions. While definitive data on the 1964 and 1965 corn harvest are not yet available, preliminary estimates range up to 8.5 million tons; and although this upper estimate seems high, production in 1965 was certainly more than 7 million tons compared to about 5.5 million tons in 1960. Approximately 600,000 tons of the 1965 corn crop were exported. This would leave at least 6.5 million tons for domestic use. (Additionally about 600,000 tons of sorghum grains were produced as feed grains; perhaps 100,000 tons were produced in 1960).

7. One of the most significant features of Mexican agriculture during 1964-65 has been the large export of grains. Roughly one million tons of the 1964 corn crop was exported, and 600,000 tons of the 1965 crop; aided by government subsidies the corn exports, combined with the wheat exports, brought the participation of grains in exports up from practically nothing in 1963 to a position of second only to cotton in 1965. Foreign exchange earnings from grains were approximately US\$ 120 million in 1965. A critical question with respect to these commodities is the degree to which surplus production will continue to be available for the export market once the export subsidy is withdrawn or reduced as it was for wheat in 1966.

8. Wheat. Wheat has in recent years been produced in quantities adequate for domestic needs and permitting substantial exports in both 1964 and 1965. In fact, wheat is a classic example of effective public policy<sup>1/</sup> directed to increase the production of a basic food crop. In 1950 domestic production was less than 600,000 tons and more than 400,000 tons had to be imported to satisfy national needs. By 1959-60 production had doubled with an average annual production of 1,200,000 tons and no

---

<sup>1/</sup> For a description of this policy, see below, paragraphs 30-33 and 63.

significant imports. In 1964 and 1965 production had jumped to about 2,200,000 tons and not only were national needs met, but also some 600,000 tons per year were made available for export. Thus grains, although historically only grown for domestic consumption, in the last two years were an important source of foreign exchange earnings.

9. Beans. Bean production is the third big domestic food crop in Mexico. Much as corn, beans are produced by subsistence farmers in all parts of the country; also, as is true of corn, harvested acreages and yields vary greatly from year to year as a function of weather. Since this crop is grown so extensively, and crop reporting methods are not completely satisfactory, only approximate estimates may be given of total production. Something more than 650,000 tons of beans were produced in 1965 compared to about 500,000 tons in 1960. About one-third of production comes from interplantings with corn. This level of production satisfies national needs and only minor quantities are exported. International markets for some varieties of beans are relatively strong, but the principal production in Mexico is not of these varieties.

10. Sugar Cane. Sugar cane is a fourth principal crop which has long been grown principally for domestic uses. Since 1960, with growing access to the U.S. market from which Cuba was absent, increasing quantities have been destined to export. Production of cane increased from about 16 million tons in 1960 to 23 million tons in 1965. Harvested sugar cane areas rose from about 290,000 hectares to 370,000 hectares over the same time period, with yields rising from about 55 tons per hectare to about 61 tons. This rate of growth in cane production has permitted a 35 percent increase in domestic sugar consumption from 1960 to 1965 and has allowed annual exports of between 400,000 and 500,000 tons of sugar. The prospects for further increases in production are more limited, since the U.S. sugar imports are growing only slowly and Mexico's average cost is too high to make present world market prices attractive.

11. Cotton. For the past 15 years, cotton has been the leading agricultural export commodity. At the close of the Second World War, cotton exports were less than 100,000 bales per year; they grew rapidly up to a maximum of 1,800,000 bales in 1956. Faced with increasingly difficult international markets, exports dropped off to a low of about 1,350,000 bales in 1960 and 1961. Domestic consumption accounts for about 500,000 bales per year. Beginning in 1962 exports of cotton began once again to rise, and presently the level is once again up to the former high of about 1,800,000 bales. Cotton production has been responsive to the demand for the final product. When world demand was strong, with associated high prices during the late forties and early 1950's, Mexican production increased rapidly, more than fourfold from 1945 to 1955. In contrary fashion, production stabilized or actually dropped beginning in 1956 and on into the sixties. In the last few years, production has once again begun to expand, although not greatly above former peaks. The relative stagnation in cotton production seems to have been demand induced; yields have increased at better than 5 percent per year and areas planted have fluctuated in

accordance with demand prospects. Domestic demand has not been a strong expansionary factor for this product, with apparent per capita consumption no higher today than twenty years ago. The recently announced new cotton policy of the U.S. makes it unlikely that foreign demand for cotton will be a major element in stimulating additions to output in Mexico in the next few years.

12. Coffee. Coffee production has increased rapidly from 1960 to 1965. Production has been estimated at about 120,000 tons in 1960 and at about 180,000 tons in 1965. Exports averaged about 90,000 tons for 1964 and 1965 and about this level of export is programmed for 1966. Domestic consumption is estimated variably at from 40,000 to 60,000. The rapid growth in production in the face of slowly expanding demand is forcing the development of increasing and burdensome stocks. In order to increase local consumption, a number of steps are currently being undertaken. These include new coffee roasting regulations and the promotion of the consumption of pure coffee without mixtures (such items as chickpea, wheat, beans, coffee shells and unrefined sugar). It is still too early to judge the effectiveness of these campaigns.

13. Corollary to activities tending to promote coffee consumption is a program which proposes simultaneously to improve technology for coffee culture and remove from cultivation marginal coffee production regions where other crops might be more advantageously produced. The fundamentals of the scheme may be illustrated with the data given in Table 4. Basically the scheme calls for four things:

- a. doubling crop yields over the 10 year period,
- b. reducing the area planted by 20 percent,
- c. a slight increase in exports of coffee in accordance with expected quotas through the international coffee agreement, and
- d. more than doubling domestic consumption of coffee in the decade covered.

14. The steps undertaken to increase domestic consumption were mentioned above, and there is little need to enumerate here specifics on international coffee arrangements. The two aspects of the scheme which are most nearly related to agricultural activities are those related to increasing crop yields for coffee and the reduction of crop areas through the implementation of a crop substitution effort. The increase in crop yields is being accomplished through an aggressive program of technical assistance supported by the Coffee Institute. The Institute has about 110 technicians, most of whom work either on experimentation or extension activities related to improved coffee culture. One phase of the program has been the replacement of old plantations with new ones, using improved coffee varieties and with superior shade conditions. The Institute estimates that coffee yields have increased from 470 kg/ha in 1961/62 to approach 700 kg/ha in 1965/66. The program

appears to be progressing in accordance with original plans with regard to the increase in yields.

15. The same, however, is not true regarding the substitution of coffee by other crops. The scheme called for the displacement of about 30,000 hectares of established coffee plantings by other crops, principally rubber, although some acreages of citrus and avocado were to be planted, and all by the end of 1965. In fact, substitution has not progressed as fast as planned. A total of perhaps 15,000 hectares has been planted to other crops; the data for rubber are reported as:

1962	800 hectares planted
1963	1,500 hectares planted
1964	5,500 hectares planted
1965	1,500 hectares planted

In addition, more than 2,000 hectares of citrus have been planted and something more than 1,000 hectares of avocado. Some farmers have also made plantings of these crops outside of the program directed by the Coffee Institute. As can be noted, planting fell off in 1965. The problem is reported to be a lack of financial resources to push the program ahead. Rather than continue to expand the program without assured continuous financial support, the directors have chosen to restrict plantings to financial realities. Financing is critical in the crop substitution program because of the long time needed for establishment of tree crops and because the program is being carried out with small holders of very limited financial resources.

16. Although this mission was not able to obtain more than a superficial view of the full program, what it did see was impressive. One additional problem associated with the rubber program is the initiation of a second synthetic rubber plant, production of which was not included in the earlier calculations of the development scheme. The exact significance of this additional source of rubber could not be fully appreciated. Undoubtedly, there are serious problems associated with rapidly expanding coffee production and weak export and domestic markets. The projected expansion of domestic consumption of coffee calls for an increase from 49,000 tons in 1961/62 to 114,000 tons in 1969/70. These projections are at wide variance with the recently released Bank of Mexico supply-demand projection study which identifies 1960 consumption levels of coffee at 34,000 tons and projects 1970 demand at 51,000 tons. The Bank study does not consider the possibility of an effective promotion campaign to increase coffee consumption or changed regulations for coffee roasting. It is clear that the combination of rising crop yields, slow growth in demand and a slower than hoped for reduction in coffee areas presages grave uncertainties for Mexico's coffee producers.

17. Meat. The availability of meat for domestic consumption and export in Mexico is determined by three principal aspects of livestock production:

- a. the rate of growth of livestock inventories,
- b. the natural reproduction ratio, and
- c. the weight of the animal carcass.

While data adequate to analyze the historical effects of these factors on the production of meat products are not available, estimates have been made of numbers of animals and production of carcass meat for the 1959-61 period. These are presented in Table 5.

18. Because there is an intimate relationship between the number of animals slaughtered and either the increase or reduction of inventories, it is not possible to deduce rates of growth of the livestock population from short-term annual slaughter figures. The figures given for the 1959-61 period depend on various independent estimates of livestock numbers and slaughter. Unfortunately data are not available to indicate in any quantitative manner the rates of growth of meat production. Informed estimates, however, confirm the impression derived from census data, that the rate of growth in cattle inventories has been about 1.6 percent annually over the past ten years. These same sources do not suggest that any significant changes have been occurring in beef cattle production systems that would permit substantial shifts in the other determining parameters of available beef supplies.

19. As can be appreciated from the data given in Table 5, the ratio of slaughter to inventories is only 16.4 percent for beef cattle in the 1959-61 period. This compares to average rates of 35 percent in the United States and well above 40 percent in European countries. Additionally carcass weights are comparatively low. While both of these aspects, low slaughter ratios and light slaughter carcasses, suggest areas where effective programs could be initiated, it is significant to note that informed sources did not identify action programs currently being undertaken which would tend to increase livestock productivity. Poor animal nutrition and endemic disease have been identified as the most significant problems facing the beef cattle industry. Natural pastures, particularly in the tropical zones, produce abundant forage supplies during the wet season, but dry up and provide very little feed supply during about half of the year. Nutritional problems associated with short feed supplies have direct consequences in growth rates of cattle, but also have indirect effects on the provision of beef supplies. These nutritional deficiencies are directly related to the low fecundity rates reported on Mexican cattle ranches. The average calving rates are estimated at about 45 percent of the cows in inventory. Although disease problems and managerial systems may also contribute to this low rate of reproduction, nutrition is considered a fundamental cause. Some livestock specialists also suggest that the genetic characteristics of the bulk of the cattle population

cause the stock to be slow growing and inefficient users of available feed supplies. Obviously genetic improvement is a very long-term activity, and more immediate results in production can be expected by programs intending to improve managerial systems, including pasture improvement and disease control.

20. The rates of growth of pork production in the recent past can only be appreciated in a qualitative sense, since no satisfactory statistical data are available for specifying growth in pork production. Much as in the case of beef cattle production, estimated numbers of slaughter animals flowing from breeding stocks are low when compared to averages from other countries, although carcass weights are comparable in weight to those produced elsewhere. A number of factors are considered fundamental to the provision of increased supplies of pork products. Animal nutrition is basic. Ample and cheap supplies of concentrate feeds **are** essential to an expanding hog industry. This means the provision of increasing quantities of feed grains and protein supplements. The current rapid expansion of sorghum production has propitiated pork production, although slower expansion in the production of oil seed meals and the export of some of these has not been favorable. Price relationships are also important; the high guarantee price for corn and its associated influence on sorghum grain prices, compared to authorized prices for hogs, are not conducive to rapid expansion.

21. On the managerial side, the low number of piglets per litter and once-a-year farrowing are aspects of the production system which need improvement. Both of these limitations could be alleviated by diffusing greater information on managerial systems and by attacking nutritional problems associated with hog production. Hog sanitation is considered to be not limiting at this time. It should also be pointed out that some hog producers are using the most advanced production systems.

22. Milk. More than one-third of the value of livestock products is accounted for by milk production. In a certain sense it is difficult to appreciate the **changes** that are taking place in the industry because of the small proportion of the nominally "milk cows" that are really animals specifically adapted to milk production. Although almost seven million head of cattle are listed as of milk types, less than one million are of improved milking breeds.

23. Although the stock of milk cows has been estimated to have increased between 1940 and 1960 at an annual rate of 2.7 percent and milk production per cow to have increased from 300 liters per year to over 500 in the same time period, shortages of this important basic food are still noted. Restraints on the increase of milk supplies appear to be caused by the lack of additional forage in milk producing zones, by the high cost of dairy feeds compared to the authorized price for milk, by the lack of

improved animals and most particularly by the lack of dairy organization which will supply replacement heifers for a continually expanding industry. Newspaper reports of lack of milk for the metropolitan Mexico City market and observed deficiencies in outlying markets suggest serious deficits in the industry's provision of a nutritionally necessary product.

#### B. Factors Associated with Past Growth

24. A number of highly inter-related factors have been associated with the growth in agricultural production over the past twenty-five years. Of fundamental importance has been the development of the modern complex of irrigation facilities in north and northwestern Mexico. These newly established agricultural lands, endowed with ample supplies of water, provided the opportunity for the development of Mexico's new and modern agriculture, with its yield-increasing technology. The substantial public investments in irrigation development would not have been anywhere near as productive as they have turned out to be, if concurrent with water resource development, successful agronomic research had not been able to develop superior production systems. Supporting the opening of new irrigated lands and superior production techniques were the provision and financing of the needed inputs. Moreover, a selective price support program was used to enhance the profitability of certain lines of production. No single activity of those mentioned would have been so successful without the support of the others, since all were part of an interconnected effort.

#### Development and Adoption of Superior Production Processes

25. Systematic agricultural research in Mexico was first undertaken in the early 1940's and has continued with increasing emphasis up to the present time. The National Agricultural Research Institute is the organization assigned the chief responsibility for agricultural research in Mexico, although other specialized agencies work on sugar, coffee, cacao and a few fruit crops. The Institute is organized on the basis of five research centers, each with a number of subsidiary research stations; Chapingo, in the State of Mexico is the station responsible for basic research in support of applied work all across the country and is additionally charged with the tasks of applied research in the arid and semi-arid high central plateau region; Roque, in the State of Guanajuato, is the center responsible for agronomic research for the semi-arid regions of intermediate altitude, including the Bajio zone. Ciudad Obregón, State of Sonora, is where research related to crops in the irrigated lands of the northwest is carried out. Matamoros, in the State of Tamaulipas, is the center with responsibilities for the northeast part of Mexico, and Cotaxtla, Veracruz, is where tropical agriculture research is carried out.

26. The Institute has more than 200 technicians working on agricultural research problems, principally on the important irrigated crops; its budget expenditures are currently estimated at about 25 million pesos, up from about 14 million pesos in 1961. It will soon be moving its central

offices from Mexico City to the new center at Chapingo, Mexico, where the School of Agriculture, the Extension Service, the Post Graduate School and the Institute will jointly use new facilities developed under the "Plan Chapingo" program.

27. But numbers of personnel and location of research stations are not the really important parameters describing a research institute. What is much more critical are the results, and when measured by this standard of the effectiveness of applied agricultural research, the Mexican Institute shows an enviable record. If the case of wheat is reviewed, one can observe that national yields averaged between 700 and 800 kg/ha from 1930 to 1945; beginning in 1946 yields began to rise, at first slowly, but then with increasing rapidity up to present average yield levels of about 2,700 kg/ha. There is no sign of yields leveling off even at these relatively high levels. It must be recognized that some of the increase in yields has been the consequence of shifting the location of production from the center zones of the country to the new irrigated regions of the northwest, but the bulk of the increase is the consequence of effective research which has increased yields and permitted the expansion of wheat production into the new areas.

28. Plant disease (wheat rusts) has been one of the most limiting factors on wheat yields. By introducing genetic resistance to these diseases the productive potential of the plant has been released. Effectively, as diseases have been controlled, research on plant nutrition (fertilizer requirements) and water control has permitted higher yields, and as yields increased on experimental plots and on the parcels of the most progressive farmers to about four tons per hectare, serious lodging problems developed. By 1961, it was estimated that over half of the wheat crop in the northwest, planted with improved seed and under conditions of high fertilizer application, lodged. Although yields were high, maximum benefits of improved varieties, fertilizer applications and careful water control, could not be obtained as long as lodging of the long stemmed wheat varieties were used. Cultural practices, including the use of lower seeding rates, later applications of nitrogen fertilizers and careful timing of water applications, alleviated the problem but more definitive resolution depended on genetic improvement of varieties. By this time, experimental work had already been undertaken on the introduction of dwarfing genetic characteristics into accepted commercial varieties of wheat. As these short-stemmed varieties have become available, farmers have been able to make even higher applications of fertilizer with resulting increased yields. Top farmer yields are now reported up to seven tons per hectare as compared to about a four ton maximum only five years ago. Scientific endeavor, closely related to the realities of a progressive agriculture have paid off in the case of wheat research in Mexico.

29. It should be added that as Mexico ceased to be a net importer of wheat and became first self-sufficient and later an exporter, problems of wheat quality became increasingly important. Whereas earlier the only significant characteristic needed was a greater tonnage of wheat - since imported wheats could be purchased at the quality specified to be blended

with domestic production in accordance with miller's specifications - as national needs were met with domestic production it became increasingly necessary to incorporate milling quality as well as strictly agronomic considerations into the research plan.

30. Work on no other crop is able to demonstrate the same kind of results as those associated with wheat. Nevertheless, as was pointed out earlier, crop yields have doubled over the last thirtyfive years, with significant increases in the past few years. And these yield increases have been obtained for both domestic crops and export crops. While no suggestion is made here that yield increases have been determined exclusively by the research effort, clearly this activity has been a critical and enabling factor. One further qualification is that with the exception of wheat and cotton, crop yields in Mexico, while rapidly increasing are still at notoriously low absolute levels.

31. Among the aspects of agricultural investigation still to be emphasized are natural rainfall farming systems, including crop selection, improved varieties, fertilization and other cultural practices; livestock farming, with work on the full range of nutrition, disease and management problems; economic research, including farm, regional and public policy problems; and a full scale research effort on the problems of tropical agriculture. The success already enjoyed for some crops and some systems of farming augur well for the tasks lying ahead.

32. Although expansion of agricultural production has been based on advancing technological systems, a broadly based and integrally organized extension service has not developed. Even at present perhaps no more than 250 extension agents are employed directly in the educational tasks associated with a progressive agriculture. To many it may seem inconsistent that such a small effort, both quantitatively and qualitatively has been associated with an eminently successful agriculture. Fuller discussions of technical assistance will be given in later sections; suffice to say that no significant credit can be given to formalized extension activities in the growth of agricultural product in Mexico. Such growth has been accomplished in large part because of the concentration of the national effort to a limited number of areas and a selected group of farmers. Using 1960 census figures it is possible to estimate that more than half of crop total sales were made by less than three percent of the country's farmers; and that about 15 percent of the farmers produced three-fourths of the crop sales. An active extension program is not necessary to propitiate the establishment of a progressive agriculture with so small a group of producers. Many of the 50,000 private farmers producing half of crop sales have direct contact with the latest accomplishments on research stations, receive advice from their farm credit association and from the farm supply houses selling to them and from their farmer friends who have tried out the newer practices. The somewhat larger number of colonists and ejidatarios with more favorable resource bases are encouraged in their activities by similar sources of stimuli and in addition by their contacts with the technicians of the public agricultural credit

banks. For this small group of farmers, improved agricultural techniques have been adopted with little or no recourse to an organized extension service. The great mass of peasant producers have not had recourse to organized technical assistance services either, but neither are they joining in the miracle of Mexican agricultural growth.

### The Provision of Production Inputs

33. Concordant with the development of improved farming systems and techniques, and the dissemination of information about these improvements to farmers, is the development of systems making available to farmers the inputs needed to put into operation the new methods. In one or another manner the improved seeds, the fertilizers, insecticides, fungicides and the machinery and tools needed, have to be made available.

34. Agricultural Chemicals. Increasing quantities of the chemical products associated with a modern and scientific agriculture are being used in Mexican farms. (See Table 6). As will be noted there has been a doubling of nitrogen use over the past five years, with more modest increases in usage of phosphates and potash. Studies of soil fertility have shown high production responses to nitrogen in almost all parts of Mexico, with more limited responses to phosphates except in some tropical regions and other cropping areas where high yields of crops on a sustained basis are drawing down fertility levels at rates faster than normal soil chemical processes can make nutrients available for plant growth.

35. Recent rates of growth in use of nitrogen fertilizers are projected for the years ahead, with almost 500,000 tons of nitrogen (N) expected to be used by 1970. Four crops, corn, wheat, cotton and sugarcane, will receive 80 percent of the nitrogen applications. Although almost one-half of the nitrogen used for fertilizers in 1964 was imported, planned expansion of the fertilizer industry is expected to fill the 1970 demand with domestically produced product.

36. Insecticides are the other principal chemical product that is used in modern agricultural production processes. At present about 120,000 tons of prepared mixes are being used, most of these on cotton production. Since cotton acreages have not been increasing recently, use of insecticides has not been growing rapidly. Additionally, successful biological control of harmful insects has been promoted in a number of agricultural regions.

37. Improved Seeds. The principal problems concerning the availability of improved seeds center on the crops of corn and beans. These two crops represent well over half of the area planted in Mexico and it is these two traditional crops for which the provision of improved seeds is both the most difficult and the most deficient. In the case of corn, early work on improving corn varieties was based on the hybridization principal and this has meant the necessity of replacing farmers' seed supplies each year if maximum benefits are to be obtained from the experimental work. Not only is the task of getting farmers accustomed to replacing their seed stocks each year difficult, but it is also a complicated,

expensive and highly technical job to reproduce high quality hybrid seed. For many years the national seed producing agency has been the only authorized source of hybrid corn seeds. They have been unable to produce more than 20 percent of the required corn seed and in addition the quality of their seed has been questioned. Attempts continue to be made to open up the seed market to private enterprise, particularly for progressive farmers associations. A concurrent attempt is being made to provide alternative types of improved corn seed which will permit farmers to plant second and third generation seed without losing much of the inherent yield increasing capacity. These new varieties are less expensive and difficult to reproduce and may prove to have much wider ecological adaptability than hybrids.

38. Crops such as cotton, which are grown under highly commercial conditions, have few seed supply problems. And the small grains, because they are self-pollinating do not tend to degenerate rapidly as seed is replanted by farmers, season after season. An additional factor in the case of wheat is that wheat farmers have become accustomed to changing their seed stocks in accordance with the extraordinary opportunities for higher profitability that they have experienced in the past few years with yield increasing varieties. Among the other major crops, problems of improved seed availability exist for beans and for oil seeds. Although some new bean varieties, with disease resistance, are being distributed, the regional preferences for different types of beans complicates the distribution of seeds. Only modest progress has been made in developing improved oil crop seeds and hence there is little need for a seed distribution program.

39. Power and Machinery. Only a small number of Mexico's farmers possess tractors and associated power machinery. For most farmers, agricultural operations are carried out with animal power, there having been an estimated 3,500,000 draft animals in 1960. A mechanized agriculture is often considered equivalent to a progressive one, but although the number of farm tractors has increased very slowly from 1960 to 1966, (slightly more than one percent per year) the work potential of these tractors increased more rapidly, because of the replacement of smaller tractors with increasingly larger units. (See Table 7).

40. This pattern is consistent with the observation mentioned above that most of the increasing agricultural product is coming off of a limited number of farms. Although there need be no relation between mechanized farming and the use of biologically superior production techniques, under Mexican conditions the two factors have tended to move together. The farmer using the best production techniques tends also to use a mechanized cultivation system. The small number of tractors compared to the number of farms is symptomatic of the failure of the great mass of small farmers to actively participate in the expanding agricultural production of Mexico.

Agricultural Credit

41. No attempt will be made here to describe the structure and organization of agricultural credit in Mexico. A detailed report on this was included in the document covering the 1965 Bank loan to Mexico for the agricultural credit project (Report No. TO-489a, August 27, 1965). Additionally a section of this report will treat some of the special conditions of credit as directed to the ejidal sector. Special attention, however, should be devoted to one aspect of agricultural credit, namely the role which credit plays in financing the adoption of modern farming systems.
42. Since much of the rapid growth of Mexican agricultural product has been associated with the adoption of new production techniques and since most of these practices are expensive to implement, credit has been essential for the fulfillment of the public policy favoring rapid growth in agriculture. Total outstanding agricultural credit has increased about 50 percent from the end of 1961 through the end of 1965. (See Table 8). The announced policy of encouraging increasing participation by the private banking sector in agricultural credit is demonstrated by the figures which show that private bank loans almost doubled between 1961 and 1965, while public credit banks increased their outstanding loans by less than 30 percent. In the process of this change, the proportion that private sources represented of all institutional agricultural credit increased from 35 percent in 1961 to 45 percent in 1965. In the 1961 report of the Banco Ejidal, 1,200 million pesos - over two-thirds of outstanding loans - were classified as overdue, after accumulated bad debts had been deducted, estimated for that year at more than 1,000 million pesos. No comparable data are available for 1965, but it seems reasonable to assume that no more than one-third of the outstanding loans were in good standing in later years. In fact, officials of the Ejidal Bank indicated that their annual loan rate is currently running at about 1,200 million pesos a year (as against a theoretical potential lending level of some Mex\$3,700 million, see Table 8).
43. In 1965 a new public agricultural credit bank was established, the Banco Agro-Pecuario, which has been in the process of organizing itself and is making its first loans. This bank's actual contact with farmers will be by way of its regional affiliated banks, four of which have now been established. The Mexico City bank will operate as a discounting bank for its regional affiliates. This structure has been adopted to facilitate two fundamental considerations in the establishment of this bank - functional and regional decentralization. The regional banks will each be organized with their own board of directors and a complement of administrative and technical personnel; they are empowered to establish branch offices within their regions.
44. The Banco Agro-Pecuario with its affiliated regional banks, will emphasize intermediate and longer term credits which are intended to increase the economic capacity of farmers and which will make significant contributions to both regional development and to the fulfillment of national needs for agricultural products. While the

principal projects which are to be undertaken will be longer term credits, a component of the loans will be available for the short-term financing needed for a balanced complete farm credit program. One feature of the operating pattern in process of being established is the making of loans to formal farmers associations of more informal small groups with joint responsibility. The Mexican authorities expect that working with groups will facilitate administrative operations and permit the financing of activities which are of mutual benefit to groups of farmers and that the joint responsibility will help to identify the more responsible and dedicated farmers, all of whom are voluntarily agreeing to work together and to absorb jointly the risks. Loans will also be made to individual farmers under exceptional circumstances.

45. Mexico has had a long experience of extending agricultural credit to associations of farmers and to groups with joint responsibility, and this without particular success in the case of the Banco Ejidal and the Banco Agrícola. Several features of the planned activities along these lines are pertinent to an appreciation of this organizational feature of the Banco Agro-Pecuario. A fundamental feature is that the farmers determine themselves with whom they want to be associated. They know their neighbors, and they can best judge who is likely to pay their indebtedness and who would constitute a high risk to the group's solidarity. Additionally it is assumed that the group will be able to identify problems with particular members long before defaulting on repayment makes it obvious to bank officials. In order to eliminate two problems long associated with joint responsibility groups in agricultural credit operations, namely lack of understanding by members that joint responsibility means that members must repay loans for their associates if someone defaults, and failure to maintain adequate internal accounting by the group, the Banco Agro-Pecuario has included efforts to resolve these problems as an integral part of its technical assistance program. Bank officials explain at every opportunity the significance of joint responsibility to clients and simple accounting systems are established for each group so that each farmer may know exactly what the status of his account is with the group and the bank. In order to further minimize this problem, groups are also kept small - in the beginning perhaps no more than ten members - so that members know each other well and so that all operations concerning the receipt and repayment of loan funds may be witnessed by all concerned members.

46. The Banco Agro-Pecuario was established with a paid-in capital of something more than 1,000 million pesos in April 1965; it had few operations last year, but programmed loans for 1966 amount to about 600 million pesos. The magnitude of the bank's future operations seems not yet to have been determined, although the intention seems to be to expand operations as fast as it builds up competence for administering loans and to the extent of possible demand by qualified farmers. The bank's policy, at the present time, is to work with economically viable farmers, private proprietors and selected ejidatarios. Loan policy is to be coordinated with that of the Fondo de Garantía of the Bank of Mexico, so that

there will be no competition with the private banking sector. Indeed the policy is to encourage the larger farmers to work with the Fondo. The impression obtained concerning this bank's operations is that it will extend increasing quantities of loan funds, although the number of recipients will be limited by the use of traditional banking concepts of creditworthiness. Small farmers and ejidatarios may continue to find it difficult to obtain credits and technical assistance to improve their production and incomes.

### Irrigation

47. Over 90 percent of public investment in the agricultural sector in recent years has been directed toward the development of new irrigation facilities and the rehabilitation of earlier established irrigation districts. In 1965 about 2.5 million hectares were included in irrigation districts under direct administration of the Ministry of Water Resources and perhaps 1-2 million hectares were privately irrigated. Twentyfive years ago less than 300,000 hectares were included in the formally organized districts. The continuing large public investments in irrigation works are part of the decided central policy tending to create, principally in peripheral areas, a new and modern agriculture. Whereas 25 years ago except for a few notable exceptions, production centered in the central plateau region, as a consequence of irrigation investment and other associated developments there has been a significant shift in the location of production. For 1963/64, production from the irrigation districts represented over 70 percent of total cotton production and over 90 percent of wheat production, and these principally out on the periphery. In addition substantial quantities of corn, sorghum grains and sugarcane were produced in the irrigation districts. In the current crop year perhaps 40 percent of all crops were grown in the irrigation districts, although these represent no more than 15 percent of the cultivated cropland.

48. Between 1940 and 1964 an average of about 56,000 hectares a year of new lands have been brought under irrigation and improvements were made to an additional 30, 00 hectares annually. The accumulated investment (at 1960 prices) made to accomplish this rate of irrigation development is reported as 8,200 million pesos or an average annual investment of over 320 million pesos. Costs per hectare of developed land have been relatively low in the case of Mexican irrigation. In part these low costs have been a consequence of having selected for early development the more favorable potential sites where costs of construction and layout would be lowest, but in addition costs were kept low by not completing all aspects of the project. In order to obtain maximum benefits from scarce funds and a limited number of technicians, projects were turned over to users when they were operational, even if incomplete. In the future, the development of additional sites is likely to become increasingly costly and the returns on rehabilitating or completing existing ones is therefore becoming an increasingly profitable alternative, but it may well be that by the same token the development of smaller scale irrigation in the central states will also prove to be increasingly attractive as the returns on other types of irrigation projects dwindle.

49. For the period 1960-64 the rate of development of new irrigation lands fell off from the earlier levels, averaging about 40,000 hectares per year and with an additional 16,000 hectares receiving some improvements. Beginning in 1965, substantially higher levels of new irrigation development are programmed, with 54,000 for 1965, 84,000 for 1966, 90,000 for 1967 and 100,000 hectares each for the years 1968-70. There can be little doubt that Mexico has demonstrated capacity to develop, administer and use effectively its irrigated lands. What can be noted is that the new zones scheduled to be brought under irrigation will have higher construction and development costs than earlier projects. The tendency to concentrate the irrigation investments on the periphery continues.

#### Price Incentives

50. The importance of shifting production systems from traditional to modern has been emphasized in this discussion of Mexico's agricultural growth. Implicit to the prescription of changing production systems as the basis for a country's attainment of increasing supplies of agricultural products, is that producers have economic incentive to make the requisite changes in their farm organization. For the most part this means attractive prices for final products or subsidized prices for the new bundle of productive inputs; in Mexico public programs have emphasized somewhat higher than world price levels for several basic food crops.

51. The administrative agency responsible for the price support programs for basic food crops is CONASUPO (Compañía Nacional de Subsistencias Populares) which - although recently reorganized - has been the continuing agency since 1949.<sup>1/</sup> It does not, however, work in isolation, but rather participates in a consortium agreement with the Banco Nacional de Crédito Ejidal, the Banco Agrícola and the Almacenes Nacionales de Depósito, S.A., which divide between themselves the tasks of executing the price support programs defined by the National Government through the Ministries of Agriculture and Commerce and Industry. The two agricultural credit banks collaborate in the purchase of the product produced by their own clients, identify farmers eligible for the sale of products to CONASUPO, even though not clients of these banks, and serve in effect with their many country branches as the purchasing agent of CONASUPO. Almacenes Nacionales de Depósito, S.A., has the responsibility of receiving, weighing, analyzing, storing and handling the products for final distribution.

52. Although there is a coordinating committee to facilitate the work of the four agencies, CONASUPO is the responsible agency for determining the organization and operation of the price supporting mechanisms. Five crops - corn, wheat, rice, beans and sorghum grains - have been the principal products with which the agency has been operating. Guaranteed farm prices in 1965 were as follows:

---

<sup>1/</sup> Before April 1965 a Sociedad Anónima, and since that date a decentralized public agency; from 1949 until 1961 the antecedent agency was CEIMSA (Compañía Exportadora e Importadora Mexicana, S.A.)

Corn	Mex\$	940/Ton
Wheat		913/Ton
(except in Baja California)		1,100/Ton
Beans		1,750/Ton
Rice		2,150/Ton
Sorghum		575/Ton

In 1966 the price of wheat was officially lowered from Mex\$913 per ton to Mex\$800 per ton, except in Baja California where it was dropped to Mex\$913 per ton. The support price for export corn was reduced in 1966 on a selective basis, depending on the proximity to ports of embarkation, to Mex\$800 in Tamaulipas and Mex\$750 in Sonora. Other products will be maintained at former levels. A number of mechanisms are used by CONASUPO to affect the guaranteed prices for farm producers. In the case of corn the agency enters the market as a marginal purchaser with the intention of forcing grain dealers to pay the designated guarantee price; farmers thus having the alternative of selling their products to CONASUPO. Although for the case of corn, coverage of the agency is not complete, it has effectively brought farm prices in most production areas up toward the guarantee price. Surplus purchases of CONASUPO are sold on either the domestic or foreign markets. Their sales price is Mex\$950 per ton on the domestic market, except for 400,000 tons which are distributed to the Federal District corn millers at Mex\$637 per ton in accordance with a contract between the Government and the millers to keep the prices of tortillas from rising in the metropolitan market. Exports are sold at prevailing international prices. Wheat is handled differently. The bulk of the milling industry is centered in the central part of the country, and this region is less than self-sufficient in wheat production; as a consequence they must bring in wheat from the northern region to fill their milling quotas. CONASUPO buys all the wheat in the northwest and then sells to millers from its supplies. Because of this capacity to sell to the millers or restrain supplies it has been able to contract with the millers so that they will pay the minimum guarantee price to producers in the central region. CONASUPO, in turn, sells to millers at the same price as it pays to farmers, the agency absorbing transportation and handling costs. CONASUPO has recently signed a long-term contract in which the selling price of wheat flour has been fixed up to 1971. Wheat, beyond that needed for domestic consumption, is sold on the international market at prevailing prices.

53. Rice is handled somewhat differently. Since the production is very nearly in balance with utilization there have been only modest programs in the last couple of years. Because rice must also be processed before it enters consumption channels, both producers and millers are involved in the minimum guarantee price program. For regions where programs are to be carried out, agreement is reached between CONASUPO and the millers in which the millers agree to pay the guarantee price for paddy and CONASUPO agrees to acquire any surplus milled rice at the corresponding negotiated price. Most rice marketing is carried on under traditional private trading arrangements with only marginal quantities removed from consumption channels by CONASUPO.

54. For the past several years sorghum has been in short supply and it has not been necessary for CONASUPO to enter into the market to support domestic producers' prices. In former years purchases were made in a limited number of production zones, with distribution in zones of utilization. Bean purchases have also been modest in recent years, with purchases restricted to a limited number of production zones.

55. CONASUPO's programs thus create the possibility of high agency losses because of the minimum prices paid to farmers and the lower prices received from sales, either domestic or export. Annual reports for CONASUPO, S.A., for the years 1961, 1962 and 1963 show the following annual losses:

1961	Mex\$387,720,000
1962	620,540,000
1963	913,300,000

Actual Treasury transfer payments to CONASUPO were: 1961, Mex\$266 million; 1962, Mex\$400 million and 1963, Mex\$400 million. The difference seems to have been absorbed by the Federal Government which took over CONASUPO's debts to the banking system. Annual reports are not available for 1964 and 1965 operations, but Treasury figures show transfers of Mex\$500 million for 1964 and Mex\$634 million for 1965. Inasmuch as transfer payments were less than losses for the period 1961-63 by an amount of about Mex\$856 million and since during these same years inventories built up from an estimated Mex\$550 million to Mex\$1,150 million, and with a paid-in capital of only Mex\$1,000 million, it is understandable that the agency went into receivership on November 18, 1964.

56. In April 1965, CONASUPO reorganized as a decentralized public agency with similar responsibilities to those of the former "Sociedad Anonima". The intention is to improve efficiency of operations, exercise more rigorous control of surplus production, control costs of handling and maintain agency operational losses within the currently authorized Mex\$500 million Treasury subsidy.

57. But more important to the purposes here at hand than the financial losses of the agency is an appreciation of the role which the price support program has had on farmers' supply decisions. Comment will be restricted to those aspects of supply response related to particular commodities and the allocation of resources towards their production. Inasmuch as only five commodities have been included in the price support programs, in fact there has been no national policy program to affect agriculture's terms of trade relative to the rest of the economy. Principally, guarantee prices have been used as incentives for the production of particular commodities although occasionally references are also made to supporting small farmers' incomes through the price support program, much as minimum wages are set to protect wage earners in other sectors. A brief review of three crops may be adequate to see the functioning of the price support program and its inter-relationship with other production oriented programs.

58. During the early 1950's, Mexico was a net importer of wheat. To ensure national self-sufficiency in basic food crops an integrated program encouraging wheat production was initiated. Prices were set at levels considerably above the world market, research efforts were concentrated on solving production problems related to wheat in the newly

developed irrigation zones in the northwest and institutional agriculture credit was earmarked for financing wheat. From 1955 to 1965 production increased from about 800,000 to 2,300,000 tons. Over this same time period, the farm price only rose from Mex\$800 to Mex\$910 per ton, but profitability of wheat production appears to have been high during most of this time period, in large part because of the rapid adoption of cost reducing technology. Between 1955 and 1965 wheat yields rose from about 1,000 kg/ha to more than 2,600 kg/ha. Because of higher yields, even at only slightly higher prices, gross receipts almost tripled in this ten year period; and while the costs of producing wheat also rose - both because of an increase in the costs of inputs that farmers had to buy and of the greater quantity of inputs needed for the higher yields - wheat production became increasingly profitable and farmers responded by almost tripling production.

59. Corn is of course the basic food crop for Mexico. Because it is produced in almost all regions of the country, and by many small farmers who have little or no marketable surplus, yearly production data are less accurate. Nevertheless, it is generally accepted that production was about 4,500,000 tons in 1949 and about 5,700,000 tons in 1959. Production for 1965 is subject to question, but probably something more than 7,000,000 tons were produced. From the early 1950's up to the present, the rural price of corn increased from Mex\$400 to Mex\$940 per ton. The response to price increases has been less pronounced in the case of corn than has been true for wheat which is produced on the more commercially organized farms, although it is important to point out that farmers in irrigation districts and on the better natural rainfall lands are beginning to shift to corn from other crops as corn prices combined with known high yielding techniques offer increasing economic opportunity. In general, however, price response has been more limited in the case of corn as compared to wheat, because of the predominance of small farmers, many on marginal lands, who produce this crop.

60. Although cotton is an export crop for which no direct price support program has been maintained, it is perhaps useful to review farmers' supply decisions with respect to a commercial crop for which prices actually declined. Farm prices for cotton fell from a high of about Mex\$ 6,600 per ton of ginned cotton in the middle fifties to Mex\$6,000 in 1959 from which level it rose once again to Mex\$6,700 in 1965. Deflated by the Bank of Mexico's Wholesale Price Index, 1954 = 100, the comparable figures would be: 1954, Mex\$6,600; 1959, Mex\$4,360 and 1965, Mex\$4,440. The stability of farm prices for cotton in the face of rising costs brought a reduction in cotton acreages of about 20 percent from the levels planted in the mid-1950's. Marginal areas and marginal producers were forced out of production even though the government reduced cotton export taxes to alleviate price squeezes on producers. Farmers who stayed in production raised average yields from less than 500 kg/ha in the 1954-56 period to 700 kg/ha in 1964 and 1965. This 40 percent rise in yields has permitted the maintenance of production at a fairly constant level over the last ten years. But declining relative prices of cotton have been a disincentive to expanded production in accordance with weak domestic and export market opportunities.

61. For commercial farmers, crop profitability is basic to decisions about their cropping systems. The resources they have available can often be used in the production of alternative crops, and there have been indications that in the irrigation districts farmers first substituted wheat production for cotton and more recently that they have begun to plant corn and oilseeds in place of wheat. The technical production systems and the availability of new resources (particularly irrigation water and chemical fertilizers) combine with final product prices in determining the profitability of alternative crops or increasing the level of production in a single-crop agriculture. A price support program can be most effective when it is associated with a total agricultural development program.

## II. SECTOR OBJECTIVES AND POLICY FORMATION

62. While the particulars of public policy with respect to agriculture are not easy to identify, the broad objectives have been clearly articulated by Mexican authorities:

- a. to provide an expanding supply of food and fiber for both domestic use and export needs,
- b. to provide an increase in the social welfare and income levels for the great mass of low income population engaged in agriculture.

### A. National Needs for Agricultural Production

63. The discussion in the previous chapter concentrated on the recent accomplishments of the agricultural sector in providing the supplies of food and fiber for a growing economy. The record has been admirable. Agricultural commodities have been available in quantities adequate to the needs of a population growing at a rate of 3.1-3.6 percent per year and receiving higher incomes permitting higher per capita consumption of foods and fiber. In an attempt to review the prospects both for agriculture and for the fulfillment of national needs for agricultural commodities the Bank of Mexico, jointly with the Ministries of Agriculture and Treasury and Public Finance sponsored a major supply and demand projection study for agricultural products in Mexico. <sup>1/</sup> The purpose of the study was to evaluate the expected demand and supply for agricultural commodities in 1970 and 1975 to provide a guide for long-term development policy.

64. The structure and growth of the general Mexican economy provide the framework within which the demand for agricultural products and the possibilities of supplying them will develop. Recent historical data show that rapid growth has occurred in the general economy and that important structural changes have been taking place. Gross domestic product increased at an average rate of about 6 percent per year, with per capita gross product going up from 3,200 Mex \$ in 1950 to 4,500 Mex \$ in 1963 (at 1960 constant prices). Between 1950 and 1960 population was increasing at 3.1 percent per year. Of particular interest, because they condition the aggregative projections for agricultural commodities as well as for particular commodities are a number of the basic conditions and assumptions of the Banco de Mexico study. (See Table 9). Population is projected with an annual growth rate of 3.6 percent; this compares with 3.1 percent between 1950 and 1960. Growth rates of the rural population are assumed to be 1.5 percent and that of urban areas, 5.3 percent for 1961-1970 and 4.9 percent from 1971-75. The national population will be almost 60 percent urban by 1970, and climb to an estimated 64 percent urban by 1975.

65. Per capita gross product is projected to increase by 2.7 percent per year from 1964-1970 and by 3.3 percent from 1971-75. Per capita

---

<sup>1/</sup> Banco de Mexico, S.A., op. cit. Referred to below as Agricultural Projections or as Banco de Mexico study.

consumption will increase at 2.3 percent annually from 1964-1970 and at 2.9 percent from 1971-1975. This is a drop from the annual average rate of 3.3 percent from 1951-1960, but may still be somewhat higher than what in fact can be achieved under the presently foreseeable constraints on resources available for investment.

66. The Bank of Mexico study of demand for agricultural commodities makes two independent estimates of the income elasticity of demand for these products. A regression analysis of per capita domestic demand for agricultural and livestock products from 1940 to 1960 showed that "the increase in demand associated with a one percent increase in per capita gross domestic product has been progressively less: 0.89 percent in 1940, 0.63 percent in 1950 and 0.53 percent in 1960. If the relationship derived from the time series was valid throughout the projection period, the ratio would decline to .47 in 1970 and .44 in 1975." <sup>1/</sup> Estimates of demand elasticities derived from a family income and expenditure survey carried out by the Bank of Mexico in 1963 gave an income elasticity coefficient for all agricultural products of 0.35. While there are differences between these two estimates, the rough magnitude is comparable and the differences may be largely explained on the basis of the difference in the basic data.

67. The aggregate Agricultural Projection based on the consumer survey estimate of income elasticity and on the Inter-Secretarial Working Group's estimates of the rate of growth for the Mexican economy is that demand for agricultural commodities is expected to almost double between 1960 and 1975, while per capita consumption will increase by less than one percent per year. (See Table 10). The rapidly rising national population accounts for more than three-fourths of the projected demand increases.

68. Three main groups of commodities were identified in the Bank of Mexico study according to their projected annual rates of growth in per capita consumption.

- a. Those commodities for which projected growth rate are less than 0.9 percent per year. Included are: pulses, 0.4 percent; cereals, 0.1 percent; and animal fats, 0.4 percent. The declining relative domestic demand reflects lowering consumer preferences for beans, corn and lard.
- b. Those products for which the rate of increase is similar to the average: starches, 0.9 percent; hides and skins, 1.1 percent; vegetables, 1.1 percent; and oilseeds, 1.0 percent. For these products, the share in domestic demand will remain approximately unchanged.
- c. Those commodities for which there is a projected per capita increase in consumption greater than the average for all products: cacao, coffee and tobacco, 1.2 percent; sugar,

---

<sup>1/</sup> Ibid. p. 40

1.2 percent; textile fibers, 1.4 percent; meat and milk and eggs, 1.5 percent; and fruit, 1.5 percent. These products will constitute an increasing share of aggregate domestic demand for agricultural commodities.

69. Considering the exports as well as domestic consumption, the Bank of Mexico's projected rate of growth in expected demand is about 4.3 percent per year. In view of the recent growth in crop products averaging almost 5 percent per year there is little room for concern that Mexican agriculture will not be able to provide the crops needed both for domestic uses and exports. There is less certainty with regard to livestock products. While data are inadequate to quantify possible problems with respect to the availability of livestock products in the recent past or for the years ahead, there are indications that not all has gone well. There are repeated reports that milk has not been available in adequate quantities for the Mexico City market. Early in the morning one can observe long lines of women waiting for the distribution of subsidized reconstituted milk in Mexico City; the daily distribution ends long before the full demand is met. Whether those who fail to get milk from this source do obtain it from other sources, albeit at higher prices, is not known. Also with respect to milk, and its derivative products, quality is less than acceptable. Numerous towns and cities do not have pasteurization plants or hygienic milk distribution systems.

70. Beef has currently been reported to be in short supply in the Federal District. Most recently new regulations permit the introduction of meat slaughtered outside of the Federal District into this market area. It is hard to tell what part of the reported difficulties concerning beef availability in Mexico City is due to inadequate farm production and what part springs from inadequacies in the marketing system. But there is no doubt about the very substantial rise in the real prices of meats from 1951 on. (See Table 11). Consumption of beef which was about 8 kilograms per person in 1940 seems to have dropped to about 5 kilograms in 1950, but from there rose once again to 8 kilograms in 1956 and has held at that level since then. At the same time the real price of beef had almost doubled between 1950 and 1960. There can be little doubt that such rapidly rising relative prices for beef have restrained domestic consumption. It is also likely that the structure of meat marketing in Mexico has not permitted these high retail prices for beef to serve as an effective incentive for expanding production.

71. Pork prices also increased, although not so greatly as those for beef, during the same time period. Consumption levels beginning about 1957 have also been stationary for pork. No consumption estimates are available for eggs or poultry meat, but the general opinion is that for both of these products, prices have not been increasing and that increasing quantities of product have been reaching the market.

72. To summarize, and using past performance as the best indication of the country's capacity to provide needed food and fiber for the years immediately ahead, the conclusion is clear that crop production will be adequate for national needs, notwithstanding a 3.6 percent population

increase. In the case of livestock production the forecast is less clear, if for no other reason than the lack of data regarding recent past performance. The rapid population increase plus an expected 1.5 percent annual increase in demand for meats and other livestock products requires a 5.4 percent increase in production. Recent price increases suggest that consumption of meat is already being restrained. Any action tending to decrease prices would tend to put further pressure on a tight supply situation. Further rises would of course tend to restrain consumption, but - particularly in metropolitan centers - would be burdensome for consumers.

#### B. Income Distribution and Productivity

73. No single national promise to Mexico's millions is clearer or more repetitively insisted upon than the proposition that it is the national purpose to increase the social welfare benefits and to provide increasingly rapid increases in income levels for the great mass of low income people. Although it is now well over half a century since "Land and Liberty" started to become a reality, the repeated calls on the part of national political leaders for broader involvement of low income peoples in the national life suggest that there are pervasive problems which the progressive and modern nation has still to resolve.

74. After fifty years of agricultural reform the extreme concentration of commercial production by a small fraction of all farmers is a key element of Mexico's agricultural economy. A rough approximation of this concentration can be obtained by using data for the private ownership sector, from the 1960 Census of Agriculture. (See Table 12). While exactly comparable data are not given for the ejidal sector, a division of ejidatarios by size of parcel is reported. 230,979 out of the 1,512,125 ejidatarios with cropland, had parcels of ten hectares or more. These ejidatarios, with larger land endowments, may be assumed to have the best chance of participating actively in the commercial market. Indeed, it may very approximately be estimated that this group sells somewhere around 2,800 million pesos of crop products.

75. The total number of private holdings plus the ejidatario parcels, sum up to slightly more than 2,100,000 farming units. (The number of farms may be smaller because of the possibility that more than one unit may be held by an individual farmer). The total value of crops sold is reported at 11,818.2 million pesos. Now using these data and those given in the table it can be demonstrated that the 68,234 private holdings from each of which more than 15,000 pesos of produce was sold, produced over 6,000 million pesos of sales. Which is to say that three percent of the holdings were responsible for over one-half of crop sales. Although data are not available, it is generally held that livestock production is even more concentrated than crop production. If the 230,000 largest ejidal holdings are included, then roughly 300,000 holdings or less than 15 percent of all holdings provide three-quarters of agricultural sales. The remaining 85 percent of producers are a very marginal item in the national agricultural economy. It should not be overlooked that this massive group of small farmers and the associated large group of agricultural workers, who jointly

with their families total perhaps as many as 20 million people, do not constitute a significant market for the expanding consumer goods industries.

76. This is a truly significant national problem, and its resolution will have to be worked out through the political processes of the country. The emphasis here is that the limited participation of so large a part of the population is an important factor; at least as important as the provision of foods and fibers for urban centers. Resources exist which are not being used in accordance with their known potential and economic opportunities exist for their utilization. By grasping these opportunities, the ultimate end of development policy, increasing total welfare, may be better served.

### C. Public Policy Issues and Instruments

77. It was noted above that two overriding objectives guide Mexico's agricultural development efforts:

- a. The provision of adequate food and fiber products for national needs.
- b. The wider participation of small farmers in the national economy, both from the standpoint of expansion of economic activity and from the concepts of social justice.

These two fundamental objectives are not necessarily inconsistent with each other, although either can be pursued without having perceptible effects on the other.

78. A wide range of policy instruments are currently employed to implement agricultural policy. Mexico does have a land policy, one which combines land re-distribution with a modicum of security in rural properties. It has a resource development policy and the magnitude of irrigation development was described above. Colonization activities are also undertaken, albeit with variable success. And credit, research and education, agricultural prices, the provision of farm inputs, are all component parts of public policies directed to agriculture. We have also noted above the singular success of these policies as measured by the amount of product generated by the agricultural sector. The essence of success in this public policy has been the high degree of consistency in concentrating potentially productive inputs and services into a limited number of areas and into the hands of a relatively limited number of farmers.

79. A quick review of the pragmatic aspects of the policies are these. Irrigation investments have been over 90 percent of all public investments in agriculture. They have been concentrated in the peripheral zones of the country; undoubtedly because of the location of basic water resources, but incidentally in the zones of relatively low population density. In 1965 the total number of water users in formally organized irrigation districts was 340,000 (the actual number of farmers would be less since some farmers control more than one registered holding) or no more than 15 percent of all farmers in the country. Credit, public and private, has also reached a small

proportion of the country's farmers. The Banco Ejidal, principal agency for public credit to small holders, reaches no more than 10 to 15 percent of all ejidatarios. The Banco Agricola reaches even a smaller proportion of its potential clients. The Fondo de Garantia of the Bank of Mexico on December 30, 1965, had a total of 20,509 farmer clients, a number so small as to be insignificant in terms of proportion of farmers served, although of substantial effect in terms of helping to generate agricultural production. The concentration of institutionalized credit is not only on a limited number of farmers, but also, operates by channeling credit into the same areas as those served by the public water resources agencies. Irrigation water reduces production risks, and increases farmers' credit-worthiness. The controls of water and credit also are used to stimulate production of particular crops. Wheat, cotton, oil seeds and even from time to time corn production have been stimulated through the use of these rather flexible instruments.

80. In like manner, agricultural research activities have been concentrated on a limited number of crops and most particularly for production on irrigated acreages. Little work has been done for crop production under natural rainfall conditions, except for a few regions, recognized as offering immediate potential. Recognizing that almost no formal effective extension service exists, the experiment stations have been used for direct demonstrations to leading farmers of the consequences of the application of scientific techniques. On annual and semi-annual field days several thousand farmers attend talks and demonstrations at each of the five regional research centers. This direct contact with even ten or more thousand farmers is a significant contribution of these centers, but it hardly means an effective technical assistance program for the millions of peasant farmers.

81. The provision of production inputs, particularly fertilizers, has also followed the same pattern. Emphasis has been for fertilizer application on cotton, wheat and sugarcane, the crops grown on commercial farms, sometimes in association with industrial plants. Usage has been concentrated in the irrigation districts; except for a few isolated experiments, fertilizer response experiments have been carried out for irrigated farming. Credit availability is determinant in the use of fertilizers. Mechanized farming systems are, of course, restricted to large farm holdings, including, in a limited number of irrigation districts, ejidal holdings.

82. Public investments largely in irrigation, agricultural credit, technical developments and their propagation, and the provision of production inputs, have similarly been concentrated into the hands of a limited number of holdings and into a fairly limited geographic area. In a very real sense, public policy has been to create a new and commercial agriculture almost from virgin regions; attempts to modernize and reform established and traditional agriculture have been rather weak. The result of this concentration, of this newly formulated modern and scientifically based agriculture, has been the provision of expanding supplies of food and fiber both for domestic and export needs. But it has also been the development of an agriculture which concentrates the benefits of public investment and modernization among a limited number of farmers.

83. The fundamental issues which confront the policy maker concerned with the productivity and welfare of so large a segment of the Mexican population, as well as with tons of final product, is how to use the instruments of policy so as to permit a broadening of involvement by peasant farmers in expanding the production of agricultural commodities. Certainly the issue is not one of transferring large sums of the national product from one sector to another; the national economy is not so strong that it can afford these kinds of transfers. The question is more nearly related to the feasibility of encouraging a greater flow of production from a set of resources which are not currently producing very much; albeit by channeling the complementary resources into this sector. Basic to this possibility is that Mexico now has at its disposition a quite different stock of physical and technical inputs than it had twenty years ago when current policies were initiated.

84. Where then lie the opportunities? Surely the start must be in effective decisions at the highest level that policies related to agriculture will consider the availability of final products as well as the effects on the national economy of a more productive small farms sector. Once this decision is taken, pragmatic review of program alternatives can look clearly at the hard realities of the national need to use under-employed human and other resources in an expanding economy.

85. Water Resource Development. The principal public investment directed toward agriculture has been irrigation development. As such it is the most directly controlled aspect of public policy. During the period of 1960 through 1965, considerably less than 10 percent of the lands benefitted from new or improved irrigation facilities were located in the high population Center and South Pacific Highland regions, where two-thirds of the country's farmers and agricultural workers live. Although irrigation development depends principally on the availability of water resources, and this may be limiting for the central plateau region, about one-third of the nation's irrigated lands are located within this region and it is generally held that systems of water distribution and efficiency of water usage are less than ideal.

86. Greater attention to water usage and distribution systems, both at the district and farm levels offer opportunities for greater production in the older and less effective districts. In 1964, wheat yields averaged 2,150 kg/ha in the Alto Rio Lerma Irrigation District as compared to 3,360 kg/ha in the Rio Yaqui, although the former area in many respects is a more favorable ecological zone for wheat production <sup>1/</sup>. Much the same occurs in corn production where yields averaged only 2,880 kg/ha in the Lerma while reaching 3,540 in the Yaqui. More factors than just water control are involved in these differential yields, but clearly water distribution systems, drainage and land leveling are among the contributing factors.

87. Related to considerations of policies with regard to water resource development are the questions of the market for final products that might be produced. In 1964, 85 percent of the crop area in irrigation projects was planted to grains and cotton, both of which categories of products have only modest demand prospects in the years ahead. Considering the transportation facilities available, the shipment of perishables from

---

<sup>1/</sup> Informe Estadístico No. 29, Secretaria de Recursos Hidráulicos, October 1965.

the periphery to the center is still not particularly feasible, and it is meat, milk, vegetables and fruits that have the better demand prospects for the years ahead. Proposals for the development of new and improvement of old irrigation projects should keep these basic demand relationships in mind, and allocation of funds between alternative projects determined in accordance. Even though the technical coefficients might be less favorable in the center region, the possibilities of producing forage crops for livestock enterprises or vegetables and fruits for the nearby markets might more than compensate the technical disadvantages.

88. Technical Developments. It is in the area of technical developments that the most substantial opportunities exist for public programs leading to both adequate supplies of food and fibers and a wider participation in modern production processes by small farmers. Mexico has reached a degree of distinction in scientific progress in agriculture unmatched by other countries in comparable levels of economic development. Its agricultural scientists are respected members of international associations of agronomists, and workers from all over the world go to Mexico to review the most recent advances in genetic materials and cultural practices. Most recently substantial quantities of wheat seed were sent to India and Pakistan to provide the foundation for expanded production of improved wheat varieties in those countries. The genetic materials on maize maintained at Chapirgo, Mexico, are also internationally famous and are increasingly becoming among the most important sources of yield increasing capacity for corn improvement the world over. As work has advanced on crop improvement, disease resistance, fertility studies and insect control, a significant research capacity has been either a by-product or perhaps the principal accomplishment.

89. The hundreds of well trained agronomists now working on agronomic research and related activities have the technical capacity to attack an ever broadening complex of problems in Mexican agriculture. Indeed the current 100 million peso development program at Chapirgo, Mexico, financed by the Mexican Government, the United Nations Special Fund, AID, IDB, the Ford and Rockefeller Foundations, is testimony of the faith, both on the part of the Mexican Government and by prestigious international agencies, that Mexico has the capacity to use effectively substantially better facilities in attacking the technical problems of its agriculture. And it is precisely this capacity which is presently needed and which will be increasingly needed in the years ahead. Rather than only emphasizing research on the problems of technifying irrigation agriculture, the powerful research experience with plant genetics, plant pathology, entomology, soil fertility and other related disciplines should be brought to bear on a much wider group of ecological zones and differing problems. Clearly among the areas for which research needs to be emphasized, are those in the central plateau regions and the high valleys which have at least minimal rainfall for effective agriculture (700 mm. or more) and which are also the high population centers of the country. Here opportunities exist for the production of forage crops as the basis for an expanding livestock industry, but the full range of possible crops, the disease and insect control, the fertility programs and other associated cultivation practices have not been studied. At present, with limited exceptions, farmers only know how to grow corn in the traditional ways. Which is to say, to plow the land, take seed from last

years harvest and plant it once again, wait for the rains, make some physical control of weeds and virtually have faith that God will provide a harvest. Over the decades, the seed used has been selected by farmers to provide a degree of surety of a minimal harvest, and the plowing and seeding dates have been developed in accordance with farmers' empirical experience of former rain patterns. But few have asked if something better could not be done.

90. The nature of the kind of policy that can be followed to provide both the nation's needs for agricultural products and at the same time incorporate a larger number of producers into the production process is suggested by some recent research findings. The question, framed in terms of the research purpose was "to determine the fertilizer response functions, relate fertilizer response to yield-limiting factors, and to employ response data, field observations on drought, soil properties, and climatic data for past years to calculate the family of nitrogen response functions and their probabilities for important producing systems." <sup>1/</sup> Using a detailed research plan, including 47 field experiments in the western Bajio region, and interpreting these results with the aid of theories concerning the physiological response of the corn plant to drought, optimal rates of nitrogen fertilization were calculated for 16 production systems, where production systems were identified in terms of soil texture and depth and average annual rainfall. In addition other common characteristics of the systems were: (a) that temperature and other climatological factors are those that correspond to the study region; (b) that the soils are non-toxic, and that slopes were not excessive from the standpoint of water losses and erosion; (c) that surface and internal drainage were good; (d) that weeds and insects would be controlled; (e) that improved seeds be used and that plant populations be optimum, both in accordance with the best existing knowledge, and (f) that corn be planted after June when the first rains moisten the sandy loam soils up to 25 cm of depth. <sup>2/</sup>

91. While the results for each of the 16 production systems were different, nitrogen applications were recommendable in all identified production systems except one, that with 525-600 mm of rainfall and with soils of less than 30 cm of depth. For the more favorable production systems, those with more than 800 mm of rainfall and with deep soils, 120 and more kg of nitrogen were recommendable. For these situations, the field experiments indicate that the application of this amount of nitrogen would increase yields by 2.6 tons per hectare. Which is to say that an expenditure of about 600 pesos per hectare for nitrogen plus an additional 200 pesos for additional weed and insect control generated slightly more than 2,400 pesos of additional product per hectare. Small farmers with three or four hectares of corn would more than double their net incomes through the application of these improved production systems at current corn prices. These production systems, while requiring substantial purchased inputs, are ef-

---

<sup>1/</sup> Laird, R. J. and J. H. Rodriguez G., "Fertilización de Maíz de Temporal en las Regiones de Guanajuato, Michoacan y Jalisco," Folleto Técnico No. 50, Instituto Nacional de Investigaciones Agrícolas, Mexico, February 1965, p. 66.

<sup>2/</sup> Ibid. pp. 60-61

fectively cost reducing systems, thus they may lead to higher incomes for farmers or to an expansion of output and to lower corn prices or to a combination of both.

92. The technological development here cited is just one of what might well be a flow of economically viable new agricultural production systems which would both provide the national needs of commodities and at the same time enlarge the involvement in the national economy of thousands of peasant farmers. A beginning requirement is a national decision to work on these problems and the provision of the research funds with which such studies might be carried out. Currently the annual expenditure of the National Agricultural Research Institute is about 25 million pesos per year. While funds are being made increasingly available, it is doubtful that this quantity of funds is adequate to pay salaries sufficiently attractive to maintain staff and to increase the coverage of its work; the better staff members are already being offered higher salaries in industry and in semi-autonomous public agencies. (The new Banco Agro-Pecuario was reported to be attracting numerous of the Institute's personnel through attractive salary offerings and perquisites). Substantial increases in public support seem to be indicated. Among other factors, it should be clarified that the urban centers of the country profit from the more efficient production of food and industrial products originating in an increasingly technified agriculture.

93. The development of the superior production technique is just one part of the overall task. While public resources devoted to agriculture were adequate for a policy of concentration of efforts to increase agricultural product in a limited number of areas and by a limited number of farmers, an expanding policy would require a substantially greater effort. The application of improved production techniques in the case of wheat were discussed above and it was mentioned that research results were picked up by the relatively small number of wheat farmers with considerable effectiveness and in fact without a highly organized dissemination program. It cannot be expected that the wheat experience will serve any useful purpose with respect to programs directed at a much wider number of smaller farmers. In point of fact, the more efficient corn production system described above is an extremely complicated way of producing corn. Although land preparation may be about the same as under the traditional systems, new materials include selected seeds, insecticides to control both soil borne and other insects, herbicides, and chemical fertilizers. Not only are these all new materials to the small corn farmer, but timing of operations and exacting formulations of chemical materials for application are an integral part of the system. To enjoy even moderate success, technical assistance will have to be made available to participating farmers, perhaps on a weekly basis. The need is thus for a large number of agricultural technicians who will have direct contact with farmers.

94. Provision of Production Inputs. Associated with the availability of technical assistance is the necessity to provide the new inputs which are the basic ingredients of the new systems of farming. Fortunately the agricultural chemical industries have been developing rapidly in Mexico; the projected availability of nitrogen fertilizer would provide 200,000 tons for

application on corn in 1970. Consequently, the materials will be available, if distribution systems are organized and if farmers' demand is fomented.

95. Agricultural Credit. Agricultural credit is already recognized as a fundamental instrument of Mexican agricultural policy. The availability of public credit has long been used as a tool for stimulating expansion or contraction of production of particular commodities. When external demand for cotton was strong, maximum availability of credit was directed toward expanding production. In like manner, in the years when wheat was in short supply, agricultural credit availability was used to stimulate production, while in recent years credit availabilities were curtailed in an effort to restrain further expansion of wheat production. It is to be expected that credit will continue to be used as a means of directing farmer resource allocation in accordance with public policies and interpretation of the national good.

96. Over the past few years institutionalized credit seems to have been directed at a shrinking proportion of Mexico's farmers. The numbers of ejidatarios receiving credit from the Ejidal Bank is actually smaller today than it was thirty years ago when the bank was first organized. The Banco Agrícola serves the needs of only a small proportion of small private farmers, and the Fondo was never designed to serve the needs of any except the traditionally defined "creditworthy." Even in its program with the Alliance for Progress funds, the number of small farmers (ejidatarios) served is less than 7,000 and of these over 70 percent of the loans made with ejidatarios are in association with sugarmills which thus receive an assured supply without much reference to market price fluctuations. Operational procedures are still in the process of formulation for the new Banco Agro-Pecuario and it is not yet clear whether it will be organized to incorporate a much larger proportion of the country's farmers into the system of institutionalized credit.

97. In point of fact, it would make little sense to try and broaden the coverage of agricultural credit unless that decision is a part of an over-all public policy with respect to agriculture, i.e. one that sees agricultural credit as an instrument which permits the adoption of new and different farming systems. It permits the obtention of new materials and systems of production by entrepreneurs who could not otherwise obtain control over such resources. And in a developing agriculture, when the shift is from traditional production systems to modern and technically superior ones, it is highly productive. Hence, it does not really matter if the interest charge is 6 percent or 12 percent; neither does it matter if there is a service charge for credit supervision. The high productivity of this kind of change permits the absorption of the costs, either by the individual farmer or by society. It is on the basis of the potentially high productivity of shifting systems of production that an aggressive credit policy might be followed, tending to incorporate a much larger proportion of Mexico's farmers into the institutionalized credit system.

98. Price Policy. Mexico has had more than twenty years of experience in administering limited national agricultural price programs as instruments of public policy. While in the beginning the policy was to favor urban consumers with low priced agricultural commodities, more recently the reverse has been true. Over the past 15 years rural prices of the national food

crops have been maintained at levels somewhat higher than world market prices, first to stimulate additional production in accordance with national needs, and later as a way to provide higher incomes for small farmers. Particularly in the case of wheat, the price program, combined with an aggressive development policy tending to lower production costs, has moved the country from the position of a net importer of wheat to that of a net exporter. The price program for corn has not been as universally effective in coverage and neither has it been associated with so effective a production development scheme; production has been substantially higher the past few years over earlier levels, but this may be more the result of weather conditions and of some shift into irrigation districts, than price incentives.

99. Effective price programs have their maximum potential as instruments of national development policy when viewed as an integrated part of overall policy implementation. When attractive prices are being used as an incentive to greater production, the obtention of that production is more likely, if consistent resource development, technical services and agricultural credit policies are also followed. Such was the case with wheat some ten years ago. An example of much less consistent policies can be cited in the case of wheat more recently. Although national demand at existing prices was being met, aggressive technical programs were still being developed which tended to stimulate wheat production, and the guaranteed minimum prices to farmers afforded continuing profitability as production increased. The increased production could not be absorbed by the domestic market and had to be exported with substantial losses to CONASUPO. At the same time that this was occurring, guaranteed corn prices were raised, based on an argument of affording a rise in small farmers incomes somewhat comparable to the increase in minimum wages announced for workers in other segments of the economy. This rise in the price of corn coincided with bumper crops, in large part a consequence of better than average weather conditions. The combination of greatly increased inventories on the part of CONASUPO and substantial exports, all at several hundred pesos per ton losses, could result in nothing less than enormous agency losses, insolvency and in November of 1964, the entrance of CONASUPO, S.A., into receivership and reorganization.

100. Price programs which have had difficulties in the past are not likely to be more successful in the future unless they are geared more nearly to the basic national policy for agriculture. It also seems unreasonable to assume that Mexico as a nation can long afford an agricultural price policy program that provides a large per ton transfer payment out of Treasury funds to producers. The level of national income and present tax schedules do not provide an absolutely large public sector income and the opportunity cost of transfers is high in terms of productive public sector expenditures and investments. Neither can such per ton transfer payments be justified on the basis of equity. Poor farmers, with their stagnant low levels of production, just don't produce enough tons of product entering commercial channels to materially benefit from such subsidies.

101. It has been argued above that the development of biologically superior production systems offer some of the best opportunities for the continuing provision of foods and fibers for national needs and also for expanding the participation into the national economy of large groups of small farmers. Illustration was made of a particular scheme for the production of corn under natural rainfall conditions. It will be recalled that in the more favorable rainfall conditions of the western Bajio Region traditional systems of corn production yield about 1.5 tons per hectare. Using superior production systems, the yields can be increased to 4.1 tons per hectare. This gain in yield is accomplished by using some additional 800 pesos of purchased inputs. Information about these improved systems is now available, although no systematic promotion campaign is yet being developed to carry through to the masses of small farmers located in the potential production zone. Basic considerations are of course the economic incentive for farmers to participate in such a development scheme and the economic rationale for the Government to undertake it.

102. If corn prices are maintained at current guarantee levels of 940 pesos per ton there is little doubt about the benefits to farmers. A yield of 4.1 tons would mean a gain in farmers incomes from former levels of 1,400 pesos to slightly more than 3,000 pesos per hectare after having paid for the additional inputs. Such a gain is significant and would clearly provide incentives if farmers are convinced of feasibility, receive technical assistance, can obtain locally the needed new inputs and can arrange financing. But there might still be doubts as far as the national economy is concerned. The domestic demand for high priced grains is clearly limited and international markets, while currently strong, have prices much lower than the Mexico guarantee price. In fact current policy in Mexico is to restrain excess production of grains, both wheat and corn, because of the losses absorbed by CONASUPO when exports are made. Even a program of limited (but significant) scope, including a hundred thousand producers with some 400,000 hectares would produce an additional million tons of corn. A 300 million pesos loss in exporting such an additional production is not an attractive operation.

103. One alternative would be to offer more limited economic incentive to producers and force most of the cost reducing advantages of the new production systems to find expression in lower final product prices. In the example at hand, if internal corn prices are reduced to 620 pesos per ton (export prices of 720 pesos, less 100 pesos handling and shipping) the gross receipts from the sale of 4.1 tons of corn would be about 2,500 pesos. If from this, the additional out of pocket costs of 800 pesos are subtracted, it would leave a net figure of 1,700 pesos per hectare for farmers, compared to the comparable figure of 1,400 pesos for the traditional system. Indeed prices might be brought down to this level, but the farmer incentive would be rather limited, and the development program would be only partly successful. Another alternative could be to study the possibilities for a crop substitution program, bearing in mind internal and external demand forecasts, with special emphasis in replacing corn in the traditional sector with other crops in which

Mexico still has a deficitary position and that could excell corn's productivity for the farmers. It should be added that lower relative grain prices would clearly facilitate the development of more rapid growth in milk, eggs, poultry and pork production. A flexible price program might permit accomplishments somewhere between the extreme cases here illustrated.

D. A Concluding Note on Policy

104. The comments here directed to the discussion of policy formulation and instruments of fulfillment have emphasized the dual considerations of fulfilling national needs and expanding the involvement of a wider group of farmers in the national economy. No serious problems are expected with the first of these objectives, and since some changes from present policy are required for the fulfillment of the second, the discussion has repeatedly returned to this theme. It would appear that in Mexico and elsewhere there is substantial support for policies tending to continue the formula which has succeeded so well in the past. That is, to continue to limit the resources directed to agriculture and to concentrate them. The express and implied assumption underlying such a policy is that ultimately the country must get people out of agriculture and that it should proceed with all due speed in the development of other sectors. Agriculture is important only to the degree that it provides the products needed in urban centers and for export. These needs have been well satisfied with the current limited but highly concentrated effort.

105. It was argued above that on the long run perhaps the most expedient form of increasing the national product is to foment new production systems among small farmer producers. There are obvious limitations to providing new jobs in industry and services for the rapidly expanding population and not even the most optimistic projections call for an absolute reduction in the numbers employed in agriculture for the foreseeable future. The resources now in agriculture can, in accordance with the contemporary national capacity, make a greater contribution to the national economy and in like manner participate more fully in the benefits of an expanding economy.

106. The emphasis has been on technological developments and the power these developments have in the growth of agriculture. While **the emphasis of** illustration has been with respect to natural rainfall agriculture, particularly corn production, the general relationships are the most important. Known opportunities exist for corn production, but there are also currently known superior production techniques for a wider range of products which can be applied by the many farmers who have at least some irrigated acreage, no matter how small. Additionally, an aggressive and broadly based research program will identify an ever wider range of opportunities. The natural rainfall areas of the central region and less than optimally utilized irrigated zones also in the heavily populated regions offer the advantage that necessary infra-structural services are already available at least on

minimal levels. Other zones on the periphery, whether in the desert zones or in the Gulf Tropics may have less well established markets and transportation and other services but here too attractive opportunities may exist. The stress should be on the shift from traditional to modern agriculture wherever opportunity may exist, recognizing that special efforts may well be made in the heavy population zones.

### III. INVESTMENT OPPORTUNITIES

107. No integrated or even partial national agricultural investment plan was available to form the basis for a systematic review of investment in agriculture for the years immediately ahead. Therefore, only a general outline of what may be some productive investment opportunities under contemporary Mexican conditions will be attempted here. The discussion is based on the orientation established in the sections descriptive of contemporary Mexican agriculture and those which treated policy considerations.

#### A. Current Account Expenditures

108. Investment opportunities in agriculture are conditioned by the very close relationship that exists between public investments and the supporting current expenditure activities carried out by public agencies. Research, extension or technical assistance, regulatory and other activities all condition the rates of adoption and the effectiveness of public investment programs. As has been pointed out before, over the past years, more than 90 percent of public investment has been made in irrigation development. Because of established ways of classifying public expenditures, it is perhaps not unusual that fixed investments in irrigation facilities be the principal recipient of these funds. In point of fact, if current expenditures for agricultural activities were high, such a level of investment expenditures might not be so out of balance. But the absolute magnitudes are enormously different. Irrigation expenditures (effected or budgeted) between 1964 and 1966 ranged from 1,800 to 2,100 million pesos. In this same time period the entire budget for the Ministry of Agriculture varied between 300 and 400 million pesos, and this figure in turn includes some investment expenditures. The budget for the Ministry of Agriculture in the view of those charged with departmental administration is no more than adequate for minimal staffing of a traditional bureaucratic organization. While one might be critical of many agencies within this Ministry, for failing to use the limited resources effectively, it is also fair to say that total available resources are woefully inadequate. In a very real sense it is much easier to point to an installation constructed and take national pride in accomplishment; it is much more difficult to appreciate the effectiveness of an operational program.

109. Under any circumstances an effective investment program in agriculture must be associated with a coordinated set of agricultural services, provided either through the traditional Ministry of Agriculture agencies or through special ad hoc arrangements. And no matter how they are organized they will constitute significant costs on current account. These are, however, the services which will permit the new investments to reach their economic potential.

B. Public Investments

110. Irrigation. Considering the long dominance of irrigation development among possible investment activities it is to be expected that this category will continue to be prominent among the agricultural alternatives, if for no other reason than because of the effectiveness of past programs. The agencies responsible also know how to draw up plans, pass them through to favorable implementation decisions, and then to build useful installations.

111. Mexico's national geography, much of it arid and semi-arid does, of course, make the rational utilization of its limited water resources of primary importance. Within the limits imposed by nature and with due regard to benefits and costs every effort should be made to develop new irrigation facilities in the higher population centers and regions where the complementary infrastructure is already established. In order to get maximum social benefits, irrigation works should increase the resource base of some of the less privileged farmers, not by hauling them off to forge their way in some unknown ecology, but rather to develop known resources in established areas. Some of the developmental work in the Plan Lerma promises this kind of emphasis.

112. Members of the mission were unable to establish whether the presently emphasized large scale irrigation schemes, or small irrigation works offer the more promising long-term opportunities. Obviously the physical availability of water is fundamental to the development of either of the two scales of project. What needs to be clarified is the comparable initial investment, the duration of installation with corresponding depreciation charges, and the operation and maintenance costs.

113. Clearly rehabilitation projects should be continued in established districts wherever they may be. The majority of the installations have been made, farmers are established in the district, the zone may be adequately capitalized, but the whole agricultural organization may not be producing at potential because of some engineering inadequacies. It is to be expected that limited expenditures will bring about substantial benefits. Experience over the past few years suggests that this type of project is particularly attractive. The Water Resources Ministry has programmed about 2,500 million pesos for rehabilitation work in the period 1965-70.

114. An additional area of investments in the irrigation districts which would seem to offer attractive perspectives are "on farm" investments in land leveling, drainage and internal water distribution networks that will tend to permit maximum benefits from the irrigation system. Complementary to these on-farm investments would be technical assistance programs and short-term credit programs permissive of an aggressive production development scheme. This coordinated activity could well be handled by the public agricultural credit banks, including perhaps the technical assistance component.

115. The comments on irrigation development presuppose a continuing agricultural research activity supporting irrigated farming. It should also be clear that emphasis here has been on projects that would benefit small holders within the irrigation districts as well as the larger ones who have not already accomplished much of what has been suggested here.

116. Natural rainfall agriculture. Two aspects are fundamental to a more flourishing agriculture in the natural rainfall zones. The first is an expanded research effort. Such an effort would need greater current budget expenditures, and also limited investments in research facilities. As viable production systems become known, their implementation will depend on credit availability, much of it short-term, and on the provision of technical assistance to the small farmers concentrated in this kind of agriculture. Most of the illustrations in this report have centered on the opportunities which may exist in this category.

117. Tropical zones. Altogether too little is known about tropical agriculture. Excepting a few enclaves of plantation type agriculture, the tropical zones are still not well communicated with the rest of the national economy. Some farmers have found economic opportunity in the tropics and they are engaged in the process of pushing back the frontier as fast as their empirical experience permits them (and from time to time, retreating). The most indicated present undertaking would be to emphasize the development of additional knowledge about tropical agriculture, and draw on knowledge from other countries, and allow those farmers established in the area to try out the results. Minimal road constructions, effective public health measures and perhaps a few other amenities may be provided, but for the near future emphasis should be on gathering and interpreting past experience as a guide for further developments. Livestock production excepted, ambitious operational programs should not be initiated at this time.

118. Livestock production. It was pointed out above that the one group of products for which some doubts of future availabilities exist are those related to livestock production. The problems surrounding livestock production include the full range of disease, management, quality breeds, reproduction, nutrition, markets and economic incentives. A comprehensive approach must be directed to the adequate definition of fundamental problems. Opportunities may then exist for investment in demonstration facilities, in the introduction of improved breeds and the establishment of livestock organization which will maintain and increase these improved stock, in disease eradication and in the establishment of expanded feed supply and distribution systems. Agricultural credit will be fundamental to an aggressive livestock development program, just as a more systematic technical assistance program will also be needed.

119. Land registry. During the current presidential administration a systematic review of land holding is being undertaken by the Departamento Agrario. The intention is to identify public lands and private lands affectable in order to terminate the redistribution phase of the agrarian reform. Such an effort is urgently needed and the project should be expanded to give definitive resolution to problems associated with rural properties, both private and ejidal. While it cannot be documented,

there is much evidence that uncertainty in land holding and titling restrains farmers' development of their farms. There can be no doubt that cloudy titles to rural lands eliminate farmers as clients for institutionalized credit. No bank, public or private, will lend to farmers who do not have reasonable surety of title to their properties.

A Comment on Priorities

120. We have repeatedly indicated that opportunities exist for incorporating a much wider group of Mexico's farmers into the national economy. We have held that viable economic opportunities exist, but that effectively a national political decision would have to be taken to initiate such an expansion of involvement. One expression of the decision to broaden the production base would be in the allocation in the current expenditure budget of meaningful amounts to such services as research and extension; another would be an increase in the investments benefiting relatively large numbers of farmers, without at the same time curtailing the traditional high yield expenditures of proven efficacy.

121. In short, the opportunities at present lying dormant in the productive potential of the traditional sector of agriculture seem to be large, while at the same time the social implications of leaving them underexploited may be serious. Programs to exploit these opportunities will be neither cheap nor easy, and will take a considerable time to become effective on a large scale. They will involve creating a whole administrative infrastructure of qualified extensionists, most of whom have yet to be trained. Moreover, large numbers of sub-technicians would have to be trained and put in the field. Credit activities would have to be gradually oriented to cooperating with the extension activities and some of the present institutional arrangements in the credit field would have to be altered.

122. While neither cheap, nor easy, such an approach is likely to become increasingly attractive on purely economic grounds as the opportunities for expanding output economically through further investments in large scale irrigation gradually are shrinking. The best sites are already being exploited; not very many opportunities to repeat the phenomenal success of, for instance, the Yaqui Valley irrigation in Sonora, remain. Naturally, those that do remain, should be exploited, and the older irrigation works in need of rehabilitation should be improved as much as possible; incremental returns on investment here are frequently very high. But this approach will eventually have to be complemented by investments of a different nature, and the long gestation period of these makes it advisable to begin to lay the basis without much delay.

ANNEX VII - AGRICULTURE

PART I

LIST OF TABLES

Table No.

- 1 INDEX NUMBERS OF CROP PRODUCTION MEXICO, 1929-1965
- 2 INDEX NUMBERS OF CROP YIELDS MEXICO, 1929-1965
- 3 INDEX NUMBERS OF AREA HARVESTED MEXICO, 1929-1965
- 4 DEMAND AND SUPPLY ASSUMPTIONS IMPLICIT IN MEXICO'S COFFEE  
DIVERSIFICATION SCHEME
- 5 AVERAGE ANNUAL MEAT SUPPLIES FOR MEXICO 1959-1961
- 6 APPARENT CONSUMPTION OF NITROGEN, PHOSPHOROUS AND POTASSIUM  
NUTRIENTS, MEXICO 1956-1964
- 7 NUMBER OF AGRICULTURAL TRACTORS AND THEIR HORSEPOWER, MEXICO  
1951-1965
- 8 LOANS OUTSTANDING FOR AGRICULTURE, MEXICAN BANKING SYSTEM,  
1961-65
- 9 SELECTED INDICATORS OF MEXICAN ECONOMIC GROWTH, 1950-1963,  
AND BANCO DE MEXICO PROJECTIONS TO 1970 AND 1975
- 10 BANCO DE MEXICO'S PROJECTION OF DOMESTIC DEMAND FOR AGRICULTURAL  
AND LIVESTOCK PRODUCTS, MEXICO 1970-75
- 11 RETAIL PRICES OF BEEF AND PORK, MEXICO, 1951-60
- 12 NUMBER OF HOLDINGS IN PRIVATE PROPRIETORSHIP SECTOR AND VALUE  
OF PRODUCTION, MEXICO 1960. CLASSIFIED BY AMOUNT OF CROP  
SALES

Table 1: INDEX NUMBERS OF CROP PRODUCTION  
MEXICO, 1929-1965

	Physical Production <sup>a/</sup>		
	<u>Domestic Use</u>	<u>Export</u>	<u>All Crops</u>
1929	100	100	100
1939	148	117	137
1949	254	210	239
1959	379	397	386
1965	523	534	527

a/ Weighted by average prices 1929-65.

Source: The index numbers are based on 25 principal crops grown in Mexico, 16 principally used for domestic consumption and 9 which have been historically considered as export crops. The 25 crops represent close to 90 percent of the country's total crop production. Individual crop data for the years 1929-59 were obtained from the respective agricultural census reports. Those for 1965 are preliminary data from the Direccion General de Economia Agricola, except the estimates for corn and beans which were adjusted by the mission.

Table 2: INDEX NUMBERS OF CROP YIELDS  
MEXICO, 1929-1965

<u>Year</u>	Crop Yields <sup>a/</sup>		
	<u>Domestic Use</u>	<u>Export</u>	<u>All Crops</u>
1929	100	100	100
1939	113	106	113
1949	151	137	150
1959	163	162	163
1965	198	216	199

a/ Weighted by average area harvested.

Source: Coverage, basic source materials and adjustments are the same as for Table 1.

Table 3: INDEX NUMBERS OF AREA HARVESTED  
MEXICO, 1929-1965

<u>Year</u>	Area Harvested <sup>a/</sup>		
	<u>Domestic Use</u>	<u>Export</u>	<u>All Crops</u>
1929	100	100	100
1939	122	93	118
1949	153	149	152
1959	191	226	195
1965	203	230	206

a/ Unweighted.

Source: Coverage, basic source materials and coverage are the same as for Table 1.

Table 4: DEMAND AND SUPPLY ASSUMPTIONS IMPLICIT IN MEXICO'S COFFEE  
DIVERSIFICATION SCHEME

Year (Oct. 1- Sept. 30)	Thousands of tons			Yield per Hectare (kg)	Area to be harvested at the expected yield to provide desired production (thousands of hectares)
	Internal Consumption (a)	Export (b)	Desired Production (a+b)		
1961/62 <sup>a/</sup>	49	95	141	470	300
1962/63 <sup>a/</sup>	57	74	132	460	287
1963/64	60	96	156	547	285
1964/65	69	99	168	615	272
1965/66	78	102	180	697	257
1966/67	87	105	192	772	248
1967/68	96	108	204	837	243
1968/69	105	111	216	904	240
1969/70	114	114	228	955	238

<sup>a/</sup> Estimates of actual data, before preparing the projections for the scheme.

Source: Adapted from data given on page 63 in mimeo report, "Plan de Tecnificación de la Caficultura y Programa de Diversificación de Cultivos, 1965", prepared by the Instituto Mexicano del Café.

Table 5: AVERAGE ANNUAL MEAT SUPPLIES FOR MEXICO  
1959-1961

<u>Class</u>	<u>Inventories Number of head</u>	<u>Annual Slaughter</u>		<u>Consumption per Capita (kg)</u>	
		<u>Number of Head</u>	<u>Total Weight (tons)</u>		<u>Weight per Carcass (kg)</u>
Beef	16,009,000	2,025,000 <sup>a/</sup>	309,000	153	8.6
Pork	6,132,000	2,691,000	157,800	59	4.4
Lamb and Mutton	5,170,000	825,000	12,400	15	0.3
Goat	9,732,000	778,000	11,700	15	0.3

<sup>a/</sup> In addition to the 2,025,000 head of cattle slaughtered for domestic consumption, 167,000 head of cattle were slaughtered for export and 440,000 head were exported on the hoof.

Source: Adapted from, "Projections of Supply of and Demand for Agricultural and Livestock Products in Mexico for 1970 and 1975," Secretaria de Agricultura y Ganaderia, Secretaria de Hacienda y Credito Publico, y Banco de Mexico, S. A. pp. 256-260.

Table 6: APPARENT CONSUMPTION OF NITROGEN, PHOSPHOROUS AND POTASSIUM  
NUTRIENTS, MEXICO, 1956-1964

	Nitrogen (N)	Phosphorous (P <sub>2</sub> O <sub>5</sub> )	Potassium (K <sub>2</sub> O)
(metric tons)			
1956	69,541	28,651	6,679
1957	69,845	30,730	7,930
1958	93,577	28,312	12,995
1959	98,408	37,048	15,500
1960	118,160	43,621	17,009
1961	122,519	40,508	10,672
1962	144,466	44,588	14,918
1963	190,428	61,450	11,286
1964	228,513	59,526	12,508

Source: Mexico: Proyecciones de Demanda, Costos de Fabricación y Costos de Amoniaco, Urea, Abonos Complejos, Metanol y Formaldehido, Nacional Financiera, mimeographed 1965.

ANNEX VII  
Part I

Table 7: NUMBER OF AGRICULTURAL TRACTORS AND THEIR HORSEPOWER, MEXICO  
1951 - 1965

---

<u>Year</u>	<u>Tractor</u> <u>(units)</u>	<u>Available</u> <u>Horsepower</u> <u>(thousand of</u> <u>horse-power)</u>
1951	22,700	650
1952	31,600	920
1953	33,900	998
1954	37,800	1,120
1955	41,400	1,240
1956	46,700	1,430
1957	48,600	1,506
1958	49,400	1,540
1959	51,000	1,600
1960	52,700	1,680
1961	54,500	1,760
1962	54,800	1,780
1963	55,300	1,800
1964	56,800	1,880
1965	58,700	1,980
1966	60,100	2,100

---

Source: Adapted from Mexico: Estimación de la Demanda Futura de Tractores Agrícolas, mimeo report from the Nacional Financiera, S.A., and for the years 1964-66 from trade sources.

Table 8: LOANS OUTSTANDING FOR AGRICULTURE, MEXICAN BANKING SYSTEM, 1961-65  
(millions of pesos)

<u>Source</u>	<u>December 31</u> <u>1961</u>	<u>December 31</u> <u>1962</u>	<u>December 31</u> <u>1963</u>	<u>December 31</u> <u>1964</u>	<u>December 31</u> <sup>a/</sup> <u>1965</u>
Total	<u>6,883.8</u>	<u>7,947.2</u>	<u>8,890.5</u>	<u>9,116.0</u>	<u>10,297.0</u>
Private Banking Institutions	2,413.5	3,529.2	4,211.2	4,006.6	4,586.0
Public Credit Institutions	(4,470.3)	4,418.0	4,679.3	5,109.4	5,711.0
Banco Ejidal	2,900.7 <sup>b/</sup>	2,697.6	2,909.3	3,098.9	3,682.3
Banco Agrícola	1,249.4	1,341.2	1,528.3	1,670.1	1,760.3
Nacional Financiera	33.7	28.7	25.1	110.5	112.5
Banco Nacional de Comercio Exterior	93.9	103.6	85.2	90.5	95.3
Other Public Institutions	192.6	246.9	131.4	139.4	60.6

<sup>a/</sup> Preliminary

<sup>b/</sup> Figures differ from those of 1961 Annual Report of Banco Ejidal.

Source: Departamento de Información de Crédito. Banco de Mexico, S.A., April 4, 1966

**Table 9: SELECTED INDICATORS OF MEXICAN ECONOMIC GROWTH, 1950-1963, AND BANCO DE MEXICO PROJECTIONS TO 1970 AND 1975**  
(Percentage Shares and Rates of Growth Calculated on Values at 1960 Prices)

Concept	Actual					Projected		Average Rate of Growth			
	1950	1960	1961	1962	1963	1970	1975	1951- 1960	1961- 1970	1964- 1970	1971- 1975
Population (thousand) <sup>a/</sup>	26,436	36,003	37,272	38,585	39,944	51,086	60,892	3.1	3.6	3.6	3.6
Rural (%)	57.4	49.3	48.3	47.4	46.5	40.3	36.4	1.6	1.5	1.5	1.5
Urban (%)	42.6	50.7	51.7	52.6	53.5	59.7	63.6	5.0	5.3	5.3	4.9
Per Capita Gross Product (in dollars)	259	346	347	351	362	437	514	3.0	2.3	2.7	3.3
Per Capita Aggregate Consumption <sup>b/</sup> (in pesos)	2,732	3,789	3,770	3,762	3,919	4,598	5,310	3.3	2.0	2.3	2.9
Gross Domestic Product (in millions of pesos)	85,409	155,867	161,498	169,503	180,587	279,127	391,504	6.2	6.0	6.4	7.0
Agriculture and Livestock (%)	20.0	16.6	16.5	16.5	15.9	14.4	13.1	4.2	4.5	4.9	5.0
Industry (%)	28.9	31.4	31.4	31.4	32.2	33.6	35.1	7.1	6.7	7.0	7.9
Commerce, Services and Others (%)	51.1	52.0	52.1	52.1	51.9	52.0	51.8	6.4	6.0	6.5	6.9

<sup>a/</sup> For 1950 and 1960, population census data as adjusted by R. Benitez and G. Cabrera.

<sup>b/</sup> Includes changes in inventories.

\*Source: Adapted from Table I-1, "Projections of Supply of and Demand for Agricultural and Livestock Products in Mexico to 1970 and 1975," Banco de Mexico, S.A., Secretaría de Agricultura y Ganaderia and Secretaria de Hacienda y Crédito Publico, 1965. This part of the study was prepared by the Joint Working Group, Ministry of Finance - Bank of Mexico.

ANNEX VII  
Part I

Table 10: BANCO DE MEXICO'S PROJECTION OF DOMESTIC DEMAND FOR  
AGRICULTURAL AND LIVESTOCK PRODUCTS, MEXICO, 1970-75

<u>Year</u>	<u>Aggregate Domestic Demand (Millions of Pesos) a/</u>	<u>Per Capita Consumption b/ (Pesos) a/</u>
1959-1961	22,881	640
1970	35,721	700
1975	44,682	730
<u>Indices: 1960 = 100</u>		
1970	156	110
1975	195	115
<u>Average rate of growth</u>		
1961-1975	4.5	0.9
1961-1970	4.5	0.9
1971-1975	4.6	1.0

a/ At average 1958-1960 farm prices.

b/ Calculated with population figures from Table 9.

Source: "Projections of Supply of and Demand for Agricultural and Livestock Products in Mexico to 1970 and 1975," Banco de Mexico, S. A., Secretaría de Agricultura y Ganadería and Secretaría de Hacienda y Crédito Público, 1965. p. 39.

ANNEX VII  
Part I

Table 11: RETAIL PRICES OF BEEF AND PORK, MEXICO, 1951 - 1960  
(1954=100)

---

<u>Year</u>	<u>Beef</u>	<u>Pork</u>
1951	97.4	98.4
1955	111.2	114.5
1960	186.5	130.1

---

Source: Data from 1951-1960 from "Projections of Supply of and Demand for Agricultural and Livestock Products in Mexico to 1970 and 1975."

Table 12: NUMBER OF HOLDINGS IN PRIVATE PROPRIETORSHIP SECTOR AND VALUE OF PRODUCTION, MEXICO 1960. CLASSIFIED BY AMOUNT OF CROP SALES

Interval (pesos)	<u>Of More than 5 Ha.</u>		<u>Of 5 Ha. or less</u>		<u>All Private Holdings</u>	
	<u>Number</u>	<u>Value (millions of pesos)</u>	<u>Number</u>	<u>Value (millions of pesos)</u>	<u>Number</u>	<u>Value (millions of pesos)</u>
Up to 3,000	128,848	183.9	292,358	291.5	421,206	475.4
3,001 - 15,000	74,442	579.1	31,336	185.9	105,758	765.0
15,001 - 30,000	29,423	611.8	1,985	38.9	31,408	650.7
30,001 - 50,000	13,942	524.0	524	19.4	14,466	543.4
50,001 - 75,000	6,880	426.0	153	8.7	7,033	434.7
75,001 - 100,000	4,272	364.9	25	2.2	4,297	367.1
100,001 - 500,000	9,366	2,102.3	20	4.3	9,386	2,106.6
100,001 and more	1,644	1,932.7	-	-	1,644	1,932.7
TOTAL	268,797	6,724.7	326,401	550.8	595,198	7,275.5

Source: IV Censos Agrícola-Ganadero y Ejidal, 1960, Secretaría de Industria y Comercio, Mexico, 1965.

PART IITRADITIONAL AGRICULTURE AND THE EJIDOINTRODUCTION

123. In the annals of agrarian reform, the Mexican reform holds a unique place. Its long and crowded history is the record not only of sweeping tenurial changes but of the rise of Mexico as a modern state. It is not the purpose of this report, however, to present in detail either this often told story, or the principal consequences of the reform. Nevertheless, any assessment of the prospects of Mexican future agricultural development requires a consideration of the results of the reform as they appear today. The ejido system 1/, which is the most important institutional product of the reform, accounts for 45 percent of all the cropland of Mexico, 54 percent of the landholders in the country, and in 1960 for 35 percent of the value 2/ of all crop and livestock production. This report deals with many aspects of the Mexican agrarian system, but the main emphasis is on the ejidos and ejidatarios 3/, most of whom are indigent and in a way, wards of the State, whether or not so acknowledged.

124. Mexican agriculture has made striking progress in recent years; between 1941 and 1960 per capita production increased by 46 percent compared with an increase in the world as a whole of 12 percent, and a decline of 4 percent in Latin America.4/ Much of this growth has come from the best irrigated, technically well-equipped, large-scale commercial farms. The ejidos have also benefited from government credit, irrigation facilities, rural education, road building, and of course, from the absorption of many of their unemployed or underemployed in industry. These benefits, however, were very limited in scope. Notwithstanding the overall success of the country's agriculture, rural Mexico cannot hide the fact that it has a large number of subsistence farmers whose holdings are often underfinanced, underdeveloped, underirrigated, overcrowded to bursting, and subject to other disabilities. They make up the minifundio, which comprises the bulk of

---

1/ The term "ejido" refers to all types of land and water resources, the title to which is vested in villages as a whole and which are exploited in common or individually by the members of the village. This is the definition of "ejido" in all agrarian legislation enacted since the Revolution of 1910. The term "ejido" originally referred to communal lands outside (at the "exit") of the medieval Spanish village.

2/ Pesos 22.4 billion in 1960.

3/ An ejidatario is a member of an ejido.

4/ From the annual address of the Secretary of the Treasury before the XXXII Convention of the Bankers Association of Mexico, March 24, 1966.

the ejidos and perhaps a million small private holders with 5 hectares and less. The farmers of this group do not present a picture of stagnation only but, as a whole, they do not tell a success story either. Few of the 3 percent of the farmers who produce over 50 percent of the crop sales are in this group. <sup>1/</sup> The minifundio is the problem-child of Mexico's agriculture, and of its whole economy. Generally speaking, it does not contribute significantly to the country's rapidly growing agricultural productivity, its rising standard of living, nor to the expansion of the national market mechanism. Numerically speaking, it is of very great importance. If landless farm workers are added to ejidatarios and small private holders, the total number represents about 80 percent of all the economically active population engaged in agriculture. By the same token, the minifundio is the "80 percent problem" of Mexican agriculture.

125. Both the good and the not so good of Mexico's agriculture can be seen in the existing pattern of land distribution. There are, on the one hand, 20,000-22,000 ejidos, an army of private small holders, and 2.5 million landless peasants, a number exceeding the number of ejidal owners; and on the other, a relatively small group of large and prosperous landowners. Thus, although the reform has been instrumental in widespread distribution of 55 million hectares of land among the peasantry and the acquisition of land by a large number of small private holders, 50 years after its beginning, the attempts to reach the goal of land for the tiller, how best to use this land and how to improve his living conditions, still present the Government of Mexico with some of the touchiest of problems. The unquestioned and remarkable success of the government policy of channelling investments into that section of agriculture that could yield the surest, largest and quickest returns is not without an adverse side-effect: it accentuated the line of demarcation between the relatively few "haves" and the great multitude of "have nots" in agriculture. The great problem that faces Mexico revolves about measures to narrow the gap in order to insure the future progress and stability of the country.

126. The Government is committed to achieve the "reforma agraria integral". This implies to "complete" or to reform the agrarian reform sometime in the future. It is not difficult to surmise that this means adding another dimension to the existing land tenure system, namely, an adequate development policy for the depressed agricultural sector.

127. The content of that policy will become apparent as this report unfolds, but this much may be briefly noted now. A great many of the ejidatarios and a number of private small holders can and must increase their production potential. They have the capacity to use resources,

---

<sup>1/</sup> Source: IV Censos Agricola-Ganadero y Ejidal, 1960, Secretaria de Industria y Comercio, Mexico 1965. Cuadro 40, p. 551.

though granting that their agro-cultural background leaves something to be desired. There is no way of fitting them into the country's agricultural economy and the country's economic development unless they augment their output per unit of land. To bring this about, their technological base must be measurably improved. This can be done only through allocation of additional resources and government concentration on their needs with the same vigor as it has displayed vis-a-vis the commercial sector. The extension of this policy to the non-commercial sector is in the best interest of all concerned, including those of the large proprietors, particularly from the point of view of their lasting control of the land they now possess. Failure to help raise ejidal output and improve the living conditions of the ejidatarios carries consequences other than economic, from which neither the small nor large owners, nor the country as a whole would benefit.

128. There is ample evidence that the Government of Mexico is fully aware and concerned about the problems just raised. Statements by the most responsible leaders of Mexico that something must be done to ameliorate or resolve them are not rare. The statements do not lack references to specific measures or desired goals, and it remains to be seen what form the reality of awareness will assume. To understand the reasons for the well justified concern and what the present situation implies for the ejidos and the country, it is necessary to review the origin of the reform and the kind of agricultural system it created.

#### I. ORIGINS OF THE EJIDO

129. In 1910, on the eve of the Revolution, the hacienda, or large estate, held an almost complete monopoly over Mexican rural resources and dominated lives of the rural population. In the process of accumulating land it had "separated" the traditional village unit from its land and gobbled up the larger part of the public domain. In the same process, the hacienda had reduced the peasantry to a state of peonage, working its land for a pittance, and virtually eliminated the mobility of that captive labor force. A few well-known statistics are worth repeating. By 1910, an estimated 95 percent of the rural population owned no land at all. Generally speaking, the proportion of the landless to the total farm population in the various states ranged from a low of 88 to a high of 99 percent.<sup>1/</sup>

130. Landlessness went hand-in-hand with the huge principalities into which Mexico had been carved, which were controlled by one percent of the population. These holdings had not come about through any significant investment of risk capital. In the Diaz regime (1876-1910) the main cause of the growth of the large estates was the transfer to the haciendas

---

<sup>1/</sup> George M. McBride. Land Systems of Mexico p.154.

or newly created land corporations of 64 million hectares of the public domain, leaving in that category less than 23 million hectares. "This was so great an upheaval in Mexican rural property that it has been called the "New Conquest".<sup>1/</sup> While most of this land was of limited economic value, it did contain many millions of hectares of valuable crop, forest and pasture land. "In return for this vast quantity of land the Mexican Government received a little more than 11.8 million dollars, paid mostly in depreciated bonds."<sup>2/</sup> The main source of land concentration before the dissipation of the national domain had been the illegal usurpation of cultivable and cultivated village land. This, more than any other factor, provided a rationale for the agrarian reform, and particularly for its character, i.e. the creation of the ejido system. It gave the proponents of reform a powerful argument for the return of the land to its original owners - the villages - roughly on the basis they had originally held the lands. There were other charges against the hacienda: lack of enterprise, perpetuation of backward agricultural techniques, a drag on the national economy, and that morally it was a system "Born in conquest and nurtured on injustice (and) it gradually absorbed the living substance of a people, only to nourish pride and arrogance in its beneficiaries, permitting them to live idle lives in distant cities and to waste their inheritance with little sense of the human and cultural tragedy their career exemplified."<sup>3/</sup> When all these factors are taken together, it is clear that the existing land system had created a revolutionary situation and made it ripe for a drastic overhaul. The war for independence in 1810 had also been an agrarian war, "a war of proletarios contra propietarios," but that aim had not been realized. In the intervening century the hacienda had become even more an anachronism and the Revolution of 1910 provided the spark that spelled its end.

131. The Revolution began as a political movement, but it was the peasants' call for the return of the village land that became the dominant issue. Much of the turmoil of the first decade or more of the Revolution centered around that issue and the pressure to reconstitute the ejido type of tenure. In fact, the promise of land was the crucial commitment that enabled political leaders to gain and hold power. Moreover, in Mexico, in contrast with most Latin American countries currently faced with land reform problems, the peasants participated actively in physical attacks on the haciendas and their protectors. Neither Hidalgo in 1810, nor Zapata a century later, had any difficulty in arousing peasants to use

---

<sup>1/</sup> Frank Tannenbaum: Mexico, The Struggle for Peace and Bread, pp.139-140.

<sup>2/</sup> Eyley N. Simpson: The Ejido - Mexico's Way Out, p.28.

<sup>3/</sup> Frank Tannenbaum: op. cit. p.141.

gun and machete as instruments of social intercourse, in order that, in Zapata's words, "the ejidos of our villages are restored to us, until we are given back the lands which the hacendados stole from us..." <sup>1/</sup>

## II. PRINCIPAL FEATURES OF THE EJIDO

132. There is no need to discuss in detail the crystallization of the program of the reformers nor the mass of legislation which eventually put the program into effect. Comment can be limited to the two legal cornerstones of the reform: the decree of January 6, 1915 and Article 27 of the Mexican Constitution of 1917. The former, which was later incorporated into Article 27, declared null and void all types of alienation of village land and called for the restoration to the villages of land which had been taken through the expropriation and distribution among the hacienda and non-hacienda large properties. Article 27 went beyond the January decree by defining the nature of property in land and the limitations on land ownership, by identifying the individuals and legal entities who might hold landed property, and by setting forth the general principles and procedures to be followed in solving the land problem. These principles and procedures are of particular importance for they were directed at the removal of inequalities in land distribution. Specifically, Article 27 made clear that the aim of the reform was the creation of the ejido out of land taken from the hacienda, or through grants of land taken from other sources.

133. As has already been pointed out, the reform gave rise to a vast body of legislation, consisting of more than 100 laws, codes, decrees, executive orders, etc. For the purpose of this report, however, only few provisions of the Agrarian Code of 1943 need be singled out. Under the legislation an ejido might obtain land from a hacienda or from the public domain in an area 7 kilometers from the center of the village. However, the distance provision was not always obligatory. In most instances the ejidos were established on hacienda land. The owner of a hacienda was, however, permitted to retain part of the land of his own choosing. The Agrarian Code laid down the following maximum retention limits: 100 hectares of irrigated land, 200 hectares of unirrigated land, 150 hectares under cotton, 300 hectares in bananas, sugarcane, coffee, cacao, fruit trees, henequen and a few other perennial crops, or the amount of land required to maintain 500 head of cattle. All holdings in excess of the indicated maximums were not automatically expropriated; they were merely subject to expropriation upon a request by a legally qualified body of farmers or village.

134. As elsewhere, the retention limit proved to be a rather flexible and "stretchable" provision. From the literature, talks with informed students, statistics on the pattern of land distribution, and observations

---

<sup>1/</sup> Nathan L. Whetten: Rural Mexico, p.112. This quotation is from a Zapata Pronouncement addressed to President Madero.

in the field, an observer cannot but gain the impression that the land retention limitations have been honored mainly in the breach. In many instances, owners have transferred many times 100, 150, 200 or 300 hectares to relatives while continuing to operate the land by and for themselves. When they obtain credit, they do not often take single loans for all of the land thus "distributed" plus what they have personally retained, but separate loans for each parcel of land, separately held. This provides a cover for the evasion of the requirements. The ease or difficulty with which the ceiling provisions can be evaded depend in part upon the local population density. In densely populated rural districts, where the peasants are clamoring for land, excess retention is likely to be more difficult; in relatively thinly populated areas evasion of the ceiling is not so hard. In fact, evasion occurs in areas of both kinds and apparently with few questions raised by the authorities.

135. Reform legislation provided for the compensation of the hacienda owner in the amount equal to the assessed tax value of the land plus 10 percent. Payment was to be made in 20-year, 5 percent bearer bonds. The villages receiving ejido land were in turn to reimburse the government for the land they received. The ejidatarios have in fact never paid anything, while the government paid the original owners very little prior to 1931 and virtually nothing since that date. Even if compensated, the assessed tax value of the land, grossly understated by the hacienda owners, would not have availed them of much compensation. In any case, under the Constitution of 1917, which defined individual property as social in nature, expropriation became a right which the State was free to exercise to the extent required by urgent social needs. For all practical purposes, in relation to that portion of the hacienda that the government took, the government exercised that right.

136. The ejidos were created hurriedly and without plan or program mainly on the basis of political considerations. With landless peasants all over the country, often with arms in their hands, vociferously demanding land, it was not possible to carry out lengthy and careful investigations before making the distribution. There was, moreover, another important reason for haste which can be found not only in Mexico. That reason is well presented in the following dialogue:

"Why do you do this at such breakneck speed and in such wholesale fashion? Why don't you take time to plan the communities before distributing the land? Why don't you choose the recipients of the land more carefully?"  
Almost invariably I got the answer, "It would be better to go slow... But throughout our history, everytime land reform was even attempted it has been resisted and blocked. If we try to move slowly now, all the hostile interests will congeal in a solid front, and no land reform will ever take place."<sup>1/</sup>

---

<sup>1/</sup> Nathan L. Whetten. The Role of the Ejido in Mexican Land Reform, May 1963, p.4. Land Tenure Center, The University of Wisconsin.

No care was exercised, therefore, in endowing the ejidatarios with "viable" or "economic" holdings, both in size and quality, nor was account taken in the distribution of the qualifications of the applicants. The ejidos were thought of largely as means of subsistence agriculture to supplement the farm wages of their members, and the consequences of that assumption plague most of them to this day. Until 1943, recipients of land were supposed to get 4 hectares of irrigated or 8 hectares of unirrigated land; the Agrarian Code of 1943 raised the figures to 6 and 12 respectively; and in 1947 the allotments were raised again to 10 and 20 hectares. In most cases they are smaller than the specified amounts, and the number of hectares actually cultivated by the majority of the ejidatarios is much smaller.

137. Not all the peasants who asked for land received it. Often there was not enough to go around, and those who failed to get a piece of land are considered as having reserved agrarian rights and are placed on a waiting list. This group is estimated now from one-half to one million.<sup>1/</sup> Every member of an ejido in full standing is given a "certificate of agrarian rights"; eventually each one is supposed to get a title to a specific parcel of land (título parcelario). The significant distinction between the two items and the length of time that elapses before a title is issued will be discussed below in the section evaluating the ejido system. It should be noted at this point, however, that only titles recorded in the National Agrarian Register "constitute proof of ownership of ejido property" (Article 335).

138. The land in an ejido may be cultivated collectively or by individuals; 96-97 percent of the ejidos are divided into individual plots and each family farms its own land in its own way. Pasture and woodland are held in common by the ejido for commercial use.

139. "Ownership" in the ejidal sense is complex and carefully circumscribed. An ejidatario may pass his land on to only one of his children (to avoid fragmentation). He may not sell or rent it, and since he does not own the land outright, he may not mortgage it to secure a loan. If he fails to cultivate his land for two successive years, it reverts to the ejido; the land is supposed to revert also if he rents the land to others. The limitations were imposed because of the justifiable fear that many new owners would dispose of their newly and easily acquired land if they were free to do so. To some extent, events have justified those fears for despite the prohibitions against transaction in ejido land, leasing or sharecropping is a common practice that is rarely punished. There are even known cases of sales of "certificates of agrarian rights" and "parcel titles," although in most such cases the land has remained in the hands of ejido members.

---

<sup>1/</sup> Land Distribution in Mexico. Foreign Agricultural Service, U. S. Department of Agriculture, March 1964, p.5.

140. Finally, the ejidos operate in an institutional framework that was designed to serve the interest of their members. In theory, each is an organization whose ultimate power rests with the membership. They are governed by three bodies: the general assembly, the comisariado ejidal or executive committee, and the vigilance committee. The assembly elects the executive committee, made up of a president, secretary and treasurer, which actually runs the affairs of the ejido and represents it in dealing with external agencies but is responsible to the assembly for its actions. As its name implies, the vigilance committee is another device to insure that the comisariado serves the interests of the ejido. On its face, the ejido, as an institution, should be the creature of its members. In practice, it may be something else again. In another context, it will be pointed out that one of the most serious criticisms leveled against the ejido as an institution is that it fails to prevent certain activities which favor the private interests of the comisariado rather than those of the ejido membership.

141. The numerical growth of the ejido system has not been steady as shown by Table I which gives the amount of land distributed, and in consequence, the number of ejidos created. The fluctuations reflect mainly differences in the driving force behind the reform exerted by the various presidents. Under President Cardenas (1935-40) 18 million hectares of land were distributed; that was one-third of all the land given to the ejidos between 1915 and 1965, or 2.5 times as much as was distributed between 1915 and 1934. The table shows clearly the important role played by the man at the top of the political ladder in the execution of an agrarian reform. The relatively limited distribution of land during 1941 and 1958 was a reflection not only of declining land availability but also of a certain ambivalence about the agrarian reform on the part of those in power and, more particularly, of their nagging doubts about the ejido system as a solution of the problem of the landless. However, distribution increased sharply again in President Lopez Mateos' administration (1959-64) and this was probably the last distribution of land on so large a scale.

142. At present the ejidos can be regarded as permanent institutions, in spite of occasional vague mutterings about the possibility of change in their form and substance. On the basis of numbers alone, there can be no question that they are a major element in the agricultural economy of the country. But they do not appear to constitute a potent political force, nor have they been as important a factor or played as effective a role in economic decision-making as they were expected to. And perhaps not surprisingly, therefore, they have not been among the major beneficiaries of the country's economic progress during the past two decades or so.

III. REFORM ACHIEVEMENTS - AGRARIAN AND NON-AGRARIAN

143. Although the ejidos have not achieved as much as they were expected to or as some of their more fervent proponents hoped, it would be a mistake to minimize the great achievements of the agrarian reform in creating the ejidos, in stimulating the private agricultural sector to higher productivity, and in the reform's influence on the economic development of the country as a whole. Some of these attainments are truisms by now, but in this report, it may be worth setting them forth.

144. Agrarian-ejidal. To begin with, while there are many large holdings in Mexico today and substantial inequalities in the pattern of land distribution, the pre-revolutionary pattern - when about 95 percent of the peasants had no land at all - has disappeared. Small-scale ownership, whether in ejidos or private holdings, is widespread. Small as holdings are, much of the Revolution's aim, put forward in its battle cry of "Land and Liberty", has been largely realized. The small holder has a stake in rural Mexico. He understands what landholding means, for as one writer put it, "Land is right under his feet."<sup>1/</sup> He knows how he came to have it, and he can make reasonably good use of it, under proper conditions. The standard of living of the ejidatario leaves much to be desired, but no statistical evidence is needed to show that he is infinitely better off than the peon on the hacienda. It is probably no exaggeration that

"More and more rural people sleep on beds instead of on the ground, wear shoes instead of huaraches or going barefoot, use store-made pants instead of home-made white cotton calzones, eat bread in addition to tortillas, grind their corn in mills instead of by hand, drink beer (or the ubiquitous "colas") instead of pulque, use doctors instead of curanderos, and travel by bus or train (or bicycles) instead of on foot or by burros."<sup>2/</sup>

The hacienda store, dreaded, yet very much the hub of the life of the peon, with its credit for bare sustenance and its perpetual hold on the poor through their debt, is only a memory. There is no hacienda, no debt peonage, no "captive" labor force to be chained to the hacienda.

145. The mobility that the peasant has acquired, his freedom to move from one job to another in response to changing economic conditions, cannot be overvalued. In spite of the sharp increase in the rural population, the decline in the relative importance of the agricultural labor

---

<sup>1/</sup> James G. Maddox. Land Reform in Mexico. Quoted from manuscript.

<sup>2/</sup> Oscar Lewis. Mexico Since Cárdenas, p.20.

force from 70 percent of the total in 1930 to 54 percent in 1960 shows both the mobility of the rural worker and the opportunities provided by the economic development of the country. Admittedly, those who leave the village permanently or seasonally go partly for lack of land or opportunity for employment in agriculture, but there is a good reason to believe that they are better off as a result of their change in occupation. It can be argued further that but for the existence of the peasants' stake in ejido land, rural-urban migration would have been much greater and of less manageable proportions.

146. One of the crucial tests of the agrarian reform is the amount of personal freedom or unfettered behavior of the members of the ejidos compared with the pre-reform days. Judged thus, the social consequences of the reform in the countryside are a major attainment. In this connection, the single most important experience of a field trip to the rural areas is a meeting with ejidatarios, whether in groups under a village tree, in a provincial bureaucrat's office, or in the field. The impression they give is not one of fatalism, passivity or submissiveness; on the contrary, they are articulate, of no fear to speak freely, and show no subservience. At one such meeting, the mission was impressed by the fact that the presence of a sugar refinery official did not inhibit a large group of ejidatario cane producers from sharp complaints against the sugar refinery, the pricing system, the sugar content standard, the credit arrangements, irrigation facilities, and, in fact, everything about it. The peasants were troubled by their debts to the refinery; to the food shop that charges them no interest but takes it out in high prices; to private individuals who lend them money at 5 percent per month; they were troubled by the feeling that they were in a blind alley in relation to the refinery. Their land is irrigated, an ideal condition every ejidatario aspires to, and they do receive credit, another vital condition that sustains him. But from the point of view of the ejidatario and of the time considered here, there is a fly in the ointment. The irrigation facilities are for cane raising only and in accordance with the provision of the 24 million pesos loan provided by the Fondo via the Alliance for Progress, and administered by the refinery. The ejidatarios are strictly tied to a cane cropping pattern; they would rather not place all their eggs in one basket, but under the rules of their particular relationship to the refinery and to the inputs of water and credit provided by government agencies, and punctually repaid by the ejidatarios, through check-off at the source, they cannot deviate from the cropping pattern and diversify even if cane raising is not, as they see it, a paying proposition.

147. These observations are reported, however, not so much to indicate the condition of the ejidatarios producing cane for the refinery as to call attention to the fact that many of these men were peons only a generation ago. If the record of what life was like in those days is to be trusted - and the unanimity of the reports attest to its validity - it is probably not going too far to say that while the ejidatario's newly acquired self-respect may not make up for all the errors of judgment or policy committed by, or in the name of the Revolution, it does represent a major gain. A conclusion on this point drawn from earlier observations holds in all essentials for the present as well:

"Everywhere they reported that they are enjoying personal freedom that was nonexistent previously. They might be living in the same shacks, subsisting on the same type of diet (with, perhaps, some improvement in quantity), wearing the same types of clothes, and drinking the same polluted water; but at least they are not abused by the landlord or kept in perpetual debt slavery, or hunted down by the rurales if they try to escape. They are not required to purchase their food and clothing through the tienda de raya (Hacienda Store). There is now no fear of arbitrary arrest and punishment without trial; ley fuga is no longer the dreaded fate of those who incur the displeasure of government officials." 1/

148. A further point needs to be made. There is a tendency to regard the ejidatarios - or many of them - as "unfarmers", on the alleged ground that they are inefficient, poor credit risks, and do not contribute their proportionate share to agriculture or the national economy. That will be discussed in detail below. But it seems worth noting at this point that the ejidatarios, too, though surely not all of them, have responded to the stimulant toward improved agricultural efficiency, which has been one of the important indirect results of the reform. The statistical records show that for a number of crops, ejido yields are lower than the yields in the private commercial sector. But the comparison is not valid; the difference in yields is due less to the inefficiency of the ejidatario than the small size of these holdings, insufficient availability of inputs, and his admittedly lower technico-agricultural background. In general, the small

---

1/ Nathan L. Whetten, op. cit. p571.

farmers give the impression that it was the poor quality of their land and their lack of appropriate inputs and knowledge about improved practices rather than shortcomings in character that make so many of them unsuccessful farmers and poor. They give every evidence of being able to use what they have, and one has a strong impulse to attribute much of this relative competence to the reform which put an end to peonage and listlessness of the peon working somebody else's land for the price of survival. Of the missing links which adversely affect the performance of the ejidatario there are enough, but as the evaluation of the ejidos will show, they do not appear to be mainly of his own making.

149. Schools can be seen in most villages and farmers show a desire for education, certainly for their children. Surely a beginning toward the improvement of the quality of the human factor in production which is needed for better farming, has been made. In Tabasco, for example, in the ejido Hidalgo, the run-down huts of the ejidatarios are in sharp contrast to the two-story, blue school building. There is an upsurge in the literacy level among the young and there are some signs of an improvement among the older generation as well. The word "some" is used advisedly; even in that well-known showcase of a collective ejido, the "Quechehueca," in the country's richest agricultural valley, the Yaqui Valley, in the State of Sonora, the ejido President, told the mission that 70 percent of the heads of families are still illiterate. The large grade school with its nine permanent teachers and the recently established secondary school are going full blast, but the night school for the "senior citizens" is languishing. Still, in 1948, when "Quechehueca" collective was established, practically all of its members were illiterate; today younger, literate farmers are here and there replacing older illiterate ones.

150. It is not easy to estimate how far the investment in human resources will go, but the course has been chartered and the vision of the future quoted below may not prove an idle dream: "In the past Mexico was divided into latifundios, with the big house (casco) in the center; in the future we will organize it around the village, with the school in the center." <sup>1/</sup> A generation had passed since that remark was made, and many village schools have been built. Yet ejidal Mexico, like rural Mexico in general, has still a long way to go in improving "the

---

<sup>1/</sup> Frank Tannenbaum, op. cit. p.153. The quoted remark is by former President Calles, made in a conversation with Tannenbaum.

human factor of production." To quote an informed observer:

"It is impossible," a commentator writes, "to evaluate the increases in productivity or improvements in public health that may have resulted from them (rural schools), but in those communities with multigrade schools, devoted teachers, and sufficient economic potential, the improvements were probably substantial. Unfortunately, these conditions were not met in the vast majority of villages."<sup>1/</sup>

In part because what has just been stated, the ejidos contain, as will be pointed out in greater detail later, too many inherent and acquired features that keep most of the ejidatarios from achieving high productivity and reasonable well-being. While rural education undoubtedly enhances the ejidatario's ability to make the best use of the land he has, it must be recognized that the climate within which he operates is not always favorable to drastic or rapid changes in values.

151. Agrarian-private. On the owners of the remains of the haciendas and on those who by one means or another acquired larger holdings, the reform had a very positive and significant effect. It forced them to participate directly in land management and make the most of their land. With land and other means at their disposal, they became production and profit-seeking agricultural entrepreneurs. This is shown in the rising productive efficiency, especially noticeable on the larger privately owned farms. In these circumstances, capital accumulation and investment naturally followed.

152. The rise of an acquisitive, achievement-minded agricultural entrepreneurial group shows clearly that the widely propagated argument that an agrarian reform drives capital out of agriculture is not true of Mexico any more than of the small number of other countries where agrarian reforms have actually been carried out. Because of the way in which Mexican agrarian legislation has been applied and of the continuous clamor for more land distribution (the "unfinished" first phase of the reform), many private landowners have had reason to wonder how long they could hold on to their land. It is significant, therefore, that the break-up of the traditional land monopoly has actually stimulated public and private capital investments in land. The fact that to the ejidos and many of their students public investment seems to favor the large-sized private agricultural sector does not reduce the validity of the preceding conclusion.

153. Non-agrarian. The agrarian reform has had consequences outside of agriculture too. Some observers go so far as to say that "Perhaps, even its most important consequences have been manifest outside that sector."<sup>2/</sup>

---

<sup>1/</sup> C. N. Myers. Education and National Development in Mexico, Princeton University Press, 1965, p.42.

<sup>2/</sup> Glade and Anderson: The Political Economy of Mexico, p.53.

The "dead hand" of the hacienda dominated the economic, social and political forces of the country. The haciendas not only owned land; "with land ownership went the ownership of the government at both the national and local level, including the right to make and enforce (or not to enforce) laws, the right to tax or not to tax, the right to control and limit the amount and direction of social (and economic) investment."<sup>1/</sup> When this system went, the bulwark against modernization went with it, and the ground was cleared for basic changes in the economy, politics and social relations. It is hard to estimate the extent to which the reform alone was responsible for these changes. It is clear, however, that the Revolution of 1910 unified the nation; made the Mexicans proud of their nationhood; accelerated industrialization; gradually brought about political stability by raising incomes, minimizing, even if to a small degree, economic disparities, reduced social class distinctions, and heightened the fluidity of the nation's class structure. For the same reason, it gave rise to an enterprising middle class in government and business; gained for successive administrations the support of all classes; and, finally, created an infrastructure of economic and social services, which in turn provided a favorable base for a continuous and rapid economic growth of the country.

154. Viewed in this way, the effect of the agrarian reform was indeed far-reaching in areas not strictly agricultural. There seems good reason to believe that post-Revolutionary Mexico would not have progressed so rapidly if not for the land redistribution program. If, as generally agreed, "the Revolution would probably have not been possible without land reform," it seems reasonable that "the major result of land reform has been its indirect role of acting as a pillar of support to middle class governments that have used the strength thereby gained for direct action in other fields."<sup>2/</sup> And yet, when the reform is viewed in relation to the needs of the ejidos, it appears that the stress of agricultural policy has been less on the ejidos and much more on the private, highly productive commercial agricultural sector.

---

<sup>1/</sup> Ibid, p.53.

<sup>2/</sup> James G. Maddox: op. cit. pp. 35 and 36.

#### IV. EVALUATION OF THE EJIDO SYSTEM

155. The preceding section indicated in general terms the widespread results of the agrarian reform: for agriculture, for the economy as a whole, for the political character of Mexico which was placed on a new basis, and for the peasant who was transformed from a serf-like peon into an independent ejidatario. The present section will examine in some detail the ejido as an institution, and attempt to understand why, in spite of some very great achievements, the ejido has been largely unsuccessful, particularly as an instrument of production and, in consequence, as a means of raising substantially the standard of living of its members. In still another section of this report the pattern of land distribution in the private sector will be examined, not alone from the point of view of its effect on agricultural output but also of its relationship to the reform, as well as its social and political implications. The ejido system is 50 years old, and it is as good a milestone as any to take stock of its performance. And in doing this, two questions are raised: What of the ejidos in the more recent past, and what of the possible course of their future development?

156. The "Yes-No" Controversy. The ejido is firmly entrenched in rural Mexico, but the controversy over its merits is still very much alive. To some the ejido is, in Eyler Simpson's famous phrase, "Mexico's way out," while to others it is an anachronism and a "dead-end"; to some it is still the outstanding achievement of the agrarian reform, to others it is an unfulfilled creation of the reform; to some it is an essential part of the social and political transformation of the countryside but has little to recommend it on economic grounds, to others - though not many - it seems passable economically, as well as socially and politically. To some the ejidatario is a "forgotten man", outside in the "Mainstream of modern society.....a secondary figure in the general development of the country" <sup>1/</sup> because the State has favored the private agricultural sector at the expense of the ejidos; to others, mostly officials, the State "is doing its best by the ejidos." Finally, to some students the ejido is a system born of an impulse toward social justice in which the basic measure adopted - land distribution - was not supplemented by other measures required to enable those receiving the land to make the best use of it. This is possibly the most telling criticism that can be leveled against State policy toward the ejido. Despite the welter of contradictory views, there is a consensus on the major point that all is not well with the ejidos. They are in fact in difficulties and to ease, let alone solve, some of their worst problems, will take a great deal

---

<sup>1/</sup> Manuel Carlos, Jr. The Changing Nature of the Mexican Ejido: Administration and Politics. Typewritten manuscript pp. 1 and 2.

of courage and determination at the highest political levels, a great deal of thinking and action, a great deal of resources, and a great deal of time.

157. Land base. To begin, it is necessary to consider the land resource base of the ejidos. The 55 million hectares belonging to the ejidos are distributed among 1.5 million ejidatarios according to the 1960 census, or among 2.3 million according to the apparently more accurate unofficial estimates. That would be equivalent to 36 hectares per ejidatario according to the census figures, or 24 hectares if we take the second set of figures. However, about four-fifths of the land is pasture and woodland of little economic value to the ejidatarios in part because they lack the resources to exploit land of this kind. What about the cropland? A few examples will help to show its quality. In 1959-1960, Mexico turned over to the ejidos 778,000 hectares of land; of this 2.4 percent was irrigated or "humid" land and 29.5 percent dry land; the remainder was pasture and woodland. In the following three years the percentages of the total represented by the two types of land were respectively 0.8 and 12; 0.9 and 25.4 and 0.5 and 16.8 percent. Although the figures are for recent years one cannot say that this sample is not representative on the ground that the best land had already been disposed of. For the period 1915-1956 as a whole, the cropland constitutes about 20 percent of the total amount of land distributed. The census of 1960 provides further confirmation. The cropland of the ejidos was recorded as 10.3 million hectares, or a little over 20 percent of all the land they had received.

158. Even if all this cropland were evenly divided among the 1.5 million officially listed ejidatarios, rather than the possibly 2.3 million, the share of each would average only seven hectares. Cropland does not mean cultivated land, particularly in Mexico with its mostly semi-arid climate. Of Mexico's 20 million hectares of cropland (private and ejidal), only 12.5 million hectares (1960 census) were cultivated and of these 10.8 million were harvested. Moreover, it must be recalled that the haciendas had a right to choose the land they would retain, and naturally picked the best land. The ejidos were often, although not always, given the poorer land. But even if it could be assumed that ejidal land is equal in quality to privately held land and the national ratio of cultivated cropland were applied, the average cultivated holding of an ejidatario could not possibly exceed four hectares, and three hectares would probably be closer to reality. It is clear, therefore, that the various allotment provisions of the Agrarian Code (see paragraph 136) were goals that could not be met, and more important is the fact that the effective land base of the ejido is so small that the system as a whole must be characterized as one of "too many people on too little land."

159. The cropland held by ejidos is not distributed equally. The 1960 census shows that in 37 percent of the ejidos the average holdings were four hectares and less; in 43 percent from four to ten hectares and in only 20 percent of the ejidos located mainly in sparsely populated areas

with poorer land were the average holdings over 10 hectares (Table 2). Even in the fairly recently developed areas where land is abundant, the ejidatario rarely had received as much land as he was supposed to. In Tabasco State, according to local authorities the aim was to give every<sup>1/</sup> ejidatario 10 hectares of good land and 40 hectares of unimproved land. A brief visit in the countryside reveals no such magnitudes. Ten hectares or less - in total - is closer to the norm; 36 percent of the ejidatarios have holdings of only 4 hectares or less; 42 percent from 10 to 4 hectares, and only 22 percent of more than 10 hectares. The densely populated State of Morelos is overwhelmingly ejidal, with 65 percent of the land in ejidos. In that State, 96 percent of the ejidatarios have holdings of 5 hectares and less, mostly less.

160. Both the statistics and observations in the field raise a question - why should land distribution be unequal? In "individual" ejidos, as distinguished from "collective" ones, all members are entitled to equal, separate, land shares. Consideration is of course given to the quality of the land so there could be differences in the amount of land allotted to each member. But even after this is taken into account inequality remains. Questions put to farmers on that point brought no clear answers. Talkative as the ejidatarios normally are, they were reticent on this point. Changes in the ejido, including the admission of new members, departures of members and variations in the size of families probably explain the difference in part. But there seems reason to believe that part of the explanation - perhaps a small part - lies in the relationship between the distributors and recipients of land. This may explain the reluctance of the farmers to discuss the matter. On balance, the unequal distribution of land in an ejido is almost a natural development as a result of the very small, economically usable land resource upon which the ejido system rests, and the keen competition for that land.

161. Small as the individual holdings of the ejidatarios are, they are reduced in size under the pressure of a rising population. The overall rate of population growth in Mexico is 3.6 percent, one of the highest in the world. Random checks in the field show that families with five children are hardly representative; families with six, seven or eight children and more are common. As a result, despite the out-migration to the cities, the numbers of rural dwellers grow and individual holdings are subdivided and fragmented. Subdivision is forbidden by the Agrarian Code, but the facts of ejidal life being what they are, it is a common occurrence. No data are available on the extent of the phenomenon, but there seem to be few ejidos in Mexico where there has not been some subdivision. One student of the ejidos goes so far as to say that "there are areas in Central Mexico where population pressure is heaviest, in which the atomization of landholdings has reached

---

<sup>1/</sup> In Tabasco, the quality of the land depends not upon whether or not it is irrigated but upon the presence or absence of drainage facilities.

such a degree that properties are measured by yards and furrows and no longer by hectares'.<sup>1/</sup> The ejidatarios are alive to the consequences of a high rate of population growth and the increasing man-land ratio. One of them put it somewhat wryly: "Fortunately I had the misfortune of having all my children die." Others made it clear that though the output increased, the share of each person dependent on it had fallen.

162. The departure from the ejidos of second, third and younger sons has had the effect only of keeping the problem from becoming worse than it is. Not much relief can be expected from the further distribution of land; in the densely populated areas where most of the ejidos are located, there is no unclaimed land to "beef up" landholdings. To summarize, the land resource base of the individual ejidatarios was limited to begin with and has been steadily diminishing in size. In view of the rather weak technical base and the absence of many of the elements needed to strengthen that base, it is clear that the problems faced by the ejidatarios are formidable.

163. Land renting. Although the renting of land is, with few exceptions, forbidden by the Agrarian Code, it is a common practice for the ejidatarios to rent land to each other, to the leaders of the ejidos and to private operators. Farmers talk about it in a matter-of-fact way as if it were entirely normal, which it is in some parts of the country. Now and then some farmer may think it necessary to preserve the honor of the ejido like the farmer who denied the existence of the practice in his ejido, but volunteered the information that 60 percent of the ejido land in the region in question was rented out. It is impossible to determine the extent of the practice country-wide, but rough approximations can be made for certain areas. This much may be said with certainty: the practice is limited in the mainly dry land, densely populated ejido centers and more widespread in the less populated, irrigated, prosperous agricultural areas.

164. There are a number of reasons for the practice. A widow with small children or a disabled ejidatario must rent, and the Code foresaw that. But these recognizable legitimate cases do not constitute the majority. Most of the ejidatarios who rent their land are able-bodied; some have alternative occupations, some live on their rents and some work as farm hands to augment their income from rent. The most common explanation offered for the rental of land is the inadequacy of existing institutional credit facilities. The wider aspects of this problem as it affects the ejidos are discussed in paragraphs 187-203. In the present context, it suffices to say that the inability of the majority of ejidatarios to gain access to credit is probably an important cause of leasing out land.

---

<sup>1/</sup> Rodolfo Stavenhagen. Aspectos Sociales de la Estructura Agraria de Mexico. Quoted from a manuscript.

165. In some cases, a lack of title to the land appears to be a reason for renting. This is given as one of the factors in the case of the ejido "Mixaguianuala", of Hidalgo State, a study of which has been published.<sup>1/</sup> This ejido had 1,534 members, of whom 55 percent had holdings of three hectares and less and 45 percent an average of four hectares. Of 100 ejidatarios studied, 42 rented their land to others. The causes for renting were reported as follows: the high cost of credit and crop insurance <sup>2/</sup>; limited economic resources apart from the land, and finally, a lack of title to the land. On the last point, the study concluded: "The internal political situation of the ejido is such that the majority of the ejidatarios who still do not possess titles to their land....give the land on a sharecropping basis to persons who promise them support in their struggle to obtain the definitive title."<sup>3/</sup> The study does not indicate to whom the land was rented; one can only surmise that in the eyes of the renters they were influential people, not excluding the leaders of the ejido.

166. In certain sections of the country, however, where rental is very common, lack of title of ownership does not seem to be an important factor. In the States of Sonora and Sinaloa the problem of title is not serious, yet the rate of rental to private operators is extremely high. In Sonora it is reportedly 65 percent of all the ejido land in the Yaqui Valley, almost 90 percent of the neighboring Mayo Valley; in Sinaloa the comparable figure is a rough estimate of 40 percent. In Mexico City where some of this information was given to the mission, it seemed puzzling enough, but it became more puzzling when the mission saw that marvel of an agricultural-production machine called the Yaqui Valley. From a low-flying four-seater plane the valley was an unforgettable sight, showing how the combination of irrigation, good soil, an experiment station and an enterprising owner could turn formerly unproductive land into gold. Back on the ground we were told that yields were pushing to new horizons and that the doubling of already fairly high yields was only a matter of a relatively short time. The yields on the ejido irrigated land are about a third lower than on the privately owned land, yet they too have been climbing. Between 1958-59 and 1965-66 ejido yields of wheat rose from 1.3 to over three tons per hectare, and yields of cotton from 1.2 to 2.0 tons. The holdings are the largest for ejidos in Mexico; they average 18 hectares - all irrigated and cultivated. The land tax is only 14 pesos per hectare

---

<sup>1/</sup> Lucio Mendieta y Nuñez. Efectos Sociales de La Reforma Agraria en Tres Comunidades Ejidales de la Republica Mexicana. Published by Universidad Nacional Autónoma de Mexico, Instituto de Investigaciones Sociales.

<sup>2/</sup> The ejidatario cannot get a loan from the Banco Ejidal without first insuring his crop with the National Crop Insurance Agency.

<sup>3/</sup> Op. cit. p.179.

and the cost of irrigation a reasonable 125 pesos per hectare. It is hard to understand why they lease out two-thirds of such productive land, denying themselves a profit that current rentals cannot make good.

167. When the question was raised, a number of explanations were offered, including derogatory remarks about the ejidatario - his preference for idleness, his spending against saving, his illiteracy and ignorance, his "state of mind" which does not make for good farming, etc. But this familiar type of comment must be taken with a grain of salt. By far the more convincing explanation is that the technology of irrigated agriculture is more exacting, and the investment needed for it is vastly greater. The ejidatarios of the Yaqui Valley do not have the resources for this type of agriculture. Such agriculture is a carefully planned sequence of field operations and applications of inputs that does not permit qualitative dilutions or haphazard timing - except at the cost of lower output. The skill and knowledge required for this type of agriculture have not been developed among the ejidatarios; pitted against the large operators with ample means to take advantage of the best in agricultural technology, they do not cut strong figures. Moreover, they have only limited means for financing their operations. The ejidatarios can get a crop loan from the Banco Ejidal of 1,000 pesos per hectare of wheat or 3,000 pesos per hectare of cotton, but most of them cannot get a loan for a tractor, the minimum price of which is 60,000 pesos but which is a typical Yaqui Valley tool of production.

168. The Banco Ejidal of Sonora gives the impression of being a very enterprising institution, eager to assist the ejidos, but it is not geared to loans of that kind. Private banks generally refuse to extend credit to ejidatarios who cannot mortgage their land as security. But in the Yaqui Valley, the tractor has displaced the mule, not only because of the relatively large-scale operation, but also because in the irrigated zone it is difficult to till the soil with animals. Most ejidatarios must rent equipment from private owners. Custom jobs of this kind come in three grades, and price of all is high. The tendency of the ejidatario is to contract for the cheapest job, and the results show it. It is not altogether surprising, therefore, that many ejidatarios prefer to rent out their land on the conditions offered by those who can secure the full benefits from the most modern farm practices and adequate financial resources.

169. Good soil, good sized holdings, good farm techniques and ample year-round water should have provided the ejidatarios with the incentive to hold on to the land and develop it with something of the enterprise of the private owners. That the favorable combination of factors has failed to bring that result about as shown by the "desertion" of the land, is not, basically, the fault of the ejidatarios. Whatever their failures to come to terms with the Yaqui Valley type of agriculture, what is more important are the questions this experience raises about present ways of approaching ejidal improvements. These

are well summed up in a careful study of the problem as follows:

"From the available empirical evidence, we can conclude that the technique was imposed upon the ejido group of the Yaqui Valley and it failed to be fully assimilated. This was principally due to the fact that the public institutions working in this field haven't given due consideration to the value of the participation of the ejidatarios, ignoring, maybe in good faith, ways of improving the aspirations and involvement of the ejido group." <sup>1/</sup>

170. The point is that renting is common and that its implications must be recognized. It is not hard to see what they are. A transfer of natural and human resources is taking place inside and outside the ejido. Even if only inside the ejido, it is a serious breach of the Code provision, not to speak of an injustice to those on the land distribution waiting list. Renting out ejido land to outsiders is both a violation of the Code provision and a source of significant land accumulation in few hands. This is the case in the areas mentioned in paragraph 167. In whatever numbers, ejidatarios are becoming something other than farmers. Even if the practice had unquestioned advantages for the ejidatarios, the exchange of the right to use land for the right to collect rent is a retreat from a basic goal of the ejido system. Yet in some parts of the country, as, e.g. the Yaqui Valley, the retreat has gone so far as to raise the question whether what is good for private farming may not be a sign of the decadence of the ejido system. The complete lack of enforcement of the Code provision against the subletting of land is not the cause of this development. It merely facilitates it. What is important are the underlying causes. So long as the rewards of the ejido system are limited, its members will not be able to withstand the temptations offered them and administrative measures will avail little. If it is intended to reverse the present trend, the only way is to come to grips with the most serious problems facing the ejidos. There are pronouncements from official circles that this particular practice deserves attention, and we shall return to this problem in another connection.

171. Security of tenure. One of the principal goals of an agrarian reform is security of tenure to those operating farms. In Mexico the ejidos received millions of hectares of land, cost-free, but the vast majority of the ejidatarios did not gain absolute security in the ownership of the parcels they cultivate. According to some students of the problem, "As it now stands, the Government, the community and the

---

<sup>1/</sup> Francisco J. Andrade y Donald K. Freebairn, Economia Agricola en el Valle del Yaqui; Los Ejidatarios Individuales, p.77. Published by Secretaria de Agricultura y Ganaderia. Instituto Nacional de Investigaciones Agricolas, Mexico.

individual parcel holder all have their rights to the same land."<sup>1/</sup> Whether as a result of this or not, only an estimated 15 percent of the members of the ejidos have legal title to the land (título parcelario). Though most of the ejidatarios without titles remain undisturbed on the land, the peasants are aware of the value of a title and eagerly, if so far vainly, seek to obtain one. Until the peasant gets a title, he is bound to have the uneasy feeling that the land he cultivates is not quite his own, and with good reason, for some peasants do lose their land. In this regard, a sentence in President Diaz Ordaz's First Report to Congress is significant: "The legal security of possession which can only be obtained through rigid application of the protecting laws is as important as the distribution of the land itself."<sup>2/</sup>

172. The government's remissness in this respect is at least partly due to the fact that the Departamento Agrario lacks sufficient funds to survey and demarcate the parcels and then issue legal documents of ownership. Not unrelated to this is the "determination of the boundaries of the ejidos in the relation to community lands and privately owned lands. The important part of this project is to uncover the internal problems of the ejidos and farm communities and to try to solve them."<sup>3/</sup> The Departamento Agrario is charged with the distribution of land and all the functions relating to it, including the survey of boundaries as well as the issuance of titles within the ejidos. These activities call for a large and trained staff and ample funds. This is not the case of the Departamento Agrario, the administrative pivot of the reform. Its 1965 budget was a meager 109 million pesos hardly sufficient to handle current land distribution, some titles, and to enable harassed officials to adjudicate the constant flow of peasant complaints connected with the application of the reform. The mission is not in a position to state if its 1966 budget is much larger.

173. A title of ownership to land is important not only for psychological reasons, important though these are; so long as legal claims to the land are unresolved, conflicts among ejidatarios about administratively assigned parcels are inevitable. Ejido cropland is limited, and the pressure of the population on the land is enormous.

---

<sup>1/</sup> Matthew D. Edel. "Zinacantan's Ejido: The Effects of Mexican Land Reform on an Indian Community in Chiapas." The author's reference on this point is to the legal land scholar, Dr. Mendieta y Nuñez Lueia and his work, El Problema Agrario de Mexico, 1954.

<sup>2/</sup> From the First Congressional Report to the Nation, September 1, 1965.

<sup>3/</sup> President Diaz Ordaz. Quoted from his First Congressional Report to the Nation, September 1, 1965.

In such a climate the first requirement for the security of an ejido member is a legal recognition of his right to his parcel, which protects him against other claimants. Lacking such recognition, many ejidatarios (the exact number is unknown) have found themselves dependent upon the goodwill of the ejidal authorities. In practice, even if indirectly, such situations have led to involuntary - as against voluntary - leasing of land; they have led also to the shifting of ejidatarios from parcel to parcel, and worse than that, to occasional dispossessing of ejidatarios from the land.

174. There are no statistics on such occurrences, and officials directly involved in the agrarian reform are reluctant to discuss them. Groups of ejidatarios questioned by an outsider react similarly. But there is ample evidence that such cases occurring are not rare. On a visit to an appropriate office crowded with peasants, illegal dispossession from the land was not an uncommon cause for complaint. There is reason to believe that the files of the pertinent agencies would yield records of a large number of ejidatarios wronged in such ways. The Mexico City daily press does not print much news of this kind, but even there, a reader can find occasional items. In El Dia, they are practically daily fare. The provincial press, which is much closer to the scene of "irregularities," reports enough relevant stories on this subject to compensate for the lack of statistical evidence.

175. If legally conferred ownership does mean security, it is only reasonable to assume that peasants on such land would take better care of it. That is where the psychological and the practical are likely to meet, though recognizing that the ejidatario cannot sell or mortgage his land. For all the enumerated reasons the title of ownership is a compelling need if the process of land redistribution is ever to be completed. There are students of the reform who denigrate the element of "ownership" in the ejido on the ground that technical and cultural improvements among its members are of greater importance. It is idle to draw such a distinction as if the combination of these elements is not basic to a stronger ejido. What matters is the attitude of the ejidatarios who are, after all, good judges of their needs; nor can one take lightly the consequences an ejidatario must face in the wake of dispossession, or shifts from plot to plot. The importance of technical and cultural uplift is not in question, but to feel secure on the land is the precondition upon which much else depends.

176. Some commentators on ejidal tenure see other weaknesses in a system where rights to the land are held by the government to some degree, and to a larger degree by the ejido communities and individual ejido members. The ambiguity of ejido ownership, it is argued, can in itself be a factor limiting production; the "uncertainty" of this type of tenure discourages investment and improvements, the ejidatario cannot sell or mortgage the land, buy more land and has limited recourse to credit to improve what he has. Along the same lines, one of Mexico's outstanding agricultural economists, Dr. Fernandez y Fernandez, deplures what seems to him too rigid a link between the ejidatario and his land, and urges

that the ejidatario ought to hold his land in fee-simple, i.e. have an unhampered right to sell or mortgage land, although Dr. Fernandez would restrict the right to sales within the ejido. To others, unrestricted right of ownership or selling and buying could not be contained within the ejido; private interests would find their way into this market, causing a good deal of selling of land, especially the best ejido land. Not all nor even a majority of the ejidatarios would sell out, but under present conditions and faced with difficult pressures, many might find it hard to resist the temptation to sell. The authors of the Agrarian Code probably had good reason for imposing a restrictive type of ejido ownership. That is not to say, however, that the completion of the granting of titles of ownership provided for in the Code is not long overdue. It cannot be denied either that the system of ownership is rigid and that time has come to make it more flexible. This is touched upon in paragraph 139.

177. Ejido non-land resources. Mexico is not Japan, but it may be useful to compare it with the latter country in which a land reform was carried out in the present generation. The average size of a farm in Japan is one hectare. To overcome this severe limitation, the approach adopted after the reform was, in the words of the slogan, nailed down to every door in every Japanese village: "Let the size of our output increase the size of our holdings." The combination of improved technology facilitated by government assistance in credit, extension services and "intervention" of many other kinds has proved that such a slogan can become a reality, though agriculture alone in Japan does not provide a complete solution to all peasant problems. The measures taken did not constitute a "one-shot" program to bolster up a reform which was in fact a success from its inception. On the contrary, the Japanese policy of assistance is a continuous one and is part-and-parcel of the reform process.

178. That record is relevant to the Mexican reform. The ejidatarios (and the private holders of less than 5 hectares), too, must enlarge their holdings by increasing their productivity, as one of the ways of easing the conditions of the overcrowded ejidos. This assumes that Mexico's rapid rate of industrial and commercial development will be maintained and that large numbers of surplus rural workers will be absorbed in other pursuits, and that the rate of population growth will eventually decline. Since securing higher productivity depends on improving the means of production, including credit and technical assistance, it is necessary first to examine the "package" currently at the disposal of the ejidatarios.

179. With few exceptions, the ejidatarios did not receive farm equipment along with the land distributed to them. This situation prevailed not only in the first chaotic days when the "noblemen's nests" were being burned; it has prevailed down to the present days of a stable and relatively prosperous Mexico. But the ejidos have gradually accumulated some assets. According to the census of 1960, the value of the ejido share in all types of farm equipment was 31 percent. In the light of what they started with, this is a not inconsiderable achievement. Nevertheless, with roughly the same amount of land, the private sector has 69 percent of all farm equipment, and its equipment concentrated in the commercial sector is generally more sophisticated and efficient.

180. The overall 31-69 division of farm equipment tells only part of the story. A major comparative study of conditions in ejidos and private agriculture 1/ is revealing in this respect. The study was made in the district of Celaya in the State of Guanajuato, but the author considered conditions there fairly representative of a number of other parts of the country. It dates back to 1953-54, but there is no reason to believe that the relationship between the ejidos and private farms has changed significantly. When the investigation was undertaken, the district had 202,000 hectares of cultivated land, of which 96,000 was ejidal and 102,000 was privately held. All of it was planted to such typical crops as corn, wheat and beans.

181. Table 3 compares the ejidos with the private farms. Though the private sector had only 11 percent more land, the value of its land, buildings, irrigation works, machinery, transport vehicles and animals amounted to 70 percent of the value of the assets of all farms - private and ejidal. The ratio of the value land to ejidal land was 66:34, clearly showing a difference in quality. Even greater differences are shown for buildings where the ratio is 95:5; for irrigation works, where it is 76:24; for farm equipment, 73:27; for transport vehicles 85:15, and for animals 80:20. Capital assets per hectare amount to 4,412 pesos in the private sector compared with only 1,198 pesos in the ejidal sector. 2/ Current investment showed an even greater disparity. In 1954, net investments amounted to 104 pesos per hectare for the private farms and only 4 pesos per ejidal hectare. 3/ Except for the animal stock, capital consumption in the ejidos exceeded new investments. Dr. Castillo concluded:

"In the ejido sector capital resources are very different from those in the private sector and show grave symptoms of deterioration. With the exception of livestock.....the ejidos are not only not replenishing the amortization of their buildings, irrigation investments, farm equipment and transportation means, but are literally consuming their capital resources at the rate of 3 percent per year." 4/

182. On the basis of the census figures given above as well as Dr. Castillo's figures, it seems clear that no valid comparison can be made between the ejidatario and the much better provided private holder

---

1/ Carlos Manuel Castillo, La Economía Agrícola en la Región del Bajío, 1957.

2/ Ibid, Table 92, p.99.

3/ Ibid, Table 91, p.99.

4/ Ibid, p.96. The discrepancy between this finding and the census data cited in paragraph 181 may be due to the differences in time and geographic coverage of the two sources.

as cultivators. The ejidatario starts with grave handicaps which evidently not many can overcome. The lack of resources other than land makes it extremely difficult for the ejidatarios to use the land. Obviously, the government cannot be asked to give each peasant all the equipment he needs, but a policy that would help an ejidatario willing to make the effort to accumulate such assets is an essential part of an agrarian reform.

183. Credit. The ejido farmer needs a great many things, but when the ejidatario is asked what he needs most, the invariable answer - after water - is credit. What he refers to is institutional credit, not credit from private lenders. All Mexican agriculture is dependent on credit. One gets the impression that even successful commercial agriculture, despite the sizeable resources it has acquired, could not continue to grow without a constant flow of new credit. But the ejidatarios who need institutional credit most, find it hardest to get - and get it least.

184. Almost the only source of institutional credit for the ejido is the Banco Ejidal. In the agricultural State of Sinaloa, for example, private banks extend loans to established ejidatarios well-known to them, with holdings considerably larger than the average. But these, like other cases that could be cited, are exceptions. Private banks in Mexico insist on "absolute" security, which means mortgaging the ejido land. This is a condition which no ejidatario can meet, for under the Agrarian Code he cannot mortgage his land. The recently established Banco Agropecuario is beginning to extend loans to ejidatarios, but only to those who have demonstrated that they are "successful" and creditworthy. But, to repeat, all cases of this kind are exceptional. The overwhelming mass of the ejido farmers must depend upon the Banco Ejidal. That Bank was created to serve them, but it does not perform that function as well as its creators must have hoped.

185. The Banco Ejidal provides the following types of loans: short-term production loans (avio) granted for a maximum period of 18 months and in the amount not exceeding 70 percent of the expected value of the crop - such loans account for 70 to 90 percent of the total amount loaned by the Bank in any year, intermediate loans (refaccion) mainly for equipment and for periods of 5 to 12 years - these loans account for from 6 to 10 percent of all loans made in any one year. The remainder - insignificant - are long-term loans (immobilario). The interest rate charged by the Bank is, in Mexican conditions, a low 10 percent per year.

186. Unlike the private banks and such official credit institutions as the Banco Agropecuario, the Banco Agricola, the Fondo de Garantia y Fomento, the Banco Ejidal is the only one that extends loans on the security of anticipated crops. This practice has resulted in certain difficulties for the Bank, which are discussed below together with other bank problems. The loans are made available in part in cash, paid in installments, to cover the living expenses of the borrowers; by far the larger part is made available in the form of supplies and services required for production.

The loans vary considerably in size, depending upon the crop for which they are made. For cotton they amount to 2,500-3,000 pesos per hectare, for wheat - 1,000 pesos per hectare, and for corn - 800 pesos per hectare. The credits are not equally distributed throughout the country; the Laguna cotton region, Yucatan with its henequen and the Yaqui Valley with its wheat and cotton receive about half of the total. In recent years (1959 and 1961) the average size of the loans ranged from 4,000-5,000 pesos (US\$320-480). Although the amounts are not large, they show that the Bank's principal concern is with cash crops grown on larger than "average" ejido holdings. To ensure recovery, the Bank takes over the produce at harvest time, arranges for its sale, deducts the amounts due to it, and gives the balance, if any, to the borrowing credit society for distribution among the latter's members. The repayment record is relatively poor, as is shown by the substantial volume of overdues and bad debts.

187. With the aid of 40 main offices and 300 branches, credit is made available throughout the country, even though, as indicated, the main emphasis is on a few regions. With few exceptions, the Bank extends loans only to ejido societies (60-70 members per society), which are supposed in turn to be prorated among the members of their societies. Officially, in 1965, there were about 12,000 societies, but at least 5,000 were dormant. Since the number of the ejidos is estimated at 20,000-22,000, it might appear that roughly a third of the ejidos or a third of the ejidatarios were eligible for credit. This is not the case because (a) only a small proportion of the ejido membership is covered by the societies, and (b) only about half of the members of such societies actually receive loans. Many reasons are given why so few have access to credit: farmers complain that the Bank's services are neither adequate nor timely; that there is too much red tape involved in securing a loan; that there is too much Bank supervision of the use of loans. The Bank attributes the situation to the fact that a large number of farmers are not creditworthy. It is not surprising, therefore, that ejidatarios prefer to pay merchants or processors 2 percent per month as against the 10 percent per year charged by the Bank.

188. Although the limited scope of Banco Ejidal's activities is explained in part by the factors cited above, by far the most important cause is the fact that the funds at the disposal of Banco Ejidal are too small to meet needs even in the selected areas and among the groups which it favors. Between 1950 and 1960 the Bank's disbursements rose from 200 million to 1.2 billion pesos a year; since 1960 they have remained at about the latter level. Official figures for disbursements in 1962-65 have not been made public, but figures for 1960, the peak year of loan disbursements (1.25 billion pesos), are instructive. In that year, there were 9,069 societies with a membership of 668,308; the Bank dealt with 4,922 societies with a membership of 370,018. Of these, 237,000 received loans, that is, either 10 or 16 percent of all ejidatarios, depending on whether the official or unofficial estimates of total membership of ejidos is accepted. Clearly, the overwhelming majority of the ejidatarios do not receive Banco Ejidal credit.

188. The six-fold increase in funds does not represent a much greater scope in the Bank's activities. The number of ejidatarios served by the Bank has hardly changed in the past 30 years. In 1936-45, the average was 260,000 per year; in 1950-59, it was 290,000 per year, and there was a decline in the second half of the latter period. The average size of the loan has increased substantially, but after adjusting the absolute figures for many factors contributing to the rise, there does not appear to have been nearly as much real increase as it might appear at first glance. In the last three years of 1936-45 when the size of the loans reached a peak, the average was 420 pesos per year; in 1959-61, it was 4,000 pesos per year. But when account is taken of the change in the purchasing power of the peso <sup>1/</sup> the comparable figures are 420 and 1,000. The more than two-fold increase hardly offsets the rise in credit requirements resulting from technological change in agriculture. For example, 30 years ago few, if any, ejidatarios used chemical fertilizer. They now fertilize 9 percent of the cultivated land (17 percent in the private sector), while the ejidatarios served by the Bank fertilize an even larger percentage. Adding insecticides, better and costlier seed, and an occasional piece of equipment, the average 4,000 peso loan is inadequate to cover the cost of the inputs required for a modern, as against a traditional type of agriculture. It is understandable why farmers who receive credit from the Banco Ejidal, rely in addition, on other credit sources.

189. Not only does the Banco Ejidal fail to meet the needs of the ejidos, but it has suffered from a number of difficulties the most serious of which, from the very beginning, has been a relatively large volume of overdue payments and bad debts. Of the loans made in 1958 and 1959 only 80 and 75 percent were repaid. The rate of recovery in preceding years was the same or even poorer, and that is probably true of the four most recent years for which data are not available. As a result, the Bank has accumulated a huge load of indebtedness. At the end of 1961, the most recent year for which figures have been published, out of the Bank's total portfolio of 1.8 billion pesos, the accumulated overdues amounted to 1.2 billion pesos, or 66 percent of the total volume of loans outstanding.<sup>2/</sup> The former figure does not include loans already written off as bad debts. Overdue payments are due in part to recurrent crop failures on unirrigated land. In part, they are due to the meager financial resources of even the better of ejidatarios who are the principal clients of the Bank; it seems clear that they borrow from other sources as well as the Bank and because of the greater pressure exerted by the former, repay these debts first. Finally, the poor record may be due in part to the alleged inefficiency of the Bank, which is shown not only by its large losses but also by the high cost of operations.

---

<sup>1/</sup> Purchasing power fell by three-quarters between 1943-45 and 1959-61.

<sup>2/</sup> There exists a large discrepancy for which no explanation could be found between the figures contained in the 1961 Report of the Banco Ejidal -- used here -- and the global data supplied by the Banco de Mexico for the years 1961-65. The latter figures were used by the mission in the Main Report. See also footnote on page 70.

191. The Bank is a traditional money loser. Crop insurance (Aseguradora Agrícola Nacional), which is compulsory for crops financed by the Bank makes possible the recovery of some of the losses on bad loans. But such recoveries only reduce, they do not wipe out the losses. In 1961 the Bank lost 265 million pesos; in 1958 it had wound up its operations in the red to the tune of 282 million pesos. When the operating results for 1962-65 are finally published, they will probably reveal losses of roughly the same magnitude. In addition, in 1961, as in most other years, the Bank's portfolio contained an undetermined amount of loans on which payments were overdue which will eventually be charged to losses. As to administrative costs, in 1961 they amounted to 115.5 million pesos, or 12 percent of the loan volume for that year. Although it is difficult to find comparative figures for a meaningful judgment, it is generally agreed that the administrative cost is abnormally high; nor does the Bank's involvement in activities other than lending completely explain the high cost. To offset them, the Federal Government has been giving the Bank a yearly subsidy of about 400 million pesos, but even so, the Bank cannot make both ends meet and it is commonly regarded as the worst loser among the public and private banks of Mexico.

192. Among those acquainted with its work, the Banco Ejidal has come to be looked upon more as a "welfare agency" than a banking institution, with the government bearing all the losses, regardless of the cause. For this reason, it is maintained, the Bank is poorly managed, makes no effort to require the societies that borrow from it to build capital reserves, solicits no deposits; displays little concern over the soundness and recoverability of its loans, responds to political pressures in making loans, and, in general, has come to look upon itself as a welfare institution, an attitude which presumably enhances these tendencies.

193. Nevertheless, despite its faults, the Bank has helped to promote better agriculture in some ejidos by financing crops and popularizing the use of improved inputs. The Bank is practically the only institution that gives many ejidatarios cheap credit. Its "welfare" point of view is understandable in the light of the fact that it deals with ejido members who are subject to all kinds of disabilities. Moreover, whatever the unfavorable results flowing from this approach, they should not be laid solely at the door of the Bank; they arise from the difficulties of the ejidos which the Bank cannot help to reflect. The often-repeated criticism of the Bank that it serves only a very small number of farmers is also not justly laid at its doors; the policy is not of its own making.

194. Granting that the Bank's performance could be improved, it is doubtful it could serve a much larger number of farmers, given the present agricultural policy of the government which involves channelling public and private credit resources to the sector which can yield the quickest returns in increased productivity and the best prospect that the loans will be repaid. That policy has been eminently successful; this is amply attested by the remarkable progress of private, non-ejidal, commercial

agriculture which has received the lion's share of the credit resources. The newly created Banco Agropecuario is an extension of the Government policy, for this bank, too, is concentrating mostly on the larger and successful private farmers. But, in addition, the activities of the new bank create some problems for the Banco Ejidal; the Banco Agropecuario has begun to take over from the Banco Ejidal the accounts of the most solvent ejidatarios, leaving only the weakest to that less-favored institution. The immediate prospect is that the Bank will do well if it manages to maintain its operations at current levels.

195. How do the ejidatarios manage to fill the credit gap of the Banco Ejidal? Neither the census nor the Bank provides statistical information to answer this question. Inquiries by the mission among the ejidatarios indicate that many get no credit at all; that a few individuals and societies resort to private banks and credit unions with varying degrees of success; that some ejidatarios with small holdings and equipment can secure credit from private sources on the security of such assets; that some borrow at 2 percent per month, while many others must pay the even higher going rate, which may be as much as 5 percent per month. The conclusion would seem to be that if the "life blood" of Mexican agriculture is adequate amounts of credit at 10-12 percent per year, the ejidos suffer from a serious case of anemia. Their situation is in sharp contrast with that of the large and medium private holders who have access to an increasing flow of public and private credit. And on this account too, as well as because of the other differences already discussed, one should not accept the simplistic and widely held view that the ejidatario is an innately "poor" farmer and the private holder is a "good" farmer. The two cannot justly be compared keeping in mind that the ejidatarios receive the short end of the credit stick.

196. It would be possible to end on this note, but it will be useful to raise some further questions about agricultural credit: What can the ejidatarios and the small private holders, most of whom must rely on very costly credit at present, expect in the future? And what are the prospects for those who cannot get any credit at all?

197. It cannot be denied that the official credit policy has been very successful as a contributing factor to great expansion of food and fiber

---

1/ Between the end of 1961 and 1965, loans outstanding provided by public and private banking institutions increased by 3,413 billion pesos. The comparable figure for the Banco Ejidal was 781 million, or 23 percent of the total. As of the end of 1965, the Bank's outstanding loans to ejidos were about 36 percent of those supplied by all institutions. By either measure, the commercial sector obviously receives the lion's share of the credit. See Table 8: Loans Outstanding for Agriculture Mexican Banking System, 1961-65.

production for domestic and foreign markets. But the policy (credit, investments in irrigation facilities and price support) that insured this veritable 'miracle' of Mexican agriculture, has exacted a price - the neglect to a greater or smaller degree of the overwhelming majority of the farming population. This covers by far the greater part of approximately 60 percent of the country's cropland (ejidal and small private farms). This land has a considerable production potential which, given certain pre-conditions, could be considerably enhanced for the benefit of the peasants and the State. The pre-conditions, however, are not only greater credit facilities; they comprise most of the items of an agricultural development policy to meet the needs of the ejidos (and small private holders).

199. Credit for ejidatarios and small farmers cannot be dealt with in isolation from their other problems: shortcomings in the internal management of the ejidos; limited amount of usable land at the disposal of the ejidatarios; meagerness of their productive resources; their small water resources; lack of employment opportunities on the ejidos; very small number of livestock and forestry ejidos, or processing and merchandising ejido cooperatives; limited opportunities for ejidatarios to gain access to better agricultural techniques, and their resulting relative inefficiency as producers. Not every item enumerated is subject to remedy, shortage of land for example, but all the others are basic items for a policy to assist the ejidos and small private farmers, without which credit by itself is a useful but temporary relief measure between crops.

200. If credit is the productive catalyst for farmers who do not have the problems listed above, it seems probable that ejido credit, too, would produce results, but only if combined with efforts to strengthen the base of the ejido economy. If Mexico continues with a dynamic policy for the small and more productive group of farmers, while leaving the uncreditworthy to shift for themselves, inadvertently perpetuating a division of the agricultural economy into two sharply differing farm sectors, thorny problems of economic welfare, social relations and, in a basic sense, politics are bound to become more prominent in what is still an apparently quiescent rural society. Hence the need for a persistent attempt to apply corrective measures aimed at placing an increasing number of ejidos on a sounder basis, buttressed with credit to make possible the achievement of the goals of higher production and better living. This suggests the kind of 'package' of measures of which credit could form a significant element. There is ample evidence from the experience of other countries (Japan, Taiwan and parts of India - all mostly small-holder farmers) that under such conditions the productivity and the standard of living of Mexico's small farmers could be improved by such a policy.

200. Irrigation. In any discussion of their problems with ejidatarios, it is a safe bet that the conversation will eventually get around to irrigation. This is not only among ejidatarios; all Mexican farmers have water on their minds; even today farmers do not make light of Tlaloc, the God of Water. This is quite natural in a country where only 13 percent of the

land has adequate moisture in all seasons; 50 percent is deficient in moisture in all seasons, and 37 percent is deficient in moisture in the wintertime.<sup>1/</sup> Understandably, a Mexican measures his holdings in terms of irrigated hectares rather than total hectares.

201. The government has done yeoman work in expanding the country's irrigation facilities. Estimates of the irrigated area vary, but the apparently reasonable figure of 3.5 to 4 million hectares is an impressive testimony to the effort. The distribution between ejido and the private sector in expenditures for irrigation and type of irrigation work, is not clear. In principle, land irrigated by a government agency is apportioned in accordance with the policy of the government, which is intended to favor the small farm operator, whether he is in an ejido or operating independently, although some writers on the ejidos claim that the theory and the practice contradict each other. In any case, according to the 1960 census, ejidos had 1.4 million irrigated hectares out of the total recorded 3.4 million hectares under irrigation, or 42 percent of the total. If these figures are correct, the ejidos whose cropland holdings amount to 45 percent of the total have not fared so badly, on the whole, though all ejidos have not done equally well. As an example, 60 percent of all the ejidatarios and 50 percent of the cropland owned by ejidos are located in the Central and South Pacific regions but these regions have only 40 percent of the irrigated land in the country. There are also striking variations in irrigation facilities within the private sector. Data on their distribution by size of cropland holdings are lacking, but it is known that holdings from 50 hectares and more have by far the large share of irrigation works, whether self-provided or supplied through government sponsored irrigation projects.

202. Secretaria de Recursos Hidraulicos is the irrigation planner and builder. Its projects are divided into two categories: "new" and "improved" works. Between 1930 and 1964 the former accounted for 1,568,000 hectares and the latter for 910,000 hectares. Figures of expenditures by category are not available, but obviously the greater part went into "new" major irrigation works. These works, especially those carried out in the last two decades, are located in the so-called peripheral areas away from the old centers of population in which the ejidos predominate, and where the emphasis has been on the development of large-scale commercial agriculture. Natural conditions and the prospect of good economic returns were the sound reasons for choosing such locations. It is difficult to determine how much the ejidos of Central Mexico, for example, benefited from the "new" projects, but it seems likely that they were not the principal beneficiaries, particularly in view of the fact that six northern States (Baja California Norte, Sonora, Chihuahua, Coahuila, Nuevo Leon and Tamaulipas) accounted for 68 percent of the irrigated land in 1961-62.<sup>2/</sup> Most of the irrigation

---

<sup>1/</sup> Nathan L. Whetten, op. cit., p.8.

<sup>2/</sup> C. H. Myers, Education and National Development in Mexico, Princeton University, 1965, p.14.

facilities in Central Mexico antedate the works carried out by Recursos. It may be assumed that the projects carried out in that region in recent years were mainly improvements. Thus the fact that the ejidos have 42 percent of the irrigated land in the country does not imply that a proportionate amount of the 16 billion pesos expended for irrigation during the past 25 years went to them. For the same reason, it does not reflect the benefits from that investment, particularly when compared with those accruing to the large holders of newly irrigated land.

203. The ejidos in the densely populated areas are concerned about small-scale irrigation schemes ("pequeña irrigación") suitable to their needs. According to IERD Report WH-137a—small irrigation is "the development of water resources projects that will irrigate less than 5,000 hectares. They are usually in dry land areas where there are no possibilities of developing larger projects." It is not clear how far the as yet unapproved 1966-1970 program of Recursos will go to meet such requirements.

All that can be said is that the program calls for a total investment of 13.5 billion pesos, of which the investment in "pequeña irrigación" is earmarked at 1.016 billion, or 7.5 percent of the total. It appears, therefore, that small irrigation schemes of the kind the ejidatarios speak in Central Mexico is certainly not a major feature of the plan. It can be argued that, in the future, Recursos might well take more account of the urgent water needs of the rural areas with a high density of population, whether ejidal or not. Water has been the principal factor in making the newly-developed lands so productive, and there is no reason to believe that it would not go a long way toward stepping up the productivity of the areas where the traditional type of small-scale agriculture is carried on.

204. Extension. The indispensability of an extension service for the promotion of better farm practices is generally recognized. But such a service hardly exists for the ejidos (and small private holders). This is the more regrettable because a great deal of work has been done and useful knowledge acquired in Mexico about such major crops as wheat and corn which these farmers grow. The successes achieved through the application of this knowledge can be seen mainly on the larger, irrigated farms of the private sector. For reasons given elsewhere in the mission's report, the knowledge has not been applied by the vast number of small farmers who lack water, credit and technical knowhow. The farmers need guidance in order to make effective use of new varieties of seeds and improved practices. They must be told if there are new varieties adapted to their localities and farms, where they can be purchased or how they can be produced. Beyond that, they need specific instructions on cultivation practices to get the maximum advantages from new varieties. This is the function of the extension service, but in Mexico in the ejidos, the service hardly makes an appearance.

205. The center of extension work in the country is the Departamento de Extensión Agrícola, a bureau of the Ministry of Agriculture. Though

---

1/ An Appraisal of the Development Program of Mexico, Volume III, Annex II - Agriculture, p.33, paragraph 107.

organized in 1948, it does not yet have anything like the resources needed to cope with its obviously enormous task. In 1965, the federal extension department had a staff of 435, including 135 home economics demonstrators. The financial resources of the Ministry are so limited that only 140 members of this staff were on its payroll; all the others were paid by state and municipal governments, the Banco Ejidal, and some private business groups engaged in the sale of farm equipment and supplies. The professional staff included about 200 ingenieros agrónomos and 45 home economics demonstrators and supervisors. Approximately half of the professional staff were in the field; the remainder were attached to the main office. As to the qualifications of the personnel, a report by CIDA (Inter-American Committee for Agricultural Development) prepared in 1964 said: "Only a small percentage of these persons have received formal training in extension methods."<sup>1/</sup>

206. The authorities recognize that the staff is too small even as a supervisory force to meet the needs of a couple of million ejidatarios and nearly a million small private farmers. With a view to furnishing more adequate service, the Ministry of Agriculture prepared a four year plan (1965-68) which provided for the training and hiring of 2,000 additional agents and 1,000 home economics workers, and for the establishment of 72 centers to train 9,000 young farmers per year. The total cost was estimated at 850 million pesos. From the information available it is not possible to judge the quality of the Ministry's plan, but for the time being that is not a matter of practical consequence, since for reasons not altogether clear to the mission the necessary budgetary appropriations were not made. At present, therefore, the extension service continues to carry on its activities with an inadequate appropriation of about 20 million pesos, or US\$1.6 million.

207. For an appreciation of the role of extension in Mexico, there is no substitute for a visit to the countryside. Whether it is in the State of Mexico, Morelos, Tabasco or Puebla, remarks made by the farmers are as revealing as they are discouraging. Farmers asked about the extension service, usually disclaim any knowledge of it; some greet the question with a smile as if to underscore the visitor's naivete; and one farmer identified the object of discussion in this way: "Ah, you mean the fellow who drives by but never stops here." This picture of the "extensionista" and his place in the village is not a fictional one. Fairly detailed surveys in the first two States listed above provided ample justification for the farmers' skeptical attitude.

208. Morelos is a small State with 34,229 farms and a total crop area of 143,000 hectares, 65 percent of which are in ejidos. Close to 96 percent of the farms are smaller than five hectares. Production has been increasing but slowly, and technical assistance would almost certainly be useful. But Morelos has only two extension agents, or one

---

<sup>1/</sup> Inventory of Information basic to the Planning of Agricultural Development in Latin America, Mexico, p.61.

per 17,000 farms. Clearly, this is the same as no extension service. The situation in the State of Mexico is not much better. It is a much larger State with a cropland area of 612,000 hectares and 309,535 farms. Here, too, most of the farms (97 percent) have less than five hectares, and almost 50 percent are in ejidos. There are 21 extension agents in the State, or one for nearly 15,000 farms. In addition, there are 10 veterinarians and 60 home economics workers. Even though larger than in Morelos, the extension corps can render little service, and it is understandable that relatively few farmers have any contact with it. In the opinion of the chiefs of extension service of these states, the largest number of farmers a good extension agent can keep an eye on is 400; in other words, Morelos would need 85 and Mexico State 765 agents.

209. Numbers are, of course, not the only consideration; there is also the question of the quality of the personnel and the terms of employment. The agents are young graduates of agricultural schools which offer no special training in extension work. Their pre-service training is limited; "in the State of Mexico (it) includes a week of general orientation with individuals under the direction of supervisors. This includes extension organization, role definition, extension procedures, methodology, audio-visual training and limited time with an experienced agent."<sup>1/</sup> According to available information, agents tend to represent the less capable of the college contingent; they join the service for lack of better employment opportunities elsewhere. Their salaries are small, they do not look upon extension as a career, and they can be enticed out of it easily. Moreover, their terms of employment are peculiar in certain respects. Of the 21 agents in Mexico State, 14 are paid by the state and 7 by the Federal Government, or the extension department. The salary scales differ. The maximum for those employed by the state is 2,500 pesos and for those employed by the Federal Government is 1,500 pesos. Travel allowances, too, differ. An agent employed by the state must provide his own vehicle, for which he receives 1,500 pesos per month; part of this amount is a loan for the repayment of the cost of the car and part is a subsidy to maintain it. An agent on the federal payroll is given a car and 450 pesos a month for maintenance, although the cost of maintenance is estimated to be close to 750 pesos. The question how the "extensionista" can operate his car when the maximum salary is 1,500 pesos has apparently only one answer: he engages in other activities. This assumes a variety of forms, the principal one being trading in commodities such as fertilizer, insecticide, seed, etc. But even if the extension agent should devote all his time to work with farmers, the extension service available for the states of Morelos and Mexico can hardly meet their needs. Whether the situation in these states is typical of that of other Mexican states cannot be answered with certainty, but there is reason to believe that the conditions described are not entirely atypical.

---

<sup>1/</sup> State of Mexico Agricultural Extension Service, October, 1964. Sponsored by the Ford Foundation with the State of Mexico.

210. What little extension service there is in Mexico, it is concerned almost entirely with crops rather than pasture land or forest land. Yet 80 percent of the ejido land is classified broadly as pasture and forest. Mexico's resources in land of these types may be seriously impaired through the attempts by the ejidatarios to grow corn crops on land not suited for crop production. If Mexico does eventually create an extension service that is adequately financed and a larger, better trained and better paid staff, it ought to provide for technical assistance for non-crop land as well as cropland. For the time being, however, little of either type of ejido land gets the technical assistance it so badly needs. This is true, too, for the land of the small private holders.

211. Administration. In principle, the ejido is a democratically run institution, but the assumption that this is true in every case is highly questionable. The way in which the comisariado runs the ejido and the "will" of the ejido community are by no means identical. Detailed evidence of administrative abuses is not within the reach of a short-time observer of ejido conditions; instances of abuses by management are not likely to be revealed in casual talks between a visitor and group of farmers. The Departamento Agrario has relevant information, but it is not available to outsiders. Of course, abuses of this type are not confined to Mexican ejidos and their existence cannot be regarded as extraordinary in an institution where interests often clash and authority can act in its own interest as well as impartially.<sup>1/</sup>

212. The Spanish term "caciquismo" stands for rural "bossism". This is the antithesis of the type of ejidal administration that was formally provided for, including the safeguards (paragraph 214). Nevertheless, it is fairly widely alleged that many ejidos have their "caciques" and problems to which they have given rise, particularly in such matters as the juridical rights of the membership with respect to land distribution within the ejidos, land use, and communal expenditures. It has been reported to the mission that a "Committee of Seven" appointed to draft a new Agrarian Code, which is expected to be submitted to the Government of Mexico some time during this year, is, among other things, considering recommendations for fairly substantial changes in administrative structures of the ejidos. This is allegedly based on the Committee's recognition that one of the principal difficulties of the ejidos is the not infrequent inefficiency and irresponsibility of their management.

213. The administrative structure of the ejido has important implications for the ejidatario apart from the quality of management. Under the existing system the ejidatario is not quite a free agent. In theory, and usually in practice, the ejido member cultivates his allotted land in his own way, but he is subject to the "will" of the community, the authority of the comisariado, and the intervention of government agencies such as the Departamento Agrario or occasionally Secretaria de Agricultura y Ganaderia, the Secretaria

---

<sup>1/</sup> See in this connection a quotation from Jesus Silva Herzog's La Revolucion Mexicana en Crisis, pp.544-545, in Rural Mexico by Nathan L. Whetten. Also Dr. Whetten's chapter on Mordida (the "bite") pp.545-555.

de Recursos Hidraulicos, which determines how much water he will have and how it may be used and, of course, the Banco Ejidal which provides credit. Often it is not the ejidatario as an individual who deals with Departamento Agrario on land questions nor with other government agencies that have some relation to the ejido. Nor, notwithstanding many exceptions, is it true inside the ejido in matters of land allocation, land utilization, communal land use, water distribution, institutional credit, acquisition of inputs, purchase of an expensive piece of farm equipment, repair of village roads, fencing of ejido boundaries, etc. And the fact that the actions of the ejidatario are limited by decisions made by ejido authorities and, indirectly, by those made by central government agencies, tend to create in him an attitude which discourages independent economic action.

214. It is inevitable that in day to day operations the president of the comisariado rather than the whole membership of the ejido should determine the interests of the ejido. The vigilance committee is supposed to and could be a useful safeguard against the president of the comisariado confusing private with public interests. In fact, however, the safeguards like much else in the Agrarian Code, are often form rather than substance. Dr. Castillo's study of the administration of the ejidos leads him to say that "In reality ... the vigilance committee has a tendency to become a mere appendage in the service of the president of the comisariado."<sup>1/</sup> It is generally agreed that there are many instances where the president of the comisariado acts in his own interests, or those of his close associates, or individuals outside the ejido but connected with it in a variety of ways. The results can be - and often are - the polarization of interests between the administrators of the ejido and the ejidatarios, the critical point being "the enrichment of the members of the comisariado and their followers."<sup>2/</sup> The solution to the problem is not merely to change the laws; it can only form part of the solution of the complex of ejidal problems which is discussed in this report.

215. One other point deserves mention. The ejido is not only an economic institution; it is a political institution as well. According to Dr. Castillo, the dual function of the ejido has serious consequences because of a "lack of a clear conception of the difference between the two functions."<sup>3/</sup> In his view, the economic needs of the ejido and the political role it plays cannot be served by the present type of administrative organization. Even on purely economic grounds, Dr. Castillo's investigations lead him to conclude:

---

<sup>1/</sup> Ibid, p.164.

<sup>2/</sup> Ibid, p.64.

<sup>3/</sup> Dr. Carlos Manuel Castillo, op. cit., p.160.

"One of the most common problems of ejidal agriculture in the Economic District of Celaya is the inaptitude of the leadership of the comisariado. Because of this, many of the internal problems of the ejido cannot be solved satisfactorily. Several reasons explain the inaptitude of the comisariado; among them are the lack of formal training, little specialized agricultural knowledge, and ignorance of the ways of dealing with external forces which affect the ejido... The importance of these problems cannot be exaggerated. A good comisariado is basic for the success of the economic development of the ejido. It is not only that its members must have status in the community, but also the capacity to seek out and find solutions to the problems the ejidos are faced with 1/

216. Politically, the ejido has a dual function: first and foremost to marshal the grass-roots vote on election day and second to participate in agricultural organizations from the state to the national farm level, the Confederación Nacional Campesina. It is the contention of Dr. Castillo that the leadership is preeminently political. On this point he writes:

"It is possible that from the dualism of functions... stem some of the problems that affect adversely the ejidal organization and the services it tries to render. In reality, it is difficult for the same group of individuals to carry out successfully both types of activity. In reality, too, since political considerations weigh more heavily in the selection of the comisariado, administrative efficiency is weakened."2/

Dr. Castillo does not oppose the involvement of the leadership in politics, recognizing that such activity can be useful in gaining the ejido access to outside economic resources. He does not, therefore, argue for two separate units - one political and one economic-administrative - but merely for a comisariado whose selection will not be determined by political considerations and whose members will be the type of persons capable of performing the required economic services. A decade has passed since Dr. Castillo made his distinguished study, but his analysis and prescription for a better ejido administration has not yet met a response in decision-making circles.

217. Income Levels. An evaluation of the ejidos would not be complete without some comment on the income of their members. The redistribution of land substantially increased the real income of the ejidatarios. But even a cursory familiarity with official pronouncements yields many direct and indirect references to their poverty not

---

1/ Ibid, p.162.

2/ Ibid, p.161.

only as compared with non-agricultural workers but with other farmers. These are, however, only general statements; there are no figures for the income of ejidatarios as a group or by sub-groups. The available data make no distinction between the ejidal and private sectors or among sections within these two major groups. However, some broad conclusions can be reached from the far from adequate farm income data available.

218. The figures in Table 4 include incomes from both agricultural and non-agricultural sources, with food consumed on the farms considered part of the income. The data show a not unexpected inequality of income of rather substantial proportions. Persons with monthly incomes of 700 pesos and less represent roughly two-thirds of the total number recorded as agriculturally employed, but account for only one-third of the total income of the group. On the other hand, those with incomes of 1,700 pesos and over, who constitute only 17 percent of the total number, account for just over 42 percent of the total farm income. The respective figures for the two top groups (4,001 pesos and over) were 2.7 and 15.3 percent. If income from agriculture alone is considered, 90 percent of the persons employed in agriculture show incomes of 499 pesos and less, but this group accounts for only 54 percent of the total amount of income; the remaining 10 percent of the group received 46 percent of the income.<sup>1/</sup>

219. The data are, as has been indicated, far from satisfactory. However, there is reason to believe that they reflect fairly accurately the general level of farm income and the pattern of its distribution, even though they do not throw light on the position of the ejidatarios. But taking account of the size of the holdings of the latter, the low-value crops they tend to produce, official statements, views of specialists, and information gathered through personal interviews with ejidatarios, it seems overwhelmingly probable that the bulk of the ejidatarios fall into the group earning 600 pesos or less from agriculture and all other sources (Table 5). Even if it is assumed that the average for the group is the fairly high figure of 500 pesos, that would mean only US\$40 per month per family, or under US\$7 per capita. It seems apparent, therefore, that a very large number of ejidatarios do not receive an income adequate to cover their "basic requirements," however these might be defined.

---

<sup>1/</sup> Source: Incomes of the economically active population, Population Census, 1960, Bureau of Statistics, Mexico 1964.

V. THE PRIVATE SECTOR, THE LANDLESS, EJIDOS AND OFFICIAL ATTITUDES

220. The private sector, particularly its most productive section, has been discussed briefly in the preceding pages, but it deserves more detailed treatment. For one thing, certain of the problems of at least some of the ejidatarios, such as their very small land holdings are bound up with the large land holdings of the private sector. It is not accidental that, for example, one of the important objectives of the livestock-breeders' associations in the State of Veracruz is defense against ejido demands for a share in their extensive holdings. Nor are the problems of the ejidos unrelated to those of the minifundista segment of private agriculture, whose strengthening is an important objective of Mexico's agrarian reform, or to those of the large number of landless agricultural workers. The latter often work for the ejidatarios; they also compete with them for jobs, and they are, of course, the labor force upon which the medium and large owners depend. The character of non-ejidal agriculture is, at least to some degree, an outgrowth of the agrarian revolution, but it is far from being in tune with the original aims of the reform. A closer look at the structure of the private sector and the condition of the agricultural workers would shed further light upon the social and economic aspects of this sector and also on the magnitude of the problems of rural Mexico.

221. The Landless Peasants. "Farm hands" are a large and growing group in Mexico. There were 1.4 million in 1950 and 2 million in 1960 according to the census of that year. In view of the high rate of rural population growth, they very likely numbered 2.5 million in 1965, or 42 percent of the active farm population. Between seasons, their numbers swell by underemployed ejidatarios and small private holders. For the greater part, the rural proletariat has no land at all; perhaps 500,000 to one million are on the land distribution waiting list, but have little hope of getting any. Some are employed regularly on medium and large farms; others are seasonal or daily laborers, and until recently made up the large force of "barceros" who came every year to the United States for seasonal agricultural employment. Some go to the cities, but judging by the figures from the two latest census, the exodus has not reduced their numbers on the farms. Their economic conditions are difficult. The mission caught a glimpse of it while visiting a sugar growing ejido in the State of Morelos. They were earning about 15 pesos per day. Their working tool was the ubiquitous machete. They lived in tents in a corner of the village square, which disclosed large numbers of children and almost no possessions. Their situation was well summed up in these words:

"Given their geographical dispersion, their low cultural level, their economic instability and mobility, these workers are not organized in leagues or unions, they often do not receive minimum wages, they do not benefit from social security and medical insurance and do not have access to the states' social welfare programs except in small measure. They are, in fact, the pariahs of Mexico's agricultural population." 1/

---

1/ Rodolfo Stavenhagen, Aspectos Sociales de la Estructura Agraria de Mexico. Quoted from a manuscript.

222. It is open to question whether employment on or off the land can significantly reduce the numbers of the landless peasants. Considering the recent experience, the continuous rise in the number of landless, neither the village nor the city, or a combination of the two, offer much promise. The expectation of some Mexicans that within a generation employment opportunities in the cities will depopulate the villages and solve all or at least most of the rural problems is far from a certainty. The rapid growth of industry in recent years and the associated exodus from the countryside have not yet brought about any decline in the absolute size of the rural population; it has indeed increased from 14.2 million in 1950 to 16.3 in 1960, and to an estimated 17.4 million in 1965.<sup>1/</sup> Even assuming a very rapid rise in industrial production, and looking a decade ahead, any expectation of significant relief from this source must be carefully qualified.

223. Settlement on the reportedly good, but as yet unimproved, land with adequate rainfall in the Coatzacoalcos-Touola Basin in the Isthmus of Tehuantepec and in the Panuco River Basin of the State of Tamaulipas offers possibilities. But past colonization experience is not a good augury for a large-scale undertaking of this type, especially considering the huge capital investment that would be required. In any case, possibilities of this type are limited, for the amount of economically exploitable land still available is rapidly dwindling. An elaborate study, Projections of Supply of and Demand for Agricultural and Livestock Products in Mexico to 1970 and 1975, notes that Mexico has relatively little such land left. Its conclusions on this point are as follows:

"One of the forces affecting the projection of crop output, and especially accounting for the lower growth in 1971-75, is the fact that it is becoming increasingly difficult to bring new land under cultivation. The harvested crop area is projected to grow between 1961 and 1970 at an annual rate of only 1.5 percent, and from 1971-75 at an even lower rate of 1.1 percent. Mexico is approaching the limits of the possible land use for agricultural and livestock raising. The total amount of cropland is estimated to be 29.3 million hectares. According to the census 51 percent was incorporated in farms (whether under cultivation or not) in 1940; by 1950 this proportion had risen to 68 percent and by 1960 to 81 percent. In the latter year, only 5.5 million hectares of probable reserve cropland were still available..... This situation is even more critical in the case of pasture land, since reserves are practically exhausted..... Under present conditions, population pressure is tending to expand the amount of cropland at the expense of pastures and forests, and is leading in many areas to a misuse of the latter. For similar reasons, livestock extension is encroaching in some areas upon forest land. Such trends can only be corrected

---

<sup>1/</sup> 1950 and 1960 are census figures. The 1965 figures are from U.N.N.Y. 1965, Boletín Estadístico de A.L., Vol.II, No.2, p.10.

in the future by means of sizeable increase in crop yields and in livestock productivity."<sup>1/</sup>

224. If these conclusions are valid, there is little that even the best intentioned Government of Mexico can do for the landless. Thus, the emphasis placed by the government on further accelerating the rate of industrial development makes sense. Nevertheless, it may be questioned whether rapid industrialization can solve the problem of rural unemployment when the rate of population growth is at least 3.6 percent per annum, and the more sophisticated new industries tend to offer fewer employment opportunities.<sup>2/</sup> Whether the "services" created by these types of industries can absorb enough ruralists to make up for a continued high rate of population growth is highly questionable, or, at best, debatable. Resettlement and colonization are weak reeds to lean on, but some positive results might be squeezed out through them.

225. The Constitution (Article 123) and the Federal Labor Law of 1941 (Articles 41, 190-205) provide the principal regulatory provisions for agricultural laborers. The main items relating to them are the minimum wage,<sup>3/</sup> and social security which was extended in theory at least to all rural workers during the years 1954 and 1963.<sup>4/</sup> In addition, there are provisions for the permanently employed such as maximum workday, free housing, medical care, plots of land to raise food, access to firewood and water, and hunting and fishing privileges. Can the government improve the lot of the rural landless through the enforcement of the minimum wage and whatever benefits that can be derived from the application of social security?<sup>2/</sup>

226. Expanding social security coverage to the landless peasants would be very expensive because less than one percent of them receive now the minimum benefits guaranteed by enrollment in the Social Security Institute. Greater enrollment would exact greater expenditures on the part

---

<sup>1/</sup> Pages 119, 121, 123 and 125. The study was prepared under the auspices of Secretaría de Agricultura y Ganadería, Secretaría de Hacienda, and Bank of Mexico.

<sup>2/</sup> See in this connection Newsletter #22 of the Land Tenure Center, Wisconsin University. It deals with two points of views: one argues that the solution of rural unemployed or underemployed lies in a rising rate of industrialization, while the other argues for greater utilization of resources in agriculture and industrialization.

<sup>3/</sup> The average prescribed daily minimum wage in 1964-65 in the 111 rural districts of Mexico was 13.5 pesos.

<sup>4/</sup> Robert E. Price. The Contemporary Law of Land Tenure in Mexico: Its Contribution to Agrarian Reform in Latin America, p.17, Land Tenure Center, University of Wisconsin, November, 1964.

<sup>5/</sup> "The number of citizens covered by Social Security comes to 6,565,551; a total which is 8.2 percent greater than the number registered on September 1, 1964. In spite of the progress achieved, only 15 percent of the population receives the benefits of Social Security." From President Diaz Ordaz's First Congressional Report to the Nation, September 1, 1965.

of the workers, employers and government, and the parties involved are either not willing or financially incapable to meet the cost. As to the minimum wage provisions, they have hardly been enforced in comparison with those affecting industrial labor. As one commentator put it, "..... that this economic class has such slight strength (that) it cannot even reach the judicial system is evidenced by the 1962 statistics for "Resolved Labor Disputes, by Activity": Of a total of 15,127 decisions, the agricultural sector counted only 752" <sup>1/</sup> although this class includes about 2.5 million workers. Obviously, enforcing the minimum wage provisions would be difficult; moreover, it might raise additional problems. Mexican farm owners provide more employment at present than is economically justifiable. In most instances they pay less than the minimum wage, but they keep off the labor market many more workers than if they had to abide by the minimum wage provisions. They do not act thus out of philanthropic considerations but in accordance with the traditional non-economic custom of "patronato" which has survived even at the cost of some failure to modernize agricultural techniques. An attempt to enforce a minimum wage might, however, lead to the dismissal of surplus labor and in turn provoke physical resistance to such a move.

227. Finally, of course, the government could exercise the option it has taken all along, which is to leave bad enough alone. What the outcome might be if the government decided to change its present policy is anybody's guess. But one cannot help sympathizing with a government faced with such unpalatable choices.

228. Minifundistas and Semi-latifundistas. Dr. Frank Tannenbaum, the eminent student of Mexico and its agrarian reform, believes that the "chief cause of the Revolution of 1910 was the uneven distribution of land." <sup>2/</sup> At the present time, with 45 percent of the cropland in the hands of the ejidos, the maldistribution of land in the private sector seems unlikely to have similar consequences. And yet the situation warrants more than superficial consideration, for many ejidatarios, small holders, and landless whose position is unsatisfactory eye the broad acres of the large owners enviously and hungrily.

229. In an earlier part of this report, the ejido system was characterized as one of "many people on little land." In the private sector, too, the overwhelming majority have very little land and a relatively small number own the bulk of it. No wonder that the most striking feature of private Mexican agriculture is the polarization of

---

<sup>1/</sup> Robert E. Price, op. cit. p. 18.

<sup>2/</sup> Frank Tannenbaum: Mexico, The Struggle for Peace and Bread.

small and big land ownership, as if they were - as indeed they are - two worlds apart. Data on the pattern of land distribution support this observation. The total area of privately owned land - cropland, pasture and forest land - is 125 million hectares <sup>1/</sup> divided among 1,346,000 holdings. In the case of the ejidos, a figure for the average size of an ejido holding can be regarded as an approximation, though subject to some qualification. But computing an average for private farms would be a pointless exercise because while 73.8 percent of the holdings from 10 hectares and less account for only 1.6 percent of the total area, 6.8 percent of the holdings from 100 hectares and over comprise 94.4 percent of the land. Moreover, one percent of the holdings (from 1,000 hectares and over) account for 74.3 percent, of which 3 percent of the holdings (5,000 hectares and over) comprise 56.6 percent of all the land (Table 6). Much of the land, especially the holdings from 500 hectares or over, is neither planted to crops nor used for pasturage due to lack of water, but the extreme inequality of the distribution of land resources raises disturbing questions, especially in a country which has undergone a violent agrarian revolution.

230. A much more realistic picture emerges from an examination of the distribution of cropland in the private sector (Table 7). The extremes are not nearly as great but they are sufficiently so to give one pause. Three percent of the holdings or holders <sup>2/</sup> account for 63 percent of the land, while 85 percent of the holders account for only 16 percent of the land. It has been pointed out that a large fraction of the cropland cannot be utilized for lack of water; there is no information on whether the percentages are the same on large and small holdings but it does not seem unreasonable to assume that the large owners are better off in this respect. But whatever it is, the pattern of distribution remains

unchanged. Of the 1,201,000 land owners, 929,000 or 77 percent are in the category of 5 hectares or less comprising 11 percent of the cropland. In contrast, the 15,000 holdings of 100 hectares and more represent only 1.3 percent of the holdings but account for 52 percent of the land; even more significant are the 2,000 holdings (.2 percent of the total) of more than 400 hectares each which represent 35.5 percent of all the cropland.

231. Mexico's private sector has gradually become one of minifundistas on the one hand and semi-latifundistas on the other. That

---

<sup>1/</sup> This figure includes 22 million hectares of communal, public and other land. They cannot be isolated from the total with respect to the size of holdings as given in Table 6. But even so, 1,346,000 holdings and 103 million hectares do not materially change the conclusions drawn about the pattern of land distribution in the private sector.

<sup>2/</sup> Farmers may have more than one holding but the census figures refer to holdings only.

was not the aim of the agrarian revolution, but the evasions or "misinterpretations" of the Agrarian Code have resulted in the creation of this pattern. There is one great difference, however, between the pre-Revolutionary latifundia and the present day large farms; the owners of the latter are among the most skilled and efficient agricultural producers of Mexico. Having said this, it must also be added that the lopsidedness of land distribution in the private sector may induce social strains inherent in that structure.

232. The small private owners or minifundistas differ from the ejidatarios in a number of ways. Disregarding regional variations, they have, on the average, only about 1.5 hectares of land per family, which is less than half of the size of the ejidatario holding. These "sub-family" farms have plenty of labor but clearly too little land. Unlike the ejidatarios, moreover, they are not even formally the object of State concern; they have no Banco Ejidal to minister to the interest of at least some of them and Banco Agrícola serves but very few small holders; unlike the ejidatarios, they do not figure nearly as prominently in public discussions. Statistically speaking they form part of a single census which blankets the whole private sector - the one-two hectare and the 1,000 or more hectare farms - into the category of "pequeña propiedad." They have less access to irrigation facilities than the ejidatarios, and benefit less from support price schemes, because they have little to sell. They form Mexico's authentic subsistence farming sector, characterized by low productivity, low income and a great deal of underemployment. The mission does not agree with an observer who almost equates their conditions with those of peons of old, but their impoverished state stands out sharply in the productive and prosperous private agricultural sector.

233. The low income levels of the small holders, the great majority of the ejidatarios and of the landless farm workers - all these interfere with the creation of an expanding market for domestically manufactured products. There are no good data on the number of "retarded" consumers, but it is very large. In his study on Mexican development, Dr. Raymond Vernon writes as follows:

"The nature of Mexico's income distribution is such that, instead of thinking of 35-40 million people as being the objects of their sales campaigns, many businessmen are obliged to think of some small fraction as a target. For instance, the urban peon, the ejidal farmers, and the small landowners (not counting the landless) making up perhaps two-thirds or three-fourths of the country - may have to be regarded as simply outside the market for many modern day products."<sup>1/</sup>

---

<sup>1/</sup> Raymond Vernon. The Dilemma of Mexico's Development, Harvard University Press, 1963, pp.183-184.

234. The farm income data, and admittedly subject to many limitations, will serve to illustrate the point more precisely. They show that 26 percent of the farm population have monthly family incomes from both agricultural and non-agricultural employment of 300 pesos or less, or an average of 200 pesos; that another 32 percent have incomes from 300 to 600 pesos with an average of 400 pesos. The estimated incomes include home-produced food, the value of which can only be guessed at, but which is probably about half of the total estimated income. If that is the case, the 11 million persons who fall into these two groups have little disposable income and can purchase only such basic items as salt, sugar, other seasonings, a very limited amount of simple clothing, a pair of sandals, and essential simple agricultural tools. They cannot be expected to buy most of the wide range of "home furnishings," petro-chemicals, and other items which Mexico has been producing in recent years. There are undoubtedly even more than 11 million peasants in rural Mexico with extremely limited purchasing power, although the available data do not make it possible to estimate their numbers. It seems reasonable to assume, therefore, that a large segment of the rural population is only on the periphery of the market, and is incapable of contributing to the country's future economic development.

235. The problems of the small private holders and the landless peasants are unlikely to disappear; on the contrary, they are likely to become more intractable. Yet they hardly appear to fall within the scope of official considerations of agricultural matters. In this respect, the position of these groups differs from that of the ejidos for which the government has formally assumed responsibility through the Agrarian Code, Departamento Agrario, Banco Ejidal, and such political arms of the government as Confederacion Nacional Campesina, which is closely integrated with the Partido Revolucionario Institucional (PRI). These are all the visible ties and claims on the government which the latter does not deny, even if it is only fulfilling them to a very small degree.

236. Awareness and Concern. The relation between the ejidos and the Revolution has not been forgotten. The awareness takes many forms, tangible and intangible. When on September 1, 1965, President Díaz Ordaz signed 294 decrees to distribute 1,213,000 hectares among 27,763 peasants, he affirmed by deed the process of giving land to the landless. Two quotations from a recent address by President Díaz Ordaz, inscribed on the walls of the new headquarters of the National Peasant Confederation in Mexico City provide less tangible evidence of the tie, but evidence of concern nevertheless. The first incised in marble in the lobby reads: "Not only land distribution but also a good standard of living for the peasants." The other one, in the "board room" of the Confederation, on a new mural showing the struggle for and the triumph of the land reform, reads: "An agrarian reform must be an integral one or it is not an agrarian reform." And "integral" means more than distribution of land; it means also all or most of the items required for land utilization.

237. There are other significant reminders of the state of the ejidos and the poorer sector of agriculture. They are more than slogans, for they

unmistakenly reveal deep awareness on what is wrong. In his inaugural address on December 1, 1964, President Diaz Ordaz addressed himself directly to the ejidos, bringing to bear a thorough appreciation of their problems. The President said:

"Six million Mexicans, half of the working force of the nation, toil in the fields. For their benefit and that of the country we shall carry agrarian reform to its ultimate conclusion: we shall accelerate the distribution of land until that which is available is exhausted; all simulations, concealments and whatever other forms of violations of the law, will disappear, for outside of or against the law one can live only for a relatively short period of time, but never indefinitely; we shall also be systematically against perversion in distribution, such as the concentration of land grants to farm workers, or their illegal subletting...."

"The agrarian problem is not only physical, but fundamentally human: population grows faster than the land that we can put at the disposal of farm workers. To complement this we must face the urgency of giving employment to the people who come to the cities because they no longer earn a living in the fields. We shall not fool the farm laborer. Those to whom it is impossible to grant lands shall honestly and quickly be told so."

"Granting of land is not enough to solve the agrarian problem; we know that the implements available in the majority of the 'ejidos' are inadequate, that they not only require credit for sowing, but also to gather, if only gradually, the necessary equipment to obtain better yields, as well as the acquisition of the knowledge that will make them better citizens and better farmers."

"As far as is possible, we shall take to the fields the necessary economic elements and technical and scientific efforts: the main thing is to make the land produce more and to accelerate the process of industrialization of its products."

"The fields have contributed without stint and in a basic manner to industrial development; today, industry must contribute to solve the problems of the fields....Agrarian Reform is on the march and it will continue forward until it is integral."

The President pointed out the serious economic implications of the current situation:

"...There is no greater stimulus to economic growth than an ever-growing market. Without a market, there is no production. And without purchasing power of the masses, there is no market. We reiterate that no business can prosper if surrounded by poverty...The greatest possible amount of financial resources should be channeled to the rural sector."

238. Don Rodrigo Gomez, Director General of the Bank of Mexico, in an address delivered on March 25, 1965, before the National Bankers' Convention, made a number of equally pertinent comments:

"This important effort of investment and financing should not, however, take place only in the cities. We must recognize that the exodus of poor farmers who come to live in the large towns is accelerating dangerously due to the extremely low income of our rural masses. The difference existing between the urban and rural income is so significant that we could hardly criticize those who affirm that in Mexico there are two countries; one represented in various regions by farm workers with a level of living comparable to that of the poor sections of Asia and the other constituted by a large number of inhabitants of the cities with incomes and public services comparable to those of many inhabitants of Western Europe.... Nearly 50 percent of the population of the country lives in rural districts and has an average per capita income not exceeding 1,500 pesos annually...."

239. Attention was called in no uncertain terms to the problems of the ejido by Senor Carlos A. Madrazo, then President of the ruling political party of Mexico, the Partido Revolucionario Institucional (PRI). In an address before the Fourth National Assembly of the Party (April 28, 1965) Sr. Madrazo minced no words:

"The juridical insecurity, the constant deprivation of lands and water from the ejidos and communities, the frequent violations of individual rights, all this is being reflected in agricultural and livestock production. Without juridical security in the rural districts there cannot be economic stability or political peace in the nation."

240. Mexican leaders know that the country's economic progress requires the correction of the imbalance between Mexico's "two countries." They know, too, that the real imbalance is between a fast developing industrial economy and large-scale commercial agriculture, and a drifting ejido system and a mass of small farmers and landless whose share in the economy is very small. Save for Sr. Madrazo, none of the speakers quoted suggested that failure to make the needed adjustments might lead to internal disturbances. That is understandable because, while complaints among peasants are common, as the Economist expressed it in a recent article on Mexico, "nobody in Mexico feels the slightest danger of any immediate political or social upheaval."<sup>1/</sup>

---

<sup>1/</sup> "Making a Little Go a Long Way," The Economist, April 23, 1966, p.237

241. Visits to the field confirm the above conclusion. In the villages one can hear many complaints from ejidatarios, and the offices of the Departamento Agrario are inundated with them. The individual grumblings cover the gamut of things wrong with the ejidos, but not about the system itself. Many landless peasants still hope to get land through the formation of new ejidos. The memory of land acquisition and the abolition of peonage is cherished. Nor are government promises taken lightly, for even in recent years a good deal of land had been distributed, thousands of titles have been granted and many complaints have been adjusted. Moreover, as political organization tightly bound to the government party, the ejidos continue to hew to the official line. As to the minifundistas and the landless peasants, they are too dispersed, disorganized, and leaderless to confront the government with concrete demands. It is perhaps for all these reasons that while an observer in the countryside can find many problems, he cannot at present detect signs of a breakdown of the status quo.

242. Yet, the risks inherent in the present unsatisfactory situation should not be overlooked. One particularly disturbing phenomenon deserves mention. Squatting on someone else's land in a desperate quest for land has not been uncommon in Mexico since the reform. The commonality of such moves reflects the militancy of the causes that lie behind them. This was demonstrated by the events of 1961, when discontented and resentful peasants took to arms and challenged the government - unsuccessfully it is true, in widely separated parts of the country. Tensions borne of dissatisfaction exist in rural Mexico, and are bound to grow if "integral reform" remains only a slogan, and income disparities remain as wide as they are and if industrialization and/or population control fail to reduce the absolute size of the rural population to manageable proportions.

243. The problems of the Mexico of 1966 are of course not the same as those of the Mexico of 1910, and the desires and expectations of the mass of the peasants go far beyond those of 1910. The peasants who have received land have much to be grateful for. But it is questionable whether the sons and grandsons of the former peons who live in the ejidos are equally appreciative. What was good for the generation of half or a quarter of a century ago is not nearly good enough now; not only because holdings are small and getting smaller, and the standard of living is low. They want but do not often get, more and better food, clothing, shelter, education for their children, and such items as sewing machines and wristwatches and much else that lies in between. The knowledge that for other people of Mexico such things, and more, are standard, piles frustration upon unfulfilled desires. It would be a bold man who would assert that the "80 percent" problem of Mexican agriculture cannot be dealt with by the present allocations of material and human resources to agriculture, which are not directly addressed to the problem that can be summarized as follows:

- a. The subsidization of a small number of ejidos through loan-losses sustained by the Banco Ejidal;
- b. price subsidies through CONASUPO,<sup>1/</sup> the main beneficiaries of which are the medium and large farm producers and urban consumers;

---

<sup>1/</sup> Compañía Nacional de Subsistencias Populares.

- c. the financing of very useful major irrigation facilities primarily in the northwest, combined, however, with a relative neglect of the main areas of ejido concentration in other parts of the country;
- d. the very inadequate support of technical assistance (extension services) as an aid to more effective use of ejido and small-holder land;
- e. the non-enforcement of many crucial provisions of the Agrarian Code; and
- f. the absence of any significant assistance for the landless peasants.

VI. CONCLUDING REMARKS

244. Whatever the shortcomings of the reform, the Mexican farmer is very much better off than before the reform. The aches and pains of the ejidos do not make them failures. For many reasons already stated, it has been the good fortune of the peasantry and of Mexico to have had this reform rather than none at all. With all the faults of commission and omission, the offspring of the agrarian revolution, the ejidos, have more than justified their existence for many reasons as indicated in Section IV of this report. But changes are needed to shore them up.

245. There is no single, simple or quick solution for the economic ailments of the ejidos, but their conditions can be improved and action-areas have been noted. In addition, part one of the mission's agricultural report makes a number of recommendations for investment in non-commercial agriculture. They presuppose the "broadening of involvement by peasant farmers in expanding the production of agricultural commodities." This implies either a gradual addition of new resources or a gradual shift of currently available resources in order to extend assistance to a larger number of farmers with small but potentially productive holdings. This change in policy would meet a long-standing need - to raise the level of ejidal agricultural techniques and increase the quantity and improve the quality of the equipment and supplies used in production. These are the only means of increasing productivity in the ejidos, of "enlarging" their holdings so to speak, and of giving practical meaning to what President Diaz Ordaz so aptly termed "reforma integral." Therein lies not only redistribution of income that immediately follows redistribution of land but, and more importantly, lasting agricultural development as well. Only the latter can prevent the redistribution of income from degenerating into a mere passing phase of peasant welfare. One unexplored possibility could be the adoption of cooperative forms of organization for ejidal holdings, that could also be considered for small private farms. The responsible leaders of Mexico know what must be done to improve the ejido as an institution as well as the economic condition of the ejidatario, but some additional observations on this point may be useful.

246. The problem of too many ejidatarios on too little land cannot be solved through agricultural policy alone. Much more is involved; according to the President, "It is imperative that the nation create approximately four hundred thousand new jobs per year." <sup>1/</sup> These jobs are required to take care of the new entrants into the labor market. Under the circumstances, therefore, the already underemployed ejidatarios, small private farmers and landless will have to compete for jobs in a market saturated with other seekers of employment. Assuming that 400,000 jobs are created annually, only a small share of these will be at the disposal of the groups discussed here. In the meantime, pressure on the land is bound to continue unabated

---

<sup>1/</sup> President Gustavo Diaz Ordaz, Inaugural Address, December 1, 1964.

and no single step taken by the government can eliminate it.<sup>1/</sup> However, a combination of measures, all of which are feasible and one of them difficult (see (c) below), does hold out more promise. These include:

- a. An active program to improve conditions in the ejidos, along the lines noted in paragraph 202;
- b. Industrialization with a view of maintaining at least the current rate of growth;
- c. Population control - a measure which has not yet won support in Mexico but is of the greatest importance.

The Government of Mexico cannot quickly re-equip a large number of ejidos, significantly expand irrigation facilities, increase the volume of credit and make it more widely available as an adequate and well-functioning extension service, give ownership titles to all the ejidatarios, bring into being dedicated and competent ejidal administrators, nor quickly undo at this late date the wholesale and grave violations of the Agrarian Code. But it can make a beginning by persistent efforts starting in the ejidal areas where a gradual improvement can be effected, provided the deed matches the existing awareness and concern, and provided the population question is considered with the seriousness it deserves. Barring that, and mindful of Mexico's capacity to double its population in 20-25 years, there is the danger that in the long run the ameliorative measures will be written in water.

247. The need for all these measures is very great on economic and social grounds. The meaning of these and what they imply is clear; after all, modern Mexico was nursed by a revolution dedicated to economic progress, higher standards of living and social justice. But immediately more important than invoking the basic philosophy of the revolution is the outstanding record of Mexico's leadership in recent years to develop and carry out vital public policies. It is because of this that large-scale agriculture is where it is and seems no longer to need the preferential attention lavished on it in the recent past. It seems timely, therefore, for the Government to turn its attention also to the ejidal sector. That the task will be more difficult and that the investments may for some time to come yield lower profits than the public investments made previously in commercial agriculture need not be considered overriding objections.

---

<sup>1/</sup> This is particularly true if attempting to give more land to the peasants is one of the measures. Said the President: "When land distribution began, the rural population was growing by 50,000 individuals a year; today the rural work force has doubled. At this rate, the country will not have land enough for all; hence the unavoidable necessity of dedicating ourselves to the creation of new sources of wealth." From President Gustavo Diaz Ordaz's First Congressional Report to the Nation, September 1, 1965.

248. If the alternative is "business as usual" in the non-commercial sectors of agriculture, what of the prospects of bridging the wide gap between the "two" Mexicos, so feelingly and accurately described by one of the country's ablest economic custodians? The answer is already in, and it lies in the very existence of the "two" Mexicos - one rich and one poor - and in the accumulation of instabilities best avoided. It is encouraging that the leaders of Mexico are not about to make peace with this condition, for they have given evidence of beliefs that the ejido system is closely bound up with the development of the nation as a whole, and are prepared to try to solve difficult problems. <sup>1/</sup>

249. Certain practical considerations deserve note. More and better irrigation facilities and more institutional credit are top priorities. The technical skills and organizational structure to develop and implement such schemes are available, though more in the first instance than in the second. Another "must" is security of tenure through the issuance of titles of ownership. Since the President of the Republic rates it of highest priority, a move in that direction would be natural. To accelerate the rate at which titles of ownership are issued, the budget of the Departamento Agrario would have to be substantially increased. To provide adequate extension services, an organization would have to be created almost from scratch. As in the case of the Departamento Agrario, the budget of the Ministry of Agriculture would have to be greatly increased as a first and essential step to attain that end.

250. Another important requirement is to lend a much greater measure of prestige to agencies and persons connected with the ejidos: the Departamento Agrario, the Ministry of Agriculture and the Banco Ejidal. The impression is that they are not held in equally high esteem with some other important agencies. Whatever the reasons, the ejidal services are not among the choice ones, and it is understandable that "The younger, better trained junior administrators, agronomists, technicians, and clerks are not attracted to the ejido system's bureaucracy....The better personnel seek out the status of the non-ejido related organizations with their greater budgets and political prominence." <sup>2/</sup> If these observations are as valid as they appear to be, more status or prestige could be of considerable value.

---

<sup>1/</sup> This is based on the following quotation from the President's Inaugural Address:

"These questions (ejidal and non-ejidal) are intimately related to the economic and social growth of the nation. To conquer them we will meet new problems with courage and will not fear the solution which some of them are urgently demanding."

<sup>2/</sup> Manuel Carlos, Jr., The Changing Nature of Mexican Ejidos: Administration and Politics. Quoted from an unpublished manuscript.

251. The elimination of evasions and violations of the Agrarian Code will be a particularly difficult problem. The abuses run so far and so deep as if they were natural phenomena, flesh of the flesh and bone of the bone of the agrarian reform. Deviations from the Code are found in and out of the ejidos. The former have been described; the latter are mainly the building up of large holdings beyond anything provided for by the Code. Here reliance must be placed on a determined effort grounded in the view expressed by the President: "outside of or against the law one can live only for a relatively short period of time, but never indefinitely," and that all forms of misuse of law "will disappear." The problem is certain to be much more troublesome than any other. Undoing what has been done may prove impossible without serious economic consequences to an important national asset with a long and successful life behind it. That the ceiling provision of the Code might have been enforced considering the rather generous retention limit, is academic now. What is not academic is that the often illegal accumulation of land has created a situation which serves as an irritant and reminder to many that they have been deprived of land which should have legally belonged to them.

252. Equally rough going will probably be encountered in trying to make the ejidos comply with the Code provisions. Non-compliance is partly due to the ejidatarios themselves, partly to the comisariado, to some outmoded features of the Code and partly to the overall administrative processes. Here, too, a set of relationships have been created which have assumed the character of permanence over the years. However, reform deviations are probably caused by the fact that the ejido system was framed with an eye on socio-economic conditions prevailing early in the century: for a rural community that was static in its agricultural practices; a farm population that remained more or less constant; needs and aspirations that were limited, and contact with the outside world that was minimal. Half a century later, these conditions in midst of a changing dynamic society no longer hold. The economic base of most of the ejidos cannot support the expanded needs of a rapidly rising ejidal population. Illegal subletting of land, for example, is not the result of a mere desire on the part of the ejidatarios to evade the Code; it is essentially a product of the social and economic changes that have occurred in the last few decades.

253. This does not mean that the maladministration in the ejidos should not be re-examined, particularly on the local level, while activities to raise production are gradually put into effect. Nor does it mean that an examination of the process of land accumulation might not bring useful results. They are not likely to yield very substantial amounts of new cropland to distribute, but they may well yield large areas of excess usable pasture land, and without disturbing the present livestock economy pattern. Finally, it is not necessary to take for granted that illegal subletting of land cannot be significantly reduced. Mere reiteration that the practice must cease will fall on deaf ears; of much greater promise is a careful re-evaluation of the Code provision which prohibits selling, mortgaging or renting ejido land. Since the present system is rigid and often self-defeating, the problem it has created calls for a more flexible approach which may well have to include updating the Agrarian Code itself, so that it reflects more realistically the peasants' actual economic possibilities. The ejidatario should be given a status which, without freeing him completely to transfer the land as he wishes, would permit him

to make various adjustments, including the transfer of his interest in a particular holding to other ejidatarios, thereby realizing the accrued value on his land, if he should wish to leave the ejido and take up some other activity. This is not the only possible solution, but merely one of many possible methods to achieve the same end.

254. Central to the Code evasions and to all other issues raised in this paper is the utilization of the production potential of the ejidos through the strengthening of their technical base. There is no substitute for this regardless of the nature of the ejido problems. The prospect of additional cropland to make their holdings more "viable" is poor or non-existent. They will have to do with the land base they have. This does not, however, preclude an increase of productivity of the ejido land if the well-known factors of production are added to enrich the soil. These are the so-called "substitutes for land", which have worked well in other countries, as well as in Mexico. There is no reason why they should not be effective on multitudes of ejido farms.

255. The initiative in this regard lies with the Government of Mexico. Admittedly, the task it faces, judging by the mere enumeration of the problems of subsistence farming, is indeed formidable. While the issues of ejidal agriculture are certainly complex enough to tax the will and capacity of the Mexican Government, this is no cause for discouragement. It has sufficient economic and political power and expertise to insure a measure of success in an undertaking of this kind. One cannot repeat often enough that Mexico has demonstrated its genius in creating a progressive economy on the shattered ruins of a feudal one. This argues well for its ability to face and act upon the problems discussed in this report. However, if for any reason, the challenge is not met, there is a grave question of the future of the ejido system and half of the cropland of Mexico, as well as of the repercussions that are likely to come in the wake of failure.

ANNEX VII - AGRICULTURE

PART II

LIST OF TABLES

Table No.

- 1 LAND DISTRIBUTION IN MEXICO, 1915-1965
- 2 DISTRIBUTION OF EJIDO HOLDINGS
- 3 CAPITAL RESOURCES IN AGRICULTURE, CELAYA DISTRICT
- 4 MONTHLY INCOME DISTRIBUTION PER FAMILY IN AGRICULTURE
- 5 FAMILY INCOME SURVEY, 1963: AVERAGE PER CAPITA MONTHLY INCOME  
BY FAMILY INCOME BRACKETS
- 6 TOTAL FARM AREA - PRIVATE
- 7 CROP AREA - PRIVATE

Table 1: LAND DISTRIBUTION IN MEXICO, 1915-1965

<u>Period</u>	<u>Number of Years</u>	<u>President</u>	<u>Area in Hectares</u>
1915-1934	20		7,697,329
1935-1940	6	Lazaro Cardenas	17,889,792
1941-1946	6	Manuel Avila Camacho	5,518,970
1947-1952	6	Miguel Aleman	3,844,745
1953-1958	6	Adolfo Ruiz Cortines	3,198,781
1959-1965	6	Adolfo Lopez Mateos	16,000,000 <sup>a/</sup>
1965	1	Gustavo Diaz Ordaz	1,213,000
		TOTAL	<u>55,363,617</u>

<sup>a/</sup> Estimated figure. This area includes the colonization program which was transferred to the Agrarian Department in 1959. The total is not therefore strictly comparable with preceding amounts. The area distributed under the colonization program, however, is not believed to have been very significant prior to 1959.

Source: Departamento Agrario.

Table 2: DISTRIBUTION OF EJIDO HOLDINGS

<u>Crop Land per Ejidatario</u>	<u>Number of Ejidos</u>	<u>Percentage</u>	<u>Number of Ejidatarios</u>	<u>Percentage</u>
Up to 1 ha.	1,124	6.2	147,118	9.7
1 to 4	5,681	31.0	521,044	34.5
4 to 10	7,878	43.0	612,984	40.5
Over 10	<u>3,618</u>	<u>19.8</u>	<u>230,979</u>	<u>15.3</u>
TOTAL	<u>18,301</u>	<u>100.0</u>	<u>1,512,125</u>	<u>100.0</u>

Source: IV Censos Agricola-Ganadero y Ejidal, 1960. Resumen General. Direccion General de Estadistica, Mexico 1965. p. 556.

Table 3 : CAPITAL RESOURCES IN AGRICULTURE, CELAYA DISTRICT  
(Millions of Pesos)

Category	1953						1954					
	Total	Per- cent	Private	Per- cent	Ejidal	Per- cent	Total	Per- cent	Private	Per- cent	Ejidal	Per- cent
Land	273.6	100	180.8	66	92.8	34	273.7	100	181.0	66	92.8	34
Structures	13.6	100	12.9	95	0.7	5	13.7	100	12.9	95	0.7	5
Irrigation Works	26.8	100	20.4	76	6.4	24	25.8	100	19.6	76	6.2	24
Machinery and Equipment	61.6	100	45.1	73	16.4	27	67.5	100	51.3	76	16.2	24
Vehicles	19.3	100	16.4	85	2.9	15	19.4	100	16.6	86	2.8	14
Animals	29.4	100	23.5	80	6.0	20	34.6	100	27.7	80	6.9	20
TOTAL	<u>424.3</u>	100	<u>299.1</u>	70	<u>125.2</u>	30	<u>434.7</u>		<u>309.1</u>	71	<u>125.6</u>	<u>29</u>

Source: Carlos Manuel Castillo, "La Economía Agrícola en la Región de El Bajío," Problemas Agrícolas e Industriales de México, Vol. 8, 1956, p.99.

Table 4: MONTHLY INCOME DISTRIBUTION PER FAMILY IN AGRICULTURE

<u>Income Category</u>	<u>Crops and Livestock</u>	
	<u>Percentage Persons</u>	<u>Percentage Income</u>
Up to 175	6.9	1.3
176 to 225	7.1	2.1
226 to 300	12.4	4.7
301 to 400	16.1	7.8
401 to 530	12.1	7.2
531 to 700	12.1	9.0
701 to 950	10.1	12.0
951 to 1250	5.0	6.1
1251 to 1700	3.7	6.1
1701 to 2200	5.2	8.0
2201 to 3000	3.6	11.3
3001 to 4000	2.3	7.7
4001 to 5200	1.2	5.3
Over 5201	1.5	10.0

Source: Family Income and Expenditure Survey, Agricultural Projections Office, Bank of Mexico. From: APUNTES PARA EL ANALISIS DEL DESARROLLO ECONOMICO DE MEXICO by Leopoldo Solis M.

Table 5: FAMILY INCOME SURVEY, 1963: AVERAGE PER CAPITA MONTHLY INCOME  
BY FAMILY INCOME BRACKETS

---

Monthly family income brackets (Pesos)	Average per capita income (Pesos)
0 - 300	43.27
301 - 600	79.32
601 - 1000	133.22
1001 - 1500	209.65
1501 - 3000	333.75
3001 - 4500	515.54
4501 - 6000	782.70
6001 - 10000	1,266.83
Over 10000	1,874.49
Average	221.78

---

Source: Projections of Supply of and Demand for Agricultural and Live-stock Products in Mexico to 1970 and 1975, page 322 from Table AII-4.

Table 6: TOTAL FARM AREA - PRIVATE<sup>a/</sup>

Size of Holdings (ha.)	Number of Holdings (thousands)	Percentage	Total Area (1000 ha)	Percentage
Up to 5	899	66.8	1,328	1.1
5 - 10	94	7.0	679	0.5
10 - 25	132	9.8	2,104	1.7
25 - 50	70	5.2	2,484	2.0
50 - 100	59	4.4	4,137	3.3
100 - 200	41	3.0	5,679	4.6
200 - 500	27	2.0	8,185	6.6
500 - 1000	11	0.8	7,341	5.9
1000 - 5000	9	0.7	22,023	17.7
5000 and Over	4	0.3	70,626	56.6
TOTAL	<u>1,346</u>	<u>100.0</u>	<u>124,586</u>	<u>100.0</u>

<sup>a/</sup> Cropland, pasture and forest land. Includes 21,755,000 ha. of communal, public and other lands.

Source: IV Censos Agricola - Ganadero y Ejidal, 1960. Resumen General. Direccion General de Estadistica, Mexico 1965. pp. 16-24.

Table 7: CROP AREA - PRIVATE

Size of Holdings (ha.)	Number of Holdings (thousands)	Percentage	Total Area (1000 ha.)	Percentage
Up to 5	929	77.2	1,461	10.8
5 - 10	95	8.0	665	4.9
10 - 25	103	8.6	1,581	11.7
25 - 50	37	3.1	1,280	9.5
50 - 100	22	1.8	1,499	11.1
100 - 200	10	0.8	1,329	9.9
200 - 400	3	0.3	888	6.6
400 and over	<u>2</u>	<u>0.2</u>	<u>4,787</u>	<u>35.5</u>
TOTAL	<u>1,201</u>	<u>100.0</u>	<u>13,490</u>	<u>100.0</u>

Source: IV Censos Agricola - Ganadera y Ejidal 1960. Resumen General. Direccion General de Estadistica, Mexico 1965. pp. 25-28.