THE IMPACT OF INCREASED INCOME ON PEASANT WANT PATTERNS IN MEXICO'S SOUTHERN GULF LOWLANDS

by

G. MARILYN FORD
B.A. (Honours), University of Sheffield, 1965

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in the Department
of
Geography

We accept this thesis as conforming to the
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

May, 1969

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree tha permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Geography

The University of British Columbia
Vancouver 8, Canada

Date Sept 3rd. 1969.

ABSTRACT

This paper examines the changes that take place in want patterns when unaccustomed purchasing power is made available to peasant agriculturalists as a result of a recent Government-sponsored development project in the Mexican Gulf Lowlands. It is hypothesized that increased cash income stimulates changes in peasant expenditure patterns and that corresponding changes in wants can be identified. In order to measure the changes that have taken place in expenditure and make inferences about wants, a detailed study has been undertaken of patterns of income and expenditure in a sample group selected within the Plan compared with a control group of peasants outside of the immediate project area.

The comparison between the sample groups supports the hypothesis. However, no simple link was found between increased purchasing power and consumption. The initial period of new want development consequent on income increase was characterized by extensive experimental spending on a wide variety of superficial wants, which are unlikely to be incorporated as deep-seated components of the consumption pattern since they are based on short-term impulses prompted by curiosity and prestige motives. Consequently, increased expenditure on want satisfaction had achieved relatively little impact on the standard of living.

It was concluded that the main significance of increased income in this context is that it acts as a catalyst to change

in wants and brings the consumer to the point where satisfaction of potential wants is possible. Potential wants are not adopted simply because the opportunity is available and the items can be afforded, but only if they are the response to a felt need and have a good fit with the existing cultural matrix. Thus, change in want patterns is a function of change in perception rather than a response to increased income. The value system, then, plays the key role in want development and it appears that change in the value system itself in terms of attitudes, motivations and aspirations, is prerequisite for the development of new wants and the modification of old wants, which in turn stimulates further reformulation of the cultural frame-of-reference.

TABLE OF CONTENTS

LIST OF TABLES

MAPS AND DIAGRAMS

ACKNOWLEDGEMENTS

I would like to express my thanks to all employees of La Comision del Grijalva for providing working facilities in Cardenas and unquestionning access to accounts and files. In particular, thanks are due to Ing. Carlos Molina R., Vocal Executivo de la Comision del Grijalva, and Ing. Javier Garcia, Vocal Secretaria, who gave up many hours of their time to discussion of Plan Chontalpa.

Special thanks are also due to my advisor Dr. A.H. Siemens for his advice and encouragement, and to Prof. Richard Copley for patiently listening to me. The assistance of Richard Sullivan and Ted Manning in laying out the maps is also gratefully acknowledged.

Finally, I am especially grateful to the peasants of La Chontalpa for their cheerful cooperation, without which the completion of this thesis would obviously not have been possible.

CHAPTER I

INTRODUCTION

Economic Behaviour as Human Behaviour

Economics is traditionally defined as the study of man's allocation and distribution of scarce resources. Human needs and wants are assumed to be infinite whilst material resources exist only in limited quantities. Thus, men must make decisions concerning production, distribution and consumption of these scarce resources in order to choose the alternatives which will offer the greatest possible satisfaction of wants.

Thus economics is essentially the study of certain aspects of human behaviour elicited by the environment.[1] However, economics has tended to lose sight of its overall behavioural context, becoming more and more abstract in its methodology in search of scientific precision. The nineteenth century '*rational economic man*' with his programmed way of reacting to environmental stimuli in order to maximize satisfaction and avoid stress or pain, is still a ghost giving mechanistic overtones to modern economics.

However, most behaviour patterns are neither automatic nor universal and there is no such thing as behaviour determined

---

[1]George Katona, Psychological Analysis of Economic Behaviour, New York, McGraw-Hill, 1951, p. 1.

by purely economic motives. Economic relationships are part of an overall system of social relationships and can only be comprehended in this broader behavioural context. Economic behaviour varies considerably between different cultural groups for peoples' attitudes, motives and values--their whole cultural frame-of-reference[2]--mold their perception of the environment and influence their behaviour within that environment. For culture is something more than the sum total of the tangible or material manifestations of man's occupance of this planet. These phenomena have a symbolic quality and the physical form is also a manifestation of cultural meaning. All material phenomena enter human experience not as absolutes but as entities refracted by particular points of view or perceptions based on the cultural frame-of-reference. Thus in order to fully understand economic behaviour as human behaviour, it is necessary to go beyond the abstract analysis of economic patterns and processes and examine the role played by the cultural frame-of-reference in the formulation and implementation of decisions and choices concerning production, distribution and consumption.

---

[2]The term '*cultural frame-of-reference*' is preferred to the '*value system*' of anthropological and sociological literature in order to avoid confusion between the several common interpretations of the term '*value*'. The 'cultural frame-of-reference' of a group may be defined as the common matrix formed by the most widely shared attitudes and values, which forms the basis for the evaluation of all experience and the selection of action-paths to achieve group goals.

Want Development

If we accept that man has unlimited wants but only limited resources with which to satisfy them, it is clear that analysis of consumption or expenditure patterns will reveal the existence of those wants selected as priorities for satisfaction. The variety and type of wants chosen for satisfaction will be influenced by three main considerations: firstly, the amount of wealth available for expenditure on want satisfaction; secondly, the number of alternative action choices available; and thirdly, and the most important consideration as far as this paper is concerned, the cultural frame-of-reference in which decisions concerning expenditures are made and which gives meaning and direction to the wants selected for satisfaction.

It is necessary at this point to attempt some definition of the terms '*wants*' and '*needs*' as used in this context, as these terms are quite broad and often loosely defined. The following is based on definitions of wants and needs by Leland J. Gordon[3] and Elizabeth Hoyt.[4] For the purposes of this study wants are defined as those desires over and above the basic necessities of life, which are felt to be necessary to fulfil shared conceptions of the good life developed in the cultural frame-of-reference. Thus, personality-based whims of the

---

[3]Leland J. Gordon, Economics for Consumers, American Book Company, New York, 1961, p. 23. Gordon gives a more explicit definition of needs- "...needs are limited to those forms of wealth which are indispensable to the maintenance of life - a minimum of food, clothing and shelter, which are sufficient to maintain the physical strength necessary to provide these very necessities."

individual which are not group-shared desires originating in the value-system are not included as wants in this analysis. Moreover, this paper deals only with those wants which are the concrete expression of economic choices and not with wants which are social or psychogenic in origin. Needs are defined as the basic essentials required for survival--for the physical maintenance of life itself rather than the satisfaction of group-shared ideas as to what makes life worth living.[3]

Elizabeth Hoyt distinguishes between regularly satisfied deep-seated wants which form relatively permanent components of the standard of living, and superficial wants or impulses which have not yet been accepted as a permanent and necessary part of the consumption pattern.[4] Miss Hoyt considers only the deep-seated wants as truly significant. However, in this paper superficial wants are also studied, since they have the potential of becoming deep-seated wants if they are culturally congruous and do not conflict with existing wants, and thus may offer clues to possible future changes in the pattern of consumption.

The development of wants and their acceptance as permanent components of the consumption pattern is apparently a very complex process which is, as yet, little understood. Although there has been a considerable amount of research in

---

[4]Elizabeth Hoyt,"Want Development in Underdeveloped Areas," Journal of Political Economics, Vol. LIX, No. 3, June 1951, pp. 194-208.

psychology and economics on how people learn to satisfy existing wants, relatively little work has been attempted on the development and acceptance of wants--why people want what they want and how these wants arise and become established. Some social scientists have considered this question,[5] but their ideas are scattered '*piecemeal*' throughout the literature and are far from forming a connected theory of want development.[6]

Several factors may be said to have operated against the development of such a theory: firstly, the late development of that part of psychology most relevant to students of consumer behaviour--the analysis of attitudes, motivation and cognition; secondly, the apparent reluctance of cultural geographers and anthropologists to consider non-material aspects of culture;[7] thirdly, the abstractness of modern economics; and fourthly, the obsession with disciplinary boundaries which has inevitably

---

[5]Hoyt, op. cit. See also Katona, op. cit. and James Bayton, "Motivation, Cognition and Learning - Basic Factors in Consumer Behaviour," Jour. Marketing, Vol. 22, 1958, pp. 282-289.

[6]Hoyt, op. cit., p. 194.

[7]This reluctance is now a thing of the past in North American anthropology and is fast fading in cultural geography. See National Academy of Sciences - National Research Council: The Science of Geography, Washington, D.C., Publication 1277, 1965, p. 28. "Values are the essence of cultural study, for without them one cannot comprehend the '*slant*' of the culture or its organizing principles . . . . Influenced by anthropological thought, many cultural geographers are coming to realize that ideas, attitudes, and other non-visible entities of a culture are of importance in understanding spatial distributions and space relations of phenomena."

hampered any attempts to construct general theory.

Perhaps the roots of all these retarding factors lie in the history of Western thought, with the post-Renaissance separation of philosophy and science and the consequent reification of valued knowledge or the deification of '*hard facts*'. This trend effectively discouraged inquiry into the relations between what people think and what they do, until the development of '*philosophy of science*' or '*operational philosophy*'[8] in the early twentieth century, which seems to have created an intellectual climate which is at last favourable for research along interdisciplinary lines towards the construction of general theory in the social sciences. This return to a consideration of thought and action as one continuing process has led to an increasing interest in the construction of a general theory of choice, which is of especial relevance to want development.

Study of the scattered literature on want development suggests several areas of priority for research. Although the problem of want development is obviously essentially suited to an interdisciplinary approach, research would be facilitated by the allocation of specific problem areas to the discipline best equipped to handle the approaches and techniques required. Firstly, it is clear that a wide range of psychological factors enter into want development. Thus research in psychology

---

[8]Anatol Rapoport, Operational Philosophy, New York, 1953.

should be directed towards analysis of those psychological factors which influence variations in the degree of susceptibility, receptivity and speed of reaction to changes in economic stimuli leading to development and modification of wants.[9] Secondly, within the field of economics, research on want development should be concerned with the relation between economic wants and income and expenditure levels. How do wants as dispositions to buy effect demands for consumer goods and services?[10] How do wants react on the standard of living? Can predictive economic models be developed to explain these relationships?

Thirdly, there are a number of questions which must be examined by cultural geographers and cultural anthropologists, which are perhaps the most basic of all to want development and provide the framework for the research design of this thesis. What is the role played by the cultural frame-of-reference in the development of new wants and the modification of established wants? Do changes in the non-material elements of culture such as attitudes, values and aspirations cause corresponding changes in want patterns? How are these cultural values used as choice determiners in the decision-making process? What cultural configurations are likely to make for the acceptance of new

---

[9]For example, research into motivation, cognition and le-rning as related to consumer behaviour - the forces behind economic choices and actions.

[10]Hoyt, op. cit., p. 195.

wants as permanent components of the consumption pattern?[11]

In order to facilitate the examination of these questions, a case study was selected of a peasant community in which the traditional economic system had recently been '*upset*' by large-scale technological change and a corresponding increase in cash income. It was considered that this '*unbalanced*' situation provided an ideal laboratory for the examination of the development of new wants and the modification of the old, since the operative processes had been deliberately accelerated through planned change and were thus more readily identifiable. This is similar to the common procedure in the experimental sciences of examining deviations from the norm in order to understand how processes operate in the regular or '*normal*' state.

Peasant Economic Systems - Consumption Patterns

A survey of anthropological literature reveals a vast quantity of definitions of the term '*peasantry*'[12] of which no

---

[11]The term '*cultural configurations*' is synonymous with Ruth Benedict's '*patterns of culture*'; Ruth Benedict, Patterns of Culture, 1934 - meaning the particular combination of cultural components which makes a culture group distinct. It would seem logical that some combinations of cultural components would favour the acceptance of a particular want, whilst others would inhibit acceptance, depending on whether the new want fits in or clashes with the existing pattern of culture. If these combinations could be identified with some degree of consistency, a predictive model could be developed which would be invaluable in planning socio-cultural change.

[12]The definitive works on peasantry include: C.S. Belshaw, Traditional Exchange and Modern Markets, Englewood Cliffs, N.J., Prentice-Hall, 1965; A.V. Chayanov, The Theory of Peasant Economy, 1925, Edited by Daniel Thorner, Basile Kerblay and R.E.F. Smith, Homewood, Illinois, American Economic Assoc-

two definitions are apparently similar in every respect. Perhaps this is because-- "Peasant society and culture has something generic about it. It is a kind of arrangement of humanity with some similarities all over the world."[13] Thus, although certain basic similarities can be identified in peasant societies in widely varying geographic and cultural areas no two peasant communities will be exactly alike in all respects. The content of the definition constructed will therefore depend both on the particular socio-economic and cultural configur-

---

12(continued)
iation 1966; Raymond Firth and B.S. Yamey, Capital, Saving and Credit in Peasant Societies, London, Allen and Unwin, 1964; George M. Foster, Tzintzuntzan: Mexican Peasants in a Changing World, Boston, Little, Brown, 1967; Clifford Geertz, Studies in Peasant Life, Stanford, Stanford University Press, 1963; Manning Nash, Primitive and Peasant Economic Systems, San Francisco, Chandler, 1966; Robert Redfield, Peasant Society and Culture, Chicago, University of Chicago Press, 1956; Tepoztlan, A Mexican Village: A Study of Folk Life, Chicago, University of Chicago Press, 1930; Gideon Sjoberg,"Folk and Feudal Societies," American Journal of Sociology, LVIII, No. 3, Nov. 1952, pp. 231-239; Sol Tax, Penny Capitalism, A Guatemalan Indian Economy, Chicago, University of Chicago Press, 1963; Charles Wagley and Marvin Harris,"A Typology of Latin American Subcultures," American Anthropologist, LVII, No. 3, Part I, June 1955, pp. 428-451. Eric Wolf, Peasants, Englewood Cliffs, Prentice-Hall, 1966; "Types of Latin American Peasantry: A Preliminary Discussion," American Anthropologist, LVII, No. 3, Part I, June 1955, pp. 452-471.

[13]Robert Redfield, Peasant Society and Culture, Chicago, University of Chicago Press, 1956, p. 17.

ation of the peasant societies selected for study, and the special interest or approach of the definer.

Perhaps the most widely accepted definition of peasantry is by Robert Redfield[14] though Eric Wolf's "*Peasants*" also provides an extremely helpful general introduction.[15] Redfield defines peasants as "a type or class loosely defined, a focus of attention rather than a box with a lid,"[16] for whom agriculture is a way of life rather than a profit-oriented commercial enterprise and who represent a society "intermediate between the tribe and the modern city."[17] In other words peasantry is a broad descriptive term, referring to a socio-economic group of small-scale agriculturalists who are involved to a limited extent in the urban market system although their technology remains primitive. Only peasant farmers are included in this particular definition although several anthropologists, such as Raymond Firth,[18] use the term '*peasant*' for any society of small producers who reserve the larger proportion of their produce for their own personal consumption thus including hunters, fishermen and pastoralists.[19]

---

[14]Especially Robert Redfield, Peasant Society and Culture, Chicago, University of Chicago Press, 1956.

[15]Eric Wolf, Peasants, Englewood Cliffs, N.J., Prentice-Hall, 1966.

[16]Redfield, op. cit., p. 17.

[17]Robert Redfield, Tepoztlan, A Mexican Village: A Study of Folk Life, Chicago, University of Chicago Press, 1930.

[18]Raymond Firth, Elements of Social Organization, London, Tavistock, 1951.

The operative principle appears to be that peasant agriculture is regarded as an assigned or traditional way of life rather than a preferred choice aimed at the accumulation of money or assets. However, it is certainly not true to say that peasants are not stimulated by a profit motive and do not try to obtain maximum satisfaction in their economic activities.[20] Unlike primitive societies, peasants use money for a relatively wide range of transactions and cash crop production to a greater or lesser extent is a common characteristic. On the other hand, wealth is reckoned in terms of assets accumulated rather than money income, and these assets include a wide range of goods and services which often have a symbolic cultural value that cannot readily be quantified in economic terms. For example a plot of land or a pig are not merely regarded as factors of production but have strong symbolic overtones. To an American farmer a pig only represents a potential cash income of $150 on sale, whilst to a Mexican peasant it is a symbol of security--an '*insurance policy*' against possible future hardships such as crop failure or a death in the family, and he may be unable to estimate the monetary value of the animal.

---

[19]Other rural dwellers such as craftsmen and small business operators could also logically be included since they essentially form part of the peasant socio-economic system and share the same value system.

[20]Generally money is very important in peasant societies and wealth carries a definite prestige value. However, aspirations tend to be low and the peasant's conception of a '*desirable*' or '*adequate*' standard of living is rarely far above the bare subsistence level. Consequently achievement-motivation is also low and drive is limited below the perceived optimum level. Furthermore, in some closed-corporate peasant communities aspirations are further limited by the '*peasant image of limited good*' (Foster, 1965).

In other words, peasants commonly possess a different concept of wealth from '*modern*' economic systems due to differences in the cultural frame-of-reference, and non-economic variables dominate behaviour patterns to a greater extent. Thus the term '*peasantry*' implies something more than an economic system since it involves a distinctive set of values and social relationships. However this paper is not concerned with the study of peasant societies per se, and structural or social relationships such as kinship systems or ceremonial responsibilities are only relevant in so far as they affect consumer behaviour patterns.

In most peasant societies the household is both the main unit of production and of consumption since the greater proportion of agricultural produce is devoted to domestic subsistence. A household system of production does not have the incentives for capital accumulation nor the resources for instituting large-scale technological innovations, but when the opportunity is available the peasant will expand beyond the bare minimum necessary for subsistence and become involved in cash crop production. However, involvement in market fluctuations can prove disasterous to the peasant farmer operating within a very narrow risk margin, and the rate of change from dominantly subsistence to commercial production tends to be very slow and erratic.

Similarly, analysis of peasant consumption patterns reveals a slow rate of change in want development. However, this is not because peasants are inherently backward and unpro-

gressive but is a function of the few realistic alternatives available to them. Thus the popular view that peasants are essentially conservative is a complete misconception, for it has been shown that peasants are surprisingly swift to accept changes which they perceive as beneficial.[21]

Consequently, it seems likely that the provision of a wider range of alternative action paths through the introduction of technological change will greatly stimulate the speed of want development, by increasing productive capacity and earned income. However, new wants will not inevitably develop simply because a wider range of consumer goods are available and the peasants can afford to buy them. For all wants originate in the cultural frame-of-reference, and patterns of consumption are influenced strongly by social sanctions and are guided by the values of the group as a whole. Thus, items which do not fit in with the existing cultural configurations and are not perceived as useful or desirable, are unlikely to be accepted as new wants,[22] though there are cases where peasants have adopted items from another cultural complex by changing the meaning or use of the items.

It would seem then, that the introduction of technological change and the development of an increased involvement with modern cash economies is one of the most powerful forces transforming traditional peasant societies. Thus, in order to

---

[21]Sol Tax, "Changing Consumption in Indian Guatemala," Economic Development and Cultural Change, No. 5, 1956-57, pp. 147-158.

[22]See footnote 11, p. 6.

clarify the process of want development in developing countries it is necessary to examine in greater detail the changes that take place in expenditure patterns when peasant farmers receive a sudden increase in cash income, as a result of acceleration of the rate of socio-economic change.

The Impact of Increased Income on Peasant Want Patterns in The Mexican Gulf Lowlands

The purpose of this study is to examine the changes that take place in want patterns when unaccustomed purchasing power becomes available to peasant agriculturalists as a result of a recent Government-sponsored development project in the Mexican Gulf Lowlands. It is hypothesized that increased cash income stimulates changes in peasant expenditure patterns and that corresponding changes in wants can be identified. In order to measure the changes that have taken place in expenditure and make inferences about want changes, a detailed study has been undertaken of patterns of income and expenditure in a sample group selected within the Plan and a control group of peasants outside of the immediate project area.

The questions asked in this study can be arranged in three groups -

1. a) Can new wants be identified?
   b) Are these new wants superficial? or do they have sufficient cultural congruity to be accepted within the cultural frame-of-reference as permanent components of the consumption pattern?

2. a) What has been the effect of income change on '*old*' long-standing wants?

b) Are these old wnats now satisfied on a regular basis stimulating the further development of new wants?
c) Have old established wants acquired new meaning within the new socio-economic context?

3. a) What exactly is the role of income increase in the process of want development?
b) Is the reformulation of the cultural frame-of-reference accompanying technological change more important in want development than the actual increase in purchasing power which merely acts as a catalyst? In other words, is the most fundamental influence in expenditure not purchasing power per se but dispositions to buy, springing from wants developed in the cultural frame-of-reference?

Thus, this study is primarily designed to measure the tangible effects of change in cash income in terms of changing wants. However, it has added significance in that measurement of tangible change may also provide the key to the identification of intangible change in the cultural frame-of-reference. Therefore, this analysis of the relations between increased income and want patterns should provide indications of change in attitudes and aspirations, which are less tangible components of the value system than wants.

CHAPTER II

PLAN CHONTALPA: REGIONAL CONTEXT

Development Planning in Mexico

Mexico's rapid economic progress since the beginning of World War II indicates that the country is well on the way to sustained economic growth.[1] However, in Mexico as in many other developing countries, there exists an inbalance between population and resource distribution, and until recently most progress was largely confined to the densely populated Mesa Central and the irrigated agricultural areas of the northern deserts. Within the last two decades other areas, such as the Gulf Lowlands, have begun to emerge as growth regions due to economic decentralization and development programming.

The agrarian sector of the Mexican economy is lagging behind the commercial and industrial sectors in terms of total value of production, and this gap has increased noticably in the last two decades (See Table 1). Only about one tenth of Mexico's total surface area can be regarded as suitable for cultivation. Consequently, there is a high pressure of population on the cultivable land especially in the Mesa Central,

---

[1]Mexico's Gross National Product has increased from 22.3 in 1939, to 93.2 in 1964 (expressed in thousands of millions of pesos at 1950 prices). Source: Banco, de Mexico, S.A. - quoted in Nacional Financiera S.A., Statistics on the Mexican Economy, Mexico, D.F., 1966, Table 5, p. 29.

and the country's agricultural resources have been feeling the strain of the recent '*population explosion*'. A considerable amount of Government funds has been devoted to increasing irrigation facilities in the arid North; however, other parts of the country have been less fortunate and recent Mexican planning policy has been concerned with reducing this inbalance in investment in agriculture and water resources.[2]

TABLE 1

MEXICO: AGRICULTURE, COMMERCE AND INDUSTRY EXPRESSED AS A PERCENTAGE OF THE GROSS DOMESTIC PRODUCT (1950 and 1964) [2]

	1950	1964
Agriculture (a)	22.5%	17.5%
Commerce	26.3%	25.9%
Industry (b)	29.3%	33.8%

(a) agriculture includes cattle, forestry and fisheries.
(b) industry includes manufactures, mining, petroleum and construction.

Source: Based on data quoted in - Nacional Financiera S.A., Statistics on the Mexican Economy, Mexico, D.F., 1966, Table 8, pp. 32-33. (Original data supplied by Banco de Mexico S.A.)

---

[2]Mexican Federal Public Investment in agricultural development has increased dramatically from 563 million pesos in 1953 to 1,415 million pesos in 1963. Source: Nacional Financiera, op. cit., Table 91, p. 194. Also - analysis of the distribution of Federal Public Investment by state between 1959 and 1966, shows a marked increase in Government spending in agriculture, cattle rearing and flood control in the Lowland States of Tabasco and Veracruz. Source: Ministry of the Presidency, General Bureau of Public Investment: Federal Public Investment Statistics.

Large-scale regional planning in Mexico was not really significant until the first river basin development authority was established in 1947 under the auspices of the Secretariat de Recursos Hidraulicos (the Ministry of Water Resources). However, during the last two decades the Mexican Government have obviously decided that the regional approach provides the best framework for a comprehensive attack on development issues.[3] During this period the Government has paid especial attention to the formerly neglected, relatively sparsely populated states of the Gulf Lowlands. Government agencies have published glowing reports of the agricultural potential of this humid tropical lowland, and call for a "*march to the sea*" which relieve congestion in the Central Mesa and open up desperately needed new agricultural land. However, in view of the somewhat dubious history of planning in Mexico it is unwise to take these Government pronouncements too literally as their motivation is probably political rather than purely economic, and with each change of Government policies which were promoted enthusiastically by the previous regime tend to be somewhat neglected.

There is, however, clear evidence of the resurgence of interest in the Gulf Lowlands and considerable progress has been achieved in the last two decades. Planned developments in agriculture and industry (especially the petroleum industry of

---

[3]The trend in other developing countries appears to be away from large-scale integrated development projects on a regional scale, towards concentration of resources on the solution or amelioration of specific key issues.

Tabasco and Veracruz), together with improvements in social welfare and communications, have been responsible for progress within the area, and the Gulf Lowlands are no longer an economic backwater but one of Mexico's leading growth regions. A number of agencies have contributed to these recent developments in the Lowlands. The most spectacular agricultural development programming has been undertaken by La Comision del Papaloapan and La Comision del Grijalva--two river basin authorities under the auspices of the Secretariat de Recursos Hidraulicos (Ministry of Water Resources). However, other Government agencies are also involved, notably the Departmento de Asuntos Agrarios y Colonizacion (Department of Agrarian Affairs and Colonization), the Secretariat de Agricultura y Ganaderia (the Ministry of Agriculture and Cattle), the credit banks such as the Banco Nacional Agropecuaria (National Agricultural and Cattle Bank) and the Banco Nacional de Credito Ejidal (National Ejidal Credit Bank), and the Government marketing agency CONASUPO (La Compania Nacional de Subsistencias Populares).

The agrarian ministry and its departmental dependencies aim to raise the level of agricultural productivity primarily through research, extension and small development projects. However, their achievements in this respect are limited in area and have little impact on the Lowlands as a whole. Similarly, the credit banks tend to give credit only to the holders of larger properties, as the ejidatarios and small peasant farmers are generally very poor and cannot offer acceptable assets for

security. This lack of credit facilities for the majority of the Lowland farmers obviously makes it difficult to raise the general level of agricultural productivity in the region as a whole. The Government marketing agency also tends to concentrate its efforts on the owners of larger properties who are able to meet regular production contracts and are conspicuous by their absence in areas mainly devoted to ejidal land.

Thus, it would seem that the achievements of Government agencies in promoting agricultural development in the Gulf Lowlands, although important on a local scale are generally less significant than individual private enterprise in the region as a whole. It is the individual entrepreneurs such as the ranchers and plantation owners, who by their own initiative and co-operative efforts have contributed most to the recent emergence of the Lowlands as an agricultural growth region. However, their efforts would not have achieved such impressive results without the improvements in infrastructure, such as road construction and flood-control works, undertaken by the Government agencies especially the river basin authorities.

The two river basin authorities have been concerned with large-scale integrated development. The first, La Comision del Papaloapan, was set up in 1947 and involves the development and rehabilitation of a river basin located pre-

dominantly in the State of Veracruz.[4] The Papaloapan Project was initially concerned purely with flood control, but its aims were expanded to include the improvement of the living conditions of the indigenous inhabitants, the resettlement of people from the congested uplands and the development of agriculture and industry.[5] The initiation of this Government-sponsored development project was indicative of the prevalent feeling of optimism regarding the agricultural potential of the tropical lowlands. However, although the Papaloapan Project has achieved considerable success in flood control, communications and the improvement of living conditions generally, the agrarian and colonization sectors were without doubt a resounding failure. Most of the new colonies have been abandoned and the Commission's budget was cut drastically in 1958 when Lopez Mateos took over as president, and the Project was virtually suspended from 1961 until 1966 when a plan was drafted for a new colonization scheme in the central part of the basin. Poleman suggests that much of the blame for the failures within

---

[4] La Comision del Papaloapan is a semi-autonomous agency under the direction of the Secretariat de Recursos Hidraulicos, (the Ministry of Water Resources) and was originally responsible for all sectors of the projected development of the Papaloapan Basin. The Commission was empowered to deal directly with other Government agencies, being responsible only to the Minister for Water Resources, thus avoiding some of the bureaucratic and administrative problems which seem to be inevitable in Mexican Government Departments.

[5] T.T. Poleman, The Papaloapan Project, Stanford, Stanford University Press, 1964. This book provides a very comprehensive account of the aims and achievements of the Papaloapan Project and an assessment of its implications for Mexican economic development.

the agrarian sector must be attributed to the faulty and inadequate planning and over-paternalism of the Papaloapan Commission.[6] However, it seems that perhaps even more important than the faulty innovative techniques used by the Commission was their failure to consider the human elements involved, that is, the attitudes, aspirations and motivations of the prospective colonists.

The second river-basin authority operative in the Gulf Lowlands - La Comision del Grijalva, also a semi-autonomous agency of the Secretariat de Recursos Hidraulicos, --was set up in 1951 but was not really operative in the field until the late 1950's.[7] The first field works of the Commission from 1958 onwards were concerned with creating "more favourable conditions for human activity",[8] primarily through flood control measures. The danger of large-scale flooding was virtually removed by the construction of the Presa Netzhualcoyotl, a vast control dam with hydro-electric power installations on the edge of the Chiapas Uplands, which was completed in 1965, (See Appendix: Map 1). In this year the Commission entered the second stage of the overall Plan and initiated measures to promote economic development concentrating on the agricultural

---

[6] Ibid., pp. 153-154.

[7] Most of the activities of the Comision del Grijalva are at present concentrated in the lower basin of the Grijalva River which falls mainly in the State of Tabasco about 240 miles S.E. of the Papaloapan.

[8] Unpublished report of La Comision del Grijalva, Cardenas, Tabasco, 1965.

sector, which after preliminary surveys was considered to be producing at far below its potential level. The Chontalpa, the western portion of the Tabascan coastal plain in the lower basin of the Grijalva River, was selected as the pilot area for the restructuring of the agricultural landscape and the rehabilitation of the population. The Chontalpa project is jointly financed by the Mexican Government which supplies 52% of the funds and the Inter-American Development Bank which contributes 48%.

The objectives of the Grijalva Commission in the Chontalpa are similar to those of the Papaloapan Commission, but are concerned with improving socio-economic conditions over a larger area, 150,000 hectares from 1963 to 1976. There are two other basic differences between the Papaloapan Project and the Plan Chontalpa. Firstly, the Plan Chontalpa is essentially a resettlement project rather than a colonization scheme, since much of the land is already under cultivation and the vast majority of the participants in the Plan are native to the region.[9] Secondly, the Plan Chontalpa is a '*self-help*' type of planned change programme as opposed to the more paternalistic policy of the Papaloapan Commission. Thus the Grijalva

---

[9]At present about 40 peasant farmers from the state of Michoacan are included in Plan Chontalpa under a special agreement with the Governor of that state. These peasants are graduates of '*rural technical agricultural schools*' in the central uplands and hopefully will demonstrate to the local inhabitants how to use modern farming techniques.

Commission aims to help the peasants to help themselves with only a minimum of formal aid.

The Chontalpa Region

The planned change project to be examined is located in the Chontalpa region of Tabasco, about 550 miles south-east of Mexico City. (See Appendix: Map 1.) The name '*Chontalpa*' is probably derived from one of the idigenous tribes of the central part of Tabasco--the Chontal, though it has been suggested that it is of '*Mexicano*' origin signifying '*foreigner*'.[10] The three main Indian groups--the Chontal, Zoque and Mexicanos--were of Maya stock but tended to be less advanced and less warlike, accepting both the Conquistadores and Christianity with relative equanimity. Early in the Colonial period when Tabasco was part of the Provincia of Yucatan, dependent on the Audiencia of Mexico, the Chontalpa already possessed a distinct regional identity owing to a rather higher population density than the surrounding areas of coastal plain. This '*oasis*' of dense settlement in the Chontalpa has persisted through to the present day, probably due to the soils and drainage which are unusually good for a tropical lowland environment and reduce the incidence of laterization. During the Colonial period the principal crop

---

[10] I. Ramirez, ed., Directorio Monografico de Industria, Commercio, Agricultura, Ganaderia y Profesiones, 1957-1959, Chiapas, Tabasco, Campeche, Quintana Roo, Yucatan, Mexico, D.F., 1960.

in Tabasco was cacao owned by the encomenderos,[11] which was sent directly to the capital for export to Spain. Cattle rearing was also traditional in the zone but was a rather insecure occupation due to the frequent floods and the prevalence of parasitic diseases.

This regional consciousness was probably reinforced by the relative isolation from the Mesa Central, the traditional cultural and economic core of Mexico and the hearth of Spanish Colonial power in that country. Because of this geographic remoteness Tabasco has tended to be on the periphery of major historical events. However, the Chontalpa has suffered periods of violent upheaval from the piratical raids of the seventeenth and eighteenth centuries through the Revolution commencing in 1910 and the unsettled decades of the 1920's and 1930's. During the Colonial period there were frequent forced migrations of the indigenous inhabitants fleeing from the raping and pillaging pirates. The Rio Seco, at that time one of the outlets

---

[11]The following is probably the clearest explanation of the encomienda system: "Under this system a conquistador received from the royal governor an allocation of Indians who were to serve him with tribute and labour. The encomendero, in turn, assumed the feudal obligation of defending his country for the emperor Charles V, of protecting his Indian charges, and of instructing them in the Christian religion. The encomienda did not involve an award of land, but along with the distribution of Indians often went a grant of land to the conquistador." Editor's Introduction p. 8, in - Alonso de Zorta, Life and Labour in Ancient Mexico, The "Brief and Summary Relation of the Lords of New Spain," translated and with an introduction by Benjamin Keen, New Brunswick, New Jersey, Rutgers University Press, 1963.

of the Grijalva River, served the pirates as a convenient access route for the looting of riverine settlements. In 1775 the inhabitants of these settlements were forced to block this waterway with pallisades and earth banks in order to stop the piratical raids. Again, in the Revolutionary period the Chontalpa became a bloody battlefield between national troops and revolutionary guerillas. The peasants suffered considerably during this time and in the uneasy years after the Revolution when land reform was taking place, being exploited both by the middlemen who bought up their produce at very low prices and held them in virtual debt servitude, and by the politicians who used the peasants to achieve their own ends.[12]

The present population of the Chontalpa are mestizos descended from the original Indian inhabitants who can no longer be identified as a separate culture group within the region, intermixed with the Spaniards and other later immigrant groups including Italians, French and English and the negroes imported by the Spaniards to work the plantations. The population density is still high relative to the surrounding areas

---

[12]For further information on the Chontalpa in this period see - Francisco J. Santamaria, Documentos Historicos de Tabasco, Vols. I and II. Publicationes del Gobierno de Tabasco, Villahermosa, Tabasco, 1950 and 1951. Also - personal interview with Senor Dario Vidal, Cardenas, Tabasco, August 30th-31st, 1968.

though far below the densities achieved in the Mesa Central, and the total population is increasing steadily despite the rural-urban drift which is one of the most outstanding modern Mexican demographic characteristics.[13]

Agriculture is the predominant occupation within the part of the Chontalpa scheduled for development.[14] The only industrial establishments are those connected with the petroleum industry[15] and processing plants for agricultural products such as sugar cane and cacao.[16] The only agricultural products

---

[13]In 1960 the population density in the Chontalpa was 25.5 people/sq.km. as opposed to the figure for the State of Tabasco of 20.1/sq.km. and the national average of 17.8/sq.km. The total population of the administrative region of La Chontalpa has reached 325,000 by 1960, or 65.5% of the total State population, with an average annual increase rate of 3.2% between 1950 and 1960, which equalled the State average and came slightly above the national figure of 3.1%.
Source: Unpublished handbook of La Comision del Grijalva, Cardenas, Tabasco, 1966, pp. 9-10 (based on 1960 census data).

[14]Agriculture, including cattle ranching, forestry, hunting and fishing occupied 69.45% of the total active labour force of the administrative district of La Chontalpa in 1960.
Source: Unpublished Handbook of La Comision del Grijalva, Cardenas, Tabasco, 1966, p. 11. (Based on 1960 Census data.)

[15]The several small oil and natural gas fields in the Chontalpa are amongst the most productive in the Gulf Lowlands accounting for 22.7% of the value of total national production in 1962. Ibid., p. 15.

[16]The Chontalpa's two sugar mills and only cacao factory are located in the municipio of Cardenas near the field headquarters of La Comision del Grijalva.

[17]The ejido is a form of land tenure originating in the breakdown of the large estates in the post-Revolutionary land reform, in which the group forming the ejido holds the land title and the individual members have only usufruct rights to the land.

which are of any real commercial importance are cacao, roatan bananas, copra and sugar cane, while coffee, maize, rice and beans are mainly produced for domestic consumption only. Cattle rearing is widespread throughout the region consisting largely of the '*criollo*' stock introduced by the Spaniards crossed with Zebu and Swiss breeds which are especially suited to tropical lowland environments.

Apart from a few large cattle ranches and plantations which rarely exceed 200 hectares, most of the land holdings in the Chontalpa are small private properties and ejidal plots of less than 10 hectares in size.[17] Despite the post-Revolutionary land reforms the land is still very unevenly distributed with 35.2% of the land in the hands of only 4.9% of the farmers. (See Table 2, p. 28a).

Although soils are potentially very productive agriculture is basically subsistence-level with a very low per capita productivity. The main reasons for this low productivity are probably the fragmented and uneconomically small private properties and ejidal plots, the rudimentary nature of peasnat technology and climatic hazards.

There are three main climatic hazards. The combination of the very gently undulating slope of the Tabascan coastal plain together with a humid tropical marine climate, results in poor surface drainage with periodic flooding which formerly caused extensive damage to crops, livestock and settlements. The danger of large-scale flooding has now been virtually removed by the construction of a dam the Presa Netzhualcoyotl.

TABLE 2

TYPE OF LAND TENURE IN THE FIRST PHASE OF PLAN CHONTALPA
(83,000 hectares) [1]

Type of Tenure	Total Area in Hectares	%	Number of Farmers	%	Average Amount of Land/Farmer in Hectares
Ejidos	30,706	37.0	2,590	55.3	11.9
Small properties less than 10 has. in size	5,100	6.2	1,200	25.7	4.3
Small properties between 10 has. and 50 has.	16,880	20.3	660	14.1	25.6
Small properties greater than 50 has.	29,214	35.2	230	4.9	127.0
Comision del Grijalva	1,100	1.3	-	-	-
Total	83,000	100.0	4,680	100.0	-

[1]For location of Phase I of Plan Chontalpa see Appendix, Map 1.
Source: Unpublished Handbook of La Comision del Grijalva, Cardenas, Tabasco, 1966, p. 29.

Secondly, although the Choutalpa lies in the humid tropical Gulf Lowland one of the main reasons for crop losses due to climatic hazards is the variability in length of the spring dry season which normally occurs from February to April, but has been known to last until July. Thirdly, the combination of heat and humidity also encourages a wide variety of tropical diseases.

Other important contributing factors are poor communications, an inefficient marketing system and the lack of agricultural advice and credit facilities for ejidatarios and small private property owners. Ejidatarios have only usufruct of the land and cannot alienate the property itself, thus they have no security to offer for bank loans except assets such as animals or farming equipment, or any private property owned apart from the ejidal land. The Banco Ejidal de Mexico is reluctant to give credit to ejidataros in the Chontalpa since most are very poor and possess no acceptable assets. The commercial banks such as the Banco Agropecuaria del Sureste, also tend to give credit only to the larger property owners as the small peasant farmers cannot offer adequate security.

Before the initiation of Plan Chontalpa peasant living conditions were very poor. Outside of the project area malnutrition and tropical diseases are still widespread, and infant mortality rates and overall death rates are high since medical services are insufficient except in the towns. The provision of adequate services is hampered by the dispersed nature of the rural settlement pattern: illiteracy is high and rural

schools are few and far between, adequate sanitation, electricity and piped water supplies are rarely available in rural areas and social services and cultural facilities are completely inadequate.

The type of peasantry found in the Chontalpa comprises what Eric Wolf terms an '*open*' heterogeneous community as opposed to the '*closed*' corporate peasant community which is perhaps more in accord with the popular image of peasant society.[18] This open structure is typical of peasantry in tropical lowlands and implies a certain degree of involvement in cash-crop production dependent on capital investment from the outside, though the peasant still depends almost completely on subsistence agriculture for domestic consumption.

In the area covered by Plan Chontalpa the extent to which the peasants are involved in cash-crop production is largely a function of their location relative to the main access routes, the local market centres and the sugar mills and cacao factory in the municipio of Cardenas, (See Appendix: Maps 1 and 3). The importance of cash-crop production in the Chontalpa has shown a remarkable increase in the last 15 years due primarily to the flood control and road construction works of the Grijalva Commission, the stimulation of the sugar industry

---

[18] Eric R. Wolf, Types of Latin American Peasantry: A Preliminary Discussion, American Anthroplogist, Vol. 57, 1955, pp. 452-470. The majority of the anthropological studies of peasant societies have concentrated on the more easily identifiable traditional closed-corporate communities and relatively little work has been undertaken on the somewhat loosely defined open agricultural societies.

through Government subsidies, and the organization of producers' cooperatives for the sale of cacao to the Cardenas factory.

However, this cash-crop production is generally conducted on a small scale within the traditional framework of peasant agriculture and consequently subject to most of the constraints on agricultural development outlined on page 28. Thus the peasant who becomes involved in commercial agriculture is frequently in a very precarious position, since in addition to the possibilities of crop failure due to climatic hazards he must face the risk of fluctuations in the cash-crop market. Consequently, a peasant in this position -

> ... is always concerned with the problem of striking some sort of balance between subsistence production and cash-crop production. Preceding cycles of cash-crop production have enabled him to buy goods and services which he cannot afford if he produces only for his own subsistence. Yet an all-out effort to increase his ability to buy more goods and services of this kind may spell his end as an independent agricultural producer. His tendency is thus to rely on a basic minimum of subsistence production and to expand his cash purchases only slowly. 19

This trend is evident in the Chontalpa and peasants seem hesitant to commit themselves totally to cash-crop production even when the opportunity is available. Generally money income received from the sale of cash-crops is small and irregular and mostly used to satisfy wants which have already been incorporated into the standard of living, and there is little

---

[19] Ibid., pp. 371-372.

visible change in expenditure patterns.

However, it would seem that the open type of peasant community encountered in the Chontalpa is more oriented towards technological change than the closed corporate society, since involvement in cash-crop production necessitates a certain degree of interaction with the outside world, and one would expect the peasants to show a corresponding greater degree of achievement-motivation particularly with respect to the accumulation of individual wealth.

Plan Chontalpa: Aims and Achievements

The basic aim of La Comision del Grijalva in the Chontalpa is to increase agricultural production and productivity through the complete restructuring of the agricultural landscape and the rehabilitation of the population.[20] To achieve these ends the Commission has introduced measures to remove the constraints on agricultural development outlined above and to improve the conditions of rural life in the region.

The original conception of the plan in 1963 was a pilot project to develop intensive agriculture on 52,000 hectares only. However, in 1965 the plan was expanded redically involving the extensive agricultural development through irrigation and drainage works of 143,000 hectares.[21] The revised project

[20] Over a fourteen-year period the net value of gross output per farmer is expected to increase from U.S. $540 to U.S. $3,760, and gross per capita income from U.S. $73 to U.S. $520. Source: Unpublished Report of the Inter-American Development Bank (B.I.D.), May 1968, Mexico, D.F.

is subdivided into two phases; from 1965 to 1970 and from 1971 to 1976. The first phase up to 1970 involves the development of 83,000 hectares of which 36,000 hectares are already producing with low returns. During this period operations are being concentrated in five main areas:

a) The construction of flood control works, drainage ditches, main penetration roads and paved access roads to every parcel of agricultural land. This sector essentially forms the core of the plan and is allocated over 60% of the total project funds.[22] (See Table 3).

b) The clearing and levelling of forested lands newly opened up for agricultural development and of '*rotation scrub*' already within the peasant slash-and-burn cycle.

c) The restructuring of the fragmented and unequal land tenure pattern (See Table 2, p.28a) by the expropriation of all land including private property, so that the whole area can be divided up into parcels of economic size. The private property owners are compensated for the value of the land expropriated, and the ejidatarios are paid for the value of assets such as houses and crops. The original conception of the Plan involved the division of the whole area into 10 hectare plots of agricultural land with an additional 5 hectares of pasture for cattle raising. These parcels are to be grouped into 24 agro-

---

[21] Unless otherwise stated all statistics in this section were obtained from records of La Comision del Grijalva, Cardenas, Tabasco.

[22] Inter-American Development Bank, op. cit.

TABLE 3

PLAN CHONTALPA-ALLOCATION OF 1965-1970
BUDGET BY SECTORS

	Allocation in millions of (Mex. $)	% of Total Budget
Flood control works, drains and service roads	499.8	63.9
Housing, including utilities and community services	78.4	10.0
Agricultural Research Station	17.3	2.2
Resettlement, including compensation and land clearance	67.4	8.6
Residences for Commission personnel	70.1	9.0
Miscellaneous, including operating expenses, visiting advisers and inspection teams, and general overheads	48.7	6.3
Total Budget	781.7	100.0

Source: Inter-American Development Bank Report, May 1968.

economic units of between 1,500 and 5,000 hectares in size according to the number of parcels included.

The agricultural units will function as ejidos in that each peasant will have only usufruct rights to his parcel. However, the organizational framework will be more flexible, being intermediate in structural organization between the conventional '*individual*' ejido in which the peasants operate completely independently from each other, and the collective ejidos in which the land is owned and worked jointly and the total capital is controlled by the community as a whole. Each agro-economic unit consists of an agricultural zone of 10 hectare parcels with an adjoining cattle zone, and four units were completed according to these specifications. However, this initial plan was modified in 1967 attaching greater importance to livestock production, and the remaining agro-economic units are being subdivided into agricultural parcels of 5 hectares with 10 hectares devoted to cattle rearing. The decision to increase the emphasis on cattle rearing was made for a number of reasons including the '*physical*' difficulties of agriculture in the humid tropics and credit and marketing problems. Cattle rearing has great potential in tropical lowlands and there is sufficient demand for meat in the Mexican domestic market to warrent expansion in this direction. The provision of a 5 hectare agricultural plot will allow the peasant to grow some crops for his own subsistence and to take part in the production of cash-crops which will be marketed on a co-operative basis.

d) The provision of credit through the agency of the Banco Agropecuaria del Sureste, the development of agricultural extension services to instruct the peasants in the use of modern techniques, and the construction of an agricultural experimental station to conduct research into the special problems of agriculture and cattle raising in the humid tropics.

e) The improvement of conditions of rural life through the provision of medical facilities and disease eradication programmes; the construction of schools and new housing with piped water, sewerage and electricity; and the provision of social and community welfare services. The new houses are being constructed in nucleated semi-urban villages, one for each agricultural unit, in order to facilitate the provision of these services.

In August 1968 after nearly three years of intensive field operations, the relative achievements within the Plan's major sectors varied considerably. In some sectors, notably the construction of basic works such as protective embankments, drains and service roads the work was progressing satisfactorily, however agricultural development, the restructuring of land tenure and rehousing were lagging far behind the planned schedule.

Some of the reasons for the slow rate of progress of these three components are outlined in a report issued by the

Grijalva Commission in March 1968.[23] Progress in agriculture has been hampered by Mexico's lack of experience of intensive agriculture in the tropical lowlands. The Papaloapan Project (See Pages 20-22) suffered in the same way from the lack of adequate background research data. However, Plan Chontalpa has the advantage of an associated agricultural research station located within the project area, which is undertaking experiments on techniques and crop strains suitable for successful cultivation within the zone. In addition, the agronomists employed by the Grijalva Commission are aware of and profit from experience gained by other countries experimenting in the colonization of tropical lands.

The major bottleneck in the agrarian sector appears to be the restructuring of land tenure, due mainly to the radical revision of the Plan in 1967 which reduced the size of the agrarian plot to 5 hectares and increased the amount of cattle land to 10 hectares per farmer. The four agricultural units which had already been completed retained the original format of 10 hectare plots of agricultural land, and the only modification necessary was the expansion of the cattle zone of each unit to award 5 additional hectares of pasture land to each farmer.[24] However, a completely fresh start had to be made in

---

[23] Reported in a communication from La Comision del Grijalva, Mexico, D.F., to the Inter-American Development Bank (B.I.D.), Washington, D.C., dated May 10th, 1968, with reference to the revision of Plan Chontalpa.

[24] The expansion of the Plan has necessitated the expropriation of 52,000 additional hectares of private property which will permit the participation of a greater number of peasants in the project.

two units where work was underway at the time of the revision of the Plan, which complicated the surveying and delimiting of parcels and resulted in a considerable delay in the payment of compensation and allocation of new parcels to the peasants.

Apart from delays resulting from the revision of the Plan, the Commission originally underestimated the amount of time necessary for the complete restructuring of tenure on such a large scale. Each peasant has to be interviewed individually in order to provide an adequate explanation of the process of land transfer and to arrange satisfactory compensation for the loss of crops and other assets, and many unforseen delays can arise during these transactions. However, this programme has now been accelerated and given top priority and the restructuring of tenure should be completed in all 24 agro-economic units by late 1970.

The expansion of cash-crop agriculture has been held back due to problems with land clearance, the organization of credit and markets, and with the formulation of an efficient agricultural extension programme. However, increased investment in machinery has permitted the more efficient levelling and clearing of land.[25] The main problem with the develop-

---

[25]Between May 14th and September 11th 1968 a total of 2565 hectares were cleared by machinery in the first agricultural units; of which 1301 hectares were devoted to annual crops such as rice, maize and sorghum, 460 hectares to perennials (bananas), and 80 hectares to pasture in the cattle zones. This is far behind the original schedule for new plantings. However, the peasant can obtain further credit to clear his land by hand and cultivate '*rustic*' maize by traditional methods.

ment of the extension service has been the lack of rapport between the peasants and the extension agents, many of whom though technically competent, lack experience in communicating techniques on a level the peasant can understand. However, this has been remedied by the institution of a new training programme for extension agents.

The problem of credit is critical to the whole future of the Plan and cannot be solved as easily as the land clearance and extension problems. The two main difficulties have been the peasants' misappropriation of credit funds and failure to pay off their bank loans due to lack of understanding of the principles of credit extension, and the fundamental difference in attitude towards credit of La Comision del Grijalva and the Banco Agropecuaria del Sureste. The first year of credit extension from spring 1966 to spring 1967 had rather disappointing results. Unfortunately many peasants defaulted on their loans and the Grijalva Commission was forced to quarentee the repayment of each individual loan to the Bank in order to obtain sufficient credit for the 1967-1968 agricultural cycle.

Although the directors of the Banco Agropecuaria are concerned that Plan Chontalpa should be a success, the Bank is essentially a commercial '*profit-oriented*' institution, and as such its operational philosophy does not accommodate the risk of extending loans without reasonable guarantees of repayment. Thus the Bank's inclination following the initial disappointing experience with credit was to decrease the volume of credit

issued and to cut down on the number of long-term loans until the peasants can offer more solid guarentees of loan repayment. On the other hand the Grijalva Commission insists that it cannot function adequately within these restrictions, and that '*sufficient*' credit is essential in order to obtain tangible results in increasing agricultural production.[26] Both the Bank and the Commission are being reasonable in their demands, for commercial banks are not charitable institutions and the Grijalva Commission must show results by 1970 (Government election year) if the Mexican Government is to continue substantial investment in Plan Chontalpa. The step taken by the Grijalva Commission of quaranteeing all loans granted to the peasants should be an effective temporary solution. However, it seems likely that this basic difference in attitude to credit of the Banco Agropecuaria and the Grijalva Commission will inevitably create further problems in the future, and doubts are raised as to the suitability of a commercial bank as the credit agent for a plan of this type. One possible solution might be to place the administration of credit in the hands of a joint committee comprising representatives of all the major Mexican banks. Thus, no one bank would be required to assume all the loan risks and the possibilities of negotiating long-term loans would be increased.

---

[26]Long-term loans are essential for tropical perennial crops due to the length of time that must lapse before any returns can be expected. In addition long-term loans are desirable for all crops, including annuals, in the first few years of a development project until the economic take-off point has been reached.

However, considerable progress was made in agricultural development in 1968, and credit was available for irrigated banana plantations,[27] sorghum, rice, maize and the seeding of pasture. Apart from irrigation of the banana plantations the introduction of widespread irrigation on the agricultural parcels has been postponed until after 1971, thus reducing the expected agricultural production levels for the first phase of the Plan.[28] The main reason given by the Grijalva Commission for this dephasing of irrigation is the Tabascan peasants' unfamiliarity with the basic principles of irrigation, necessitating the instigation of a long and intensive agricultural extension programme in order to achieve this successfully.[29]

---

[27]The banana plantations are the '*showpiece*' of the agricultural sector of Plan Chontalpa involving a sophisticated sprinkler irrigation system and mechanized packing plants. Each of the first five agricultural units has an area of well-drained soil set aside for plantations of the '*Valery*' banana which is resistant to the endemic Panama disease. The bananas are to be sold on the West German market as the result of a specially negotiated contract. Despite the considerable capital outlay involved, (Mexican $11,000 per hectare for irrigation and drainage works), the Commission expects to recoup their investment after a year of full production.

[28]Irrigation would reduce the risks involved in spring planting and would increase output by an estimated 62% in 14 years.

[29]Communication from La Comision del Grijalva to the Inter-American Development Bank, op. cit., p. 4.

However, it would seem likely that financial pressures have also contributed to the decision to '*dephase*' irrigation, since the Inter-American Development Bank funding (48% of the total) has not been increased although the revision of the Plan has widely expanded the scope of development operations. The Grijalva Commission seems to have realized that the peasants can only assimilate a limited quantity of new techniques at one time, and that undue haste in introducing planned innovations will only jeopardize the future of Plan Chontalpa.

The last sector in which work has progressed more slowly than was anticipated is the rehousing programme involving the relocation of the peasants in nucleated semi-urban villages. The delays in this sector can be attributed to two main reasons. Firstly, due to the Commission's lack of experience in the construction of low-cost housing, the first villages completed showed deficiencies in workmanship and house design,[30] and expenditure exceeded the assigned budget. However, the Commission learned from these mistakes and the new villages are being constructed with a modified house design which is both low-cost and better suited to the needs of the peasants. The construction programme was accelerated in 1968 and 19 villages complete with service installations are expected to be finished by 1970.

Secondly, the Grijalva Commission realized that the rehousing programme was more than a straight-forward physical

---

[30]The main complaint of the peasants occupying the new houses in the first village was that the kitchens were far too small for the average Tabascan family, (average size approximately 6.5 persons), and possessed inadequate outlets for smoke from the cooking stove.

construction project programme and had to be directly related to the attitudes and motivations of the peasants. In other words, the peasants could not be forcibly rehoused in order to meet the projected time schedule, and resettlement could only proceed after motivation had been aroused by an intensive programme of education which explained the aims of Plan Chontalpa and the benefits it would offer in terms the peasants could understand.[31]

The problem of stimulating achievement-motivation is critical to a self-help programme like Plan Chontalpa, since the Grijalva Commission aims to help the peasants to help themselves with a minimum of formal aid. Thus the active participation of the peasants in the construction of the villages is essential in order to foster self-reliance and a feeling of achievement. However, this means that construction work can only proceed as fast as achievement-motivation rises.

---

[31]The Grijalva Commission took care to gain the sympathy and cooperation of the local elite--the school teachers and the members of the ejidal council who helped in the explanation of the proposed innovations to the peasants. Most effective of all was probably the written propaganda put out by the Commission. This was in the form of a well-illustrated and carefully written pamphlet which appealed to the things which the Mexican peasant values most highly--his love for his country, his faith in the Revolution and his concern with the well-being of his family. (Published by La Comision del Grijalva, Villahermosa, Tabasco, 1964.) The success of this extension programme is evidenced by the fact that although residence in the new villages is optional, the majority of the peasants have chosen to participate in the programme.

In the beginning of the project efficiency was very low, since not only was construction work completely unfamiliar to the peasants, but in addition there is no tradition of cooperative labour in the Chontalpa. In order to be eligible for a house in the new villages each peasant is required to donate 50 days labour at making bricks and tiles, house construction or laying out drains and roads, as initial payment.[32] When construction first got underway many peasants contracted out their compulsory labour, preferring to pay others than to learn the skills themselves. This practice was obviously contrary to the aims of a self-help project and had to be discouraged. The Commission overcame the problem by introducing an '*individual incentive system*' whereby any work volunteered over the basic requirement is paid according to the minimum salary scale for the region with additional payment for overtime.[33] In addition, peasants who show aptitude are encouraged to acquire special skills such as carpentry, and receive the minimum wage during their training period. The peasants have responded enthusiastically to these incentives and construction operations are now running very smoothly.

Despite the setbacks outlined above it seems that, on the whole, Plan Chontalpa is achieving its goals and that

---

[32]The total cost of each house is Mexican $12,000 and payment is scheduled over a 25 year period.

[33]The minimum daily wage for unskilled labourers in Tabasco has risen from Mexican $15 for an eight hour day in 1966 to Mexican $18 in 1968.

generally the Grijalva Commission is acting wisely in the best interests of the peasants. Success is most evident in the sectors concerned with improving the conditions of peasant life and '*rehabilitating*' the population. However, it is too soon to speculate on the outcome of the project in economic terms since the expected '*take-off*' point has not yet been achieved.[34]

In any case the Grijalva Commission may find that in the long run the success of Plan Chontalpa may not be weighed in pesos or kilos, but in terms of the improvement in the '*quality*' of the population, for -

---

[34] It may be that the large-scale development project is already obsolete as a means of promoting economic development; since even if such a project achieves its economic goals there is no guarantee that the country as a whole will benefit to an extent which will justify such a large capital outlay. It seems that a more efficient way to promote development would be to concentrate both monetary and human resources on key problems, and to permit change in one sector to promote its own Revolution in its own time.

> The ultimate measure of success is not statistics of miles of roads built and irrigation canals dug, acres sown in particular crops, people made literate or vaccinated etc. as important as these things are. Rather the focus is upon what happens to the people themselves; whether or not they have greater confidence in themselves and their ability to solve their own problems and alleviate their needs without dependence on the government to do it for them, as is so often the case in underdeveloped countries; their willingness to invest their leisure and savings to attain their goals; and finally their capacity to govern themselves in the sense of building and maintaining local social, economic and political institutions appropriate to their own stage of development. 35

---

[35] James W. Green, "Community Development as Economic Development: The Rate of Value Orientations," Community Development Review, Vol. V, No. 3, p. 10.

CHAPTER III

FIELD METHODS

From this analysis of the current achievements of Plan Chontalpa, it is obvious that it is difficult to assess the impact of innovations in the beginning stages of a development project in terms of results achieved, as insufficient time has lapsed to allow any really meaningful conclusions to be drawn. However, it was suggested in Chapter I that there are distinct advantages to studying process itself, as opposed to the results of process operation, in the early stages of a development project. Thus, conditions were considered to be ideal for this study of want development as ".... the operative processes had been deliberately accelerated through planned change and were thus more readily identifiable."[1]

In order to obtain the most accurate measurement possible of the changes that have taken place in income and expenditure patterns, a detailed study of income and expenditure was undertaken in a sample group selected from peasants participating in Plan Chontalpa and a control group of peasants outside of the immediate project area.

The control group sample was essentially to provide a baseline for measurement of the full extent of changes in income and expenditure, forming the '*before*' segment of the total

---

[1]See Chapter I, p. 8.

'*before and after innovation*' picture. Thus the characteristics of the selected control group had to approximate as closely as possible those of the sample area selected, now designated Unit 28 of Plan Chontalpa, before the Plan began full-scale field operations in 1966.

Accordingly, selection of the control group was based on the following considerations -

a) distance from market town (Cardenas) - about 14 kilometers

b) reasonable accessibility to the major trunk road (La Carretera del Golfo) - within 2-3 kilometers

c) total population between 150 and 300 ejidatarios (no private property holders).

d) area of total ejidal landholdings - 1,000-2,500 hectares

e) economic conditions - traditional subsistence farming with some commercial production of sugar cane and cacao on a very small scale

f) social conditions - no electricity or piped water, services only available in market town, living conditions generally very poor (diet, health, etc.).

The ejido selected, Arroyo Hondo, met these conditions in all respects, except that it was several kilometers nearer Cardenas as it bordered on to the selected area within Plan Chontalpa.

The control sample was selected from a numbered list of ejidatarios holding official title to parcels in Arroyo Hondo, excluding '*squatters*' who had not yet made official application for ejidal rights.[2] A 10% random sample was drawn using a

random numbers table, yielding a sample of 18 persons out of the total population of 179 ejidatarios.

The '*Plan sample*' was selected from peasants occupying plots in Unit 28--the first agricultural unit in Plan Chontalpa to be completed, as sufficient time had lapsed since the initiation of intensive development works in this unit in Fall 1966, to permit the identification of considerable change in the traditional peasant way of life. A 10% random sample was selected using a random numbers table, yielding a sample of 26 out of the total population of 258 parcel holders in August 1967.[3]

Field methods essentially consisted of the use of work-sheets and questionnaires, combined with taped interviews and standard anthropological observation.[4] The use of questionnaires proved impossible in the control sample as the peasants were unaccustomed to talking to strangers other than the occasional Government agricultural agent, and were nervous and even hostile when subjected to formal questionning. Consequently, taped interviews were used exclusively in Arroyo Hondo. The interviews were completely informal, but were focused on income, assets and expenditure as closely as possible. Additional key

---

[2]The list of officially designated ejidatarios in Arroyo Hondo was obtained from the Cardenas office of the Department of Agrarian Affairs and Colonization.

[3]The Plan sample was selected from a numbered list of parcel holders in Unit 28 prepared by La Comision del Grijalva.

[4]See Appendix for examples of work sheets, questionnaires and tape transcripts.

informants, such as school-teachers and '*aged*' residents not included in the control sample, were interviewed to obtain information about the history of the ejido and recent changes in economic conditions and peasant way of life.

In the Plan sample a preliminary worksheet was used to supply background information on family composition, quality of population in terms of health and educational levels, and the extent of the change in the agricultural production and marketing system caused by the innovations of Plan Chontalpa. This initial survey was followed by a questionnaire on domestic and personal assets and main household expenditures. Information on agricultural assets and cash income earned was obtained from the records of the Grijalva Commission. Additional taped interviews were undertaken to examine the peasants' perception of the changes achieved by Plan Chontalpa, and their aspirations for the future, which contribute to an understanding of current want patterns.

Thus, in both the control and Plan sample groups data were collected under three headings--assets, income and expenditure. The data were tabulated and then compared in order to identify want patterns.

CHAPTER IV

THE CONTROL SAMPLE - EJIDO ARROYO HONDO

Socio-Economic Setting

The land now comprising the ejido Arroyo Hondo was first occupied by squatter settlers in the early 1930's. These peasants were all natives of the State of Tabasco: the majority were landless agricultural labourers who were unable to obtain ejidal plots in their own densely-settled municipios,[1] and moved into the Central portion of the Chontalpa north of Cardenas in search of unoccupied national lands. This area was relatively sparsely settled at this period due largely to the absence of waterways which provided virtually the only means of access in the Chontalpa, and the density of the forest cover which discouraged potential settlers from clearing the land for crop agriculture.

When the settlers were sufficient in number to meet the prescriptions of the Agrarian Code with respect to eligibility for ejidal land grants,[2] an application was made to the Government for the formal incorporation of Arroyo Hondo as an ejido. The official land grant of 1,556 hectares was made on September

---

[1] 'Municipio' - local administrative unit roughly equivalent to the North American county.

[2] The group of peasants making application for ejidal land must exceed 20 in number, and each must be over 16 years of age. A residence period of 6 months must be fulfilled before an application can be filed. The peasants may own small pieces of property, but they must work the land themselves and not rent it [Footnote 2 continued on page 51].

13th, 1939 benefitting 126 peasants. This allocation was later extended by 250 hectares on March 25th 1957 involving 28 peasants, bringing the total of officially designated ejidatarios to 150 with an average land holding of 10 to 14 hectares per capita. A further 25 peasants are occupying a 300 hectare extension of the ejido and are currently awaiting official confirmation of their ejidal status, bringing the total population of Ejido Arroyo Hondo to 179 as of August 1968.[3]

Interviews with pioneer ejidatarios indicate that the original settlers of the Ejido were almost completely dependent on subsistence agriculture, producing solely for domestic consumption and selling produce only in rare years of plenty. The two sugar mills in the municipio of Cardenas were already in existence in the 1930's, but these were operating on a very small scale drawing on cane grown on private properties only, since the ejidatarios were unable to become involved in cash-crop production due to the lack of access roads. Similarly cacao was grown only on private properties and sold directly to agencies in Villahermosa, the State Capital. The precarious nature of subsistence peasant agriculture in Arroyo Hondo was intensified by the low altitude of the terrain which almost invariably flooded in the rainy season until the Grijalva

---

[2](Continued) out to tenants. Source: Codigo Agrario de los Estados Umdos Mexicanos, Article 54, Medina Hermanos, Mexico, D.F., 1965.

[3]Data supplied by courtesy of the Departmento de Asuntos Agrarios y Colonizacion: Comité Regional Campesino, Cardenas, Tabasco, August 1968.

Commission instituted flood-control works in the early 1960's. The privations suffered by these early settlers are vividly illustrated by the words of the current ejidal president who first settled in Arroyo Hondo in 1933.

> To survive in Arroyo Hondo in those days you had to get used to water--walk, work and swim in water and eat water as well as drink it--there wasn't anything else to eat. What chance did we have to improve ourselves and our land? We were too busy trying to keep our heads above water. 4

Thus, until the last decade there was little dynamism in the economy mainly due to the lack of economic alternatives available. The peasants produced and consumed the basic staples --maize and beans and very little else. Climatic hazards and the use of virtually pre-Columbian tools and techniques resulted in low productivity which made it impossible for the peasant to accumulate capital for reinvestment in the land. He was too concerned with keeping the spectre of hunger one step away from his front door to be able to break the vicious circle of poverty which inevitably surrounds the subsistence agriculturalist. However, within the last ten years the embryo of a cash crop economy has been grafted on to the subsistence economic base though the peasants still rely heavily on subsistence agriculture to feed their families.

The recent development of cash-crop agriculture is largely the product of the organization of producers' co-operatives

---

[4]Interview with Francisco Vazquez Solis, President of Ejido Arroyo Hondo, Tuesday, September 10th, 1968.

for the sale of cacao to the Cardenas factory in 1959, and the stimulation of the sugar industry through Government subsidies and the consequent expansion of the two sugar mills in the municipio of Cardenas. However, the impact of these developments would have been relatively limited without the flood control and road construction works of the Grijalva Commission. As stated on page 30 -

> The extent to which the peasants are involved in cash-crop production is largely a function of their location relative to the main access routes, the local market centres and the sugar mills and cacao factory in the municipio of Cardenas.

Ejido Arroyo Hondo is located only 14 kilometers from Cardenas and three new access roads have been built by the Grijalva Commission to service flood control works. Consequently, compared with much of the Chontalpa, this ejido has an extremely favourable location for the development of cash-crop production and very few of the ejidatarios are solely dependent on subsistence agriculture. However, although all the peasants in Arroyo Hondo are involved in a monetary economy to some extent since they frequently sell surplus produce over and above their household needs, only about half of them can be regarded as cash-crop farmers with primarily commercial production motives. These cash-crop farmers are principally engaged in the production of cane and cacao, the two crops for which processing facilities are available locally, with coffee and bananas as subsidiary cash-crops. Commercial sale of these crops on any

appreciable scale is dependent on the ease of accessibility for transporter trucks. Thus, the degree of involvement in cash-crop production of the Arroyo Hondo ejidatarios varies according to the location of holdings relative to the truck access roads rather than with the actual distance from the market centre, Cardenas, as the crow filies, (See Table 7).

Despite the recent nature of these developments in cash-crop agriculture, the impact has been considerable and it would appear that more change has taken place in the economic system in the last decade than in all the 25 years since the original settling of the ejido. Cash income has increased considerably and the peasants no longer suffer the extreme hardships of the early years. However, cash-crop production is still conducted on a very small scale within the traditional framework of peasant agriculture and with all the limitations that entails, and with a few exceptions cash income earned from crop sale is small and sporadic and has not yet achieved much impact on the standard of living and want patterns.

Assets, Income and Expenditure

In order to identify wants and clarify the relationship between peasant income and expenditure in Arroyo Hondo, a survey was undertaken of a sample group of 18 households. Data were collected under three headings - assets, income and expenditure. and are tabulated in the following pages to facilitate comparisons between the sample components. Table 4 summarizes the relevant background data concerning the household as the main

TABLE 4

CONTROL SAMPLE-PERSONAL DATA

Household Sample	Age of Family Head (in years)	Sex	Length of Residence in Arroyo Hondo (in years)	Former Place of Residence	Number of Children	Total Number of Household Residents[1]
1	42	M	34	Rancho[2] in Cunduacan	8	13
2	56	M	35	Rancho in Villahermosa	9	9
3	48 20 [3]	F M	25 20 (life)	Cardenas	8	8
4	42	M	25	Rancho in Comalcalco	12	8
5	28	M	28 (life)	-	4	6
6	55	M	55 (life)	-	15[4]	5
7	48	M	28	Small Priv Pr Huimanguillo	9	4
8	60	M	60 (life)	-	5	2
9	38	M	38 (life)	-	12[4]	8
10	32	M	32 (life)	-	8	10
11	39	M	20	Rancho in Comalcalco	16[4]	11
12	22	M	22 (life)	-	4	6
13	49	M	30	Villahermosa	23[5]	9
14	54	M	34	Rancho in Cunduacan	8	7
15	30	M	30 (life)	-	5	8
16	40	M	25	Rancho in Cardenas	7	5
17	55	M	30	Ejido in Huimanguillo	20[4]	8
18	27	M	27 (life)	-	2	4

[1]The large number of residents per household is due in many cases to the extended family residence pattern whereby the typical household consists of the nuclear family (husband, wife and children) plus married children and their offspring and/or one or both parents of the husband and wife.

TABLE 4 Footnotes continued.

[2]Rancho - private property of moderate size - rarely exceeding 100 hectares in the Chantalpa. All of the peasants in this sample giving a "rancho" as their former place of residence (or their fathers' where applicable) were employed as day-labourers (or peons) and were not themselves land holders.

[3]It is very unusual for a woman to be head of a household. This woman was left a widow 10 years ago with 8 small children. She retained control of the household until her oldest son, now 20, was old enough to take charge, and she still is effective head although her son is nominally so.

[4]Four men in this sample have two wives and thus maintain two separate households. Only one man (head of household number 5) is legally married. The others all have common law spouses.

[5]This man is now living with his forth wife, the other three having died in child-birth. The current wife is only 16 years old. Generally the wives are from 5 to 20 years younger than their husbands.

unit of production and consumption, and should be borne in mind when examining the subsequent tables.

Assets

Assets can be regarded both as the source from which wealth is generated, and the tangible expression or reservoir of wealth possessed--the result of income received. Thus assets may be regarded as both cause and effect, providing a combined index of potential income and past expenditures. For this reason assets must first be evaluated before any attempt can be made to consider the relationships between income and expenditure. Evaluation of assets is of especial significance in this paper which aims to study peasant use of wealth in order to identify patterns of want satisfaction, since peasants reckon wealth in terms of assets accumulated rather than money income.

Just as peasants possess a different concept of wealth from '*modern*' economic systems, assets are also regarded as including a far wider range of items than is common in '*modern*' economies. Thus, the term '*asset*' as used in this paper is very broadly defined, and is taken to signify anything owned by the peasant or any resource or advantage to which the peasant has access which has economic value, even though this value may not be readily apparent or quantifiable in monetary terms. Consequently, the assets considered in this survey include labour units per household, location of land holding relative to access roads, and health and educational levels, as well as

the more obvious tangible economic assets--houses and their appointments, domestic and personal possessions, and crops and livestock.

Table 5 shows the total crop and domestic animal assets held by the eighteen households in the sample, together with the size of land holdings which can also be regarded as an asset. The crop and animal statistics refer to the agricultural cycle from October 1967 to September 1968, that is, from immediately after the 1967 maize harvest to the 1968 harvest. The maize cycle was selected as the baseline for annual estimates of all data rather than sugar cane, the other main field crop, since field surveys indicate that despite the recent increases in cash-crop agriculture nearly three-quarters of the Arroyo Hondo ejidatarios grow most of the maize needed for household consumption, whereas only one-third grow cane for sale.[5]

Households 1 and 7 on Table 5 have not produced any maize since the cacao cooperatives were organized in 1959, since revenue from the sale of cacao is sufficient to enable them to buy all the food required by the household. Similarly, households 3, 4, 6, 14 and 17--all of which are cane growers, have not grown any maize since they became involved in cash-crop production. However, the remaining 11 households including cash

---

[5]In the agricultural cycle 1967-1968, 56 ejidatarios in Arroyo Hondo were growing cane for sale to the sugar mill on 261 hectares of land. Information volunteered by the Ingenio Santa Rosalia, Cardenas, June 1968.

TABLE 5

CONTROL SAMPLE-CROPS AND DOMESTIC ANIMALS
(September 1967-August 1968)

Household Sample	Size of Holding (Hectares)	Acahual [1] (Low Rotation Scrub (Hectares)	Monte (High Rotation Forest (Hectares)	Milpa Maize Clearings (Hectares) [2]	Beans (Hectares)	Sugar Cane (Hectares)	Rice (Hectares)	Natural Pasture (Hectares)	(Hectares (h) or trees (t) in production)			(Average yearly total)			
									Cacao	Coffee	Bananas	Horses	Cattle	Pigs	Turkeys (t) Chickens (c)
1	12	2	-	-	-	-	-	4	6 (h)	-	-	-	20	4	80 (c)
2	11	1	1	4½	½	-	-	-	3½ in cacao, coffee and bananas (h)			-	-	2	20 (c)
3	11	1½	-	-	-	8	-	-	1 (h)		½ (h)	-	-	-	-
4	9	-	1	-	-	7	-	-	1,500 (t)	1,500 (t)	800 (t)	1	-	-	15 (c) 4 (t)
5	12 (estimate)	4	2	1	½	1	-	2	800 (t)	-	-	1	-	3	50 (c) 15 (t)
6	12	-	-	-	-	10	-	-	2 (h)	-	-	-	-	4	15 (c)
7	12	-	-	-	-	-	-	-	2,251 (t)	891 (t)	2,404 (t)	1	-	7	300 (c)
8	12	1½	-	1½	-	5	-	2	-	300 (h)	300 (h)	-	18	1	100 (c)
9	10	4½	2	2	½	-	½	-	-	-	½ (h)	-	-	2	50) c)
10	14	6	1	4	½	-	2	½	-	-	-	1	-	-	20 (c) 2 (t)
11	9	5	2	1	-	-	-	-	500 (t)	-	200 (t)	-	-	1	10 (c)
12	10	4	-	1	-	2	-	-	800 (t)	250 (t)	½ (h)	-	-	2	-
13	12	6	1	1	-	-	-	4	-	-	-	1	16	1	30 (c)
14	12	4	1½	-	-	4	1	-	1½ (h)	½ (h)	½ (h)	-	-	-	-
15	9	5	1	1	-	-	2	1	½ (h)	-	-	-	-	-	7 (c) 2 (t)
16	11	3	1	3	½	-	½	-	1,500 (t)	300 (t)	700 (t)	-	-	2	16 (c)
17	12	5	1	-	-	6	-	-	-	-	-	1	-	2	30 (c)
18	12	2	2	1	½	2	½	2	1,500	-	-	-	-	1	12 (c)

[1] The acahual (or low rotation scrub forest) includes a variety of assorted tropical fruits such as orange, lemon, avocado, mango, coconut, palm, etc., which are consumed on occasion by the household, but rarely sold.

[2] These area totals represent two maize crops, the summer crop planted in early May and the Fall/Winter crop planted in late September. The only agricultural implements used are the digging-stick (for seeding) and the hoe, machete and spade (for preparing the land and weeding). No insecticides or fertilizers are used and yields per hectare are low, rarely exceeding one ton. Cash-crop production of maize is restricted largely by the peasant's lack of adequate storage facilities, and in many cases the store put by for the family is eaten by rodents or grows fungus before it can be consumed.

crop producers regularly cultivate milpa (maize clearings), and their economic horizons are still primarily focussed on the maize cycle. In the case of households 5, 8, 12 and 18 who produce cash-crops as well as maize, the cultivation of maize may be motivated by psychological dependence on this traditional subsistence crop rather than by economic necessity, since the household heads all showed great alarm when asked if they would consider devoting all their energies to cash-crop production and abandoning maize cultivation completely. The head of household 8 made this point vividly as follows -

> Even though we have 5 hectares of cane now I will never abandon my milpa. You can't live on sugar cane can you? What would happen if they won't buy my cane any more? I don't trust those old goats in the sugar mill; that's just the sort of thing they would do--cut me off without a cent. Anyway, we've always grown maize, we live from maize, if we don't have maize we don't have anything. We've got to feed the animals too. Buy maize? --no I'd never buy maize. How do you know they aren't cheating you on the price. The only right way is for a man to have his own milpa, then he's secure, he can stand on his own feet ... he's a man. [6]

Domestic animals supplement family income and act as insurance policies against possible future hardships and unexpected expenditures. Up until two years ago every household owned household owned some poultry for it is relatively inexpensive to feed and even the poorest households were able to have a couple of chickens to fall back on. However, the

---

[6] Interview with Frederico Lopez Velazquez, September 8th, 1968.

number of households with poultry and the number of poultry per household has decreased considerably since that date due to recurrent outbreaks of fowl pest, which has considerably increased the poorer peasants' operating risks. In particular egg production has been affected which formerly provided small but regular cash income, since eggs are nearly always sold rather than consumed by the household because of the high price per egg in Tabasco, (60 Mexican cents per egg).

Ownership of pigs, cattle and horses is more restricted because purchase requires initial capital, and only the wealthier households can afford any appreciable number.

The statistics quoted for livestock represent peasant estimates of the average number of domestic animals owned during the agricultural year. The figures given for horses, cattle and pigs are accurate, and the peasants are well aware of the exact number of these valuable animals that they possess. However, the chicken estimates are extremely rough, especially where larger numbers are involved, since many peasants do not bother to count the exact number, (if indeed they can count that high), and in any case the number fluctuates considerably throughout the agricultural year depending on household needs.

Table 6 specifies the number of units of adult male labour per household. This '*asset*' is critical to agricultural production, especially of field crops such as maize and cane, in which the amount of land a peasant can plant is essentially dependent on the amount he can clear of the forest or scrub vegetation. Thus, households with the greatest number of adult

TABLE 6

CONTROL SAMPLE-LABOUR UNITS
PER HOUSEHOLD

Household Sample	Units of Adult Male Labour per Household [1]	Household Sample	Units of Adult Male Labour per Household
1	3	10	3
2	3	11	3
3	2	12	1
4	4	13	1
5	1	14	3
6	2	15	1
7	4	16	2
8	1	17	3
9	2	18	1

[1]Youths over 16 years of age are regarded as adult males.

male labour units will be able to clear and plant proportionally more land and consequently will possess more crop assets. The extended family residence pattern exhibited by many households often increases the number of labour units per household and is thus regarded as an advantage rather than a burden.

Table 7 summarizes data on house location relative to access roads and house appointments in terms of construction, water source and outbuildings. House location relative to road access is also critical to agricultural production, as it is the dominant influence as to whether or not cash-crops can be cultivated by the household (See paragraph 3, page 30). Thus, house location can logically be regarded as an asset since it is, as is labour units--"(a) resource or advantage to which the peasant has access which has economic value."[7]

The house itself is obviously a material asset, and the assessment of age and state of repair, together with the description of construction materials used, interior room partitioning, water source and outbuildings, provides both an indication of the value of the house and the wealth of the occupants.

Tables 8 and 10 must be considered together, since Table 8 is a key outlining the point values assigned to domestic assets, which are totalled in Table 10 to show the variation bwtween the sample households in type, quantity and '*value*' of domestic assets. The point ranking outlined in Table 8 is weighted according to a subjective assessment of the utilitarian

---

[7] See definition, page 57.

TABLE 7

CONTROL SAMPLE-HOUSE LOCATION AND APPOINTMENTS

Household Sample	House Location		Age of House (Years)	State of Repair	Roofing	Walls	Floors	Windows	Doors	Rooms	Water Source	Outbuildings
	Km from Trunkroad	Km from Accessroad										
1	0	-	3	Excellent	Aluminum	Concrete brick	Cement	2	Rustic wooden	3(wooden partitions)	Well with hand pump	Rustic kitchen and 2
2	½ by footpath	-	8	Poor	Palm thatched	Cane	Earth	-	Rustic wooden	2(cane partitions)	Ditch	Rustic kitchen and rustic barn
3	2	0	9	Very poor	Palm thatched large holes	Cane	Earth	-	Rustic wooden	2(cane partitions)	Well	New concrete brick house under construc)
4	3	0	5	Very good	Aluminum(crops stored under roof)	Cane (front wall wood faced)	Earth	2	2 Rustic wooden	3(solid wood partitions)	Well with hand pump	Rustic kitchen
5	4	1 by foot-path	12	Very poor	Palm thatched mostly holes	Cane	Earth	-	-	1	Creek ½km away	Rustic kitchen
6	2	½	3	Excellent	Aluminum	Concrete brick	Cement	2	Cement porch	1(rustic cooking exten.)	Well with hand pump	Rustic barn
7	3	1 by jeep trail	4	Excellent	Aluminum	Concrete brick	Cement	2	Cement veranda	4(cement partitions	Well with hand pump	Rustic kitchen
8	2½	½	7	Fair	Palm thatched	Cane	Earth	-	2 curtains, 1 cane door	1	Creek ½km away	-
9	2	1 by foot-path	3	Very poor	Palm thatched	Cane	Earth	-	Rustic wooden	1	Well	-
10	4	1½ by foot-path	8	Fair	Palm thatched	Cane	Earth	-	Rustic wooden	1	Creek at back door	Rustic kitchen and barn
11	0	-	5	Good	Palm thatched	Cane	Earth	-	Curtains	3(cane partitions	Lake ½km away	Rustic kitchen
12	1	0	6	Fair	Aluminum	Cane (front wall wood faced)	Earth	1	Rustic wooden	2(wood partitions)	Well	Rustic kitchen and barn
13	5	2 by foot-path	8	Very poor	Palm thatched	Cane	Earth (mud)	-	-	1	Creek through back door	-
14	½	0	3	Very good	Aluminum	Concrete brick	Cement	2	Rustic wooden	3(cement partitions	Well with hand pump	Rustic kitchen
15	1½ by path in swamp	-	7	Poor	Palm thatched	Cane	Earth	-	-	1	Swamp	-
16	0	-	3	Good	Palm thatched	Cane	Earth	-	Rustic wooden	3(cane partitions)	Drain	Rustic kitchen and barn
17	2	0	4	Very good	Cement tiles	Concrete brick and plaster	Cement	2	Rustic wooden	3(cement partitions)	Well with hand pump	Rustic kitchen
18	¼ by jeep trail	-	9	Fair	Palm thatched	Cane	Earth	-	Curtain	1	Well	-

TABLE 8

CONTROL SAMPLE-POINT VALUES FOR RANKING OF DOMESTIC ASSETS (See Table 10)

Point Values	Utilitarian Items	Prestige Items
6		Refrigerator
5		Gas stove Bed (store bought)
4	Bed (home-made wooden with store-bought mattress)	Sewing machine Bicycle Table knife
3	Bed (without store-bought mattress)	Chair (store bought) Table (store bought) Saucepan Table fork Casserole Radio Gun
2	Table (rustic) Petrol lamp Wicker basket Shelves Cupboard Hammock Aluminum bucket Jug Curtain	Table-spoon
1	Chair (rustic) Bench Reed sleeping mat Clothes storage box Rustic cooking stove (fogon) Earthenware or aluminum cooking pot Earthenware or aluminum bowl Mug or cup Plate Plastic bucket	

TABLE 9

AVERAGE RETAIL PRICE OF SELECTED 'PRESTIGE' ITEMS
QUOTED BY CARDENAS STORE KEEPERS (August 1968)

Point Value	Item	Retail Price $ Mex.
6	Refrigerator	3,500
5	Gas stove	900
5	Cupboard	500
5	Box spring bed	1,200
4	Folding metal frame bed with mattress	700
4	Bicycle	400-700
3	Chair (kitchen)	100
3	Table (kitchen)	600
3	Radio (transistor)	250
3	Clock (alarm)	90
3	Gun	300
3	Pistol	120

TABLE 10

CONTROL SAMPLE-HOUSEHOLD RANKINGS
OF DOMESTIC ASSETS

Household Sample	Data (Point Ranking in Brackets)	Point Total
1	4 rustic chairs (4), 1 bench (1), 1 rustic table (2), 1 store-bought table (3), 1 sewing machine (4), 1 petrol lamp (2), 1 cupboard (2), 1 set shelves (2), 4 hammocks (8), 1 rustic bed (3), 4 storage boxes (4), 1 rustic stove (1), 4 aluminum cooking pots (4), 1 aluminum bucket (2), 2 casserole dishes (6), 2 plates (2), 4 mugs (4), 2 spoons (4), 1 radio (3), 2 sleeping mats (2), 1 bicycle (4), 1 gun (3).	70
2	2 rustic chairs (2), 1 bench (1), 1 rustic table (2), 1 petrol lamp (2), 5 hammocks (10), 1 rustic cooking stove (1), 3 storage boxes (3), 1 wicker basket (2), 2 curtains (4), 3 aluminum cooking pots (3), 1 aluminum bucket (2), 4 plates (4), 2 mugs (2), 1 spoon (2), 2 sleeping mats (2).	42
3	3 rustic chairs (3), 1 rustic table (2), 1 petrol lamp (2), 1 cupboard (2), 1 set shelves (2), 3 hammocks (6), 1 rustic cooking stove (1), 1 earthen cooking pot (1), 2 aluminum bowls (2), 1 jug (2), 4 plates (4), 4 mugs (4), 2 spoons (4), 1 radio (3), 2 sleeping mats (2), 1 bicycle (4).	44
4	3 rustic chairs (3), 2 store-bought chairs (6), 1 store-bought table (3), 1 rustic table (2), 1 petrol lamp (2), 1 cupboard (2), 1 cupboard (2), 1 set shelves (2), 4 hammocks (8), 4 storage boxes (4), 1 rustic cooking stove (1), 1 mug (1), 3 aluminum cooking pots (3), 1 jug (2), 1 sleeping mat (1).	40

TABLE 10 - continued.

5	1 rustic chair (1), 1 rustic table (2), 1 sewing machine (4), 1 hammock (2), 1 rustic cooking stove (1), 1 storage box (1), 2 earthen cooking pots (2), 1 plate (1), 1 mug (1), 1 radio (3), 2 sleeping mats (2).	20
6	3 rustic chairs (3), 2 store-bought chairs (6), 1 store-bought table (3), 1 rustic table (2), 1 sewing machine (4), 1 petrol lamp (2), 4 hammocks (8), 1 rustic cooking stove (1), 2 storage boxes (2), 2 aluminum cooking pots (2), 1 aluminum bucket (2), 4 mugs (4), 4 spoons (8), 1 saucepan (3), 1 bicycle (4), 1 gun (3).	57
7	4 rustic chairs (4), 4 store-bought chairs (12), 1 store-bought table (3), 1 rustic table (2), 1 sewing machine (4), 4 hammocks (8), 1 cupboard (2), 2 sets shelves (4), 2 storage boxes (2), 1 rustic cooking stove (1), 1 gas stove (5), 1 rustic bed with store-bought mattress (4), 1 store-bought bed (5), 2 petrol lamps (4), 5 mugs (5), 2 cups (2), 2 table knives (8), 6 plates (6), 4 forks (12), 8 spoons (16), 2 sleeping mats (2), 2 bicycles (8), 2 radios (6), 4 aluminum cooking pots (4), 2 jugs (4), 1 aluminum bowl (1), 1 aluminum bucket (2), 1 casserole (3), 1 gun (3).	142
8	1 rustic chair (1), 1 hammock (2), 1 storage box (1), 1 rustic cooking stove (1), 1 cup (1), 1 spoon (2), 1 sleeping mat (1), 2 aluminum cooking pots (2), 1 plastic bucket (1).	12
9	2 rustic chairs (2), 1 rustic table (2), 2 hammocks (4), 4 storage boxes (4), 1 rustic cooking stove (1), 1 petrol lamp (2), 2 mugs (2), 2 plates (2), 2 spoons (4), 4 sleeping mats (4), 3 aluminum cooking pots (3), 1 jug (2), 1 plastic bucket (1).	33

TABLE 10 - continued.

10	1 rustic chair (1), 1 bench (1), 1 rustic table (2), 1 petrol lamp (2), 3 hammocks (6), 1 rustic bed (3), 3 storage boxes (3), 1 rustic cooking stove (1), 2 earthern cooking pots (2), 1 plastic bowl (1), 2 mugs (2), 1 radio (3), 4 sleeping mats (4).	31
11	3 rustic chairs (3), 1 rustic table (2), 1 store-bought table (3), 1 petrol lamp (2), 4 hammocks (8), 1 set shelves (2), 2 storage boxes (2), 1 rustic cooking stove (1), 4 aluminum cooking pots (4), 1 rustic bed (3), 1 jug (2), 6 mugs (6), 2 plates (2), 3 spoons (6), 5 sleeping mats (5), 1 wicker basket (2), 2 curtains (4).	57
12	2 rustic chairs (2), 2 store-bought chairs (6), 1 rustic table (2), 1 sewing machine (4), 1 petrol lamp (1), 2 hammocks (4), 1 cupboard (2), 1 set shelves (2), 1 storage box (1), 1 rustic cooking stove (1). 1 radio (3), 1 saucepan (3), 2 aluminum cooking pots (2), 1 plastic bucket (1), 2 plates (2), 2 mugs (2), 1 spoon (2), 3 sleeping mats (3).	44
13	1 bench (1), 1 rustic table (2), 2 hammocks (4), 4 storage boxes (4), 1 rustic cooking stove (1), 1 mug (1), 1 spoon (2), 6 sleeping mats (6), 2 aluminum cooking pots (2), 1 plastic bowl (1), 1 plastic bucket (1).	25
14	4 rustic chairs (4), 2 store-bought chairs (6), 1 rustic table (2), 4 hammocks (8), 1 cupboard (2), 2 set shelves (4), 4 storage boxes (4), 1 rustic cooking stove (1), 1 rustic bed with store-bought mattress (4), 1 petrol lamp (2), 4 mugs (4), 4 plates (4), 2 forks (6), 4 spoons (8), 4 sleeping mats (4), 1 plastic bucket (1), 1 aluminum bucket (2), 1 bicycle (4), 3 aluminum cooking pots (3), 1 plastic bowl (1), 1 jug (2), 1 gun (3).	79
15	1 rustic chair (1), 1 rustic table (1), 1 hammock (2), 2 storage boxes (2), 1 rustic cooking stove (1), 3 sleeping mats (3), 1 plastic bucket (1), 2 aluminum cooking pots (2).	13

TABLE 10 - continued.

16	2 rustic chairs (2), 1 rustic table (2), 2 hammocks (4), 1 set shelves (2), 2 storage boxes (2), 1 rustic cooking stove (1), 1 rustic bed with store-bought mattress (4), 1 petrol lamp (2), 3 mugs (3), 2 plates (2), 3 spoons (6), 1 plastic bucket (1), 1 plastic bowl (1), 1 radio (3), 1 bicycle (4), 2 aluminum cooking pots (2), 1 jug (2), 2 sleeping mats (2), 2 curtains (4), 1 saucepan (3).	52
17	1 rustic chair (1), 1 store-bought table (3), 2 store-bought chairs (6), 1 rustic table (2), 2 hammocks (4), 1 cupboard (2) 2 set shelves (4), 1 rustic cooking stove (1), 2 petrol lamps (4), 1 store-bought bed (5), 4 mugs (4), 4 plates (4), 4 spoons (4), 4 aluminum cooking pots (4), 2 radios (6), 1 bicycle (4), 4 sleeping mats (4), 1 aluminum bucket (2), 1 plastic bowl (1), 1 saucepan (3), 1 gun (3).	76
18	3 rustic chairs (3), 1 rustic table (2), 2 hammocks (4), 1 set shelves (2), 2 storage boxes (2), 1 petrol lamp (2), 1 rustic cooking stove (1), 1 mug (1), 2 plates (2), 1 spoon (2), 1 aluminum cooking pot (1), 1 radio (3), 1 plastic bucket (1), 1 sleeping mat (1).	27

and prestige value awarded to domestic assets by the peasants themselves. The prestige items are not regarded as basic necessities for a '*tolerable*' life by peasant standards, but as luxuries evidencing a wealthy household. Consequently these items are awarded a high point ranking in this assessment. Similarly, items with a high utilitarian value are also given high ranking. The low ranking items are those regarded as relatively easily obtainable basic necessities by the peasants. Table 9 gives average retail prices quoted by Cardenas storekeepers for selected prestige items. Table 10 facilitates the rapid assessment of the wealth of a household in terms of domestic assets accumulated, (the wealthier the household the higher the point total assigned), and provides the foundation for a later assessment of wants with respect to domestic assets which will be inferred from the asset patterns presented in this table.

Table 11 summarizes '*intangible*' assets related to the quality of the sample population--literacy and health, and includes a list of recreations enjoyed by each household which is a good indicator of the cultural quality of the population. The remaining two columns itemize the number of changes of clothing and pairs of shoes per household member, which are material assets evidencing the wealth of the household. The number of pairs of shoes per household member is also directly related to the health of the family in many cases, since parasites such as hookworm are contracted by walking barefoot in tropical regions,

TABLE 11

CONTROL SAMPLE-QUALITY OF POPULATION, SELECTED EXAMPLES

House-hold Sample	Literacy		Health of Family	No. of Changes of Clothing	Pairs of Shoes per Household Member	Recre-ations
	Husband	Wife				
1	c/d	d	u(13),v (1),y(1)	H-1,W-1	--	i,j,l,m
2	b	d	u(6),z(1)	H-3,W-2	H-2	m,o
3	c (head)	c	u(1)	W-2,C^{1}-5 C^{2}-3,C^{3}-3	C^{1}-4,C^{2}-1 C^{3}-1	i,k,l,m n,o,p
4	c	d	u(4),w(1) z(1)	H-2,W-1 C-1	H-1	j,m,p
5	c	c	u(6)	H-1,W-0	H-1	i,l,m
6	c	d	u(3),z(1)	H-2	H-1	l,m,o,p
7	a		u(1)	H-3,C^{1}-5 C^{2}-4,C^{3}-4	H-2,C^{1}-4 C^{2}-2,C^{3}-2	i,k,l,m n,o,p
8	c/d	d	u(2),x(1)	H-2,W-2	H-1	--
9	c	d	u(7),v(1)	H-1	--	j,m
10	c	c	u(10),z(1)	H-1	--	i,p
11	b	c	u(4)	H-2,W-1	H-2,W-1	k,l,m,o,p
12	b	c	z(2)	H-4,W-4 C^{1}-2	H-2,W-2 C^{1}-1	i,k,l,m, n,o,p
13	d	d	u(9),z(4)	H-1	--	--
14	b	d	u(2),w(1)	H-3,W-2 C^{1}-1	H-2,W-1 C^{1}-1	l,m,o,p
15	c/d	c/d	u(8)	--	--	--
16	c	c/d	z(3)	H-2,W-1	H-1	i,j,o
17	c	d	u(3),y(1)	H-3,W-2 C^{1}-3	H-2,W-1 C^{1}-2	i,k,l,m,p
18	b	c/d	z(2)	H-3,W-3	H-2,W-2	i,k,l,m,p

Coding Key for Sample of Quality of Population:

H - Husband, W - Wife, C - Children

Literacy

a - reads and writes fluently
b - reads and writes with average competence
c - reads and writes haltingly
c/d - reads haltingly, writes name only
d - illiterate

Health

u - parasites
v - anaemia
w - malaria
x - chronic bronchitus
y - T.B.
z - sickness unidentified

Recreations

i - listen to radio
j - read Bible and religious books
k - read magazines or newspapers
l - go to cinema
m - religious or national fiestas
n - sports (baseball, football participation)
o - walk to town
p - drinking

and there is a strong correlation between the number of household members who do not wear shoes and the number with parasites.

Literacy, health and recreations are codified to facilitate inter-household comparisons. The various components, included under '*quality of population*' can thus all be regarded as assets in that they are a direct or indirect reflection of wealth, or are in some way related to agricultural production and productivity. Health in particular can be regarded as a direct economic asset since poor health is extremely likely to be reflected in low agricultural productivity. Literacy, and recreation as an index of cultural '*quality*', have more tenuous links with economic considerations.

Income

Cash income is derived primarily from the sale of crops, either cash-crops or surpluses above basic subsistance requirements. Some additional income is obtained from the sale of livestock and livestock produce, but the sale of poultry and eggs is now relatively unimportant due to the recent outbreaks of fowl-pest. Agricultural wage labour is another supplement to household income, but this is very sporadic and is only undertaken in the months of July and August when the peasants have little work in their own land parcels, or when ready cash is desperately needed to meet some emergency. In the household sample only two households, numbers 7 and 13, received any cash income from agricultural wage labour, and in both cases earnings did not exceed $300 Mexican and the work was undertaken by youn-

ger sons who wanted to obtain pocket money and thus did not enter into the household budget.

A small number of households in the ejido supplement their cash income with money earned from part-time employment in non-agricultural work as skilled artisans--carpenters, tilers, blacksmiths,etc. The head of household number 13 earns between $1,000 and $1,500 (Mexican) in a year from spare time work as a tiler, which adds considerably to his meagre income from the sale of surplus subsistence agricultural produce.

Finally, several small money-making enterprises are undertaken by the women. The wives in households 2 and 10 sell tortillas to their neighbours; the wife in household 11 sells garden products such as chile, fruits and vegetables in Cardenas; and the wife in household 1 has a sewing machine and makes up clothes to order. However only the seamstress earns more than $100 (Mexican) from this spare time work

Table 12 contains estimates of cash income earned from the sale of crops and domestic animals and their produce during the 1967-1968 agricultural cycle, (October 1967-September 1968). The figures quoted for income received from crop sale are generally accurate to within $50 (Mexican), however no statistics could be computed for income from the sale of domestic animals due to the very rough nature of the data presented in Table 5. In any case, the rearing of domestic animals for sale is not a regular commercial enterprise in any of the sample households, as the animals are killed and sold only when emergencies or unforseen expenditures arise. Even household 7, which owns 300

TABLE 12

CONTROL SAMPLE-ESTIMATES OF CASH INCOME EARNED FROM SALE OF CROPS AND DOMESTIC ANIMALS, 1967-68

House-hold Sample	Cacao (Amount Sold in Kilos)	(Cash from sale in $ Mexican[1]	Cane (Amount Sold in tons)	(Cash from sale in $ Mex. [2]	Maize (Amount Sold in Kilos)	(Cash from sale in $ Mex. [3]	Bananas (Amount Sold in Kilos	Cash from Sale in $ Mex. [3]	Coffee (Amount Sold in Kilos)	Cash from Sale in $ Mex. [3]	Rice (Amount Sold in Kilos	Cash from Sale in $ Mex. [3]	Eggs No.	Cash from Sale in $ Mex. [3]	Total Cash Income Earned $ Mexican
1	1,000	5,000	-	-	-	-	-	-	-	-	-	-	65	39	5,039
2	800	4,000	-	-	300	165	1,800	360	-	-	-	-	-	-	4,525
3	50	250	960	21,510	-	-	500	100	-	-	-	-	-	-	21,860
4	650	3,250	840	18,900	-	-	2,000	400	-	-	-	-	-	-	22,550
5	500	2,500	120	2,700	-	-	-	-	-	-	-	-	-	-	5,200
6	80	400	1,000	22,500	-	-	-	-	-	-	-	-	-	-	22,900
7	2,217	11,087	-	-	-	-	3,628	726	400	3,200	-	-	200	120	15,133
8	-	-	600	13,500	50	28	200	40	100	800	-	-	60	36	14,404
9	-	-	-	-	150	83	500	100	-	-	250	175	-	-	358
10	-	-	-	-	300	165	-	-	-	-	1,000	700	-	-	865
11	350	1,750	-	-	-	-	150	30	-	-	-	-	-	-	1,780
12	550	2,750	300	6,750	-	-	500	100	100	800	-	-	-	-	10,400
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000
14	1,200	6,000	600	13,500	-	-	450	90	150	1,200	500	350	-	-	21,140
15	50	250	-	-	70	39	-	-	-	-	2,500	1,750	-	-	2,039
16	680	3,400	-	-	450	248	2,500	500	100	800	-	-	-	-	4,948
17	-	-	1,080	24,300	-	-	-	-	-	-	-	-	-	-	24,300
18	600	3,000	240	5,400	-	-	-	-	-	-	-	-	-	-	8,400

[1]The standard rate of payment for one kilo of cacao offered by the producers' cooperative in Cardenas is $5 Mexican.

[2]The standard rate of payment for one ton of sugar cane offered by the Ingenio Santa Rosalia is $55 Mexican; however, net payment received per ton is only $22.50 Mexican after deductions for transportation of the crop to the Ingenio.

[3]Average price in $ Mexican offered by Cardenas traders in August, 1968 was: Maize, 0.55/kilo; bananas, $0.20/kilo; coffee, $8.00/kilo; rice, $0.70/kilo; and eggs, $0.70/egg.

chickens, sells eggs only and chickens are killed for domestic consumption alone. It is more meaningful to consider livestock as insurance against hunger and unforseen expenditures rather than as a source of cash income.

In most cases the peasants could clearly recall the amount of produce sold in kilos, tons, etc., but were completely unable to calculate the cash received from the sale. Thus, estimates of cash income received were obtained by computing the average price paid by traders per unit value of produce and multiplying these figures by the sale quantities provided by the peasants. All cacao was sold to the cooperatives in Cardenas at a standard price and the figures quoted check correctly with the cooperatives' records. Similarly, all cane was sold to the Ingenio Santa Rosalia (the local sugar mill) at a contracted price and all figures check correctly. The statistics given for maize, bananas, coffee and rice have a lesser degree of accuracy.

Expenditure

The amount of cash expenditure per household is obviously directly related to the wealth of the household in terms of cash income earned. Consequently the following tables are mainly devoted to a summary of the peasant's allocation of cash income earned in a year to various expenditure categories. However, expenditures alone cannot be regarded as a sufficient index to household wealth, as cash income is still relatively small and irregular for the most part and wealth is more truly represented by assets accumulated. Thus, in order to comprehend

the long-term expenditures of each household it is necessary to examine and evaluate assets, which represent both the sum of past expenditures and the potential to generate future income and make new expenditures.

The sectors under which expenditure will be considered are--food, health, clothing and recreation. Expenditure on the house, either for maintenance or the purchase of furnishings and appliances, constitutes a fifth category, however, it proved impossible to elicit a response from the peasants as to total annual expenditure within this category. A rough estimate can be obtained, however, from the amount of cash remaining from the total income earned per household after all other expenses have been deducted.

Table 13 is not concerned with allocations of cash income within various expenditure categories as are the remaining tables, but has been included in this section on expenditure as a summary of typical daily food consumption, reflecting expenditure on food which is the major item in the expenditure budgets of all the households sampled. The '*typical*' daily diet is typical of the average household, spending about $35-$45 (Mexican) a week on food to supplement its own produce.

Table 14 provides an estimate of weekly cash expenditure on food per household, calculated by multiplying the estimates of the total quantity of each food item purchased by the average price per unit value (usually kilos) offered by local storekeepers. The estimates given for households 1, 3, 7, and 13 have

TABLE 13

TYPICAL DAILY DIET

Time of Day	Food Items
4:30 - 5:00 A.M.	Coffee with sugar or pozol [1]
7:00 - 8:00 A.M.	Breakfast: Beans or eggs and tortillas. Coffee.
2:00 - 3:00 P.M.	Dinner: Rice or garlic soup or consommé and/or stewed meat or chicken (average 3 times in 14 days) with chiles and rice or tortillas or pasta (garlic often substituted for chiles) or beans or eggs with tortillas or rice or pasta. Occasionally bananas or onions are served as a vegetable.
8:00 - 9:00 P.M.	Pozol with or without cacao or Atole de masa [2].

[1] Pozol - a 'paste of maize and water, prepared by cooking maize with lime to form 'nixtamal' which is ground in a 'metate' to form coarse-grained lumps which are soaked in water to form a paste. Pozol is consumed either 'straight' with salt or mixed with ground cacao. On festive occasions fermented pozol may be consumed. This is prepared by allowing the paste to ferment on rolled banana leaves in the heat of the sun.

[2] Atole de masa - a gruel made with very finely ground corn mixed with milk or water.

TABLE 14

CONTROL SAMPLE-ESTIMATES OF WEEKLY CASH EXPENDITURE ON FOOD ITEMS

Household Sample	No. of Residents	Maize		Beans		Rice		Sugar		Pasta		Eggs		Meat	Vegetables	Coffee		Other	Total
		Kilos	$ Mex.	Kilos	$ Mex.	Kilos	$ Mex.	Kilos	$ Mex.	Kilos	$ Mex.	No.	$ Mex.	$ Mex.	$ Mex.	Kilos	$ Mex.	$ Mex.	$ Mex.
1	13	28	29.40	7	17.50	4	11.40	3	5.40	1	2.20	6	3.60	10.00	2.00	½	3.00	3.00	87.50
2	9	14	14.70	3	7.50	-	-	2	3.60	?		6	3.60	7.00 (Ave.)	?	1	6.00	6.00	47.80
3	8	35	36.75	5	12.50	5	14.25	3	8.40	-	-	15	9.00	25.00	5.00	1	6.00	10.00	123.95
4	8	17	17.85	2	5.00	1	2.85	1½	2.70	-	-	-	-	5.00 (Ave.)	-	½	3.00	2.00	38.40
5	6	11	11.55	3	7.50	-	-	1½	2.70	?		-	-		-	1	6.00	.40	28.15
6	5	28	29.40	3½	8.75	3½	9.98	3½	6.30	1	2.20	14	8.40	12.00	3.00 (Ave.)	1½	9.00	2.00	91.03
7	4	30	31.50	7	17.50	2	5.70	5	9.00	?		-	-	20.00	5.00	1½	9.00	8.00	105.70
8	2	-	-	½	1.75	-	-	½	0.90	-	-	-	-	5.00	-	-	-	5.00	12.65
9	8	14	14.70	-	-	-	-	1	1.80	½	1.10	-	-	12.00	6.00	½	3.00	2.00	40.60
10	10	10	10.50	1	2.50	-	-	3½	6.30	1	2.20	-	-	-	-	½	3.00	?	24.50
11	11	14	14.70	2	15.00	2	5.70	1	1.80	-	-	-	-	15.00	2.00	-	-	?	44.20
12	6	7	7.35	1	2.50	1	2.85	½	.90	-	-	-	-	-	3.00	-	-	?	16.60
13	9	3	3.15	½	1.75	-	-	½	.90	-	-	-	-	-	-	-	-	?	5.80
14	7	25	26.25	7	17.50	3	8.55	2	3.60	-	-	10	6.00	20.00	2.00	½	3.00	5.00	91.90
15	8	6	6.30	½	1.75	-	-	2	3.60	-	-	-	-	5.00	-	1½	9.00	?	25.65
16	5	10	10.50	5	12.50	3½	9.98	1½	2.70	1	2.20	-	-	18.00 (Est.)	1.50 (Est.)	-	-	5.00	52.38
17	8	29	30.45	7	17.50	1	2.85	3	5.40	-	-	-	-	10.00	-	1½	9.00	?	75.20
18	4	3	3.15	½	1.75	-	-	1	1.80	-	-	-	-	-	3.00 (Est.)	½	3.00	?	12.70

a high degree of accuracy since these families were visited daily for a one week period with careful observation of all food purchases and meal preparation. Data quoted for other households are very rough estimates based on information volunteered by the peasants, interviews with shop-keepers and spot checks on shopping habits.

It must be emphasized that this weekly estimate was undertaken in August 1968 and is valid only for this month, since there is considerable variation in the quantity and types of food purchased from month to month depending on the amount of ready cash available, and the amount of maize each household needs to buy which is directly related to the state of the agricultural cycle. However, within the context of the yearly cycle, there is an average amount of cash available for food expenditures in August. The sugar mill (Santa Rosalia) advances credit to those peasants with cane contracts, and small amounts of cash are obtained from the sale of cacao, coffee and bananas during this period. The amount of maize purchased is proportionally high in August since there is still a month to go before the harvesting of the summer maize crop, and only household 8 grows enough maize for year-long domestic consumption. The lack of adequate storage facilities prevents the majority of the peasants from keeping their harvested maize free from rodents and fungus, and discourages attempts to be self-sufficient in maize.

Only households 1, 3, 4, 6, 7, 14, and 17 buy maize all year round. The remaining households will consume their own

produce after the September harvest until supplies run out again. However, the total weekly expenditure per household will tend to remain constant despite the elimination of maize from the budget since the peasants diversify their spending amongst the other food categories. The households which purchase maize all year round deviate very little from the food expenditure pattern illustrated in this table.

Thus, although the proportional expenditures within the various food categories are valid only for August, the estimate of total weekly food expenditures should be close to the weekly average for the year, and provides a rough guide to annual expenditure on food.

Table 15 summarizes total income and expenditure and the categories of origin and destination of the money earned. These totals are estimates and should only be used as a guide to the differences in income and expenditure patterns between the sample households. In any case, the income and expenditure totals are less relevant to this thesis than the proportional allocation of cash between each expenditure category, since this gives an indication of priority wants for satisfaction. In most cases, (16 households out of the sample of 18), food is allocated over 50% of the total household expenditure and frequently accounts for over 80%. Recreation is generally the second largest expenditure.

Any surplus cash left after the other expenditures have been deducted is usually devoted to the purchase of household

TABLE 15

CONTROL SAMPLE-INCOME AND EXPENDITURE TOTALS

Household Sample	Estimate of Total Income	Estimate of Total Expenditures $ Mex.				
	$ Mex.	Health	Clothing	Recreation	Food	Total
1	5,289	250	100	300-350	4,550	5,225
2	4,525	100	150	50-100	2,485	2,810
3	21,860	-	1,000	1,500	6,445	8,945
4	22,550	300	300	400	1,995	2,995
5	5,200	50-100	150	150	1,465	1,840
6	22,900	-	100-150	700-800	4,735	5,610
7	15,133	-	1,800	2,000	5,495	9,295
8	14,404	300	150	-	660	1,110
9	358	-	100	150	2,110	2,360
10	865	-	50-100	200	1,275	1,550
11	1,780	350	350	500	2,300	2,500
12	10,400	300	600	800-1000	865	2,665
13	1,250	-	50	-	300	350
14	21,400	600	700	1,000	4,830	7,130
15	2,039	-	0-50	-	4,830	7,130
16	4,948	300	200	100-150	2,725	3,350
17	24,300	500	900	1,000	3,910	6,310
18	8,400	250	500	400	660	1,810

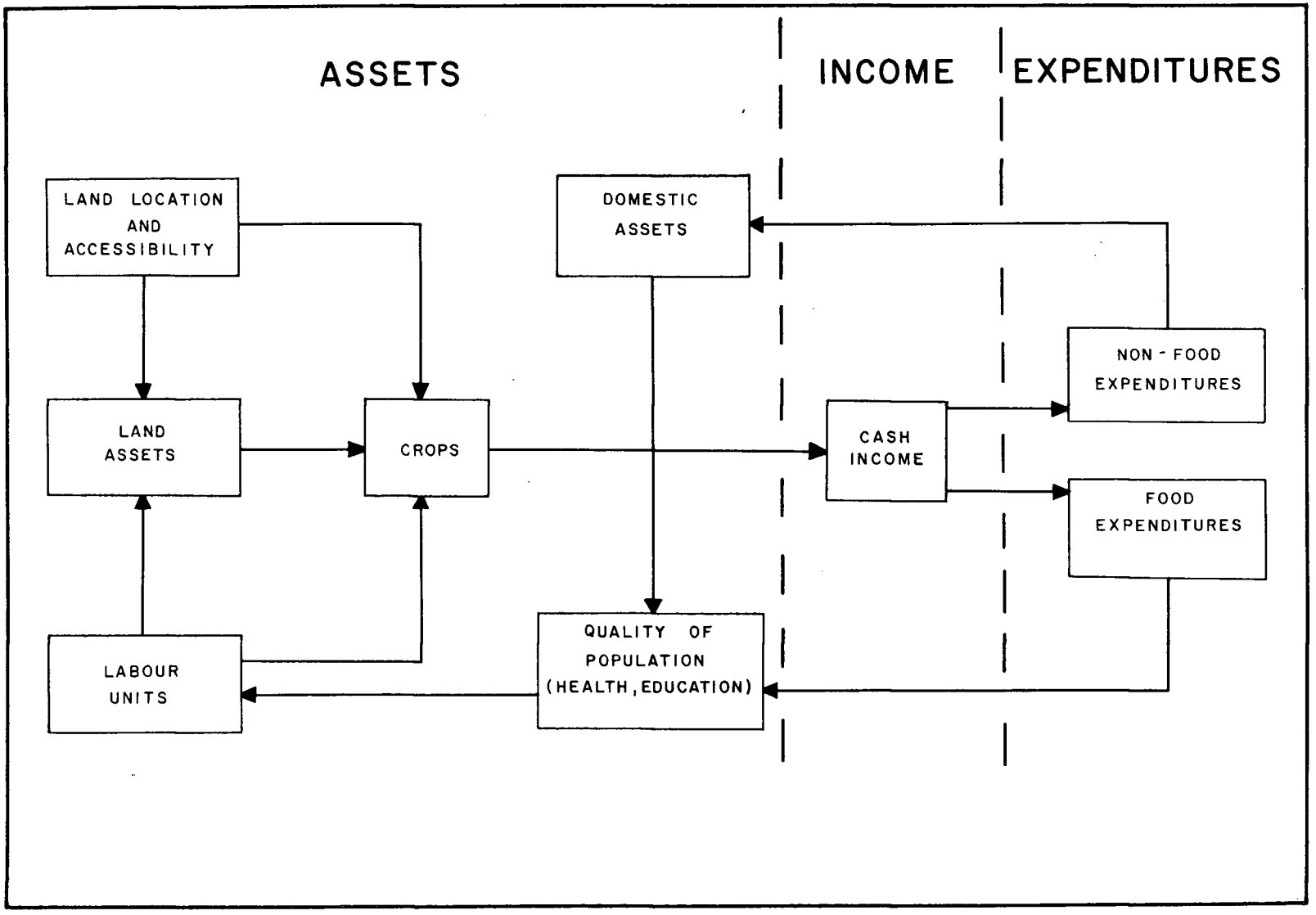
furnishings and appliances. However, in 12 of the sample households income exceeds expenditure by a disproportionally large amount. This discrepancy can largely be accounted for by the merchants' and traders' practice of extending credit on future crops so that the peasants can subsist until harvest time. Naturally this arrangement is far more beneficial to the merchant than to the peasant as interest rates on credit extended are very high. Thus frequently, the peasant is crippled by debts which he can never fully pay off due to his low agricultural profit margin, and he sinks into debt servitude handing down debts from generation to generation. Consequently, though cash income may appear ample to meet expenditure needs, a large proportion of the cash received from crop sale has to be immediately allocated for debt repayment.

Summary of Tables

The clearest way to summarize the meaning of the data on income, assets and expenditure presented in this chapter, is to correlate the tables in order to infer interrelationships between the selected components of the peasant socio-economic system. Figure 1 is a summary diagram to illustrate the significant relationships between the data presented in the previous tables.

The economic system operates in the following manner: assets produce income which results in expenditures thus pro-

Diagram 1 - Control Sample: Summary Diagram Indicating Relationships Within the Peasant Economic System



ducing assets. Thus the accessibility of the peasant's land by truck together with the number of adult male labour units in the household, will influence the amount of land that can be cultivated and consequently the quantity and type of crops produced. The value of domestic assets accumulated influences the quality of the population in terms of the health and educational level of each household, which also significantly effects the productive capacity of the household. The quantity and type of crops produced, (subsistence or cash crops), obviously influences the amount of cash income earned by the peasant household, which is expended on food and non-food items with proportional allocation of expenditure between these two categories depending on the amount of food produced by the household for domestic consumption. The amount of expenditure on food feeds back to influence the quality of the population and consequently the productive capacity of the household labour units. Expenditure on non-food items results in the accumulation of domestic and personal assets which also feeds back to influence productive capacity.

Thus the wealthiest households tend to be those with easy truck access and several adult male labour units, who can cultivate enough land to take full advantage of cash-crop opportunities. Cash income is consequently high and more money can be spent on food and non-food items. The impact of these expenditures can be seen directly in the amount of domestic assets accumulated and less directly in the health and educational levels of the households.

An example of a wealthy household illustrating this pattern of relationships is household number 14 in the sample. This household has 4 adult male labour units and is located on a paved access road only half a kilometer from the main trunk road. These factors influence the amount and type of crops produced by the household--4 hectares of sugar cane, 1 hectare of rice and 2 and a half hectares of cane, cacao and bananas in the agricultural cycle from Fall 1967 to Fall 1968. A total of (Mexican) $21, 140 was obtained from the sale of these cash crops of which approximately $4,830 was spent on food, $1,000 on recreations, $700 on clothing and $600 on medical expenses. The relatively high long-term expenditures on domestic and house assets are reflected in the above-average point total of domestic assets accumulated (79 points), and in the concrete-brick '*modern*' house built three years ago. The high expenditure on food and non-food items also appears to have influenced the health and educational level of the household which is well above average and has a positive influence on productive capacity.

Similarly, the poorer households tend to be those accessible only on foot, with only one or two labour units available for land cultivation. Consequently, there is a minimal degree of involvement in cash-crop agriculture and the household is almost completely dependent on subsistence production. The small amount of cash income earned from the sale of crop surpluses and domestic animals and their produce has to be spent on the bare essentials for survival such as food, and little or no money can be allocated to domestic assets, clothing, recreation and health.

Household 13 in the sample provides a good example of a household in this position. This household has only 1 unit of adult male labour and is located 5 kilometers from the trunk road and 2 kilometers by footpath from the nearest access road. Largely because of these disadvantages no cash crops at all are grown, and only 1 hectare of maize milpa was cultivated during the 1967-1968 agricultural year. The (Mexican) $1,000 received from the sale of cattle was the only cash income earned by the household throughout the year. Consequently, the household spent only $300 on food, depending almost entirely on its own agricultural produce for domestic subsistence. The only other recorded expenditure was a $50 outlay on clothing. No money was available for expenditures on recreation and health. The small size of the family budget is reflected in the below-average point total of domestic assets accumulated (25 points), and in the very poor state of repair of the eight-year-old rustic house. In keeping with this general pattern of poverty the household ranks very low in the assessment of levels of health and education, which would tend to have a negative effect on productive capacity.

It must be noted that these two households represent extremes on opposite ends of the scale of wealth. The majority of the households fit somewhere in between and are occupied with a mixture of cash-crop and subsistence agriculture. In many cases the relationships outlined in the systematic diagram, (Figure 1), are not so clear cut and easily identifiable since they operate with varying degrees of intensity. Indeed, some

of the relationships may not exist at all as in the case of household 11.

This household is located right on the trunk road and has access to three units of adult male labour. Consequently we would expect to find a relatively high degree of involvement in cash-crop agriculture resulting in a sizable cash income. However, during the 1967-1968 agricultural year only 1 hectare of maize was cultivated, and the total cash income received was only $1,780 from the sale of small quantities of cacao and bananas. The point total of domestic assets accumulated is 57 which is about average for the sample, and health and literacy levels also meet average standards--so these two factors do not help to explain the relatively small amount of cash income earned. The key to this problem lies in Table 15--the summary of total income and expenditure throughout the year, where it will be noted that expenditure exceeds income by nearly $2,000. Interviews with household members revealed that the family has been heavily in debt for many years, and that instead of having a positive influence on production and productivity, the apparent impossibility of ever paying off the debts has reduced their achievement-motivation to the point where they are sinking deeper and deepter in debt, without the ambition to take advantages of the opportunities available for cash-crop agriculture. The main object in the life of this family is apparently to obtain oblivion through alcohol, rather than to maximize economic opportunities.

However, in general this system of interrelationships provides a good explanation of patterns of wealth in the ejido. Nevertheless, the example of household 11 quoted above illustrates the dangers of accepting these relationships as infallible or absolute, since economic behaviour cannot be explained in purely economic terms, and is part of the overall pattern of social behaviour.

Household Wealth and Want Patterns

It was proposed on page 3 of the introductory chapter that -

> If we assume that man has unlimited wants but only limited resources with which to satisfy them, it is clear that analysis of consumption or expenditure patterns will reveal the existence of those wants selected as priorities for satisfaction.

Furthermore, the assumption was made that -

> The variety and type of wants chosen for satisfaction will be influenced by three main considerations: firstly, the amount of wealth available for expenditure on want satisfaction; secondly, the number of alternative action choices available, and thirdly ... the cultural frame-of-reference in which decisions concerning expenditures are made and which give meaning and direction to the wants selected for satisfaction. [8]

Accordingly, want patterns were inferred from the data on the use of cash income in the various expenditure categories, (See

---

[8] Chapter I: Introduction, page 3.

Tables 14 and 15), and on the type, amount and value of assets accumulated, (See Tables 8, 9, and 10); bearing in mind that the nature of the wants is influenced by the total wealth of each household, the range of want options available, and the degree of compatability of each option with the cultural frame-of-reference.

Although a general pattern of wants can be identified for the sample group as a whole, there was sufficient variation in income and assets between the households to warrent discussion of want patterns in three sub-groups--wealthy households, households with average wealth, and poor households. Since cash income alone is an unreliable indicator of household wealth as it reflects only short-term spending power and assets accumulated are a better guide to long-term expenditures, a wealth index was devised based on both cash income earned and the point total of domestic assets accumulated. These two components were weighted according to a subjective assessment of the significance of their contribution to total household wealth. Thus cash income was awarded a weighting of 0.4 and domestic assets a weighting of 0.6. Two scales between 0 and 10 were constructed for the total range of values of cash income and domestic assets, and each household was assigned a scale ranking for each category. These scale rankings were then multiplied by their respective weighting factors (0.4 and 0.6) and the results were added to obtain the wealth index. For example:

Household 1

Cash income	-$5,289	Point total of domestic assets	- 70
Scale ranking	- 3	Scale ranking	- 5
3 x 0.4 = 1.2		5 x 0.6 = 3.0	

Wealth Index: 1.2 + 3.0 = 4.2

The households were then subdivided into three groups based on their wealth indices: Group A - wealthy households (wealth index > 5.0); Group B - households with average wealth (wealth index 2.5-5); and Group C - poor households (wealth index < 2.5). The wants of each group were assessed as deep-seated or superficial depending on their frequency of occurrence as components of the consumption-expenditure pattern.

Three main categories of wants were identified in each group of households--food wants, domestic wants and personal wants, comprising the total range of want options amongst which expenditures could be allocated.

Group A - Wealthy Households

This group comprises six households--numbers 3, 4, 6, 7, 14 and 17 in the sample.

Analysis of food wants reveals a large variety of wants in comparison with the rest of the sample. In addition to maize, beans, sugar, coffee and cacao which are basic deep-seated wants in all three groups, high-cost prestige foods such as

poultry, meat, eggs and vegetables can also be regarded as permanent components of the consumption pattern. Other deep-seated food wants in this group include rice, chile, garlic and other spices. All items which are regarded as basic deep-seated food wants by all groups are consumed in larger quantities by this group. Superficial food wants which are satisfied only sporadically include pasta, milk, bananas and other fruit.

Similarly, domestic wants include a large variety of both deep-seated and superficial wants. Deep-seated domestic wants comprise the full range of home-made rustic furniture and utilitarian household items such as cooking and eating utensils (See Table 8). However, prestige store-bought items such as radios, bicycles, sewing machines, chairs, tables, saucepans and spoons are also deep-seated wants incorporated into the standard of living as regularly satisfied wants. Superficial wants which appear irregularly in asset accumulations include furnishings and kitchen ware with a very high prestige rating such as gas stoves, '*modern*' beds, cooking utensils and cutlery (knives and forks). Six out of the seven households in this group exhibit a deep-seated want for '*modern*' houses built with permanent construction materials, as opposed to the rustic cane-walled, palm-thatched houses traditional to the region.

Personal wants include clothing and shoes and less tangible wants such as health needs and recreations which are included since they are -

> ... desires over and above the basic necessities of life which are felt to be necessary to fulfil shared conceptions of the good life developed in the cultural frame-of-reference. 9

Deep-seated wants in this category include clothing, shoes, and recreational items and expenditures. Four of the households in this group spend over $700 a year on clothing and shoes which is an extremely large outlay by peasant standards. Generally clothing is bought for all family members including very small children, though shoes are rarely worn by women and children except on festive occasions. '*City-style*' clothing such as jeans, underclothes and high-heeled shoes, can be regarded as a superficial want which is developing amongst the younger generation who are fascinated by American movies. The extent to which recreations requiring cash expenditures are becoming incorporated into the household budget, is evidenced by the fact that recreational locationals in this group of households average over $1,000 per household. Similarly the range of recreations is far greater, with movies, magazines and novels incorporated into the traditional peasant recreational pattern of attending a few fiestas, visiting relatives occasionally and walking to town. Medical facilities and drugs are, however, only a superficial want, and unless it is absolutely necessary most households in this group would rather spend money on recreations than on doctors and drugs. The head of household 5 expressed this sentiment as follows -

---

[9] See Introduction: page 3.

> If I have a pain in my belly perhaps it's only indigestion or little animals (amoebas) or perhaps it's real sickness and I'll die. But it's no use worrying yourself about it--I'll die someday in any case and no doctor's going to grow fat on my carcass. Anyway I'd rather take a beer than a pill any day, and if you drink enough beer the pain will go away--so why worry? 10

Group B - Households With Average Wealth

This group is composed of seven households--numbers 1, 2, 8, 11, 12, 16 and 18 in the sample.

Food wants are less numerous than in Group A and a higher percent of food is produced by the peasants themselves in their parcels. Maize, beans, sugar, coffed and cacao are still purchased but on a more irregular basis, however reliance on these basic staples is correspondingly higher since the smaller food budget permits fewer alternative wants to be satisfied. Meat, vegetables and chile are the only other deep-seated wants which can be satisfied on a regular basis. Superficial wants include pasta, eggs and chicken which are greatly desired but can only be afforded occasionally. Items considered as superficial wants in Group A such as fruit and milk, do not appear at all in Group B's food wants. This is apparently not due to any monetary considerations since fruit trees are ubiquitous in every parcel and milk is relatively inexpensive. Rather, it seems that the peasants have no taste for these items despite their nutritive value. The head of household 3 gave the reason for this distaste as follows -

---

[10]Interview with Ignacio de Dios Montejo, September 18,1968.

> Fruit and milk - blah! - that's for babies. I wouldn't take that stuff if there was nothing else in the house to eat. I'm not at the breast any more. I'm a man - men need meat with plenty of chile to make them strong and hot blooded. 11

Domestic wants are almost as numerous as in Group A but include fewer prestige store-bought items as deep-seated wants, and these are generally the less expensive items such as radios, spoons and cheap cooking utensils. However, superficial wants which can be satisfied only by the minority of the households include some high-value store-bought items such as sewing machines, bicycles, furniture and more sophisticated cooking utensils. '*Modern*' houses cannot really be considered even as a superficial want in this group, since only one household possesses such a house and the other families exhibit little interest in striving to obtain one.

Deep-seated personal wants include clothing and shoes though on a more limited basis since purchases are mainly restricted to adults and older children. Recreations requiring cash expenditure are also a deep-seated want but have a lesser degree of importance in comparison with traditional recreations. Surprisingly, medical facilities can also be considered as a deep-seated want in this group in contrast with Group A where they were regarded only as a superficial want. Perhaps this is due to the more precarious nature of life in this less wealthy group of households, since the peasants tend to be more pre-

---

[11] Interview with Miguel Montejo Gamas, September 11, 1968.

occupied with the maintenance of life rather than the gratification of pleasure-oriented wants.

Group C - Poor Households

This group is composed of five households--numbers 5, 9, 10, 13 and 15 in the sample.

In this group of households food wants are limited almoat exclusively to the five basic staples--maize, beans, sugar, coffee and cacao. Superficial wants include pasta, vegetables and meat, which are greatly desired to vary the monotonous diet of beans and tortillas but can rarely be afforded. When questioned about meat consumption the head of household 3 reacted quite heatedly -

> How many times a week do we eat meat? - you mean how many times a year? or more important to us - how many times a week do we eat at all? Well - when God gives us good crops and we have money in the pocket we eat meat almost every day. But maybe that's two weeks in each year. The rest of the time--well it's obvious you don't know what meat costs in these parts--life's just beans, tortillas and pozol--that's all. The poor campesino thanks God he has anything in his belly. Meat? --that's funny --you don't know what life's all about. 12

Domestic wants are also very limited in quantity and variety. Deep-seated wants conprise basic furnishings and utensils such as chairs, hammocks and cooking pots, but no prestige store-bought items, nor even the range of more sophisticated home-made furnishings such as beds or storage closets. Some

---

[12]Interview with Miguel Montejo Gamas, September 11, 1968.

store-bought items such as radios and spoons appear as superficial wants, but the majority of the superficial wants are utilitarian items such as petrol lamps and plates which more wealthy households consider to be basic necessities. Eating utensils are almost non-existent for-- "The tortilla is the plate of the poor campesino and fingers make a good enough spoon.[13]

Deep-seated personal wants include only clothing, and expenditures on this item are generally restricted to working adults. Many children are unable to go to school since they do not possess any clothes; for them-- "God's skin is good enough.[14] Shoes are the only superficial want since recreations requiring cash outlay are generally out of the question with the exception of small contributions to local fiestas.

Conclusions on Want Patterns

It is clear that want patterns differ considerably between the three groups of households and that variations in wealth are the operative factor causing these differences. For example, even the poorer households in Group C desire meat as a superficial want, and increasing wealth enables Group A households to consume meat on a regular basis as a deep-seated want. Generally, as wealth increases the households tend to buy greater quantities of those items which are basic wants in

---

[13]Interview with Victorio Perez Lopez, September 18, 1968.

[14]Interview with Ignacio de Dios Montejo, August 30, 1968.

all three household groups, such as food staples, cooking utensils and clothes. In addition, they are able to satisfy a greater variety of wants such as food wants for a more varied, higher protein diet, domestic wants for prestige-store bought items as well as a wider range of utilitarian goods, and personal wants to improve the quality of life such as medicines, better clothing and recreations. However, it would seem that these new wants are not purely the product of increasing wealth, but are already in existence as potential, unsatisfied wants in the poorest group of households. The poorer households possess aspirations for new foods, modern clothing, and so on, but extra income is needed to bring these households to the point where satisfaction of these potential wants is possible.

Despite these inter-sample differences a common want pattern can be identified for the group as a whole. Though want patterns have been slow to change in the past and all households still exhibit many of the traditional peasant wants such a '*pre-Columbian*' dependence on corn, the sample households do not conform to the popular view of peasants as backward and unprogressive. The development of cash-crop agriculture has already had considerable impact on want patterns, and the corresponding increase in purchasing power has opened up a number of alternative want options. The peasants in this sample have, on the whole, both recognized and taken advantage of these new opportunities as is evidenced by the quantity and type of new wants satisfied on a regular basis.

However, income is not the only factor in want development, and the ultimate deciding factor as to whether or not a want will be accepted as a regular component of the consumption pattern is the degree of compatability with the cultural frame-of-reference. Potential wants are not necessarily adopted just because the opportunity is available and the item can be afforded, since change in wants is largely a function of perception. Thus for a new potential want to become part of the standard of consumption, it must not conflict with the existing cultural matrix as expressed in the value system.

Discussion of two examples will clarify this point. At present it seems unlikely that milk will be accepted as a deep-seated want in the near future, even though the wealthier households can easily afford to buy it and are well aware that urban society considers it a prestige item with high nutritive value. The small number of households who buy milk do so solely to supplement the small childrens' diet and refuse to drink it themselves. This distaste is largely a function of their traditional perception of milk as fit only for nursing babies, and degrading as a beverage for adult consumption.[15] Consequently, attempts by the local health authorities to promote adult milk consumption amongst the peasants are unlikely to be successful within the near future, since this potential want is in direct conflict with the cultural frame-of-reference in which all decisions are made.

---

[15]See page 94, exerpt from interview with Miguel Montejo Gamas.

On the other hand radios have been accepted within the last decade as a deep-seated want which is a permanent and necessary component of the standard of consumption, since they are compatible with the high value which the peasants have traditionally placed on music.

A brief survey of aspirations for future wants reinforces inferences as to which existing superficial wants are likely to become permanent components of the consumption pattern. Thirteen of the sample households expressed a want for more modern furnishings and clothing, a higher protein diet, and more recreational items and facilities, and it seems likely that if the general level of peasant wealth continues to grow at the present rate these wants will soon be satisfied on a larger scale. However, desire for higher education and increased medical facilities was more limited, and these items cannot yet be considered seriously as potential wants.

In any case, it is unwise to make any specific predictions concerning future want patterns since new wants are often more important as symbols than as utilitarian additions to the standard of consumption. Thus many of the new wants recently adopted by the households in this sample are prestige items symbolic of the wealth of the households. Prestige is a function of fashion, and fashion, by definition, is merely a passing fad. Consequently, many of the new prestige wants such as refrigerators and box-spring beds, may not be very durable, and in any case are unlikely to be incorporated into the

standard of consumption as deep-seated wants, since they do not really fit into the existing want pattern which still retains many elements of the traditional peasant way of life.

CHAPTER V

THE PLAN SAMPLE - UNIT 28

Socio-Economic Setting

Unit 28 of Plan Chontalpa was the first agricultural unit to be completed in terms of the restructuring of land tenure and the completion of the new semi-urban village. Relocation of the peasants in this new village--named Geogorio Mendez after a local Revolutionary hero--was commenced in May 1967, and the majority were rehoused by June of that year. Although residence in the village is not compulsory for participation in the Plan, the current population of Gregorio Mendez numbers 240 households, (January 1969), and it is expected that the remaining 18 families still living in their former homes will eventually submit requests for new housing.

The resettlement programme caused considerable upheaval in the peasants' traditional way of life. Two of the most radical changes were the shift from the typical rural dispersed settlement pattern to living in close proximity to neighbours in a nucleated community, and the breakdown of the traditional extended family residence pattern, since each adult male over 16 years of age is eligible for a parcel and a house of his own. However, dispite this upheaval the initial period of pronounced disorientation was apparently surprisingly short lasting little more than 6 months, and by May 1968 the majority

of the peasants seemed to be accustomed to their new environment. There were still some complaints about the small size of the houses and the kitchens in particular, and the eccentricities of the electricity and water supplies which seem to operate on an apparently random basis. However, most of the inhabitants agreed that the advantages of living close to schools, medical facilities and shops, together with the companionship afforded by urban residence far outweighed these minor disadvantages.

The peasants were generally less satisfied with their new parcels as only a small percentage had been able to enjoy the benefits of mechanized agriculture, since the Plan's agricultural programme had encountered many difficulties and was lagging far behind schedule. The provision of credit facilities enabled the majority of the peasants to cultivate more maize per capita than on their former land holdings, but many were unhappy at having to continue to practice rustic methods and were disappointed at the slow progress of mechanization.

In addition, the restructuring of land tenure caused an almost complete breakdown of the pre-existing production and marketing network. The peasants who were formerly cane growers under contract to the sugar mill Santa Rosalia, often found themselves with a new 10 hectare parcel consisting solely of acahual (rotation forest). The Grijalva Commission paid compensation for the value of the standing crops, but inevitably this change caused a feeling of insecurity amongst several of the peasants affected. Other peasants who had formerly relied on

cash income from the sale of bananas, coffee and cacao found themselves with new parcels in which there were no fruit trees at all. Even the peasants who were fortunate enough to be in a zone suitable for mechanized land clearance and cultivation,[1] often found it difficult to adjust from the old regime of partial dependence on traditional subsistence production to large-scale mechanized farming. Thus, in the summer of 1968, many of the peasants appeared to be in a state of disorientation and dissatisfaction with the agricultural programme, though the acceleration of land clearance and the increased development of mechanized agriculture was beginning to ameliorate the situation.

The variations in the distribution of mechanized agriculture within Unit 28 resulted in corresponding differences between the peasants in the amount of cash income earned from crop sale, though the availability of wage-labour work for the Grijalva Commission in road and house construction helped to reduce inequalities in total income earned. Nevertheless, a parcel in the mechanized maize, rice, sorghum and banana zones was regarded by the peasants as a great advantage and a key factor in raising the level of household wealth.

Thus at the time this survey was undertaken in the summer of 1968, the peasants appeared to have adapted reasonably

---

[1] Initial mechanized land clearance was limited to areas of less dense forest cover and easy road access in order to minimize operating costs and maximize short-term results.

well to the changes in residence pattern, but were less secure within the agricultural sector, and the general level of peasant well-being in terms of the quality of the population had increased noticably since the initiation of Plan Chontalpa in this region.

Assets, Income and Expenditure

In order to identify want patterns and measure the changes in income and expenditure resulting from the Grijalva Commission's innovations, a survey was undertaken of 26 families resident in Gregorio Mendez--the new village. As in the control sample, data were collected under three headings--assets, income and expenditure. The data are tabulated in the same format used in Chapter 4 for the control group data in order to facilitate inter-sample comparisons. Table 16 summarizes the relevant background data concerning the household as an economic unit, and provides a baseline of reference for all subsequent tables in this chapter. It should be noted that the number of residents per household is much smaller than in the control group sample, due to the substitution of the nuclear family for the traditional extended-family residence pattern.

Assets

Despite the increased dependence on cash income, assets are still considered to be the most significant indicator of wealth amongst the households in the Plan sample, though the

TABLE 16

PLAN SAMPLE-PERSONAL DATA

Household Sample	Age of Family Head (in years)	Length of Residence (in years)	Former Place of Residence	Number of Children	Number of Household Residents
1	39	Life	-	5	7
2	35	Life	-	4	6
3	62	6	Private property in Cunduacan	5	4
4	24	Life	-	2	4
5	40	Life	-	3	6
6	39	Life	-	6	6
7	33	4	Rancho near Cardenas	6	8
8	35	10	Rancho in Huimanguillo	7	8
9	45	30	Rancho in Villahermosa	6	4
10	36	Life	-	5	7
11	32	Life	-	5	7
12	20	Life	-	1	3
13	40	Life	-	5	2
14	29	Life	-	5	7
15	19	Life	-	0	2
16	28	Life	-	3	5
17	42	8	Rancho near Coatzacoalcos	5	5
18	35	Life	-	9	11
19	27	Life	-	2	4
20	35	Life	-	8	9
21	49	25	Rancho near Cunduacan	6	8
22	30	10	Rancho in Comalcalco	4	7
23	31	3	Villahermosa	8	10
24	48	Life	-	6	7
25	33	10	Rancho in Comalcalco	4	6
26	33	Life	-	4	6

range of items considered to be assets by these peasants differs slightly from those discussed in the control group sample. Items regarded as assets in both the control group sample and the Plan sample include domestic and personal possessions, outbuildings, health, crops and domestic animals. The level of education is also an asset in both samples, though it has taken on new meaning in the Plan sample including skills acquired in construction work, such as carpentry and brick-laying, which provide a sizeable contribution to the income of many households. Several assets discussed in the control group sample must be regarded as constants in the Plan sample, which do not contribute to variations in household wealth. Thus, houses, the location of parcels relative to access roads, and the number of labour units per household are still assets in that they are resources, possessions or advantages with economic value, but are not discussed in detail in this chapter since they are uniform in character throughout Unit 28. All the peasants in Gregorio Mendez live in identical new homes of concrete brick with tiled roofs, and are provided with electricity and running water. Similarly, all the parcels are served by all-weather truck access roads. In addition, the number of labour units per household is largely irrelevant to the productive ability of the household, since the agricultural sector of the Plan is based on the one man/one parcel concept, with mechanized cultivation and group labour pools obviating the necessity for the organization of labour on a household basis.

The amount of land per household is also a constant, as each parcel averages 10 hectares in size. The type of soil

and vegetal cover is a more meaningful asset in terms of the capacity of the parcel owner to generate wealth, since a light well-drained soil is suitable for perennials such as bananas which yield a higher income per hectare than field crops, and parcels with a light vegetal cover are more likely to be machine-cleared at this stage of the Plan.

Table 17 shows the total crop and animal assets held by the 26 households in this sample. As in the control group sample, the crop and animal statistics refer to the agricultural cycle from October 1967 to September 1968. Similarly, the statistics quoted for livestock represent peasant estimates of the average number of domestic animals owned during the agricultural year. The numbers of livestock per household have been drastically reduced in the last two years, due to stealing and outbreaks of fowl pest both of which have increased in intensity since the peasants moved into Gregorio Mendez.

Table 18 summarizes the improvements made in houses and lots over the last two years. House extensions and outbuildings can be regarded as improvements raising the value of the house as an asset. The interior decoration of the house can be taken as an indication of the family's interest in improving the quality of their domestic environment, as can the upkeep and use of the lot which are codified to facilitate inter-household comparison.

Table 19 lists the point values used in Table 20 for the household rankings of domestic assets. The point ranking

TABLE 17

PLAN SAMPLE-CROPS AND DOMESTIC ANIMALS

Household Sample	Parcel Number [1]	Acahual (Low Rotation Scrub) (Hectares)	Monte (High Rotation Scrub) (Hectares)	Maize [2] (Hectares)	Beans (Hectares)	Sugar Cane (Hectares)	Mechanized Rice (Hectares	Sorghum (Hectares)	Natural Pasture (Hectares)	Horses No.	Cattle Yearly Average Number	Pigs Yearly Average Number	Chickens (c) Turkeys (t) Yearly Average Number
1	188	3	-	-	-	-	2¼	-	1	-	-	-	9(c),3(t)
2	116	3	-	-	-	-	4¼	-	1	-	-	2	8(c)
3	139	3	-	-	-	4	-	-	2	-	-	2	3(c)
4	244	2	-	¾	-	-	6	-	-	-	-	-	4(c),3(t)
5	198	2	1	-	-	-	4¼	-	2	-	-	-	5(c)
6	221	3	-	-	-	-	4	-	2	-	-	1	3(c),(1 duck)
7	108	2	-	-	-	-	3½	-	-	-	-	-	-
8	213	3½	2	3	-	1¾	-	-	-	-	-	1	3(c),3(t)
9	254	4	-	-	-	1½	2½	-	1	1	-	1	10(c)
10	86	2	-	2	-	-	2½	-	2	1	-	-	20(c),1(t)
11	240	2½	-	2½	-	-	4½	-	-	-	-	-	7(c),3(t)
12	219	3	1	2	-	1	2½	-	2	-	-	-	-
13	102	3	-	-	-	-	4	-	-	1	-	-	6(c)
14	62	3	-	-	-	-	2½	-	1	1	-	-	-
15	98	3	1	1½	-	-	4½	-	-	-	-	-	-
16	212	2	1	1½	-	4½	1½	-	-	1	-	1	15(c),3(t)
17	3	3	2	-	-	-	4	-	-	-	-	-	-
18	200	3	-	-	½	-	4	-	-	1	-	1	10(c)
19	13	5	1	-	-	-	2	-	-	-	-	-	-
20	30	3	-	-	-	50 sq. meters	4½	-	1	-	-	-	7(c)
21	176	4	1	2	-	-	2	-	-	-	-	-	30(c),10(t)
22	28	4	1	1	½	-	-	-	2	1	-	-	10(c),4(t)
23	151	-	-	1½	-	50 sq. meters	5½	5½	-	1	-	1	8(c),(1 duck)
24	82	-	-	-	-	-	11	-	-	1	-	-	8(c)
25	210	3	-	2	-	-	2	-	2	-	-	3	12(c)
26	37	2	1	2	-	-	3	2	-	-	-	-	7(c)

[1] See Appendix Map 3. All parcels in Unit 28 average 10-12 hectares in size.

[2] Includes both mechanized and rustic maize.

[3] Household 1 formerly cultivated 2 hectares of cane which were ploughed in by the Grijalva Commission in preparation for the new banana zone. The household head received ($ Mex.) $5,258.12 from the Commission as compensation for the loss of the standing crop.

TABLE 18

PLAN SAMPLE-HOUSE AND LOT IMPROVEMENTS

Household Sample	House Extensions	Interior Decoration of House	Outbuildings	Fenced Lot?	Use of Yard[1]	Assessment of Amount of Lot Development[2]
1	Porch bricked in and painted	-	Rustic chicken house	Yes	C,O,F	2
2	-	Photos, religious pictures	-	No	C	4
3	Porch bricked in and painted	Photos, calendars, religious pictures; painted interior	Storage barn, rustic cooking hut	Yes (plus fenced chicken range)	C,O,F,L	1
4	-	Painted interior	Wooden tool house	Yes	C,O	3
5	-	Painted interior; photos, calendars	Rustic cooking hut, wooden tool house	Yes	C,F,L	1
6	-	-	-	Yes (plus fenced)	C,O,P	2
7	-	-	-	Yes (chicken range)	O,F,L,P	1
8	-	-	Rustic cooking shelter	No	C,M	4
9	-	Religious pictures	Rustic chicken coop	Yes (chicken range)	C	3
10	-	Painted interior; photos, travel posters	Rustic chicken coop	Yes (chicken range)	C,O,F	2
11	-	Painted interior; magazine pictures	-	Yes	C	4
12	-	Painted interior	Rustic cooking hut	Yes	O,F,L,P	1
13	-	-	-	Yes	C	4
14	Concrete brick rear extension, corrugated iron roof	Photos, posters	Wooden chicken coop	Yes (plus fenced chicken range) (plus fenced)	O,L,P	2
15	-	-	-	Yes (chicken range)	Ca,O	3
16	-	Painted interior	Rustic tool shed	Yes	C,F,P	2
17	-	-	-	-	-	4
18	Concrete brick rear extension, corrugated iron roof.	Painted interior, religious pictures	-	Yes (plus fenced chicken range)	C,F,O	1
19	-	Painted interior; religious pictures	-	Yes (plus fenced chicken range)	V,F,P	2
20	-	-	Rustic chicken coop	Yes	C,F,Ca	2
21	-	Painted interior, magazine pictures	-	Yes (plus fenced chicken range)	C,F	2
22	-	-	-	Yes (high cane walls)	C,F,O,P	1
23	-	Painted interior; photos, calendars, magazine pictures, china ornaments	Rustic storage barn	Yes (plus fenced chicken range	C,F,O,Ca	1
24	-	Painted interior; photos, calendars	-	Yes	C,O	3
25	-	Painted interior	Chicken coop	Yes (chicken range)	C,O	3
26	-	-	-	Yes	C	4

Coding Key: 1. Use of Yard

C - chicken range
O - orchard
F - flowers
Ca- cane
L - lawn
V - vegetable garden
P - paved walks
M - maize mill

2. Amount of Lot Development: 1 - intensively developed
2 - average development
3 - poorly developed
4 - undeveloped

TABLE 19

PLAN SAMPLE-POINT VALUES FOR RANKING OF DOMESTIC ASSETS
(See Table 20) (New items not recorded in Table 8 are underlined)

Point Values	Utilitarian Items	Prestige Items
6		Refrigerator
5		Gas stove Bed (store-bought) Cupboard (store-bought)
4	Bed (home-made wooden with store-bought mattress)	Sewing Machine Bicycle Table Knife Folding metal-frame bed and mattress
3	Bed (without store-bought mattress) Chest (home-made wooden)	Chair (store bought) Table (store bought) Saucepan Table fork Casserole Radio Mirror Saucer Mincer Clock Small cupboard (store bought) Gun Pistol Table glass
2	Table (rustic) Petrol lamp Wicker basket Shelves Cupboard Hammock Aluminimum bucket Jug Curtain	Table-spoon
1	Chair (rustic) Bench Reed sleeping mat Clothes storage box Rustic cooking stove (fogon) Earthenware or aluminum pot Earthenware or aluminum bowl Mug or cup Plate Plastic bucket Plastic bowl Plastic spoon	

TABLE 20

PLAN SAMPLE-HOUSEHOLD RANKINGS OF DOMESTIC ASSETS

Household Sample	Data (Point Ranking in Brackets)	Point Total
1	2 rustic chairs (2), 1 rustic table (2), 1 sewing machine (4), 2 rustic beds (6), 1 hammock (2), 1 gas stove (5), 1 rustic stove (1), 3 aluminum cooking pots (3), 1 plastic bucket (1), 3 plates (3), 6 mugs (12), 2 spoons (2).	43
2	3 rustic chairs (3), 1 rustic table (2), 1 store-bought table (3), 1 bench (1), 1 hammock (2), 2 rustic beds (6), 1 storage box (1), 1 petrol lamp (2), 1 rustic stove (1), 2 curtains (4), 6 aluminum cooking pots (6), 1 wicker basket (2), 3 plates (3), 1 mug (2), 8 spoons (16), 1 radio (3).	57
3	2 rustic chairs (2), 2 store-bought chairs (6), 1 rustic table (2), 1 refrigerator (6), 1 sewing machine (4), 1 rustic bed and mattress (4), 1 store-bought cupboard (5), 1 mirror (3), 1 gas stove (5), 1 rustic stove (1), 1 petrol lamp (2), 1 wicker basket (2), 1 hammock (2), 1 sleeping mat (1), 1 radio (3), 2 curtains (4), 1 plastic bucket (1), 12 plates (12), 4 forks (12), 2 knives (8), 4 spoons (8), 5 aluminum pots (10), 2 saucepans (6), 2 casseroles (6), 4 mugs (4).	119
4	2 rustic chairs (2), 2 benches (2), 1 sewing machine (4), 1 rustic bed (3), 1 hammock (2), 1 petrol lamp (2), 1 radio (3), 1 curtain (2), 1 aluminum bucket (2), 1 rustic stove (1), 3 mugs (6), 3 spoons (6), 1 plate (2), 1 aluminum cooking pot (1), 1 saucepan (3).	41
5	3 rustic chairs (3), 1 bench (1), 1 rustic table (2), 1 store-bought table (3), 1 hammock (2), 1 store-bought bed (5), 1 rustic bed and mattress (4), 1 petrol lamp (2), 1 gas stove (5), 2 plastic buckets (2), 1 rustic stove (1), 10 plates (10), 6 spoons (12), 6 aluminum cooking pots (6), 2 sleeping mats (2), radio (3), 1 gun (3).	66

TABLE 20 - continued.

6	1 rustic chair (1), 1 bench (1), 1 rustic table (2), 1 store-bought table (3), 1 gammock (2), 1 rustic bed (3), 1 radio (3), 1 plastic bucket (1), 2 sleeping mats (2), 7 plates (7), 7 spoons (14), 7 aluminum cooking pots (7), 2 jugs (4), 2 mugs (2).	52
7	2 rustic chairs (2), 4 store-bought chairs (12), 1 bench (1), 1 rustic table (2), 1 store-bought table (3), 1 hammock (2), 2 store-bought beds (10), 1 petrol lamp (2), 2 sleeping mats (2), 2 storage boxes (2), 1 wooden chest (home-made) (3), 1 plastic bucket (1), 2 aluminum cooking pots (2), 3 plates (3), 2 spoons (4), 1 knife (4), 1 fork (3), 2 cups (2), 1 gun (3).	63
8	4 rustic chairs (4), 1 rustic table (2), 1 hammock (2), 1 rustic bed (3), 1 radio (3), 1 gas stove (5), 8 plates (8), 8 mugs (8), 2 spoons (4), 2 aluminum cooking pots (2), 2 sleeping mats (2).	43
9	4 rustic chairs (4), 1 bench (1), 1 rustic table (2), 1 store-bought table (3), 2 rustic beds (6), 2 hammocks (4), 7 plates (7) spoons (14), 2 forks (6), 8 mugs (8), 1 plastic bucket (1), 1 mirror (3), 2 storage boxes (2), 1 petrol lamp (2), 1 rustic stove (1), 1 gun (3).	67
10	1 rustic chair (1), 1 bench (1), 1 rustic table (2), 3 rustic beds (9), 1 hammock (2), 1 petrol lamp (2), 1 mincer (3), 1 mirror (3), 1 gas stove (5), 6 plates (6), 6 cups (6), 2 spoons (4), 2 aluminum cooking pots (2), 1 aluminum bucket (2).	48
11	1 rustic chair (1), 1 rustic table (1), 2 rustic beds (6), 1 hammock (2), 1 radio (3), 1 gas stove (5), 10 cooking pots (10), 8 plates (8), 8 spoons (16), 2 forks (6), 2 knives (8), 1 plastic bucket (3).	70
12	3 rustic chairs (3), 1 store-bought chair (3), 1 rustic table (2), 2 hammocks (4), 1 radio (3), 1 rustic bed (3), 1 bicycle (4), 1 plastic bucket (1), 1 plastic bowl (1), 1 rustic stove (1), 1 gas stove (5), 12 plates (12), 6 cups (6), 6 saucers (18), 6 forks (18), 6 spoons (12), 2 knives (8), 2 aluminum cooking pots (2).	100

TABLE 20 - continued.

13	3 rustic chairs (3), 1 rustic table (2), 1 hammock (2), 1 radio (3), 2 rustic beds (6), 1 rustic stove (1), 1 plate (1), 2 mugs (2), 1 spoon (2), 1 cooking pot (1), 1 petrol lamp (2).	25
14	2 rustic chairs (2), 1 rustic table (2), 1 hammock (2), 2 rustic beds (6), 1 bicycle (4), 3 sleeping mats (3), 1 radio (3), 1 aluminum bucket (2), 3 aluminum cooking pots (3), 3 plates (3), 3 mugs (3), 4 spoons (8).	41
15	1 rustic table (2), 1 hammock (2), 1 rustic bed (3), 1 sewing machine (4), 1 bicycle (4), 1 radio (3), 1 gas stove (5), 2 plates (2), 2 forks (6), 2 spoons (4), 2 knives (8), 2 mugs (2), 2 aluminum cooking pots (2), 1 plastic bucket (1), 1 mirror (3).	51
16	3 rustic chairs (3), 1 rustic table (2), 1 store-bought cupboard (5), 1 radio (3), 1 hammock (2), 1 sewing machine (4), 1 bicycle (4), 2 rustic beds (6), 1 petrol lamp (2), 1 gas stove (5), 2 plastic buckets (2), 4 aluminum cooking pots (4), 5 plates (5), 5 mugs (5), 5 spoons (10), 1 gun (3).	66
17	1 rustic chair (1), 1 rustic table (2), 2 hammocks (4), 1 radio (3), 1 rustic bed and mattress (4), 1 rustic bed (3), 1 rustic stove (1), 2 aluminum cooking pots (2), 5 plates (5), 3 mugs (3), 1 spoon (2).	30
18	4 rustic chairs (4), 1 store-bought table (3), 1 store-bought cupboard (5), 1 mirror (3) 1 sewing machine (4), 1 radio (3), 2 hammocks (4), 4 rustic beds (12), 1 store-bought bed (5), 1 gas stove (5), 1 bicycle (4), 12 plates (12), 4 cups (4), 6 spoons (12), 6 plastic spoons (6), 1 plastic bucket (1), 1 plastic bowl (1), 6 aluminum cooking pots (6), 1 gun (3), 1 pistol (3).	99
19	2 rustic chairs (2), 1 small store-bought cupboard (3), 1 sewing machine (4), 2 rustic beds and mattresses (8), 2 rustic beds (6), 1 hammock (2), 1 gas stove (5), 1 petrol lamp (2), 2 aluminum cooking pots (2), 2 saucepans (6), 4 plates (4), 4 spoons (4).	48

TABLE 20 - continued

20	1 bench (1), 2 hammocks (4), 5 sleeping mats (5), 2 aluminum cooking pots (2), 2 plates (2), 2 cups (2), 1 spoon (2).	18
21	5 rustic chairs (5), 3 store-bought chairs (9), 1 rustic table (2), 1 store-bought table (3), 1 sewing machine (4), 1 radio (3), 2 store-bought beds (10), 1 gas stove (5), 1 mirror (3), 12 mugs (12), 12 plastic spoons (12), 12 plates (12), 1 knife (4), 1 fork (3), 1 plastic bucket (1), 1 plastic bowl (1), 2 sleeping mats (2), 1 petrol lamp (2),1 gun (3).	96
22	2 rustic chairs (2), 1 rustic table (2), 1 radio (3), 1 rustic bed (3), 2 hammocks (2), 2 sleeping mats (2), 4 jugs (8), 5 plates (5), 5 spoons (5), 3 aluminum cooking pots (3), 1 casserole (3), 1 bicycle (4), 1 clock (3).	45
23	6 rustic chairs (6), 3 store-bought chairs (3), 1 store-bought table (3), 2 small store-bought cupboards (6), 1 sewing machine (4), 1 radio (3), 1 store-bought bed (5), 2 rustic beds and mattresses (8), 1 rustic bed (3), 1 hammock (2), 1 refrigerator (6), 1 mincer (3), 1 clock (3), 1 mirror (3), 1 gas stove (5), 1 bicycle (4), 8 plates (8), 8 cups (8), 8 saucers (24), 6 spoons (12), 4 forks (12), 4 knives (16), 2 mugs (2), 2 plastic buckets (2), 6 glasses (18), 3 saucepans (9), 2 casseroles (6).	185
24	2 rustic chairs (2), 2 rustic tables (4), 1 bench (1), 1 radio (3), 1 hammock (2), 1 sewing machine (4), 2 rustic beds (6), 1 petrol lamp (2), 1 mirror (3), 1 gas stove (5), 3 aluminum cooking pots (3), 4 plates (4), 4 spoons (8), 3 saucepans (9), 2 casseroles (6), 1 plastic bucket (1), 1 bed store-bought (6), 1 plastic bowl (1), 1 mincer (1), 1 clock (1), 4 storage boxes (4), 6 sleeping mats (6), 1 gas stove (5).	91
25	3 rustic chairs (3), 2 store-bought chairs (6), 1 store-bought table (3), 1 rustic table (2), 1 hammock (2), 1 radio (3), 4 rustic beds (12), 1 petrol lamp (2), 1 mirror (3), 1 small store-bought cupboard (3), 1 rustic stove (1), 1 wicker basket (1), 3 curtains (6), 1 plastic bucket (1), 1 plastic bowl (1), 3 aluminum cooking pots (3), 3 plates (3), 3 mugs (3), 4 spoons (8), 1 saucepan (3), 1 gun (3).	72

TABLE 20 - continued

26	2 rustic chairs (2), 2 store-bought chairs (6), 1 rustic table (2), 1 store-bought table (3), 1 store-bought bed (5), 1 rustic bed (3), 1 hammock (2), 1 plastic bucket (1), 1 radio (3), 1 bicycle (4), 3 plates (3), 3 forks (9), 3 knives (12), 3 mugs (3), 2 saucepans (6), 1 jug (2).	66

outlined in Table 19 is weighted as in the equivalent table in the control group sample, (Table 8, Chapter 4), with the addition of some new items which did not appear in domestic asset accumulations in the control group sample.

Table 21 summarizes intangible assets related to the quality of the population--levels of literacy and health, including a list of the most common recreations enjoyed by each household as an index to the cultural quality of the population. As in the equivalent table in Chapter IV, levels of literacy and health and the list of recreations are codified to facilitate rapid comparison between households.

Income

The two main sources of cash income earned by members of the Plan sample are income derived from the sale of crops and from wage labour in construction works of the Grijalva Commission. At this stage of the Plan it appears that in many cases wage labour provides the greater proportion of total income earned, since the agrarian sector is not yet fully operative. In addition, wage labour is especially significant as it is paid on weekly basis, which provides a more balanced distribution of ready cash throughout the year. On the other hand, though credit is provided for crop cultivation throughout the agricultural cycle, the bulk payment of profit (if any) can obviously only be paid after the crops have been sold and the amount of credit deducted.

TABLE 21

PLAN SAMPLE - QUALITY OF POPULATION, SELECTED EXAMPLES

Household Sample	Literacy		Health of Family	No. of Changes of Clothing	Pairs of Shoes Per Household Member	Recreations
	Husband	Wife				
1	b	c	u(1)	H-3,W-4,C^{1}-4 C^{2-5}-3	H-2,W-1	i,n,o,p
2	c	d	u(3)y(1) z(1)	H-3,W-4,C^{1}-3 C^{2-4}-2	H-1,W-1, C^{1-2}-1	i,j,m
3	c	b[1]	t(1)u(1) z(1)	H-2,W-4,C^{1-2}	H-1,W-2[1]	i,k,q
4	c	c	u(2)	H-2,W-1,C^{1}-4, C^{2}-2	H-1,W-1	i,l,m,n,0
5	c	c/d	s(1)u(1)	H-2,W-2,C^{1-2}-3 C^{3-4}-2,C^{5}-1	H-1,W-1 C^{1-2}-2,C^{3}-1	i,k,m,o,p
6	c	c/d	u(2)v(1)	H-3,W-3,C^{1-3}-3 C^{4-6}-2	H-1,W-1,C^{1-3}-2 C^{4-6}-1	i,l,m,p,q
7	a	b	s(1)u(1) v(1)	H-3,W-3,C^{1-3}-2 C^{4-6}-1	H-3,W-2,C^{1-3}-2 C^{4-6}-1	k[2],m,n
8	c/d	c/d	u(4)z(2)	H-2,W-1,C^{1-4}-1	H-1,C^{1}-1	i,m,p
9	c	c/d	u(2)v(1) x(1)	H-1,W-1,C^{1}-3 CH-2	H-1,C^{1}-2 CH-2	m
10	b	c/d	u(3)	H-2,W-2,C^{1-4}-2	H-1,C^{1-3}-1	i,j,k[3],m
11	c/d	c/d	?	H-1,W-1,C^{1-4}-1	H-1	i,j
12	c	d	z(1)	H-3,W-3,C^{1}-5	H-2,W-1,C^{1}-1	l,m,n,o
13	c/d	d	u(2)y(1)	H-2,W-1	H-1	j
14	c	c	r(1)u(3) v(1)	H-3,W-4[4] C^{1-4}-2	C^{1-4}-1	j,l,o
15	b	c	u(1)	H-12,W-10	H-5,W-7	i,k,l,m,n, o,p
16	b	c/d	u(2)v(1) z(1)	H-4,W-5,C^{1-3}-3	H-2,W-2, C^{1-3}-1	i,j,m,n,p
17	c	d	s(1)u(3) z(3)	H-2,W-1,C^{1-3}-1	H-1,C^{1-2}-1	i,m,p,q
18	b	c	u(4)x(1) y(1)z(2)	H-4,W-2,C^{-}-3 C^{2-7}-2	H-2,C^{1}-2, C^{2-7}-1	i,k,m,q
19	c	c/d	s(1)v(1) x(1)	H-4,W-5,C^{1-2}-3	H-1,W-1	j,k,m,n
20	c	d	u(3)z(2)	H-2,W-1,C^{1-2}1-	H-1,C^{1}-1	h,k,m,o
21	b	c/d	u(2)z(1)	H-4,W-1,C^{1}-3-1	H-2,W-1,C^{1}-1	i,m,o,q
22	c	d	?	H-3,W-2,C^{1-4}-4	H-2,W-2,C^{1-2}-1	i,l,m,p
23	a	b	s(1)u(2) z(1)	H-5,W-6,C^{1-4}-6	H-4,W-2,C^{1-2}-3 C^{3-4}-1	i,h,k[5], m,n,o,p
24	b	d	s(1)u(3)	H-4,W-7,C^{1-3}-4 C^{4-8}-1	H-2,C^{1-8}-1	i,k,l,m,o
25	c	c/d	u(3)	H-2,W-2,C^{1-3}-2 C^{4}-1	H-2,C^{1-3}-2 C^{4}-1	i,l,m,p,q
26	b	c	u(2)v(1) y(1)	H-3,W-2,C^{1-2}-1	H-1,C^{1}-1	i,k,m,p

[1]Unusually the wife is more literate than the husband. She is employed as treasurer of the Consumer's Cooperative and consequently needs more clothes for business purposes.

[2]Reads technical agricultural books and articles.

[3]Reads medical books.

[4]Wardrobe includes two paper dresses.

[5]Reads educational and cultural books - e.g., '*Teach Yourself English*'.

Coding Key

H - Husband, W - Wife, C - Children, CH - Child's Husband.

Literacy

a - reads and writes fluently, b - reads and writes with average competence,
c - reads and writes haltingly, c/d - reads haltingly, writes name only,
d - illiterate.

Recreations

g - visits relations, h - writes letters, i - listens to radio, j - reads Bible and religious books, k - read magazines or newspapers, l - go to cinema,
m - religious or national fiestas, n - sports (baseball, football), o - walk to town,
p - drinking.

Health (brackets indicate number of people suffering from disease)

s - recurrent respiratory diseases, t - female disorders, r - internal disorders,
u - parasites, v - anaemia, w - malaria, x - chronic bronchitus, y - T.B.,
z - sickness unidentified.

At present, no cash income is obtained regularly from the sale of livestock and livestock products as stock has been reduced in number by animal plagues and fowl pest, and in any case there are problems with housing and feeding domestic animals in the limited area of the urban house lots.

Three households in Gregorio Mendez supplement their cash income with money earned from labour as skilled artisans --two household heads are carpenters and one is a blacksmith. Eight households run small general stores in one room of their houses. Finally, several women in the village have sewing machines and make clothes to order for neighbours.

Table 22 contains estimates of cash income earned from the sale of crops during the 1967-1968 agricultural cycle. The figures quoted for sugar cane are accurate as all cane was sold to the sugar mill, Santa Rosalia, and the data was obtained from their records. Similarly, the data on the production and sale of sorghum was obtained from the accounts of the Grijalva Commission in Cardenas. Unfortunately, no statistics could be given for maize and rice as final production figures were still not available at the time this survey was completed. Consequently, an estimate was made of potential cash income in three categories --high income, average income and small income, based on the number of hectares of each crop in the parcels of the sample households.

Tables 23, 24 and 25 must be considered together as all three relate to the total cash income earned in wage-labour for the Grijalva commission. Table 23 shows the total number of

TABLE 22

PLAN SAMPLE-ESTIMATE OF CASH INCOME EARNED FROM SALE OF CROPS

Household Sample	Cane[1]		Sorghum		Maize[3]	Rice
	Amount Sold in Tons	Cash from Sale in $ Mexican	Amount Sold in Kilos	Net Income from sale in $ Mexican after deductions [2]		
1	-	5,258[4]	-	-	-	2
2	-	-	-	-	-	1
3	600	13,500	-	-	-	-
4	-	-	-	-	3	1
5	-	-	-	-	-	1
6	-	-	-	-	-	2
7	-	-	-	-	3	2
8	240	5,400	-	-	-	-
9	200	4,500	-	-	2	2
10	-	-	-	-	2	2
11	-	-	-	-	2	1
12	120	2,700	-	-	-	2
13	-	-	-	-	-	3
14	-	-	-	-	3	2
15	-	-	-	-	-	1
16	250	5,625	-	-	3	3
17	-	-	-	-	-	2
18	-	-	-	-	-	2
19	-	-	-	-	-	2
20	-	-	-	-	-	1
21	-	-	-	-	2	2
22	-	-	-	-	3	-
23	-	-	9,704	3,225	3	1
24	-	-	-	-	-	1
25	-	-	-	-	2	2
26	-	-	0[5]	0[5]	2	2

Key to Maize once Rankings: 1. over 4 hectares high income.
2. 2-4 hectares average income.
3. under 2 hectares small income.

TABLE 22 Footnotes continued.

[1]The standard rate of payment for one ton of sugar cane offered by the Ingenio Santa Rosalia is Mexican $55; however, net payment received per ton is only $22.50 after deductions for transportation of the crop to the Ingenio.

[2]Deductions include credit repayment and transportation costs.

[3]This column includes both mechnaized 'rustic' maize.

[4]This figure represents the amount of compensation paid to the head of Household I for loss of banana trees due to land clearance in preparation for the mechanized banana zone, in which the parcel holder will have 2 hectares of irrigated bananas.

[5]No income received due to crop failure.

TABLE 23

PLAN SAMPLE-NUMBER OF WEEKS WORKED FOR LA COMISSION DEL GRIJALVA
(July 1st 1967-June 30th 1968)

House-hold Sample	July 1 2 3 4	August 1 2 3 4 5	September 1 2 3 4	October 1 2 3 4	November 1 2 3 4 5	December 1 2 3 4	January 1 2 3 4 5	February 1 2 3 4	March 1 2 3 4	April 1 2 3 4	May 1 2 3 4	June 1 2 3 4	Total Weeks
1	x		x x				x	x x x x	x x x	x			12
2	x x x x	x x			x x x		x	x	x x x	x x x x	x x	x	21
3	x x x	x x x x x	x x x x	x x x	x								16
4	x x x	x x x x x	x x x x	x x x x	x x	x	x x x x x	x x x	x x	x			30
5													0
6				x x									2
7	x x x x	x x x x x	x x x x	x x x x	x x								19
8													0
9													0
10		x x											2
11				x	x x x x x	x x x	x x x x x	x x x	x	x x x	x x		23
12	x x x	x x x	x x x x	x x x	x								14
13	x x	x x x x	x x x	x x x x	x x x								16
14	x x	x x x x x	x x x	x x x x	x x x x x	x x x x	x x x x	x x x x	x		x		33
15													0
16	x x x	x x x	x x										8
17													0
18				x x x									3
19	x x x	x x x	x x x x	x x x x									14
20		x x x x	x x										6
21	x x x x	x x x x x	x x x	x x x x	x x x	x x x x	x x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	48
22	x	x x x x x	x	x x x			x x x						13
23				x x x x	x				x				6
24	x x x x	x x x x x	x	x			x	x x x	x x x x	x x x x	x x x x	x x x	30
25													19
26													0

Source: Data obtained from the records of La Comission del Grijalva, Cardenas, Tabasco.

weeks worked by the head of each household in the sample, and the distribution of these '*labour weeks*' throughout the fiscal year from July 1st 1967 to June 30th 1968. The distribution is important as it indicates periods when cash income from wage-labour is received on a regular basis. Table 24 quotes the pay scales for the various categories of employees. The progress which the Plan Chontalpa peasants have made in acquiring construction skills is evidenced by the variety of employment categories. Initially, all the peasants commenced work as basic wage-labourers, however, several have learned trades and become masons, solderers and electricians, and others have been placed in positions of responsibility as night watchmen, guards and foremen. Table 25 summarizes net income earned from wage-labour in the construction works from July 1st 1967 to June 30th 1968.

Expenditure

The main sectors under which expenditure will be considered are--food, health, clothing, recreation, education, house payments and minor domestic expenses. As in the control sample, it proved impossible to estimate the annual expenditure on domestic assets such as furnishings and appliances, as the peasants had no conception of their total expenditure in this category, and could not even remember which items had been purchased in the last twelve months.

Table 26 provides an estimate of weekly cash expenditure on food per household. The figures were calculated by

TABLE 24

PLAN SAMPLE-PAY SCALES PER CATEGORY OF EMPLOYEE
(July 1st 1967-July 30th 1968)

	Pay Scales: July 1st 1967-December 30th 1967 $ Mex./hour	Revised Pay Scales: January 1st 1968-June 30th 1968 $ Mex./hour
Labourer	15.00	17.40
Mason	21.00	21.00
Solderer	21.00	21.00
Solderer's Mate	18.35	18.35
Electrician	21.00	21.00
Electrician's Mate	18.35	18.35
Night Watchman	15.00	15.00
Guard	18.35	18.35
Foreman	35.75	45.00

Source: Records of La Comision del Grijalva, Cardenas, Tabasco.

TABLE 25

PLAN SAMPLE-WAGES EARNED FROM LABOUR IN THE WORKS OF LA COMISSION DEL GRIJALVA (July 1st 1967-June 30th 1968)

Household Sample	Net Wages After Deductions 1 $ Mex.	No. of Weeks Worked 2	Category of Employee 3
1	1,730.89	12	Night watchman Guard
2	3,267.69	21	Night watchman Labourer
3	3,526.38	16	Solderer's mate Electrician's mate
4	3,431.52	30	Labourer Night watchman
5	-	-	-
6	135.55	2	Labourer
7	5,974.47	19	Mason
8	-	-	-
9	-	-	-
10	122.09	2	Labourer
11	2,294.64	23	Labourer
12	2,257.98	14	Labourer
13	2,682.26	16	Labourer
14	4,428.07	33	Labourer Night Watchman
15	-	-	-
16	544.36	8	Labourer
17	-	-	-
18	222.78	3	Labourer
19	3,490.26	14	Labourer Mason
20	653.65	6	Labourer Guard
21	12,663.49	48	Foreman
22	1,589.96	13	Labourer
23	735.01	6	Guard Solderer
24	12,759.83	30	Foreman
25	2,073.44	19	Labourer
26	-	-	-

Source: Records of La Comision del Grijalva, Cardenas, Tabasco.

[1]Net wages after deductions: i.e., after tax has been deducted, and medical expenses and house repayments where applicable.

[2]No. of weeks worked: check Table 23 for specific weeks worked in this time period.

[3]See Table 24.

TABLE 26

PLAN SAMPLE-ESTIMATES OF WEEKLY CASH EXPENDITURES ON FOOD ITEMS (August, 1968)

Household Sample	Number of Household Residents	Maize Kilos [1]	$ Mex.	Beans Kilos [1]	$ Mex.	Rice Kilos [1]	$ Mex.	Sugar Kilos [1]	$ Mex.	Pasta Kilos [1]	$ Mex.	Eggs No. [1]	$ Mex.	Meat Kilos [1]	Vegetables $ Mex. [1]	Coffee Kilos [1]	$ Mex.	Bread $ Mex. [1]	Milk $ Mex.	Cacao Kilos [1]	Chocol $ Mex.	Salt $ Mex. [1]	Soft Drinks $ Mex. [1]	Fish $ Mex. [1]	Misc. $ Mex. [1]	Total $ Mex.
1	7	14	12	2	5	3	8½	2	5½	½	1	10	5½	15	3	1½	9	5	3	½	2	½	15	-	-	76½
2	6	21	18	3½	9	3½	10	7	20	-	-	-	-	35	5	¼	1½	7	4½ or 5	½	2	1	-	10	-	123½
3	4	21	18	7	17½	4	11½	3	8½	½	1	60	33	50	5	tin 1	6	-	-	-	-	4	-	2½	-	107
4	4	5	4	3	7½	1	3	1	3	½	1	5	3	20	-	½	3	10	-	½	2	1	-	-	-	57½
5	6	8	7	1½	4	2	5½	3½	10	2	4	6	3½	10	3	½	3	4	1½	½	1	2	6	10	-	74½
6	6	20	17	6	15	6	17	2	5½	-	-	12	6½	20	-	1	6	2	-	-	-	2	5	10	-	106
7	8	6	5	1	2½	1	3	1	3	-	-	-	-	12	-	½	1½	2	9	-	-	½	-	-	-	38½
8	8	3	2½	2	5	1	3	2	5½	-	-	-	-	5	-	½	3	-	-	-	-	1	-	5	-	30
9	4	2	2	1	2½	3	8½	1	3	2	4	4	2	15	10	½	3	2	1½	-	-	3	6	10	8(f)	80½
10	7	8[2]	7	1	2½	3	8½	-	-	-	-	-	-	5	-	½	3	-	1½	-	-	-	10	-	-	37½
11	7	17½	15	1	2½	1	3	2½	7	-	-	-	-	20	2	½	3	10½	1½	1	4½	2	14	-	-	85
12	3	-	-	2	5	2	5½	3	8½	½	1	12	6½	30	-	1	6	10	3	-	-	5	-	10	-	90½
13	2	-	-	1	2½	1	3	1	3	-	-	-	-	8	-	-	-	2	3	-	-	2	7	-	-	30½
14	7	10[a]	8½	2½	6½	2	5½	2	5½	1	2	10	5½	50	5	-	-	6	1½ or 3	2	2	6	12	15	-	131½
15	2	10	8½	1	2½	1	3	½	1½	-	-	5	3	25	3	½	3	14	3	1	4½	½	6	15	-	92½
16	5	25[a]	21	1	2½	2	5½	2½	7	-	-	-	-	20	2	½	3	2	1½ or 3	-	-	2	6	-	1(c)	74
17	5	15	13	2	5	2	5½	1	3	-	-	-	-	20	-	-	-	5	-	-	-	3	6	-	-	60½
18	11	25	21	8	20	7	20	1	3	1	2	-	-	50	-	½	3	-	7½ or 12	½	2	4	-	5	-	140
19	4	18	15	¼	1¼	2	5½	1½	4½	½	1	18	10	25	-	¼	1½	10	3 or 6	½	2	8	14	10	-	113
20	9[3]	-	-	3	7½	2	5½	1	3	-	-	-	-	15	-	½	3	-	-	-	-	2	-	5	-	41
21	8	10	8½	1	2½	2	5½	1	3	-	-	10	5½	13½	5	¼	1½	16	3	1	4½	5	3	-	5(f)	82½
22	6	-	-	3½	9	½	1½	7	20	-	-	6	3½	10	-	1	6	12	4½	-	-	8	10	5	-	89½
23	7	14	12	2	5	2	5½	4	11½	½	1	30	16½	40	3	-	-	14	7½ or 12	½	1	2	15	10	5(f)	151½
24	10	14	12	2	5	3	8½	8	5½	½	1	6	3½	25	-	½	3	6	1½	-	-	2	8	5	7(c)&(b)	93
25	7	14	12	3	7½	3	8½	3½	10	½	1	40	22	50	10	1	6	6	1½ or 5	½	1	1	30	15	5(f)&(c)	188
26	6	28	24	3	7½	3½	10	3½	10	½	1	12	6½	15	8	¼	1½	4	1½	-	-	5	3	5	-	102

[1] Prices offered by the consumers' cooperative in Gregorio Mendez in $ Mexican - Maize $0.85/kilos; beans $2.50/kilo; rice $2.85/kilo; sugar $1.80/kilo; pasta $2.20/kilo; eggs $0.55 each; coffee $6.00/kilo or $6.00 for 1 can Nescafe; bread $0.20/part loaf; 1 can powdered milk $5.00/can; 1 can Nestle milk $1.50/can; cacao $4.35 kilo; salt $1.00/small bag; soft drink $1.00/a bottle; tin chile $0.70/tin.
Average price offered by local traders - Meat $10.00/kilo; milk $1.50/litre; fish $5.00/average size fish.

[2] A portion of maize fed to animals.

[3] This household's expenditures are high in proportion to income, since four labourers eat their midday meal here, three times a week.
Code: (f) fruit; (c) chile; (b) biscuits.

multiplying the estimates of the total quantity of each food item purchased, by the price per unit value (usually kilos) offered by the consumers' cooperative in Gregorio Mendez. The figures quoted for households 1, 3, 9 and 11 have a reasonable degree of accuracy since these families were visited daily over a one week period and all food purchases were recorded. Data cited for the remaining households are estimates based on information obtained in interviews with the peasants and the accounts of the consumers' co-operative. As in the control sample, the estimates of allocation of total food expenditures between the different food items are valid only for the month of August, as both quantities and types of food purchased vary considerably from month to month. In particular, the amount of money spent on maize fluctuates widely, depending on the stage in the agricultural cycle, the amount of maize grown by each household, and the adequacy of storage facilities. Although expenditure on maize is proportionally high in August as there is still a month to go before the maize harvest, there is a tendency to compensate by spending less on other food items during this period. Thus, as in the control sample, the estimates of total weekly food expenditures should be close to the weekly average for the year, and provide a rough guide to annual expenditure on food.

Table 27 provides an estimate of total income for the agricultural year 1967-1968, and summarizes total expenditure and expenditure allocations within the six budgetary components.

TABLE 27

PLAN SAMPLE-INCOME AND EXPENDITURE TOTALS

Total Income ($ Mex.)				Total Expenditure ($ Mex.)						
Household Sample	Crops	Available Wages	Income Ranking[1]	Medical[2]	Clothing	Recreation	Food	Education	Household Payments	Total
1	5,258	1,731	Average	111*	400	100-150	5,600	36	-	5,250
2	-	3,268	Average	260*	500	50-100	6,550	24	-	7,400
3	13,500	3,526	High	800(E)	500	250-300	5,650	-	-	7,250
4	3,432	3,432	High	418*	1,200	350-400	3,050	12	-	5,050
5	-	-	Low	50(E)	400	50-100	4,000	36	-	4,550
6	-	135	Low	50(E)	500	150-200	5,600	36	60	6,400
7	-	5,976	High	480**	300	350	2,200	36	-	3,350
8	5,400	-	Average	nill	125	< 50	1,600	36	-	1,800
9	4,500	-	Average	100(E)	300	< 50	4,300	36	-	4,800
10	-	122	Average	50(E)	150(?)	150	2,050	24	-	2,400
11	-	2,295	Average	106*	100	-	4,500	24	-	4,750
12	2,700	2,258	Average	115*	300	150-200	4,750	-	-	5,350
13	-	2,682	Low	50(E)	450	-	1,600	36	-	2,150
14	-	4,428	Average	1,000**	800	200-250	6,900	24	-	8,950
15	-	-	Average	50(E)	1,200	500-600	5,000	-	-	6,800
16	5,625	544	Average	20(E)	500	100-150	3,950	-	30	4,650
17	-	-	Low	-	250	< 50	3,150	36	-	3,500
18	-	223	Low	500**	500	<100	7,400	60	-	8,550
19	-	3,490	Low	600**	750	150	5,950	-	750	8,200
20	-	654	Low	nill	250	50	2,150	36	225	2,700
21	-	12,663	High	2,364*	900	150-200	4,400	36	-	7,900
22	-	1,590	Low	nill	500	250	4,800	24	-	5,550
23	3,225	735	High	450(E)	750	600	8,050	24	178	10,050
24	-	12,760	High	838*	750	700	4,950	60	-	7,298
25	-	2,073	Average	144*	500	200-250	9,850	48	-	10,750
26	-	-	Average	nill	200	100-150	5,350	24	-	5,700

Table 27 Footnotes:

[1]Income ranking is based on a subjective assessment of value of potential income from crop sale plus income from wage labour.

High income	- >	Mexican $10,000
Average income	-	Mexican $5,000-$10,000
Low income	- <	Mexican $5,000

[2]Numbers marked with a single asterisk are accurate and were obtained from the Grijalva Commission's records as 'deductions from wages for medical expenses'.

Numbers marked with two asterisks refer to households where medical expenses exceed the amount deducted from wages, and represent a fairly close estimate of annual expenditure.

Numbers marked (E) are very rough estimates provided by the peasants themselves and should only be used as a guide to actual expenditure in this category.

The figures for expenditures on clothing and recreations are provided by the peasants themselves, and are consequently very rough estimates. Some of the data on average annual expenditure on doctors and drugs are also estimates, but the majority of the figures for medical expenditures, and the figures for house payments are accurate as they were obtained from the Grijalva Commission's records. Similarly, the expenditures on education were calculated from a standard school rate of $10 per child per annum. As the complete figures for cash income earned from crop sale were unavailable, a subjective ranking of potential income was used based on an assessment of whether high, average, or low cash income would be expected, depending on the amount of cash-crops in each parcel. The proportional allocation of cash between each expenditure category is, however, of greater importance in this context, as this provides an indication of priority wants for satisfaction.

As in the control sample, expenditures on food comprise the largest allocation of total funds; in all the sample households food expenditures claim well over 50% of the total household budget, and frequently account for over 80%. However, in contrast to the control group, clothing takes the place of recreation as the second largest expenditure. Cash outlay on medicines and recreations are approximately of the same order and rank third, followed by educational expenses and lastly, payments on the new houses in Gregorio Mendez. As in the control sample, any surplus cash remaining after the various expenditures have been deducted is usually devoted to the purchase

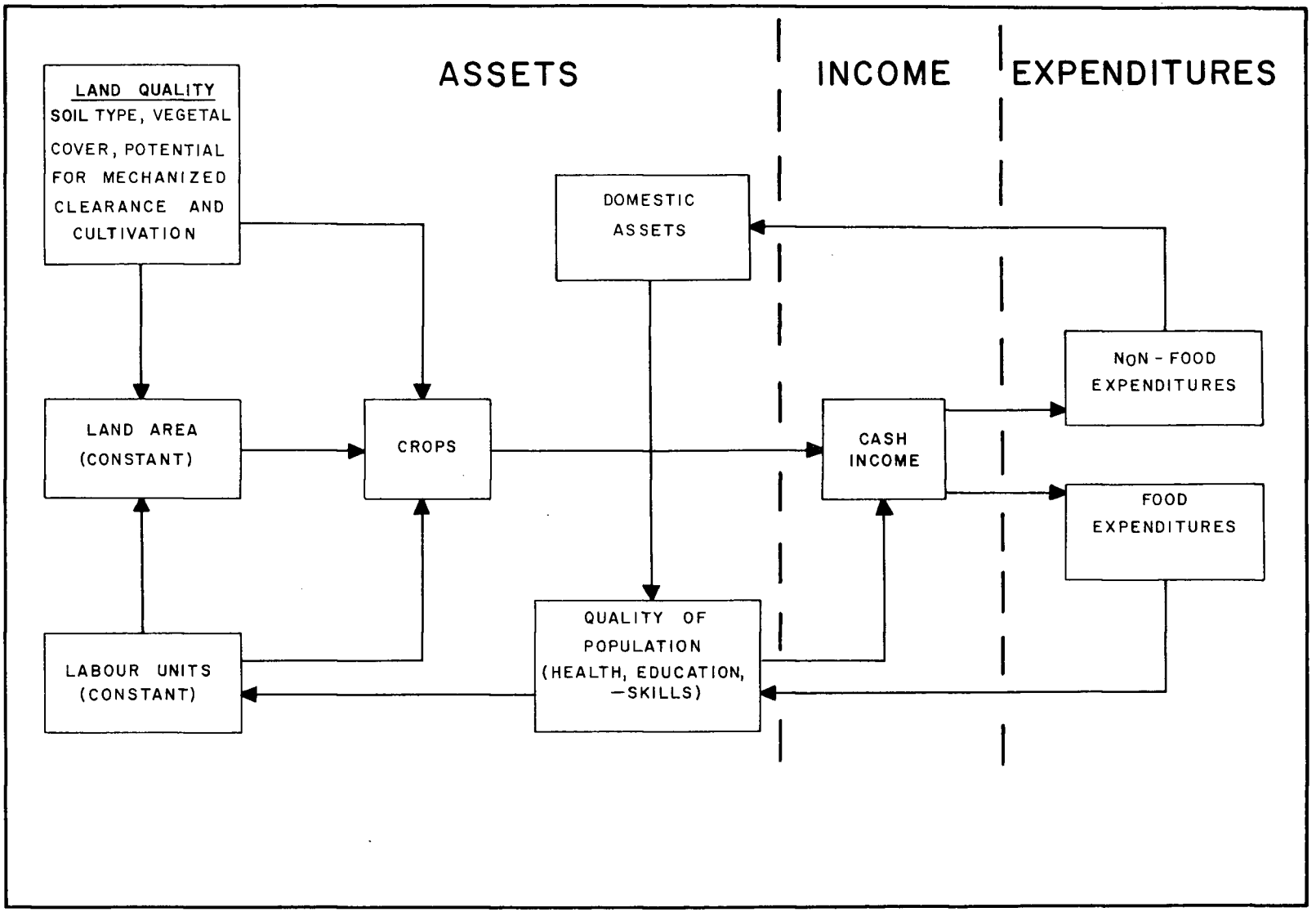
of household furnishings and appliances.

There is little difference between the Plan sample and the control sample with respect to the upper range of incomes, and in fact three households in the control sample have incomes of over (Mexican) $20,000, exceeding that of any household in the Plan sample. However, the average income per household in the Plan sample is clearly consistantly far higher than in the control group, with all households in the sample receiving an income of over (Mexican) $2,000. It should also be noted that this income is better distributed throughout the agricultural year than in the control sample, and represents net income received after the standard bank credit repayments have been made as opposed to the control group in which a large proportion of the cash income must frequently be allocated for debt repayment. Total expenditures are also consistantly higher in the Plan sample than in the control group sample.

Summary of Tables

As in the control sample, assets produce income which results in expenditure thus producing assets. However, we are no longer dealing with a peasant economic system, but with a planned economy operating with a different set of inputs and constraints. Thus, though the basic functional principles are the same in both systems, the interrelationships between the component parts of the Plan system are significantly different. Figure 2 is a diagram summarizing the relationships between the various components as inferred from the data presented in

Diagram 2 - Plan Sample: Summary Diagram Indicating Relationships Within the Planned Economic System



this chapter.

The introduction of a new set of production methods and goals results in changes in the type and meaning of assets. Thus, land location relative to access roads, the number of labour units per household, and the amount of land in each parcel become constants, as they are more or less uniform throughout Unit 28. However, land quality in terms of soil type and amount of vegetal cover, have taken on added importance as resources or advantages with economic value, affecting productivity by influencing the type of crops grown and the amount of mechanized clearance and cultivation possible, and consequently contributing to the amount of income earned from crop sale.

As in the control sample, the value of domestic assets accumulated influences the quality of the population in terms of the health and educational levels of each household, which in turn affects productivity. However, a new dimension has been added to the level of education in the form of new skills acquired in construction labour, which is the source of a large portion of total cash income earned. Thus, the main difference between the peasant economic system and the planned economic system is the sources of income; the control group depends almost entirely on income from crop sale, while the Plan sample has access to two income sources, from crop sale and wage labour. Consequently, the amount of cash income earned by households in the Plan sample depends on both the quantity and type of crops produced, and the number of weeks worked in construction and the category of employment.

Income is expended on food and non-food items, with proportional allocation of expenditure between these two categories depending on household income and the total number of residents per household, rather than on the amount of food produced for domestic consumption as this is minimal in the Plan sample. The amount of expenditure on food feeds back to affect the quality of the population in terms of health, and consequently influences the productive capacity of the household labour units. Non-food expenditures result in the accumulation of domestic and personal assets which also feed back to influence quality of population and productive capacity.

Household number 24 in the sample is an example of a wealthy household illustrating this pattern of relationships. This household possesses a parcel with good, well-drained soil and scattered forest cover, permitting economical land clearance and cultivation by machines. The 11 hectares of mechanized rice in the parcel will potentially yield a cash income of over (Mexican) $5,000. The head of household 24 worked as a foreman in the construction works for thirty weeks between July 1st 1967 and June 30th 1968, yielding a net income of (Mexican) $12,759.83. His skills and knowledge acquired in construction labour together with his reliability as a supervisor, are thus a great asset to his family as he is paid $35.75 an hour as opposed to the basic labourer's wage of $15 an hour.

The household spent an estimated total of (Mexican) $7,298 during the year on medicines, clothing, recreations, food and education. Of this total approximately $4,950 was

expended on food, $700 on recreations, $750 on clothing, $838 on medical expenses and $60 on education. The relatively high long-term expenditure on domestic assets is reflected in the above average point total of assets accumulated (91 points). The above average expenditures on food and non-food items also appear to have influenced the quality of the population, as both literacy and health levels are relatively high, which would tend to have a positive influence on productive capacity.

Household 13 is typical of the least wealthy households in the sample. The family's parcel has a dense cover of rotation forest making land clearance by hand a difficult undertaking. The part of Unit 28 in which the parcel is located has not yet been scheduled for mechanized clearing, and the household has only been able to cultivate 1 hectare of rice in the past year using traditional agricultural methods, which will yield a potential cash income of well under (Mexican) $5,000. The household head worked as a labourer in consturction for 13 weeks, and received a net income of $2,682, thus total income for the year would amount to a little over $5,000.

The household spent an estimated total of $2,150 during the year on medicines, clothing, food and education. No money was spent on recreations, as the family cites reading the Bible as their only '*recreation*'. Of the total expenditure budget approximately $1,600 was spent on food, $450 on clothing, about $50 on medicines and $36 on education. The comparatively small size of the household budget is reflected in the below-average point total of domestic assets accumulated (25), and is in-

directly reflected in the low levels of health and education.

In conclusion, it must be remembered that Unit 28 is part of a planned economic development programme which is still in the early stages. Consequently, the agricultural system is in a constant state of flux, with almost daily modification and recombination of inputs and components, in order to increase production and productivity and thus raise the standard and quality of peasant life as quickly as possible. Therefore, the system of interrelationships outlined above holds good only for the time of examination--summer 1968, as wage labour in construction and the quality of the land in terms of soil type and vegetal cover, may no longer be the dominant constraints on the generation of wealth.

Household Wealth and Want Patterns: Comparison With Control Sample

The main aim of Plan Chontalpa is to raise the peasants' income and standard of living by modernizing the agricultural system and ironing out inequalities in land tenure, agricultural opportunities and income. Considerable success has already been achieved in raising the average amount of cash income earned per household, as can be seen in Table 27 as compared to Table 15 in Chapter 4. In addition, some progress has been made in eradicating income inequalities, and the range in value of income and assets in the Plan sample households is considerably less than in the control sample. Consequently, it was not considered necessary to subdivide households on the basis of wealth

in order to undertake a survey of want patterns in the Plan sample.

As in the control sample three main categories of wants were identified--food wants, domestic wants and personal wants. These wants were then assessed as deep-seated or superficial depending on their frequency of occurrence as components of the consumption-expenditure pattern.

Analysis of food wants reveals a large variety of wants in comparison with the control sample, with the addition of new wants such as bread, fish, soft drinks, drinking chocolate, and canned goods such as condensed milk, Nescafé, canned fruit, vegetables, meat and fish. The majority of these new items are superficial wants which are satisfied on an irregular basis on special occasions such as fiestas, or when surplus income is available, though they are consumed more frequently by wealthier households earning a regular cash income from wage labour. However, canned milk and soft drinks can be regarded as deep-seated wants as they are regularly consumed by over 50% of the sample households. Canned milk is frequently used as a substitute for the breast-feeding of older children, which formerly used to be continued up to the age of 5 years or more. However, no instances of adult consumption of canned milk were encountered in the households. On the other hand, soft drinks are consumed in vast quantities by every member of the 18 households citing this item as a regular weekly expenditure. This may have unfortunate dietetic and health consequences, especially for the small children. As one mother says -

> My children won't drink milk--only soft drinks. The social worker says this is bad for them--but I don't see why. The little ones don't get sick any more than they used to. Anyway, when they drink a bottle of pop they aren't so hungry all the time and don't want so much to eat. Little mouths still cost enough to feed, and we don't have that much money yet. 2

Fish is irregularly consumed largely because it is often rotten by the time the traders get to Gregorio Mendez, but would probably become a deep-seated regularly satisfied want if it arrived in the town in good condition. Bread is a completely new want for the peasants in this region, and is desired as a prestige food eaten for desert as *'cake'* rather than as a staple ceral--a possible replacement for the tortilla. Thus, it would seem unlikely that bread will become a deep-seated want in the near future, as traditional peasant dependence on maize is very deep-seated psychologically. In addition, the peasants prefer the taste of corn to that of wheat meal, and dietary tastes and preferences are generally very slow to change as they are deeply rooted within the cultural frame-of-reference. Similarly, canned goods are bought largely out of curiosity for experimental and prestige reasons, and the peasants prefer fresh fish, meat and vegetables for everyday consumption.

The extent to which a large proportion of expenditure on superficial wants is motivated by curiosity and desire to

---

[2]Interview with wife of Constantino Olan Gamas, August 8th, 1968.

experiment with new items,[3] is evidenced by the wide range of goods stocked in very small quantities in the consumer's cooperative in Gregorio Mendez, which is run by the peasants themselves. They were given free range in stocking the cooperative, and selected items from the range of goods stocked in the supermarket in Villahermosa--the state capital. Thus, the list of goods in the cooperative includes a number of well-known, brand name items which the peasants would not even have heard of 5 years ago, such as--Triumph cooking oil, Ajax cleanser, Alka-Selzer, Camel cigarettes, Colgate toothpaste, Jello instant pudding, Camay soap and Fab washing powder.

Most of these items were selected simply out of curiosity as many of the peasants had been impressed by the colourful advertisements in magazines, which, in many cases, are the only part of periodicals they can read with any degree of facility due to their low level of literacy. However, the inclusion of items such as soap, domestic cleanser and washing powder, was influenced partly by the social workers of the Grijalva Commission who have been undertaking an intensive drive for personal and household cleanliness.

Deep-seated wants comprise roughly the same range of items as in the wealthy group of households in the control sample, including high-cost prestige foods such as poultry, meat, eggs and vegetables as well as the basic staples such as maize, rice, pasta, beans, sugar, coffee, salt and cacao. However,

---

[3]A period of experimental spending was also identified by Elizabeth Hoyt, op. cit., in her case study of peasants involved with the expansion of the United Fruit Company's operations in Guatemala but was not apparent to Manning Nash, op. cit., in his examination of the industrialization of a Guatamalan community.

considerably more money is allocated to the high-protein prestige items such as meat and eggs, than in the control sample.

In contrast to the control sample, milk can be regarded as a deep-seated want. However, as stated above, milk is still not regarded as a commodity for adult consumption.

In summary, it is clear that although some households in the control sample spend as much on food as the households in Gregorio Mendez, the average expenditure per household is consistently higher in the Plan sample. In addition, it appears that the peasants respond to the increase in cash income available for food expenditures, by diversifying spending rather than purchasing larger quantities of the traditional components of the peasant diet. Thus food and domestic wants are far more varied than in the control sample, including more high cost, high protein foods, and a larger number of prestige superficial wants desired for experimental reasons.

Domestic wants also include a wide variety of both deep-seated and superficial wants. As in the control sample, deep-seated wants comprise the full range of home-made rustic furniture, and utilitarian household items such as cooking pots and eating utensils (See Tables 19 and 20). However, a greater number of prestige store-bought goods can be included as deep-seated wants, which can be satisfied by well over 50% of the sample households. In particular, the use of kitchen ware and beds, either home-made beds with bought mattresses or store-bought '*modern style*' beds, has become far more widespread than

in the control sample. Other items with high prestige rating which are superficial wants satisfied by only a few wealthy households include refrigerators, gas stoves, box spring beds, cutlery and household ornaments.

Even the poorer households in the sample with the lowest point ranking of domestic assets, possess some store-bought items, and it seems likely that as income increases with the progress of Plan Chontalpa, many of the superficial prestige wants will become incorporated into the standard of living. However, electrical appliances such as refrigerators and '*urban style*' modern furnishings such as box-spring beds represent experimental spending, and it seems unlikely that they will be incorporated as deep-seated wants in the near future even if income continues to increase at the present rate. For people do not buy things simply because they are available and can be afforded, and there has to be a degree of congruity with long-standing wants. The peasants in the Plan sample do not yet perceive any real need for these appliances and furnishings, and they do not fit in with their current pattern of living, which still includes many traditional elements of rustic life in the region. Several of the households in Gregorio Mendez buy expensive appliances and then throw them away when they break-down or use them as cupboards for storage, which reinforces the supposition that the peasants are not yet ready for this type of commodity. However, the occasional household will continue to buy these appliances and furnishings for prestige reasons, but they will not become deep-seated wants until a real felt need develops.

As in the control group, personal wants comprise clothing, shoes, health needs and recreational items, but items for personal adornment such as cosmetics, toiletries and dress accessories are also included as a new component. Clothing is a deep-seated want claiming a proportionally larger amount of the total family budget than in the control group. This increased expenditure is due largely to more frequent participation in national and school festivals as a response to community living, which prompts the peasants to spend more money on '*fiesta clothes*'. The same reason partly explains increased expenditure on shoes, and most adults and school-age children have at least one pair for such special occasions. However, the social workers' campaign to persuade the peasants to wear shoes to reduce the incidence of hookworm probably contributes to the increase in number of pairs of shoes per household, though the mere fact of possession does not necessarily mean that the peasants do not go barefoot most of the time in order to avoid wear and tear on footware. In addition, the clothing and shoes purchased is somewhat more modern in style than in the control group, reflecting the impact of magazine advertizing and the increased frequency of trips to Cardenas and Villahermosa. However, such items as jeans and high-heeled shoes can still only be regarded as superficial wants, and it seems improbable that the mini-skirt will become accepted apparel in Gregorio Mendez for many a year.

Unlike the control group, health expenditures can be regarded as a deep-seated want in the Plan sample. However, this is not really due to a change in want perception, but rather

to the increased availability of medical facilities and drugs through the medical services of the Grijalva Commission. In addition, those peasants working as wage labourers in the Commission's construction works can have the cost of drugs deducted out of their wages if they so desire. This encourages the peasants to seek medical aid and buy drugs, as -

> It doesn't hurt so much to spend money
> when you never knew you had it anyway. [4]

The variety of recreational wants is also appreciably greater than in the control sample, as is the number of recreations requiring cash outlay. More money is spent on '*modern*' recreations such as movies, magazines and books, and the traditional peasant recreations such as visiting relatives, walking to town and Bible-reading are only practised by the older inhabitants and the more '*rabidly*' religious households. The role of religion in influencing recreational wants is very interesting, especially in one respect--those households which include both Bible-reading and drinking in their list of recreations are invariably Catholic, while households listing Bible-reading without drinking, movie-going, and reading magazines are inevitably Evangelical --which indicates the importance of cultural factors in want development.

Sport and recreational equipment are a completely new want in this category. With the exception of bicycles these must be regarded as superficial wants enjoyed by only a few of the households. However, the provision of sports facilities in

[4]Interview with Efrain Lara Barahona, June 30th, 1968.

Gregorio Mendez for children and adults should encourage this want to develop on a more widespread basis.

Bicycles can be regarded as both domestic assets and recreational items. In any case, they represent a more deep-seated, widely satisfied want in the Plan sample than in the control group. This increase in the number of bicycles is due largely to the provision of good all-weather roads within Plan Chontalpa, whereas riding a bicycle is simply not feasible in Arroyo Hondo in the rainy season. In addition the control group peasant prefers a horse to a bicycle for utilitarian reasons as a work animal for transporting crops and rounding up stock, whereas the peasant in the Plan sample has access to trucks provided by the Grijalva Commission. The younger peasants in particular prefer bicycles as they have to spend less time each day walking to their parcels and can go into town in the evenings, and also a bicycle does not have to be fed. Finally, the prevalence of bicycles in Gregorio Mendez is a good indicator of the extent to which the Plan sample peasants have moved away from the traditional rustic way of life.

Cosmetics, toiletries, and dress accessories such as handbags and wrist watches constitute superficial wants which are satisfied by only a small percentage of the sample households, though the number of people buying these items, however sporadically, has steadily increased over the last two years due both to the impact of magazine and radio advertizing and the example set by the young teachers and social workers employed by the Commission.

Finally, a growing want for adult education is evidenced by the increasing enrollment in adult literacy, domestic science and handicraft classes organized by the school teachers and social workers in the afternoons.

Conclusions On Want Patterns: comparison with control sample

It is clear that want patterns differ considerably between the Plan sample and the control sample, both in the type of wants exhibited and in the degree of want satisfaction obtained. The Plan sample households exhibit more prestige wants for high-cost store-bought goods, and are able to incorporate a greater number of these items into the standard of living as deep-seated wants. They are also able to buy larger quantities of basic utilitarian items and thus achieve a higher degree of satisfaction of these wants.

The higher average income in the Plan sample is clearly the operative factor influencing the increased degree of satisfaction of wants common to both samples. Increased income is also indirectly responsible for the wide variety of wants exhibited by the Plan sample as opposed to the control group, as the Plan peasants have been liberated from the struggle to keep their families alive, and have sufficient surplus cash to undertake a certain amount of experimental spending.

However, there is no direct link between the increase in cash income and the type of wants desired by the Plan sample peasants, for it is clear that the fact that an article is avail-

able and can be afforded does not necessarily mean that it will become a regular component of the consumption pattern. Thus, although most of the households in the Plan sample can afford to wear shoes every day, they have not become a deep-seated want in spite of the efforts of nurses and social workers, as they are not part of the traditional peasant wearing apparel and the peasant does not perceive any real need for them.

The key factor in the transformation of superficial wants into deep-seated wants is thus the degree of compatability with the existing cultural matrix and especially with the value system or cultural frame-of-reference. Thus many of the superficial wants which are the product of experimental spending are unlikely to be incorporated as deep-seated wants, as they are prompted by curiosity and the dictates of advertizing and are passing whims which have no real '*fit*' with the attitudes, values and general way of life of the peasants in Gregorio Mendez.

However, increasing participation in a '*modern*' way of life due to the innovations of Plan Chontalpa, and consequent improvements in literacy, greater exposure to mass media, and more contact with the '*other Mexicans*' --engineers, social workers and other well-educated professional people, has resulted in the genesis of new deep-seated wants which have already been incorporated into the standard of consumption. Thus, items such as radios, bicycles, sewing machines, modern clothing, medicines and recreational items, which are generally superficial wants in the control sample, have become deep-seated wants in the Plan sample, due to these changes in the peasant way of life and

corresponding change in attitudes and values, as well as the increase in cash income which is necessary to bring the peasants to the point where the satisfaction of these wants is possible.

The increase in cash income in the Plan sample has permitted a greater degree of satisfaction of deep-seated wants also present in the control group. However, in many cases these long-standing wants have acquired additional dimensions or new meaning in the Plan context as a result of changes in attitudes, motives and aspirations. For example, expenditure on recreations and fiestas has moved away from traditional components along more modern lines. However, some of the new wants developed in the Plan sample as a response to increased exposure to a modern way of life, have been modified in meaning to give a better '*fit*' with the peasants' value system which still retains many traditional elements. Thus, the peasants in the Plan sample exhibit a superficial want for white bread, but this is desired as a cake with '*treat*' connotations rather than as a basic dietary component, as wheat cannot compete with corn as a staple grain for it would conflict with existing peasant values and perceptions.

Despite the considerable differences in want pattern between the control group and the Plan sample, the difference in the standard of living between the two groups is far less than may be expected. Total expenditure is much higher within the Plan sample, but there is relatively little difference in every-day expenditures, and despite the improvements which Plan Chontalpa has made in the quality of the environment the standard of living of the Plan sample households is only a little higher

than that of the wealthiest households in the control sample.

Several explanations can be suggested for this apparent anomaly. Firstly, the effects of other developments in Tabasco apart from Plan Chontalpa such as improvements in the communication network and the expansion of the sugar, cacao and petroleum industries, are more widespread than appears initially in terms of impact on peasant achievement-motivation, aspirations and standard of living. Secondly, the high degree of experimental spending undertaken by the peasants in the Plan sample retards the incorporation of new wants within the permanent consumption pattern, as the way of life of these people has changed radically in a very short time and they have not yet had time to develop many new priority wants for satisfaction. Thirdly, the peasants are unaccustomed to receiving cash income on a regular basis, and there is little planning of expenditure and little understanding of the meaning of budgeting and saving. In addition, some degree of culture shock is evident and it will be some time before there is full adjustment to the change in life way, and the embryonic changes in attitudes and perceptions have been consolidated into the cultural frame-of-reference. Finally, some of the potential new wants conflict with the cultural matrix which retards or prevents their incorporation into the standard of living.

In summary, the control group sample represents a traditional peasant society in which the rate of socio-economic change is accelerating due to increased involvement with cash-

crop agriculture. Consequently, the want pattern shows a mixture of traditional deep-seated peasant wants, with the addition of some new items which have a sufficient degree of congruity with the existing cultural matrix to be accepted as deep-seated, regularly satisfied wants if income continues to increase. On the other hand, the Plan sample represents a peasant group which has been involved in planned accelerated change, involving radical disruption of the traditional peasant life-way and corresponding values. Thus, the want pattern comprises a blend of new superficial wants which are the result of experimental spending, new deep-seated wants which are consequent on changes in values, attitudes and perceptions triggered off by the Plan, and old long-standing wants which are related to the many traditional elements of the peasant way of life and value system which still persist in the Plan sample.

CHAPTER VI

CONCLUSIONS ON WANT DEVELOPMENT

Referring back to the questions asked and the hypothesis erected in the introductory chapter, the analysis of the control group and the Plan sample has clearly shown that increased cash income stimulates changes in expenditure patterns and that corresponding changes in wants can be identified. It is also evident that such a study of the relationships between increased income and the development of new spending patterns, gives an indication of changes in attitudes and aspirations initiated by Plan Chontalpa.

However, there is no simple link between increased purchasing power and consumption. The availability of cash income merely acts as a catalyst to change in wants, as potential wants are not necessarily adopted merely because the opportunity is available and the items can be afforded. Thus the main significance of increased income is that it brings the consumer to the point where satisfaction of potential wants is possible.

It has been shown that change in wants is largely a function of change in perception, rather than the influence of increased income, for all wants originate in the cultural frame-of-reference or value system. Thus, it appears that change in the value system itself in terms of changes in attitudes, motivations and aspirations, is prerequisite for the development of new wants and the modification of old wants, which in turn stimu-

lates further reformulation of the value system. Thus, the amount of income available for expenditure and the number of alternative want choices possible are secondary in importance to the role of the value system in want development. The key factor in want development is dispositions to buy which originate within the value system.

Furthermore, it has been shown that the ultimate deciding factor as to whether or not a superficial want will be accepted as a regularly satisfied deep-seated want, is the degree of compatability with the existing cultural matrix formed by the sum of all components of total way of life. In particular, for a new potential want to become part of the standard of consumption, it must not conflict with the existing cultural matrix as expressed in the value system.

The comparison between the Plan sample and the control group indicated that acceleration of the rate of socio-economic change also accelerates the rate of want development. The availability of increased cash income makes possible a greater degree of satisfaction of old long-standing wants, and the reformulation of the value system accompanying socio-economic change causes some old wants to acquire additional dimensions within the new context. However, it became clear that the initial period of new want development consequent on income increase, was characterized by a period of experimental spending on a wide variety of superficial wants which are unlikely to be incorporated as deep-seated wants, as they are prompted by curiosity and are passing '*whims*' which have no real cultural congruity. Conse-

quently, increased spending on want satisfaction in the Plan sample has achieved relatively little impact on the standard of living in comparison with the control group, as the high degree of experimental spending retards incorporation of new wants within the permanent consumption pattern. Thus, increased income does not automatically result in a higher standard of living, at least in the initial period following the innovation.

Finally, it is clear that motives for expenditures on superficial wants influence the likelihood of their adoption as deep-seated wants. In particular, wants motivated by desire for experimentation are unlikely to be very durable once initial curiosity has been satisfied. Neither are '*prestige*' wants motivated simply by a desire to display wealth likely to be long-lasting, as: "...prestige is a function of fashion, and fashion, by definition, is merely a passing fad."[1] Thus, it appears that a superficial want has a better chance of becoming a permanent component of the consumption pattern if it has some utilitarian aspects and fulfils a real '*felt need*'. Consequently, it is unwise to make any specific predictions concerning possible future patterns of consumption based on these new want developments, as new wants are often more important as symbols than as utilitarian additions to the standard of consumption.

In conclusion, analysis of changing income and expenditure patterns seems to be a useful method of identifying

---

[1] See Chapter IV, page 99 .

change in wants. However, it is impossible to proceed beyond identification towards a fuller understanding of the process of want development, without a closer examination of the role played by the cultural frame-of-reference or value system, both in giving birth to new wants and in influencing whether or not they will be accepted as permanent components of the pattern of consumption. Thus the next step in the formulation of a connected theory of want development should logically be a more detailed analysis of the role played by the value system in that process.

SELECTED BIBLIOGRAPHY

Books

Bauer, P.T., Yamey, B.S. The Economics of Underdeveloped Countries. Cambridge, Harvard University Press, 1957.

Belshaw, C.S. Traditional Exchange and Modern Markets. Englewood Cliffs, N.J., Prentice-Hall, 1965.

Benedict, Ruth. Patterns of Culture. Boston, Houghton Mifflin, 1934.

Bennis, W.G., Benne, K.D., Chins, R., eds. The Planning of Change. New York, Holt, Rinehart, Winston, 1961.

Braibanti, R., Spengler, J.J., eds. Traditions, Values and Socio-Economic Development. Durham, Duke University Press, 1961.

Burk, Marguerite C. Influences of Economic and Social Factors on U.S. Food Consumption. Minneapolis, Burgess, 1961.

Chayanov, A.V. The Theory of Peasant Economy. [1925], eds. Daniel Thorner, Basile Kerblay, R.E.F. Smith, Homewood, Illinois, American Economic Association, 1966.

Chevalier, F. Land and Society in Colonial Mexico. Los Angeles, University of California Press, 1963.

Codigo Agrario de los Estados Unidos Mexicanos. Mexico, D.F., Medina Hermanos, 1965.

Cohen, Yehudi A. Man in Adaption - Vol. II, The Cultural Present. Chicago, Aldine, 1963.

De Vries, Egbert; Exhavarria, Jose Medina, eds. Social Aspects of Economic Development in Latin America. Vol. I, Paris, UNESCO, 1963.

Dusenberg, James. Income, Savings and The Theory of Consumer Behaviour. Cambridge, Harvard University Press, 1949.

Einzig, Paul. Primitive Money. London, Eyre and Spottiswoode, 1949.

Falcon de Gyves, Zaida. Analisis de los Mapas de Distribucion de la Poblacion del Estado de Tabasco. Mexico, D.F., Universidad Nacional Autonoma de Mexico - Instituto de Geografia, 1965.

Firth, Raymond, ed. Themes in Economic Anthropology. London, Tavistock, 1967.

Firth, Raymond; Yamey, B.S., eds. Capital, Saving and Credit in Peasant Societies. London, Allen and Unwin, 1964.

Foster, George. Tzintzuntzan: Mexican Peasants in a Changing World. Boston, Little, Brown, 1967.

Gordon, Leyland J. Economics for Consumers. New York, American Book Company, 1961.

Hagen, E.E. On the Theory of Social Change. How Economic Growth Begins. Homewood, Illinois, Dorsey, 1962.

Halpern, Joel. The Changing Village Community. Englewood Cliffs, N.J., Prentice-Hall, 1967.

Heath, Dwight; Adams, Richard. Contemporary Cultures and Societies of Latin America. New York, Random House, 1965.

Herskovits, M.J. Economic Anthropology. New York, Knopf, 1952.

Hill, David. The Changing Landscape of a Mexican Municipio, Villa Las Rosas, Chiapas. Chicago, Chicago University Department of Geography Research Paper No. 91, 1964.

Hirschman, A.O. Economic Development and Cultural Change. Chicago, University of Chicago Press, 1957.

Homans, George. Social Behaviour as Exchange in Sentiments and Activities. New York, Glencoe, 1962.

Hoyt, Elizabeth. The Consumption of Wealth. New York, Macmillan, 1928.

Hozelitz, Bert. Sociological Aspects of Economic Growth. New York, Glencoe, 1960.

Instituto Mexicano de Recursos Naturales Renovables. Problemas del Tropico Mexicano. Mexico, D.F., 1965.

Katona, George. Psychological Analysis of Economic Behaviour. New York, McGraw-Hill, 1951.

Lewis, Oscar. Life in a Mexican Village: Tepoztlan Restudied. Urbana, University of Illinois Press, 1963.

Lippitt, R; Watson, J; Westley, B. The Dynamics of Planned Change. New York, Harcourt, Brace and World Inc., 1958.

McBride, G.M. The Land Systems of Mexico. New York, American Geographical Society, 1923.

McClelland, David C. The Achieving Society. Princeton, N.J., Van Nostrand, 1961.

Mellor, John W. The Economics of Agricultural Development. Ithaca, N.Y., Cornell University Press, 1966.

Nash, Manning. Machine-Age Maya: the Industrialization of a Guatemalan Community. Chicago, Pheonix, 1967.

_____. Primitive and Peasant Economic Systems. San Francisco, Chandler, 1966.

National Academt of Science - National Research Council. Science of Geography. Washington- D.C., Publication 1277, 1965.

Neal, Sister Marie Augusta. Values and Interests in Social Change. Englewood Cliffs, N.J., Prentice-Hall, 1965.

Parsons, Talcott; Shils, E.A., eds. Towards A General Theory of Action. Cambridge, Harvard University Press, 1951.

_____. et. al., Economy and Society. London, Routledge and Kegan Paul, 1956.

Poleman, T.T. The Papaloapan Project. Pala Alto,California, Stanford University Press, 1964.

Ramires, I: Directorio Monografico de Industria, Comercio, Agricultura, Granaderia y Profesiones, 1957-1959, (Chiapas, Tabasco, Campeche, Quintana Roo, Yucatan), Mexico, D.F., 1960.

Rapoport, Anotol. Operational Philosophy. New York, Wiley, 1965.

Redfield, R. The Little Community and Peasant Society and Culture. Chicago, University of Chicago Press, 1963.

_____. Tepoztlan, A Mexican Village: A Study of Folk Life. Chicago, University of Chicago Press, 1930.

Robbins, Lionel. An Essay on the Nature and Significance of Economic Science. London, Macmillan, 1937.

Philips, E Bryant. Consumer Economic Problems. New York, Holt, 1957.

Schultz, T.W. Transforming Traditional Agriculture. New Haven, Conn., Yale University Press, 1965.

Shafer, Robert J. Mexico. Mutual Adjustment Planning. Syracuse, Syracuse University Press, 1966.

Shapiro, Samuel, ed. Intergration of Man and Society in Latin America. Notre Dame, Indiana, University of Notre Dame, 1967.

Smelser, Neil. The Sociology of Economic Life. Englewood Cliffs, N.J., Prentice-Hall, 1963.

Tax, Sol. Penny Capitalism. A Guatemalan Indian Economy. Chicago, University of Chicago Press, 1963.

Veliz, Claudio. Obstacles to Change in Latin America. New York, Oxford University Press, 1965.

Wagley, Charles. Economics of a Guatemalan Village. Menasha, Wisconsin, American Anthropological Association, Memoir No. 58, 1941.

Warriner, Doreen. The Economics of Peasant Farming. London, Oxford University Press, 1939.

Whetten, N.L. Rural Mexico. Chicago University Press, 1948.

Wilkie, James W. The Mexican Revolution: Federal Expenditure and Social Change Since 1910. Berkeley, University of California Press, 1967.

Wolf, Eric R. Peasants. Englewood Cliffs, N.J., Prentice-Hall, 1966.

de Zorita, Alonso. (Life and Labour in Ancient Mexico) The Brief and Summary Relations of the Lords of New Spain. Translated and with an Introduction by Benjamin Keen, New Brunswick, Rutgers University Press, 1963.

Articles and Periodicals

Atkinson, J.P. "Motivational Determinants of Risk-Taking Behaviour," Psychological Review. Vol. 54, 1957, pp. 359-372.

Breslaw, B.T. "The Development of a Socio-Economic Attitude," Archives of Psychology. No. 226, 1938, pp. 5-96.

Bayton, James A. "Motivation, Cognition, Learning - Basic Factors in Consumer Behaviour," Journal of Marketing. Vol. 22, January 1958, pp. 282-289.

Foster, George M. "Community Development and the Image of the Static Economy," Community Development Bulletin. Vol. 12, 1961, pp. 124-128.

_____. "Interpersonal Relations in Peasant Society," Human Organization. Vol. 19, 1960-1961, pp. 174-184.

_____. "Peasant Society and the Image of Limited Good," American Anthropologist. Vol. 67, 1965, pp. 293-315.

Frank, J.D. "Some Psychological Determinants of the Level of Aspiration," American Journal of Psychology. Vol. 47, 1935, pp. 286-293.

Green, James W. "Community Development as Economic Development: The Role of Value Orientations," Community Development Review. Vol. 5, pp. 1-10.

Hoyt, Elizabeth. "Want Development in Underdeveloped Areas," Journal of Political Economics. Vol. 49, June 1951, pp. 194-202.

Katona, George. "Rational Behaviour and Economic Behaviour," Psychological Review. Vol. 60, 1953, pp. 307-318.

Lewin, Kurt. "Forces Behind Food Habits and Methods of Change," Bulletin of the National Research Council. No. 108, 1943, pp. 35-65.

Nash, Manning. "The Multiple Society in Economic Development: Mexico and Guatemala," American Anthropologist. Vol. 59, 1957, pp. 825-833.

Opler, Morris E. "Problems Concerning Official and Popular Participation in Development Projects," Economic Development and Cultural Change. Vol. 2, 1954, pp. 269-278.

Redfield, Robert. "The Folk Society," American Journal of Sociology. Vol. 42, January 1947, pp. 293-308.

Scott, W.A. "Empirical Assessment of Values and Ideologies," American Sociological Review. Vol. 23, 1959, pp. 299-309.

Sjoberg, Gideon. "Folk and Feudal Societies," American Journal of Sociology. Vol. 48, November 1952, pp. 231-239.

Swift, Michael. "The Accumulation of Capital in a Peasant Economy," Economic Development and Cultural Change. Vol. 5, 1956-1957, pp. 325-337.

Tax, Sol. "Changing Consumption in Indian Guatemala," Economic Development and Cultural Change. Vol. 5, 1956-1957, pp. 147-158.

_____. "The Freedom to Make Mistakes," America Indigena. Vol. 16, 1956, pp. 171-177.

Tobin, James. "On the Predictive Value of Consumer Intentions and Attitudes," Review of Economics and Statistics. Vol. 51, 1959, pp. 1-16.

Wagley, Charles; Harris, Marvin. "A Typology of Latin American Subcultures," American Anthropologist. Vol. 47, June 1955, pp. 428-451.

Wolf, Eric. "Types of Latin American Peasantry: A Preliminary Discussion," American Anthropologist. Vol. 57, 1955, pp. 452-470.

Government Publications

Banco Nacional de Comercio Exterior. Mexico 1966. Hechos, Cifras, Tendencias. Mexico, D.F., 1966.

Nacional Financiera S.A. Statistics on the Mexican Economy. Mexico, D.F., 1966.

Santamaria, Francisco J. Documentos Historicos de Tabasco, Vols. I and II. Villahermosa Tabasco, Publicaciones del Gobierno del Estado, 1951.

Secretaria de Agricultura y Ganaderia, Secretaria de Hacienda y Credito Publico, Banco de Mexico, Projections of Supply of and Demand for Agricultural Products in Mexico to 1965, 1970 and 1975. Jerusalem, United States Department of Agriculture, 1966.

Secretaria de Industria y Comercio, Direccion General de Estadistica. Anuario Estadistico Compendiado, 1966. Mexico, D.F., 1967.

Secretaria de Industria y Comercio. Direccion General de Estadistica. IV Gensos Agricula, Ganadero y Ejidal 1960. Resumen General. Mexico, D.F., 1960.

Unpublished Documents and Other Sources

Italconsult Argentina, and C.I.E.P.S. Ingenieros Consultores. Banco Inter-Americano de Desarrollo. Secretaria de Recursos Hidraulicos: Proyecto Piloto El Limon, La Chontalpa, Tabasco, Mexico. Vols. I-V, Mexico, D.F., 1963.

Interviews with Ing. Carlos Molina R., Vocal Ejecutivo de la Comision del Grijalva, and Ing. Javier Valle Garcia, Vocal Secretario de la Comision del Grijalva, and other personnel of La Comision del Grijalva and the Banco Inter-Americano de Desarrollo. Summer 1967 and Summer 1968.

La Comision del Grijalva. Unpublished documents, reports and accounts, 1965-1968.

APPENDIX A - 1

Extract from interview with head of Household 5 in the Control Sample (literal translation from the Spanish, with some editional comments in brackets).

"Well here we are as ejidatarios fighting the land the Government gave us. We have had to work and work all our lives to gain a living from the soil. Each of us here has 12 hectares, exactly the same. But of course some of us work harder than others (laughter). In this part of the ejido nearly all of the parcels are in cane and cacao (he means nearly everybody has some of these crops but the quantities are often minute). I, myself have ten hectares of cane, and two hectares of cacao or thereabouts. We have been growing cane here for about 6 years. We started to grow cacao seriously a little earlier about 1960 (N.B. when the producers' cooperatives came into operation in Cardenas). Before that it was only maize and beans. We never grew rice; I don't know why. When the Ingenio started expanding we took the chance of earning a little more, and those who could, grew sugar. It depends a lot on your parcel though --most of mine was high pasture and not flooded very easily. The poor boys with pure forest or lowland--well they are too busy clearing with machete or swimming to look after cane. We sell our cane to the Ingenio, yes. This year they pay $55 pesos a ton but it varies from year to year. Last year it was a little higher but I don't know why. We clear about $22.50

after all the other costs have been taken off--it's a lot, no? They take the biggest part for their expenses. Still it's a living. The returns per hectare are quite good for the first cutting, about 120 tons per hectare. Right now I'm getting 100 tons on the fifth cutting. I'm a member of the cacao cooperative too; we all are. They pay $5 per/kilo. I used to have a lot of cacao, but when my sons grew up I split up the land amongst them and now I have only 500 trees left for myself. The boys have 400 trees and 350 trees each. So right now I sell about 80 kilos a year which isn't very much really.

- My family is large enough--(laughter)--I have eight children in this family, 4 boys and 4 girls: but I have another family too not far from here with 7 children, (i.e., 2 wives). Right now only one of the girls is living here at home--all the rest are off my hands. Three of my sons in this family have land here in the ejido, buy one has moved over to Huimanguillo.

-Animals: I have 4 pigs and 15 chickens. The plague didn't affect us here as much as it did further down the road.

-I was born here and lived here all my life. My father worked on the old Finca Santa Teresa. I have been to Villahermosa and Coatzacoalcas but there are some people '*inside*' (i.e., away from the roads) who have never been to Cardenas . I am 55 years old, but I look a lot older don't I? That's what hard work does to you. When I heard they were giving national land to the peasants (i.e., when this area was originally being

divided up into ejidos in the 1930's) I decided to stay. Anyway where else could I go? This is my country. So I was the first President of the ejido Arroyo Hondo and served a second term about 10 years later.

-Plan Chontalpa - well, who knows--we are accustomed to cultivate the land on our own, to living on our own in our own houses. I ask myself, how are we going to live in these new towns? (Brought up subject himself--no prompting). I don't know much about the Plan itself; I only know they move you into towns into little houses with very small garden lots--no room for anything there. Where am I going to put my animals then? Of course I am interested in the machines and the help they give the farmers, we need all the help we can get. On the whole, we think the Plan is a good thing for the peasant if we could stay in our own homes on our own plots of land, something in the form of a colony maybe--yes a colony with Government help would be the right thing. It's about time the Government did something. I've visited the towns several times but I think it's better to live at home. At least there is room to live here.

APPENDIX A - 2

PLAN SAMPLE: QUESTIONNAIRE - SUMMER 1968
U 28 (English Version)

PERSONAL DATA

Name .....

House Number ..... Parcel Number .....

Birthplace of Household Head .....

If born out of the region - reason for coming to the Chontalpa

.....

Number of Household Residents .....

Literacy of Parents? .....

Official Positions held by Family Head .....

.....

DOMESTIC ASSETS

Furniture

Table ..... Chair ..... Bench ..... Radio .....

Cupboard ..... Sewing Mechine ..... Beds .....

Hammock ..... Other .....

Clothing

.....

Interior House Decoration

.....

Cooking Utensils

.....

Luxury Articles and Recreational Items

.....

Animal Assets

.....

Live with animals? .....

Chicken houses? ..... Outbuildings? .....

Fenced lot. .....

Lot Use

.....

Tools and Implements

.....

House Extensions

.....

EXPENDITURES

A. Expenditure on Food (Estimates): Dietetic Information

1. Staple foods -

2. Number of meals daily? .....

   At what hours? .....

3. Typical diet - foods consumed at each meal?

4. Foodstuffs grown by household in parcel?

   .....

5. Foodstuffs kept regularly in the house.

.....

6. Member of the Consumers' Cooperative? .....

7. Number of times a week purchases are made? .....

Where and which shops? .....

.....

8. Number of times a month purchases are made in Cardenas?

.....Which items? .....

9. Quantity of foodstuffs bought each week?

Maize	Meat	Fruit	Cacao .....
Beans	Milk	Vege-tables	Salt .....
Pastas	Cheese	Eggs	Candy & Biscuits .....
Rice	Fish	Chile	Soft Drinks .....
Bread	Coffee	Sugar	Other .....

10. Estimate - how much money spent on food per week? ($ Mexican)

.....

B. Non-Food Expenditures (Estimates in $ Mexican)

1. Domestic expenditures - average monthly expenditures.

.....

2. Clothing - average yearly expenditure.

.....

3. Articles of luxury and recreation - average yearly expenditure

.....

4. Education - yearly expenditure .....

5. Medical expenses - yearly average .....

C. Information: List - main recreations

1. What type of movies do you like?

2. Type of reading material?

3. What type of radio programmes do you like? - amount of listening time? ....

4. Any increase in expenditure of time and money in this category?
.....

D. Peasant estimate of main changes in direction and amount of expenses since initiation of Plan.

.....

.....

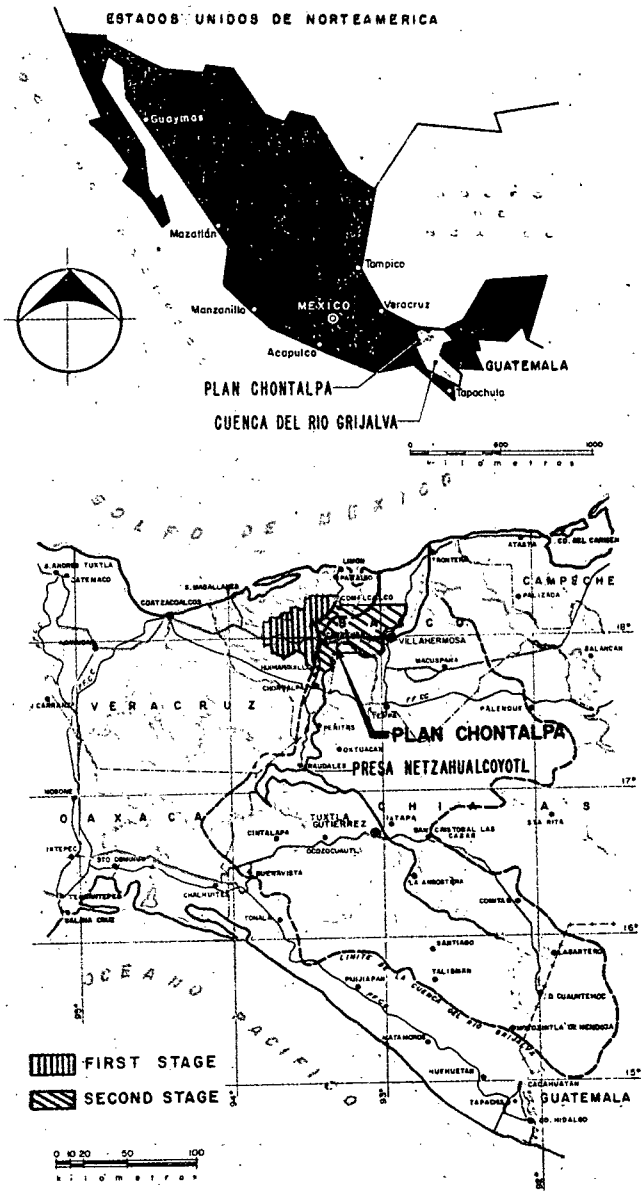
A P P E N D E X B

M A P S

MAP I

PLAN CHONTALPA

LOCATION

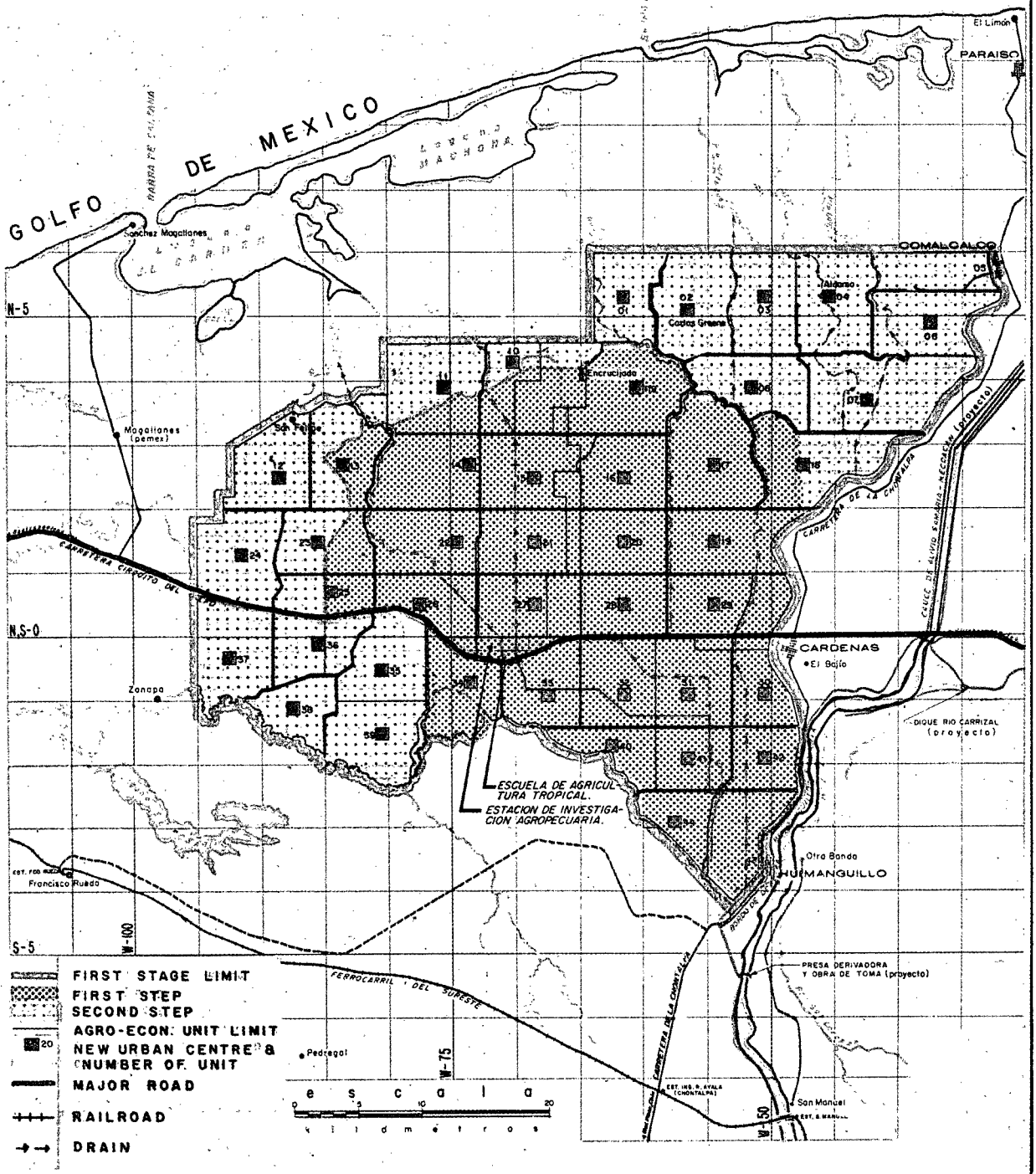


SOURCE: ADAPTED FROM MAP DRAWN BY La COMISION DEL GRIJALVA (1964)

MAP 2

PLAN CHONTALPA

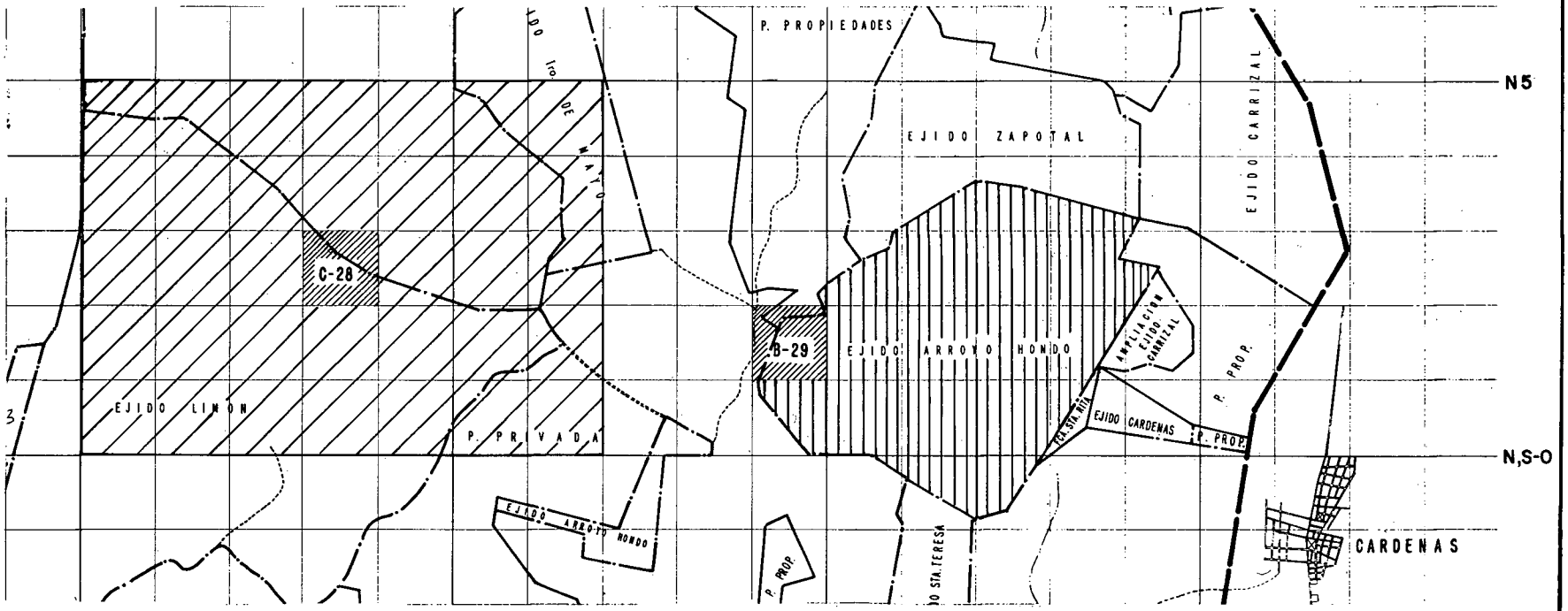
AGRO-ECONOMIC UNITS & NEW URBAN CENTRES



SOURCE: ADAPTED FROM MAP DRAWN BY La COMISION DEL GRIJALVA (1966)

MAP 3

LOCATION OF EJIDO ARROYO HONDO IN RELATION TO THE AGRO—ECONOMIC UNITS OF PLAN CHONTALPA



SOURCE: ADAPTED FROM MAP DRAWN BY La COMISION DEL GRIJALVA (1966)

— LEGEND —

EJIDO ARROYO HONDO (CONTROL SAMPLE)

UNIT 28 — PLAN CHONTALPA (PLAN SAMPLE)

P. PRIVADA — PRIVATE PROPERTY

APPENDIX C

GLOSSARY OF SPANISH TERMS USED IN TEXT

acahual	low rotation scrub forest
conquistador	one of the original Spanish conquerors of the New World
ejidatario	peasant holding usufruct title to an ejidal plot
ejido	a form of land tenure originating in the breakdown of the large estates in the post-Revolutionary land reform, in which the group forming the ejido holds the land title and the individual members have only usufruct rights to the land
encomienda	a system granting Indians to Spanish conquerors, who were obligated to protect their charges in return for tribute and labour. A grant of land often accompanied the allocation of Indians
finca	private property of moderate size, rarely exceeding 100 hectares in the Chontalpa
ingenio (de azucar)	sugar refinery
milpa	clearing for maize cultivation
municipio	local administrative unit roughly equivalent to the North American county
pozol	a paste of maize and water consumed as a beverage
rancho	private property similar in size to a finca