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6 Papers on the Development of the
Agriculture of Guatemala

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A DECLARATION OF PRINCIPLES

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All modern governments engage in programs of activity that have economic objectives or consequences. Every government takes steps to assist and to regulate to some degree the economy of its nation. Most governments attempt also to stimulate economic development.

It is difficult to design economic programs that will achieve the objectives that are sought. There are in fact three sources of difficulty. One is the familiar difficulty of incomplete knowledge or technical error. It is the greater because most governments have had only comparatively brief experience in carrying out economic programs.

The second source of difficulty is that of substituting appearance for action and accomplishment. The temptation is great to establish agencies and commissions with titles that are chosen well -- even impressive. To evaluate the quality of any economic program it is necessary to look not only at organization charts, but also at the record of achievement.

Thirdly, there is danger that economic objectives will be overshadowed by other kinds of objectives or considerations. These can be ease or convenience of administering a program. They can also be the objectives of political gain. Economic objectives ask a degree of dedication, of faithfulness. To achieve them often requires both vigor and courage.

It is implied in these remarks that in order to design economic programs it is necessary to have economic objectives in mind. This is not to say that they must always be expressed as such. Often they are implied rather than expressed. But objectives must be in the minds of the persons who draw up programs of economic activity for government.

Economic programs for agriculture are made more complex by virtue of the complicated structure of the agricultural economy. Historically, most agriculture of the world was of a subsistence economy. Not until the last century or two did a sizable part of world agriculture become commercial. Each country now has some commercial agriculture, and some that remains non-commercial or subsistence. Commercial agriculture, in turn, is divided into production for domestic markets and for export markets.

In general, as a nation develops economically more of its agriculture becomes commercial. This is not to say that all improvement in agriculture must be confined to enlarging and improving the commercial sector of agriculture. The mistake is often made of confining attention to commercial agriculture, and of neglecting non-commercial agriculture. Or, as a second mistake, attention may be given non-commercial agriculture but the government tries to apply to it a program that was designed for commercial agriculture.

The dilemma posed by these two kinds of agriculture is heightened by virtue of the relationship of each kind to formal organization, including the role of government. Non-commercial or subsistence agriculture requires few markets other than local ones, little credit, and of course no export services. Nowadays, commercial agriculture, by contrast, is characterized by a wide range of auxiliary services, including those of government.

Habits of thought change more slowly than reality. In all nations, the agricultural community would like to think of commercial agriculture as scarcely more complicated than non-commercial. In fact, it is much more complicated, and it is becoming more so year by year.

Moreover, modern commercial agriculture can be highly productive -- so productive that it stands in constant danger of over-supplying its markets. An individual producer knows that his production does not over-supply a market. An individual nation usually can be sure its production alone will not over-supply the worldwide market. Nevertheless, when many producers or many nations increase production simultaneously, they will all be subject to the consequences.

Throughout the world, governments -- individually or in regional combinations -- are giving more and more direction to their agricultural economies. Usually the increased direction is done in company with public statements that the actions are temporary. In spite of the defensive statements, the fact is as stated.

Therefore, irrespective of whether any person or any nation favors that trend, it cannot escape the consequences of it, particularly with respect to its export products. Guatemala, for example, is subject to the terms of a worldwide coffee agreement. Likewise, its exports of sugar are influenced by the size of the quota granted by the United States. (The United States, in turn, is party to a world wheat agreement, and its consumers of coffee will be affected by the degree of success attained by the coffee agreement.)

The meaning of these developments to the government of any export nation is that it cannot avoid the responsibility of helping its agriculture to adjust to the forceful realities of the export market. Each government will find it necessary, on the one hand, to enter into negotiations in order to obtain as favorable terms of trade as possible. On the other hand, it must assist its agriculture to adjust to the export situation. For commercial agriculture producing for domestic markets, somewhat less action by government is called for.

Nevertheless, most governments try to help domestic commercial agriculture in several ways: (1) education as to practices in both production and marketing; (2) education as to which products are likely to have the best markets; (3) assistance in credit; (4) marketing programs to prevent monopoly and to help farmers to receive a fair share of the final value of their products; (5) stabilization programs, such as those to stabilize prices from season to season or from year to year.

For non-commercial agriculture most governments try to provide worthwhile help, although, as mentioned above, they sometimes make the poor decision of applying programs that are suitable only for commercial agriculture. Efforts to help non-commercial agriculture often encounter the handicap of low literacy of the farmers and their ingrained customs. Yet progress in increasing the productivity of non-commercial agriculture can show pronounced and visible benefits -- perhaps more so than any success elsewhere.

There is also a potential danger in the fact that some programs for non-commercial agriculture introduced by government are labor-saving. In a country that has a big surplus of labor, it is questionable whether the introduction of equipment that only saves labor is of much net benefit.* Non-commercial agriculture needs cultural practices that increase yields, more than it does those that save labor.

This enumeration omits measures to open up and develop new lands. These are a class of their own. In a sense they are the most visible program, the easiest to design if not administer. In most nations they can accomplish only a small part of the total improvement of agriculture that is needed, and they cannot substitute for action to improve existing agriculture.

The above enumeration suggests that the economic aspects of government are distinctive for each kind of agriculture.

Commercial production for export is affected by the various worldwide agreements as well as by the regional trade pacts that now exist (such as the Common Markets of Europe and Central America). It also is affected by the ever more pressing need to standardize and to guarantee the quality of products that are exported. Nations subject to export agreements and otherwise exporting agricultural products generally make use of one or more of the following measures: marketing quotas for individual producers; storage programs; inspection of products for export, as to their meeting quality standards; and encouragement of production of substitute products through education or through direct financial aid.

Commercial production for domestic markets usually requires somewhat less assistance from government than does production for export. The amount and kind of assistance varies with the product, and with the prospects for future demand for each product. Perhaps economic analysis has more usefulness when applied to programs for this kind of agriculture than for any other kind. There usually is economic analysis of prospective demand for various products. If the nation wishes to increase its total commercial production for domestic markets, there must be research and education for that purpose, together with public policies (including taxation and land tenure policies) to achieve a higher intensity of land use. Studies of potential productivity will be made area by area. Much attention will be given the livestock economy. In less developed nations livestock may graze lands that have high potential productivity for crops. As those nations develop, grazing becomes confined to the more remote or drier areas, and part of the livestock (and poultry) economy is made more intensive through feeding of harvested feeds.

* As distinguished from equipment essential to increased yields.

For this part of agriculture the marketing system gradually becomes more formally organized -- more commercial. Interest arises in improving and standardizing quality, in providing more market information, and in measuring the cost of each market service for the ultimate purpose of assuring that more of the value of products is paid to the farmer.

Nevertheless, it would be a mistake to copy routinely the marketing programs of Western Europe or the United States. Before any step is taken a judgment should be made as to whether the circumstances justify it. Economic studies can often (but not always) help toward reaching that judgment.

For all commercial agriculture, there is need to meet two pressing requirements: for credit, and for programs to achieve more stability. The latter may begin with economic education, but extend to various schemes in which the government guarantees a minimum price, or makes direct loans on harvested crops, or facilitates similar lending by commercial banks, or takes other action. There is as yet no general agreement as to how best to stabilize commercial agriculture -- which has been noted for its instability.

These remarks are recorded in order to certify three basic principles: that there is no universal formula by which to design an economic policy for the agriculture of any nation; that just to copy the programs of any other nation or nations is perilous; and that economic studies, carefully done, can be a useful guide to the designing of economic programs for agriculture. This last is true irrespective of whether applied to estimates of the productivity of a given region in alternate kinds of use, or of the probable success of a proposed program of stabilization, or of many other problems.

As a concluding comment, economic programs for agriculture cannot be drawn up in isolation. They must be related to (1) other nations, particularly (in the case of Guatemala) those of Central America; (2) other parts of the nation's economy.

THE PARADOXICAL PROCESS OF PLANNING

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August 4, 1965

This will be a brief essay on the process of planning. It will relate to both the concept and the procedure.

Any government that entertains even the most modest aspirations for the development of its economy must engage in economic planning. It will do so irrespective of the terminology used to describe it, or of the place in the administrative structure where it is done.

The process of planning is in fact something of a paradox. If planning is to be done well, it should be accorded the recognition of a separate office, identified as such. In a memorandum I have commented on what I regard as the preferred location of a planning office in the administrative structure.¹ In my judgment the office should be attached to the top administrative official, so that the head of the office can report directly to that official.

But planning is not identified in terms of either the kind of planning office that is set up, or the procedures that are put in motion. This is the first paradox. For the essence of planning lies in the attitude on the part of officials who make policy decisions -- in their habits of thought.

The essence of planning consists of a willingness and an ability to perceive and describe overall goals for an economy, and actually to design and carry out programs of action that will contribute to achieving those goals. This holds true both for programs that contribute directly to reaching those goals, and for those that contribute indirectly.

It is important to keep this idea in mind. In another memorandum I have called attention to the persistent danger of regarding planning as a matter of only going through motion.² I refer there to the temptation to substitute "appearance for action and accomplishment".

In a nation striving to develop its agricultural economy, the process of planning usually begins with naming longer-run goals. These are usually both quantitative and non-quantitative goals. The former are ordinarily expressed in terms of the quantity of each product that is to be produced and consumed, and of the price that may be received, in some future year. The non-quantitative goals are usually brief statements as to the kind of changes in the national agricultural economy that are sought.

This is a useful exercise. It is a good starting point, perhaps even a necessary one.

¹Memorandum to Ing. Aldana, July, 1965.

²"A Declaration of Principles"

But here a second paradox arises. It is that the gap between national total goals and individual programs of action can be so wide as to prevent a meaningful connection between the two. The overall goals may be wholly out of the range of possible accomplishment, while the persons who directly administer programs may find them to be so remote as to appear of little or no value.³

As though to complicate the matter further, overall goals do not of themselves define the best way by which they may be attained. They do not describe a unique, a clearly best single program of action.

³Let it be made clear that in a democracy national goals for agriculture are not fixed, rigid requirements that become mandates for the making of policy. Rather, they are statements of what the Ministry of Agriculture hopes to accomplish. They make it possible for all Directorates to agree on central objectives. They facilitate the process of coordinating individual action programs, and of choosing priorities and relative emphasis among proposed programs.

An example of a statement of overall goals for agriculture is the following quotation from "Synthesis de la Situacion del Sector Agropecuario de Guatemala", presented by the Minister of Agriculture at a Central American Ministers meeting in February, 1963.

"The working programs of the Ministry of Agriculture have the following objectives:

Opening up, development and improvement of the areas under cultivation or capable of exploitation through the different projects such as: irrigation, drainage, soil conservation, and agricultural mechanization.

Increase of the production of articles for domestic consumption and for export through the improvement, encouragement and protection of the varieties and breeds under development.

Preservation of the natural resources, especially sources of water, and wild animal life.

To raise the educational level of the Guatemalan farmer through the agricultural schools, extension and assistance to the indigenous economy.

To aid the formation of cooperatives.

Granting of supervised credit."

Instead, all a statement of goals can do is provide a point of reference for all action programs. It makes available a common cadre of objectives against which individual proposals for programs of action can be compared and evaluated.

This may appear to cast goals into a minor role. It is really not minor. There is a negative aspect too. A set of well-chosen goals for the agricultural economy can also help to reveal what consequences would result from programs of action that do not conform to those established goals. When programs are not consistent with goals, the consequences may not be merely neutral, but negative, i.e., harmful.

Intermediate Steps. There are two reasons why officials who carry out action programs often fail to consider how their programs relate to the overall goals for the agricultural economy.

One reason is that all too often those officials are not drawn into the planning process. The second reason is that the overall goals, which frequently are expressed as national total statistics and as lofty epigrams, are not also broken down into intermediate stages that have clearer meaning to the administrators of programs. These will be discussed in reverse order.

To break national total goals into goals or principles that are nearer the level of understanding at which decisions are made on action programs almost invariably introduces difficult and controversial issues. Nearly always, when overall goals are restated in terms of direction that policy should take, it becomes necessary to make hard choices from among the various possibilities. Priorities have to be named. For example, Guatemala may wish to increase the production of wheat, or corn, or fruit, and targets for a future year's output will doubtless be set. But is the increase to occur primarily in commercial or non-commercial areas? At the expense of other crops? By new colonization? Or by increases in yields on approximately the present acreage? And if the last, by what means are high yields to be sought? And will it be necessary to encourage larger production by means of announcing a support price at incentive levels?

The official who is charged with responsibility for planning will find it advisable to bring the officials who administer action programs into the planning process. In this way he can take advantage of their knowledge. In fact, as will be emphasized later, their factual data are the "raw materials" for planning. In addition, this procedure helps to keep those officials informed as to the plans -- as to what objectives are sought in the government's agricultural policies.

Furthermore, in most cases the members of the planning office will meet with program officials from time to time in their own directorates or divisions. They will do so in order to aid in coordinating the various action programs -- to help make them conform to overall goals.

The Need for Factual Data. Most policies for agricultural development have economic content, and some are wholly economic. It is essential that reliable, factual economic data be utilized as a basis for the economic portion of planning.

That is to say, good planning is built on research and economic analysis. Research, in turn, is of two kinds. The first is the formal kind, as carried out by research agencies such as the Division of Research of the Ministry of Agriculture of the Guatemalan Government. The second is research to determine the results of action programs that are now being carried out. In all nations, this latter is a badly neglected source of factual economic data. If a soil conservation project is being undertaken in Antigua, might this be the best place to study the benefits of such a project? If lands are being colonized, a wealth of information could be obtained from the actual experiences.

In the final analysis, no matter how brilliant and dedicated the planning staff may be, plans for the development of agriculture can be no better than the information that goes into making them.

Moreover, much useful information can be obtained as a by-product not only of existing programs, but of other research. The Division of Research may be concerned principally to guide farmers toward using the best cultural practices on their land, but the data will reveal approximately how much the national total production would increase if all (or most) farmers would adopt comparable practices. Similarly, studies may be made of the losses sustained when potatoes are stored by various methods, of the costs of each method, and of the normal seasonal increase in the price of potatoes. The findings will show what kinds of storage are most profitable under stated conditions. They will be useful to potato producers and to potato marketing firms. They will also provide invaluable information to officials of government. Those officials need such information in order to decide, for example, whether the government should encourage more commercial storage or cooperative storage, or take other steps. Furthermore, if storage of potatoes proves practical and economical, the prospects are much brighter for an expanded production of potatoes than if storage is found to be too costly. Increased production could then be encouraged, with the double benefit of increasing incomes of farmers and improving diets of consumers.

The "Tools" of Planning. Since planning has been defined here as a state of mind by which officials of government design their action programs so as to fit an agreed-on overall objective, it is impossible to specify any one best technique of planning.

Generally, the best "tool" of planning is information on the economic (and other) consequences that would result from any action that is contemplated. "What will happen when such-and-such action is taken?" must be the universal question.

Nevertheless, a few standard tools that belong in the planner's tool chest can be listed. They include the following:

1. Statistical data on supply, utilization, and price of each major agricultural product. These data will include acreage of crops or inventory of livestock, yields, production, foreign trade, consumption, and prices at the farm and at retail -- preferably for each season of the year.

2. Resource inventory:
 - a. Inventory of land resources;
 - b. Inventory of human resources and of the availability of supplies used in production.
3. Productivity data on how various technological practices affect yields (per manzana or per head).
4. Price analyses showing how the quantity and quality of products produced affect the price received by farmers and paid by consumers.
5. Information on how various policies such as taxation and tenancy affect productivity.
6. Forecasts of both domestic and foreign demand.

The most complicating feature of planning lies in what is known as multiple relationships. It is not too difficult to obtain experimental data on the effects of chemical fertilization by itself, or deep tillage by itself, or even contour cultivation by itself. What is difficult is to estimate the effects of applying two or all of these practices together. The rule holds true for any combination of practices.

This difficulty applies to the making of projections of how much production might increase in the future if certain practices should be adopted. The cumulative benefits of several practices are not additive, but multiplicative.⁴ Further, the results of various practices, as used alone or in combination, vary according to the kind of land to which they are applied. Probably one of the best techniques in national agricultural planning is to begin by outlining "types of farming areas". These are based in part but not wholly on soil classification. Each area must be small enough to be nearly homogeneous. It is then possible to estimate the results of cropping patterns (including pasture for livestock) and of various technological practices (including soil conserving practices).

A good system of national planning for agricultural development will give approximately as much attention to marketing as to production. From the standpoint of the quantity of any product that is actually available for sale to the consumer or for export, the results are the same when one quintal is saved from loss in marketing as when one quintal more is produced. If it is cheaper to save a quintal of a product than to produce one, it becomes wise policy to save it. Whatever is necessary to reduce the loss in marketing should be done. In a separate memorandum it is suggested that economic studies can help to show which practices in marketing pay their costs, and which do not.⁵

⁴Multiplicative in a figurative sense. In reality, the analysis of the results of combining two or more practices is conducted by the techniques of production economics.

⁵"Further Comments on Economic Considerations in Choosing Marketing Policies."

In one respect, planning to improve marketing is even more difficult than planning to improve (increase) production. It concerns the need to attain or preserve a marketing system that is competitive. It is possible for market firms, when few in number, to become less than fully competitive. Perhaps the possibility is greatest in processing of farm products. In a country no larger than Guatemala there is always a chance that there will not be enough competition to assure that prices are arrived at competitively. When this is the case, it is by no means certain that the benefits of improved practices in either production or marketing will be passed on to farmers and consumers -- that is, to the nation.

FURTHER COMMENTS ON ECONOMIC CONSIDERATIONS
IN CHOOSING MARKETING POLICIES

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August 6, 1965

This will present a few further observations on economic considerations in the designing of marketing policies. It will supplement my memorandum of June 26 addressed to Lic. Velazquez.

The theme of that memorandum is that economic analysis can be employed advantageously as an aid in choosing and drawing up policies for marketing; that government services to marketing will differ for various products and for various parts of Guatemalan agriculture; and that in selecting measures to improve the efficiency of marketing any product, an eye should be kept on the effects upon the competitive structure of the market for that product.

The marketing of farm products should be more orderly, more systematic, more efficient than it now is. Innumerable improvements could be made. They could range from better facilities for storage, to establishing services for quality standardization and for market news, to building new and more efficient terminal wholesale market facilities.

Some of these improvements could be made privately. Cooperatives could often be the initiator of better marketing. But some improvements can only be made with the help of government.

Unfortunately, there is no general formula or rule that will indicate which actions to improve marketing are economically justified and which are not. For this reason, it is necessary to form a judgment as to what the benefits of any improvement would be, and to estimate how much it would cost.

But there is a second dimension to all programs in marketing. It is widely reported that some of the costs in marketing in Guatemala are attributable not to inefficiency of labor but to so-called structural deficiencies. These may be the absence of competition in some areas or for some products, or exclusive privileges at some markets, or other arrangements that interfere with competition in providing services and in pricing. Sometimes, it is said, associations of truckers put the farmer at a disadvantage and impose tight restrictions on selling fresh produce at wholesale.

Moreover, it is entirely possible that some actions which could be taken with a view to streamlining the marketing system would introduce a risk of creating more points of limited competition. That possibility should always be kept in mind, and reckoned with as necessary.

On further reflection it seems likely that the kinds of government services to marketing that may be desirable in Guatemala can be enumerated and classified about as stated below. Not every service named should be applied to every product. But the outline affords a kind of repertory of services from which a selection can be made according to circumstances in each case.

1. Commercial Production for Export. This part of agriculture can readily require the most highly developed services, particularly for products newly entering the export market. Methods of exporting are well established for traditional export crops, such as coffee and bananas. But if Guatemalan exports are to be diversified, help from government is probably essential.

Assistance to export marketing is desirable for two reasons: because of the distance between local sellers and foreign markets, and because most foreign markets are more discriminating as to quality standards than are domestic markets.

For both reasons, it is imperative that steps be taken to protect quality standards for the export products of Guatemalan agriculture. For some products, such as beef, these standards include those of sanitation. It can be fatal to the building of export outlets if products when received in the buying country are in poor condition or of low quality or questionable wholesomeness.

Local shippers are sometimes victimized by dishonest buyers for export. It is possible that the Government of Guatemala should require that buyers for export be registered or post a good-performance bond or otherwise demonstrate their integrity in some way.

In many respects, foreign trade in farm products throughout the world is more subject to influence by nation-to-nation negotiations now than previously. It also is affected by the success of programs of trade promotion. In various exporting nations governments join with the private trade in carrying out both negotiations and promotion. Negotiations include those as to tariff duties as at the GATT sessions in Geneva, and those on the size of the Guatemalan coffee quota, held at London.

It is likely that government help in foreign market development will be necessary if Guatemala is to be successful in diversifying her exports.

2. Commercial Production for Domestic Market. Several services to marketing are more applicable to products sold to the domestic market than to those that are exported. However, as exports become diversified the distinction will be less significant. Several of the services named below can be helpful to exportation as well as to internal sale.

A system of warehouses that are subject to inspection, so that products stored in them are accepted as collateral for loans, would be beneficial to various products, both export and domestic. Coffee may well require a special program of storage and lending if the export quota in any year is substantially smaller than the amount of coffee that is available for export.

A system of storage warehouses is essential to any programs of stabilization that may be undertaken. One has been proposed for corn. The principles of the proposed corn program could be applied to several other products. In many nations, the government undertakes stabilization action of some kind. The objective may be one or more of the following: to adjust to variations in export demand or domestic demand; to protect producers against

exceptionally low prices at harvest time; to hold a reserve for any year of bad weather; or as an aid in efforts to stimulate larger production.

Traditional services of establishing standard weights and measures, standard containers, quality standards, inspection for sanitation and purity, and reports of market news are probably more important to domestic than to export marketing. This category can include diverse activities. Fluid milk may be certified as to non-adulteration and sanitation. The price of corn being paid in various cities can be published in newspapers or broadcast by radio or television. The motley mixture of containers and units of quantity used in trading may gradually be reduced to a few sizes and to standard units. Eggs may be classified as to size and quality. Many other examples could be cited.

It would be splendid if the Government of Guatemala could gradually provide more services of this category. A truly efficient, up-to-date commercial marketing system is not possible without them. Nevertheless, so many products are produced in Guatemala that it is necessary to consider which services for which commodities would do most to improve marketing. Careful investigation will help toward arriving at a judgment.

3. Production Largely for Home Consumption. The many small farms, particularly in the mountains, may be thought to be less in need of market services than is commercial agriculture. In one sense, this is true: the total service needed is not large.

But, in another sense, these farmers may be affected most by certain services that they need. For these farmers are the least literate and knowledgeable, and they are the most vulnerable to being gouged by buyers and by money lenders.

Any stabilization program, for example, should definitely be extended to small farmers. Price information (market news) can help those farmers, even though the means of communication may be as simple as a blackboard in a meeting hall.

Where an effective government program of storage is not provided, small farmers often will benefit from aid and advice (including credit) that will enable them to provide small storage facilities of their own.

The above list is confined to those activities that are most clearly defined as a part of marketing. There are many others that are at least closely related. Statistical information on production is often regarded as akin to marketing. So is information on demand, at home and abroad, including forecasts of future demand.

Laws to regulate usury, and to prevent monopoly, and to prohibit other unethical practices also are of benefit to marketing. They can be of great benefit.

Finally, all activities to build roads and railroads and otherwise to improve transportation and communications are beneficial to the marketing of farm products. However, these improvements are so visible, and so high in

popularity, that it is usually less difficult to build up interest in them than in some of the less visible services to marketing.

But the more narrowly defined services to marketing are those listed above according to the three classes of Guatemalan agriculture. Progress toward providing more of those services would constitute progress in Guatemalan agriculture, and in the Guatemalan economy.

NOTES ON THE ECONOMICS OF THE PRODUCTION OF LIVESTOCK AND POULTRY

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It is interesting that in the Spanish language there are separate words for the production of crops (agricultura) and of livestock (ganaderia). In English, "agriculture" refers to both.

Although agricultura and ganaderia are closely related, they are in some respects two separate economies.¹ The Spanish terminology may be more appropriate than the English.

In many countries interest has increased in the possibility of expanding the production of both livestock and poultry. The larger interest is caused in part by the search for new sources of income to farmers -- in the trend toward diversification. It is caused in part by the development of improved methods of production, such as the more adapted breeds (or cross-breeds) of beef cattle, or the new systems for producing broilers at small requirement for feed per pound of gain. But the greatest incentive is the growth of demand for meat (including poultry meat) in the industrialized nations, and among the higher income consumers of developing nations.

Production of livestock can add to the income of farmers. Nevertheless, it is wise to avoid uneconomic expansion. There is danger of doing so at any time when prices of livestock are temporarily high. In the United States, for example, whenever the price of hogs reaches \$20.00 per cwt., one reads that farmers in Utah or Idaho are planning to begin the production of hogs. Sometimes -- too often, in fact -- slaughterers encourage them to do so. There is no more reason for Utah to produce many hogs than for Guatemala to produce reindeer.

The economics of the production of livestock and poultry can be divided as follows:

1. Livestock that graze pastures or that otherwise forage for their feed (as hogs may find their feed in forests). This kind of livestock production is best suited to areas where either (1) labor is expensive, or (2) land is so poor, or so dry, or so inaccessible, or of such rough terrain, that it cannot be used for crops.

Livestock that fall in this category are principally cattle and sheep.

This kind of livestock production is called "extensive". It does not require much labor nor does it yield a high value of product per unit of land.

¹See my article, "The Three Economies of Agriculture," Journal of Farm Economics, August 1962.

For the above reasons this kind of livestock production is not well suited to fertile crop land, especially in a country that has a surplus of labor, or that needs to increase its total production of farm (crop and livestock) products. It should be encouraged only in regions where studies show that more net product can be obtained from livestock than from crops.

2. Livestock and poultry that are fed in confinement on harvested feeds. In general, it is more expensive to produce meat in this way than by grazing cattle or sheep on dry or hillside pastures. On the other hand, it is usually less expensive to obtain part of a nation's meat supply in this way than by grazing livestock on good crop land.

The system of production is especially well adapted to the production of poultry (for both meat and eggs). In developed nations it is used for the production of hogs. It is never used for the production of sheep and cattle; however, in developed nations it is used for adding weight to young cattle and to lambs after they have been removed from pasture.

This system of production is most economical in a country where yields of feed crops per acre are very high and labor is not too expensive (or machinery can be used effectively). Also, it is used more in a nation whose consumers have a high income and express a strong demand for meat.

This is the most intensive among all systems for production of livestock and poultry.

3. Livestock and poultry that are produced and fed in various mixed systems. This category is midway between the first and the second.

One illustration is the feeding of various by-product feeds. The most familiar examples are the feeding of the protein cake obtained in the extraction of oil from cottonseed, and of the by-product feeds obtained in the milling of wheat.

There are many other by-product feeds. In California such feeds are obtained from the processing of many fruits and vegetables, from the manufacture of sugar from sugar cane, and from other similar sources. One advantage of an expansion in food processing industries in Guatemala would be the production of by-product feeds obtained from them.

Another illustration is supplemental feeding of livestock that are basically produced on pasture. This can often be economical in areas subject to drought. A reserve of feed can be kept on hand, to be fed during a dry season of the year, or in a year that is unusually dry. Feeds used for the purpose can be of many kinds -- protein supplement, harvested grass or legume (hay), or coarse roughage such as the fodder of corn. Although cattle and sheep will not gain weight when fed corn fodder, they can almost retain their weight if fed enough fodder of fairly good quality.

In general, it seems likely that an expanding livestock economy of Guatemala can economically be based only on systems one and three. For the near future, the intensive system two will be confined largely to production of broilers.

The feeding of corn to livestock is not likely to increase greatly so long as corn is the staple of diet for the indigenous population and is priced rather high for that reason. Expansion of the livestock economy certainly should not be sought at the expense of the food supply for the indigenous population.

A similar consideration limits to some degree the extension of livestock production according to system one. It is doubtless true that from a long-run, idealized point of view many of the mountain slopes now producing corn and beans for the indigenous population should instead be used only for grazing. (It is a significant commentary on the state of the mountain economy that many mountain slopes now cultivated are too steep for grazing.) Until other forms of employment and food supply are available to the indigenous population, it would be unwise -- and even inhuman -- to try to convert the cultivated land in the mountains to the grazing of livestock.

Nor should the best cropland of the fertile regions, such as the Pacific slope, be seeded to grass for grazing. As noted above, almost invariably the net value of product is greater when such lands are cropped than when they are grazed. Guatemala needs to maximize its total agricultural (crop and livestock) production. It cannot afford extensive use of highly productive land. Nor is there a scarcity of labor, which would give occasion for turning to extensive land use.

There are many areas in Guatemala that clearly are well-suited to production of livestock under system number one. That is, they are suited to livestock, but not to intensive cropping. A number of other areas are borderline: it is not possible to know whether they are best suited to livestock or crops until studies are made as to productivity, and costs of production, in each use.

System number three seems to offer intriguing possibilities. Would it be possible to recover more by-product feeds from the processing of farm products? What about molasses from sugar? Can rations be developed that would make it possible to feed cottonseed meal to hogs or poultry? Could coarse roughage be salvaged and fed advantageously in some areas?

All the above remarks have been directed to the economics of production. The economics of marketing also deserve attention.

In livestock, as in crops, a distinction must be made between the foreign and domestic market. Usually, the foreign market sets the more exact standards of sanitation and quality. Those standards must be met if foreign sales are to be increased -- or even sustained. This is an immutable rule.

For domestic sale, it is difficult to know how much commercialization of a marketing system is desirable. Will Guatemalan consumers, for example, pay a premium for meat of high quality, one sufficient to justify setting up a system of grades? It seems likely that custom slaughter houses, owned either by municipalities or by farmers' cooperatives, are suited to Guatemalan conditions, but are present facilities satisfactory? Can the amount of by-products recovered from slaughter be increased? Where can refrigerated facilities be justified economically?

In the absence of a careful study, no attempt will be made to comment on those questions here. The only point of view to be emphasized is this: if the development of the livestock (and poultry) economy is to be encouraged, it is as important to study the economics of the marketing system as of production.

NOTES ON A SUGGESTED PROGRAM FOR STORAGE AND PRICE
STABILIZATION FOR CORN IN GUATEMALA

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July 27, 1965

These are random thoughts on the above subject.

In general, there can be no quarrel with the idea of attaining more stabilization of the price of corn in Guatemala. The outline presented for an administrative organization and procedure seems excellent.

I wish there might appear, in some document, a fuller statement of the objectives of the proposed program -- of purposes to be served.

Also, I would like to see an outline of the normal pattern of prices, month-by-month of the year, for each major region. It would help especially in guarding against any complications arising in areas where two crops are harvested each year.

If the program is intended primarily to protect the interests of farmers at harvest time, that purpose is admirable. Without such a program, the price to farmers at time of harvest can be very low. And when prices rise later, farmers often do not get the benefit of the increase. Worse than that, some farmers must buy corn or other feeds, including mixed feeds, at the highest prices, near the end of the marketing year.

If, on the other hand, the objective is to increase production, the serious question arises as to where the increase would take place. Would it be in areas of commercial corn production? Would it be in mountain areas?

Although it might seem good to increase total corn production as a national statistic, the consequences would differ sharply according to the location of the increase. This is particularly true because many producers in mountain areas depend on sale of corn for part of their meagre cash income. It is conceivable that a price support program would have the ultimate effect of increasing corn production in commercial areas, thereby crowding mountain farmers out of the small cash market they now have -- or reducing the income from it.

Stated more directly, caution should be exercised to make certain that a stabilization program for corn that may be advantageous for the commercial corn area does not work to the disadvantage of farmers in the mountain area. This caution will remain necessary until such time as the indigenous population has replaced corn with other crops as a source of supplementary income for a sizable number of their farmers.

In this regard, perhaps the first precaution to be taken is to establish support prices substantially higher in the mountains than on the Pacific coast. The

difference will, of course, be limited by the cost of transportation from the surplus area to the mountains. In fact, the geographical pattern of support prices referred to in the Lemley Report must be tailored to transport cost, lest corn be trucked helter-skelter around the country in pursuit of the most favorable support prices.

It should be made clear from the beginning that regional differences in prices are to be an integral part of the stabilization program. Otherwise, political pressures might be exerted to reduce the price differences between the surplus-producing and mountain regions.

A second precaution is to avoid setting support (and release) prices at too high a level. If prices are too high, they will encourage the production of too much corn. The results would be (1) to overload the support program, increase costs to the government, reduce the program to only partial effectiveness and ultimately endanger its continuation; (2) to reduce the price of corn in the mountains, to the harm of indigenous farmers.

Although I do not have the data needed for a firm judgment, it appears that the prices used as illustrations in the Lemley Report are too high. They are based on \$2.50/cwt. for white corn of 13% moisture in the heavy producing areas at time of harvest.

Another means by which to protect the interests of all small farmers, on the coast, slopes, or mountains, is to make certain that each producer has the opportunity to deliver corn, and receive price support, himself. Many farmers would not take advantage of the opportunity, but each should have that opportunity.

The Lemley Report emphasizes the desirability of using much privately-owned storage, but also provides that government employees shall make purchases at buying stations. This advice seems sound. The government itself should offer the opportunity to farmers to deliver corn in order to obtain the support price.

One of the crucial features of a stabilization program is the schedule of support and release prices month-by-month throughout the year. In the Lemley Report, the seasonal increase in purchase price, and the further mark-up in release price, appear to be exceptionally large. Great care needs to be taken to be certain that those differentials are not too large. It would be most unfortunate if the stabilization program were to become primarily a shelter for private speculators. In that event the speculators, not the farmers, would receive the major benefits of the program.

The C.C.C. of the United States Government learned this lesson. When the rates paid to the private warehouses, and the accompanying schedule of monthly increases in purchase and release prices, proved to be unnecessarily large, there arose much criticism of the government. Thereupon those rates and monthly differentials were reduced.

Let there be no misunderstanding: a stabilization program that actually functions is the primary determinant of the price of corn. It therefore is also a major influence on profit margins in the private grain trade. To the extent a program would create a bonanza for the grain trade, that outcome would be at the expense of farmers and consumers.

These remarks should not be interpreted as suggesting that the grain trade should receive less than a fair remuneration for the services it performs. Storage rates should cover costs; but they should be held in line with costs.

It is recognized that the details of a stabilization program will be affected by the conditions that exist in other nations of the CACN.

The proposed plan contains a point of potential inconsistency where it established a schedule of release prices but also stated that "any amount over 1,000,000 cwt. that I.G.G. has when harvest is completed should be offered at a pre-determined price until the government gets its ownership down to 1,000,000 cwt." The intent, no doubt, is to avoid the constant accumulation that has become the history of the C.C.C. in the United States. Nevertheless, it is impossible to hold to a pre-determined schedule of support and release prices and at the same time to assure that stocks will never become excessively high or dangerously low. There is implicit conflict.

The only way out, in my judgment, is to adjust the entire level of support and release prices from year to year. It should be done that way, and not by revoking a previously announced schedule at mid-year.

But a good technique would be to announce the exact schedule of support and release prices late in the growing season, after the approximate size of the crop can be forecast. If a huge crop is in prospect, the level of prices will be lower than if a small crop is to be harvested.

Since one purpose of a stabilization program is to inform producers in advance as to what prices can be expected, the best technique that comes to mind is the following: the schedule of prices announced as of March 1 might be based, as of 18% moisture corn at a commercial corn area, as \$1.50 for a very large crop, \$1.75 for a crop of average size and \$2.00 for a small crop (prices are illustrative only). I realize this would make the full support-release price schedule more complicated, but it would be a major improvement in the system.

If such a technique were to be adopted, the benefits would be to discourage farmers from increasing production too much; to hold costs to the government to a reasonable level; and to reduce the likelihood that either (1) a large surplus of corn would accumulate in government hands, or (2) the government would periodically "dump" its surplus corn on the market, breaking its price and undermining all the benefits of the stabilization program.

THE USE OF ECONOMIC STUDIES IN PROGRAM-MAKING
FOR AGRICULTURAL DEVELOPMENT

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August 11, 1965

Comments made following four weeks' observations of the
practices employed by the Government of Guatemala

Introduction

Guatemala is a land of three classes of agriculture. Each is distinctive in many respects. They are the commercial production for export, commercial production for domestic use, and subsistence agriculture.

Not only will each sector sometimes require programs especially designed for it, but it is necessary always to keep in mind the possibility that a program to aid one sector might actually work to the disadvantage of another sector. Activities that are in the interest of commercial agriculture, for example, might further restrict the resources available to the subsistence agriculture of the mountains.

A second basic point of view underlies this report. It is that the planning of programs for the development of the agriculture of Guatemala should always be carried out within the context of the economic objectives established for the entire Guatemalan economy. Agriculture dare not hope to act in comfortable isolation. As a passing note, this point of view leads to a favorable judgment on the assigned role of the Consejo Nacional de Planificación Económica. As the work of the Consejo was not observed closely, no further comment will be made upon it.

Thirdly and lastly, this report is tendered with acknowledgment of both the advantages and the limitations under which a four weeks' outside observer works. Previous experience in another country helps one to make an approximate evaluation of the steps being taken in Guatemala. On the other hand, it is impossible to familiarize oneself with the many details either of the characteristics of Guatemalan agriculture, or of the activities being carried on by the Ministry of Agriculture; and this is a handicap.

In a word, my overall judgment on the administrative structure for the process of planning for the agricultural development of Guatemala is favorable. It seems a sound practice to locate a planning office directly under the Minister, and to make it directly responsible to him. Not only should the head of the planning office be in direct communication with the Minister, but in addition, it is essential that the Minister actively and demonstratively support the work of his planning office. Unless he does so, that office will not be able to involve the several Directorates in the planning process to the extent that should be done.

Nevertheless, I have several doubts as to how much progress has yet been made in carrying out effective agricultural planning. That the Division of Planning is under-staffed is obvious, and no further comment is called for. In my judgment, that Division should be staffed with outstanding individuals. The number of persons can be small, but they should be highly competent. Salaries will need to be high enough to attract able persons.

Whether the Division of Planning is being drawn sufficiently into the actual policy-making councils, in order that they may present the overall economic aspects of proposed programs, would be hard to declare with confidence at this time. Certainly the division has not been in existence long, and an appreciable part of its time has been spent in preparing data for the five-year projections being compiled by the Consejo Nacional de Planificación Económica.

Nevertheless, even in that slightly apologetic commentary on the Planning Division's record to date, there is a pointed lesson. It is that even though it is necessary to have aggregate historical data and to make projections into the future, those are not the heart of planning. For the heart of planning is not procedure, but attitude. It is a capacity and a willingness on the part of all responsible officials to perceive and pursue the long-range economic goals for Guatemalan agriculture.

It is my observation that the staff members of the various Directorates have a good understanding of the significance of the programs they administer. However, that significance is often confined to the conventional operating goals of the programs themselves. Less often do they see clearly the inter-connection between their programs and those of other Directorates or their relationship to overall objectives for Guatemalan agriculture -- or for the Guatemalan economy.

One Directorate, to my knowledge -- and to its credit -- has drawn up a ten-year plan for its work. Others have not progressed as far.

Each Director interviewed declared forthrightly that he knew it to be desirable to incorporate more economic analysis into program-building. Almost universally a lack of trained personnel, especially of economists, was named as a handicap. There can be no denial of the seriousness of that handicap. Nevertheless it has probably been overstated.

For, again, the heart of planning lies first in recognizing the economic aspects of each program, and secondly in coordinating all programs toward a common goal. The highest possible achievement in planning within the Ministry of Agriculture would be to bring all Directorates to a common understanding of the economic goals for the development of Guatemalan agriculture, and to a joint effort to achieve them.

A homely figure of speech taken from the days before tractors will illustrate. It was that horses hitched as a team need not all pull with exactly equal force, but they must all pull in the same direction.

More than that, if planning is a state of mind that makes it easier for various parts of Government to work together toward common goals, it contrasts with the opposite idea that planning is some kind of mysterious, esoteric process. In reality, planning is done irrespective of whether any officials are specifically charged with responsibility for it. When the Government of Guatemala initiates any measures to encourage or assist the development of agriculture, it implicitly engages in planning. Planning is inherent.

Planning is undertaken explicitly, with assigned responsibility, in order that policies may be determined more rationally and more systematically. It is a way to ensure that both relevant information -- much of it economic data assembled for the purpose -- and the advice of interested and knowledgeable officials are brought into the making of government policies for agriculture.

Furthermore, as will be repeated later, all governments carry out some activities in behalf of agriculture. They do so because modern commercial agriculture requires certain services of government, particularly if (1) is organized as individual proprietorships and (2) is expected to improve in productivity as a source of income.

There are three kinds of formal aids to planning as so defined:

1. The first is to require each Directorate to draw up at least once each year a statement of goals, a plan of operations and an estimate of the economic benefits to be derived therefrom. This might be presented in connection with the year's budget request. At the end of the year, a statement of accomplishments could then be submitted, complete with an estimate of their value in economic terms.
2. The second formal aid to planning is to conduct economic studies on individual programs and to analyze the information so obtained. The basic data for agricultural planning are not global projections, but the research findings on what actually happens when each program is carried out. Many administrators of programs are reluctant to take time to study the results of their programs. They should be encouraged to do so, and granted necessary funds.
3. Thirdly, the Division of Planning can assist each Directorate materially in drawing up its long-range plans, and in making individual research studies. In doing so it not only performs a useful service to each Directorate but can be a means of coordination for the entire Ministry.

The staff of the AID Mission likewise stands ready to provide help in the technical aspects of planning economic studies and analyzing data obtained from them.

Administrative Organization of the Ministry of Agriculture

My favorable judgment was expressed above on both the assigned duties of the Division of Planning and its location in the administrative structure.

A question raised several times concerns whether the Division of Agricultural Extension and the Division of Research, now in different Directorates, should be recombined. Beyond doubt, the two Divisions must work together closely. Whether they must necessarily be placed in the same Directorate is less certain. No firm recommendation will be made here inasmuch as it is not possible to form a reliable judgment from so brief an observation.

The argument in favor of combining Extension and Research is that Research provides a large part of the information that Extension disseminates through its program of adult education. On the other hand, Extension is now placed alongside other Divisions in the Directorate of Agricultural Development. This arrangement seems to indicate that Extension is regarded as an agency of agricultural development, which indeed it is. In other words, the present administrative structure has been designed to group together those Divisions that have similar objectives.

Manifestly, no organizational structure is ever fully satisfactory. Every choice as to form of organization has both advantages and disadvantages.

Even though no recommendation is offered here, it is perhaps worth noting that the modern tendency seems to be for governments to align agencies according to common function -- according to common purposes served. This is a change from some years ago, when agencies were likely to be grouped together because they used similar skills or similar technical data, or followed similar methods of operation.

Some Key Elements in Planning for Agricultural Development

The process of planning for the development of the agriculture of a country such as Guatemala is complex and extremely difficult. This is true for several reasons: (1) so many products are produced; (2) there are so many differences between the three sectors of Guatemalan agriculture (commercial-export, commercial-domestic, and subsistence); (3) agricultural development invariably requires change in the way things have been done -- sometimes rather drastic change; and change is almost always resisted, especially by those who have benefited most under the old system; (4) the objectives of agricultural development are not singular but plural. Probably the primary goals are greater productivity and higher incomes to farmers. Other goals are a better standard of living for farmers, including better conditions of living for the smaller farmers. They extend to a higher level of food supply (and nutrition) for consumers. And (5), although it is not difficult to select policies that are individually desirable, it is very difficult to decide how they can be combined so as to achieve the kind of agricultural development that is sought. The most difficult task in planning is to fit the several policies together to the best advantage.

Furthermore, programs for agricultural development will be most successful if they are part of the development of the entire economy. This means industrial and commercial development in addition to agricultural development. As one example, it is splendid to want to produce more food because so many

persons are under-nourished. But a larger production would not help the hungry people very much unless they can be employed more fully and effectively, earning the higher incomes they need in order to buy more food. As another example, it would be good to make the smaller farms somewhat larger, and to introduce more mechanization in agricultural production and marketing. But until more farm workers find other employment, it would be uneconomic as well as socially undesirable to advocate substantial increases in farm size or to introduce measures to save labor. Probably in this respect more than any other, Guatemalan agriculture differs from that of the United States.

If the key element in agricultural development for Guatemala is not to introduce more labor saving mechanization as has been done in the United States, what is it?

First of all, there can be no disagreement with seeking technological progress through more use of chemical fertilizer, introduction of better seed and root stock, activities to conserve soil, development of new lands, and so on. But again, planning for these is the less difficult part of planning.

The more difficult part of planning is to perceive and to promote the kind of institutional structure of agriculture that will help it to develop in productivity, to become a source of higher income to all farmers, and otherwise to achieve the goals set for it.

For the modern agriculture of developed nations is not merely an older agriculture that has been made more productive. Instead, it is a more commercial agriculture and a more highly organized agriculture. Moreover, although it always employs more advanced technology in production, very often the more dramatic contrasts with the earlier agriculture are those in marketing.

Clearly, the institutional structure for development of the agriculture of Guatemala will differ according to the three sectors of that agriculture. The structure will be more complex for commercial than for subsistence agriculture. Yet the latter, the mountain farming of the indigenous population, is desperately in need of certain basic improvements, such as a way to avoid having to accept very low prices for corn at harvest time, and a simple service of market information.

No attempt will be made to name all the institutional arrangements and services that characterize modern developed agriculture. A partial list would include the following:

- Research, with results thereof made available to farmers and marketers.
- Education, both general and vocational, including agricultural.
- Aid in soil conservation.
- Efficient transportation and communication.
- Drainage and irrigation.
- Colonization and development of unused or underdeveloped land.
- Credit services, notably to smaller farms, including supervised credit.

- A program of support prices and storage, for the purpose of protecting farmers against low prices during the surplus (harvest) season, and consumers against high prices during the season of short supply.
- A system of warehouses, with inspection so that commodities in storage will be accepted as collateral for loans.
- A means to adjust to export quotas, as for coffee.
- Standard weights and measures, standard containers, and a system of quality standards.
- Inspection of foods for sanitation, wholesomeness and non-adulteration (as of milk).
- Market development (i.e., activities to stimulate demand).
- Supplemental food distribution, at low prices or without cost, such as to children's institutions and schools.
- Tax laws that will speed agricultural development.
- Tenure laws to protect farm tenants.
- Laws to protect against usury and monopoly.

The above measures, in some form and to some degree, are to be found in most advanced agricultural nations. To select which should be utilized, in what form and for which products, and according to what order of priority, is the central core of the process of planning for agricultural development.

It is to the making of a selection from among those measures that economic studies are applied most profitably.

This report is not intended as a review of all the various programs of action that might be adopted in Guatemala. The following remarks will only call attention to selected principles that probably should be taken into consideration in selecting and designing programs.

Stabilization Programs. A report on a stabilization program for corn, prepared by Mr. Lemley, has previously been submitted. Stabilization programs can be highly useful. They can be used to stimulate larger production. Often their greater value lies in protecting farmers against having to sell their products at a very low price at harvest time. Two principal suggestions in connection with a corn stabilization plan are: (1) to keep the support price higher in the mountains than in the surplus producing area near the coast; (2) to make certain that purchases will be made close at hand to small farmers. Unless the latter is done, truckers rather than farmers will get an appreciable part of the benefit of the purchase price.

Price stabilization programs are particularly well adapted to storable products that are produced to a large extent by medium-sized or small farmers. A well executed program of price stabilization can be expected to improve incomes to producers, reduce costs of marketing and promote increased production and consumption.

Encouragement of the Production of Livestock. Caution is urged against expanding production of beef cattle in areas that are well-suited to production of crops. Also, a large commercial feeding industry for production of meat does not appear economic, with the exception of commercial production of broilers. On the other hand, it is entirely likely that expanded production of beef cattle can be achieved by utilizing more fully the lands that are not

well-suited to crop production, and by salvaging and feeding more by-product feeds, including by-product roughages. Moreover, it seems highly likely that by-products such as protein feeds and roughages can be used advantageously to prevent weight losses of range livestock during the dry season.

Adjustment to the Coffee Quota. If the Coffee Agreement remains in force, Guatemala will almost certainly find itself with more coffee available for export than can be exported. This situation can create a serious problem, and could cause serious injury to smaller and less well-financed producers of coffee. It seems desirable, therefore, to establish a quota for each producer, perhaps using procedures similar to those used for marketing wheat in Canada, by which producers store much of the surplus.

A System of Warehouses. Among aids to good marketing, few are more beneficial than making storage available for storable crops that have a seasonal harvest. In most advanced nations, commercial warehouses are inspected regularly by the Government, in order both to ensure the integrity of the storage service and to make it possible for commercial banks to lend money with the stored product as collateral.

Other Aspects of Services to Marketing.

(1) As a general rule, the more commercialized the marketing system for a product, the greater the number of marketing services that are justified.

(2) Certification of quality is almost imperative for products sold into export markets -- and particularly so for products newly moving into export.

(3) In general, the marketing of products for domestic sale will gradually become more commercial, more formally organized. However, how soon such services as grading and market news reporting should be made available for each product is a question that can only be answered case by case -- and then only after study. Generally more services are justified for the marketing of products of high value than for those of low value.

(4) Ironically, when steps are taken to make marketing more orderly and more commercial, a new danger arises. It is that at some stages of the marketing sequence there may be too few firms to assure that price will be competitive. Even now there is evidence that truckers in some rural areas and in some storage warehouses would be able to charge too high a storage fee, and that some food processors might enjoy relative freedom from competition.

Two alternative actions are available when the costs of any services are too high: (1) farmers can join together in cooperative negotiations, or (2) the government can place limits on what may be charged for the service. Moreover, one of the merits of the Central American Common Market is that it can provide competition to diminish the effects of any monopolies in food marketing and processing in individual countries.

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Tax and Tenure Laws. The highest potential in agricultural development can be realized only if the land resources of a nation are used to their full capacity.

Presuppositions that land will naturally find its way into its most productive use are not correct. Nearly every nation employs tax and tenure policies to aid in achieving full use of land. The most common method is to tax land in proportion to its potential productivity. Such a tax is a fixed sum, remaining at a predetermined value irrespective of the amount of products produced in a year. A tax of that kind encourages intensification of production, and if applied well will encourage virtually maximum production. Moreover, a property tax is better than any tax per unit of production, including an export tax, which tends to some degree to restrain production.

Training of Personnel. A continuous and systematic plan for training of personnel is an essential adjunct to a program of agricultural development. There is no one best way to provide the required training. It can include seminars and short courses, on-the-job training, the financing of attendance at evening classes, granting scholarships for study in leading universities elsewhere and others. Whatever combination of methods of training and education may be used, it is undeniable that training of staff is an integral part of the planning and execution of a program for the economic development of agriculture.

A Concluding Note: This report is not a set of recommendations on agricultural policies so much as a declaration that: (1) modern agriculture requires changes in structural organization, including some new services to be performed by government; (2) the programs of government needed for agricultural development differ between the commercial and non-commercial sectors, and also vary among individual commodities; (3) decisions as to which programs should be undertaken can only be arrived at on the basis of economic investigation. An appropriate administrative mechanism for planning of programs, with competent staff, is therefore necessary.