people may otherwise be expected to continue their present program of subsistence farming, with smaller numbers of large landholders, whose extensive cattle operations produce extremely low per acre profits. The needs in the different zones will vary and the programs offered must be correspondingly diverse, those holding forth the greatest promise being: irrigation; mechanization; improved seeds and livestock (which may require more and better land); better roads and transportation; more and better processing and storage facilities and better land management in general, especially in the protection of the pine forests.

DESCRIPTION OF AGRICULTURAL ENTERPRISES

CORN is the most important crop in Honduras. The 1952 census indicates that some 634,000 acres were planted to corn. This is 48% of all crop land reported, and more nearly follows the population distribution pattern than any other agricultural product, the principal areas of deviation being in the southern part of the country, where areas planted to corn slightly exceed the national average, and in the north, where they are slightly less. Zones A, B, C and D have 35.4 percent of the total population, for example, *vs* 25.5 percent of the corn acreage, while zones E, F and G have 64.6 percent of the population and 74.4 percent of the corn.

Table IX gives the yields per acre for several of the more important crops while Table X shows the percentage of land devoted to a somewhat broader range of products in the different climatic zones. These two tables show that most of the corn in Honduras is planted on land with the lowest yield and most of the population. The reasons for this distribution of corn production are many but include: (1) The crude equipment used throughout most of rural Honduras, which makes hand labor a basic requirement for the cultivation of the crop; (2) The soil and climate, which are better suited to corn than to other crops, in the areas of greatest population concentration and (3) The traditional preference for corn as a major dietary item.

The wide variety of climatic conditions found in Honduras makes for an almost continuous corn harvest — i.e.

corn is harvested in some parts of the country during almost every month in the year. Some areas grow only one crop, while others plant three to five time in a given season. On the high mountains and to the south of the continental divide, weather is generally such that only one crop is attempted, although for quite different reasons. At elevations of 4,500 feet or more the temperature is low and the corn grows slowly, even where adequate rainfall is available, while in the south, in zones F and G, rainfall is so erratic, and limited to such a short season that only one crop can be undertaken with safety.

In zones C and E, and parts of D the rainfall has a better annual distribution, so that two or three crops of corn can be grown in most years. In zone A and B excessive rainfall interferes with corn production, especially at harvest time. Since most corn is grown where only one sowing is made annually, some 87 percent of the total may be classed as first planting.

Corn is generally used in Honduras for human consumption and not as a feed for livestock. Some corn is fed to chickens or hogs at harvest time, especially in isolated areas where adequate storage or transportation facilities do not exist, since the weight and volume to be hauled to market can be cut to one tenth or less, in the form of meat.

Corn plantings have been increased in many areas following the installation, by the National Development Bank of drying and storage facilities which are safe from insects, so that some large farms now plant corn with machinery in their crop rotation. These increases in acreage are in large part devoted to newly introduced types of corn which yield much more than the native varieties. Much of this additional production is directed to the export market, however, since the local population prefers the native corn, which is softer and sweeter, and better suited to the making of tortillas, even though the yields are smaller.

Tortillas are a traditional dietary staple in the area, and are consumed where they are produced, lending themselves well to the subsistence type of rural economy found throughout most of the country. They are not easily adapted to mass production methods however, since the wet dough must be ground fresh daily. Existing mills are small, and require much supervision, so that tortilla preparation is

"...newly introduced types of corn...yield much more than the native varieties".

"The crude equipment used. . .makes hand labor a basic requirement. . ."

largely a hand operation. The finished product is also very perishable, and must be used within a few hours, as compared with wheat flour, which can be stored for a year or more.

BEANS are the staple protein in the diet of most of the Honduran population. The 1952 census indicates that some 125,000 acres were planted to beans, or about 10.5 percent of the total area devoted to crops. Bean production follows the pattern of the corn plantings, and is mostly concentrated in the southern part of the country, where the yields are lowest.

A small red, kidney-type bean has traditionally been eaten by the people of Honduras, but a considerable acreage has recently been planted to black beans, for export to El Salvador and Guatemala. Increased production of dry beans has been encouraged near the drying and storage facilities of the National Development Bank. Beans are often produced in relatively remote areas, as compared to corn, since their unit value is greater, and they are better able to stand the increased costs of transportation.

Most beans are planted after the corn is harvested, and in places where there is sufficient rainfall to assure germination of the seed, and proper establishment of the plants. Beans are deeper rooted than corn and a crop can be matured in only two months, so that they can be grown successfully in a shorter season, and with less rain. The census reports bean yields of 360 pounds per acre for the first planting, and 400 pounds per acre for the second, indicating the importance of dry weather at harvest time for this crop.

The bean harvest generally involves hand pulling of the vines and hanging them on the corn stalks to dry, before the hand flailing of the pods to free the seeds. The threshed beans are then spread in the sun for further drying, before they are stored or marketed. Beans are served three times a day in hotels and boarding houses, in the smaller towns.

SORGHUM was reported to have been planted on about 157,000 acres in 1952, with about 100,000 acres of this total from Zone F on the southern slopes of the mountains and about 50,000 acres from Zone G, along the Pacific. These two zones reported about 97% of the national production, probably because sorghum yields more than the

national average for corn wherever it may be planted, and more than twice as much as corn in the zones specified. Here the climate is such that corn production is quite hazardous, except during the height of the rainy season, which lasts for about six months, and is followed by six months of drought. Mountainside soils are also generally poor, so that sorghum is a surer crop than corn, and can be grown after the main corn crop has been harvested, the native variety of sorghum being quite well adapted to this type of operation.

Seed of sorghum and corn are often planted at the same time on a given piece of land, after the rains have begun in May or June. Both types of seed germinate at once, but the young sorghum plants grow at a much slower rate and sink their roots deep into the subsoil, without interfering with the corn, during its normal period of development. After the corn is harvested in August or September the sorghum begins to grow in earnest, so that it may be said that the September and October rains make the sorghum crop. These late rains are usually not of long enough duration to justify a second planting of corn, but are adequate for a good crop of sorghum grain. This local variety of sorghum is not used for cattle feed, but surplus quantities may occasionally be fed to chickens or hogs. Only the heads are harvested, by hand, and the stalks are left in the field, and the grain is usually flailed from the heads by hand. Much of this sorghum is used for the making of tortillas, after the corn crop has been consumed.

BANANA production in Honduras is limited to the north coast and Bay Island areas, where transportation is available to the world markets. About 70,000 acres were reported to be planted to bananas by the 1952 census. Two large U.S. companies own and operate banana plantations on the western half of the north coast of Honduras, with many smaller independent producers further west in the same area and in the Bay Islands. All of the bananas produced by these farms are exported to the United States or to Europe.

The larger banana plantations are very efficient operations, with abundant moisture assured throughout the year by adequate irrigation facilities. Insects and diseases are controlled by sprays, which are in some cases applied

from helicopters, while commercial fertilizers are distributed each month, usually through the overhead irrigation system. The smaller plantations usually do not have such modern facilities, so that irrigation may be lacking, and sprays and fertilizers must be applied by hand.

The marketing of the crop is one of the important and limiting factors in banana production. The largest producers have become transportation specialists, who operate railroads in the tropics and steamships on the high seas. These companies have found that they must limit their production to banana varieties that are acceptable to the importing countries, and that will yield the highest possible rate of return on their investment. The smaller operations may, or may not be affiliated with the larger companies, depending on local circumstance. Current market conditions in the importing countries largely determine the extent and timing of shipments from Honduras. Only the largest stems of bananas of highest quality are selected for shipment overseas, so that there are considerable quantities of bananas available for local consumption. Some of the smaller plantations grow only for the local market.

PLANTAINS and other cooking bananas are grown in all parts of Honduras, with the 1952 census reporting 17,400 acres in such crops. There are usually a few plants around each house to supply the family needs, with a few surplus stems for sale. There are two general types of plantains in Honduras: The true plantain (called "platano macho") that is quite long and slender and another, called "chata" (or sometimes "hog banana" in English speaking areas), which is quite short and thick. Both of these are usually cooked as vegetables rather than being used as a fresh fruit. In many parts of Honduras plantains are a major part of the diet. Smaller bananas than those exported are consumed locally. The 1952 census reported 57,000 acres planted to varieties other than those used for export. These plots are distributed throughout the country and the harvest is continuous, since the nature of the fruit prevents storage for more than a few weeks, even in a green condition. They may be found in the markets at all seasons.

Green bananas and plantains are frequently fed to hogs and chickens. They are not an ideal feed for livestock, but can be used to supplement pasturage and grain.

RICE is grown in all of the climatic zones of Honduras. The best yield and largest proportion in relation to the population is in Zone B, which has only 2.5 percent of the population, but 12.3 percent of the area planted to rice. Only upland rice varieties are generally grown, with paddy rice confined to a few trial plots at the research stations. Table IX shows the yield of rice by zones and Table X the distribution of the plantings. The census reported about 27,300 acres as having been planted to rice in 1952.

Honduras does not produce all of the rice consumed in the country, so that imports consistently exceed exports. Probably the darkest cloud on the horizon for rice producers in Honduras is the fact that "hoja blanca" has been reported from the country. Most of the rice crop is cut by hand and threshed by flail, but is cleaned in power mills.

COTTON was reported by the 1952 census to be concentrated in Zones F and G in the southern part of the country. The climate, in these two zones is very favorable to the cultivation of cotton, since the crop can be grown without irrigation. Planting is done in June and July, with the advent of the first heavy rains. Cotton plants are deep rooted, and do not suffer from short periods of drought, as does corn. The long dry season, lasting from December to May, gives ample time for the cotton crop to mature and for its harvest without interference from rain. Since 1952 there has been a great increase in cotton acreage. Almost all of the cotton produced in Honduras was hauled in the seed to El Salvador for ginning, until the most recent harvest, in 1957-58. The main highways in central and southern Honduras have been much improved during the past five years, permitting the trucking of commodities to El Salvador, a fact that has greatly influenced the location of the cotton fields in Honduras. Plantings of cotton in 1957-58 are estimated at about 17,500 acres, the newer plantings extending well into Zones D and E. Much of this production will be ginned at Tegucigala, where the cotton cooperative has built a new plant to provide ginning and storage facilities.

The cotton planters of Honduras have one of the best cooperatives in the country. This organization purchases supplies and equipment, and furnishes airplane spray serv-

ices and financial assistance to members, in addition to the recently installed ginning service. Plans of the cooperative include the construcción of an oil mill to crush cotton seed, which will make cottonseed meal available for the feeding of livestock.

Cotton production is probably the most highly mechanized agricultural operation in Honduras. Nearly all of the new plantations are large enough to use tractors with two and four row equipment. Practically all of these plantings are on level valley land, but contour cultivation and terracing is used wherever needed. Many plantations have water available for irrigation, if rainfall is insufficient for the crop.

TOBACCO is a major cash crop in a small area in western Honduras, with the 1952 census reporting about 9,500 acres dedicated to its cultivation. This has probably been somewhat increased during the past five years, with 76 percent of the total acreage reported from Zone E, mostly in the Department of Copan, while about 16 percent was in Zone F, principally in the Department of Nueva Ocotepeque. Cigarettes are manufactured by a local company in San Pedro Sula, which purchases the majority of the leaf tobacco. This company finances the production of some bright leaf, of the Virginia type, which is mixed with the dark native air-dried product, more commonly found in the country. The cultivation of this bright leaf tobacco is closely controlled by the company, through the distribution of plants grown from imported seed.

Many cigars are made by hand in Santa Rosa de Copan. Santa Rosa was at one time the central market for tobacco in Honduras, but San Pedro Sula now shares in this market. Most of the export tobacco from Copan goes to El Salvador, and is shipped by plane to Nueva Ocotepeque, where truck service is available. A few truck loads of leaf tobacco have been seen on the highway from Santa Rosa to Tegucigalpa and on the Pan American Highway to San Salvador. The relatively limited markets in Honduras and El Salvador determine the acreage that can profitably be planted to tobacco.

COFFEE is a major export item in Honduras, and is produced on about 170,000 acres, according to the 1952 census. Of this total, more than 40 percent was 20 or more

years of age, an additional 30 percent between 5 and 19 years, and less than 30 percent under 5 years from date of planting. These plantations have generally been handled under the "extensive" system, and are poorly managed. No commercial fertilizers are used. Most of these plantations are very isolated, and must be serviced by pack train. Practically no pruning is done except for the high limbs that are broken off in the process of harvesting the crop. These old plantations are, for the most part under the dense shade of large trees that have grown more than the coffee plants and no attempt has been made to correct this condition by selective thinning or pruning. Young coffee plants are commonly found intermingled with the older bushes, being replacements for plants that have died. Reported production is very low, and is probably less than 200 pounds of beans per acre. Most of the coffee plantations are in the central part of the country, on mountainsides at two to four thousand feet in elevation. Good coffee land is never found in the areas that support pure stands of pine, in Honduras, principally because these lands are burned annually.

Table X shows that most of the coffee is in Zone C, D, E and F. Arabian coffee does not produce well at the lower elevations found in Zones A, B and G, where the rainfall permits plant growth the year around, so that there is no distinct season of bloom or harvest. Coffee plants in such areas often bloom at erratic intervals throughout the year, so that there are a few ripe berries at all seasons, as well as a high percentage of "star" (sterile) flowers on the Arabian varieties. The harvest season, in the principal coffee growing areas of Honduras is from November to April.

Table II shows the value of coffee exported from Honduras. Transportation is an important item of expense in coffee production, since most of the plantations are high in the mountains where only pack mule transport is available. Coffee berries are processed on the plantation, so that the weight to be transported is cut to about 20 percent, five pounds of berries producing about one pound of grain coffee (in parchment). Pack mules usually bring this type of grain coffee to a village or highway, where it can be taken by truck to a central market. Much of this Honduran coffee finds its way into El Salvador, Guatemala or Nicaragua, simply because the road nearest to the plantation

crosses the international border. In Tegucigalpa and San Pedro Sula there are large processing plants where the parchment is removed from this type of coffee and the beans graded for export or domestic consumption.

SESAME is grown along the Pacific coast for export to oil mills in El Salvador. This is not an important crop to Honduras as a whole, but is of great importance to a few small farmers. The 1952 census reported 386 farms with about 1,300 acres of sesame, the majority of this total being from the vicinity of the village of El Triunfo, in the Department of Choluteca. With a more stable world market price, and the introduction of some of the newer non-shattering varieties, this could become an important crop along the south coast, where weather conditions are very favorable for its production.

HENEQUEN and other species of fiber bearing plants are found in almost every Department of Honduras. There is quite an industry around Santa Barbara that is devoted to the collection of native and semi-cultivated fibers that are sun dried and hand spun into coarse twine, rope and other similar items for use around the home and farm. Another small business or handicraft is often associated with this industry, usually in the same families, where the men make twine and rope, while the women weave hats, made from the fiber of a palm or palmetto. Some of these hats are of very fine quality, but are sold unfinished for local use or for the export trade, since there are no facilities for blocking them in the area. A few of these nice hats are brought to Tegucigalpa for custom finishing.

There has been a considerable amount of talk of expanding these associated industries through an improvement in the cultivation of the fiber producing plants and the introduction of modern processing machinery, but the world market price for coarse fiber does not encourage the necessary investment. Only a small part of the Department of Santa Barbara is involved in this handicraft industry.

CASSAVA is well adapted to the needs of subsistence farming, and is found in all of the Departments of Honduras, since it produces a very high yield of carbohydrate on a very limited area of land. The crop does not need to be harvested at any definite date, but can be left in the ground until needed for household use. It is not generally

regarded as the best, or most palatable food, but can be grown easily and used to fill in during season when little else is available. The maintainance of the plantation is easy, since a new cutting can be taken from a given plant at harvest time and set in the opened space, where it soon takes root.

WHEAT production in Honduras is limited to the high mountains of the southwestern part of the country, with about 95 percent of the 1,410 acres reported by the 1952 census located on the divide between Zones E and F and with 85 percent of this total in the three Departments of Intibuca, Lempira and Ocotepeque. Production from this small acreage supplies only a fraction of the national needs.

Most of the wheat used in Honduras must be imported, and is milled in San Pedro Sula. The 1950 census reported that only 6.4 percent of the total population ate bread made of wheat flour, but it is probable that this percentage has increased in recent years. More than 60 percent of those reported as eating wheat bread in 1950 lived in the larger urban centers of Tegucigalpa, San Pedro Sula and La Ceiba, where there are large bakeries. It is odd to note that the principal wheat producing area of the country reported the smallest percentage of people eating wheat bread, so that it is evident that the people who produce the wheat either eat it in some other form, or grow it entirely for sale. Any wheat that is transported from its place of origin does not find its way back as flour for bread making. Most of the wheat-growing farms are inaccessable excepting to pack mule transportation.

CITRUS FRUITS grow in all parts of Honduras. The climate is favorable for citrus, but on the whole the soils are much too heavy and the plantations are short-lived. Next to bananas and plantains, citrus is the most widely grown fruit in Honduras. Some type of citrus can be found in the markets of the larger towns of Honduras almost the year round. The acid citrus most common to Honduras is a large lime and they are on the market more of the time than any other citrus. Usually, they are sold by the individual fruit, or at most a few fruits to each customer. Sweet oranges and tangerines are the favorite citrus fruits in Honduras. Good tangerines are found on the market for only a short period, November to January. Sweet oranges are the vol-

ume citrus fruit and they come to the larger markets, Tegucigalpa and San Pedro Sula, by truck loads. The season for oranges is very long. Good oranges can be found in the larger markets, especially San Pedro Sula, during most of the year. The two principal varieties are Valencia and Washington navel. Grapefruit is not a popular item in Honduras. Good grapefruit are produced on the north coast where rainfall is adequate and the temperature is high during the ripening period. The minor citrus fruits are found only as novelties or in experimental plots.

PINEAPPLES are grown widely in Honduras but only around San Pedro are they grown commercially. The census did not report the area planted to pineapples. The varieties of pineapple grown are not the same as those grown in Hawaii. The red Spanish type pineapple grows well in the warm climate around San Pedro. This type is usually deep seeded so that dark specks (really mature seeds) are found in the fruit when served. The shallow seeded varieties grown in Hawaii do not show this defect. Too, it is claimed that there are no humming birds on Hawaii to pollinate the flowers, therefore, no mature seed are produced. Anyway, pineapples in Honduras have seeds that appear as specks in the fruit when served. There has been much talk of developing a pineapple industry in Honduras. Since the United States would be the market outlet for production beyond the local needs this would mean canning. Fresh pineapple will not stand long shipment. The capital investment needs for a project of this kind are quite large. Present market outlook in competition to the establised industry in Hawaii does not encourage this heavy outlay of capital. The climate of many places in zone F is favorable for the production of the type of pineapple now grown in Hawaii.

A small area planted to this type of pineapple near Santa Rosa de Copán and well managed could be worth-while.

No doubt a market could be developed in San Pedro and Tegucigalpa for a small amount of high grade pineapple.

COCONUT palms grow along the North Coast and on the Bay Islands. Collection of the nuts for sale in the U. S. A. and for making copra is quite an important business in those areas. There are at least two mills on the North

Coast that buys copra and extracts the oil. These mills also buy other oil bearing palm nuts for crushing. There is a large area that could be devoted to palm oil nuts, including African Oil Palm. Also, there are considerable quantities of wild palm nuts, (Orbignya) that are not being collected. The palm oil industry could be expanded in Honduras without great outlay of additional capital.

CATTLE are the most important livestock in Honduras. The 1952 census reported 1,765,000 acres of pasture and 1,146,800 head of cattle on 78,950 farms. The census did not report the quality or classification of the pasture nor the breed of cattle. Most of the pasture in Honduras is wild grass. Most of the cattle are a nondescript breed of early origin called "criollo", a Spanish term for indigenous.

Table II indicates that livestock and livestock products are important items of export. Most of this is live cattle that are driven to market in El Salvador and Guatemala. More recently with improvement of the Highways to El Salvador the cattle are driven to a loading station on a Highway in Southern Honduras then hauled by truck into El Salvador. From Western Honduras they are driven into Guatemala where a railroad is available for shipment to market.

Many cattle are milked in Honduras. The 1952 census reported 311,000 milk cows and 145,000 cows as having been milked the day before the census was taken. Usually the production is very low and would be considered unprofitable in many countries. Around the cities and towns some milk is sold as fresh milk. A common scene early in the morning on many streets of Tegucigalpa is the milk deliveryman with two cans on a pack mule dipping milk into a container of the purchaser. All of this milk is boiled or otherwise cooked before consumption. Considerable milk is made into cheese. This is a means of concentrating the protein of the pasture grasses into a form that can pay the freight to bring it to the centers of population. Most of this is a granular white cheese that is sold, wrapped in a banana leaf, in most of the markets. A few cheese factories make a very high type cheddar cheese.

Much of the land now called pasture is really open pine forest that has been burned annually to prevent new

growth of young pines from coming back to replenish the forest. There are some excellent pastures that are planted to improved grasses. In many places these pastures are being taken by a thorn brush called "Carbon". Where the Jaragua grass is planted the coarse stems are burned during the dry season, as the operators have no machinery to cut it, and the brush soon takes everything. In some parts of Honduras the long dry season burns the pasture and leaves no drinking water for the cattle. It is generally estimated that adult cattle loose 200 pounds weight per animal during this long dry season.

New breeds of cattle are being imported. There are some large herds of pure bred Zebu with smaller herds of European breeds and a few bulls of the American Santa Gertrudis. These new breeds are being crossed with the native cattle with good results. There are enough good cattle under good management to indicate that good beef cattle can be grown in Honduras. Dairying might be as feasible if other enterprise and industries can be developed to raise the standard of living of all the people to the point that their diet can include milk at a price that will pay for the good management and good breeding necessary. The Honduran Goverment and UNICEF have plans to build a milk dehydrating plant near San Pedro Sula. This plant will have a capacity of about 15,000 quarts of fluid milk per day and should be in operation by mid 1959.

HOG production in Honduras is usually a haphazard operation. Most of the pigs are scavangers around the villages, eating whatever is available. Out on the margin of transportation, surplus corn at harvest time is fed to the mature hogs to bring them to the finish desired to market them. Honduras demands fat hogs and much hog lard is used. The 1952 census reported 525,000 hogs from all Departments. The hogs commonly found over Honduras shows strains of good breeds from other parts of the world.

Hogs breed much more rapidly than cattle so that two or three good boars imported into a village two or three years apart can almost replace the common herd with nearly pure bred pigs. Seldom has this careful an operation been done but it could be done with organization.

Most hogs are driven to nearby markets for slaughter. Pork is brought to Tegucigalpa from the Department of Olancho by truck and by plane. Pork is more widely consumed in the country than beef because it is easier to dispose of or consume a pig than a steer.

POULTRY production in Honduras is rather haphazard with fighting cocks being the primary product and meat or egg production as secondary. The 1952 census reported 3,500,000 chickens. There have been considerable importations of improved strains of chickens from the United States but there is no local source of materials to make the balanced ration necessary for improved poultry breeds. The native hens are accustomed to "scratching" for themselves. Their diet is the insects and wild seeds found around the place. Probably the best breeds of chickens would not survive under the conditions where most chickens grow in Honduras. There are a few flocks of improved breeds being fed imported concentrates.

There is no organized market for poultry nor poultry products in Honduras. Chickens have been observed coming to market on burros, on top of buses tied by their feet and with their feet tied together over a stick on a man's shoulder. These chickens are sold alive for killing and dressing by the cook, usually after a fattening period in the back yard. Very few eggs are placed in cases like those used in the United States. Most of the eggs coming from the country are wrapped in corn shucks or banana leaves and tied with a vine or other coarse fiber. When wrapped in corn shucks usually there are two eggs to the bundle. When banana leaves are used there are six eggs to the bundle. These wrapped eggs are put in wood boxes for packing on the backs of burros, mules or horses and when hauled on the combination freight and passenger trucks that bring most of the people and produce to the markets.

There is talk of constructing a livestock slaughter house where meat scraps and blood meal can be salvaged for chicken feed. Also, there are plans for an oil seed mill in Tegucigalpa to crush cotton seed. A very small amount of cotton seed meal could be added to a mixed chicken feed. If some soy beans are grown in Honduras to be crushed in this mill a better oil-seed-meal would be available. Fish meal could be produced on the North Coast or

on the Bay Islands if there should be enough demand for such in chicken feed. Without this animal protein to make a balanced ration for the young chicks and layers there is little chance of increasing poultry production much or quickly.

OTHER LIVESTOCK ENTERPRISES: Most of the livestock grown in Honduras are too large and expensive for most of the people to enter into production. For the production of meat that can be consumed by the producers as well as sold in the market place, probably, the domesticated rabbit offers most. For milk production that can be consumed by the country family with little or no income, probably, some improved strains of milking goats, either purebred or crossed with the natives, offers most.

RABBIT production is simple enough and inexpensive enough to be widely used as 4-H Club projects. The costs of initiating a project are quite small. The needs are quite simple — a home-made hutch with wire floor and a pair of rabbits and the kid is in business. One buck (male rabbit) could serve several does of the various members of a club.

The problems of feed that makes a balanced diet are much simpler with rabbits than with chickens. They relish many of the native plants and crops that are available the year-round in Honduras, such as sweet potatoes and their vines, cassava and many grasses. Also, they can use a diet with more fiber than chickens, making it possible to grow all the feed needed on a very small area around the house. Rabbits reproduce rapidly enough that any size project can be developed quickly from only a few animals. The project can be designed to fit whatever land is available to grow feed.

MILK GOATS are one of the most efficient feed converting livestock, are highly domesticated and are quite adaptable to climatic conditions. In Honduras there are many low income families that cannot afford to purchase milk for nourishment. Most of these families do not have sufficient land nor facilities for keeping a cow, but they can afford to keep and feed a goat. A good milk goat will

supply sufficient milk for the average family for 9 to 10 months of the year and can be kept where it would be impossible to keep a cow.

There is much rough and rocky land in Honduras that is not suitable for cultivation nor for grazing dairy cattle, but could support goats. Milk goats could fit into many places where the cow is too large an animal unit or where grazing is difficult for cattle. There were about 37,000 goats reported in the 1952 census, mostly in Valle, Olancho and Yoro Departments. These native goats produce very little milk but could be the basis for cross breeding and improvement.

METEROLOGICAL STATIONS IN HONDURAS

These are the meterological stations which supplemented the information to calculate the graphs shown on the map.

The numbers on the list correspond to the numbers on the map, facing page 10.

1. Agua Caliente
2. Agua Azul
3. Amapa
4. Amapala
5. Catacamas
6. Cayetano
7. Colorado
8. Comayagua
9. Coyoles
10. Choluteca
11. Chumbagua
12. Danlí
13. Dulce Nombre, Copán
14. El Jaral
15. El Mochito
16. El Obispo
17. El Rosario
18. El Sauce, F. M.
19. El Sauce, S. B.
20. Farm Nº 17
21. Gracias
22. Guacerique
23. Guanacastal
24. Guanaja
25. Guarumas
26. Guayabillas
27. Guaymas
28. Hacienda Archaga
29. Juticalpa
30. La Ceiba
31. La Esperanza
32. La Gloria
33. La Labor
34. La Lima
35. La Lima District
36. Lamaní
37. La Paz
38. La Venta

39. Lancetilla
40. Los Planes
41. Manacal
42. Marcala
43. Morocelí
44. Nacaome
45. Nueva Ocotepeque
46. Olanchito
47. Pantano
48. Peña Blanca
49. Pespire
50. Progreso
51. Puerto Castilla
52. Puerto Cortés
53. Ruinas de Copán
54. Sabanagrande
55. San Antonio de Flores
56. San Esteban
57. San Lorenzo
58. San Marcos, Colón
59. S. Marcos, Ocotepeque
60. San Pedro Sula
61. Santa Bárbara
62. Santa Rosa, Copán
63. Sico-Iriona, Colón
64. Talanga
65. Tela
66. Telica
67. Toloa
68. Toncontín
69. Trujillo
70. Ulúa
71. Urraco
72. Veracruz, Copán
73. Villa de San Antonio
74. Yojoa
75. Yoro
76. Yuscarán
77. Zacapa, S. B.
78. Zambrano
79. Zamorano