

A REPORT ON A SURVEY OF PEASANT AGRICULTURE

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INTRODUCTION

Trinidad, in common with other parts of the world, suffered severe economic upheaval during the war years. The cost of living, and especially that of food stuffs, has risen hand in hand with the cost of labour to unprecedented heights.

Prices, such as are ruling in this Island at present, combined with a world shortage of food stuffs, reflects with great severity upon the peasant population which is by far the greater percentage of the total.

In Trinidad and the West Indies generally, however, the position is considerably worse than in our other Tropical Dependencies, in that the peasant population is not indigenous. Our peasants have been imported either as indentured labourers from India which has brought little agricultural tradition with it, or as slave labour from Africa, whose agricultural and national traditions were depressed during their captivity, and whom since their emancipation have shown little desire for agricultural labour since it is so closely associated with their lowest social epoch. It is not surprising therefore that where peasants are forced to farm small tracts stand for substance that this is carried out in a most unprovident manner.

It is obvious therefore that an effort must be made, firstly to encourage those people who are at present engaged upon the land, to improve their condition of life, their methods of working and the quality and quantity of the produce they turn out, and secondly to establish an interest and attachment for the land amongst those who have at present no association ^{with} for it. It is with these considerations in mind that the survey reported here in has been made of an area in the St. Augustine district.

In the limited time at our disposal, a complete and detailed economic survey of the area would have been beyond ^{our} one powers. This would have required the co-operation of all departments of the College which were otherwise engaged when the survey was

undertaken. Thus our work has been more of an investigation made by general observation and conversation with the peasants themselves in their way of life. In the main we have endeavoured to find what crops they grow, why^{re} they are grown and the purpose for which they grew them. Attention has also been paid to the manner in which they cultivate their land, its condition of fertility, and tenure, together with a study of marketing and transport facilities and the various social amenities, if any, available to them.

Much of this information has been difficult to obtain. Each party has found difficulty in understanding the other. The peasants in some cases misunderstanding our questions and we, on the other hand have misinterpreted their answers. Again in other cases there has been a vagueness about the answers we have received which leaves conclusion a matter of surmise. However despite such difficulties we have contrived to obtain a picture of the average conditions in the area, with this at our disposal, it is intended to devote the last section of the report to suggestions as to the way in which the lot of the peasant and hence the agricultural out put of the area could be improved.

METHOD OF SURVEY

The survey was carried out between mid - December, 1946 to mid - April, 1947. The area was divided into two sections and the survey of each undertaken separately. From the northern boundary southwards to the beginning of the St. Augustine residential area, was surveyed first and when completed the section extending from the southern limit of the St. Augustine residential area to the Tacarigua River was undertaken. It may be noted here that the St. Augustine residential area including I.C.T.A. and its farm were omitted from the survey as being, for our purposes, agriculturally unimportant. For the purposes of the survey this area is considered non-existent, and, as indicated (Fig. 14) the two sections are considered to form a continuous area.

It might also be pointed out that the limited period of time available to us in which to make the survey was a distinct disadvantage. The area and crops were viewed only during the dry season and hence the picture obtained was rather one-sided. The survey would have benefited immeasurably had a full twelve month period been available during which the area could have been viewed under all types of climatic conditions.

As indicated in the introduction the investigation was carried out by observation of the area and crops and conversation with the peasants. At the outset the question immediately arose as to the precise definition of a peasant. This was broadly speaking taken to be a person farming a holding of one to three acres and doing so with the aid of family labour only. However at the course of the survey it was discovered that the word family was a highly elastic term. Families were found to vary in size from what might be considered normal form^{four} to eight persons, to the East Indians conception of up to forty persons consisting of every kind of relationship from Great grand parents to Great grand children. This latter type was particularly typical of the southern section.

Again, despite the size of family, a little labour is often employed to perform operations for which the family does not possess the necessary equipment, as for instance, ploughing of Padi land.

It was found, too, that the total family income was not derived entirely from the land but was supplemented by members of the family working as lorry or taxi drivers, mechanics, clerks, shop assistants or upon large agricultural concerns such as sugar and cacao estates. Indeed in many cases especially where large numbers were thus employed the income so obtained often exceeded the agricultural income.

Nevertheless from the point of view of setting down facts as established by our observations, the definition will be adhered to. Such considerations as size of family and other sources of income will not debar a proprietor from inclusion under the term peasant. These anomalous cases were however to be given further consideration in the section devoted to recommendations.

SECTION I

GENERAL ACCOUNT OF THE SURVEY AREA

Situation:

The area surveyed lies in the St. Augustine district of Trinidad, some eight miles due west of Port of Spain. It is very roughly rectangular in shape in that it is longer from north to south than from east to west. On the one inch ordinance survey map the entire area lies between the co-ordinates $61^{\circ} 25' 15''$ East and $61^{\circ} 24' 15''$ West and between $10^{\circ} 37' 15''$ South and $10^{\circ} 30'$ North.

Topography and Relief:

Topographically the area shows considerable diversity. From the north the foothills of the northern range slope sharply southwards. The surface, during its entire width from east to west being pith with ennumerable ravines running roughly north and south. The entire northern section consists of a multitude of narrow canals and ridges sloping sharply downwards to narrow flooded steep sided valleys. The area continues to slope sharply southwards till it reaches the northern end of the Central Plain where it suddenly flattens out and stretches with an almost ^{im}unperceptible slope southwards to the Tacarigua River.

Drainage:

The entire area is drained principally by the Tunapuna river which traverses the area from north to south down its western side. In the hilly section to the north drainage is facilitated by a net work of small riverlets and streams running from the various ravines and valleys and discharging into the main river. In the southern section natural drainage is insufficient and the land is subject to flooding during the wet season especially in the extreme south. Artificial drains have therefore been made to remove excess water.

Communications:

Inspection of the map (Fig.1.) indicates that the area as a whole is very badly furnished with internal communications. The Eastern Main Road and the Churchill-Roosevelt Highway both traverse the area from east to west. The former running just south of the northern section and the latter running through the northern end of the southern section. Apart from these however, which give excellent communication with Port of Spain in the east and the various towns and villages of the west and which join up with the Southern Main Road to give communication southwards, metal roads are few. The remainder with the possible exception of St. Johns Road on the north and Freeman Road in the south, make very little penetration into the centre of the area. To travel beyond the limit of these roads one must depend upon traces which with few exceptions are rough and enaccessible to wheeled traffic. In many cases they are mere tracks made through the bush to enable the peasant to reach the site of his cultivation. Again, in the north, many run down steep slopes and are the fore runners of serious gully erosion.

In the southern section, apart from the Freeman Road, the only means of communication and transportation is by dirt traces. These, although rough are quite satisfactory during the dry season. In the wet season, however, they become complete quagmires and are in many cases completely under water and impassible. Hence at the height of the padi harvesting season the peasants must walk along the banks between the padi plots and carry his crop out to dry ground where it may be loaded on whatever transport is available.

The upkeep of these dirt roads is the responsibility of the estates from which the land is rented, and their condition reflects badly upon their attitude towards their tenants.

Distribution of Population:

The agricultural population of the area comprises a typical mixture of negroes and East Indians. The latter are

predominant throughout both sectors but while the southern section is almost pure East Indian, the proportion of negroes in the northern section is higher.

In the north the population is scattered. Dwellings, in the main, are formed in small groups on, or convenient to the main metalled roads. Together with these are occasional isolated dwellings situated upon traces rather remote from the amenities of civilizations.

In the southern section of the entire population was found in a complete compact group at the northern end of the section (Fig.2).

Generally speaking, in both sections the size of house varies, presumably depending on the size of the family and their circumstances. The tapia type of house, roofed with palm thatch or galvanised iron predominates. In the hills these are usually built upon sticks. In the south however they are for the greater part built on the ground, since the northern end of the southern section is not subject to flooding.

In many instances, especially in the southern section a small apartment is appended as shelter for stock. In both sections it is customary for a small garden to be cultivated round the house for the production of vegetables and ground provisions for home consumption.

Social Amenities:

Both sections are, under normal conditions well watered. In the northern section with the exception of a well to the extreme east and a spring on Mt. St. Benedict, ~~any~~ water must be obtained directly from the various ^{riverlets} ~~mounts~~ and streams. The scattered distribution of the population would present difficulty in establishing an organised water supply.

In the southern sector, however, where the population is compact, water may be obtained from public taps. Three of these are situated at central paces amongst the house lots.

The people of the entire area are all either easy reach of the villages of Tunapuna to the west and Curepe to the east. They have at their disposal, within easy distance, all the amenities of village life, places of entertainment, Cinemas, rum shops, schools, places of worship and facilities for making day to day purchases should there be required.

SECTION II

AGRICULTURAL CONDITIONS AND PRACTICES

Agriculturally the area seems to contrast production on two extreme types of land, the steep slopes of the north and the almost flat plains of the south. Moving southwards through the area there is a sharp transition from the mixed farming and tree crops of the north to the padi and sugar cane cultivation of the plains.

Soils:

The entire area is one of low fertility. The soil material of the southern sector is detrital, ^{now} brought down from the northern range, overlying alluvial material. The sector was originally under sugar and includes either wholly or a proportion of those areas of ^aStretham Lodge, St. Augustine, and Caroni Estates which have been abandoned for sugar production on a plantation scale. The accompanying soil map ^(Fig. 2) shows the distribution of the various soil types represented.

In the northern sector, on the other hand, almost all agricultural land is under a dense covering of secondary bush. Since a soil map similar to that shown (Fig. 3) is not available for this sector, samples were taken at different points in the area in the hope of obtaining a representative idea of soil fertility.

TABLE I
Result of Laboratory Examination of Soil Samples.
(8th Feb. 1947.)

Lab NO.	Soil No.	Depth ins.	M.P.S. (lb)	SEND (lb)	I.T.	Reaction	Exch. p.p.m.	OM (B)	Total N(B)	C/N ratio	Elect Cond av.	Cond Rate	acid Ros-	avail K ₂ O
φ 639	A1	6	25	68	12	4.7	4.1	1.76	.127	8.0	39	10	6	85
φ 640	A2	12	22	63	10	4.8	4.0	0.74	.082	5.3	28	3	6	-
φ 641	B1	6	31	62	19	5.7	5.4	3.58	.48	10.7	69	22	8	161
φ 642	B2	12	24	60	12	5.6	4.6	1.17	.126	5.4	37	5	9	-
φ 643	C1	6	37	64	14	5.2	4.2	3.50	.200	10.2	44	10	4	103
φ 644	C2	12	26	63	14	5.1	4.2	2.13	.167	7.5	36	6	11	-
φ 645	D1	6	42	39	36	5.4	4.6	5.10	.261	11.3	51	11	4	73
φ 646	D2	12	36	39	29	5.2	4.3	2.31	.216	6.2	44	5	9	-
φ 647	E1	6	38	42	26	5.1	4.1	3.50	.236	8.6	43	11	25	73
φ 648	E2	12	37	37	32	4.8	3.8	1.62	.187	5.0	45	4	4	-
φ 649	F1	6	29	68	15	4.9	3.9	4.07	.214	11.0	51	14	4	88
φ 650	F2	12	23	65	10	4.7	3.7	1.82	.114	9.3	25	4	3	-
φ 651	G1	6	37	37	20	7.1	6.8	4.51	.246	10.7	20.4	72	13	90
φ 652	G2	12	32	45	23	7.1	6.4	2.72	.188	8.4	15.1	100	7	-

Notes.

- A. old cacao land at head Tana-puna River. very steep slopes
- B. Recently cleared bush on steep slopes. head Tana-puna River. Rocky substrata.
- C. Bush adjacent to B.
- D. Secondary Bush on slopes above Empire growing Station. Darkish soil with apparent hum body in it.
- E. Lower slopes east of St. Joseph's River. mainly citrus. very variable soil depths.
- F. West of upper part of Tana-puna River. Mainly light tree growth. Rocky and eroded.
- G. Both sides of Valley S.S.5. Mound St. Bushes non-abundant, just reverting to bush from bananas & ground divisions. Some banana slightly over the bonings beds more loose and schistose on slopes, and somewhat more soil at the valley bottoms than apparently there was more soil.

M. P. S. = Means per spec.
I. T. = Index of Reaction

Q.M. Organic matter

The analysis of these samples is given in Table I. It must be pointed out however that the number of samples taken was inadequate to permit if definite conclusions being drawn. Table 1. shows that those soil examined were of a sandy nature, highly acidic, low in organic matter and available nutrients, total nitrogen and available phosphate and potash. In addition, in many cases the soils were of no depth and difficulty was experienced in obtaining a sample of the second six inches.

Situation and Distribution of Agricultural Land:

Although there are occasional exceptions, in general, the peasants do not live on the land which they cultivate. There is considerable variations in the distances they have to travel before their days work may commence.

The land in the southern sector extends southwards from main residential block (Fig. 2) field after field, is a compact mass. Hence for those peasants living on the area while they may not live on their actual holding may be within sight of it. For these peasants fifteen minutes should suffice to traverse the distance to the furthest lot of land. For peasants living off the area in such places as Paja, St. Augustine or even Curepe a longer time will be required, say from half to three quarters of an hour.

In the northern sector holdings are found either in complete isolation or in isolated groups. It is understandable that a preference is shown for land near roads and traces, due to the topography of the area and the fact that it is under a dense covering of bush, except where cleared for cultivation. Nevertheless such easily accessible land is limited and the peasant is forced further and further into the bush and up the slopes as time advances. He is therefore faced in most cases with a long tedious and difficult journey before his work may commence. Furthermore the nature of the terrain is such as to severely limit the numbers of implements he may bring to assist in his cultivation.

System of Land Tenure:

There is considerable variation in the conditions under which peasants hold their land throughout the area. The greater part is under leasehold but examples of owner occupancy and share cropping are also represented.

In the southern sector there is a definite line of demarcation around the area of freehold land. This comprises the land of the St. Augustine Estate which was sold outright and purchased by the peasants half-an-acre to an acre.

Stratham Lodge lands are let out under leasehold. The peasant is permitted to utilize the land and dispose of his crop as he pleases. Rents vary from \$5.00-15.00 per acre per annum depending upon the fertility of the land. The land is let on a year to year basis and tenancy may be terminated by either party at the end of any year.

A small proportion of the Curepe Estate is included in the area at its eastern extremity. This land is owned by Caroni Estates Ltd. and is leased on a year to year basis exclusively for cane growing, and the company dictate the manner in which the crop will be disposed of. However since this land is shortly going to be incorporated on the estate, it will be given no further consideration here.

In the northern sector a considerable amount of crown land was purchased as house lots after the 1914-18 war. These are in the region of the western ravine and that enclosed by the Saint Margurita circular road. The land was purchased in lots of 1, 2 and three acres at a cost of about \$60.00 per acre. This land is held freehold.

To the north of the Saint Margurita Circular Road and along the St. Johns Road as far as its confluence with the Tunapuna River, the land comprises small estates of some 10-20 acres. Portions of these are rented to the peasants for cultivation. The lease is again on a year to year basis and the peasant has no

security of tenure. He is however free to crop his land and dispose of his produce as he pleases. Rents are variable but averages \$3.00-4.00 per acre per annum.

The land in the extreme north of the northern sector is owned by the Monastery of Mt. St. Benedict. Cropping consists primarily of old cacao growing on the hillsides and ravine, and share cropping predominates. Peasants undertake to look after from 1000 to 2000 trees and the intention is that the crop will be divided equally between the peasant and the Monastery, with the proviso that the peasant sells his half to the Monastery. At present an effort is being made to improve the cacao, and during the period of improvement the peasant is permitted to take the total crop. The lease is granted on a year to year basis and peasants are not encouraged to live upon their holdings. However although the peasant must feel some insecurity, it would appear that the officials of the Monastery are understanding landlords. Provided a tenant is enthusiastic and cultivates his crop thoroughly he will have no difficulty in having his lease renewed.

It is evident from the above account that the system of land tenure is unsatisfactory throughout the area. Firstly there are those peasants who have security of tenure ^{coupled} ~~completed~~ with a limited or inadequate amount of land and no possibility of expansion. Secondly there are those who can obtain the desired amount of land in a block but are hampered in its development by insecurity of tenure.

Cropping:

In the northern sector the soil is not of sufficient fertility to permit an intensive form of agriculture; nor is there, due to the insecure position of the tenant, and incentive to build up, or even maintain, the natural fertility there land chances to possess. The peasant, therefore, must be content with whatever crops his land is capable of growing.

The Major crops, in approximate order of importance are, pigeon peas, corn, tomatoes and string beans. There are found growing, on a fairly large scale, principally on hillsides, upon thin soils recently cleared of bush. Tomatoes and string beans are generally planted between rows of corn or pigeon peas, and seldom occur as a pure stand. Pigeon peas appear to do very well under these conditions and give a very satisfactory yield. The inaccessibility of the land, and the general topography, however, often make picking slow and tedious. Corn yields are low and the crop do not appear suitable to the area. The plants are invariably stunted and the crop small, and yields cannot be considered high. Tomatoes and string beans do not yield heavily. In the case of tomatoes however, while the fruit is small it is of very good flavour. Under mixed cultivation however both are a useful source of additional income as well as serving as a useful cover during the early stages in the growth of pigeon peas.

Together with the major crops there are a variety of minor ones. These are seldom grown on a field scale since they are more exacting in their soil requirements. Hence they are found growing in small quantities where conditions are suitable, as for example in the bottoms of valleys where there is a greater depth of soil and often a more plentiful and reliable water supply. Into this category come, tannias, eddoes, dasheen, sweet potatoes, yams, cassava and plantains. Citrus both orange and grapefruit are found in small numbers around many houses. In a few isolated instances they are found to occur on a field scale in pure stand and where it has been well looked after appears to do exceedingly well; Tonka beans, pomegranates and coconuts, too, are found on a small scale around house lots.

Major crops are all grown for cash returns, but family requirements are also met. Minor crops are planted primarily for home consumption, but where the quantities available are in excess of family requirements they are sold.

In the southern sector the principal crops are sugar cane and padi. A limited amount of vegetable growing is undertaken on the padi land during the dry season, and on the cane land during the months immediately following planting.

Cane is the principal cash crop of the area. It is grown on small lots varying from half-an-acre to an acre in size and is sold to the Orange Grove Estate. The crop is planted contrary to Estate practice, at the commencement of the wet season and the first crop is harvested during the following dry season, having been in the ground only 9 to 10 months. Yields are not high, averaging some 20 to 25 tons for plant canes and falling off rapidly with each ratoon. Depending upon the season however a greater yield may be obtained from the first ratoon than from plant canes. This is undoubtedly due to the short growing season of the plant canes. The number of ratoons taken is variable and depends to some extent on the season. The average number is four, however, due to the system of supplying, that is, replacing individual dead stock with new plants; this number may often be exceeded.

The cane farmer is free to dispose of his crop as he pleases. The entire produce of the area is, however, sold to Orange Grove Estate since this is most convenient, and the grower is responsible for the transportation of his produce to the factory. The Estate offers some assistance to the grower in return for his patronage. Artificial manures in the form of sulphate of ammonia are supplied on credit and planting material of improved varieties are available. The manures are used extensively since the farmers can see an immediate return for their application. In the case of planting materials, however, the peasant considers his method of working is not sufficiently intensive to warrant the use of better canes. Hence he prefers to take his own planting material when harvesting his crop. Cane tops are used so that yields do not suffer.

Considered from every angle the cane farmer is in an unpleasant position and appears to be fighting a losing battle. He is operating on a very narrow margin of profit since his yields are perpetually low and his labour costs correspondingly high. Under these circumstances there seems little possibility of improvement either in the quality and quantity of his produce or in his standard of life.

Padi, although covering the greatest area in this sector, is seldom utilized for cash purposes. The majority of growers are East Indians and rice forms the basis for their diet. Under the existing conditions of scarcity the entire crop is used by the growers' family and their various relatives less fortunately situated in other parts of the island.

The area is particularly well suited to padi cultivation being low lying and subject to natural flooding during the wet season. The crop is grown in small lots of half-an-acre to an acre. Each is surrounded by the bank which allows control of flood water. At present an irrigation system is being introduced and is partially in operation. This scheme has been superimposed upon the existing system of agriculture, with which in many ways it is incompatible, without any effort being made to impress its potentialities upon the peasants. Hence they will not modify their methods to complement the scheme, and the latter is looked upon with general disfavour. Could the departments of Hydraulics and Agriculture, and the peasants themselves, get together there seems little doubt that many of the difficulties could be overcome.

The crop is planted early in the wet season and harvested in November. Yields average around 2400 lbs per acre and are very satisfactory. A second crop of dropped rice is often taken but yields are low and the crop often is not worth harvesting. It is the confirmed opinion of the peasants that the land will not support a second padi crop and efforts to plant such, have invariably ended in failure.

Vegetables are of minor importance, ^{OKras} ~~Okras~~, woolly pyrol, tomatoes, and egg plants seem the most popular. These are grown either as cover crops between the rows of young cane or on padi land after harvest. In the latter case the limiting factor seems to be availability of water during the dry season. Very good crops are grown on land near the Tacarigue River where ^{live} premature irrigation is possible. Towards the centre of the region however, the ground dries out badly, and since the Tunapuna River dries up during the dry season, irrigation is impossible. It is probable that the Government Irrigation scheme will make vegetable growing more profitable and general in the area. Where limited moisture is available satisfactory crops can be grown with the use of a rice straw mulch.

Here as in the northern section the use to which these minor crops are put depends upon the relation between quantity available and family needs.

Small quantities of ground provisions are grown around dwellings. Mango trees are plentiful, and there are small numbers of coconuts and tonka beans.

Cultivation:

Cultural methods are, in the main, crude throughout the area. Most operations are carried out by hand.

In the northern section, topography precludes any possibility of the use of either mechanical or even animal tillage or methods of harvesting. Land is cleared out of bush by cutting, and in most cases, burning. The durability of fertility is not considered sufficient to warrant stumping. The land is roughly broken using a hoe and the crop is planted. Subsequent cultivation is concerned with suppression of weed growth. Harvesting is done entirely by hand.

In the southern section the nature of the major crops necessitates more thorough cultivation. In some cases cane land is ploughed with oxen. It is more common, however, for planting to

be carried out immediately after the harvesting of the last ratoon. At this time the ground is very hard, a hole is made with a crowbar, the set is planted and the soil pressed in around it. It remains there until the arrival of the first rains when the cane beds are forked over. The use of cane tops, as previously referred to, necessitates planting immediately after harvest and before the ground is ready for forking. The crop is harvested by hand with the aid of a cutlass. It is harvested complete with trash and burning is not practiced.

In the case of padi, cultivation is much more thorough, and animal tillage is used by almost everyone. The ground may be prepared in either of these ways. The field may be flooded and, ploughed using oxen while still under water. Secondly ploughing may be carried out with the arrival of heavy rains. This is known as dry ploughing since the ground is wet but not flooded. In either case harrows are drawn over the ploughed surface to work the ground to the correct creamy consistency for planting. The third method is hand cultivation. The field is flooded and the surface broken and weeds buried under with a hoe. The ^{soil}weed is trampled with the feet to attain a creamy consistency.

Of the three systems the first mentioned, known as wet ploughing, is most commonly practiced and is usually carried out under contract since few of the peasants possess ploughing beams and equipment.

Prior to the preparation of the ground, a nursery is made somewhere convenient in the field. This should be about one tenth the area to be planted. It is prepared by hand by previously described. In this nursery padi is sown, and the plants transferred to the main field when the preparation of this is complete. Transplanting is carried out by hand. After cultivation is concerned with regulation of irrigation water, maintenance of banks and the suppression of water weeds, all of which operations are carried out by hand. The crop is harvested by hand and transported to the

peasants home where it is threshed. Threshing is most commonly carried out on a threshing table.

No cultivation is required for the drop rice crop. Where vegetables are grown during the dry season, the padi land is dug over with a hoe in preparation for them.

Rotation and Manuring:

Rotation of crop as known in European countries is not practiced anywhere in the area. Manures ^{are} applied only to a very limited extent.

UWI LIBRARY ST. AUG.
In the northern section rotation is practiced in so far as the favourite crop after bush clearing is corn. This may be sown as a pure stand or as a mixture. Where the land shows exceptional fertility a second crop of corn may be taken. Corn is followed by pigeon peas, and the number of subsequent crops taken depends on the length of time fertility lasts.

Topography and lack of proper means of communication render the application of pen manure almost impossible. The peasant cannot afford to purchase artificials and no facilities are at his disposal to obtain them on credit. These therefore, are seldom if ever applied.

The essence of the farming system is to clean as much land as can be handled and to work it to the point of exhaustion. It then reverts to bush and a new lot is cleared. Bush fallowing, with the working of several tracts of land in rotation is not practiced. The peasant is unable to afford to pay rent for land lying in bush, especially as ^{he has} no security to the effect that he will not be dispossessed of his holding before such land can be utilized.

The only approach to fallowing in the area was that of allowing a portion of the land to revert to weeds between harvest and replanting. That is possible for a period of one to two months. This practice was not greatly favoured due to the labour of turning

the weeds in. The peasant finds it more convenient to keep his land cropped with something all the year round.

In the southern section ^{mons -} ~~mon~~-culture is practiced. Padi and cane lands are required to produce their crops every successive year. In the case of cane it is expected to do so all the year round as well. It is obvious that under such conditions no rotation can be practiced. Padi land is however fallowed during the dry season and the weeds turned in with ploughing.

Topographical difficulties for the transportation of manure however do not exist, and where available pen manure is applied to both cane and padi land. This is applied either through the agency of a vegetable crop where this is taken or at planting.

Sulphate of ammonia is applied to canes after harvesting each year at a rate of 2 cwt. per acre. This is obtained as stated earlier on credit. Apart from this no other artificials are used.

Livestock:

In the northern section few peasants keep livestock of any kind. Amongst those that do, the smaller animals such as pigs, goats and poultry are most popular. Cattle are very few in number and donkeys are seldom seen at all.

This lack of livestock must be due in a large measure to peasants being financially unable to purchase them. There are no facilities where ~~by~~ credit may be obtained. Furthermore the topography of the area makes suitable grazing difficult to find. The situation of Agricultural holding in relation to the dwellings of the peasants means that livestock left on the holdings must be unattended for a considerable part of the time. Predial larceny is always rife and losses would be considerable.

In the southern section livestock, and especially cattle are comparatively plentiful. Draft animals are few but milk cows are numerous, approximately one third of the population being in possession of a cow. These animals are principally of the Zebu, Holstein cross variety, and are well up to the standard of livestock in the Island as a whole. Several bulls are kept also, these are

again of the Holstein and Zebu type.

The peasants take a keen interest in their animals and many have definite ideas on the type of progeny they wish to attain. However, their knowledge of the fundamentals of animal breeding is lacking and their efforts are rather on a hit or miss basis. The development of livestock in the area would, benefit greatly from a definite policy put forward by the department of agriculture. Assistance in the form of credit for the purchase of animals and the provision of suitable ^usteed animals would help immeasurably.

During the dry season the animals are given free range over the weed covered padi plots and grazing is communal. They are brought home at sundown and house for the night. Grass is cut along the roadsides and traces to provide food during the night. In the wet season when padi land is under cultivation the cattle must either remain in their stalls all day in which case fodder is cut for them, or they may be tethered during daylight somewhere convenient to the house or along the roadsides and traces. In the case of bulls and with some high producing cows fodder is supplemented by rice and coconut meals.

Goats and poultry are fairly plentiful in this section but the proportion of pigs and donkeys is low.

Soil Conservation:

In the southern section soil erosion is not a matter of immediate importance. In the northern section, however, it is extremely serious and the life of the agricultural community is dependant upon its control. At present, however, the bulk of the agricultural community seems unaware that erosion takes a toll of their land, and even those that do realize this do nothing to prevent it.

Land is farmed wherever it can be obtained cheaply and conveniently, with any consideration being paid to topography.

Angle of slope is never considered. If land can be climbed by a peasant it is considered fit to farm. Bush is cut and burned, often indiscriminately, and the soil left bare. Very often much larger areas are left bare by firing than are required for cultivation. The bare soil is dissipated in the sun and with the arrival of the first rains the soil is washed away down the slope. Should a gully chance to run down a holding, this receives no special consideration but is cleared and planted with the rest. Bush is cleared right to the top of ridges, thus increasing the velocity of run off. Crops are planted in whatever direction is most convenient which is usually up and down the slope. No effort, even the most ^{prudent} premature is made to build banks or check dams to lessen the velocity of run-off. Traces are made along the sides of cleared land and by the end of the wet season show the first signs of gully formation.

Everywhere throughout the northern section there is evidence of erosion. On almost every holding the parent rock can be seen protruding and in some instances the surface shows as much parent rock material as it does soil erosion.

Marketing Facilities, Processing and Transport:

Few of the peasants in either section own their own transport. They are left therefore with the alternative of either ^{carrying} very ~~thin~~ produce on their heads or of hiring transport. In the latter case the amount available is limited and hence charges are exorbitant.

In the northern section none of the crops require processing except possibly the threshing of corn and this is done by hand.

To market his produce the peasant has two alternatives. He may convey it to Tunapuna, St. Joseph, San Juan or Port of Spain markets or sell to buyers who visit his holding. In general the peasant prefers the former since it yields a greater return and he

seldom pauses to consider the value of his own labour. In practice the produce is conveyed to market by the peasants' wife assisted where necessary by other members of the family. Where this distance is not too great the produce is conveyed on foot, however to more distant markets train and bus services may be utilized.

Where produce must be processed as with cane and padi facilities are available. Cane is sold to Orange Grove Estate. The peasant is responsible for conveying his produce to the factory. A charge of \$1.50 per ton must be paid for transport. Since the farmer receives around \$6.00 per ton at the factory, transport cost amounts to 25% of his total income. Furthermore at the factory he may be delayed for hours or even days before his responsibility terminates. This means time wasted when he could be profitably employed elsewhere.

With ^{padi} ~~padi~~ the position is considerably easier. Firstly very little of the crop is ever marketed. The distance from the fields to the peasants home is seldom great. Threshing, ~~par~~ boiling, and drying can be carried out at the peasants home. There are three small rice mills in operation within easy reach of the area, at St. Augustine, Curepe, and Paji. The dead ^{rice} rice can be stored in the peasants home and despatched to the mill in small quantities as required.

Labour Requirements and the Availability of Labour:

By definition, a peasant holding is taken as one worked by family labour, however, as previously indicated, this requirement cannot be adhered to ~~to~~ rigorously. The majority of peasants interviewed employed some ^{small} ~~small~~ amount of labour annually.

In the northern section this was principally required for clearing of land prior to cropping and to a lesser extent for the breaking in of virgin land where this proved particularly difficult. Beyond this the peasant does all the work himself with the aid of his family. Labour was very difficult to find especially in these inaccessible regions and when obtainable the cost of \$1.50 per day

proved prohibitive. Thus it is not surprising that the peasant should only employ labour where he simply cannot get along without it.

In the southern section, labour was employed on a much longer scale, a circumstance dictated largely by the nature of the crops produced.

For padi cultivation the land was in most cases ploughed by oxen and in almost every case the apparatus was hired. The numbers of ploughing oxen and ploughs was found limited to three, and hence the owners enjoyed a complete monopoly. The cost was, therefore, exorbitantly high, in the neighbourhood of \$24.00 per acre. This included ploughing and harrowing both of which on a time basis occupied but one complete working day.

In planting and harvesting, although labour was again employed, a ^{share} ~~share~~ system seemed more predominant. Peasants combine together to plant or harvest one persons crop today and someone else tomorrow.

With sugar cane labour was required principally for harvesting. To obtain this the peasant often found himself in competition with estates and hence was faced with considerable difficulties were often overcome by members taking leave of this everyday employment to assist in the harvest. The small family on the other hand, was forced to work long hours and make the best of whatever labour available. It is not surprising therefore that the cost was high. Since the majority of these small growers are ^{forced} found to eek out their existance by working on estates any possibility of co-operation is out of the question.

Apart from those operations mentioned above, the peasant family usually cope with the remainder of the work.

SECTION III

SUMMARY AND RECOMMENDATIONS

SUMMARY:

The area surveyed, although limited in extent, is very typical of the types of land farmed by peasants throughout the Island as a whole. It shows considerable topographical diversity and seems to illustrate the manner in which agricultural practice varies with differences in topography. The area is well watered at all times of the year, although irrigation must be practiced at some parts before it can be utilized for agricultural purposes.

Drainage is good except in the extreme south where flooding is in any case essential to crop production.

Major communications leading east, west north and south are good. Minor roads and traces essential to the peasants for internal communication are either lacking in the north or of very poor construction in the south.

The population is well housed. Its distribution in relation to agricultural land, especially in the north, however is incompatible with sound and intensive agricultural practice.

With few exceptions the peasants are all within easy reach of the principal amenities of life.

The system of land tenure is greatly at fault and must be completely revised if any improvement is to be made in the area.

The area is inherently infertile. Cash crops grown are few in number and yields are in the main low.

Peasants in the northern section are oblivious to the immediate and potential dangers of soil erosion, and make no effort to control it. In the southern section the problem of soil erosion does not arise.

Livestock are lacking in the northern section. The disposition of farm lands in relation to dwellings, and a lack of capital and credit facilities would appear to be the outstanding

causes. Cattle are numerous in the southern section, but a definite livestock policy is lacking. Provision of suitable stud animals and advice on their proper use would be very helpful.

Pen manure is applied only to a limited extent. Shortage of livestock, the inaccessibility of the land and lack of internal communication in the north, are the primary factors responsible. Artificials are seldom used. Peasants cannot afford them unless on credit.

Cultural operations, with the exception of those associated with padi are crude. Implements are simple but are quite good in keeping with the situation of the land and the size of holding.

Labour requirements are low, but labour is costly. Cane and padi farmers face greatest difficulty in this respect.

While markets are within easy reach of the area, facilities for organised marketing of produce are non-existent and transport costs are exorbitant.

RECOMMENDATIONS

The facts of the survey show clearly that the area is farmed in an unsatisfactory manner. The whole basis of the agricultural life of the community is insecure. The land especially in the northern section will not withstand its present treatment indefinitely.

Improvement with complete reorganisation of peasant life is essential for the future. This will prove an immense job and must be undertaken whole heartedly and carried to its completion with thoroughness.

The recommendations made hereafter must be considered, not as an exclusive effort to rectify the faults and deficiencies of the limited area surveyed, but as part of a major ^{scheme} severe embracing a large number of similar areas.

There are such differences in the two sections, and in the problems they present, that they will best be treated separately.

The Northern Section:

This section, from the standpoint of topography and soil fertility would be better left uncultivated. However the position in Trinidad, regarding land available for peasant cultivation is such that we are faced with no alternative. The more fertile and accessible land is occupied by large estates. The peasant, therefore, must seek land on the hills if he is to exist at all.

Agriculture, as practiced at present, is extensive rather than intensive. There is an abundance of land and a sparse population. The system of farming, however, is such that complete reorganisation is the only possible way of improvement.

The scheme for reorganisation must be placed under a single Governing Body. This must be composed of experts, Agriculturists, Engineers, Doctors and Social Welfare Officers to give examples, all of whom must combine together. They must be provided with the necessary funds and complete freedom in whatever decisions they decide to make.

Land Tenure:

At present we have represented in the area, cash tenant, owner occupiers, and share croppers. Before any improvement can be effected the entire system of land tenure must be revised. Existing holdings must be given up and the land brought under the control of the governing body. Land rented on a year to year basis, as at present, makes planning ahead, the maintenance of soil fertility and the prevention of soil erosion inconceivable to the peasant.

Land is at present rented from a variety of individual landlords. To arrange for uniform conditions of tenure throughout the area will be difficult. It is improbable that the various landlords would be persuaded to work together for the common good of all tenants.

Direct and outright purchase of the land by the Government would be highly satisfactory, but the cost would undoubtedly be prohibitive. The only possible solution, therefore, appears to lie in the Government renting all the land in the area en mass. . A long lease, say 999 years would be essential, and admittedly there would be many difficulties to overcome, especially where potential building ground was concerned. It seems, probable however that satisfactory arrangement could be reached. . Then land could then be sub-let by the government to the peasants. The landlord would be receiving a ^{fixed} field rent for a considerable area of land which would normally give only a spasmodic return. His land as a capital investment would be increasing in value due to increased fertility consequent upon proper management, instead of decreasing as at present.

The annual financial outlay to which the government has committed itself would serve as a spur to their activities. An insurance is thus provided for the initial and continued success of the scheme.

In the case of owner occupiers, these enjoy security of tenure. However they are in most cases handicapped by the fact that the size of their holding bears no relation to their requirements. Many of them are forced to travel long distances to obtain additional land. These people could be offered alternative holdings, within the scheme, of adequate size, in exchange for their own. They should enter the new holding as cash tenants, but should live rent free for a sufficient period to give a cash equivalent of the value of their original holding. Compensation would have to be given for capital assets such as a house or out-buildings. Before making the exchange the peasant should sign an undertaking to the effect that his continued tenancy in the new holding must depend upon the laws of good husbandry being observed. This stipulation might appear hard. It is essential, however, to eliminate the artisan-farmer who enters schemes such as this without any intention of working his holding to

capacity. Such persons must be left as owner occupiers. This is a disadvantage but seem insurmountable.

Regarding share croppers; these are exclusively associated, with the Monastery of Mt. St. Benedict. They are engaged in cacao growing. It seems advisable that these should remain as they are and be excluded from the scheme. The Monastery is^a self contained unit with an enlightened outlook. They are always open to take advice and as landlords they can be relied upon to treat their tenants with understanding and consideration.

Layout of the Area:

Should the above recommendations be adopted, the Governing Body will have the land on one hand and the peasants on the other. They may then commence their scheme of settlement on the ground floor.

The area should be surveyed. It should then be subdivided into topographical unites and those areas of each unit most suited for cultivation selected. It should then be decided where new roads are to be laid. Investigation should be made with the possibility of a simple water supply for each holding. Should this prove impracticable some form of centralized water supply should be decided upon.

It might be pointed out here that all aspects of the scheme should be treated theoretically at first. Practical application should not be attempted until the theoretical picture of the area is completed.

Anti-Erosion Defences:

The establishment and upkeep of major anti-erosion defences should be the responsibility of the ^{Governing} ~~Governing~~ body, and the expense of their up keep could be considered as a proportion of the peasants rent. Such defences ^{should} be arranged in conjunction with topographical units. The peasants themselves will be responsible for the

establishment and maintenance of minor defences upon ⁱⁿ thin individual holdings.

Holdings:

The land suitable for cultivation having been decided upon. Gullies, hill tops and very steep slopes having been excluded, the establishment of holdings may be considered. Before this can be done a knowledge of the amount of land required to fully employ a family of given size must be ascertained. There must then be related to the fertility of the land and a decision reached as to the total amount required to allow an adequate amount to be used each year in rotation, without bringing about soil deterioration.

Holdings should be established in various sizes to allow for different sized families. This would further allow families to exchange holdings should there be a marked increase or reduction in the size of the family.

Agricultural Instructions:

An Agricultural instructor should be appointed for the area. He should function as an agricultural instructor only. He should give advice and lay down rules as to the proper running of the holdings.

Lease:

A lease should be drawn in simple terms for the peasants signature. He should be given security of tenure for a period of at least ten years. At the end of that time his lease should be readily renewable, provided his holding has been conscientiously run during this time. He should be charged a fixed rent and arrangements should be made to alter this to any large charge in

economic conditions. It should be made possible for a reliable tenant to renew his lease before expiring should he so desire it.

Credit:

Facilities for providing credit must be provided. Should these be inadequate the scheme will undoubtedly fail. Credit must be provided for the building of a dwelling and out offices. Further provision must be made for the initial clearing of the land, the purchase of seed and manures, and the establishment of the first crop. Allowing the peasant to defer payment of rent until the taking of his first crop will assist in this matter.

The provision of credit must for a fairly extensive initial period be the responsibility of the Governing Body.

Marketing:

Arrangements must be made for the satisfactory disposal of peasants produce. Facilities are available for actual sale of goods, but transport is a serious problem. In the initial years of the scheme this should again be the responsibility of the Governing Body. A communal system of transportation should be run on a non-profit making basis.

Social Activities:

Every effort should be made to encourage the peasants in the scheme as a whole and to live as a community. From a small beginning the peasants could be encouraged to manage their own affairs. A general system of co-operation should be gently introduced. Such a system might start with co-operative marketing. The peasants should be educated to this, eventually run it themselves and embrace purchase and credit as well.

Places of entertainment, worship, and learning are at

present within easy reach of the area. These with the new roads available should be sufficient for the peasants' wants. However should the peasants as a whole request that these be established in the area their request should not be ignored. Nothing will make people loose interest more quickly than a lack of facilities for relaxation.

Cropping:

The whole system of farming must be directed against soil erosion and deterioration. The peasant must ^{not} ~~not~~ ^{not} take his land instead of his crops. He is provided with sufficient land and must use a new section each year. He must learn to plant his crop on the contour and wherever possible to keep the ground covered all the year round. In setting his crops on a slope he must take precautions to minimize run off by the establishment of check ^{bunds} banks and dams.

Investigation is necessary to find alternate crops for the area. An experimental farm could be set up to this end. Its achievements could be demonstrated on a holding run by the governing body.

The amount of citrus grown could be greatly increased since it does well if carefully handled. Pigeon peas should be encouraged as they do amazingly well. Tomatoes yield could be greatly increased with the application of manures and staking of individual plants. The yield could thus be increased three fold. Beans ^{field} ~~field~~ ^{could} ~~could~~ ^{generally} be improved. ~~Where~~ ^{Similarly} seems no reason why melongen, pumpkins and ~~peppers~~ should not be grown extensively.

Livestock:

It is essential that livestock should be introduced to the area, if for no other reason, for the provision of manure.

Topography presents a difficulty. However there seems no reason why cattle, pigs and poultry should not be kept. This will require credit for the initial purchase. Fodder and feeding stuffs will have to be grown and the stock maintained in houses. A cow can live quite happily in a coral-like structure with shelter provided. It would be necessary to induce the peasant to grow an area of fodder grass each year sufficient to feed the animal. It would be difficult to induce him to do this. On seeing its advantages, however, he will take to it readily.

Since draft animals are not required in the area, the peasant should be encouraged to go in for milk production. This will give a readily ^{salable} suitable product. The purchase of good milking animals and the provision of reliable ~~stead~~ animals by the Governing Body would provide for good ^{calves} causes. These might be reared and sold as heifers with considerable profit.

The Southern Section:

Here the system of agriculture is intensive. The amount of land is limited and the number of peasants great. Hence we find all the available land under cultivation. It is cultivated in small lots of from a half to one acre. It would be impossible therefore to include this section in the scheme outlined above. There would be insufficient land to provide each tenant with a holding of economic size. To transfer the surplus to the northern section would be impossible since in the south ^{mow-culture} ~~of the north~~ is practiced and the mixed farming of the north would be unsuitable.

Padi:

Padi cultivation is generally undertaken by the older members of the community. The younger generations seem to have little ^{affinity} for the land. They invariably seek employment in other walks of life and become artisans. The result is that

padi is grown, as previously indicated, for home consumption. The bulk of the family income comes from sources other than agriculture. There is no doubt that the scarcity of land in relation to the numbers of peasants in the area, is a deterrant to rising generations who might otherwise interest themselves in farming.

Despite these facts however the padi cultivation^{or} is a good farmer. His land is always cultivated thoroughly and his crop treated with great care.

The acquisition of addition land from the adjacent sugar estates and a Government scheme instituted to stimulate rice production throughout the island would be the best means of assisting these people. Trinidad is a large consumer of rice. The Trinidadian peasant especially the East Indian, can grow good ^{Padi} rice. The island possesses large tracts of land which are suitable, either immediately or potentially for rice production. It is inconceivable therefore that no effort has been made to make the colony at least self supporting, if not an exporter of rice.

In the absence of any such scheme, the area must remain very much as it is. Nothing can be done to make holdings of economic size. Nevertheless even under these conditions an effort can be made to assist the peasant.

The ~~state~~ of communications throughout the area should be revised. The estates from whom lands are rented should be compelled to remake the roads for which they are responsible, and to ensure that they are passable at all times of the year.

Government controlled selection of rice varieties, with the object of attaining high^{er} yield and greater uniformity should be carried out. Multiplication farms run by government officers should be set up throughout the island, and "seed farmers" enrolled from the peasants themselves. The area could then be supplied with pure seed of improved varieties.

An effort should be made to educate the peasants to the use and advantages of the government irrigation scheme. They must ^{learn} ~~leave~~ to work together. They must work in conjunction with the irrigation scheme instead of expecting it to work in conjunction with them.

The establishment of a single centralized rice mill in the area would be helpful. This should be simple but modern. Although the rice is for home consumption the peasants appreciate a nicely milled sample of grain. The greater efficiency would reduce the percentage broken grains and a greater return to the peasant would result.

Vegetables growing might be encouraged throughout the area. Shortage of water has previously been a handicap, however, the irrigation scheme should rectify this. Melongens, tomatoes, peppers, lectuŕce, beans, and woolly pyrol should grow well. Apart from the enhanced income from these valuable crops, vegetable growing would assure an excellent opportunity for applying manure to the land.

Little can be recommended to reduce labour costs, especially for ploughing. It is inconceivable for a peasant to maintain ploughing oxen on half an acre of land. It might be possible however for the government to supply a number of ploughing oxen for the area. These could be placed under the control of selected peasants who should be subsidised for their proper maintenance. Ploughing could then be carried out at a rate fixed by the Government in accordance with the true value of the work done.

Sugar Cane:

Cane farming as carried on in the area at present is an unsatisfactory peasant occupation. The farmer is working land of low fertility which has abandoned previously for estate cultivation. The margin of profit is small. The demand for labour is seasonal and the farmer must compete with estates who can offer full time employment. Holdings are invariably uneconomically small, the peasant is forced to work on estates to eek out his existence.

He is without the necessary capital to work his meagre holding intensively. No credit is at his disposal where expenditure is required. Hence it is not surprising that holdings are unefficiently run and profits are very low.

If the cane farmer is to survive he must be placed on an equal basis with estates as a sugar producer. His farm must be made an economic unit of sufficient size to provide for his full time employment. The layout of holdings could be so arranged as to allow for mechanical tillage and arrangements made for supplying this on a contract basis. Thus labour costs would be appreciably reduced and the difficulty of finding labour removed. This would require the acquisition of additional land. This might present a difficulty but without it the cane farmer ^{is committed} to a life of drudgery, and ultimate extraction.

The ^{latest} ~~last~~ and most modern planting materials should be made available and credit supplied for their purchase. Credit must be available for the efficient running of farms and the purchase of artificial manures.

Under these conditions the cane farmer will graduate to a position in the community, instead of an estate labourer growing a little cane in his spare time, as he is at present. The independence thus acquired will enable farmers to work together. Thus their labour difficulties will be further reduced. They will be in a position to organise a communal transport service run on a co-operative basis, and with teaching and encouragement could be induced to do so.

Experimentation and investigation will be required before the economic size of holding can be determined. This will undoubtedly vary with the size of family. A small acreage of garden for mixed crops could also be cultivated to relieve the extreme seasonality of cane growing.

Livestock:

The peasants of this section are very interested in stock. They make good animal husband-men. They keep their animals in good condition and treat them well. They are however badly in need of guidance. There is a tendency to have "an animal" without a knowledge of the type they should have for their particular purpose.

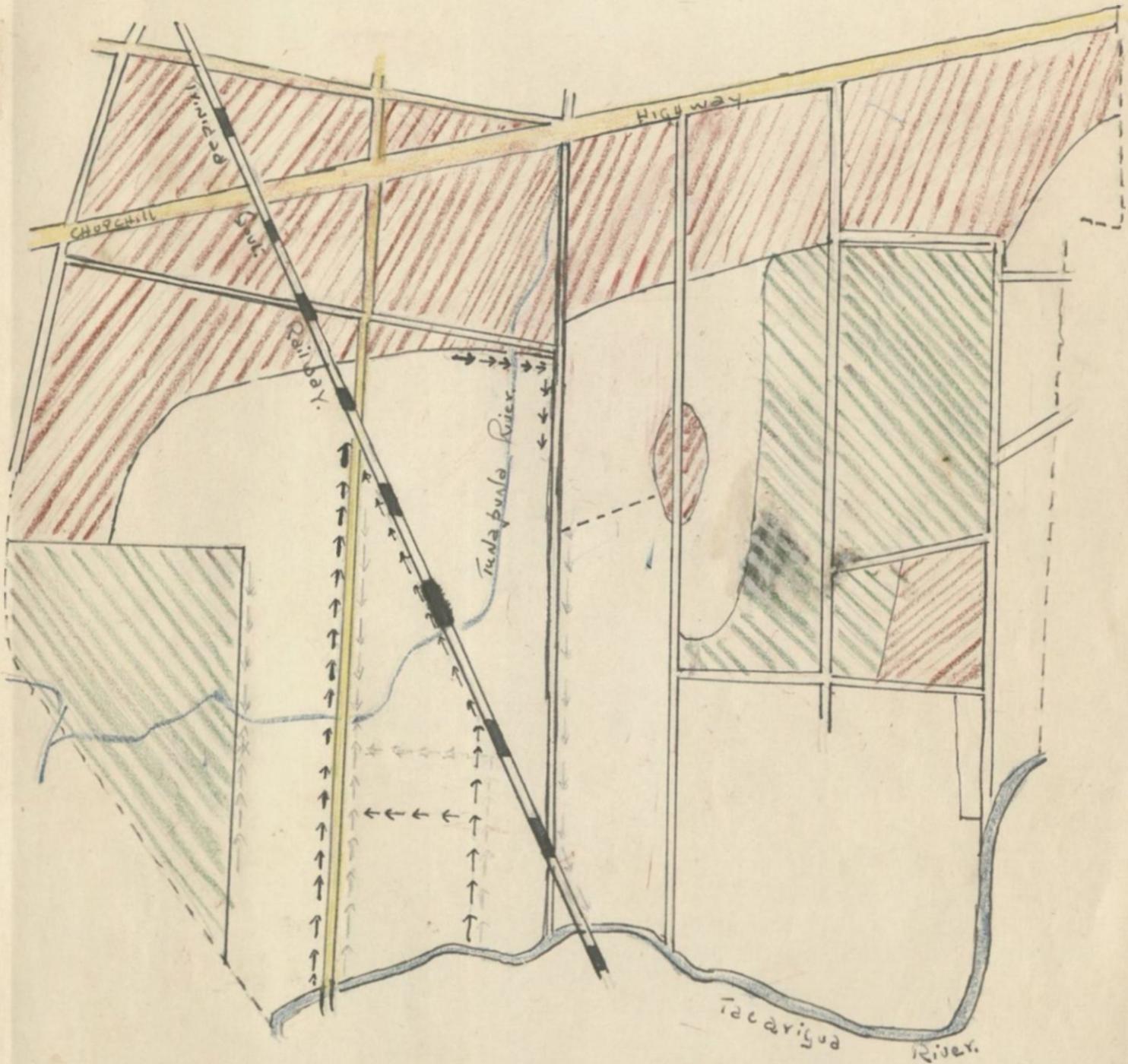
Milk production is to be advocated in the area since it is readily accessible to ~~an~~ a variety of markets. Bulls of good milking strain of both Zebu and Holstein breeds should be introduced to the area under subsidy. In this way a balanced breeding programme might be possible. Peasants should be encouraged to sell useless animals and to breed, and purchase offspring, only from the best.

Credit must be made available for the poorer peasants to purchase livestock.

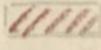
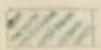
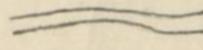
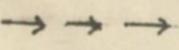
ACKNOWLEDGEMENTS

My thanks are due to Professor A. de K. Frampton and Mr. J. Evans for the assistance they have given in the field work of this survey. I am indebted to Professor F. Hardy for laboratory data on the soils of the area. Although they were not actually referred to in the text, I am very grateful to Dr. Pound of the Department of Agriculture, Trinidad, for access to the crop record sheets of the area.

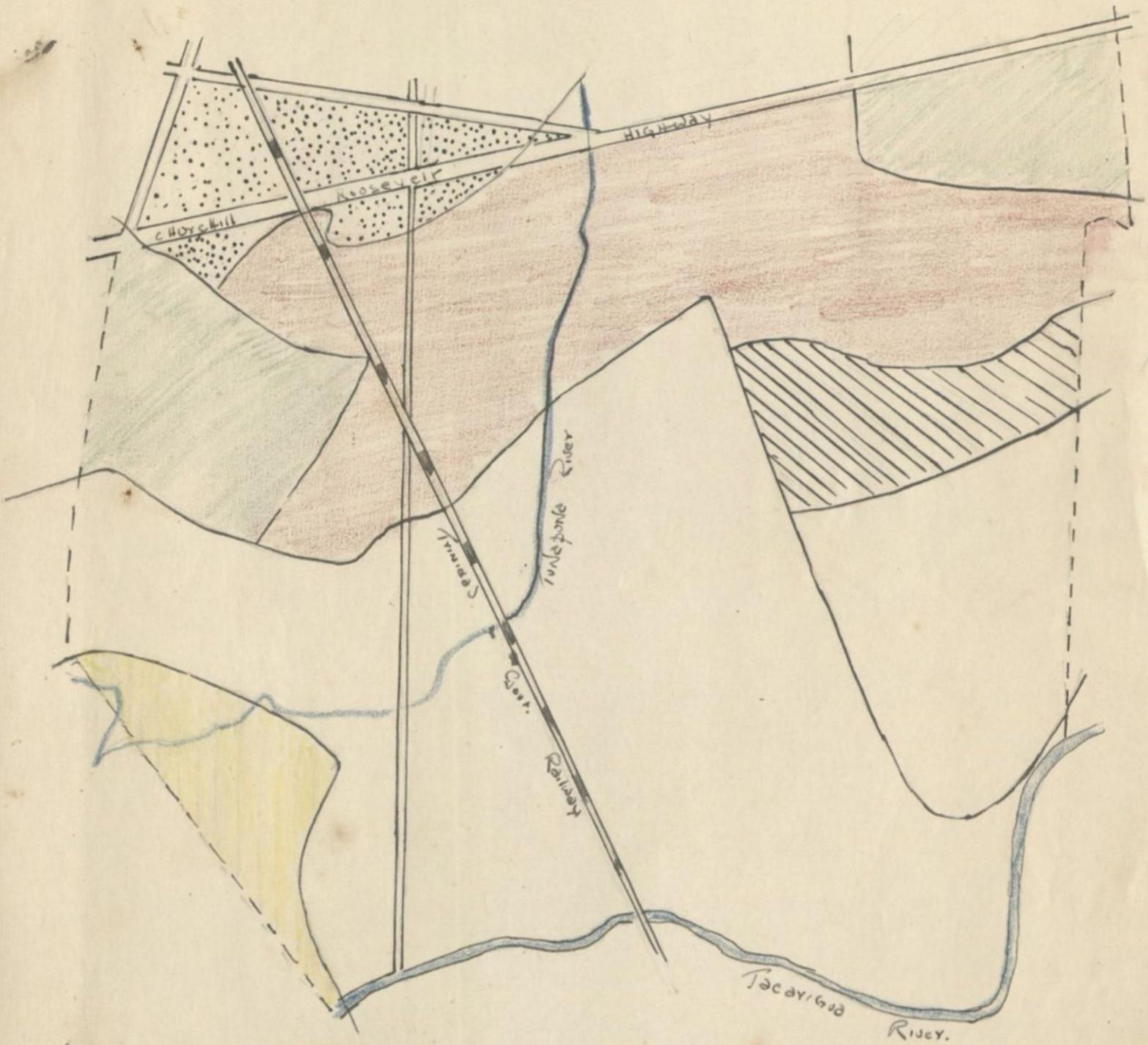
MAP OF SOUTHERN Sector.



LEGEND.

- | | | | |
|-------------|---|------------------|---|
| House lots. |  | Metalled roads |  |
| Sugar Cane |  | Unmetalled roads |  |
| Padi |  | Rivers |  |
| Irrigation |  | Boundaries. |  |
| Drainage |  | | |

Soil MAP of Southern Sector



LEGEND

A. Zonal Soils

- 1 Gray Brown Podsolie [Light Brown Box]
Risora Arali
- 2 Yellow podsolie - *Parva* [White Box]
- Golden yove* [Hatched Box]
- Campira* [Yellow Box]

B. Intra Zonal

- Planosol strathana* [Light Green Box]

C. Azonal Soils

- Detrital st. Augustina* [Dotted Box]



A general view of the area looking from the south.



Unmetaled roads in the Southern section
as they appear in the dry season.



Unmetaled roads in the southern section

as seen in the dry season.



Egg-plant's growing on Padi land during dry season.

Note the use of straw mulch to conserve moisture



Peasant's home typical of southern sector



Cattle typical of many seen in the southern sector.



Type of building used extensively in the South for housing livestock.



Site cleared for cultivation in Northern Sector



The beginning of gully formation in the Northern Sector

MAP OF NORTHERN SECTION.

LEGEND.

House Lots
Cacao
Other tree Crops
Land Cultivated or under low Bush.
Land not Cultivated UNDER High Bush
Metalled Roads
Unmetalled Roads.

