

THE
RICE ECONOMY OF MANIPUR
1952-65



NIRANJAN SAHA

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AGRO-ECONOMIC

NORTH EAST INDIA

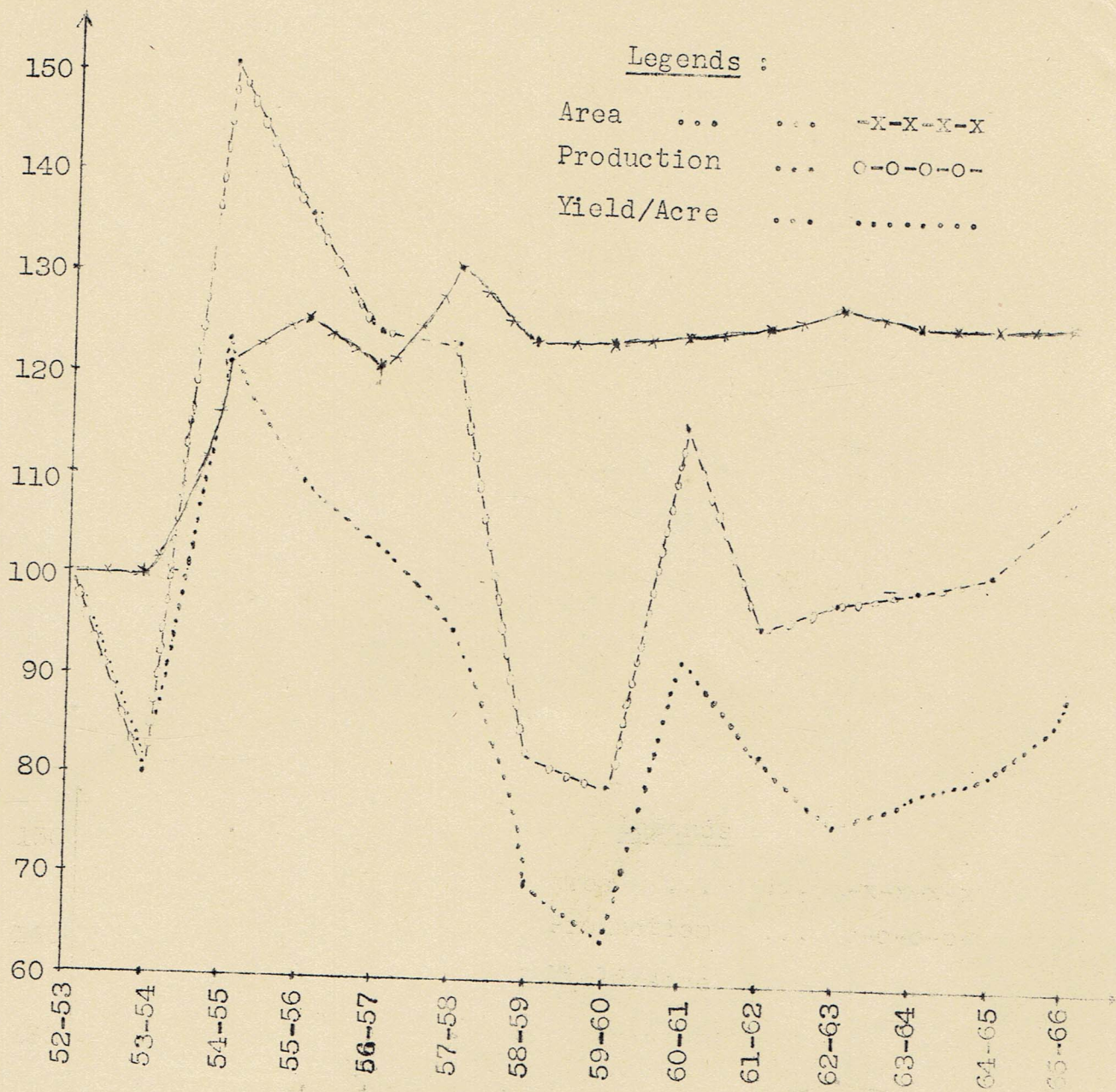
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PREFACE

1. The present paper on the Rice Economy of Manipur is, in some measure, an offshoot of the study on "The Behaviour of Agricultural Prices in North-East India" taken up by the Centre at the instance of the Economic and Statistical Adviser, Government of India, Ministry of Food, Agriculture, C.D. and Cooperation. But the emphasis in the present paper was given more on production than on Prices of Rice. The original intention of the Centre was to study the problem of marketing of paddy in Manipur. But due to imposition of monopoly procurement in September, 1965 by the Government and the consequent difficulty of studying the markets, it was decided to take up the present study.
2. This paper is based solely on secondary data as available from both published and unpublished sources which are noted in all statistical statements given in the Appendix. In course of this study, it was observed that statistics on area and production of Rice (Paddy) in Manipur are not quite reliable. Such unreliable statistics are more a hindrance than a help for proper planning on both production and prices. This study has emphasised the need for devising means for estimating correctly the area under agricultural crops - both in the valley and the hills, along with the crop-cutting surveys now being carried on. The estimates of area and production of selected crops, should be published blockwise, so that planning from below can be made possible.
3. Though the present study, like the other studies of this centre, is a joint venture under my over-all direction, special mention should be made of the following colleagues. Shri N. Saha, Research Officer who has drafted this Report has also collected data from different sources. He was assisted by Shri D. Saikia, Junior Research Investigator and Shri D. Bora, Senior Computer in statistical computation and tabulation. Shri M.C. Dutta, typist has typed stensils, while duplication work was done by Shri N. Deka, Peon. I thank them all for their cooperation in completing this study.

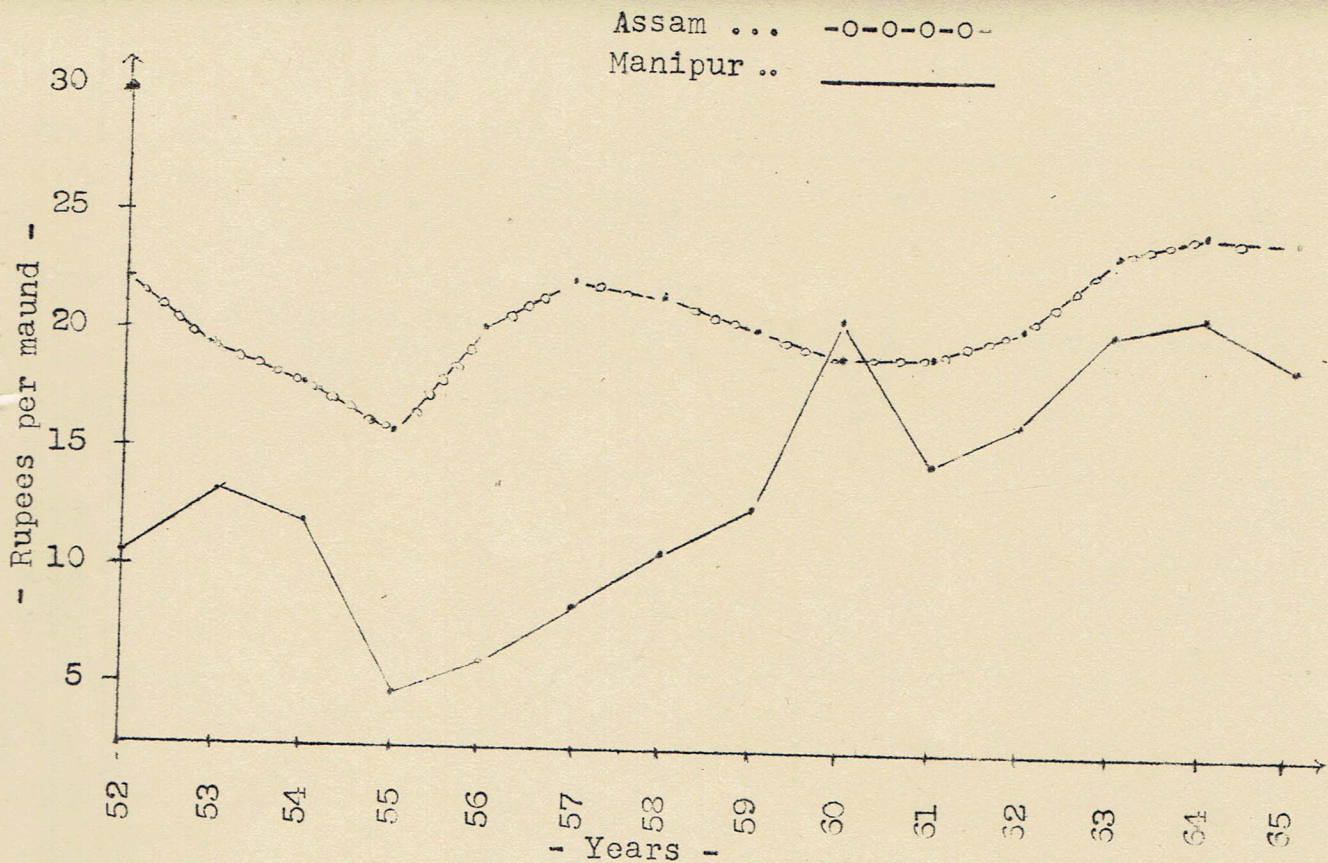
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P. C. GOSWAMI.
DIRECTOR.

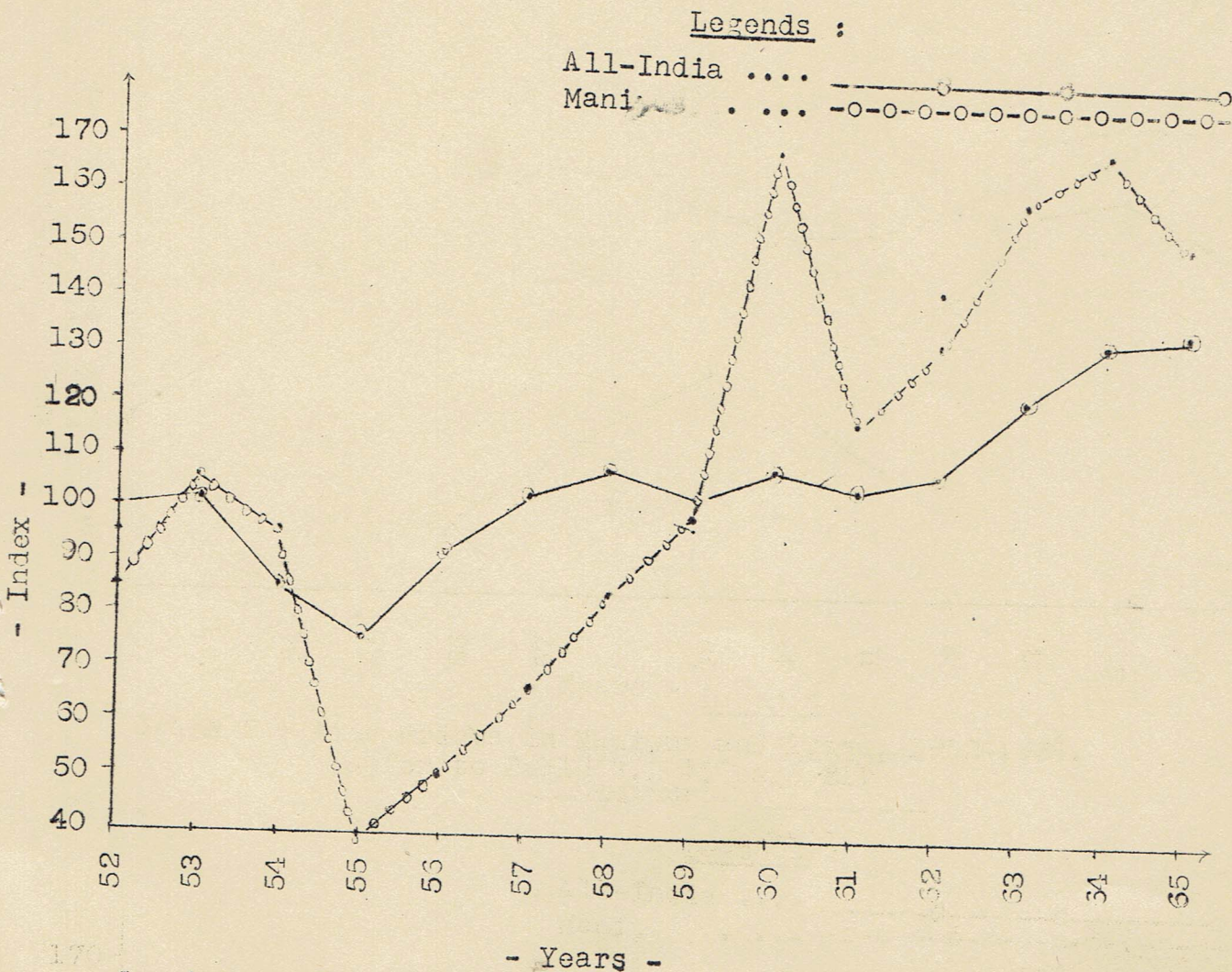


Graph-1: Index Numbers of Area, Production and Yield per Acre of Paddy in Manipur (Valley area only), 1952-53 to 1965-66.

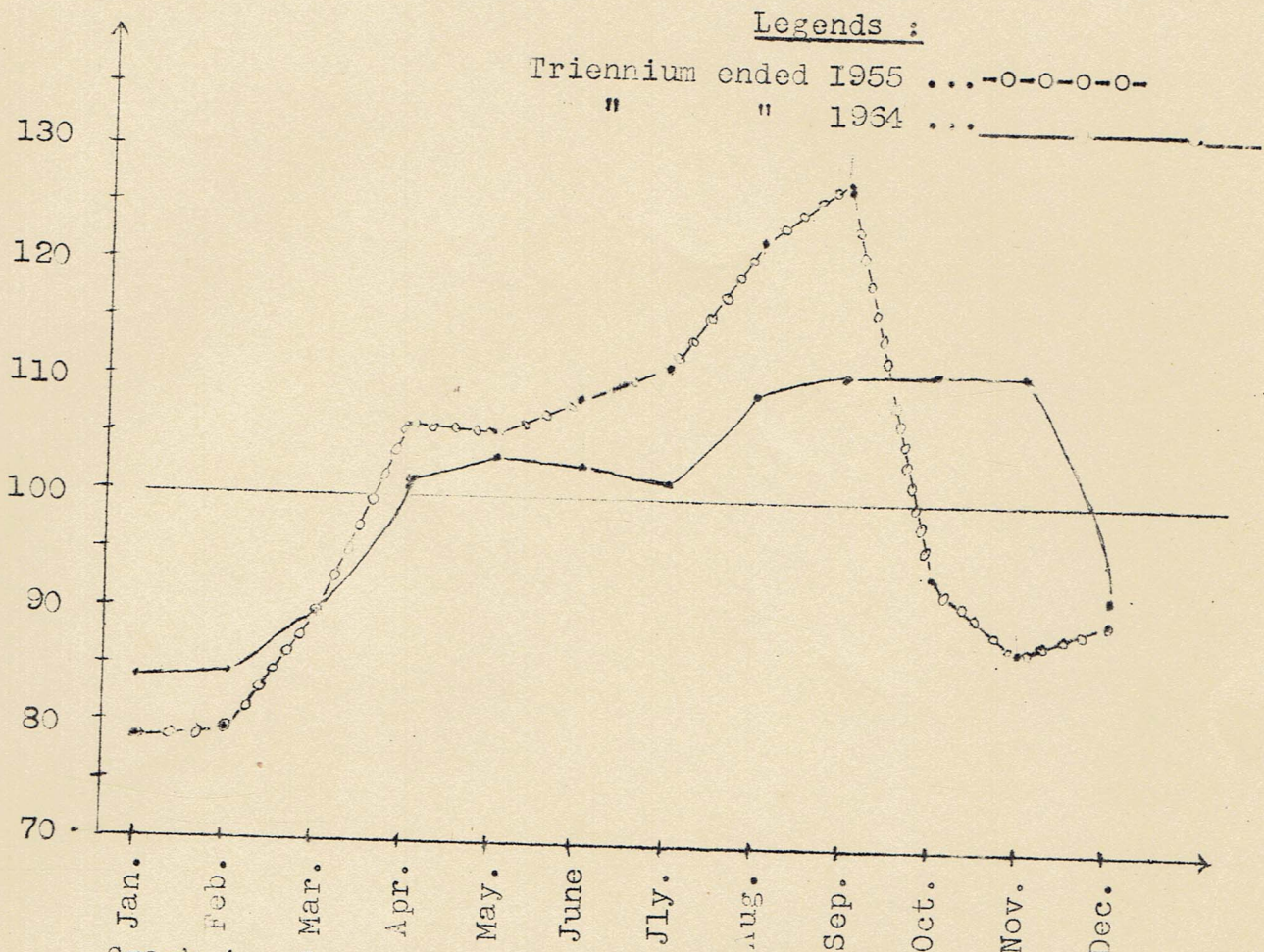
(Refer to Statement IX in the Appendix).



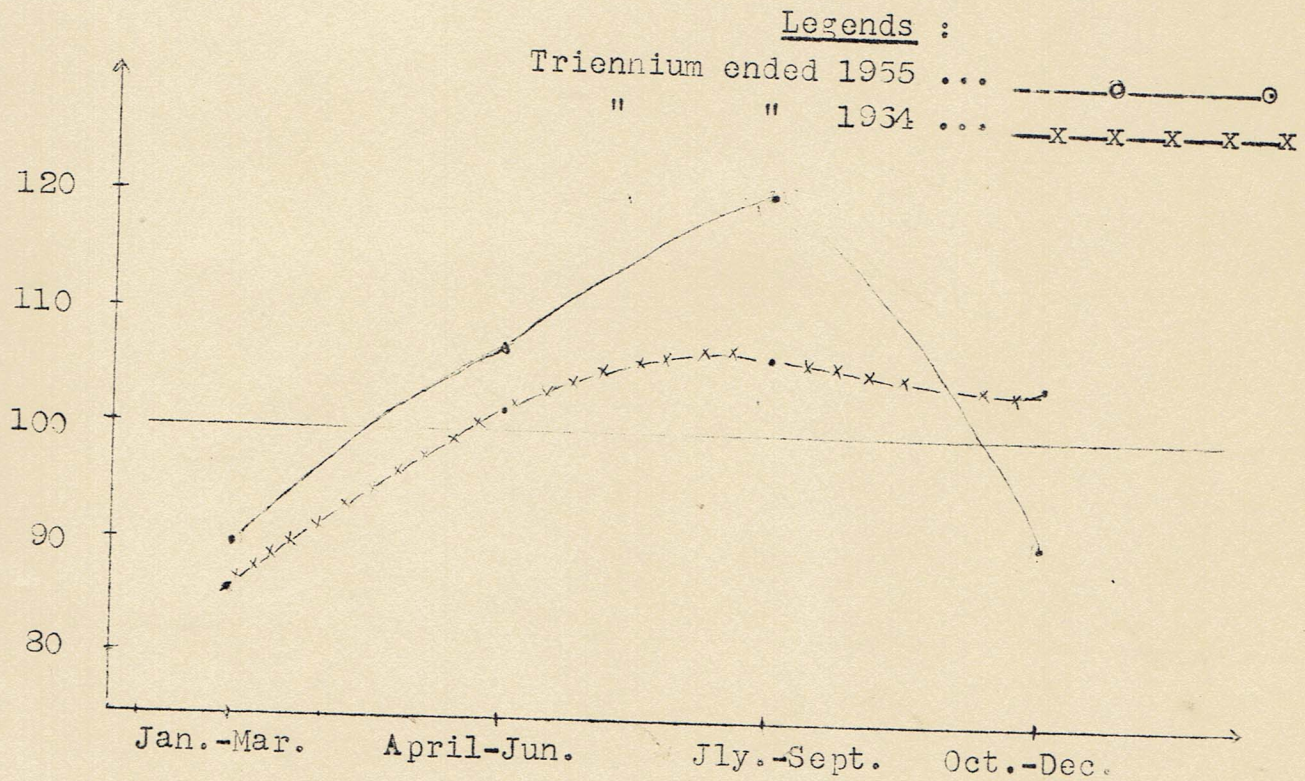
Graph 2 : Rice Prices in Manipur and Assam, 1952-1965.
 (Refer to Table 3.1 at page 21)



Graph.3 : Index Numbers of Wholesale Prices of Rice - All-India and Manipur (Base = 1952-53 = 100).
 (Refer to Statements XI and XII in the Appendix)



Graph.4 : Seasonal Index of Wholesale Prices (Month-end) of Rice- Triennia ended 1955 and 1934, Manipur.
 (Refer to Table 3.4 at page 25)



Graph.5 : Seasonal Index (Quarterly) of Wholesale Rice Prices in Manipur, Triennia ended 1955 and 1934.
 (Refer to Table 3.4 at page 25).

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CHAPTER ONE.

The Economic Background.

1. Introduction.

1.1. The State of Manipur is situated in the easternmost corner of the Indian Union, being surrounded by Nagaland in the North, Cachar and Mizo Districts of Assam in the West and Burma in the east and south. It comprises a total geographical area of 8629 square miles (22,349 square kilometers)¹ of which only about 700 square miles constitute the valley. "The Valley of Manipur, roughly about 30 miles in length and 20 miles in breadth is believed to have been once a large lake which has become gradually silted up by streams from surrounding hills."² The southern half of the valley consists entirely of lakes and swamps. The Loktak lake, about 8 miles long and 5 miles wide is a part of the great basin of Manipur yet to be completely silted up.

1.2. The alluvial clay forms the floor of the valley. The soil is highly retentive and exhibits fissures when dry. On the hills surrounding this picturesque valley, soil types range from sandy or clayey loam to lateritic red soils. The fertile valley soil is suitable for raising various crops, chief being Rice.

1.3. The State is quite rich in natural resources like forests and minerals most of which have remained untapped. The forests are sharply stratified by altitude, the hill slopes are terraced here and there, but most of the hill cultivation is carried on with traditional jhuming method. It is believed that 25% of the cultivated area in the hills are terraced.³

1. Manipur occupies 0.72% of area in Indian Union with only 0.18% of the population in 1961.

2. Randhawa, Mitra and Mehta - Farmers of India - Vol. III. Section V - Manipur.

3. Memorandum on Second Plan, Manipur Administration.

1.4. The climate is very congenial for the growth and maintenance of animal and plant life. The rainfall is moderate in the valley with annual precipitation ranging from 100 to 150 centimetres at Imphal. The rainfall is higher in Churachandpur sub-division, particularly, at Thanlon where the annual rainfall is recorded as 1,578 centimetres in 1961.⁴ The rainy season is from April to October and temperature varies from zero to 40^o5^o C. The rainfall, temperature and humidity for four important centres in Manipur viz. Imphal, Ukhrul, Churachandpur and Wangbal are given in Statements I and II.

1.5. Manipur suffers very much from inadequate communication system. A large part of the State still remains inaccessible. Even in the valley area there is much scope for improvement of road system. Manipur is, at present, connected with other parts of India by air services via Silchar in Assam and by road through Dimapur in Nagaland on the N.F. Railway via Kohima. The State Transport Department of Manipur has introduced bus services between Dimapur and Imphal. In the height of Naga troubles, this route remains almost closed for civil transport. Manipur needs more attention in the matter of direct communication between the State and the rest of India. This can be done by extending the railway communication from the Cachar District into the State.

2. Demography.

2.1. Manipur has a population of 7,80,307 with 3,87,085 males and 3,92,979 females. Thus there are 1015 females per 1000 males. The rural-urban and plain-hills break-up with density per square kilometre is given in Table 1.1.

4. Statistical Abstract of Manipur, 1962-63 - P.16-17.

5. Statement II in the Appendix.

Table 1.1 Rural-urban and Hills-plains Distribution of Population, 1961.

| Particulars. | Area. (Sq.Km.) | P.C. | Population. | P.C. | Density per Sq. Km. |
|--------------|-------------------|-------|-------------|-------|---------------------------|
| Urban. | 17 | 0.1 | 67,717 | 8.7 | 3982 |
| Rural. | 22,330 | 99.9 | 7,12,320 | 91.3 | 32 |
| Plains. | 1,813 | 8.0 | 5,14,667 | 66.0 | 284 |
| Hills. | 20,534 | 92.0 | 2,65,370 | 34.0 | 13 |
| Total. | 22,347 | 100.0 | 7,80,037 | 100.0 | 35 |

It will be apparent that Manipur is predominantly rural with 91.3% of the population living in 1,866 inhabited villages. An average village contains a population of 382 souls. But villages in the hills are much smaller than those in the plains. Manipur has only one town, Imphal, the capital of the State. From the point of view of Rice economy, the small size of urban population is advantageous in more than one aspect. The density in the plains is quite high compared to that in the hills. About 66% of the State population live in the valley covering barely 8% of the total area of the State.

2.2. The growth of population, sex distribution and sex ratio of Manipur from censuses 1901 to 1961 are given in Statement III in the Appendix. Though the growth rates in the State was moderate in the previous censuses, the 1961 census has recorded an abnormal decennial growth rate of 35%. This growth rate is quite in conformity with the trend of population growth in north-eastern States of Assam and Tripura with growth rates of 34.45% and 78.71% in 1961 respectively.

But Manipur is not equally exposed to largescale immigration of refugees and illegal infiltrants as in the case of Assam and Tripura. Against only 14.07% growth in Nagaland during the same period, the growth rate of Manipur in the last census decade seems abnormally high. In this connection, the decennial growth rates in the previous censuses of Assam, Manipur, Tripura and Nagaland as given in Table 1.2 will be interesting.

Table 1.2 Decennial Growth Rates of
North-Eastern States.

| Decades. | Manipur. | Assam. | Tripura. | Nagaland. |
|----------|----------|--------|----------|-----------|
| 1901-11 | 21.71 | 16.73 | 32.48 | 46.76 |
| 1911-21 | 10.92 | 19.01 | 32.59 | 6.55 |
| 1921-31 | 16.04 | 19.54 | 25.63 | 12.62 |
| 1931-41 | 14.92 | 20.08 | 34.14 | 6.04 |
| 1941-51 | 12.80 | 19.28 | 24.56 | 8.06 |
| 1951-61 | 35.04 | 34.45 | 78.71 | 14.07 |

2.3. One of the main factors favouring high population growth in Manipur is its female predominance. The sex ratio of Manipur was always adverse as will be seen from data presented in Statement III. It varied from 1065 females per 1000 males in 1931 census to 1015 females in 1000 males in 1961. Thus female predominance is on the decline. But it may be due to immigration of people from outside without family. Though prevailing opinion is that the public health measures have improved during the last decade resulting into less deaths, particularly infant mostality this does not explain the whole situation. The possibility of immigration across the borders from other States, even foreign countries, cannot be ruled out altogether.

2.4. Data on the age-structure of Manipur population for 1961 census are not available. To have an idea, data on 1951 census (based on 10% sample) are presented in Statement IV. Two things are important to be pointed out. Firstly, the population of the State is comparatively young with 72.15% of the population under 35 years and 40.28% under 15 years of age. Secondly, the female predominates in higher with age, precisely 1182 females per 1000 males in the age-group, 45 and above, against only 890 females per 1000 males in the population below 45 years. From these data, it can be surmised that Manipur is heading towards a balance between male and female population.

2.5. This is in evidence from the survey of Potsangbam village in the plains of Manipur under Bishenpur sub-division. Though female population in the fertile age-group of 15-45 outnumber the males, the overall picture points to a balance with 982 females per 1000 males.

Table 1.3.

Distribution of Population by age and sex,
Potsangbam, Manipur, March, 1963.

| Age-Groups. | Male. | Female. | Total. | No. of Females per 1000 Males. |
|--------------|-------|---------|--------|--------------------------------|
| Below 5 yrs. | 103 | 82 | 185 | 796 |
| 5 - 15 | 164 | 166 | 330 | 1012 |
| 15 - 25 | 107 | 112 | 219 | 1047 |
| 25 - 35 | 80 | 80 | 160 | 1000 |
| 35 - 45 | 40 | 69 | 109 | 1725 |
| 45 - 55 | 48 | 37 | 85 | 771 |
| 55 - 65 | 33 | 24 | 57 | 727 |
| 65 - 75 | 15 | 13 | 28 | 867 |
| 75 & over. | 10 | 6 | 16 | 600 |
| Grand Total. | 600 | 589 | 1189 | 982 |

2.6. Economic classification of population : The rate of participation of population in work is quite high, by any standard, due mainly to the tradition of females taking quite active, if not equal part, in agriculture and household industry. According to 1961 census, 47.31% of the males and 44.48% of females are returned as workers, giving an over-all participation rate of 45.83% in Manipur against only 42.95% in All-India and 43.27% in Assam of general population.⁶ Of the males workers, as good as 77% are engaged in cultivation, 'agricultural labour' being quite negligible, followed by 12% engaged in 'Other services'. Amongst the female workers, 53% and 41% are returned as engaged in 'cultivation' and 'household industry' respectively. Data on the economic classification of population are presented in Statement V.

3. State (National) Income and Agriculture.

3.1. No serious attempt has yet been made to correctly estimate the State Income. The estimates so far available are done by the National Council of Applied Economic Research, New Delhi in its Techno-economic survey of Manipur and the Statistical Bureau of Manipur. According to the NCAER estimate, Manipur has a total net output of Rs.1045.56 lakhs of which barely 149 lakhs are contributed by Agriculture (proper) accounting for 14.2% of the total. But the estimate done by the Statistical Bureau (not yet published) has placed the total net output at Rs.877.5 lakhs in 1960-61 of which 487 lakhs are contributed by agriculture (proper) accounting for 55% of the total. On closer scrutiny it is found that in the latter estimate, contributions from Commerce, Transport

6. The male participation rates in All-India and Assam are 57.08% and 54.10%, while female participation are only 27.94% and 30.91% respectively.

and Services have not been taken note of. Anyway, considering the pattern of employment, it can be said that agriculture (proper) contributes about half the State Income. Both the above estimates are given in Statement VI in the Appendix.

3.2. According to the 1961 census, 65.44% of the workers are engaged as cultivators and another 0.61% as agricultural labour. Thus 66% of the population are engaged mainly in agriculture. Moreover, another 22.10% engaged in household industry might have been engaged partly in agriculture. Thus, as good as 80% of the total population of the State are dependent wholly or partly on agriculture.

3.3. But agriculture in Manipur has remained traditional both in the hills and the plains. In the hills, Jhuming is the main system of agriculture, though terraced cultivation has been introduced in certain areas. Rice is the main crop accounting for 97.3% of the cropped area. There is no double-cropping. The data on land utilisation and crop pattern of Manipur are given in the Statements VII and VIII respectively.

4. Concluding Remarks.

4.1. Manipur is endowed with rich natural resources. The people of the State are healthy and industrious. Given the infra-structure, Manipur is expected to develop very fast. It has already made a mark in handloom weaving which contributes substantially to the State Income. Manipuri handloom fabrics have acquired All-India markets. After centuries of neglect, the State is now in the right road to progress. Though Manipur was always surplus in Rice, it has been experiencing difficulties in procurement and distribution. This is, of course, an All-India phenomenon.

CHAPTER TWO.

Area and Production of Rice.

1. Introduction.

1.1. Rice, both as a crop and the staple food of the people of Manipur, occupies quite an important place in the agricultural economy of the State. It is the main cereal food of the people contributing about 99% of the total cereal consumption. Rice also contributes 91% of the total income under agriculture (crop production). The valley of Manipur provides ideal condition for rice cultivation and certain areas are ideal for raising two or three consecutive Rice crops in a year, particularly the areas surrounding the Loktak lake. But due to the reluctance of the cultivators to accept innovations and their happy-go-lucky attitude of life, there has been little progress in introducing even second rice crop in the State. Available information shows that only one 'Winter paddy' crop is raised from the same field. According to available statistics Manipur produced 109 thousand metric tons of Rice (cleaned) in about 161 thousand Hectares, the average yield per hectare being only 6.8 quintals in 1963-64. This is against 10.0 quintals in Assam, 9.5 quintals in Tripura and 10.3 quintals for All-India.¹ But the estimates of Manipur relate only to the valley area and do not give a correct picture of Manipur as will be evident from subsequent discussion.

1.2. An analysis of the Rice economy of Manipur is beset with very many difficulties. Only one-twelfth of

1. Statistical Abstract of Indian Union, 1965.

the area of the State is now cadastrally surveyed. With the completion of the cadastral survey now under way and introduction of scientifically designed crop-cutting surveys all over the State, the full picture may emerge. Before that one has to depend on the available statistics which are mostly conflicting, due to difference in methods of collection and coverage of data.

2. System of Cultivation.

2.1. Rice is cultivated under both 'dry' and 'wet' methods in the hills and the valley. While 'dry-land' cultivation is mostly done in the hills under Jhuming, the valley is ideal for 'wet' paddy cultivation. Of course, in the terraces in the hills with assured water-supply, wet paddy is raised. But such cultivation is few and far between. In the jhuming, paddy is cultivated in mixture with other crops, like maize and millets, tubers and fruits. The yield of paddy in such cultivation is quite low. The 'dry' system of cultivation is relatively unimportant. This is why the hills are proverbially deficit in cereals. The wet paddy cultivation is the predominant system in the valley which provides ideal condition for such cultivation.

2.2. For the cultivation of 'wet' paddy seeds are sown in the nursery in the month of April and May. Such nurseries are generally made near the fields to minimise the difficulties of transport. The nurseries are mainly dry due to the minimum of water supply during that period. With the onset of monsoon, the lands are ploughed to destroy weeds. Before transplanting, lands are again ploughed thrice or four times to make the soil loose and pliable. The transplantation starts in the latter part

of June for the early varieties which are harvested in October and November. The late varieties are transplanted in the month of July and August to be harvested in December and January.

2.3. While the ploughing, raking and nursery preparation are done by men, women take the main part in transplanting and harvesting. While in Assam and Tripura, the threshing is done in the household threshing floors, in Manipur it is done in the field after drying. The sheaves are beaten on wooden posts placed on a specially prepared floor. This system of threshing in or adjacent to the field saves much of the difficulties of transport. Though bullock-carts are used for transport by big cultivators the small cultivators carry the crops on head or on bicycles in gunny bags and baskets. For storage, a few households have separate granaries, others use big storage baskets made of bamboos.

2.4. Manipur is believed to be self-sufficient in Rice, though in recent years, difficulties have cropped up in procurement and distribution. In recent years, new developments in the milling of rice in the State have brought about certain changes in the rice economy. The number of rice mills (mostly husking machines with average capacity of milling 100-150 maunds per day of 8 hours) has increased from only 24 in 1957-58 to 48 in 1959-60. It further increased to 59 by the end of 1961-62. In spite of this phenomenal increase of mills, the major part of the Rice is hand-pounded in village homes.

3. Area Under Rice.

3.1. As already pointed out, there is no data on land utilisation and crop pattern covering the entire area of Manipur. The land utilisation data presented in Statement

VII covers the valley portion only. In 1960-61, only about 92 thousand hectares or about 317 thousand acres were cropped. This accounts for 64% of the total valley area according to the village papers. In Statement VIII the Crop Pattern of Manipur (the estimated area under crops - average for 1960-61 to 1962-63) is given. It is found that out of a total cropped area of 406.87 thousand acres, Rice was cultivated in 396.00 thousand acres, thus accounting for 97% of the cropped area. Presumably, these data cover the entire State of Manipur and give approximate idea about the cropping pattern of the State. But complete series of data on area and production of crops in Manipur is not available. This is why available data on the area and production of paddy in the valley of Manipur from 1952-53 to 1965-66 are presented in Statement IX in the Appendix.

3.2. It will be found that the area under Rice remained completely static between 1955-56 to 1964-65 at 222 thousand acres, though in between these years, the acreage jumped to 232 thousand acres in 1957-58. The most surprising thing is that the acreage increased by 41 thousand acres in a year from 1953-54 to 1954-55. Whether this increase is actual increase due to extension of cultivation or coverage of data collection is anybody's guess. Even if it is true, the static ^{data} of the later years cannot be explained. Fitting a linear trend to the area data as given in Statement IX, it is found that the annual linear rate of growth is 1% only. In this connection it is interesting to note that doubts have been expressed about the accuracy of these data even by the Statistical Bureau of Manipur in a brochure, "Production of Rice in Manipur

(A critical Review)" . This was done on the basis of the NSS data collected by the State Statistical Bureau. The two sets of data is given in Table 2.1 for two years.

Table 2.1.

Area Under Rice in Manipur, 1964-65 and 1965-66.
(In thousand Acres.)

| Year. | N.S.S. Data. | | | Revenue Data. | | |
|---------|--------------|---------|--------|---------------|---------|--------|
| | Hill. | Valley. | Total. | Hill. | Valley. | Total. |
| 1964-65 | 53 | 195 | 248 | 173 | 222 | 395 |
| 1965-66 | 50 | 239 | 289 | 173 | 223 | 396 |

Source : Production of Rice in Manipur, 1966.

4. Production of Rice.

4.1. The data on production of Rice in Manipur from 1952-53 to 1965-66 are given in Statement IX. The method of estimating production by the agency entrusted with the job is described in the study, "Production of Rice in Manipur" as follows :-

"Crop cutting experiments are conducted by the Revenue Agency at the village level, such as Amins, Kanngoes etc. The method adopted consists in selecting three fields by eye-estimate - one field where the condition of crop is very good, another average condition and other of low condition. Experiments are then conducted by taking triangular cut from each of those three fields. Mean yields are then built up at sub-divisional level from which State average and total production are estimated. Acreage is calculated from revenue records."

4.2. Even if the average yield per acre as estimated above is correct, the reliability of the production data is vitiated by the nature of area data as discussed earlier. But the method of eye-appraisal followed in selection of sample plots also introduces into the estimate elements of personal and psychological factors. This is reflected in the nature of variations in the average

yield per acre of paddy from year-to-year (Statement IX). Such imperfect data rather hinder than help in planning production, procurement and distribution. If the above data are taken as correct, the production of paddy in the valley of Manipur decreased at 3% per annum (linear rate). This is against 1% rate of growth per annum in area under Rice.

4.3. In table 2.2 are given the estimates done by NSS and Revenue Department in 1964-65 and 1965-66.

Table 2.2

Estimate of Production of Paddy in Manipur
(In thousand Metric Tons)

| Year | N.S.S. Estimate. | | | : | Revenue Estimate. | | |
|---------|------------------|--------|-------|---|-------------------|--------|--------|
| | Hill | Valley | Total | | Hill | Valley | Total. |
| 1964-65 | 56 | 172 | 228 | : | 37 | 148 | 185 |
| 1965-66 | 45 | 236 | 281 | : | 40 | 159 | 199 |

Source : Production of Rice in Manipur, 1966.

The quantum of difference in the two estimates even for the valley area where records are believed to be more or less complete is quite great.

5. Productivity of Rice :

5.1. Thus the crux of the problem of estimating production in the State lies in the accurate collection of area data and estimating the yield per acre through carefully designed crop-cutting surveys. The data on yield per acre of paddy as given in Statement IX look misleading, even at a cursory glance. If the index numbers of productivity as given in Statement IX are adjusted with three years' moving average and linear trends are fitted, it is found that productivity of Rice is going down annually at the

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100

rate of about 4%. The average of First five years come to 21.94 mds.(8.19 quintals), while the average for last five years comes only to 17.62 mds. per acre (6.58 quintals). Thus the productivity estimates as given in Statement IX are quite unreliable.

5.2. But correct estimates of productivity for Manipur are nowhere available. In this connection, the data on productivity of paddy in Potsangbam¹, a village in the Beshenpur Sub-division of the valley of Manipur as given in Table 2.3 relating to 1962-63 may give some idea.

Table 2.3
Productivity of Paddy by Farm-Size, Potsangbam,
Manipur, 1962-63.

| Farm Size (Acres) | Area (Acres) | Production (Quintals) | Average Productivity per Acre. (Quintals) |
|----------------------|-----------------|--------------------------|--|
| Below 1 | 4.98 | 55.43 | 11.13 |
| 1.00 - 2.50 | 62.71 | 734.54 | 11.71 |
| 2.50 - 5.00 | 226.55 | 2426.45 | 10.71 |
| 5.00 - 7.50 | 194.61 | 1999.27 | 10.27 |
| 7.50 -10.00 | 48.12 | 455.17 | 9.46 |
| 10.00 - 1500 | 22.81 | 229.54 | 10.03 |
| Total | 559.78 | 5900.40 | 10.54 |

The average production per Acre of Paddy at Potsangbam is well over 10 quintals. The average of the estimates of productivity per acre in Manipur done by the N.S.S. from 1962-63 to 1965-66 comes to 24.5 mds.(9.14 quintals)¹. This shows that the decreasing trend in production and productivity as shown in Statement IX is not real.

1. Potsangbam has been surveyed by Jorhat Centre in 1963 and the Report is under preparation.