



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Vol XXV
No. 3

ISSN 0019-5014

CONFERENCE
NUMBER

JULY-
SEPTEMBER
1970

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

DEMAND FOR LABOUR IN RURAL AREAS OF ASSAM :
A CASE STUDY IN NOWGONG DISTRICT*

P. C. GOSWAMI

Hon. Director

AND

C. K. BORA

Research Officer

*Farm Management Centre
Assam Agricultural University
Jorhat, Assam*

Introduction

In the existing level of technology human labour is one of the most crucial factors of production. There is, therefore, a direct correlation between agricultural development and the pattern and extent of utilization of the available labour. Leaving aside the other inputs, efficient use of human labour itself can accelerate agricultural growth to a great extent. This paper gives an analysis of utilization of existing labour strength in the rural areas of Nowgong district of Assam as revealed in the Farm Management Studies carried out in the district. For this study, 15 villages in the district of Nowgong were selected at random with probability proportional to rural population as given in the District Census Handbook 1961.

District Background and Cropping Pattern

The Nowgong district is situated in the alluvial valley of the Brahmaputra in central Assam. Agriculture is the mainstay of the people of the district. About 78 per cent of the total workers are engaged in agriculture. The district produces a variety of crops as it is evident from the Appendix. The Appendix also shows that the intensity of cropping in the district varies between 124 and 128.

Agricultural Operations in Different Seasons

Before giving detailed analysis of employment of labour, it will be proper to give an idea of the important agricultural operations of the district. March, April and May are busy months when preparatory cultivation, sowing, weeding operations, etc., of autumn paddy (*Ahu*), winter paddy (*Bao*), jute, the principal crops of the district, are undertaken. The busiest months are June, July and August, when soil preparation and transplanting of the main crop winter paddy (*Sali*) take place. The months of November and December are the season for harvesting, threshing of winter paddy (*Sali* and *Bao*).

* The paper is based on field investigation data of the Farm Management Research Centre (Jorhat) in the Nowgong district. The report of the field investigation which will be the first of its kind in Assam is not yet ready for publication.

Monthwise Utilization of Human Labour

The monthwise utilization of human labour of the sample villages is given in Table I. Man-days in the table are calculated by converting the total man-hour engaged in productive efforts to eight-hour man-days. It will be evident from the table that the male members of the families and the family farm servants remain engaged throughout the year. This is because of the fact that in most of the vil-

TABLE I—MONTHWISE LABOUR UTILIZATION : 1968-69

| | | | (in 8-hour man-days) | | | |
|-----------|----|----|----------------------|------------------|-------------------|---------------|
| Month | | | Per adult male | Per adult female | Per adult servant | Total average |
| 1968 | | | | | | |
| June | .. | .. | 27.54 | 13.52 | 29.10 | 23.39 |
| July | .. | .. | 26.42 | 17.75 | 30.66 | 24.94 |
| August | .. | .. | 27.22 | 18.36 | 26.46 | 24.01 |
| September | .. | .. | 23.71 | 16.18 | 22.52 | 20.80 |
| October | .. | .. | 22.01 | 16.16 | 22.29 | 20.15 |
| November | .. | .. | 22.64 | 16.22 | 23.33 | 20.73 |
| December | .. | .. | 27.47 | 18.28 | 25.93 | 23.89 |
| 1969 | | | | | | |
| January | .. | .. | 22.11 | 15.79 | 21.96 | 19.95 |
| February | .. | .. | 21.24 | 14.52 | 21.54 | 19.10 |
| March | .. | .. | 22.31 | 16.05 | 26.05 | 21.47 |
| April | .. | .. | 22.01 | 15.75 | 26.36 | 21.37 |
| May | .. | .. | 23.48 | 17.01 | 27.08 | 22.52 |

lages multiple crops are raised. It will be seen that the demand for adult family male workers and family farm servants is large in the months of June, July and August when cultivation of some major crops are undertaken. The employment of annual servant is also seen to be high in the months of March to May as the sowing of autumn paddy and jute takes place. The adult female workers remain idle for a considerable period in each month of the year. This is because of the fact that most of the families (especially the Muslim families) do not employ their women in agricultural operations. However, a few female workers of the backward communities are employed in the months of July and August for harvesting autumn paddy and transplanting of winter paddy and in the month of December for harvesting of winter paddy.

Labour Utilization under Different Size-groups of Operational Holdings

The demand for labour is directly related to the operational holdings. The smaller the size of the farm the lesser is the employment of labour. Table II shows the average annual employment of farm workers by operational holdings. The employment of farm workers shows an increasing tendency with the increase of operational holding with the exception, however, of the size-group 1.83—2.43

hectares. It has been observed that the annual servants are employed to a greater extent than male and female family workers. The table also indicates that in terms of man-days the farm workers remain unemployed for about three months in the case of adult male workers, for six months in the case of female workers and two

TABLE II—AVERAGE ANNUAL EMPLOYMENT OF FARM WORKER PER FARM AND PER HECTARE ACCORDING TO OPERATIONAL HOLDINGS : 1968-69
(in 8-hour man-days)

| Size of operational holdings (hectares) | Adult male | | Adult female | | Annual servant | |
|---|------------|-------------|--------------|-------------|----------------|-------------|
| | Per farm | Per hectare | Per farm | Per hectare | Per farm | Per hectare |
| 0.01—1.82 | 256.3 | 209.2 | 177.0 | 122.6 | 272.6 | 29.0 |
| 1.83—2.43 | 293.8 | 190.0 | 202.7 | 76.8 | 261.0 | 13.0 |
| 2.44—3.24 | 265.4 | 163.1 | 181.9 | 61.7 | 279.3 | 21.9 |
| 3.25—4.45 | 279.0 | 118.4 | 189.7 | 50.3 | 279.6 | 36.8 |
| Above 4.45 | 276.2 | 93.2 | 196.8 | 27.5 | 313.7 | 26.4 |
| All farms | 274.4 | 135.2 | 188.8 | 53.9 | 288.7 | 26.4 |

and a half months in the case of annual servants. The per hectare utilization of man-days has revealed that the intensity of labour utilization is not uniform on all farms. On big farms there is proportionately less labour per hectare of land. This only indicates that either there is excess labour in smaller size-groups or dearth and inefficient use of labour in larger size-groups.

Employment of Farm Worker Irrespective of Hours of Work

Table III shows the average man-days of annual employment of family adult male workers and annual servants irrespective of hours of work in a day and also eight-hour labour man-days of employment by operational holdings. It seems that the average annual employment of farm worker irrespective of daily work comes to about 340 days ranging from 346 days in the first size-group to 344 days in the fourth size-group. It is apparent that the farm worker is employed for about 11 months in a year irrespective of hours of daily work compared to about 9 months in a year in respect of eight-hour man-days.

TABLE III—AVERAGE ANNUAL EMPLOYMENT OF ADULT MALE FAMILY WORKER AND ANNUAL FARM SERVANT IRRESPECTIVE OF HOURS OF WORK AND IN TERMS OF EIGHT-HOUR MAN-DAYS

| Farm size-groups (hectares) | | No. of days irrespective of hours in a day | | | | No. of 8-hour days |
|-----------------------------|------------------|--|----|----|--------|--------------------|
| I. | 0.01—1.82 | .. | .. | .. | 345.60 | 258.17 |
| II. | 1.83—2.43 | .. | .. | .. | 340.17 | 291.43 |
| III. | 2.44—3.24 | .. | .. | .. | 333.50 | 267.01 |
| IV. | 3.25—4.45 | .. | .. | .. | 344.39 | 279.13 |
| V. | Above 4.45 | .. | .. | .. | 339.45 | 283.66 |
| All farms | | .. | .. | .. | 340.10 | 276.65 |

Cropwise Utilization of Labour

Table IV gives the per hectare employment of human labour for the principal crops grown in the district by source. That the demand for labour is acute in peak seasons also can be evident from the fact that a considerable amount of labour days are hired in for raising each of the principal crops. The ratio of family and hired labour utilized for cultivating winter paddy (*Sali*), winter paddy (*Bao*), autumn paddy (*Ahu*) are 2.4 : 1, 3.2 : 1, 2 : 1 and 3 : 1, respectively.

TABLE IV—EMPLOYMENT OF HUMAN LABOUR PER HECTARE IN THE PRINCIPAL CROPS BY SOURCE
(in 8-hour man-days)

| Principal crops | Family | Hired | Total |
|------------------------------------|--------|-------|--------|
| Winter paddy (<i>Sali</i>) | 50.43 | 21.48 | 71.91 |
| Winter paddy (<i>Bao</i>) | 48.42 | 14.89 | 63.31 |
| Autumn paddy (<i>Ahu</i>).. .. | 56.93 | 27.49 | 84.42 |
| Jute | 116.69 | 39.25 | 150.94 |

Operationwise utilization of per hectare labour for cultivation of principal crops of the district is given in Table V. It has been observed that the labour requirements for raising these crops are very high. In the case of autumn paddy (*Ahu*) and jute, weeding operations are done very minutely and carefully. During this period additional labour requirements are met through hired labour even at high wage rates. The jute growing families have to engage a high percentage of labour for rating and drying of this crop. The additional labour requirements in the peak periods are generally met through daily wage earner or contract wage earner.

TABLE V—OPERATIONWISE DISTRIBUTION OF PER HECTARE LABOUR FOR THE PRINCIPAL CROPS OF THE SAMPLE
(in 8-hour man-days)

| Operations | Winter paddy (<i>Sali</i>) | Winter paddy (<i>Bao</i>) | Autumn paddy (<i>Ahu</i>) | Jute |
|----------------------------|---------------------------------|--------------------------------|--------------------------------|--------|
| Ploughing | 23.21 | 17.75 | 22.62 | 26.34 |
| Transplanting | 16.61 | 0.64 | — | — |
| Sowing | — | 0.90 | 0.91 | 0.94 |
| Weeding | — | 10.36 | 29.65 | 48.42 |
| Harvesting and carrying .. | 27.22 | 29.04 | 27.92 | 28.31 |
| Rating and drying | — | — | — | 46.93 |
| Threshing | 4.87 | 4.57 | 3.32 | — |
| Total | 71.91 | 63.31 | 84.32 | 150.94 |

Nature of Employment

The nature of employment of different kinds of family workers and annual servants is given in Table VI. That there is a tendency to utilize the services of annual servants to the maximum extent can be seen from the highest percentage of employment of labour on farm work. It is an obvious fact that the annual servants being paid servants are employed to the maximum extent. The percentage of employment of adult male family workers comes next to the annual servants in farm work. A small percentage of labour unit is hired out by adult male workers to the other farms in the off period. The small farmers are required to hire out their labour to a great extent. The adult male family workers utilize their services to the extent of 8.56 per cent in service and business while annual servants engaged in service and business come to only 1.54 per cent. There is not much variation in the percentage of units utilized in social and family affairs of annual servants and adult male family workers.

TABLE VI—PERCENTAGE OF EMPLOYMENT AND UNEMPLOYMENT OF FARM WORKERS
ACCORDING TO NATURE OF EMPLOYMENT

| Nature of employment | Adult male | Adult female | Annual servant |
|---|------------|--------------|----------------|
| Units used for farm work including work for production and other than crop production | 60.68 | 8.60 | 73.28 |
| Units exchanged for gratis | 0.56 | 0.03 | — |
| Units hired out | 0.43 | 0.08 | — |
| Units used for services and business .. | 8.56 | — | 1.54 |
| Units used for social and family affairs .. | 4.95 | 43.08 | 4.28 |
| Units unemployed due to non-work, sickness, etc. | 24.82 | 48.21 | 20.90 |
| Total | 100.00 | 100.00 | 100.00 |

The scope for employment of female workers is very much meagre. It is noteworthy that only 8.60 per cent of labour units of female workers are utilized in productive works. Most of their days are spent in unproductive works like social and family affairs. The percentage of unemployment of female worker is also very high.

Scope for Employment

Although in each farm several family members are engaged in agricultural operations, all of them are not fully engaged throughout the year. If the total man-hours devoted to agricultural and allied farm operations are converted into eight-hour man-days, it will be possible to have an idea of the under-employment in agriculture. Table VII shows the man-days and excess labour engaged in agriculture.

TABLE VII—DISTRIBUTION OF TOTAL MAN-DAYS AND EXCESS LABOUR ENGAGED IN AGRICULTURE

| Farm size-groups (hectares) | | | Number of earners engaged mainly in agriculture | Total 8-hour man-days | Average number of man-days devoted to agriculture by each earner | Number of persons engaged for 300 man-days a year | Excess agricul- tural worker |
|--------------------------------|----|----|---|-----------------------------|--|--|---------------------------------------|
| 0.01—1.82 | .. | .. | 61 | 14,656 | 240.3 | 48.9 | 12.1 |
| 1.83—2.43 | .. | .. | 65 | 18,129 | 278.9 | 60.4 | 4.6 |
| 2.44—3.24 | .. | .. | 90 | 22,675 | 251.9 | 75.6 | 14.4 |
| 3.25—4.45 | .. | .. | 78 | 20,509 | 262.9 | 68.4 | 9.6 |
| Above 4.45 | .. | .. | 82 | 21,924 | 267.4 | 73.1 | 8.9 |
| All farms | .. | .. | 376 | 97,893 | 260.4 | 326.4 | 49.6 |

Considering 300 days of eight-hour man-days as full employment figure for an agricultural worker,¹ it will be seen in Table VII that in each size-group of operational holding there is excess labour force, the total for the sample is 50 workers. As is natural this excess labour force is lesser in larger size-groups except in the second and third groups. The lesser number in the second group indicates intensive farm practices in that group and the larger number in the third group less intensive cultivation. Moreover, worker in Table VII includes both male and female worker. If only the male workers are considered, the excess will be far less. For obvious reasons female worker cannot give 300 days of eight-hour man-days per annum as they will be engaged in other household activities. By multiple cropping and intensive farm practices (e.g., adoption of HYV crop) it will be possible to employ this excess number fully in agriculture. At present out of 150 farmers in the sample only ten have HYV crop in 5.71 hectares out of the total of 603.57 hectares of cropped area or in less than one per cent of the cropped area.

If 260 man-days per year (the average for all agricultural workers) are considered as the full employment figure there will be very few excess labour only in the small size-groups and there will be shortage or over-employment of labour in the larger size-groups. On this basis there will be great scope for employment of non-agricultural workers also in agriculture by a slight increase in the intensity of cropping and farm practices.

In the sample there are 558 persons above 15 years of age excluding the students. Out of this, 397 persons (376 in agriculture and 21 in non-agricultural jobs) are engaged as workers. Most of the non-agricultural workers (except three workers who are in business and profession) are employed as salaried persons. The apparent figure of unemployed (558 less 397 or 161) will be considerably reduced if housewives and old persons are excluded. It seems that the number of unemployed will not be more than 30 in the 150 households. It will be possible to engage the excess labour force in rural areas through encouragement of intensive cropping, vegetable and fruit growing, livestock and poultry farming, bee-keeping, pisciculture, handloom and other cottage industries. The only bottleneck at the moment seems to be lack of marketing facilities which will not be difficult to remove through Government initiative.

1. This figure is taken on the assumption that one worker will get one holiday for each week (52 days) and 13 days for sickness and other works.

Conclusion

The analysis has shown that human labour remains unutilized for a considerable period of time in the year. The problem of unemployment is more serious in the case of small farmers. There is, however, considerable scope for employment of the surplus labour in the agricultural sector itself by introducing high-yielding varieties and intensive farm practices. But keeping in view the rapid population growth, it is high time to think of creation of employment opportunities in the non-agricultural sector and allied agricultural sectors.

The present analysis suffers from one drawback in that the 150 respondents are all farm families. In the case of landless and non-farming families, the problem of surplus labour will be more acute and the existing demand for labour in rural areas will not be sufficient to cope with the existing labour force. Moreover, even in farm families in other districts of Assam the condition will differ as the intensity of cropping will be much less than in the Nowgong district. It is, therefore, essential to encourage multiple and intensive cropping and other types of economic activities to expand employment opportunities in rural areas so that the under-employed (belonging mainly to the landless and small holders) can find employment in agriculture and particularly in non-agricultural occupations.

APPENDIX**CROP PATTERN OF NOWGONG DISTRICT : 1967-68**

| Crops | Percentage of total cropped area | |
|-------------------------------------|----------------------------------|-----------------|
| | District estimate | Sample villages |
| A. Foodgrains and pulses | | |
| Autumn paddy | 11.48 | 15.02 |
| Winter paddy | 53.36 | 59.24 |
| Spring paddy | 1.73 | — |
| Other cereals | — | — |
| Pulses | 4.57 | 3.71 |
| Total foodgrains and pulses | 71.27 | 77.97 |
| B. Other food crops | | |
| Sugarcane | 1.07 | 1.93 |
| Potato | 0.69 | 0.53 |
| Other food crops | 0.93 | 3.04 |
| Total other food crops | 2.69 | 5.50 |
| C. Oilseeds | | |
| Rape and mustard | 8.47 | 5.23 |
| Sesamum | 0.45 | 0.50 |
| Others | 0.09 | — |
| Total oilseeds | 9.01 | 5.73 |
| D. Fibre crops | | |
| Jute | 16.01 | 10.80 |
| Others | 0.75 | — |
| Total fibre crops | 16.76 | 10.80 |
| E. Non-food crops | | |
| Tobacco | 0.27 | — |
| Grand total | 100.00 | 100.00 |
| Intensity of cropping | 124 | 128 |

Source : (1) District estimate from the District Agricultural Office, Nowgong.

(2) Sample villages from field investigation by the Farm Management Centre, Jorhat.