BACKGROUND:

Nalbari with a geographic area of 2,02,427 hectares, population 10.13 lakhs, density 499 persons per km², annual population growth rate 2.44 per cent, literacy rate 46.64 per cent, rural population 97.71 per cent, main workers 28.24 per cent, agricultural workers 67.28 per cent, and other workers 28.50 per cent is one of the industrially underdeveloped districts of Assam. The mainstay of the people and the district's economy is agriculture and allied activities. The district is characterised by land scarce (0.49 acres operational land/person) and labour abundant (20 per cent agricultural labourer) situation. The district has three distinct geographic zones - AFP, MP, and BT and is the home of sizeable number of ST and SC populations.

Studies on productive asset planning in Assam in general and Nalbari district in particular are rather very limited. Therefore, attempts have been made in the present study to make an indepth inquiry to bring out a location specific plan for development of productive assets in agriculture (animal proteins producing assets and assets of cultivation) in the district at Gaon Panchayat level. For the purpose, mostly primary data on productive assets have been collected for the year 1989 and analysed with the help of standard statistical
techniques like mean, standard deviation, CRV and analysis of variance. All together four hypotheses have been formulated, examined and accepted.

The spatial and sectoral variations in the distribution of productive assets have been examined with the help of F-test. The spatial differentiations in the status of GPs with respect to each of the assets, all assets together, animal protein producing assets and assets of cultivation have been identified.

The production gap of animal proteins has been identified following Balanced Diet Norm as suggested by National Institute of Nutrition, Hyderabad. Similarly, the gap in the PAs of cultivation has been identified according to the technical standards and adequacy of support facilities has been assessed against standard norm. In order to overcome development constraints, two basic strategies adopted: (1) Land Saving and Labour Using (LSLU) and (2) Land Using and Labour Saving (LULS) following the quality character of PAs. The development strategies of the GPs have been expressed in terms of three models relating to (1) all assets together, (2) animal protein producing assets and (3) assets of cultivation. The models are based on Productive Asset-Population Ratio (PAPR) and Productive Assets-Land Ratio (PALR). The analyses of the study are supported by a series of tables, maps and diagrams.
SUMMARY AND FINDINGS:

The summary of the findings of the study are as follows:

Nalbari district is characterised by absence of land as well as labour saving types of productive assets. For example, plough bullocks and bullock carts are of land as well as labour using types of productive assets. All the seven animal protein producing assets viz. milching cows, goats, pigs, ducks, poultry birds, pigeons and fishponds are of land using and labour saving types. Except pumpset, LSLU types of assets are virtually absent in proper sense of the term. Adoption of modern management practices is totally lacking in spite of the fact that cross breed jersy cows comprise about seven per cent of milching cows; khaki campbell ducks comprise about 20.00 per cent of the ducks and culture ponds comprise about 64.64 per cent of the total fishpond areas.

The analyses of the distribution of PAs lead to conclude that there is direct and positive relationship between the sizes of PAs and land holding categories (LHC) at household level. The relationship holds good among social groups also. In analysing the sources of variation, it has been observed that land holding sizes act as significant sources of variation in the distribution of own lands, milching cows, goats, fishponds and plough bullocks in the district.
Variations in the distribution of PAs among the three social groups are also analysed. At district, zonal and GP levels, ST group possesses higher proportion of land, goats, pigs, poultry birds and plough bullocks; general group possesses more of milching cows, pigeons, fishponds and bullock carts and SC group possesses more of ducks and pumpsets. In analysing the nature of variations, it has been observed that there exists significant variations in the distribution of pigs, poultry birds and pigeons at the zonal level. The main reasons for this is socio-cultural rather than spatial.

There is however, zonal variation in the distribution of possession pattern of PAs. The overall asset possession pattern (at household level) is poor in AFP zone and in GPs within it. BT zone by far is much better off where every household possesses more of own land, milching cows, pigs, poultry birds, plough bullocks and bullock carts. In analysing the pattern of variation, it is observed that the possession of own land, bullock carts and plough bullocks per household vary significantly among the three geographic divisions.

The analysis of availability leads to conclude that the availability of PAs when measured per unit of 100 persons (PAPR) increases according to the size of land holdings and decreases when it is measured per acre of operational land (PALR). Both the relationships further establish that there is
a strong relationship between the lower PAPR with that of the higher PALR and vice-versa. The status of GPs when examined with respect to the two ratios does not show strong relationship between lower PAPR with that of the higher PALR and the vice versa. This may be due to the non-uniformity in the geographic characteristics, distribution of population on socio-cultural background and due to the variation in the distribution of land holding sizes at zonal and GP levels. The fourth hypothesis formulated in chapter-1 therefore, has been found to be partially true i.e. while the relationship - higher the PAPR, lower the PALR (all PAs) is found to be true in case land holding categories, it does not hold good spatially at the GP level. This does not invalidate the hypothesis due to the fact that the relationship of higher PAPR and lower PALR is found to be true in cases of animal protein producing assets and assets of cultivation when measured separately.

Analyses of seven support facilities lead to conclude that there is acute shortage of veterinary facilities specially among the GPs of BT zone. Apart from inaccessibility, the provision of artificial insemenation facilities - the most crucial input for dairy development is neither adequate nor timely.

The most easily accessible facility in the district is the agricultural input distribution centres. Extension services network developed under T & V system is found to be adequate. The centres for distribution of agricultural
machineries and implements in contrast, are highly inadequate and so is the case with the development of irrigation inspite of having sufficient surface and ground water potentials. The supply of power (electric and diesel oil) for the development of pumpset-based irrigation is quite lacking. Records although, show that almost all the villages are connected by electric lines, power supply is found to be very erratic. There is no diesel selling outlets in AFP and BT zones. All these found to have exert considerable impact on the low level of agricultural productivity.

Roads and bank facilities are inadequate in BT zone. Roads, particularly of pucca type comprise a meagre proportion of the total road length. Market centres appear to have distributed randomly all over the area. The gap in the adequacy is only 12 per cent. However, markets are often rudimentary and have many structural deficiencies. The conditions of sheds are poor and store facilities are absent. Besides, most of the market centres are not connected by all weather roads.

Examination of surplus-deficit position of animal proteins reveals that the district is lagging far behind attaining self-sufficiency in production. Egg production reveals highest gap (-93.17 %) and meat the lowest (-31.63 %). The gaps in milk and fish production are around 65.00 percent each. The deficit among SC population, people living in AFP zone and among small land holders are found to be much
higher. It is also observed that large land holders produce 21.43 per cent surplus of fish and ST group produce 33.33 per cent surplus of meat.

Examination of surplus-deficit position in case of PAs of cultivation reveals that in the district, there is 10 per cent surplus of plough bullocks and as high as 95.49 per cent deficit of pumpsets. Marginal category land holders and GPs of BT zone virtually donot have pumpsets. Plough bullocks record 22.50 per cent deficit among large land holders, while it is found to be in surplus among marginal, small and medium land holders.

The analysis of the quantum of surplus or deficit of the PAs in the district among the land holders of different categories, social groups and geographic divisions leads to conclude that SC group, AFP zone in general and smaller land holders in particular will be required to increase the existing productivity of animal protein producing assets by many folds on every acre of operational land to attain self sufficiency. The productivity (per acre) attained by them is already found to be near optimal. The type of situation has made the whole development issue critical. Secondly, in order to reduce the number of surplus plough bullocks according to the technical requirement of land on one hand, and not having a pair of bullocks among 28 per cent of marginal and five per cent of small land holders on the other hand, clearly indicates the need to change ploughing technique with
plough bullocks to the use of power tillers preferably forming small cooperatives among small and marginal land holders.

The examination of Land Using and Labour Saving strategy under scenario—I and Land Saving and Labour Using strategy under Scenario—II finally leads to conclude that the district has no other alternatives except to adopt the Land Saving and Labour Using strategy for the development of productive assets and ultimately to make the rural development a success. The socio-cultural behaviour of the people and the physical parameters of the geographic divisions have to be considered seriously while adopting a given type of development strategy.

Finally, a GP level location specific development plan has been outlined. The development strategies of the plan have been expressed in terms of three models. Model—I is for the development of all productive assets together, Model—II is for animal protein producing assets and Model—III is for assets of cultivation. In all the models, development priorities have been fixed based on the concepts of PAPR and PALR. Lower PAPR indicates lower availability (larger deficit) of PAs per unit of population. Higher PALR on the other hand, indicates higher availability (higher pressure) of PAs per acre of land.

The GPs having very low and low status on PAPR and high and medium status on PALR have been identified and assigned
top development priority. Second priority has been given to those GPs which have very low and low status on both PALR and PAPR. The GPs with medium and high status on both PAPR and PALR have been assigned third development priority. The fourth development priority lastly has been attached to those GPs which have high and medium status on PAPR and very low and low status on PALR.

The model suggested in the present study can easily be adopted for developing any kind of facilities at micro, meso and macro levels. The model will be specially suitable for bringing balanced regional development in a phased manner and to attach priorities according to the felt needs of the people and the area. As the structural frame of the model is based on standard statistical techniques, it enjoys immense advantage of comparability over space and through time.

SUGGESTION FOR FURTHER RESEARCH:

One of the major shortcomings of the present study is its lack of temporal assessment. The variability of the productive assets could not be assessed over time as the data for the present study have been collected for one year only. Collection of data over a longer time period was not possible mainly because of time constraint. In addition, as the present study is based primarily on field data, the respondents failed to give clear indication about the amount of assets they possessed some five or six years ago.
The study of structure and distribution of productive assets would have been much revealing if it could have been conducted in at least more than one district at a time. This type of study is necessary to have better understanding of the structure and distribution pattern of the assets under different geographic environments and at the same time over areas with different levels of economic development. This aspect of the study was not possible mainly, because of the vastness of the data to be collected from the primary sources.

These are two important aspects of productive assets study that needs further research.

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