INCOME AND EMPLOYMENT GENERATION IN ALTERNATIVE FARMING SYSTEMS:
A STUDY OF CENTRAL BRAHMAPUTRA VALLEY ZONE OF ASSAM

I

INTRODUCTION
1.1 Statement of the Problem

Farming system is more or less stable arrangements of farming activities managed by a farm household. Farming systems ecologically and socio-economically not only involve crop production but are also dependent upon their integration with other enterprises like animal husbandry, horticulture, vegetable production, piggeries, fisheries, apiculture, goatery, poultry, sericulture, and agro-forestry. The concept of farming system takes into accounts the components like soil, water, crops, live stock, labour and other resources available with farm families.

The best strategy for economic viability is flexibility within agriculture system for production of milk and its products, food, fodder, fuel, eggs and fish etc. The enterprise flexibility can be achieved through reduced input cost and increased diversification of activities providing more and more employments. A farming system
approach is a farming pattern or combination of farming activities practiced on farm. It is a production system that provides an opportunity for farmer to exploit the full productive potential of their farm through the optimal use of ecological and economic resources over a long-time frame. The concept of farming system is composed of complex of soil, water, plant, animal, implements, power, human labour, capital and other inputs controlled in parts by farming families and is influenced to varying degrees by capital, economic, institutional and social forces that operate at many levels (Singh, 1999).

Combination of one or more enterprises with cropping when carefully chosen, planned and executed (selection of proper mix and judicious allocation of resources) provides greater dividends than single enterprise especially in case of small and marginal farms with large surplus farm labour and human force (Jayanthi et al., 1994).

It is pertinent to understand at the very outset the concept of diversification. The term diversification is associated with the structural transformation of an economy. It may mean the various
kinds of changes at different level which are :(i) Diversification at the macro level, which is a broad concept. It means a change in the contribution of different sectors (viz. primary, secondary and tertiary) to national income as well as the disposition of the working population. This type of diversification is in the nature of a shift of activities, from the farm (agricultural) to the non- farm (non-agricultural) sector or vice versa, (ii) Again there is the concept of diversification within agriculture, which may be of two different types: (a) enterprise diversification and (b) crop diversification. The first involves inter-enterprises shifts of resources such as, crop raising to livestock, while the latter involves inter-crop shifts of resources (e.g., food crop production to non-food crop production etc.) (Sawant, 1993) and (iii) This type of diversification emerges from the farmers’ response to a slack in the system, leading to an addition of complementary crop activities or enterprises to the main enterprise for exploiting the unemployed and underemployed resources, whenever the opportunity to do so arises ( Sawant, 1997). The term of alternative farming system is associated with different
farming alternatives available to farmers with farming diversification. The present study is dealt with the study of the alternative farming system with diversification within agriculture i.e., combination of crop and livestock enterprises, which increase the farm’s net income and employment generation.

The state of Assam is divided into six agro-climatic zones. These are Lower Brahmaputra Valley Zone comprising the erstwhile district of Kamrup (rural & metro) and Goalpara, Central Brahmaputra Valley Zone comprising Nagaon and Marigaon district, Upper Brahmaputra Valley Zone comprising Sibsagar and Dibrugarh district, Barak Valley Zone comprising Cachar district and Hill Zone comprising the hill districts of Karbi Anglong and North Cachar district. Out of these, the Central Brahmaputra valley Zone is selected purposively for the study for their dominance in agricultural sector. There are two districts in the zone viz., Marigaon and Nagaon.

The area is primarily agrarian in character with more than 80 percent of the population depending upon agriculture and allied
activities. The major crops grown in this study area are rice, paddy, potato, mustard, jute, sugarcane, wheat, oilseeds, vegetables etc. Since the river Brahmaputra is also flowing across the region, hence a major part of the region is not free from the affect of flood.

One of the unique features of the agricultural sector of states like Assam or this zone is the dominance of the marginal farmers. For the year of 2004-05, both the districts had large numbers of farm families in marginal and small categories (especially in marginal category), i.e., the marginal, small and large categories were respectively 81.00, 12.00 and 6.20 percent in Marigaon District, while 42.38, 14.01, 10.61 per cent were respectively for the marginal, small and large categories in Nagaon district (Government of Assam, 2006). These large numbers of marginal and small farmers in rural areas are generally poor, and the viability and sustainability of the weaker section of the society especially the small and marginal farmers largely depend on the success of agriculture. Unfortunately, because of small operational base with some other inherent constrains, it is not possible to increase the
income of these households merely by raising the yield of the existing crops on their holdings. Hence tremendous efforts are necessary to enhance the bases of rural economic activities of these farmers besides crop production activity. Here the rural economic activities mean the activities like fisheries, aquaculture, horticulture, livestock and animal husbandry etc., whose production are very much remunerative. These types of avenues have begun to be regarded as a source of new employment, especially for marginal and small farmers and agricultural labourers by offering subsidiary occupation to supplement their family income.

Further, the rapid increase in population in the rural areas and the consequent increase of their pressure on land are responsible for the increase in the number of unemployed and disguisedly unemployed persons in the rural and agricultural sectors. Therefore it is necessary to have more labour intensive as well as high valued crops or livestock enterprises for ensuring fuller employment of the existing and growing labour force in the countryside. Vegetables,
potato and oilseed are the most remunerative crop activity (Saiki, 2001).

Because of the prevalence of mono cropping system in crop fields, the problem of low cropping intensity exists in agriculture sector. Therefore the production level is not up to farmers’ expectation which leads to create huge unemployment problem in this sector. The most common strategy is to improve the cropping intensity level through multi cropping system. Because, the employment of human and bullock labour could be increased with increase in cropping intensity (Bhowmick, 1982).

Again, there is a problem of price-induced instability of income in agriculture sector. This problem can be solved to a great extent by a judicious mix of enterprise, which would enable the farmers to spread out the risks and ensure a steady flow of income over the years.

Moreover it is often observed that the resources are available but inefficiently used by the rural farmers that lead to the low level of farm returns. There exists scope for increasing the income and
employment through rational resource allocation (Hazarika et al., 2002). Therefore the optimal resource adjustment mechanism is essential in this case. The production can be increased by making adjustments in the use of resources in the optimal direction from sub-optimal.

Lack of assured and controlled water through irrigation facilities is another characteristic of agricultural sector of the region. The agriculture in the area is mostly rain-fed, which is neither regular nor even. Any irrigation facility created in the region is not at all sufficient.

All these problems necessitate meticulous planning and drawing of timely and appropriate strategy. There is an urgent need to carry out research for providing adequate information on feasible farming system which will help the policy maker to formulate proper plan. A very few farming system research based on scientific land use have been carried out in this region. Therefore the present study is aimed to identify the existing farming system, analyze the land use pattern, examine economics of farming system and resource use
efficiency level of the field crops of the different groups of farmers and their resource reallocation to develop optimal plans suitable for this region with an objective of generating more income and employment opportunities through farm diversification.

1.2 Objective

On the basis of above discussion, the specific objectives of the present study are stated below:

1. To identify the existing farming systems and analyze land use pattern across the different categories of farmers in the study area.

2. To analyze the economics of different components of farming systems, practiced by the farmers in the study area.

3. To assess the resources use efficiency level.

4. To develop optimal plan through resource reallocation for increasing farm's income and employment opportunities.

5. To identify the constraints for diversification of farming activities and to suggest suitable policy measures, if any.
1.3 Research Question

The main research question of the study is whether diversification can be used as a strategy for increasing farm’s net income and employment generation?

1.4 Hypothesis

The hypothesis of the study is that the farms’ net income and employment opportunities can be increased through alternative farming system.

1.5 Likely Contributions of the Study

It is expected that the findings of the present study will provide information, through which the farmers can practice feasible farming system which will enable them to utilize their existing resources optimally. Moreover, the study will help the farmers to take rational decision about appropriate farming system to suit their local conditions. It is also expected that the findings of the study will help the farmers to diversify their farming activities in a
scientific way which will increase their income and employment opportunities, and they can also give priority for cultivating cash crops which have tremendous market opportunities.

It is also anticipated that the present study will help the policy makers in formulating policies for uplifting the economic conditions of the farmers of the region in particular. The study will also be useful to the agriculture development departments, and field functionaries in general of the Central Brahmaputra Valley Zone of Assam.

1.6 Limitations of the study

i) The findings of the study are based on information collected from limited numbers of respondents from the two districts of the Central Brahmaputra Valley Zone of Assam. Thus, the outcome of the study can be generalized only in respect of the local of the study or other areas with identical socio-cultural and agro climatic conditions.
ii) The findings of the study are based on the information given out by the respondents and the opinions expressed by them. Hence, the possibility of prejudices and biases cannot be ruled out and the quality of the information is subject to the ability of the respondents to recall.

iii) Time to be devoted to the investigation and the resources supporting the undertaking were the major limitations encountered by the Investigator.

1.7. The Structure of the Thesis

The thesis has been presented in seven chapters. The first chapter is the Introduction which covers the statement of problem, objectives, hypothesis, research question, likely contribution of the study and the limitations of the study. The second chapter dealing with the Review of Literature seeks to provide an insight into similar types of studies carried out by the researchers in the past. The third chapter namely Research Setting deals with various information regarding socio-demographic background and resource
availability of the people and area under study. The fourth chapter expounds the **Research Methodology** followed, covering the sampling design, variables and the measurement, technique of data collection and statistical and mathematical tools adopted to analyze the data. The findings of the study along with the discussion thereupon are presented in the fifth chapter i.e., **Results and Discussion**. The sixth chapter is **Constraints and Policy Implication** and the Seventh chapter includes **Summary and Conclusion** where outlines the summary and draw the conclusions based on the results of the study. **Bibliography, Appendices and Schedule & Questionnaires** are provided at the end of the thesis.

1.8. **The Reference Period**

The personal interview was conducted for the study relates to the year 2010 – 11.