AGRICULTURAL PRODUCTION AND SUSTAINABILITY UNDER SETTLED AND SHIFTING CULTIVATION IN THE HILL ZONE OF ASSAM

ABSTRACT

The present study was designed to examine "Agricultural production and sustainability under settled and shifting cultivation in the hill zone of Assam". A multistage random sampling technique was used to select 100 sample farmers each under settled and shifting cultivation for the study. The selected farmers were stratified into three size groups viz., Group I (0.01-0.53 ha), Group II (0.54-1.07 ha) and Group III (1.07 ha and above) based on area under settled and shifting cultivation using the cumulative root frequency rule. Data relating to various objectives of the study were collected by personal interview for the year 1999-2000. Results revealed that the level of literacy of the sample farmers was higher under settled cultivation. The available working force was more under shifting cultivation than that of settled cultivation. Agriculture was found to be the dominant form of primary and secondary occupation in both the systems. The average area under settled cultivation was comparatively higher in settled cultivation. Rice was the major crop accounting about 64 per cent of gross cropped area under settled cultivation and the area had the cropping intensity of 117 per cent. Amongst the plantation and other crops in the homestead, pineapple was the major crop in both the systems of cultivation.

In total 10 cropping sequences were followed by the sample farmers of which the cropping sequence CS X was found to be the major cropping sequence under settled cultivation. Similarly 4 different types of crop mixtures have been in use by the sample farmers under shifting cultivation of which CM IV was the major crop mixture in terms of area coverage. The farming system FSST 17 was found to be the major farming system under settled cultivation while it was FSSH 17 farming system under shifting cultivation. The results of the evaluation of farming systems under both the systems revealed that all the farming systems were barely viable. However, FSST 2 farming system registered the highest output-input ratio in the case of settled cultivation as against FSSH 16 and FSSH 12 farming systems under shifting cultivation. In respect of diversification under settled and shifting cultivation is concerned the extent of diversification was comparatively more in smaller farms as compared to larger farms. However, the extent of diversification was comparatively more under settled cultivation as compared to shifting cultivation. Further, the results of the economic analysis of the settled and shifting cultivation revealed that higher output-input ratio (2.16) in shifting cultivation while net return was found to be higher under settled cultivation.

Regarding the standard of living of people, it was observed that the Sen's P measure of poverty was more in the case of shifting cultivation than that of settled cultivation. The person living below the poverty line was found to more in smaller farms under both the systems. The head count ratio analysis also depicted the similar picture of poverty in both the systems. Poverty when measured in terms of food expenditure, it was seen that about 46 and 49 per cent of the sample farmers lived below the poverty line.
under settled and shifting cultivation respectively. On the other hand, the percentage of people lived below the poverty line based on expenditure incurred on food, clothing and housing was found to be higher than that of poverty based on food expenditure only in both the systems. Based on this estimation also, the percentage of people who lived below the poverty line was more in the case of shifting cultivation compared to settled cultivation. Further, the standard of living of people was also measured in terms of UNDP’s Human Development Index approach. The results of HDI value showed that amongst the districts of the state of Assam, North Cachar Hill district ranked the top of the list.

Optimization of existing resources resulted in substantial increase in cropping intensity and cropped area under plantation and other crops in the homestead under the systems of settled cultivation. Cropping intensity reached to the extent of 140 per cent under settled cultivation. However, the cropped area under shifting cultivation remained unchanged in the optimal plan PI. There was scope of increasing income and employment in all the size categories of farms through optimization even with the existing resources, which indicated malallocation of resources by the sample farmers in the existing systems.

The income and employment potentialities in both the systems of cultivation further increased over the optimal plan PI through optimization with the condition of relaxation of capital and labour supply in the optimal plan PI. This indicated the necessity of additional capital requirement of the farmers to allocate the existing resources optimally.

Food balance sheet was prepared for all the size group of farms under all the situations considering the normative requirement norms of per capita per day availability basis. The present demand for cereals was fully satisfied in all the optimal plans in both the systems. The demand for fuel wood was also found to have been satisfied in all the optimal plans. However, the demand for oilseeds although narrowed down has yet to be fully bridged.