Chapter- I

INTRODUCTION

Land has been the scarce resource for agriculture than to secondary and tertiary sectors. As a basic input for agriculture, land occupies a pre-eminent position among all the resources required for a modern economy (Ramasamy et al, 2005). Like any other resource, land has two dimensions, viz, quality and quantity, and both of these crucial aspects are under serious threat due to the intensive and extensive use of land both for agricultural and non-agricultural purposes. The competition between agriculture and non-agriculture sectors for land is intensifying due to the increasing pressure on land for food production on one hand and housing, industrial expansion, creation of infrastructural facilities etc. on the other hand.

The unprecedented rise in human and livestock population has resulted in change in land use and intensity of land use. In fact, areas that are not strictly for crop cultivation such as degraded forest land, grazing land and other waste lands are also being brought under cultivation (Iyengar, 2003). Inspite of all this the availability of per capita land is continuously decreasing. The monoculture of crops particularly high value cash crops along with extensive unbalanced fertilizer use and high doses of plant protection measures over a period of time have seriously threatened the land quality and have led to decrease in per unit of land productivity. About 10 percent of world’s irrigated rice lands in South Asia are showing decreased productivity mainly due to intensive application of fertilizers and pesticides. The uneconomic production is also due to fragmented and
inconveniently located agricultural plots and forcing the labour to migrate to urban areas in search of productive employment. As a consequence, a significant portion of farm land gets abandoned. Due to land laws, there is unwillingness of the absentee owners (non-residents) to part away with the land. The land abandonment under these conditions accompanies perpetual loss in the productive potential of land. Although the studies have shown that at all India level the cultivated area has increased at a very marginal rate during the last three decades but during 1990s the average growth rate of cultivated area has, in fact, been negative (Chadha et al., 2003). Further the serious part is that the best cultivated land is being converted to non-agricultural uses.

There is a marginal scope to expand the land base by bringing the marginal and barren land under cultivation. It includes the unutilized or waste lands. These lands are classified into three groups on the basis of length of period for which land remains unused. These are: - a) current fallow- the land remains unused for less than one year, b) long term fallow other than current fallow – the land remains unused for one to five years and c) cultural or cultivable wasteland- when land remains unused for more than five years (Chadha, 2003). At present, 30 per cent of the total reported area of the Indian Himalayas is classified as fallow, non-cultivable and unculturable land (Anonymous, 2003).

The culturable waste land mostly includes the degraded lands (Jodha, 2000). Land degradation is a composite term; it has no single identifiable feature, but instead it describes how one or more of land resources (soil, water, vegetation, rocks, relief etc.) have changed for worse. Land degradation is generally defined as the temporary or permanent decline in the productive capacity of land (FAO). The greater the degrees of dependence on land the stronger are the perceptions of degradation. Degradation leads to
reduction in crop yields and may reduce total factor productivity by requiring the use of higher input levels to maintain yields. It may also lead to conversion of land to lower value uses and may cause temporary/ permanent abandonment of plots. Overexploitation and degradation of land has become a major threat to sustainable agricultural production. Loss and degradation of this natural resource is wide spread particularly in developing countries. In India the issue of land degradation must be taken very seriously by policy makers, as it presents the very real threat of limiting future gains in agricultural output and forest production, as well as a risk to human health (Anonymous, 2004).

The degradation of land is because of natural and/ or man made factors like overgrazing, deforestation, over cultivation of crop land etc. besides agro-climatic conditions such as rainfall, slope etc. Agricultural land system in the semi-arid tropics has been developed to meet the demands of food supply for increasing population. The cropped area has been expanded over the land where the physical conditions of cultivation might be suitable. However, in this area land is prone to degrade its productivity and the distribution of cropped area may change temporarily (Uchida, 1997). Further the low operational holding, very low productivity in cereal crops in hilly and backward areas, wide spread capital difference, unsustainable intensification in hilly areas is a major force behind farm land degradation and productivity loss (Barbier, 1998). As a result, the holdings have become uneconomical.

The land is being kept fallow and is not leased-out mainly due to restrictive tenancy laws, labour scarcity, wild animal menace, better off-farm income etc. The non-cultivation of land has caused spread of obnoxious weeds and thus degradation in the land quality. The weeds have not only affected the uncultivated lands but also the cultivated area resulting
into land degradation and fall in total productivity. Although, there is increase in production and productivity due to the use of HYVs, fertilizers etc. but not to the extent to which it should have been.

In North-Western Indian Himalayan region particularly in Himachal Pradesh, land degradation is a serious problem that threatens the sustainable development. Land degradation’s impact on productivity may affect food security in some areas both through losses in aggregate production (and thus higher prices for all consumers) and through losses in income for those who derive their livelihood from agricultural land and agricultural labour (Wiebe, 2003). In Himachal Pradesh, the proportion of current fallow, long term fallow and culturable waste land to total geographical area is 1.01, 0.24 and 2.19 per cent respectively which has been very low as compared to many other states. The percentage of net cultivated area to total geographical area is only 9.87 per cent. The per capita availability of cultivated land has also declined continuously. At the district level there has been vast variations in the distribution of different categories of land. These variations have also been changing over the period of time. This is particularly true for different types of fallow lands, non-farm uses as well as net area sown. Further, very little cropland is irrigated. Fertilizer use in general and balanced use in particular, is also sparse in comparison to plain and/or irrigated areas except for few niches where the cash crops are cultivated. To increase the crop production in the rain-fed areas, the land has been intensively utilized wherever possible. But there is a little scope for area extension which has created pressure on marginal lands and steeper slopes causing severe land degradation. It has been observed that due to migration from rural to urban areas the fallow /abundant land is increasing. This is likely to decrease the production and increase
the land degradation. There are many policy issues for promoting agricultural development in high potential areas. The land is given to landless farmers which led to increase in cultivated area. The cultivated area also increased due to shifting from orchards to crops due to climatic effect and due to encroachment by the people. But the production has not been increased accordingly. Thus there is a need to examine the extent of land degradation and the factors affecting it particularly in hilly areas along with the temporal changes in different types of waste lands at the state as well as district level. However, the aggregate data may not provide the true picture about the land use pattern. During the last 50 years, the wasteland management evolved several innovative measures, but they had mixed success. To make them more effective greater attention has to be given to clarity of their given premises; focus on decentralization devotion at the operation level (Jodha, 2000). This needs a thorough investigation through household data analysis. The themes to be investigated are to what extent the cultivated land has been left fallow? Whether these lands are being shifted to fallow land/ culturable waste? What are the factors affecting land degradation and to what extent? What is the probability of putting these lands into cultivated area?

Keeping this in view, this study was undertaken with following specific objectives.

**OBJECTIVES**

- To study the dynamics of land-use pattern at state and district level.
- To study the existing land use pattern and the determinants across agro climatic zones and farm size categories.
- To study the extent and causes of land degradation across agro-climatic zones and farm size categories.
To understand the economic and environmental implications of the existing land use pattern for rural livelihood and suggest suitable policy measures.

**PRACTICAL UTILITY**

The time is ripe to draw the attention of all stakeholders in national development to the magnitude of social costs linked to land degradation and the urgent need for policies strategies and actions to promote sustained exploitation of land resources. For sustainable development it is important to study the natural resources particularly the land for its optimum use. It is necessary to have a clear idea/concept regarding the extent and nature of land degradation in the North-Western Himalayas. The study will help the policy decision makers to know about the crop productivities, soil conservation measures adopted in different regions of the study areas so that specific emphasis can be given accordingly. Since the existing lands, in some parts of the state, have been “over-utilized” with respect to high value cash crops, which casts serious doubts on the ability of these areas to continue to meet growing needs on a sustainable basis. Many of today’s marginal lands will be required to play an increasing role in meeting the requirements of different enterprises which are comparatively advantageous to the area. The present study will provide information on land use pattern, trends in uncultivable land, fallow land etc. at the district/state level. The degradation at the micro (farmer’s) level is serious but it is not being reflected at the macro (district/state) level. The study will provide useful information on extent and quantify the causes of land degradation at the micro level in different regions of the state. This will help in formulation of desired policies to minimize the land degradation.