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Agroclimatic situation and profitability study of traditional cropping pattern in Koraput district in eastern ghat region of Odisha

B.S. NAIK[1], J.C. PAUL[2], B. PANIGRAHI[3] and B.C. SAHOO[2]

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ABSTRACT

Koraput is a backward and tribal dominant district located in the Eastern Ghats Region of Odisha. Land degradation, subsistence farming, poor crop harvest, low income from agriculture and lack of employment opportunities have resulted in to acute poverty in this region. A thorough investigation has been done to ascertain the agroclimatic situations and economics of existing cropping pattern in Koraput district. The total cultivable land, forest area, and barren & unculturable area of district is about 34.5, 21 and 24% of its geographical area respectively. Gross cropped area is 372.78 thousand ha and cropping intensity is about 139%. The climatic situation is congenial for crop growth with temperature varying from 12° C to 38° C and annual rainfall of 1567 mm occurs in 83.9 rainy days. Majority of farmers (78.5%) of the district come under marginal and small category with average per capita land holding size of 1.53 ha. Present study reveals that major cropping pattern (Paddy: 114.28 thousand ha, Finger millet: 73.02 thousand ha, Niger: 38.14 thousand ha, Maize: 18.85 thousand ha and Pigeon pea: 5.45 thousand ha) is not at all economic due to lower net returns and benefit cost ratio (BCR). Higher net returns are obtained from ginger cultivation (Rs 1,47,500) followed by sweet potato (Rs 1,02,125), vegetables-*rabi* (Rs 1,02,000), vegetables-*kharif* (Rs 88,000), pigeon pea (Rs 31000), horse gram (Rs 20,700) and green gram (Rs 10,800). Higher BCR is found in case of sweet potato (4.93) followed by horse gram (4.91), pigeon pea (3.58), vegetables-*rabi* (2.76), vegetables-*kharif* (2.69), green gram (2.60), ginger (1.88), black gram (1.72), field pea (1.63) and niger (1.54). In order to get maximum returns, crops having higher net returns and BCRs to be allocated more area. Therefore, limited area should be put under paddy, finger millet, niger and maize to meet the minimum food requirement of the district, and surplus area to be used for growing crops like ginger, sweet potato, vegetables, pigeon pea, turmeric, horse gram and mung (green gram) having higher BCRs and net returns to make the agriculture profitable and sustainable.

Key words: Eastern Ghat region, land degradation, subsistence farming, cropping pattern, net return, benefit cost ratio (BCR)

INTRODUCTION

Eastern Ghats covering an area of 19.8 M ha spread over 4 states of India *i.e.*, Tamil Nadu, Karnataka, Andhra Pradesh and Odisha. Out of it, the Eastern Ghats region of Odisha alone comprises 4.87 m ha area spread over its 10 districts (Sikka *et al.*, 2000, Dass *et al.*, 2009). Land degradation, subsistence farming with poor crop harvest, low input uses and lack of employment opportunities have resulted in to poverty in Eastern Ghats of Odisha (Dass *et al.*, 2009). In addition, the rising population, limited land for agriculture and more food demand in the region have led to the extension of cultivation on steep slopes vulnerable to erosion. The backward and tribal dominant Koraput district of Odisha falls under this region and is a true representative of Easten Ghats (Sudhishri *et al.*, 2006). Shifting cultivation is a most acute problem responsible for land degradation and is prevalent among tribals in Koraput district of Odisha (Naik *et al.*, 2013). This region is endowed with potentially rich natural resources but subjected to various inherent problems like undulating topography, intense rainfall, severe soil erosion, low fertility of

[1]Scientist-SG (SWC Engg.), CSWCRTI, Research Centre, Post Box No.12, Sunabeda-763002, Dist. Koraput (Odisha); [2]Associate Professor and [3]Professor, Department of Soil and Water Conservation Engineering, College of Agricultural Engineering and Technology, OUAT, Bhubaneswar-751003, Odisha; Email: naikbsn74@rediffmail.com