

Soil and water conservation in ravinous watersheds

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Ravines are a system of gullies created by water from top land to the deep rivers below and running more or less parallel to each other. Gullies or ravines are nature's waterways having a distinct watershed consisting of gently sloping table lands, the steeply sloping peripheral lands and the ravinous land proper at the confluence with the river. Since the formation and development of ravines are due to soil erosion, the remedy lies in adopting comprehensive soil conservation measures on a watershed basis. This would control and stabilize the growth of fast spreading ravines and consequently help in reclaiming the ravine land for gainful utilization.

Key words: Integrated farming system, Ravines, Watersheds

UTTAR Pradesh has taken the lead role in reclamation of ravine lands starting from 1884 but most of the project activities gradually approached towards the requirement of reclamation based on integrated farming system approach on watershed basis. Some projects have resulted in cumulative gain in terms of area reclaimed, people benefited and knowledge gained which can be fruitfully utilized for future ravine reclamation planning. However, not much benefit could be derived from the earlier projects due to failure of stable use of reclaimed land for productive purposes. Still about 75% of the ravine land needs to be effectively reclaimed for productive use of these lands. There is need to identify the gaps and suggest approaches and components for effective reclamation of ravine lands on watershed basis. The reclamation should aim for improvement of socio-economic conditions of ravine areas indicating the scope of providing sustainable livelihood to the people of that area. The region has potential for diversified crops including highly remunerative medicinal and aromatic

crops. Introduction of these crops calls for an integrated bio-industrial approach for locally processing the produce that would provide additional income to farmers and generate employment.

Extent and types of ravines in India

In India about 3.97 million ha area has been estimated to be affected by ravines (Table 1).

Problem of ravines

Ravines are affected by severe soil erosion, and in most of cases 'A' horizon of soil have been lost to such

an extent that the soil fertility has become very poor. The development of water resources – surface and ground water, is inadequate with the result that the rain-fed farming is only practice of cultivation. Bio-diversity is poor due to soil erosion, water scarcity, scrub forests and scanty vegetation. The inaccessibility and remote situations in ravines have created law and order problem to the state. Blue bulls are a menace to crops and vegetation

Approach to ravine reclamation

The main objective of the ravines development is to arrest further growth and reclaim the valuable ravine lands and put them under productive purposes by adopting appropriate farming systems approach depending upon land capability and the practical considerations of social and economic conditions. This will add to the availability of more land for the people. The sustainability of the objective outcomes will depend on the peoples' awareness, participation, owning, operating and maintaining the project from its inception to operation.

Table 1. State-wise ravine land distribution

State	Area (in million ha)
Uttar Pradesh	1.23
Madhya Pradesh	0.683
Rajasthan	0.452
Gujarat	0.400
Maharashtra	0.020
Punjab	0.120
Bihar	0.600
Tamilnadu	0.060
West Bengal	0.104
Odisha	0.113
Himalaya foot hills (including Himachal Pradesh and Assam)	0.193
Total	3.975

