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Afforestation and Economic Upgradation of Wastelands Reclamation in Ganga-Yamuna Doab

B.P. Singh and Manju Yadav
Department of Geography, S.V. (P.G.) College, Aligarh (U.P.)
Deptt. of B.Ed., T.R. Kenya Degree College,, Aligarh-202001 (U.P.)

ABSTRACT

Afforestation of wasteland reclamation in Ganga-Yamuna doab are as irregular small patches. They occupy the Aligarh, Etah, Kanpur, Fatehpur, Allahabad district. Concentration of salts is a serious limitation in use of these lands. Ground water is close to surface of these salt affected lands so that the danger of desalinization always prevails.

Owing to the unfavorable physical and chemical properties, the salt affected lands are not able to sustain satisfactory growth of agriculture crops unless suitable reclamation and management practices are adopted. Certain tree species are know to thrive well naturally under the adverse condition of salt affected lands and therefore at least some areas of salt affected lands can be put under tree growth. For achieving successful tree growth on these problematic soils it is of prime importance to grow salt tolerant species by using suitable techniques. The selected species for afforestation should inherently be capable of producing the prolific root system and should thrive well under conditions of dries climate with low moisture supply. The pressure of an in deviated thick kankar pan in the sub-soil at a shallow depth presents a serious physical hindrance to the root development of the trees, and they dye out when the roots struck the kankar pan.

Keywords: afforestation, wasteland reclamation, Ganga, UP

INTRODUCTION

The concept of wasteland cannot be a new one. The problem of wasteland is bound to have a long history, and it can be assumed that it was initiated by the ape-man himself. It has been hypothesized that in the initial stages, the ape-man survived on nature and lived as a barbarian. But a time came when he realized that pouncing upon an animal and catching it was not the easiest way of getting it. By throwing a stone at the animal, and disabling it, made it possible for him to catch the animal more easily for his food. In this way, he started developing technology. This historical incident must have disturbed nature, and initiated the formation of wasteland in time.

Soon the Apeman would have started innovating the sharp stone for hunting purpose. In such a technology only a few of them would be skilled in killing the animal. In this way, they would have disturbed nature, resulting in desertification and ecological imbalance and generation of wasteland depending on:

i) Place of collecting the stone.
ii) Place of sharpening the stone
iii) Place of hunting
iv) Place where they killed the animal and the stone was thrown.

It was has been assumed that the development of wasteland increased with the development of technology. If an Apeman could survived without technology, then any increase of the wasteland would have been avoided.

In written history, early reference to wasteland, or the land which was not serving any purpose, appear in the 4th century B.C during the Kalinga war. This history shows that India at that time had an Arya-Anarya system which eater gave way to a “might is-right” attitude of the upper

classes. The good quality lands were in the hands of the upper castes in the fertile plains areas, while the Sudras (low castes people) were thrown to the hilly areas which were demarcated as wasteland (land not available for good agriculture). Emperor Ashoka differentiated between fertile and wasteland, for proper evolution of land. Ambassador Megasthenes has also mentioned wasteland as neglected land. In the Moghul period, Babar used the term wasteland in different ways, for denoting neglected loud, and for purpose of fixing the loud value and revenue-collection. Later on, Akbar the great, during his rule, fixed the value of land in Annas for the purpose of revenue collection from Talukdars. For poor quality land he charged very nominal land revenue, but for good quality land, according to its productivity, he levied 14 annas to 16 annas. For the neglected lands no revenue was charged at all.

The British also continued the same practice. They did not charge any kind of land revenue for wastelands or the lands which failed to yield a positive return to the farmer.

Afforestation and Economic Up gradation of Wastelands:

Some suitable trees species for the afforestation of these lands are *Tamarix, articulata, Prosopis, Juliflora, Salvadora, Olicoides, Salvodora persica,* etc. Some grasses for plantation on these wasteland *are Sporobolus halvalus*, Karnal grass, para-grass.

The successful tree planting in salt affected soils have to be such that the rain water is utilized to the maximum possible extant and the salt concentration in active root zones of young plants is kept at a minimum level through leaching following are some principal requisites of good soil working.

i) Production of loose soil amenable to rapid proliferation of the root system.
ii) Proper micro relief of soil mass to facilitate leaching of soluble salts.
iii) The soil mass should be retentive of maximum amount of moisture particularly during period of stress.
iv) Maintenance of fertility status of soil through fertilizer and organic manure.

Pit or anger hole planting is alternatives of tree planting in trench or ridge furrow system. Pits of the size of 0.6 m^3 to 1 m^3 are dug and filled with a mixture of normal soil with F.Y.M 25 kg / pit. Gypsum 3.6 kg / pit can also be added. Auger hole of 15cm diameter and 150cm depth filed with mixture of original soil, 2 kg gypsum and 7 to 8 kg F.Y.M are helpful in improving the root environment in a limited zone and up to the concretion layers which helps in easily penetration of roots. During the established period of grown species regular watering of these plants is very necessary because of the low and erratic Rain full.

Wasteland Reclamation in Ganga-Yamuna Doab:

There are many reclamation measure that been adopted in different parts of the world. In India reclamation of wasteland has been practiced since ages, though not on scientific lines. Some of the methods were successful and later on proved to be technically sound; some others turned out to be mere temporary expedients and the land reverted to the original condition sooner or later; and yet many others failed to show any response from the land so treated. The methods adopted for reclamation should take into account the causes which led to the development of the deteriorating soil condition.

According to Kelley, for any reclamation technique to be of lasting nature, the following three essential requirements have to be met with

i) Salts or alkali must be completely removed from the root zone.
ii) The land must be prevented from reverting to original condition.
iii) The repair of the damage already done to the soil should not be substantial.

In any scheme of reclamation therefore, the economy and the time involved are the additional factor to be considered. Usually the chapter amendments are slower in reaction and produced uneconomic returns in the beginning. Further certain ameliorating agents may be available as surplus farm commodity or industrial waste in an area; but may prove prohibitive or may be available with difficulty at another place.

In practice also the Ganga-Yamuna doab reclamation procedures for such deteriorated soils have to be properly judge in the light of the above basic condition

Table 1: Average soil condition of the experimental plot

Depth of soil	Salt (%)	pH	Ece (mmhos/cm
0-15 cms	32.6	802	36.9
15-30 cms	32.9	7.8	6.7
30-45 cms	36.6	7.7	2.7

The soil was sandy loam in nature with high salinity at the top 0-15 cms layer (36.9 mmhos/cm). The lower layers had lower salt content. The depth of ground water table fluctuated between 45 cms to 90cms from the surface during the growing season.

The plots receiving flushing treatments both with and without fertilizers recorded negligible mortality of planted seedlings, more number of tiller per plant, better height with dark green leaves.

CONCLUSION

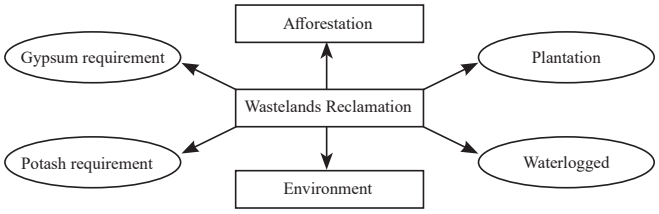
Attempts at reclamation of the uncultivated lands, in Ganga-Yamuna doab, can be described as important both from the point of view of the development of national wealth by increasing agriculture production and by increasing cultivated area. According to the land utilization statistics of Ganga-Yamuna doab (1970) out of the total area of 15,9046 hectares; 4,9875 hectares is under user land with rah (saline-alkali soils); 2,035 hectares is under banjar and 2,755 hectares is covered by old follows. This means that 15.2% of the land is lying uncultivated.

These lands require different types of remedial measure and these the cost of reclaiming them also varies. Also technical research and improvements have now reduced the necessity of allowing lands to lie fallow-a practice which was resorted to in order that the exhausted sol may recuperate half the area of the land now shown as fallow; can be kept permanently under cultivation.

In spite of all the pressure of population, relatively small extension of cultivation on these uncultivated lands has taken place during the last Forty years. This is partly due to the fact that exploitation of such uncultivated lands has not been within the resources of the ordinary cultivar, but perhaps, much due to the fact that such lands are inferior in quality and otherwise unsuitable.

Reclamation of any considered part of these areas is a time consuming and a costly project. Any reclamation which accentuates soil erosion cannot be a desirable from the long-term point of view, although it will give addition food production which is very necessary for a country like ours.

The wastelands of Ganga-Yamuna doab are of various types viz. *usar* lands with *reh* deposit (saline soil), *usar* lands (saline-alkali and alkaline soils), waterlogged lands, banjar lands and lands infested with a thick growth of *kans* and *baisuri.* Different types of wastelands pose different types of management and reclamation, hence the cost of reclaiming them also varies.



Development of Wastelands

REFERENCES:

Kaul, K.N (2011) "Scheme for Reclamation and Development of User lands Report", Indian Council of Agriculture Research Scheme.

Shafi., M, (1968) "The Problems of Wastelands in India"

Uppal., H.L. (1991) "Reclaiming Alkali Eastelands ICAR, Bulletin, New Delhi.

Uppal., H.L. (2001) "Reclamation of Saline and Alkali Lands", New Delhi

Yadav, J.S.P, (1991). "Wastelands; Characteristic and Exploitation in Forestry,