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Wasteland Development in India – Present Status and Future Planning

S. Bijayalakshmi Devi and TH Anupama Devi
M.Sc (Agri.), Department of Agronomy, College of Agriculture, Central Agricultural University, Imphal, Manipur

SUMMARY

Wastelands are economically unproductive, ecologically unsuitable and subject to environmental deterioration. India shares 16% of the world population, while its land is only 2% of the geographical area of the world. Naturally, the pressure on the land is often beyond its carrying capacity. Therefore, the productive lands; especially the Indian farmlands are in the constant process of various degrees of degradation and are fast running into wastelands. At present, approximately 68.35 million hectare area of land is lying as wastelands in India. Wastelands can be brought under vegetation with reasonable effort. Improper land use practices may also deteriorate the existing valuable land resources. A number of variations in climate, altitude, geological formation and landscape pattern may be observed in any wasteland. There is a need for wasteland reclamation as it provides a source of income for rural people, maintains ecological balance, ensures a constant supply of fuel, fodder and timber for local use, makes soil fertile by preventing soil erosion and conserving moisture.

INTRODUCTION

India occupies 2.4 percent of the world's geographical area but supports over 16 percent of the world's population. It has 0.5 percent of the world's grazing area but has over 18 percent of world's cattle population. India has shown an alarming rate of decline in the man- land ratio from 1.25 hectare per capita in1921 to 0.48 hectare per capita in 1986 to 0.31 hectare per capita in 2011. The ever increasing population places enormous demands on land resources. Land, central to all the primary production systems has suffered from different types of degradation due to different biotic and abiotic pressures. India's total land area is around 329 million hectares. Of this, the government classifies 90 million hectares as "wastelands"- that is non-productive land; a definition that militates against the fact that 40 percent of our 1.3 billion population depends on this land for livelihood. Day by day our land is undergoing degradation or dessertication which results due to increased in demands of resources and needs of increasing population. When it is good, a land can be used for several activities including cultivation, construction, grazing and for all other development works.

Wasteland

The National Wasteland Development Board (NWDB) has defined wasteland as "degraded land which can be brought under vegetative cover with reasonable effort and which is currently underutilized and land which is deteriorating for lack of appropriate water and soil management or on account of natural causes ". National wastelands development board classifies wastelands into two categories - Cultivable wastelands and Uncultivable wastelands. Uncultivable wastelands which cannot be used for vegetation are classified as- Brown rocky ; Steep sloppy areas ; Snow covered or glacier lands.

Causes of Wasteland Formation

a) Deforestation
b) Over-cultivation
c) Over grazing
d) Unskilled irrigation
e) Improper developmental activities such as dumping of wastes, mine wastes

These have drastically decreased the per capita cultivable land besides ecological imbalances. According to a report of the FAO, the global land area without major soil fertility constraints is about 31.8 million sq.km and the total potential arable land is about 41.4 million sq.km.

Why need for reclamation ?

- Provides a source of income for the rural poor.

- Ensures a constant supply of fuel, fodder and timber for local use.
- Makes the soil fertile by preventing soil erosion and conserving moisture.
- Helps maintain an ecological balance in the area.
- The increasing forest cover helps in maintaining local climatic conditions

Strategies to Reclaimed Wastelands

A number of variations in climate, altitude, geological formation and landscape pattern may be observed in any wasteland. Great variability in land use and vegetation pattern and cultural practices is also evident. Keeping these in view, approaches to development planning of the various categories of wastelands are briefly discussed.

1. Strategies to check erosion by water

A) Cultural practices:

- Planting erosion-resistant crops like legumes and grasses
- Adopting suitable cropping system
- Use of mulches
- Contour cultivation
- Graded trenching

B) Mechanical measures:

- Bunding
- Terracing

2. Strategies to check erosion by wind

- Afforestation
- Windbreaks and shelter belts
- Strip Cropping
- Mulching

3. Strategies to check Erosion by wind (shifting of dunes) –

Shifting of dunes can be checked through - Protection against biotic interference; treatment of sand by fixing mulch barriers in parallel strips or in a chess-board design from the crest down to the heel of the dune against the direction of the wind to protect the seedlings from burial or exposure by the blowing of sand.

4. Strategies for shifting cultivated area –

Shifting cultivated areas are common among the tribal and hilly areas in north eastern parts of India.

- Suitable land for intensive cultivation have to be identified.
- Careful soil and water conservation practices have to be formulated.
- Training of the farmers in the scientific farming systems and management of resources is necessary.

5. Agronomic strategies for wasteland reclamation –

a) Forage and fuel production: - High-yielding grasses, legumes and trees for forage and fuel purposes
b) Pasture Management: - Suitable for fairly leveled lands having a slope of less than 6 meter. Grasses and legumes are grow in pure or mixed stand; Upgrading the soil through fertilizer application.
c) Silvi -pasture Management (Tree+ pasture/ animal)
d) Alley cropping

Future Planning for Wasteland Reclamation:

- People's involvement can be mobilized by understanding the community structure and their needs.
- Sufficient funds should be earmarked and available to different projects.
- Banks like NABARD should establish a separate line of credit for afforestation projects.

- Suitable action plan should be taken up for integrated development of wastelands for ecological restoration and to meet essential needs of fuel wood, fodder and timber for local community.
- All development projects (mining, road, irrigation and power etc.) which by their very nature either create wastelands or degraded local environment should earmark a budget provision in the project estimates for reclaiming such wastelands or regenerating natural vegetation so damaged.
- A massive campaign for increasing the land under productive use for fuel and fodder species needs to be launched.
- Voluntary efforts by farmers'cooperatives, NGO`s and organizations should be fully recognized and assisted.

CONCLUSION

Land is a finite resource. Expanding human requirements place an ever increasing pressure on the use of lands. Wastelands too have the biotic and abiotic factors helpful for sustainable development. So by adopting appropriate conservation practices, wastelands can also be converted for human use. Improper land use practices may also deteriorate the existing valuable land resources. Now is the high time to take up future planning for its reclamation and development as the land degradation problem is becoming a challenge for the natural ecosystems and Indian economy. Area-wise suitable strategies and planning is required to save land against further degradation and also to restore our degraded land .

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