AgriCos e-Newsletter
ISSN: 2582-7049
AgriCos e-Newsletter
Open Access Multidisciplinary Monthly Online Magazine
Volume: 03 Issue: 07 July 2022 Article No: 05

Soil Degradation in Jammu and Kashmir

Rehana Rasool[1], Shaista Nazir[1], Shazia Ramzan[2], Bhinish Shakeel[3], Shahnaz Mufti[4], Shameem Shafi[5], Sabia Akhter[6], Ambreen Nabi[7], Vaseem Yousuf[8], Rakhshanda[9], Khursheed Zargar[10] and Nadeem Mir[11]

[1]Division of Soil Science, Shere-e-Kashmir University of Agricultural Sciences and Technology of Kashmir
[2]SMS Soil science KVK Budgam
[3]SMS Home science KVK Budgam
[4]Division of Vegetable Science, Shere-e-Kashmir University of Agricultural Sciences and Technology of Kashmir
[5]Division of Soil Science, Shere-e-Kashmir University of Agricultural Sciences and Technology of Kashmir
[6]SMS Agronomy KVK Budgam
[7]SMS Vegetable science KVK Budgam
[8]SMS Plant pathology KVK Budgam
[9]Division of Vegetable Science, Wadura Sopore
[10]SMS Horticulture KVK Budgam
[11]SMS Animal science KVK Budgam

SUMMARY

The state of Jammu and Kashmir because of its fragile mountainous terrain and having shallow soil is subject to various types of soil degradation. Soil degradation prevalent in the state and its ever increasing intensity are mainly due to various factors such as; deforestation, over exploitation of pasture lands and other natural resources, faulty agricultural/ horticultural practices and raising of developmental infrastructure. An appropriate strategies is needed to address soil conservation and management by adopting several soil and water conservation techniques and by creating educational awareness among the stake holders for posterity. The vision of conserving soil and water for sustainable management of forests and agriculture resources and to save water bodies from siltation and degeneration also needs to be addressed seriously.

INTRODUCTION

Soil is one of the important natural resources of the world. It plays an important role in feeding the population. In addition, it also plays a major role in recycling of air, water, nutrients and maintaining a number of natural cycles. We simply cannot imagine life without the soil. A healthy soil will be rich in biodiversity and may include a variety of earthworms, 20-30 types of small arachnids, 50-100 species of insects, hundreds of different fungi and thousands of bacteria species. But from past a few decades the soils has degraded and has come under threat. Soil degradation means that the quality of soil declines and its capacity to support animals and plants diminishes. There is a lot of diversity in the soils of Jammu and Kashmir and every soil has its own threats and problems. In hill and mountainous soils problems such as water scarcity, leaching, erosion and avalanches are prevalent. Salinity and Alkalinity is a problem in soils around canals in the alluvial soils. Karewas are an important soil type confined to Pampore, Kistwar and Bhaderwah areas of J & K. Soil erosion and depleting soil fertility are the major threats of these soils.

REVIEW

Soil can lose certain physical, chemical or biological qualities that underpin the web of life within it. Soil erosion, salinization and desertification is affecting millions of hectares of soil and is posing a great threat to the soil. This article will high lighten the soil degradation in Jammu and Kashmir UT along with the solutions to reclaim it, Mahapatra et al., (2000) study reveals that soil degradation problems are mainly due to water erosion, wind erosion and partly due to flooding and water logging. About 31 per cent area of the state is under various forms of degradation and about 57 per cent is unfit for agriculture due to rock outcrops, ice caps and glaciers. The rest of the area (about 12 per cent) constitutes arable lands, stable under natural conditions and through human interventions. The ameliorative measures to arrest further degradation of soils have been suggested. Degradation in Jammu province is largely because of its endowments of barren land and culturable wastelands. However in Kashmir it is mainly because of marshy or waterlogged land and fallows other than current fallows.

Soil Erosion: From the lower grades, we have learnt that the soil erosion is the removal of the top most layer of soil from one place to another. Due to soil erosion, not only the soil is lost but in addition to it there is removal of nutrients which decrease the soil fertility. The main cause of soil erosion is deforestation. According to Food and Agriculture Organization and ITPS 2015, the equivalent of one soccer pitch of soil is eroded every 5 seconds. Soil erosion can cause 50% loss in crop yields. Therefore, the situation is alarming. The National Bureau of Soil Survey and Land Use Planning (NBSS & LUP) estimates that soil erosion extends to about 119.2 million hectare area in India. According to a research conducted by S. K. Mahapatra (2000) on the study of soil degradation status of J&K, it was found that the soil degradation problems in the J & K are mainly due to water erosion, wind erosion. Therefore, soil erosion is a major threat to the soils of J&K.

Salt Affected Soils: It is the accumulation of too many soluble salts in the soils. According to Gupta and Abrol (1990) around 952.2 million hectare of land in the world is salt-affected. Saline soils constitute nearly 7% of the total area or nearly 33% of the potential agricultural land area of the world. Around 6.727 million hectare area is salt-affected in India which is around 2.1% of the geographical area of which 2.956 million hectare is saline and 3.77 million hectare is sodic. According to researches, saline soils are a bigger problem in Jammu division. According to Jalali and Arora (2013) around 25,000 ha of land which is salt affected or waterlogged is confined to blocks of Gho, Sajadpur, Samba and Rajpura.

Reclamation of Degraded Soils:

Healthy soils are the prerequisite for good crop yield. Therefore, maintaining the soil health is necessary to sustain life on earth. To prevent degradation of soils we can take certain steps. Monoculture which means growing of one crop for many year should be avoided and crop rotation should be done on fields. Monocultures can be extremely damaging to the soil because growing one type of plant in one area of soil means the same nutrients are continuously being absorbed, which eventually leads to depletion of that nutrient. Minimizing the amount of fertilizers, pesticides, fungicides can also make our soils healthy. Adoption of Integrated Nutrient Management which means balanced and integrated use of both organic and inorganic fertilizers sources of fertilizers together in combinations is also effective in maintaining soil fertility and health. According to Rattan Lal (2015), three basic strategies of restoring soil quality are, Minimizing losses from the pedosphere, creating a positive soil Carbon Budget and strengthening the water and elemental cycling. He further stated that improving species, diversity of soil flora and fauna is essential to restore soil quality and reducing risks of soil degradation.

CONCLUSION

Investment in agricultural production, land development and irrigation can restore degraded lands in J & K and niche based specialization should be adopted to enhance soil properties and prevent land degradation. Integrated watershed development, land reforms and adopting appropriate planning and management practices of land use would control the land degradation.

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