STEP OF EROSION CONTROL IN AGRICULTURE: AN OVERVIEW

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INTRODUCTION:

Erosion Control is the Practice of preventing or controlling wind or water erosion in agriculture, land development, coastal areas, river banks and construction. Effective erosion control handle surface runoff and are important techniques in preventing water pollution, soil loss, wildlife habit loss and human property loss. Healthy soil is the basis for healthy habitats for all living beings. They provide food, clean water, raw materials and various ecosystem services. But salinity and loss of biodiversity are just some of the threats that soils are currently facing. Soil erosion affects soil health and productivity by removing soil. It decreases agricultural, degrades ecosystem functions and amplifies hydro-geological risk, such as landsides or floods. "Soil erosion can also cause significant losses in biodiversity, damage to urban and rural infrastructure and, in severe cases, lead to displacement of human populations".

A. METHODS OF EROSION CONTROL:

1. Planting Vegetation

This method involves planting crops with deep roots that can hold the soil in place. This is particularly important in areas that are more susceptible to erosion such as streams, hillside and along rivers. Vegetative barriers impede the flow of water due to their thick stem that is densely concentrated. These barriers spread the water runoff to slowly flow through them without erosion. Plants that are suitable for erosion control are deep-rooted native plants, such as wildflower, woody perennials, and native prairie grasses.

2. Contour Farming

Preparing and cultivating on slopes can be challenging and can easily lead to soil erosion. However, contour lines can salvage the situation. This farming system serves to conserve rain water and reduce soil loss from surface erosion.

3. Applying Mulches

In this method, mulch materials are put down to cover the bare soil and keep it from being washed away. Mulching is essentially used to offer erosion control in the stages of growing seedling or shrubs.

4. Avoiding overgrazing

Grazing too many animals in the same place over a long period of time can contribute to a long poor stand of vegetation in that condition level soils exposed to the erosive force of water runoff.

5. Reforestation

Reforestation of a degraded ecosystem and protection existing ones ensure sufficient soil erosion control

6. Applying Terra seeding Method

This is an innovative method of spreading mixed composted soil with seed in a large complex area. Terra seeding allows a complete cover of the place with the seed mixed, you have little chance for the seed disruption from ground contact.

7. Use Plastic Sheeting

This practice involves the placement of plastic covers, geotextiles, erosion control blanket, and mats to keep soil from erosion by water or wind. They primarily help newly planted crops to take root in slopes with flowing water.

B. SCHEME BY GOVERNMENT:

Soil and water conservation in the catchment of river Kopili:

The development is implementing a scheme known as river valley project and flood prone river (RVP and FPR) of river kopili under the micromanagement mode. The state agriculture department is the nodal department of this centrally sponsored programme of the ministry of agriculture, Department of Agriculture and co-operation(Natural Resource Management Division).

C. ENVIRONMENTAL BENEFITS OF EROSION CONTROL

1. Reducing Runoff Velocity

When sites use erosion control blanket, the vegetative layers absorb the energy of the rain as it hits them. By doing so, they reduce the velocity of the subsequent runoff. The slower, less forceful runoff carries away only a small amount of sediment.

2. Maintaining Soil Integrity

Rolled erosion control products (RECPs) like blankets also act as fillers to trap sediments. The blanket thus helps maintain the integrity and absorptive capacity of the soil.

3. Controlling Pollutants

Often, when sediments wash away in runoff, they carry chemical residues with them. The soil from a construction site, for instance, might contain paint, solvent oe adhesive residues. Using erosion control blankets decreases these harmful effects.

4. Maintaining Habitats And Biodiversity

As erosion sweeps more and more sediment away, it can erode significant chunks of land over time, causing habitat loss for the wildlife species that live there. When these species die-off or must leave in search of new homes, the area's biodiversity diminishes.

D. CONCLUSION

- Ecological engineering techniques provide a great potential for a more sustainable soil erosion control in urban areas.
- Specific site feasibility analysis is imperative for strategic planning and project execution.
- Engineers and policy makers must consider technical, financial and environment cost-benefit analysis in making choices.