



Addressing soil loss

Posted at: 05/09/2018

Highlights

- Floods often wash away rich, weathered soil. Rehabilitation programmes must consider this loss
- As the rains abate in Kerala and parts of Kodagu district in Karnataka, the loss of lives and the devastation of infrastructure and crops is apparent.
- However, as rebuilding is planned, what is often ignored is the soil that has been washed away.
- While roads and houses will be rebuilt, and crop losses compensated partially through insurance, the gradual loss of soil productivity can have a lasting impact on the local economy.

Soil degradation due to flooding is a serious concern.

- A 2014 review of soil degradation in India by multiple institutions shows that an estimated 14 million hectares suffer soil degradation due to flooding annually.
- The impact of floods on soil was also studied in detail following the 2009 floods in North Karnataka, which killed over 170 people and caused an estimated loss of over Rs.16,500 crore.
- Researchers from the National Bureau of Soil Survey and Land Use Planning (NBSS&LUP) and other institutes estimate that 13 flood-hit districts lost 287 million tonnes of top soil and soil nutrients across 10.75 million hectares of farmland.
- Under market prices, the replacement of nutrients such as nitrates, phosphates and iron would have cost Rs.1,625 crore, while another Rs.853 crore would have been spent on replenishing organic material lost.
- To recover and replace would take a “considerable” amount of time, and a steadfast programme of recovery, they noted.
- Nine years later, there is no comprehensive scheme for recovery, and the effect of the floods is still visible on the ground.
- A soil profile of a few affected districts, done under the State’s integrated watershed scheme, shows large swathes of these areas having “shallow or very shallow” soil depth, organic carbon deficiency, and low productivity of land.

Positive effects

- Not all floods are bad for the soil, as seen in the oft-occurring floods along the banks of the Ganga, Kosi, Brahmaputra and other rivers taking birth in the Himalayas.
- There, the gushing river emanating from the mountains carries with it loosened alluvial soil, and not only washes over farmlands, but also replenishes flood plains with fertile soil.

However, in south and central India, floods wash away rich, weathered soil, which are deposited in reservoirs or as sand bars along the river bed or in the sea. Any rehabilitation programme must consider this lost soil.

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