

## Crop Management in Sand casted Kosi flood affected area

Recent flood of Kosi river resulted in sand casting and soil erosion in four districts of Bihar to variable extent. The flash flood disturbed the landscapes severely. Out of 2.47 lakh ha cultivable land affected by flood, around 1.2 lakh ha is rendered due to heavy sand cast and suffered serious erosion of soil. The Kosi region has high medium and low land physiography in the same village and the sand deposition is found to variable soil depths (15 to 60 cm) as reported by the farmers. Water receding trend is very slow due to continuous flow from uncontrolled source of Kosi river. The correct picture can be drawn after receding of water. In normal controlled condition of flow from source, the fast receding is expected after 15<sup>th</sup> October and land may be available for physical observation by November. If river flow is not controlled, this process may be delayed. Under prevailing condition major cultivable area will be available by January for land treatment and crop cultivation. Deposition of fine silt is also reported in some area which may be boon for the agricultural cultivation and production.

### Land treatment of sand-casted soils

- Lands, where sand-casting is upto 15 cm, can be treated though mechanical mixing of subsoil/addition of clay from outside.
- Lands where sand-casting is more than 15 to 60 cm, scrapping of sand from the soil surface will be needed to bring it in cultivable condition
- Lands which are converted into light textured soil due to deposition of sand/erosion of soil may be ameliorated through application of organic matter/compost/clay soil etc.
- Eroded soil needs proper rehabilitation

### Limitations

- In mechanical mixing, the irrigation requirement of crop will be increased. Area is mostly under rice cultivation. Non-rice crop in kharif will not survive due to periodical submergence owing to lowland physiography. The rice crop will require more water and cost of cultivation will be increased.
- Disposal of scrapped sand is a key issue for storing or transportation to long distance.
- Identification of individual field boundary is difficult due to erosion and sand casting. This may create social conflicts.

### Crop management

- In sand casted soil (<15 cm) vegetables like Palak, Fenugreek (methi), radish, bottle gourd, pumpkin, sponge gourd, bitter gourd can be grown.
- Maize, oil seeds and pulses can be grown in such lands where there is no water logging during kharif season.
- Barley, winter maize, lentil, wheat and mustard can be grown in rabi season.
- More emphasis will be required on water management through low cost technology including use of ground water by bamboo boring.
- Rice, winter maize and wheat cultivation in sand-casted soil will require high irrigation.