Crop Residue Management

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***Source**: PIB and National Policy for Management of Crop Residue*

Burning of crop residue in the states like Punjab, Haryana, Uttar Pradesh and Rajasthan also contributes in increasing environmental pollution levels. National Green Tribunal in 2017 directed the Delhi government and these four northern states to take strict measures to deal with this serious biennial threat.

Key initiatives

- Agriculture Ministry issued an advisory to the state governments to create awareness among the farmers about the harmful effect of straw burning.
- Facilitate farmers residue management machines and equipment such as Zero Till Seed Drill, Happy Seeder, Straw Baler, Rotavator, Paddy Straw Chopper/ Mulcher, Gyro Rake, Straw Reaper, Shredder, etc., to through Custom Hiring Centres or village level Farm Machinery Banks.
- The State Governments have also been directed that Rs. 4000/ Hectare shall be used from the funds available for demonstration of machines under Sub-Mission on Agricultural Mechanization for demonstration of straw management machinery at farmers' fields.
- For crop residue management, under Sub-Mission on Agriculture Mechanization, the Department of Agriculture Cooperation and Farmers Welfare have allocated funds to the four states

Adverse effects of Crop residue burning

- **Loss of nutrients:** It is estimated that the burning of one tonne of rice straw accounts for the loss of 5.5 kg Nitrogen, 2.3 kg phosphorus, 25 kg potassium and 1.2 kg

sulphur besides, organic carbon. Generally, crop residues of different crops contain 80% of Nitrogen (N), 25% of Phosphorus (P), 50% of Sulphur (S) and 20% of Potassium(K).

- **Impact on soil properties:** Heat from burning residues elevates soil temperature causing the death of beneficial soil organisms. Frequent residue burning leads to complete loss of microbial population.
- **Emission of greenhouse and other gases:** Crop residues burning is a potential source of Green House Gases (GHGs) and other chemically and radiative important trace gases and aerosols such as CH4, CO, N2O, NOX, and other hydrocarbons.

National Policy for Management of Crop Residue

Objectives

- Control of burning of crop residue to prevent environmental degradation and loss of soil nutrients and minerals by promotion of in-situ management (incorporation in soil, mulching, baling/binding for use as domestic/industrial fuel, fodder) of crop residue
- Diversified use of crop residue for various purposes like charcoal gasification, power generation, as industrial raw material for the production of bio-ethanol, packing material, paper/board/panel industry, composting and mushroom cultivation, etc.
- Capacity building and awareness about ill-effects of crop residue burning and its effective utilization and management; and
- Formulation and implementation of suitable law and legislative/policy measures to curb the burning of crop residue.

Strategy

- Promotion of technologies for optimum utilization and

in-situ management of crop residue to prevent loss of invaluable soil nutrients, minerals and improvement of general soil health

- Promotion of diversified uses of crop residue for various purposes viz. power generation, as industrial raw material for the production of bioethanol, packing material for fruits & vegetables and glassware, utilization for paper/ board/panel industry, biogas generation/composting and mushroom cultivation in Public-Private Partnership (PPP) mode
- Capacity building of various stakeholders including farmers and extension functionaries under crop development programmes and organization of field level demonstrations on the management of crop residues in all programmes/schemes
- Promotion of adaptive research for the management of crop residue and development of machineries for effective utilization of such residues; and
- Formulation and implementation of necessary policy measures for control of crop residue burning through suitable laws/ legislation/ executive orders etc.