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# Addressing Air Pollution From Crop Residue Burning

Air is the most basic necessity for the survival of humans, wildlife and nature.

India's declining air quality is an issue of national concern that calls for immediate, bold and comprehensive action. Air pollution ranks among the top five health risk factors in India, contributing to premature mortality and ill health. The need of the hour is to find win-win solutions for the environment and development so that we build a healthy and liveable India for its citizens and nature. Burning of crop residue in agricultural fields is a major source of air pollution in northwest India, where close to 23 million tonnes of rice residue is burnt annually. This contributes to nearly a quarter of Delhi's air pollution in the winter months, as estimated in a report by the Indian Institute of Technology, Kanpur (Sharma and Dikshit 2016). The good news is that eliminating this pollution source is an achievable reality and a solution already exists.

## Towards A No-Burn Agriculture Future

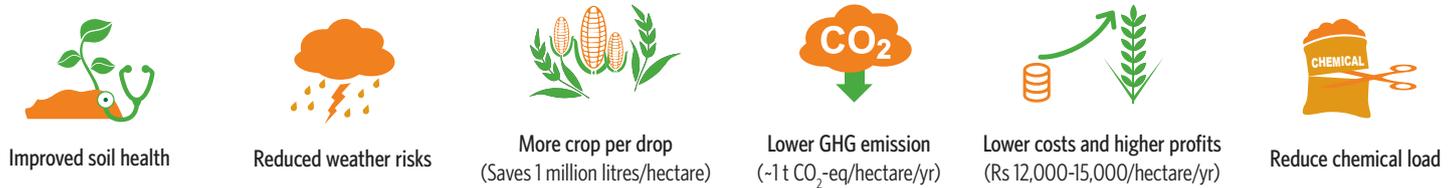
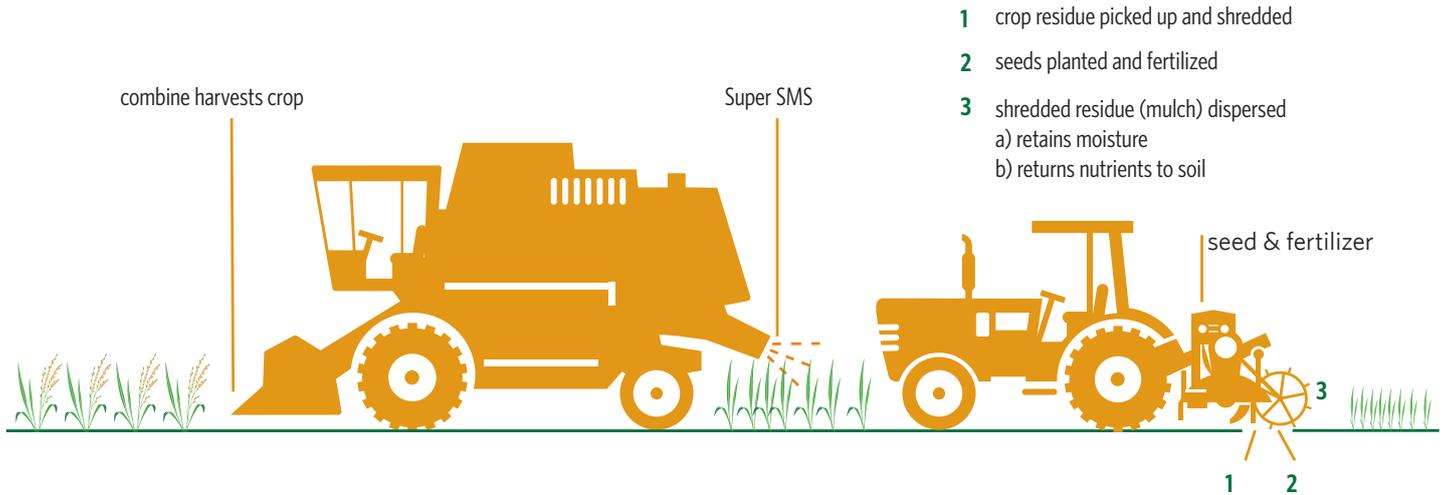
Agriculture in northwest India alone produces close to 34 million tonnes of rice residue annually, of which 23 million tonnes is disposed by burning. Based on robust evidence, the best solution to manage such large volumes across millions of hectares is to utilize the residue on the field itself. The Happy Seeder - an agricultural technology - has been identified by the National Academy of Agricultural Sciences (NAAS) and the Government of India as one of the most cost effective, innovative and scalable solutions to manage farm residue on-site. Using the machine benefits farmers and the environment as it improves soil fertility and farm yield, while reducing the use of water, fertilizer and herbicides. The Central Government announced a special financial scheme of INR 1,151 Crores as part of the 2018 Union Budget to support the Governments of Punjab, Haryana, Uttar Pradesh and NCT of Delhi in subsidising machinery for *in-situ* residue management. These states will be able to increase subsidies on Happy Seeders from 30% of its purchase price previously to 50% for individual farmers and 80% for cooperatives and farmer groups.

This initiative needs to be complemented with efforts to address behavioural barriers and information gaps to assist farmers with its adoption and use. The Nature Conservancy, The International Maize and Wheat Improvement Centre (CIMMYT), Borlaug Institute for South Asia (BISA), and the Council on Energy, Environment and Water (CEEW), have come together to advance the government's efforts to maximize Happy Seeder adoption and will work to support farmers in select villages across northwest India.

## Our Vision

India transitions to a zero-burn, conservation agriculture-based future which enables our farming sector to sustainably produce food while also ensuring clean air, healthy soils and improved water tables in the regions.

# The Happy Seeder And Its Benefits



## Our Approach

It is only through collaboration and collective action that we can achieve a no-burn agriculture future and measurably reduce air pollution in northwest India, particularly Delhi. Together with our partners, we are engaging with farmers to catalyse the use of Happy Seeders from a mere 2000 today to at least 50,000 units by 2022. This will be achieved by demonstrating the technology and its benefits to farmers in relevant states as well as intensive sensitization and awareness programs. To ensure no burning in northwest India, we are deploying the following strategy:

### Model No-Burn Villages

We have identified several districts in Punjab, Haryana and Uttar Pradesh where crop burning is most prevalent. Our aim is to create up to 350 model villages that achieve zero burning by 2018 by using Happy Seeders. We will do this by implementing extensive awareness and capacity building programs as well as facilitating farmer applications for Happy Seeder subsidy and procurement.

### Farmer Champions

Peer-to-peer learning is an effective strategy in encouraging behavioural change. To enable this, we will identify up to 1000 farmers across villages already using the Happy Seeder and provide them a financial incentive to share their experience of "going zero burn" with other farmers.

### Communication and Marketing

We will implement a highly visible communication and marketing strategy that enables outreach among farmers across these districts. Through media advertisements, billboards and posters, farmer radios, videos and social media, as well as smart phone apps, we aim to increase farmer awareness for achieving no-burn agriculture.

To enable this massive effort, we are calling upon corporations and businesses to join us as part of an Alliance for Zero Burning and pledge funds to support this vision. Your support towards this initiative will improve livelihoods for an estimated 10 million farmers, save at least 2.4 million tonnes of CO<sub>2</sub> emissions per year, drastically reduce air pollution during winters, decrease water use, and improve soil health.

### THE NATURE CONSERVANCY

We are the largest conservation non-profit in the world that works to protect ecologically important lands and waters for nature and people. The Nature Conservancy's India program works closely with the Indian Government, NGOs, research institutions and citizens to create science-based solutions that support India's efforts to develop while conserving the lands and rivers on which people depend.

### TNC-INDIA VISION

A VIBRANT AND HEALTHY INDIA THAT IS GUIDED BY SOUND SCIENCE TO MANAGE ITS NATURAL RESOURCES.

TNC-The Nature Conservancy Centre is a not-for-profit entity registered in India under the Company's Act with 80G certification.

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