



# ITC FOODS DIVISION'S FOOD LOSS & WASTE MANAGEMENT INITIATIVES

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ITC is one of India's foremost private sector companies with a diversified presence in FMCG, Hotels, Packaging, Paperboards & Specialty Papers and Agri-Business. ITC has embraced a bold and ambitious Sustainability 2.0 vision anchored on the inclusive and innovative business models, implemented on a large scale over many years. ITC has achieved the global environmental distinction of being carbon, water and solid waste re-cycling positive enterprise for over 17, 20 and 15 years in a row and more importantly support the livelihoods of over 6 million people. The goals envisaged in ITC's Sustainability 2.0 vision further strengthen multi-dimensional efforts to combat climate change, food loss & waste, enable the transition to a net zero economy, work towards ensuring water and food security for all, restore biodiversity through adoption of nature-based solutions, create an effective circular economy for postconsumer packaging waste and scale up programmes that support sustainable livelihoods.

Efficient Food Loss & Waste (FLW) management is vital to create a World with Zero Hunger while attaining the United Nations Sustainable Development Goals (*SDG 2 - End Hunger and SDG 12 - Ensure sustainable consumption and production patterns*). **Food loss** is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retailers, food service providers and consumers. Empirically, the term refers to any food that is discarded, incinerated or otherwise disposed of along the food supply chain, which starts with harvest/slaughter/catch up to but excluding the retail level, and the food does not re-enter the supply chain for any other productive use, such as for feed or seed while **Food waste** refers to the decrease in the quantity or quality of food resulting from decisions and actions by retailers, food service providers and consumers.

The amount of food lost and wasted impacts food security, along with environment sustainability and economic stability. Roughly one-third of the edible parts of food produced for human consumption, gets lost or wasted globally, which is about 1.3 billion ton per year. Driven by the ITC Foods Division's Nutrition strategy "Help India Eat Better", ITC foods division has been continuously working towards minimization of Food loss & waste under the bigger vision of Sustainability 2.0. ITC Food Division's Policy on Food Loss & Waste also reinforces the same with the objective to work towards supporting the SDG target 12.3, "halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses, by 2030" .

ITC takes multitude of steps to reduce food loss & waste across value chain. Shared below are key initiatives for food loss & waste reduction:-

## 1. Agri Business Division initiatives in curbing food losses and improving productivity in Wheat value chain

ITC Limited – Agri Business Division through its decade long association with the farmers analysed the problems faced by farmers, developed deep understanding of agricultural practices, collaborated with India's premier research institutes, built a competitive and efficient supply chain that creates and delivers immense value across the agricultural value chain, thus minimized the food losses and helped in improving the productivity of the crop.

### ITC's Approach – End to end interventions in wheat value chain

ITC developed following end to end interventions/ key practices in wheat value chain:

### 1. Introduction of short duration paddy varieties

Recommendation of short duration paddy varieties for timely harvesting of paddy and suitable window available for wheat planting and timely harvest to avoid heat wave. Arize 6129 gold, Arize-6444, BPT 5204, Bina Dhan 11, DRR 44, Swarna Shreya (120-130 days).

### 2. Regenerative farming practices

- a. **Zero till seed drill for wheat:** Zero till seed drill helps in saving 10-15 days of plating by ensuring sowing immediately after harvest. This helps wheat in timely maturity & harvesting and avoid heat wave impact. Current acreages are approx. 1.5 lakh acre under this initiative in UP and Bihar. Farmer also saves approx. Rs. 1600 per acre over conventional plating.
- b. **Happy seeder/lucky seeder:** Using the principals of zero seed drill, this planter helps direct sowing post paddy harvest thru mechanical harvester. This practice helps in saving sowing time and cost. 9000 acres demonstration of this technology was being done, which is leading to rapid adoption.
- c. **Surface seeding:** In case of late paddy harvesting in low lying area, direct seeding of wheat is done in paddy fields. This is a traditional practice which is also recommended by agriculture experts. This helps again in timely sowing & harvest of wheat and avoiding high heat wave during maturity phase.

### 3. Heat Ameliorating Sprays

Spraying of Muriate of Potash (MoP) during panicle initiation stage helps in mitigating terminal heat stress during grain formation stage, thus improving grain filling and quality.

### 4. IPM/INM Practices

Promotion of IPM/INM practices in wheat package of practices to reduce the dependence on chemical fertilizers and promotion of bio fertilizers, bio-pesticides and nano fertilizers through demonstration plots to minimise hazardous effect of chemical fertilisers and increase yield.

### 5. Harvest & Post-Harvest management of crop

Dissemination of best harvest and storage practices through farmer meetings, trainings, pamphlets distribution and field level activities. The aim of the of the meetings and training on harvest and storage practices in involves following key points:

- a. Single window of harvesting
- b. Timely harvesting of crop
- c. Harvesting practices cascading ill effects of heat stress
- d. Better and advanced harvesting practices
- e. Proper handling of the crop
- f. Education on best storage practices

#### Scale & Scope:

- **States covered** – UP, Bihar, Rajasthan, MP, Maharashtra & Punjab
- **Districts Covered:** 35
- **Farmers covered:** ~40,000
- **Total direct area covered (ha) during rabi 22-23:** 1.32 lakh ha

**Snapshots of activities done in wheat value chain**



**Zero till wheat sowing**



**Happy Seeder wheat sowing**



**Surface seeding of wheat**



**Mechanized Paddy Transplanting**



**Direct Rice Seeding through Lucky seeder**



**Seed Treatment for KB management**



**Balanced nutrition through LCC**



**MoP sprays**



**Drone spray of nano urea & other chemicals**

## 2.E-CHOUPAL

Launched in 2000, ITC created a unique farmer empowerment model, titled ITC e-Choupal, leveraging information technology to foster a new dimension of agricultural growth. Currently it is the largest initiative among all Internet-based interventions in rural India and reaches out to over 4 million farmers growing a range of crops - soyabean, coffee, wheat, rice, pulses, shrimp - in over 35000 villages through 6100 kiosks across 10 states. It addresses the core needs of farmers in terms of infrastructure, connectivity, price discovery, market access, and provides a significant boost to farm productivity through extension services and research based agri-inputs.



**Real-time information and customised knowledge provided by ITC e- Choupal**

ITC e-Choupal, through its various phases of evolution has enabled value chain reorganisation leading to the efficient transmission of consumer demand signals to support a responsive production system. Thus, the e-Choupal model has been specifically designed to tackle the challenges posed by the unique features of Indian agriculture, characterised by fragmented farms, weak infrastructure and the involvement of numerous intermediaries, among others.

### STRATEGIES AND KEY INTERVENTIONS UNDER E-CHOUPAL

- CHOUPAL PRADARSHAN KHET (CPK)**- Promotes best practices and gives farmers easy access to expert advice from agricultural professionals so that solutions can be tailored to local conditions. This initiative enables farmers to raise crop productivity and quality, optimise



**Empowering Grassroots Farmer Institution**



Over **4 million** farmers participating in e-Choupal have consistently made significant and sustainable gains in crop yield, crop quality, crop income, market access and have significantly contributed to reduced food loss and waste over the last two decades.

### 3. Climate Smart Agriculture

ITC has been working across the country for promotion of sustainable and climate smart agricultural practices with farmers. To further strengthen the initiative and approach, in an integrated and holistic manner, ITC has been partnering with Climate Change, Agriculture and Food Security (CCAFS) Programme of CGIAR and Borlaug Institute for South Asia (BISA), since 2016 to promote Climate Smart Villages (CSV).



Climate smart agriculture interventions provided to the farmers

It promotes sustainable and climate smart agricultural practices with farmers, through advanced tool kits prepared and recommended for this program, which are Seed Smart (late variety, certified seed, seed germination & treatment practices) Nutrient smart (soil testing, standard dose of fertilisers, leaf colour chart), Water Smart (Broad Bed Furrow, Ridge & Furrow, Permanent Broad Bed Furrow), Weather Smart (Weather related information) and Knowledge Smart (Linkages with Krishi Vigyan Kendra advisories). One example of the successful implementation of climate smart village program, through promotion of this tool kit and adoption of the recommended practices is seen at the Khulas Khurd village, Madhya Pradesh which has moved to High Resilience — High Yield category from High Resilience — Low Yield category, with minimal damage/shortfall in yields now observed in extreme weather conditions in the village by farmers.

**The climate smart initiative, aimed at building climate resilience of farmers, covers over 15 lakh acres, benefitting over 4.5 lakh farmers and has demonstrated reduction in GHG emissions by 66% and increase in net income by 93% for soybean crop in Madhya Pradesh. The climate-smart village initiative will be progressively extended to cover 3 million acres by 2030.**

Climate Smart Village intervention in Madhya Pradesh demonstrated an average increase in yield of 38% and 15% in soybean and wheat respectively, over the baseline. Along with reduction in cost of cultivation, this has led to an average increase in net income by 93% in soybean and 46% in wheat over the baseline the programme is closely aligned to Indian Government's 'National Mission for Sustainable Agriculture (NMSA)', which aims to make agriculture regenerative, productive, sustainable, remunerative and climate resilient.

These initiatives included Introduction of climate smart varieties in wheat to tackle heat stress for example Localised climate Resilient &/or High Yielding Variety promotion for improving productivity and farmer income- PBW 826, BW 187, DBW 222, HI 1633, HI 1634 and HI 1636.

#### 4. ITC's partnership with NITI Aayog, Government of India

ITC's partnership with NITI Aayog is designed to improve agriculture and other allied services in 27 aspirational districts of 8 states. In this partnership, relevant knowledge through collaborations was imparted to the farmers. Even during the pandemic year, when onsite training was not possible, digital training methods were implemented. ITC facilitated training of more than 617,000 farmers in 2021-22 through Government machinery on standard cultivation practices for dominant crops and for livestock. 595,000 farmers were covered through extensive digital outreach through more than 6,200 WhatsApp groups formed by the Government with ITC's help.



**Niti Aayog and ITC Partnership to Improve Agriculture and Allied Sectors in 27 Aspirational Districts**

**The programme has demonstrated improvement in yields and reduction in cultivation cost thereby augmenting farmer incomes up to 60%.**

#### 5. Agri Business Centres

Farmer Agri Business Centres are farmer groups formed at village level, which helps small farmers and marginal farmers through collective actions. ITC has promoted farmers' groups across the country which are involved in helping the member farmers. These ABCs are effectively providing support to member farmers for past 16 years for credit, collective input procurement, equipment hiring and marketing. The ABCs provide credit to farmers annually which has had a 100% repayment track. In 2021-22, these, Agri Business Centres (ABCs) have

1. Provided 98 million as credit to member farmers from the amount generated from ITC's support, members contribution and other income earned through services. The credit services helped farmers to reduce dependency on money lenders and higher interest rate
2. Provided on hire around 16,000 agri equipment such as oil engines, drums and pipes for irrigation, weighing machines and sprayers etc. to members. The equipment hiring helped in reducing costs incurred for that purpose.
3. Collectively procured agri-inputs of 6,151 quintals of customised fertilisers and 3,690 quintals of general fertilisers, which helped in reducing costs, time and in ensuring availability of quality products on time, thereby reducing food loss as well.

## 6. ITC's 'Baareh Mahine Hariyali'

ITC's Baareh Mahine Hariyali programme, which has attempted to maximise farm utilisation over 12 months of the year, is a unique 360-degree agri initiative, with interventions ranging from increased cropping intensity, enhancement of productivity through context specific agronomic practices demonstrated through Choupal Pradarshan Khets (on-farm demonstrations) and provision of market linkages with transparency in assessment of quality, prices and weighment.

**Over 2,00,000 farmers have already benefited from the interventions under the 'Baareh Mahine Hariyali' programme, out of which over 35,000 farmers who have adopted the package of practices, have reported doubling of their incomes while others who have implemented the programme partially reported increase in their incomes by 30% to 75%.**

The programme, which aims to multiply incomes of farmers through a wide spectrum of interventions in climate-smart and sustainable agriculture, is planned to be rolled out to 1 million farmers progressively.

## 7. Sustainable Agriculture Interventions

1. **Agri Extension Network**- Trained Agri experts supporting and handholding farmers in the implementation of the best package of practices and addressing specific farmer queries, providing them with all the necessary tips and learnings to increase yield and minimize wastage.
2. **Precision Farming**- Experimenting and supporting farmers in deploying digital technologies such as smart irrigation, drone-based spraying and farm mechanisation through ITC's e-Choupal 4.0 digital platform, helping in strengthening the capability of farmers and their livelihood potential.
3. **Organic Farming & Sustainability Certification**- Supporting farmers in the implementation of organic cultivation practices and appropriate certification, thereby helping them increase their yield, income in the field of organic farming.
4. **Crop Diversification**- Handholding farmers in year-round crop production and supplementary income through animal husbandry programme thereby improving income level of farmers.
5. **Village Infra Upgradation**- Supporting farmers in post-harvest infra upgradation which helps in clean and safe drying, storage, ensuring quality and reducing wastage.



**A bouquet of regenerative and sustainable agriculture interventions across crops**

## 8. Next Generation Agriculture

To strengthen the capability of farmers and their livelihood potential, it would also be important to leverage the power of the digital revolution for agriculture.

### Digital Engagement through ITCMAARS

- Use of IT for effective implementation & Monitoring – CDP Process Mapping
- Digital advisories through ITCMAARS: Posting advisories on climate smart technologies through learning centre, videos, package of practises, crop calendars etc. eg- Information about right equipment (tillage, planting, spraying) at right time increases uptake of conservation agriculture practices which are labour intensive.

### Providing appropriate market linkage

ITC developed a direct farmer buying model in line with ITC's e-choupal initiative. ITC identified lead farmers in the villages and appointed them as 'Sahayaks/Sanchalaks' and promoted Farmer Producer Companies, who would support farmers of their region by communicating them the prevalent market price and help them bring the agro-produce to ITC's buying centres. The buying at these centres happens in a completely fair and transparent manner. FPOs have a good potential to Fastrack the roll out of crop advisory and usage of mechanisation. ITC has supported Farmer Producer Companies in the formation, training and market linkages through ITC MAARS platform.

## 9. Food loss and waste management in Production Value Chain

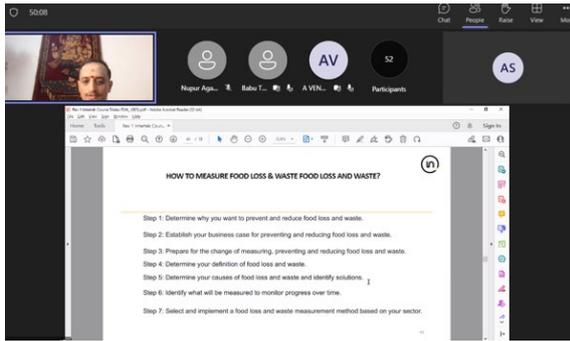
ITC Foods has a robust system for tracking and monitoring the wastes in its manufacturing units. Every day, the units track the wastage generated at every station in the Daily Production Report (DPR). This helps to identify areas where food waste is being generated and track progress in reducing wastages over time. In addition to daily tracking, units conduct weekly stock checks internally to track the material-yields. This helps to ensure we are using the raw materials efficiently and minimizing the wastages.

An internally developed value-stream mapping tool viz. "Loss-Cost Matrix" is used to identify & map the losses in the entire manufacturing process to further prioritise the focus areas and come up with the improvement projects to reduce food loss & waste.

The standards followed at ITC Foods Division for tracking Food loss and waste closely aligns with the FLW protocol. ITC has in-house processes and tools to capture time, material, energy and manpower losses at each process steps of manufacturing. The methodology adopted at ITC helps identify and understand the key areas of loss, analyse the root cause of such losses, counter measure implementation and finally establish control to continually improve and sustain the process.

## 10. Engagement and collaboration with value chain partners to help reduce food loss and waste.

ITC Foods Division strongly believes in collaborating with suppliers & vendors to support the cause of food loss & waste reduction. ITC has developed & shared with its suppliers & vendors guidance note on Food Loss & waste management to guide them to take steps in reducing food loss & waste. ITC Foods Division also facilitates independent third party webinars/trainings for key suppliers & vendors to increase awareness on Food loss & waste management.



**Snips from Webinar on Food Loss & waste management conducted by experts**