



64th

**ISO COUNCIL MEETING
NEW DELHI 2024**

EASE OF DOING CANE FARMING MECHANIZATION & MODERNIZATION

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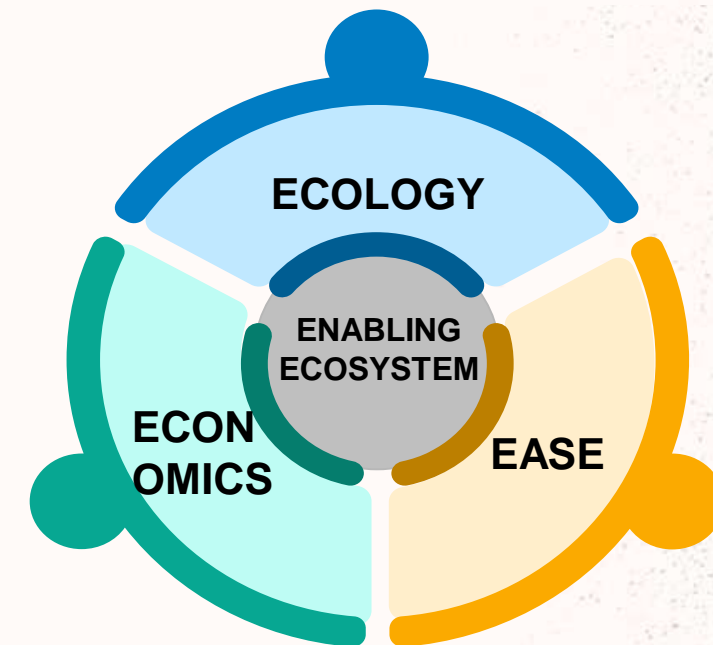
EXECUTIVE DIRECTOR & CEO – DCM SHRIRAM LIMITED – SUGAR BUSINESS

Snapshot – Agri Aspects of Indian Sugar Sector

- Total area under sugarcane crop: ~ **5 million Ha**
- Average landholding of farmers – **1.15 Ha**
- **55 million** small holders and their family members
- Relationship between farmers and millers:
 - No intermediaries are involved
 - Assured off take of sugarcane
 - Round the year/365 days engagement with farmers
 - All data /records related to each farmer are digitized
 - Cane Supply scheduling based on robust digital platform/ERP
 - Direct money transfer to farmers' account

Mechanization- Need of hour

- **Reduces Cost of Cultivation**
- **Enabling - Ease of Doing Agriculture**
- **Attracting youth** towards *farming* as a profession
- **Overcoming labour availability** – *Urbanization/migration*
- **Timeliness of operations** – to improve productivity
- **Increase Yield:** ~15 – 20% additional through Mechanization
- **Water Conservation** – laser land leveling & drip irrigation
- **Reduced Chemical Usage** – through mechanical weeding
- **Environmental conservation** – Trash mulching for water conservation
- **Reduces human drudgery** – Rising temp/adverse climatic conditions



Mechanization range in sugarcane life cycle

Field Preparation



Sub Soiler



M B Plough



Laser Leveller

Planting



Seedling Transplanter



Trencher



MTP

Irrigation



Solar Pump



Drip Irrigation

Crop care



Tractor Mounted Sprayer



Drone Spray

Interculture Operations & Earthing-up



Power Tiller



Rotary Tiller



Mini Tractor

Harvesting & Transporting



Harvester



Cane Loader



Tippler Trolley

Ratoon Management



Trash Mulcher



RMD



FDPA

Benefits of different Machines

Sub Soiler



- Breaking of surface hard pan
- Yield Improvement ~ 5%

M B Plough



- Deep Ploughing
- Yield Improvement ~ 5%

Laser Leveller



- land levelling
- Water Saving ~ 25%

MTP



- Better germination
- Yield Improvement ~ 10 %

Inter-culture Operations



- Weed removal & Earthing-up
- Yield improvement

Foliar Spray



- Fertilizer Use Efficiency ~ 90%
- Yield Improvement ~ 5%

Trash Mulcher



- Improves soil Organic Carbon
- Water Saving ~ 2 irrigations

RMD



- Stubble shaving & off barring
- Uniform sprouting

Government Schemes for supporting mechanization

- **Sub-Mission on Agricultural Mechanization (SMAM)**
 - For enhancing farm mechanization
- **Rashtriya Krishi Vikas Yojana (RKVY)**
 - An umbrella scheme for Agri Development
- **National Food Security Mission (NFSM)**
 - For promotion of usage of farm machineries
- **Per Drop More Crop (PDMC)**
 - Drip and Sprinkler Irrigation System
- **PM KUSUM Yojana**
 - For setting up solar pumps for irrigation
- **National Water Mission's (NWM) campaign “Catch The Rain”**
 - For Rain Water Harvesting Structures

Government has created an enabling Eco-system with supportive policy framework

Few examples showing pace of progress



1. **Mechanical Harvesting:** **Manajara Shetkari Co-Operative Sugar Mill**, Maharashtra has achieved 100% mechanical harvesting.
2. **Drip Irrigation:**
 - **Natural Sugars**, Maharashtra has approx. 45% area under drip irrigation system.
 - **Maharashtra state** sugarcane area coverage is 20% under Micro Irrigation.
3. **Trench Planting:** Efforts of **Uttar Pradesh Government** and **Factories** efforts have covered ~ **50%** area through this method.
4. **Foliar Spray:** Many sugar mills are using tractor mounted sprayers and drones.
5. **Custom Hiring Centres:** **DCM Shriram** & **EID Parry** have developed micro entrepreneurs for providing agri-mechanization services to small-holder farmers.
6. **Call Centre:** **DCM Shriram** has established a **call centre** for solving the queries of farmers and timely information related to sugarcane cultivation.

New Age Technologies Introduction

1. **Precision Farming Tools (AI/ ML/ Satellite Imagery)**
2. **Autonomous Irrigation** – Irrigation Intelligence software by Irrigation companies
3. **Micro Weather Stations** – For customized weather advisory services
4. **Smart Farm Grant Challenge** – Initiative by **MEITY** (Ministry of Electronics and Information Technology) in partnership with **DCM Shriram & 10 Startups**
5. **Digital Platforms** – For aggregation/ renting of farm equipment's

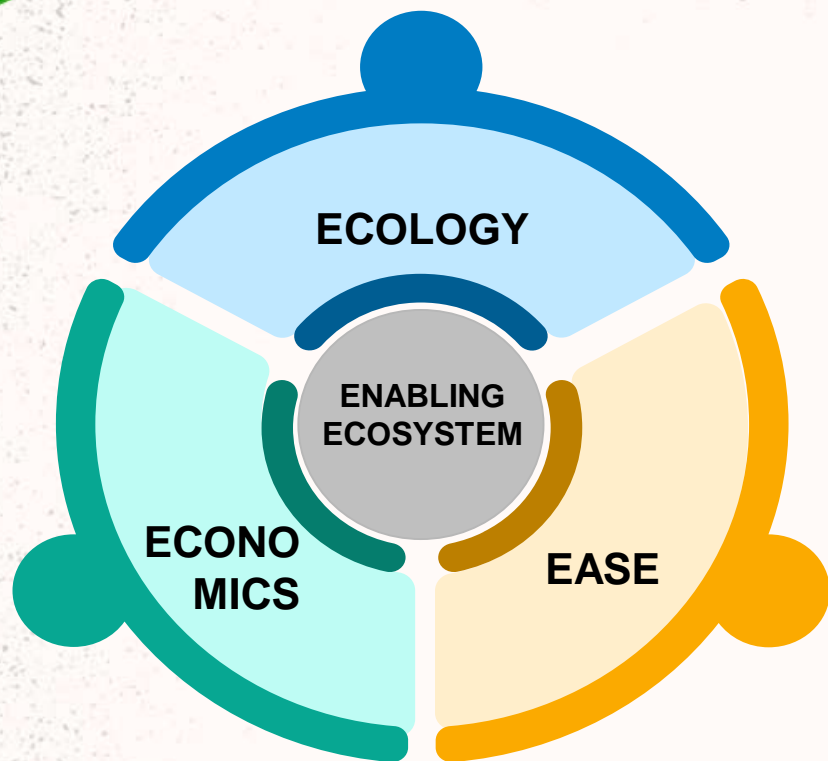
Agtech set to take off on the plank of digitalization & cellphone penetration



Challenges in adoption & mitigation plan

Challenges	Mitigants
Small Holdings Use of machinery is difficult for small holdings	- Miniaturization of agri machinery suiting to small fields
Costly Machinery Farmers inability to purchase the expensive machinery	- Popularizing of Custom Hire Model - Micro Entrepreneurs Development
Lack of Technical Knowledge Majority of farmers lack in knowledge to handle the machines efficiently	- Capacity Building by concerned Government Departments and Corporates
Repairing Facilities After sale service/maintenance infrastructure inadequate in the rural areas	- Infrastructure development – Service centers development by Machineries manufacturers

Way Forward



Inter country alliance for sharing & learning

This whole space of Ag-tech, Mechanization, Aggregation platform & “Uberization” of Agri-machinery also offers an attractive opportunity of investment in India in view of the scope and scale available.

THANK YOU

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