

IPGA Conclave 2023 –

***Opportunity in food and agri
infrastructure***

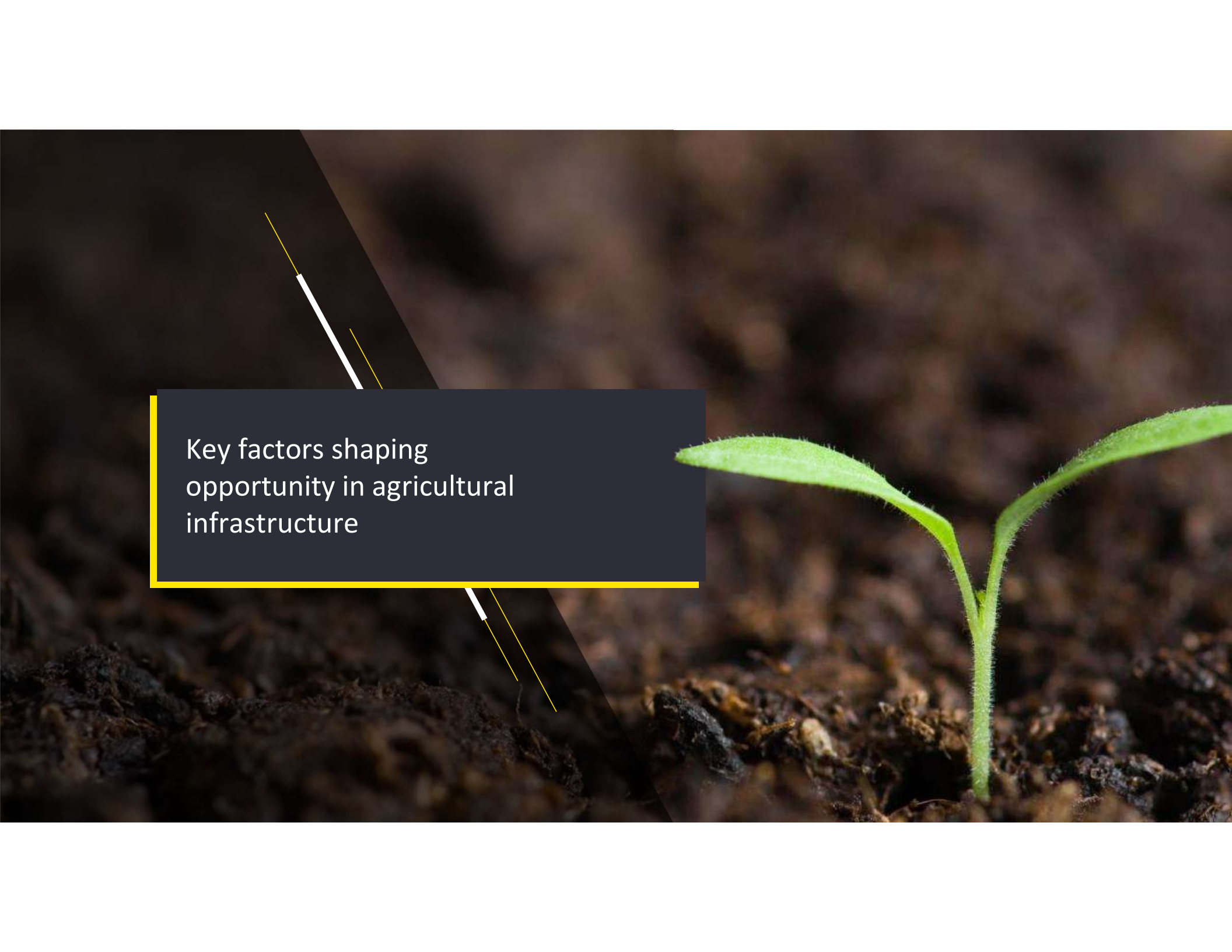
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Key factors shaping
opportunity in agricultural
infrastructure

Key factors shaping opportunity in agricultural infrastructure



Government of India's focus on **doubling** farmers income

Increased pressure to meet food demand requirements:



- ▶ India to become the **most populated** country in the world in 2023
- ▶ **Rise** in **disposable income**
- ▶ **Focus** on **healthy lifestyle** and increasing demand for fresh fruits, vegetables and pulses
- ▶ **Growth** of food **processing** sector



Focus on **sustainable** growth



India's ambition to become a **leading producer of food products** (e.g. Budget 2023 announced – India to be a global hub for **millet**s)



Focus of Government of India, industry players and producers to use **digital means/ technology** to boost **productivity**



Post-harvest losses (mostly of perishables) estimated at **INR 92,561 crore annually**¹. As per the recent study conducted by NABARD Consultancy the post-harvest losses in various commodities continues to be high at around 15% for fruits, 11% for vegetables, **6.74% for pulses**² ([Annexure](#)).



Logistical **barriers** relating to **connectivity** also pose supply-side challenges. For instance, Indian national highways, while accounting for 2 per cent of the total road network, carry 40 per cent of all cargo – exemplifying the burden on the existing road networks and potential for congestion



Warehousing

Current landscape of agricultural warehousing in India



- ▶ The total agricultural warehousing capacity has jumped from 154.82 mt in 2019-20 to 166.2 mt in 2020-21³.
- ▶ This growth is reflected in the fact that the number of warehouses under the Warehousing Development and Regulatory Authority (WDRA) has registered a **growth of nearly 30 per cent**, with 2,917 warehouses in August 2022 and a capacity of 21.38 mt³.
- ▶ A major portion of the **organised warehousing capacity** in the country is still being **managed by the Government** through public sector units³.
- ▶ **Punjab**, being the largest producer of grain in the world, is working towards building a **massive storage infrastructure with 12.36 mt** of capacity³.
- ▶ Meanwhile, storage facilities are being upgraded with the construction of **steel silos** in **public-private partnership mode**³.
- ▶ **FCI** plans to construct an additional **capacity of 11 mt** at **249 locations** across **12 states**³.

Various companies using innovative business model to support the critical warehousing infrastructure with additional services



- ▶ When farmers stocks his commodity at Apna Godam, **quality inspection** is done and the buyers all over India can **bid for the said stock online** (Annexure)
- ▶ If the farmer is satisfied with the price of the bid his stock could be sold and the money is transferred immediately
- ▶ It is the **first notified online Mandi in Rajasthan** as well as India.
- ▶ Apart from facilitating spot trading of commodities, it **also provides Warehousing, Commodity Finance and Logistic services as value-added services**⁴.



- ▶ ARYA provides cost-effective warehousing solutions at strategic locations anywhere in the country. They **advise clients on storage and preservation norms** for commodities and follow it through with impeccable execution for best quality storage strengthened by specialised **quality testing and pest control mechanisms**. (Annexure)
- ▶ These operations are **supported by a web-based software application** (with access to Clients), thorough **Audit processes** and adequate **Insurance coverage**⁵.



- ▶ founded in 2006 to provide integrated post-harvest management solutions
- ▶ Integrated and modern pan-India warehousing network maximises efficiency and reduces post-harvest losses.
- ▶ It aims to significantly increase farmer incomes with high-quality storage, protection from pest infestation and pilferage **using stringent processes to ensure the physical integrity of the stock, both in terms of quality and quantity**⁶.



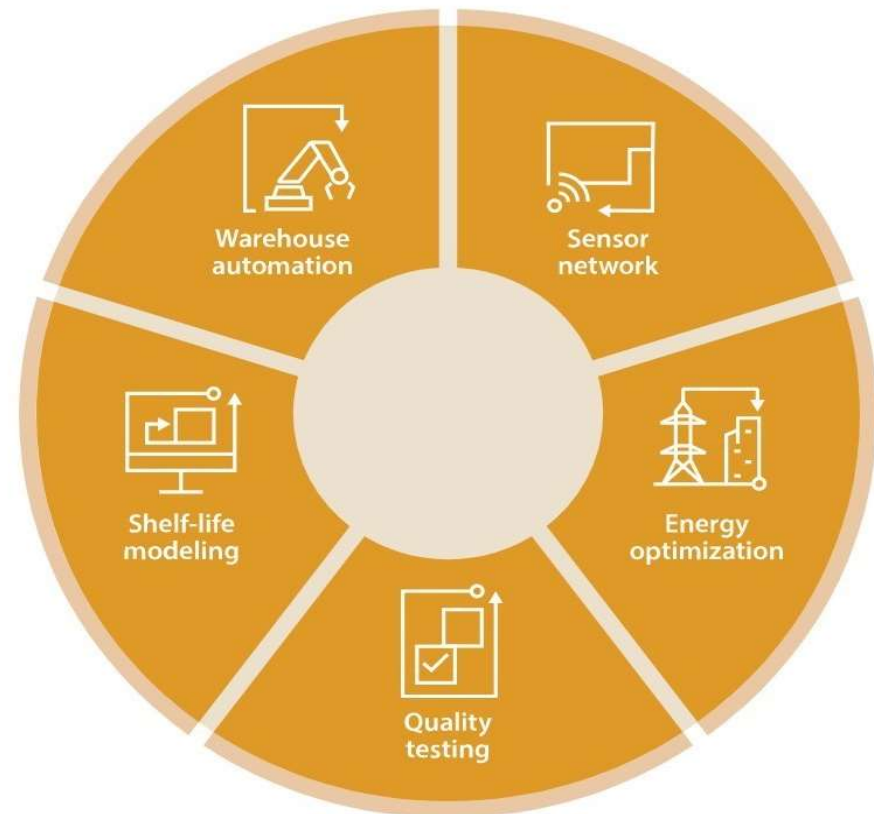
Multi-level warehouses

- ▶ Within city limits may well be Indian real estate's next big thing in a market completely transformed in the last two years by the coronavirus pandemic.
- ▶ Tech-enabled multi-level warehousing is already in demand due to the requirements for quicker eCommerce expansion
- ▶ These solutions are already in use in South Asian nations including Japan, Hong Kong, Singapore, and South Korea.

Various companies using innovative business model to support the critical warehousing infrastructure with additional services

- ▶ Continuous monitoring of ambient conditions such as temperature, humidity and oxygen enables pre-emptive action from remote locations.
- ▶ Infosys combines automation, the Internet of Things (IoT) and data analytics to ensure safe handling and storage of agricultural produce.
- ▶ Simulation tools evaluate biological variation in products (texture, shape and quality) due to changes in moisture content of the product and / or storage conditions.
- ▶ Infosys use data from grain moisture sensors to assess grain hardness and bulk density.
- ▶ It is integrated with historical field information to predict the optimal storage period⁷.

Infosys warehouse management footprint





Cold storage

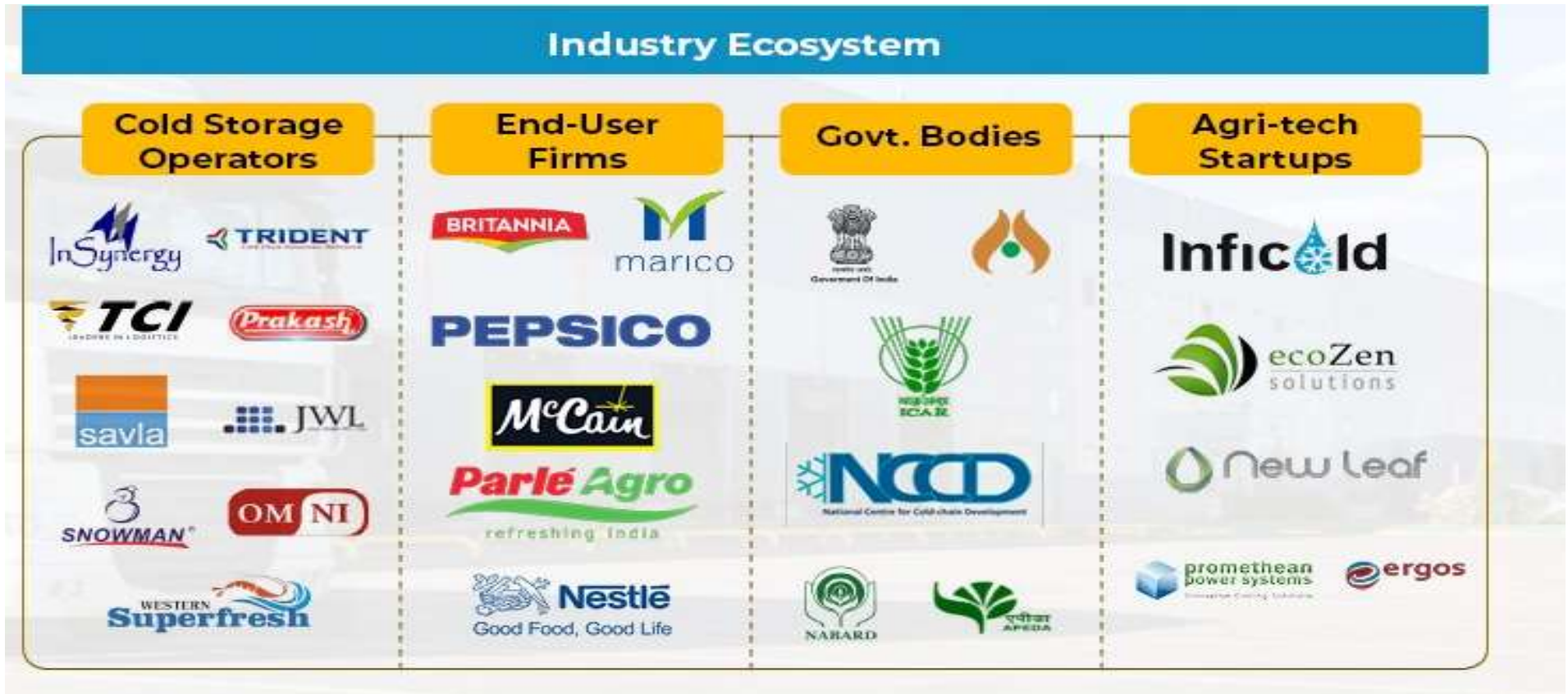
Current landscape of cold storage capacity in India



- ▶ India's cold chain sector is expected to grow at over **20 percent CAGR** by 2025⁸.
- ▶ With an **uneven spread** across the country, India has over **6,500 cold storage facilities** with an installed capacity of 30 million tonnes. The segment is predicted to become more organised and attract more institutional funds⁹.
- ▶ India incurs an **annual loss of INR 90,000-100,000 crores** every year in **wastage** of **agricultural** and **horticulture** produce owing to poor post-harvest management policies¹⁰.
- ▶ Further, **35-50%** of such **economic loss** occurs due to lack of required **cold chain infrastructure** at **farm-gate** and **hub** level¹⁰.
- ▶ More than **75%** of the **cold storage capacity** is concentrated among the **top 5 states** (UP, West Bengal, Gujarat, Punjab and Andhra Pradesh)


State	% of total India capacity ¹¹
Uttar Pradesh	38.94
West Bengal	15.61
Gujarat	10.16
Punjab	6.43
Andhra Pradesh	4.46

Cold storage ecosystem¹⁰



Decentralised cold storage

- ▶ India requires **small-capacity, decentralised cold storages** in or around **villages** and scattered **across states**.
- ▶ With **advancement in renewable energy** solutions along with **100% village electrification**, it is possible to run these facilities at rural areas without any interruption.
- ▶ Use of **solar powered cold chain facilities** can build an effective and sustainable solution
- ▶ For e.g:
 - ▶ The Energy and Resource Institute had set up a pilot biomass-powered village electrification-cum-cold storage system in a village in Uttar Pradesh¹².
 - ▶ SELCO foundation¹³
 - ▶ CoolCrop ([Annexure](#))¹⁴
- ▶ **Budget 2023** has a proposal on setting up **massive decentralised storage capacity**




Modernisation of dal
mills, processing and
packaging centers

Modernisation of Dal mills, processing and packaging centers



- ▶ Dal milling is India's **third largest** food processing business, after rice and wheat. Several mills are presently **small** and **fragmented** – Opportunity for **capacity scale-up** and **modernization** of milling units.
- ▶ Apart from quality, use of modern technology and machines in milling are expected to **increase production by 20%**
- ▶ Apart from modernisation of milling process, bulk supply of pulses in different sizes, quality and attractive packaging has created opportunity for **automatic, high speed packaging** coupled with **protection against biological, physical, chemical risks**
- ▶ Huge opportunity for businesses providing milling, processing and packaging business in isolation or as an integrated business given popularity of **e-grocery market** and **supermarkets**
- ▶ For Government also, the development of infrastructure is critical so as to ensure **quality pulses are distributed under PDS** and during bulk procurement and also avoiding post harvest losses due to inefficient management, processing or packaging of pulses
- ▶ Integrated business of handling, storage and transportation of foodgrains could also avail **100% deduction of its profit for the first 5 years**
- ▶ Under **Agricultural Infrastructure Fund Scheme - interest subvention of 3% per annum** on loans is provided for eligible projects (for pulses the eligible projects are Cleaning, De-stoning, Drying, Sorting & grading, De-husking, Splitting, De-hulling, Milling, Irradiation)




Implementation of
agricultural
infrastructure policies

Implementation of agricultural infrastructure policies announced by GOI



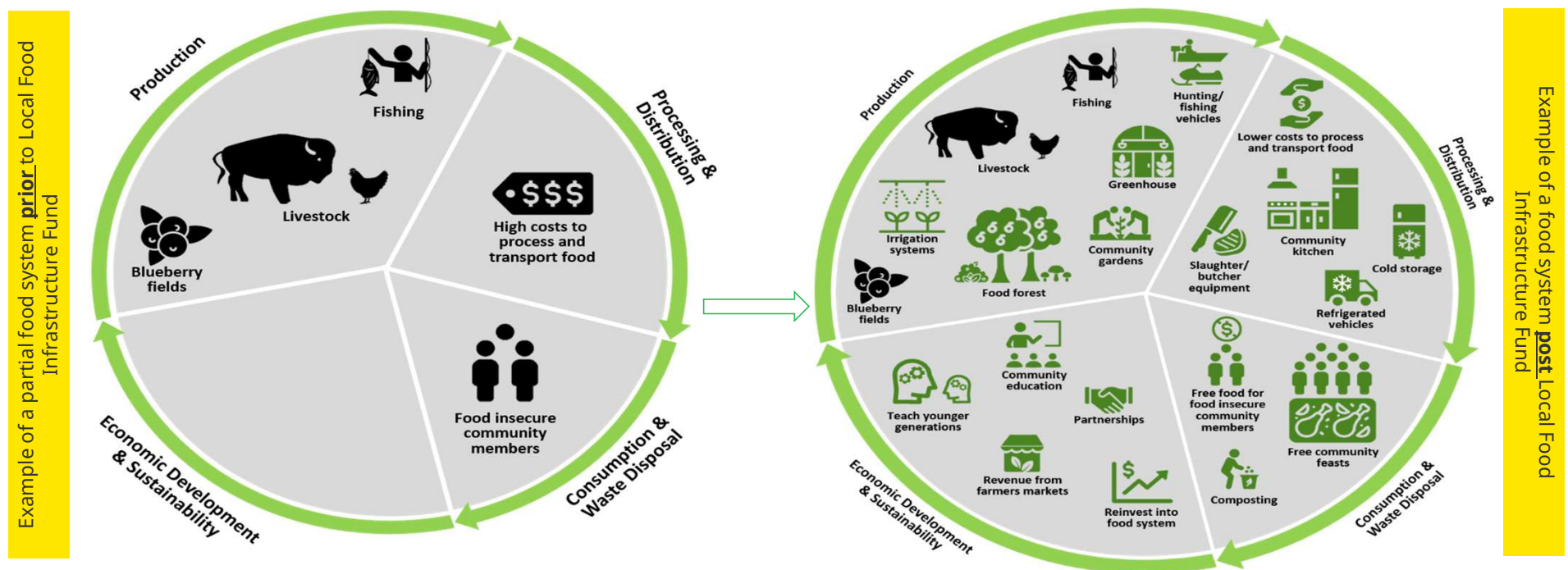
Policy/ infrastructure ¹⁵	Upto January 2022 ¹⁵	Upto December 2022 ¹⁵
Institutional credit for agriculture sector	Rs. 16.5 lakh crore in January, 2022	Rs. 18.5 lakh crore in December, 2022
Agri Infrastructure Fund	sanctioned Rs.11,891 Crore worth agriculture infrastructure in the country for more than 16,000 projects	sanctioned Rs. 13,681 Crore worth agriculture infrastructure in the country for more than 18,133 projects
Warehouses	4,748	8,076
Custom hiring centers	591	1,860
Assaying units	155	163
Primary processing units	550	2,788
Sorting & grading units	306	937
Cold store projects	267	696
Other kinds of post-harvest management projects and community farming assets	2420	3613
Per Drop More Crop (PDMC) scheme	60 lakh hectares covered	69.55 lakh hectares covered
Kisan Rail	1,900 services on 155 routes operated	2,359 services on 167 routes
Formation of FPOs	2,110 FPO registered	4,016 FPO registered
Micro Irrigation Fund	Projects worth Rs 3,970.17 crore approved covering 12.83 lakh hectares	Projects worth Rs 4,710.96 crore approved covering 17.09 lakh hectares

► Krishi Udan scheme is to provide air transportation and logistics support for perishable agri-produce as per the need. 58 airports have been included under the scheme.




Case study: LFIF project -
Canada

Government of Canada – Local Food Infrastructure Fund (‘LFIF’) – Developing infrastructure by supporting community based, not for profit organisation¹⁶



- The LFIF is a 5-year, \$60-million initiative ending March 31, 2024. It was created as part of the Government of Canada's [Food Policy](#) for a healthier and more sustainable food system in Canada.
- The fund supports community-based, not-for-profit organizations in creating or improving their food systems through investments in infrastructure that directly relate to addressing food insecurities and increasing the accessibility of healthy, nutritious and local foods within their community.
- Projects must create a minimum of 2 new food system components.



*Indian food and agri
infrastructure – have enormous
opportunities for every player in
the ecosystem and continues to
create a positive ripple effect on
the overall Indian economy –*

Thank you

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Annexures

Annexure – Post harvest loss in India (%)

Crops/ Commodities	Post harvest loss (%)	
	As per ICAR-CIPHET Study (2015)	As per NABCONS study (2022)
Cereals	4.65 - 5.99	3.89-5.92
Pulses	6.39 - 8.41	5.65-6.74
Oil Seeds	3.08 - 9.96	2.87-7.51
Fruits	6.70-15.88	6.02-15.05
Vegetables	4.58-12.44	4.87-11.61
Plantation Crops & Spices	1.18-7.89	1.29-7.33
Milk	0.92	0.87
Fisheries (Inland)	5.23	4.86
Fisheries (Marine)	10.52	8.76
Meat	2.71	2.34
Poultry	6.74	5.63
Egg	7.19	6.03

Source PIB – December 2022



Annexure – Apna Godam

INTRODUCING THE 'NEW' WAY TO COMMODITY TRADING 'NOW'

Phygital warehousing is where Physical meets Digital



Benefits to sellers:

- Low transportation cost as the warehouse is nearby
- Just send the commodity in warehouse and relax, everything is online
- Proper Fumigations and spray to keep the commodity safe
- Millers on board to purchase the commodity from Terminals
- Grading / sorting facility in some Terminals



Annexure – arya.ag

10,000+ listed warehouses | Book Now

Search Warehouse

Filter Clear all

Warehouse Type

- Arya Certified
- Arya Listed

Booking Options

- Full
- PARTIAL

Warehouse Capacity

Capacity in MT 0

Bags 0

Arya Certified Warehouse: verified, leased and managed by Arya

Arya Certified Warehouse Arya Listed Warehouse APMC Mandi Railway Stations

Recently added warehouses 1/100



Annexure – CoolCrop



SOLUTIONS

PROJECTS

MEDIA

ABOUT US

SELECT LANGUAGE ▾

GET IN TOUCH

Our work so far



48

INSTALLATIONS
ACROSS 7 STATES IN
INDIA



50

MT OF PRODUCE SAVED
PER MONTH ON
AVERAGE



9000

FARMERS SERVED



35

% AVERAGE INCREASE
IN FARMERS' INCOME





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