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Stakeholders' Consultation Meeting on Agrifood value chains in Odisha Challenges and Opportunities

Bhubaneswar, Odisha

29 November 2023

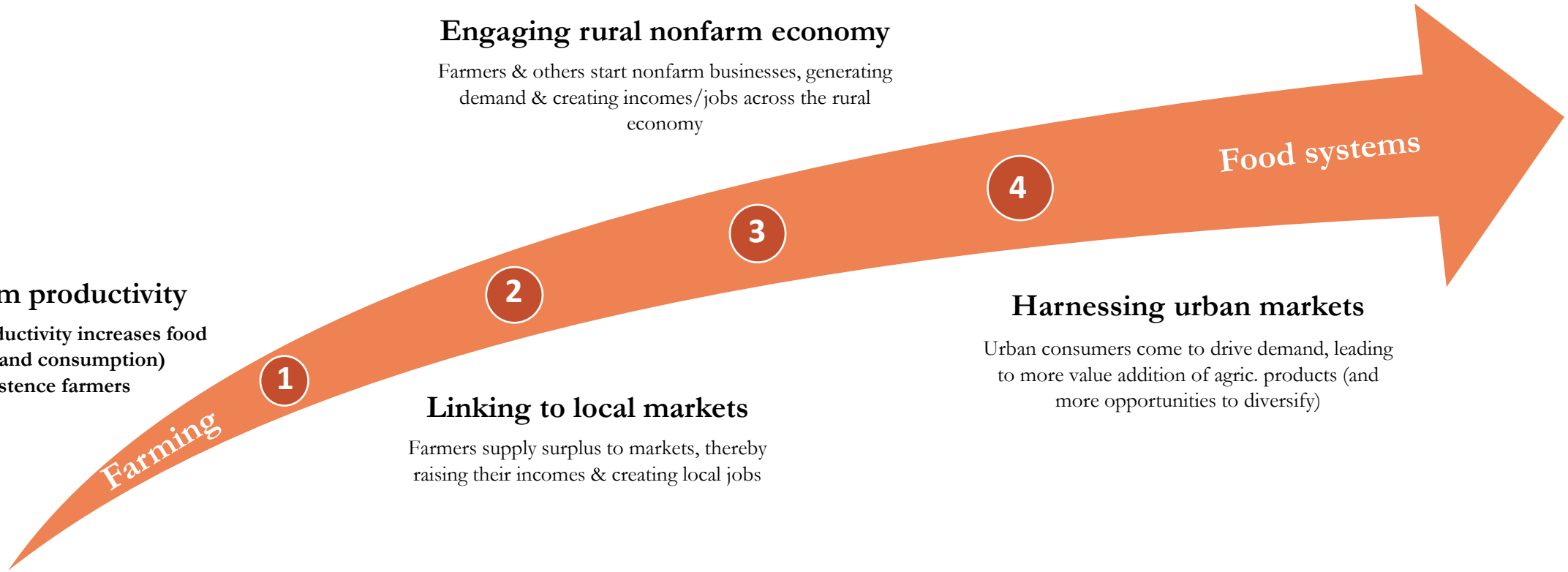
Stakeholders' Consultation Meeting on Agrifood value chains in Odisha – Challenges and Opportunities

Overview of the Meeting

by

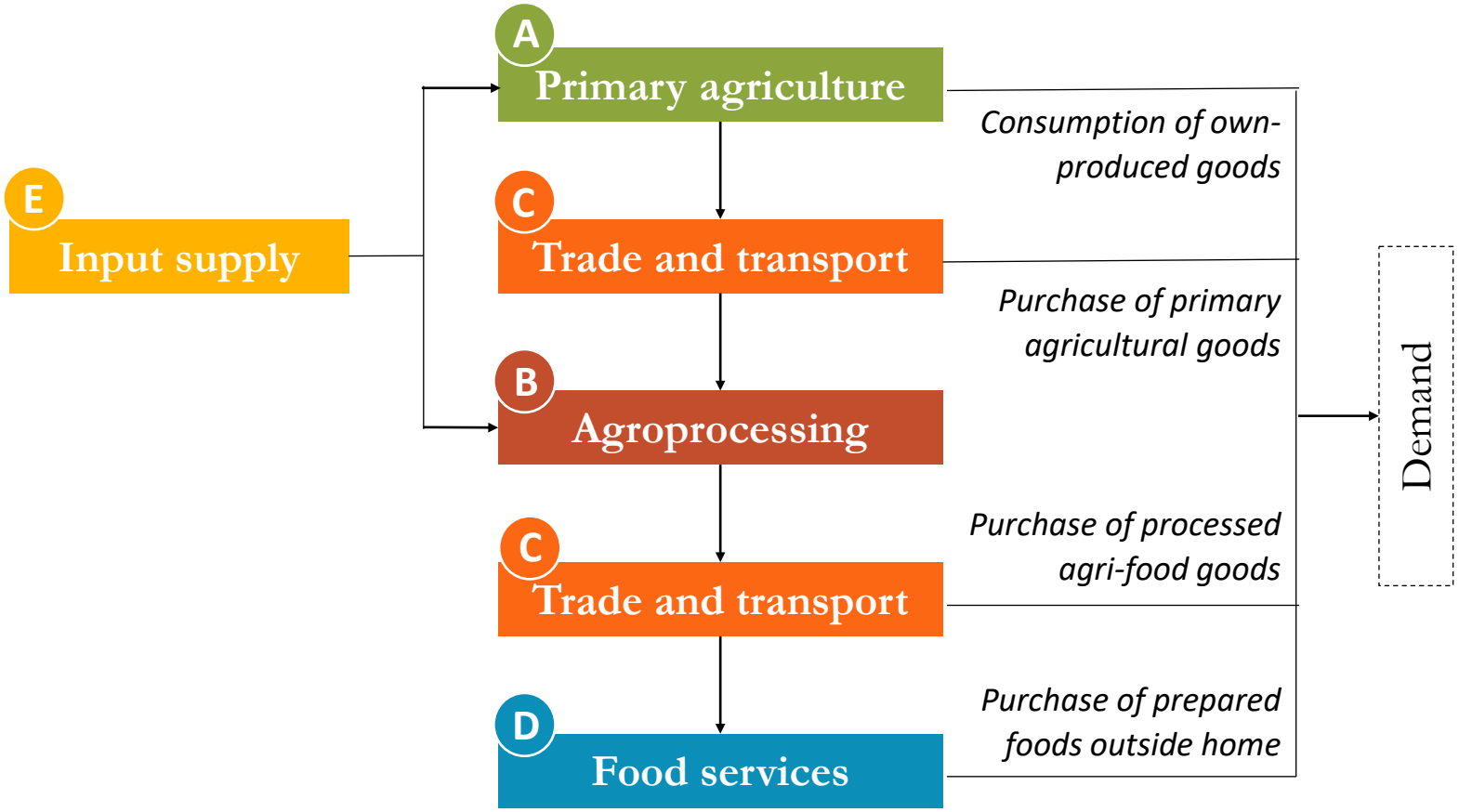
IFPRI & OUAT Team

Concepts | Stages of agrifood system transformation



Concepts | Agrifood Value Chain

A. Five major components



B. Measurement

Agri-Food System GDP (AgGDP+)

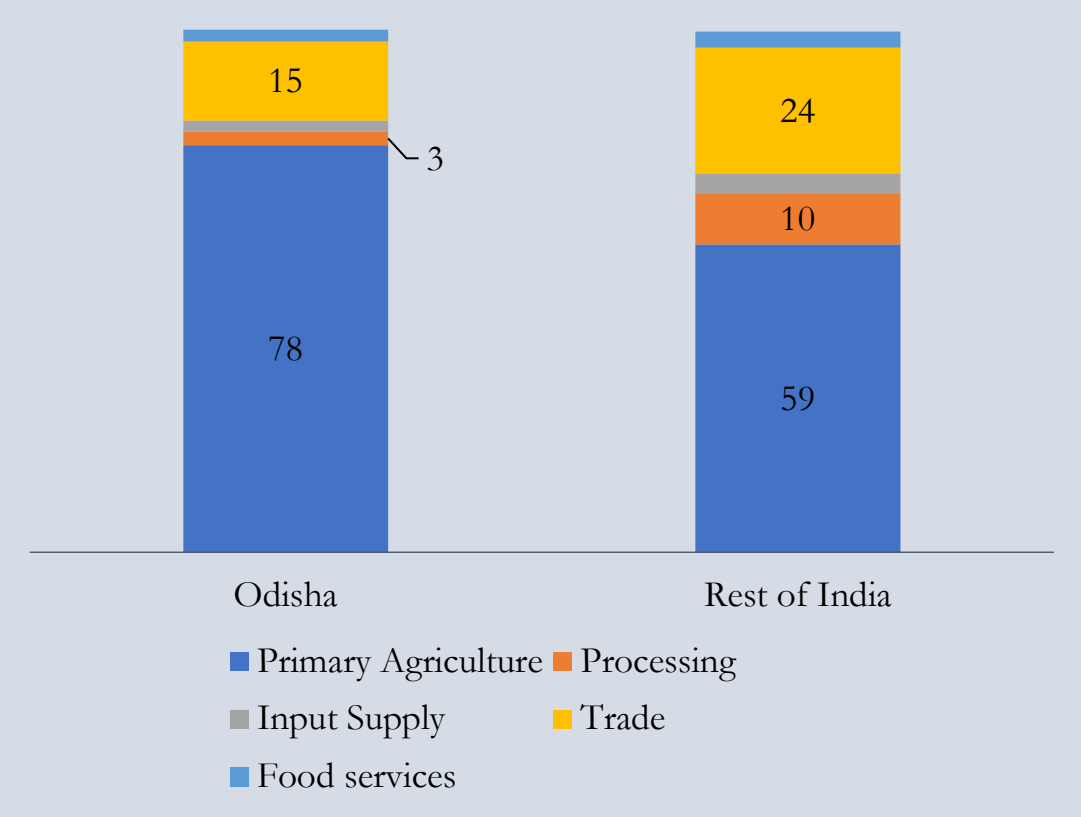
Total value added generated by all agricultural value chains (in constant dollars)

Agri-Food System Employment (AgEMP+)

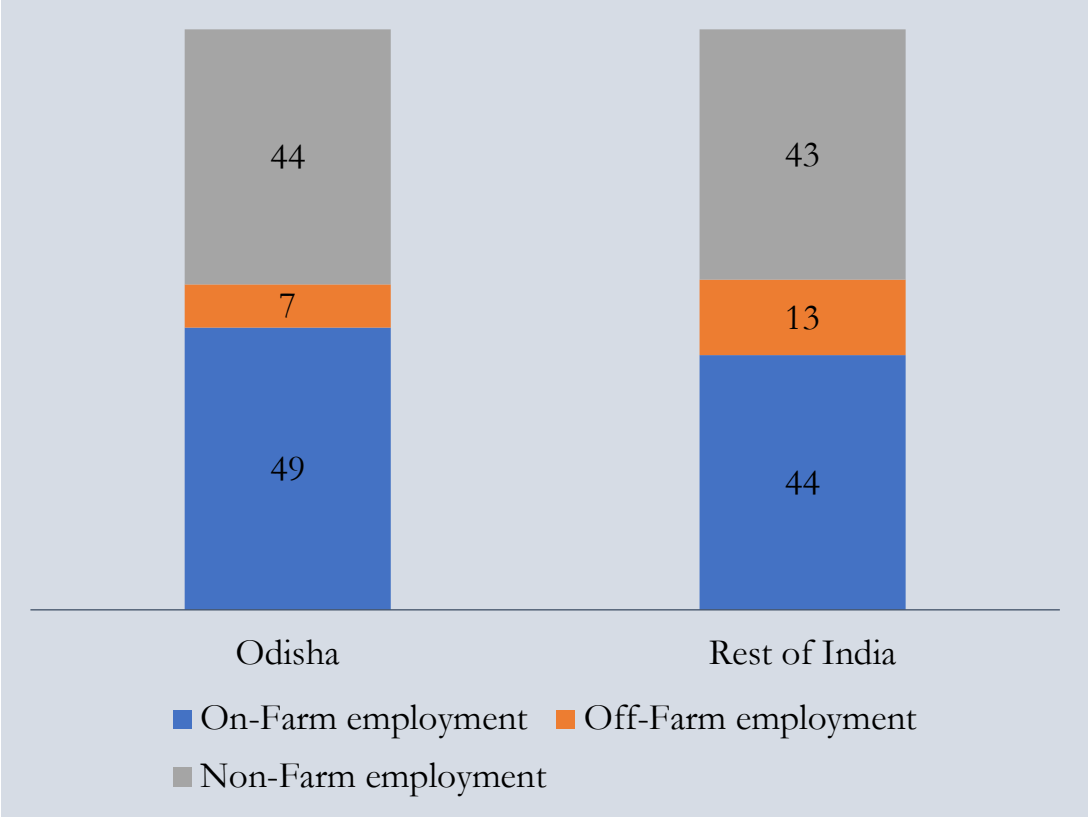
Total number of workers who are primarily employed in an agricultural value chain

Agrifood System in Odisha

Share of agrifood system components (in percent)



Distribution of employment (in percent) in and outside of the agrifood system



Structure of agrifood system in Odisha and rest of India

	Share of value chains (in percent) in total agrifood gross value added (GVA)		Share of off-farm activities (in percent) in the GVA of individual value chains	
Agrifood value chains	Odisha	Rest of India	Odisha	Rest of India
Agrifood GVA	100.0	100.0		
Cereals	**14.1**	**13.4**	**12.1**	**33.8**
Roots & Tubers	1.0	1.3	16.6	28.3
Pulses	2.2	2.7	10.0	15.0
Oilseeds	0.9	4.3	17.0	40.9
Fruits & Vegetables	**28.9**	**13.9**	**19.9**	**30.2**
Sugarcane	0.2	5.0	59.7	65.5
Fibers	1.3	10.8	27.2	85.3
Tea, Coffee & Cocoa	0.1	1.3	94.4	69.8
Other cash crops	7.2	9.7	21.9	37.0
Livestock	**16.2**	**23.2**	**24.3**	**29.7**
Fisheries	**15.3**	**6.9**	**41.7**	**45.8**
Forestry	12.7	7.1	13.4	34.7
Other food	0.0	0.4	100.0	100.0

Expectations from this Meeting

1. Identify the key drivers of transforming agrifood value chain in Odisha. In this context, the deliberations will focus on priority areas of interventions for transforming farm and off-farm sectors to enhance farmers' income in Odisha.

2. To understand emerging challenges and opportunities to integrate primary agriculture with off-farm value added activities including post-harvest activities, agricultural processing, marketing, and trade.

3. To understand essential policy and institutional reforms to transform agrifood value chain in Odisha.

Thank you

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National Policies and Strategies (NPS) Initiative: India Overview

Archisman Mitra

29/11/2023

IWMI
International Water Management Institute

Focus areas of NPS Initiative

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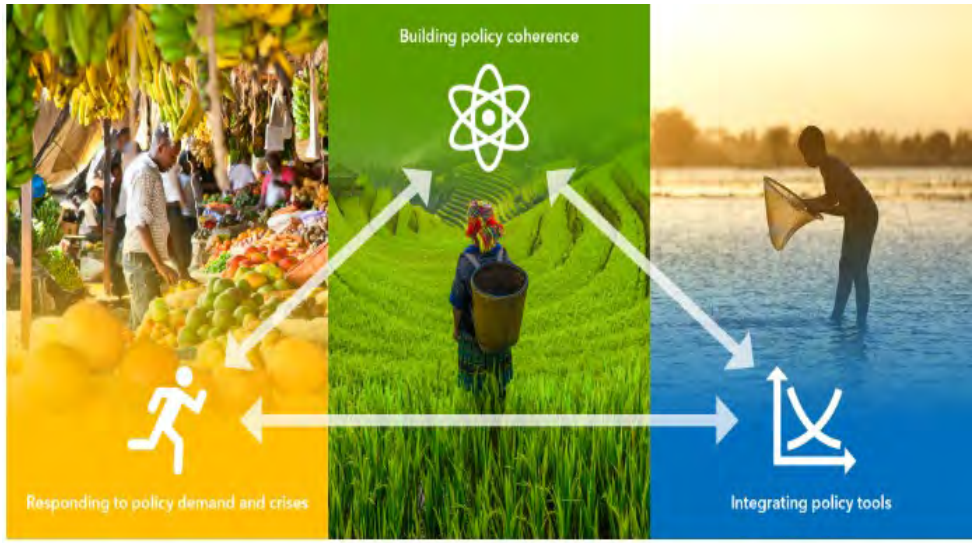
Building policy coherence: Strengthening food, land, and water (FLW) sector policy coherence through developing an analysis framework and partnership with key stakeholders

Integrating policy tools: Strengthening the analytical performance of national institutions through training of trainers, integration of user-friendly tools that can support trade-off analysis between policies and investment options

Responding to policy demand and crises: Respond to policy demand and crises with the broader objective of promoting evidence-based decision-making

Both National and sub-national level: **Odisha is a focus state**

Collaboration with Government institutes, CSOs, think-tanks and the community



Building Policy Coherence across FLW Sector

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FLW policies and schemes can often be **fragmented, uncoordinated, and incoherent**

Different ministries can be **siloed** and unable to respond with **holistic policies**

- Identify best practices and existing gaps through analysis of specific policies and stakeholder interviews
- Working with government institutes both at centre and the state – in partnership with CEEW (Indian think-tank)

National level analysis *(Niti Aayog)*

In-depth analysis + recommendations through 7 central schemes;

Flagship report launch in Jan 2024

State level policy coherence analysis *(State Government departments)*

Odisha (2023-2024); Rajasthan (2024)

Building Policy Coherence: Odisha

9 schemes for in-depth coherence analysis in consultation with Agriculture and Water Ministry officials

State-level Policies	National-level Policies
o Odisha Millet Mission (OMM) o Krushak Assistance for Livelihood and income Augmentation scheme (KALIA) o Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA) o Canal Lining and System Rehabilitation Programme (CLSRP)	o Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) o Mission on Integrated Development of Horticulture (MIDH) o Pradhan Mantri Matsya Sampada Yojana (PMMSY) o RKVY-Per Drop More Crop (RKVY-PDMC) o PMKSY-Watershed Development Component (PMKSY-WDC)

- Stakeholder consultation in Bhubaneshwar – 14th December, 2023
- Final analysis with policy recommendations in 2024

Integrating policy tools for informed decision making

Modelling approach for investment/policy prioritization in the agrifood system *(Supply and Use Table (SUT); Social Accounting Matrix (SAM) Modelling; Agricultural Investment Data Analysis (AIDA))*

- Understanding complex trade-offs and identifying drivers of system transformation
- Analysis of economy-wise impacts of agri-food systems investments

Extending national-level database and modelling to state-level in Odisha

Training policymakers, analysts, and other relevant stakeholders

Key Partner: Odisha University of Agriculture and Technology (OUAT)

Responding to specific policy demand and crises

Increase women's voice and agency in choosing assets in MGNREGA (Odisha)

- Develop information leaflets, videos, and capacity-building targeted to rural women
- ~7000 women to be targeted across 4 districts (Bolangir, Rayagada, Kalahandi, Mayurbhanj)
- RCT to generate evidence on the effectiveness across different promotional activities
- All training materials to be available freely – available for CSOs, government agencies

Key Partner: PRADAN

Responding to specific policy demand and crises

Political and Institutional Landscape Analysis of MGNREGS and ABhY (Rajasthan and Madhya Pradesh)

- Better community participation, improved convergence, and co-ordination through analysis of patterns of interactions; power relations and needs assessment
- Capacity development training of stakeholders for improved community water management

Key Partners: CmF and People's Education & Development Organization (Rajasthan); PRADAN (MP)

Responding to specific policy demand and crises

- Policy Brief analyzing the ***Implications of the Russia-Ukraine war on India's agrifood systems and policy responses***

- **Evaluation of OPELIP in Odisha** (Odisha Particularly Vulnerable Tribal Group Empowerment and Livelihood Improvement Program) - *Periodic assessment for mid-program implementation insights and feedback and generate evidence on impacts of the program*

- **Analysis on the effectiveness of the cash-incentive scheme for crop diversification** in Punjab/Haryana for saving groundwater

Status and Drivers of Agriculture Transformation in Odisha

Caron, P. et al 2018

Prof. K. R. Ashok, Ph.D.

Former Director

Centre for Agricultural and Rural Development Studies (CARDS)

Tamil Nadu Agricultural University, Coimbatore-641003

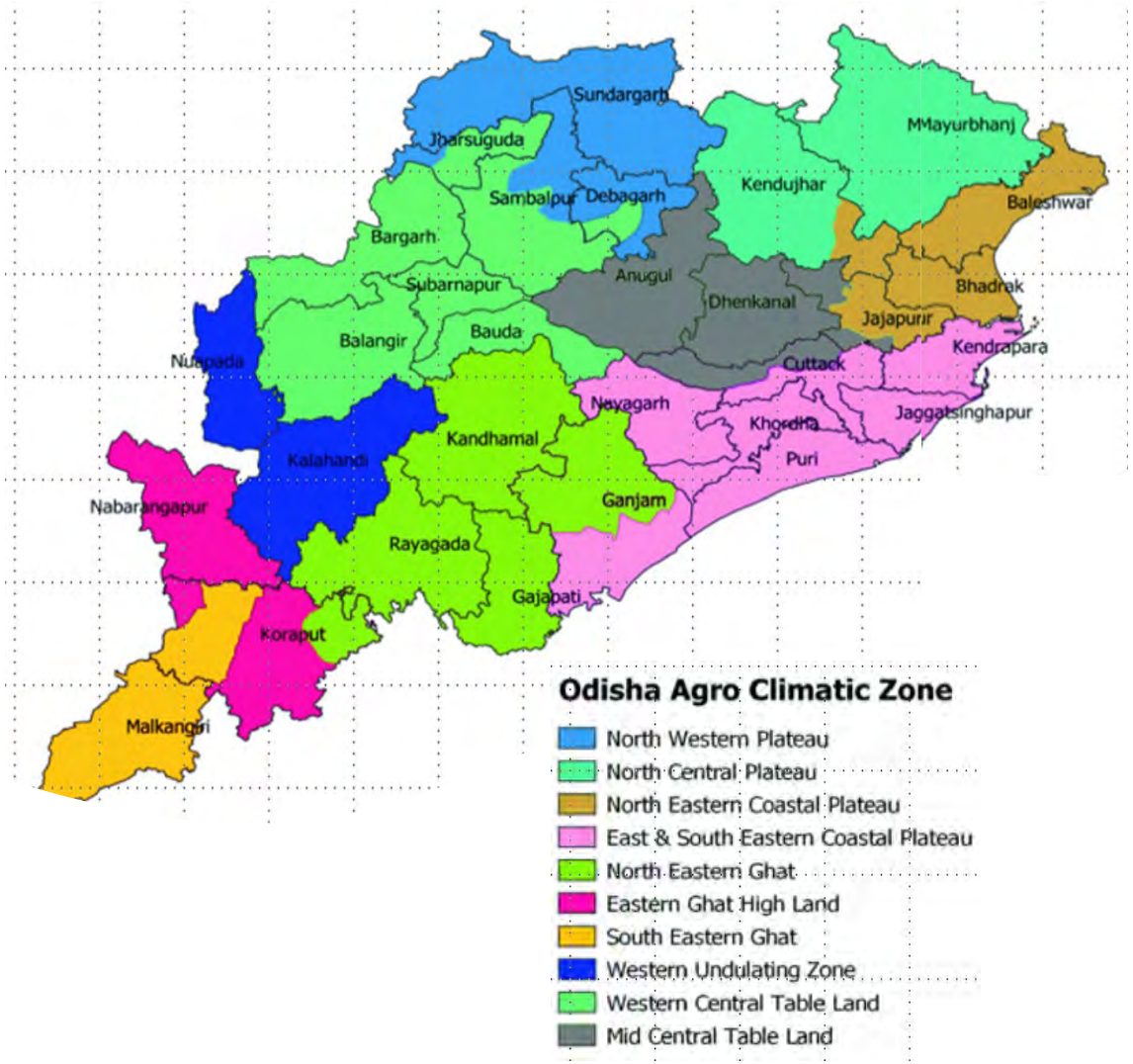
Stakeholders' Consultation Meeting on 'Agrifood value chains in Odisha – Challenges and Opportunities' at Bhubaneswar on 29-11-2023

Scheme of Presentation

1. Status of Agrifood Systems in Odisha
2. Why and How Agrifood Transformation?
3. Drivers of Agrifood Transformation in Odisha
4. Challenges of Agrifood Transformation in Odisha

I. Status of Agrifood Systems in Odisha

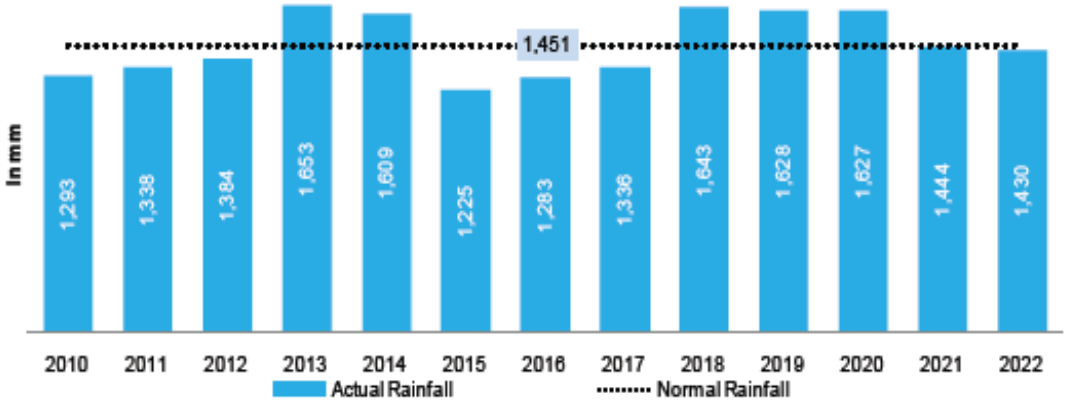
General Features of Agrifood System in Odisha



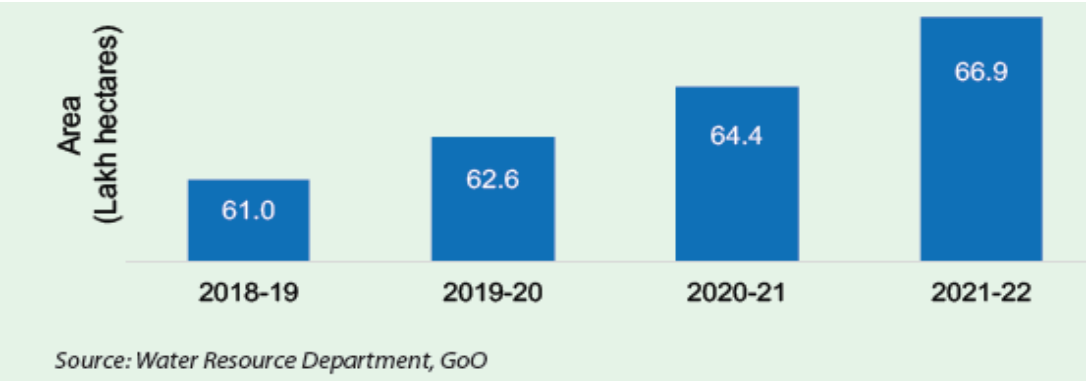
- ✓ 9th largest State in India with 4.7 % area and 3.47 % of population.
- ✓ Population 45 million; 80 percent lives in rural areas; Around 30 percent are below the poverty line
- ✓ Odisha has 10 Agro-Climatic Zones, 480 kms long coastline and abundant water resources.

Water Resources

Actual Rainfall and Long-term Average



Irrigation Potential Created



Source: Water Resource Department, GoO

Natural Calamities

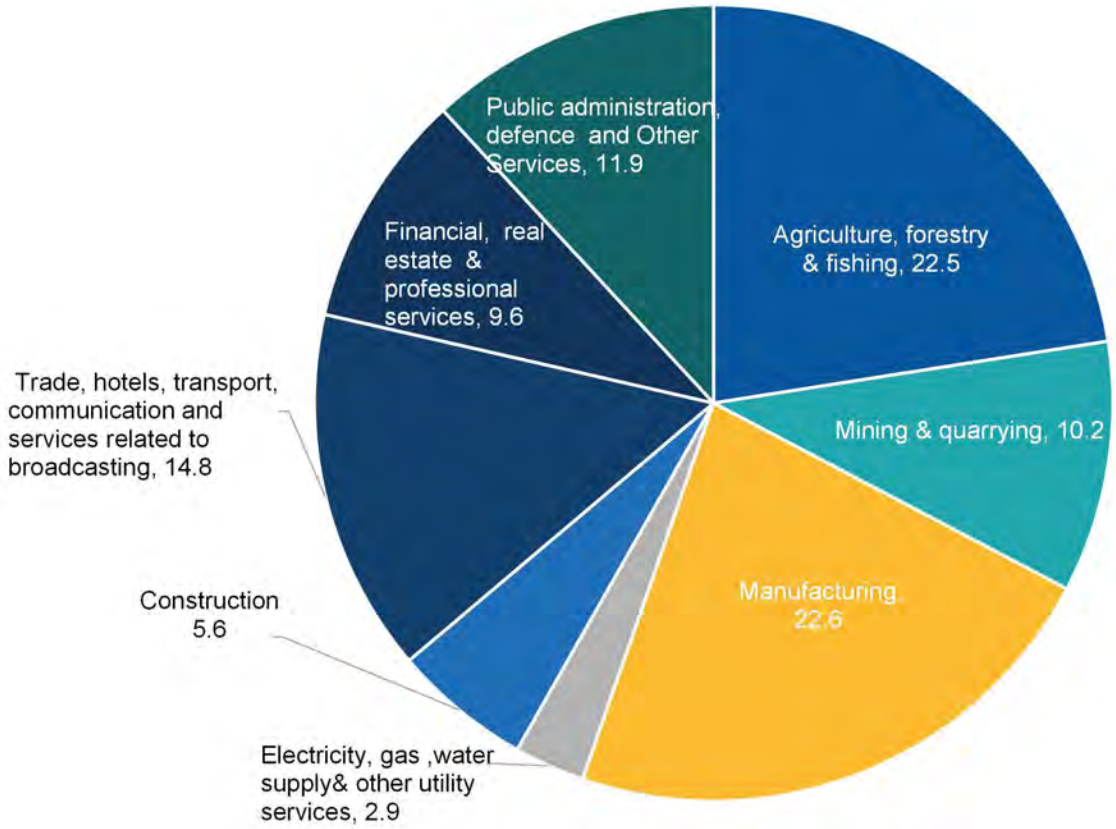
Year	Natural Calamities
2010	Flood, Heavy Rain, Drought & Unseasonal Cyclonic Rain
2011	Drought & Flood
2012	Drought & Flood
2013	Very Severe Cyclonic Storm "Phailin"/Flood
2014	Very Severe Cyclonic Storm "Hudhud"/Flood
2015	Drought, Flood & Heavy Rain
2016	Drought, Flood & Heavy Rain
2017	Flood, Heavy Rain, Drought & Pest Attack, Unseasonal Rain
2018	Cyclonic Storm "Titli" and "Pethai" / Drought
2019	Extremely Severe Cyclonic Storm "Fani" and "Bulbul"
2020	Severe Cyclone "AMPHAN" and heavy flood
2021	Drought, Unseasonal Rain and Cyclones Yaas, Gulab, JAWAD
2022	Flood and Heavy rain

Source: SRC, Odisha

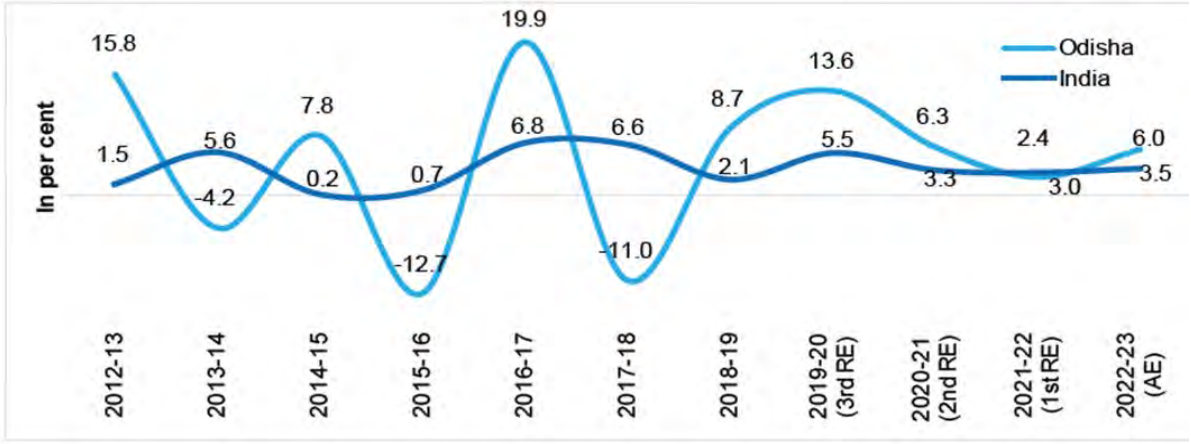
Agriculture sector faces several challenges including frequent natural calamities like floods, cyclones drought, etc., that affect farmers' yield and income.

Performance of Agricultural Sector

GSVA (%) at current Prices, 2022-23



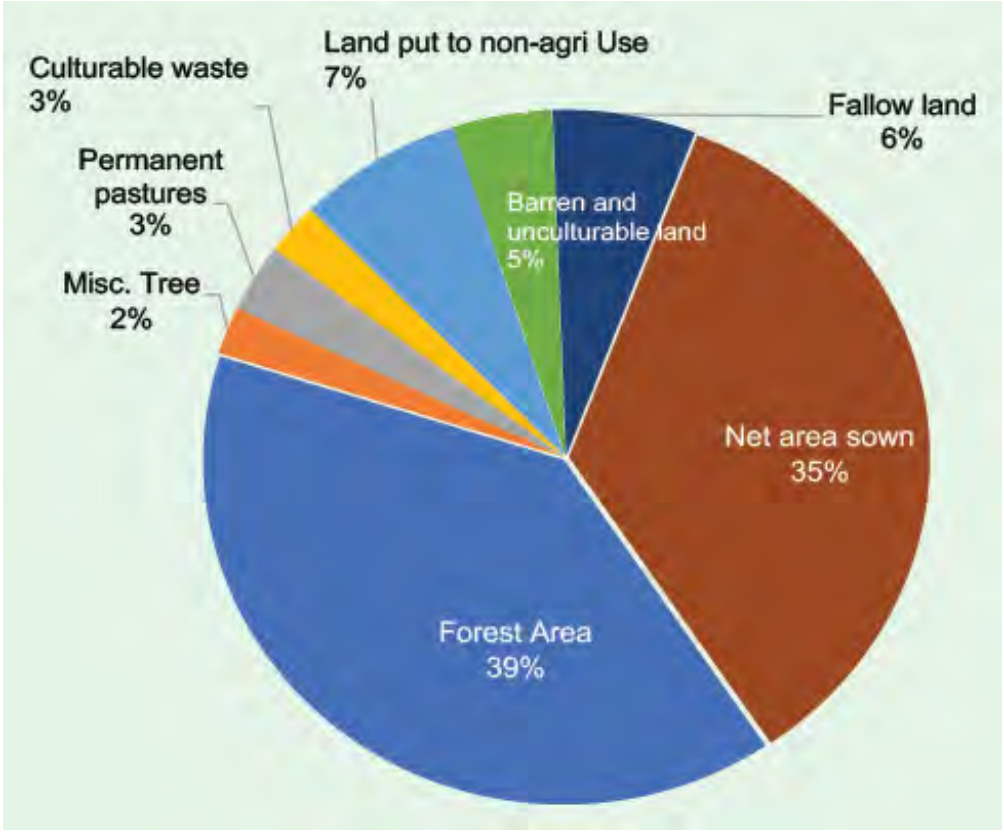
Growth of Agriculture and allied sector
GVA at constant prices of Odisha & India

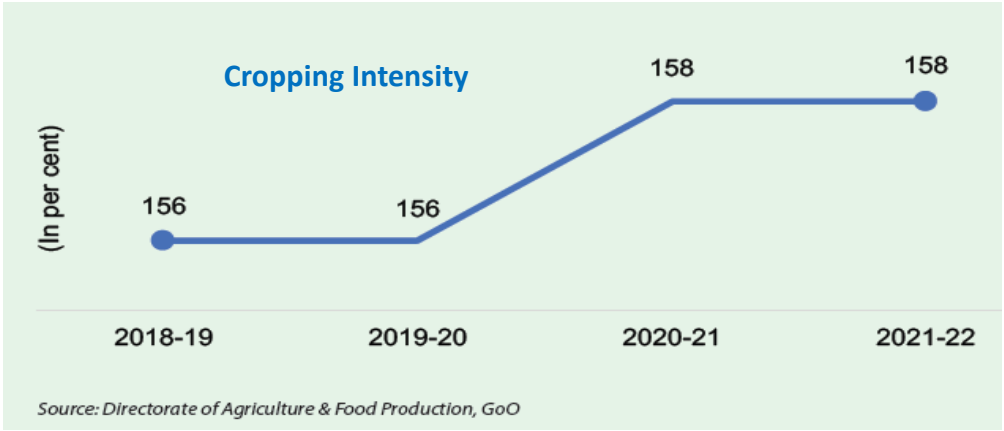


Structure of Farm Holdings

- ✓ 48.7 lakh farm holdings
- ✓ 93% are small and marginal farmers
- ✓ (< 2ha) owning 75% of the land

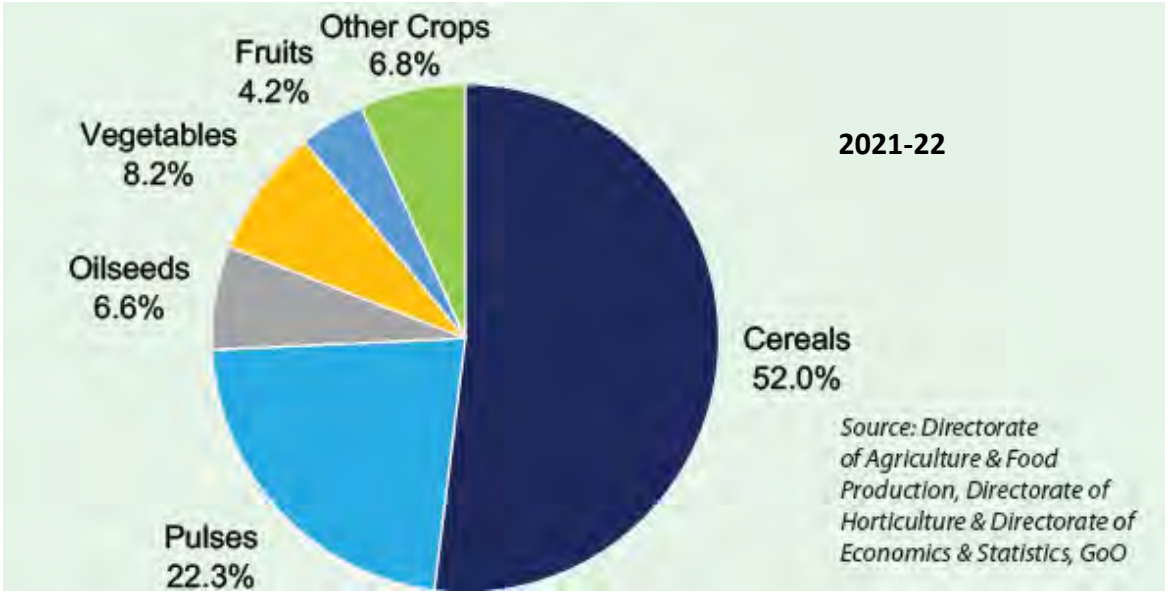
Land Use Pattern of Odisha 2021-22





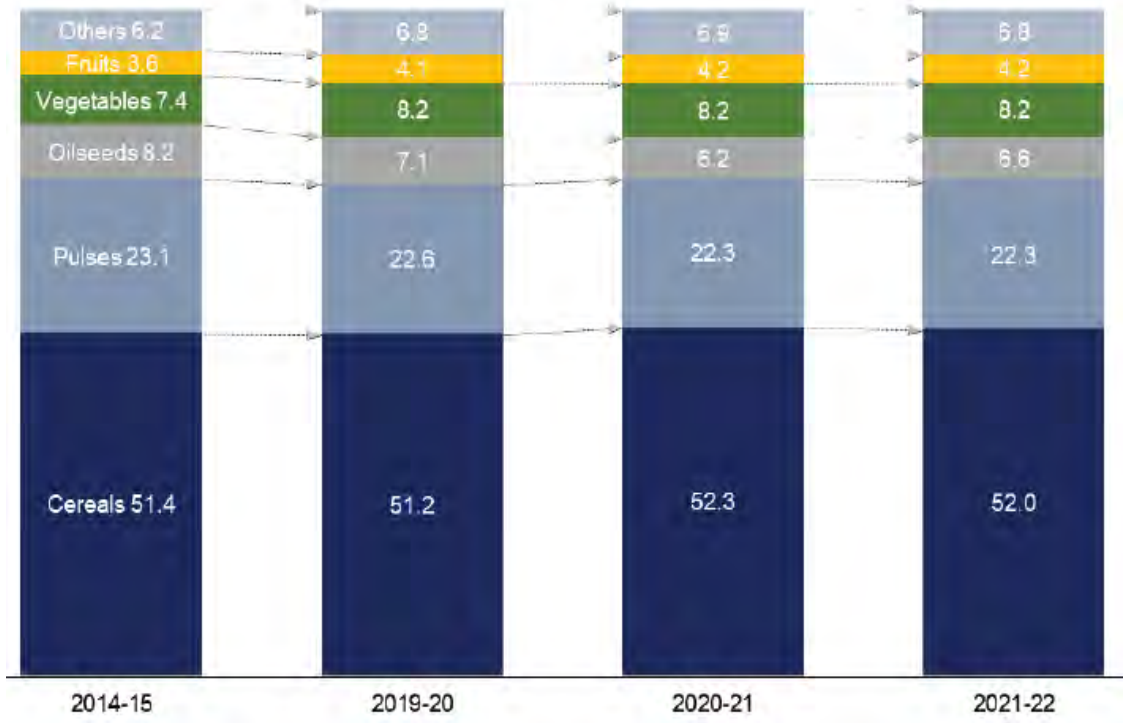
Source: Directorate of Agriculture & Food Production, GoO

% Area under Different Crop Groups



- ✓ **<u>Paddy</u> is the most cultivated crop with a share of almost 48% in gross cropped area**

Trend in Area under Different Crop Groups

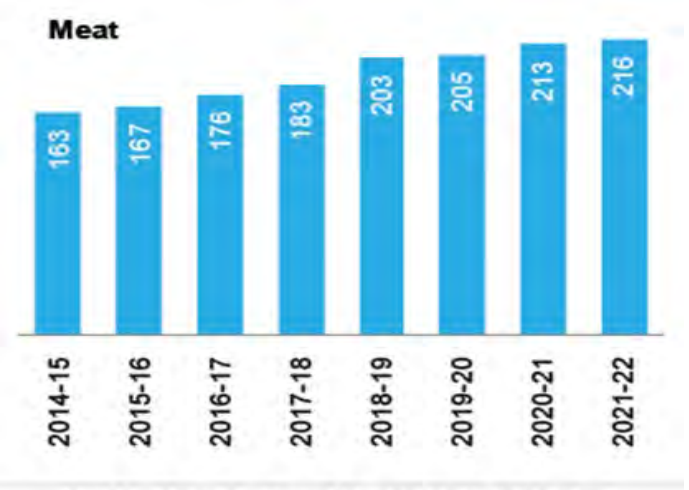


Source: DAFP(O) & DoH, GoO

Livestock and Poultry Sector

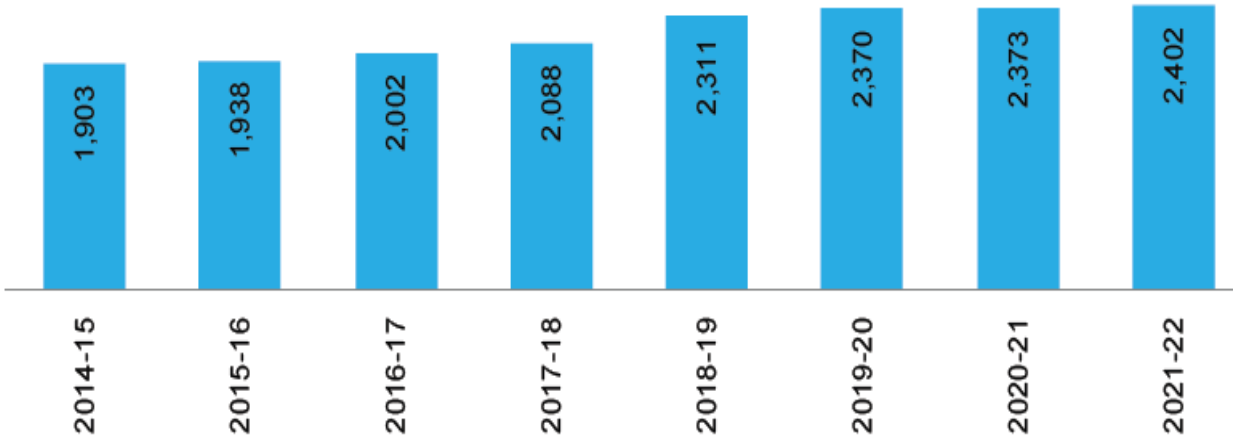
- ✓ **Odisha has 3.4 per cent of India's total livestock population and 3.2 % of the total poultry.**
- ✓ **Odisha ranks 10th in cattle & poultry population and 9th in terms of goat and sheep population in the country.**

(Livestock Census 2019)

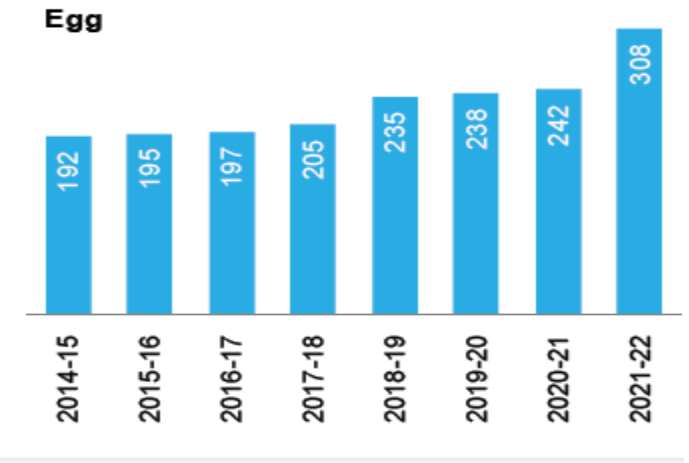


(a) Meat Production of the State (In '000, MT)

Milk Production in Odisha (in '000, MT)



Source: F&ARD Department, Odisha

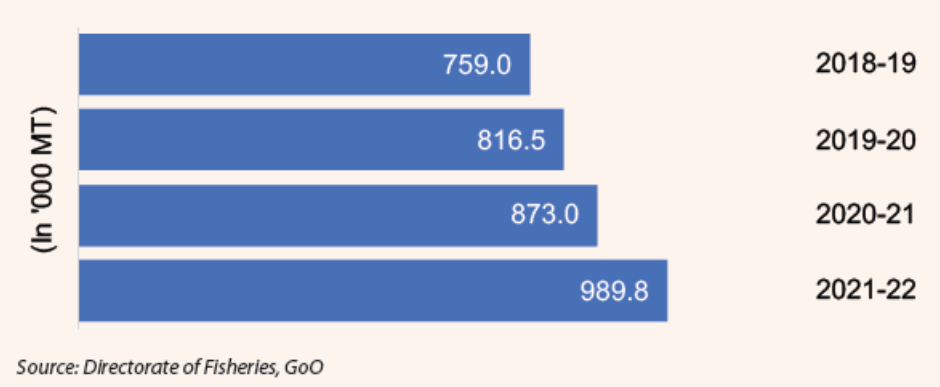


(b) Egg Production of the State (In crores)

Source: F&ARD Department, Odisha

Fishery Sector

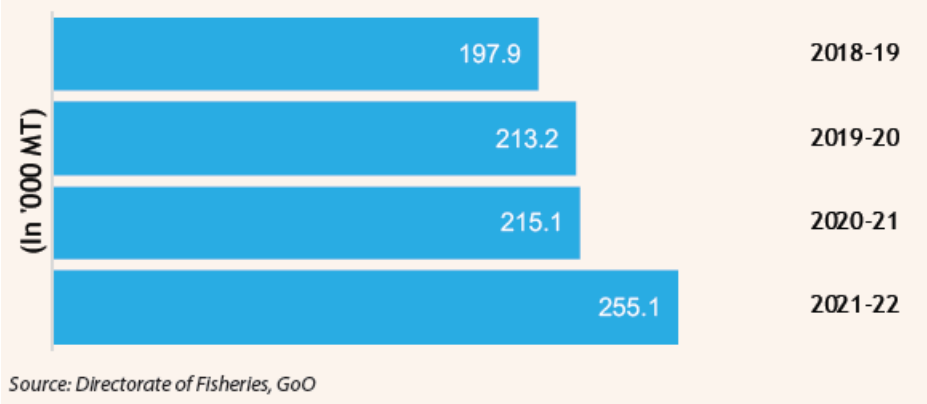
Production of Fish - Odisha



Source: Directorate of Fisheries, GoO

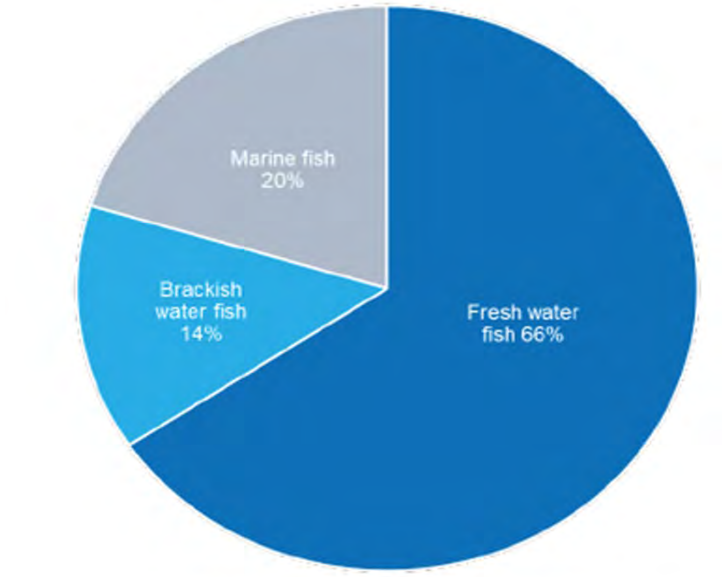
Odisha is the 4th largest fish producing state in the country.

Export of Fish - Odisha



Source: Directorate of Fisheries, GoO

Sources of Fish Catches (%) (2021-22



Source: Directorate of Fisheries, Odisha

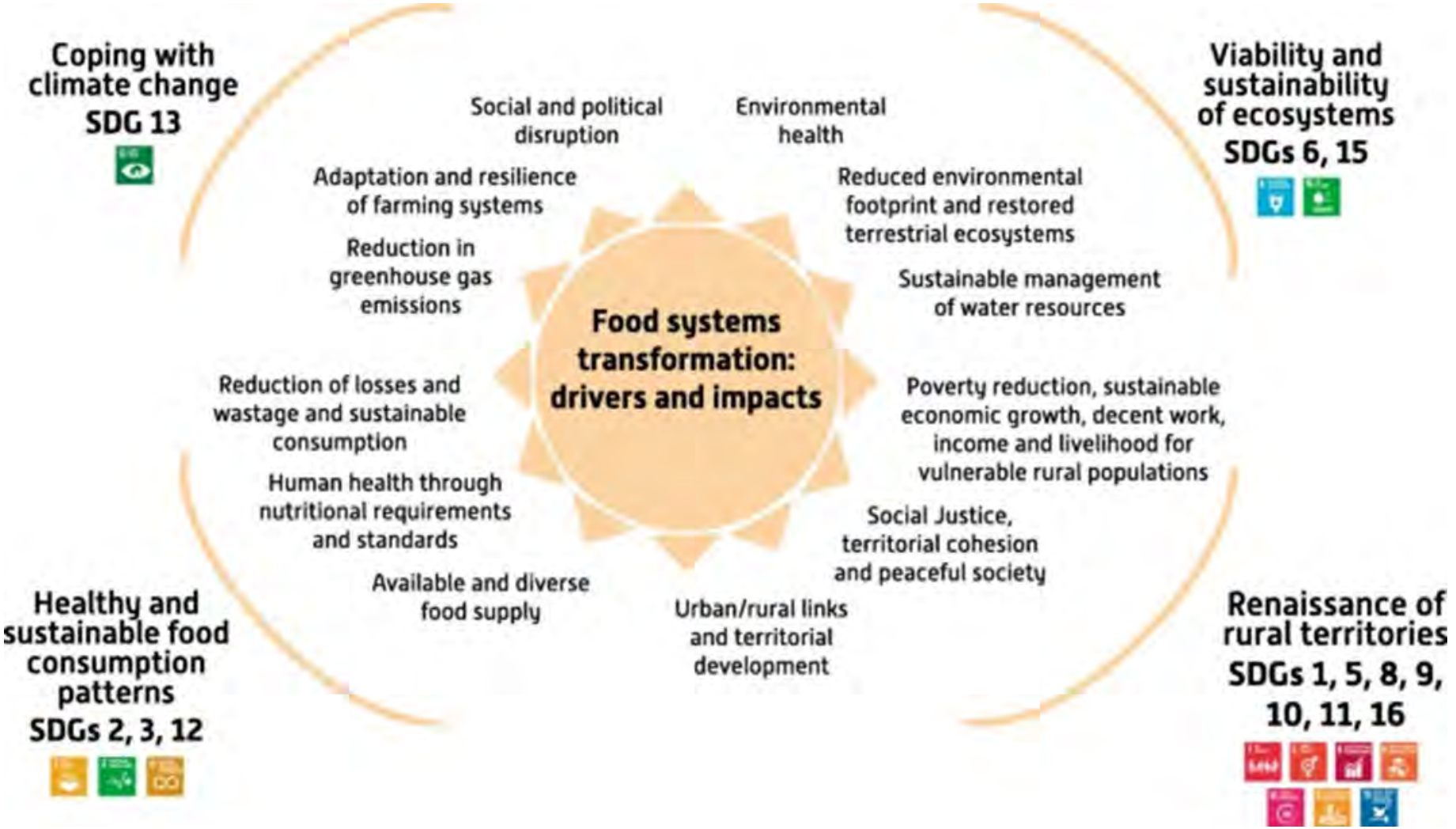
II. Why and How Agrifood Transformation?

Why Agrifood Transformation?

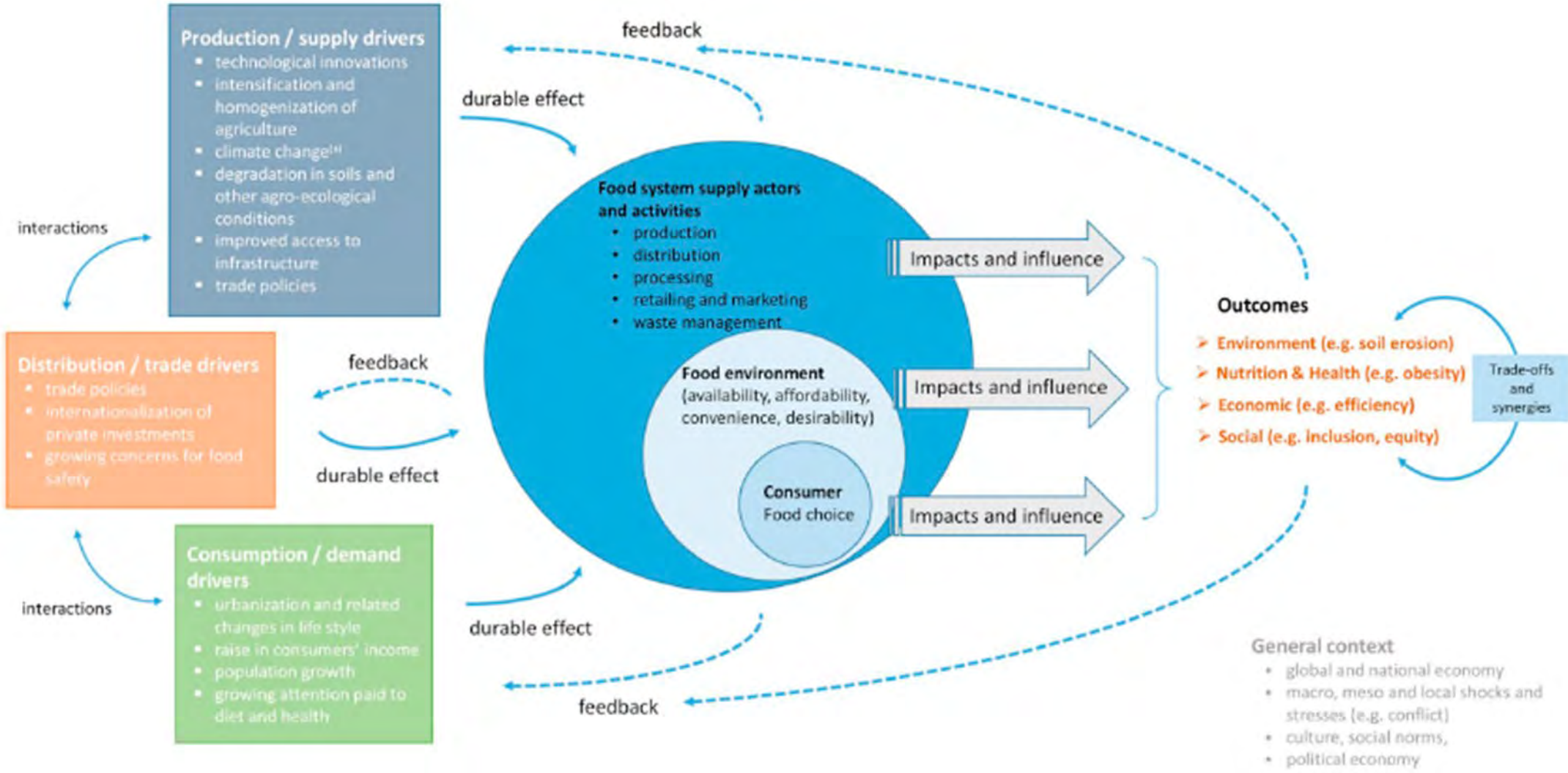
- ✓ **Food systems transformation requires a paradigm shift and robust systemic reforms to address growing challenges related to hunger, malnutrition, rural poverty, and environmental changes (FAO).**

- ✓ **Food systems transformation attempts to deliver a coordinated program of research and engagement across the food production–to–consumption continuum to support equitable access to sustainable healthy diets, improve farmer livelihoods and resilience, and conserve land, air and groundwater resources (CGIAR)**

Addressing SDGs through Agrifood Transformation



Drivers and Agents of Agrifood Transformation



Source: Bene, C., Steven D. Pragera, Harold A.E. Achicanoya, Patricia Alvarez Toroa, Lea Lamottea,b, Camila Bonilla Cedrezc, Brendan R. Mapesd (2019) Understanding food systems drivers: A critical review of the literature. Global Food Security 23 (2019) 149–159

AFS transformation involves synchronised actions in :

1. Developing required policy support
2. Strengthening institutions
3. Improving infrastructure
4. identifying priority areas for investment
5. linking farmers with markets
6. Developing commodity value chains.

Through various actors/stakeholders like:

1. Farmers/Producers
2. Government Departments
3. Service providers
4. Input sector
5. Agro-processors
6. Civil society organizations.

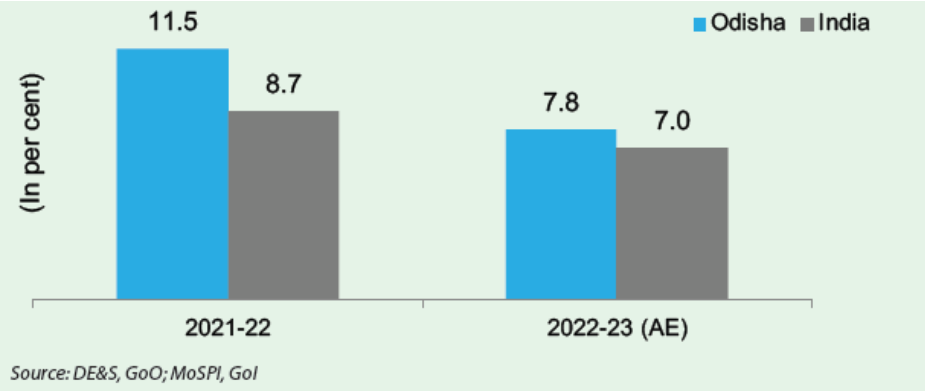
AFS's off-farm components is central to the process of agricultural transformation

Value-added in the agri-food system (AgGDP+)
Employment in the agri-food system (AgEMP+)

III. Drivers of Agrifood Transformation in Odisha

Drivers of Agrifood System in Odisha: The Performance of Economy

1. Odisha economy is growing faster than India



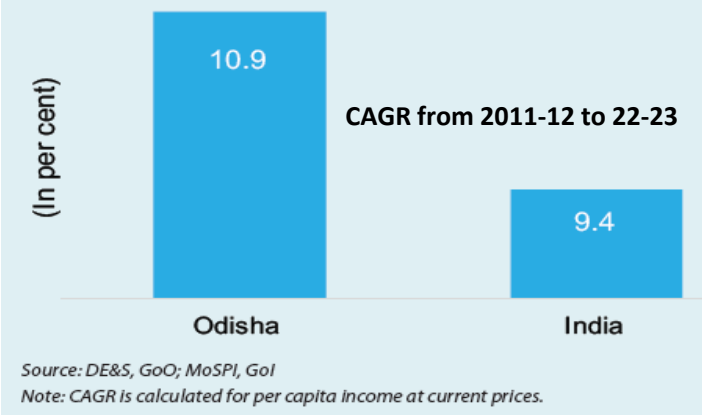
2. Odisha Economy is undergoing a structural change

Sector	Area	Employment Share (in per cent)				GSVA Share (At Current Prices, in per cent)			
		1993-94	2004-05	2011-12	2020-21	1993-94	2004-05	2011-12	2020-21
Agriculture	Rural	72	69	62	52	33	23	18	26
	Urban	10	14	14	12				
Industry	Rural	9	17	23	28	33	41	44	37
	Urban	26	27	23	29				
Services	Rural	18	14	15	19	34	36	38	37
	Urban	65	60	63	59				

- ✓ Employment in agriculture declines
- ✓ Share of agriculture in GSVA declines
- ✓ Industry and service sector increases

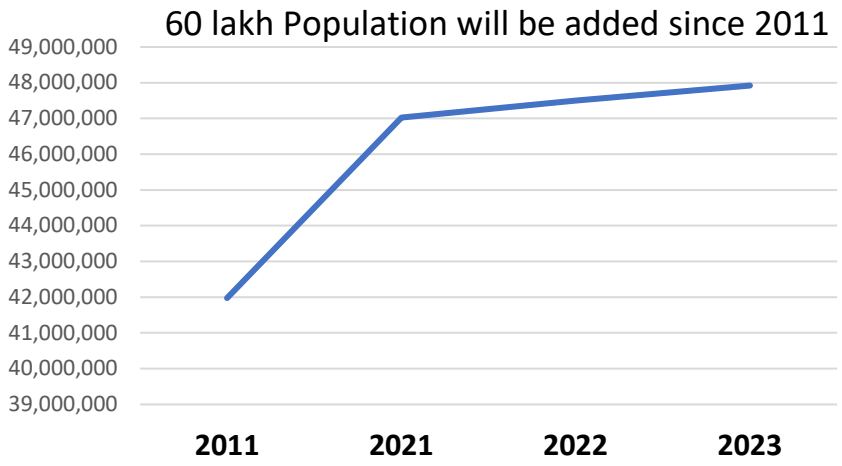
Drivers of Agrifood System in Odisha: Increasing Income and Population

5. Per Capita Income Growth



- ✓ **Purchasing power of consumers increasing**

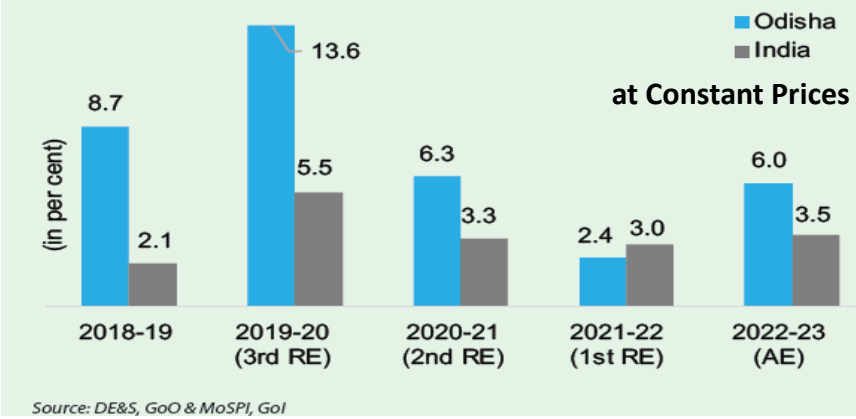
6. Projected Population Growth in Odisha



- ✓ **Income growth combined with population growth…**
- ✓ **…..translates into high demand for food especially high value food products**

Drivers of Agrifood System in Odisha: Performance of Agricultural Sector

7. Agriculture & Allied Sectors growth: higher than India



Source: DE&S, GoO & MoSPI, GoI

8. Share of Agriculture and Allied Sectors in GSVA

Economic Activity	Percentage Share in GSVA											
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (3rd RE)	2020-21 (2nd RE)	2021-22 (1st RE)	2022-23 (AE)
Agriculture, Forestry and Fishing	17.9	21.4	20.2	22.2	20.2	20.9	19.2	19.4	23.6	25.8	22.9	22.5
Crops	11.6	15.1	13.6	15.0	12.4	13.3	11.3	11.3	14.8	16.2	14.3	14.2
Livestock	2.4	2.6	2.6	2.7	2.9	2.6	3.0	3.2	3.4	3.7	3.4	3.0
Forestry and Logging	2.6	2.5	2.8	2.9	3.1	3.1	2.6	2.8	3.1	3.3	2.8	2.6
Fishing and Aquaculture	1.2	1.3	1.3	1.5	1.8	2.0	2.2	2.1	2.3	2.6	2.5	2.7

Source: DE&S, Odisha - at current prices

- ✓ **Crops show mixed trend**
- ✓ **Livestock and fishery gradually increasing**
- ✓ **Structural change taking place within agricultural sector**

9. Scale of Agriculture and Agricultural Diversity

- ✓ **Sheer size of agriculture: 54.1 lakh hectares accounting for 35 per cent of the total geographical area is under cultivation**
- ✓ **Diverse agro-ecological zones and different cropping patterns over 54 lakh ha are great strengths in driving agrifood transformation**

10. Environment friendly and Climate Resilience Interventions

- ✓ **Climate change responses for a resilient and sustainable production systems drives Agrifood transformation**

Drivers of Agrifood System in Odisha: Governance

11. Odisha Government Initiatives…need to enable AFS Transformation

BALARAM (Bhoomihina Agriculturist Loan and Resources Augmentation Model) Scheme, Krushak Assistance for Livelihood and Income Augmentation (**KALIA**), **Ama Krushi Rashtriya Krishi Vikas Yojana (RKVY), PMFBY, Odisha Missions or – Millets, Spices, Floriculture, Mushroom and Jackfruit**

12. Vibrant Policy Environment…to enable AFS Transformation

Odisha Organic Farming Policy 2018, Odisha Farmer Producer Organisations Policy 2018, Mukhyamantri Krushi Udyog Yojana (MKUY) 2018 , Agriculture Production Cluster (APC), a special programme in Tribal Regions, Odisha Logistics Policy, 2022, Odisha Export Promotion Policy, 2022, major investments in the development and modernization of industrial parks: Mega Food Park, Sea Food Park

Drivers of Agrifood System in Odisha: Consumer Preferences and Trade

13. Changing Consumer Preference and food consumption Patterns

Higher incomes, Urbanization, increasing health consciousness, demand for high value animal based foods, increasing demand for F&V…… increased demand for processed, ready-to-eat convenient foods…. Drives the food system transformation

14. Globalization of Food Trade

Food systems transformation catalyzed by:

- ✓ FDI in developing countries
- ✓ Food processing and storage technologies
- ✓ Emergence of varied food retailing formats like supermarkets, hypermarkets etc

IV. Challenges of Agrifood Transformation in Odisha

Challenges of Agrifood Transformation

Rice Dominance	Rice covers about over 50% of the cropped area and diversification of cropping pattern is a challenge
Market Linkages	✓ About 6,000 FPOs operating in the state ✓ 66 Regulated Market Committees in the State ✓ Out of 66 RMCs, 54 are linked with e-NAM Substantial investment in market infrastructure and institutions
Agro-Processing	✓ Enhancing the share of Primary and secondary processing. ✓ Post-harvest losses up to 15% for crops like vegetables.
Land Fragmentation	About 75% of landholdings being less than one hectare in size.
Natural Calamities	Odisha is vulnerable to natural disasters, with 6-7 tropical cyclones hitting the state's coastline each year


THANK YOU!

Government's Perspective on Agricultural Marketing

Pravu Kalyan Pattnayak , IOFS
Director , Agricultural Marketing cum
Member Secretary , OSAM Board
Department of Cooperation
Govt. of Odisha

Agri-Marketing Framework - Odisha

•The Agricultural Marketing System is governed under the Odisha Agricultural Marketing Produce Act,1956 & Rules,1958.

•The Agricultural Marketing Sector in the State came into existence in a structured form in 1956 and now functions under the Government in Cooperation Department, with a separate Directorate.

•Government have established 66 Regulated Market Committees along with 415 market yards and 43 Krushak Bazars across the State with the State Agricultural Marketing Board as an apex organization to strengthen Agricultural Marketing Mechanism in the State.

Agricultural marketing reforms undertaken in Odisha

- **Unified Licensing System**

Unified licensing system has been implemented in the State as per the Odisha State Agricultural Produce Markets (Amendment) Act, 2017. As per this Act, all trade licenses issued in the State are unified in nature enabling the trader to participate in electronic trading anywhere in the state. Currently these trade licenses are being issued by the Chairman of the Regulated Market Committee.

- **Single Point Levy of Market Fee**

Single Point levy of Market fee has been implemented in the State as per the Odisha State Agricultural Produce Markets (Amendment) Act, 2017. As per this Act, market fee can be levied in a single market area of the State and cannot be repeated in any other market area.

Market Infrastructure Development in Odisha

Regulated Market Committees in the state are mandated for creation of need based marketing infrastructure for orderly marketing of agricultural produce like Go-downs , Covered sheds , Farmer Information Centres , Farmer Rest Sheds , Auction Halls , Open Platforms , Banking Facilities , Approach Roads , Boundary Walls , Water Supply , Electrification , Sanitary Facilities , Garbage Disposal etc.

Available Infrastructure	Nos	Capacity
Specialized Commodity Markets (Maize , Chilly , Turmeric , Ginger , Cotton , Coconut)	17	
Go-Downs	863	334250 MT
Go-Downs at PACS/LAMPS Level	347	155480 MT
Integrated Pack House (Work in Progress)	28	10102 MT
Onion Storage Structures (Work in Progress)	14	6000 MT
Cooling Chambers	40	775 MT
Model Mandis	6	
Whole Sale Markets	3	
Multipurpose Go-downs at PACS/LAMPS Level	128	
Weighing Bridge	185	
Weighing Scale	11659	

Information Technology Integration

“e-NAM: A mission to Reach the Unreached stakeholders through Electronic Platform”

The Cooperation Department Govt. of Odisha is implementing the program National Agricultural Market (e-NAM) in Odisha. National Agriculture Market (e-NAM) is a pan-India electronic trading portal which networks the existing APMC/RMC mandis to create a unified national market for agricultural commodities. Small Farmers Agribusiness Consortium (SFAC) is the lead agency for implementing e-NAM under the aegis of Ministry of Agriculture and Farmers’ Welfare, Government of India. The e-NAM Portal provides a single window service for all APMC/RMC related information and services. This includes commodity arrivals & prices, buy & sell trade offers, provision to respond to trade offers, among other services. While material flow (agriculture produce) continues to happen through mandis, an online market reduces transaction costs and information asymmetry.

The program was implemented on pilot basis in 10 market yards of Odisha from 26th March, 2017 focusing on trading of commodities having high marketable surplus and demand in national market. Out of available 66 mandis in the state , all 66 mandis have been integrated with e-NAM.

Sl. No.	No. of Mandis Integrated with e-NAM	Month & Year of Integration with e-NAM
1	10	March 2017
2	31	April-May 2020
3	13	June 2022
4	12	February 2023
Total	**66**	

e-NAM Highlights – Odisha (Till October 2023)

66 RMCs — **e-NAM integration**

3,61,337 — **Farmers registered**

6 folds increase in last 4years

8797 — **Traders registered**

14 Folds increase in last 4 years

451 — **FPOs registered**

1,14,17,831 Quintals

27,47,76,874 Nos — **Trade Volume**

32 Folds increase in last 4 years

₹ 2960.9 Cr — **Trade Value**

15 Folds increase in last 4 years

79.82 Cr — **FPO Trade Value**

6.5 Folds increase in last 3 years

₹204.97 Cr — **Inter – Mandi Trade Value**

21 Folds increase in last 3 years

₹ 64.4 Cr — **e-Payments Value**

5 Folds increase in last 4 years

Major Commodities Traded – **Fruits and Vegetables , Coconut , Maize , Cotton , Chilly , Turmeric , Ginger , Cashew Nuts , Betel Leaves , Bamboo , Ground Nut , Fish , Prawn , Crab , Dry Fish.**

e-NAM Mobile App :

The e-NAM Mobile App is helping the farmers to know the latest prices of Agricultural commodities and helping the farmers to access the mandis through GPS. Traders are able to participate in the bidding processing using this app from anywhere.

Farmgate Module :

Farmers are able to sell their produce from their farmland using the mobile app.

Processing units – Adding Value to the Produce

Millet	Millet Processing unit at Ambapua under RMC Digapahandi(Ganjam)
Cotton	Cotton Ginning & Pressing Mill at Digapahandi (Ganjam)
Cotton	Cotton Ginning & Pressing Mill at Kalabada under RMC Digapahandi (Ganjam) proposed to be set up.
Green gram	Green Gram Processing Unit currently functioning under Sonepur Municipality Proposed to be shifted under RMC Dunguripali (Subarnapur).
Mango	Mango Processing & Ice Cream Unit at Kalapthar run by WSHG under RMC Dunguripali (Subarnapur).
Chilly	Chilly Powder & Turmeric Powder Processing unit made functional at Kusumi under RMC Kuchinda involving WSHGs (Sambalpur).
Puffed rice	Puffed Rice Units proposed to be established At Bhojpur & Jarabaja under RMC Kuchinda involving WSHGs (Sambalpur).
Turmeric	Turmeric Processing unit at Raikia & Daringbadi under Tikabali RMC (Kandhamal).

Functional

Work in Progress

Quality Assurance

•Assaying Labs have been set up in all the 66 Regulated Committees in the State along with Necessary Equipments for Cleaning , Grading & Packaging

•3 Nos. of AI based Grain analyzers have been put in place in Juangarh , Patnagarh & Dunguripali on pilot basis

Grading Equipments for determining FAQ of Paddy

Analysis Kit	4855
Moisture Meter	8150
Mini Grader	4080
Seed Grader	73
Sample divider	3355
Set of Sieves	4373

Images of Assaying Laboratory & Equipments

Promotion of FPOs

- 451 FPOs have been registered under e-NAM till 31st October , 2023. Out of these 451 registered FPOs , 231 FPOs have already participated in the trading process through e-NAM.
- Till 31st October , 2023 , trade value of Rs. 79.82 crores have been reported through the Registered FPOs under e-NAM.

Capacity Building

OSAM Board is organising regular training programme for farmers, traders and other stakeholders for trading through e-NAM. Farmers' exposure visit to inside and outside the state has already commenced to enhance their knowledge of market trend, price dynamics etc. This empowers them to make better decisions in the agricultural marketing process. All RMCs are conducting regular awareness campaigns in their respective areas.

Details of Training Programs for Stakeholders

Year wise Stakeholders Training Data : e-NAM					
Year	No. of Farmers	No. of Traders	Mandi Staff	Others	Total
2018-19	763	163	153	83	1162
2018-19	1643	252	269	127	2291
2019-20	11858	1227	648	35	13768
2021-22	14254	1618	1935	319	18126
2022-23	14541	1356	2221	371	18489
Grand Total	43059	4616	5226	935	53836

Details of Training Programs for Mandi staff

Year	No. of Mandi Staff Trained
2021-22	979
2022-23	1266
Grand Total	2245

Govt. procurement & Price Support

- In the present system , Paddy is being procured by the Govt. at MSP
- Green Gram , Black gram , Sesame Seeds , Ground nuts are being procured by the Govt. under PSS (Price Support Scheme)

Future Perspectives

- Strategic Management Partner – Govt. has decided to engage Strategic Management Partner to strengthen e-NAM and to provide third party assaying service.
- Buyer Seller Meet – State and District Buyer Seller meets are planned to connect the sellers of the state to potential buyers from within the state and outside the state.
- ICRISAT – The Govt. agency from Hyderabad has been engaged for transformation of Agri-Marketing.
- Satellite Mandis – Aggregation points of agricultural commodities will be identified and be provided with necessary infrastructure to support the farmers to sell their produce through e-NAM.

Thank You

Marketing strategy of horticultural products

Dharitri Mishra , OAS(S)

General Manager

OSAM Board

Transforming Agri-marketing through effectively operationalizing Regulated Market Committees, Developing Market Linkage and Empowering farmers through Supply Chain Management in Odisha

Contents

- *Background*
- *Importance of Transforming Agri-markets in Odisha*
- *How ICRISAT as a PMU came into the picture*
- *Project milestones achieved*
- *Execution process and factors considered for recommendations of the establishment of Integrated Pack House*
- Strategies for strengthening the value chain of horticultural produce/commodities in Odisha

Background

- Odisha is an agrarian state with 83.3 % of the rural population depending on agriculture (as per Census 2011).
- 93% of farmers belong to small and marginal landholding categories as per the 2015-16 agricultural census.
- Over the years, the share of agriculture in the gross state domestic product has declined from around 37% in TE1992–93 to 21% in TE2017–18 and that of industry and services increased correspondingly (CSO 2019).
- Even though the share of agriculture in GSDP is declining, the number of persons engaged in agriculture remains high. According to NSS reports, more than 55.7% of Odisha's population is engaged in agriculture and related sectors (NSS 68th round 2014) (45% according to the Labour Bureau, 2015–16)

Background

- Odisha ranked first in the production of sweet potato, second in brinjal, fifth in watermelon, cauliflower, okra, and tomato, and sixth in bottle gourd at the national level as per horticulture area production information system (HAPIS) reports 2019-20.
- In the fruit production category, Odisha ranked second in jackfruit, fifth in lemon, seventh in sapota, and ninth in mango. The report said that Odisha ranked seventh in the production of 11 kinds of vegetables and 11th in the production of a variety of fruits. The total fruit production in Odisha was about 24.82 lakh tonnes, vegetable production was 97.98 lakh tonnes and spice production crossed 20.2 lakh MT

Importance of Transforming Agri-Markets in Odisha

Agri-Marketing Networks:

a) 66 Regulated Market Committees (RMCs), 34 Krushak Bazars, 76 Municipal markets including 800 + FPOs/ Women SHGs

Multiple Constraints:

a) Only 10% of produce coming to mandis

b) 95% of farmers selling at farm gates

c) 7%-10% post-harvest losses; some as high as

d) Lack of storage facilities

E-NAM Centres and existing infrastructure

How ICRISAT as a PMU came into the picture

- With reference to the discussion with the research team of ICRISAT and further presentation of their previously implemented supply chain management project in Tamil Nadu i.e., Tamil Nadu Supply Chain Management Project then ICRISAT as a PMU came into picture for replicating the same in Odisha. Subsequently, ICRISAT was asked to submit a proposal on Odisha State Supply Chain Management on Agricultural Marketing Sector.
- ICRISAT-ABI submitted a project Proposal "***Transforming Agri-marketing through effectively operationalizing RMC's, Developing Market Linkage and Empowering farmers through Supply Chain Management in Odisha"*** to OSAM Board through Co-operation Department, Government of Odisha.
- Government of Odisha in Co-operation Department has approved the project.

Project milestones achieved

Milestones	Status
1. *Assessment of IPHs / PPCs as per the recommendation of District Collectors*	✓ Submitted (15) ✓ Under submission (1)
3. *Field assessment of Agricultural Production Clusters (APCs) of Mission Shakti – 30 women farmer FPOs*	✓ Interactions with FPO coordinators and Mission Shakti DPCs (**Presently Field assessment has been scheduled)** ✓ Provision of FPO Assessment Matrix prepared

District	RMC Location	Major Crops	Processing line	Proposed packhouse size	Proposed ripening chamber size	Proposed cold storage size
Balangir	Balangir	Brinjal, tomato, cabbage, cauliflower, onion	1TPH multi-produce line	8 MT		30 MT
Bargarh	Bargarh	Brinjal, pumpkin, cabbage, okra, potato	1TPH multi-produce line	10 MT		40 MT solar cold storage
	Padampur	Brinjal, pumpkin, tomato, cabbage, potato	1TPH multi-produce line	10 MT		
Jagatsinghpur	Biridi	Cabbage, brinjal, tomato	1TPH multi-produce line	10 MT		30 MT
Kalahandi	Bhawanipatna	Mango, banana, brinjal, tomato, pumpkin, bittergourd	1TPH multi-produce line	10 MT	10 MT	30 MT
	Junagarh	Mango, banana, brinjal, tomato	1TPH multi-produce line	10 MT	10 MT	30 MT
Kendrapara	Kendrapara	Pumpkin, brinjal, tomato, cauliflower, cabbage	1 TPD multi-produce line	1 MT Mini		10 MT
Mayurbhanj	Betnoti	Brinjal, tomato, cauliflower, cabbage	1TPD multi-produce line	1 MT Mini		10 MT
	Rairangapur	Brinjal, tomato, cauliflower, cabbage, okra	1 TPD multi-produce line	1 MT Mini		10 MT
	Baripada	Mango, lime, brinjal, tomato, cauliflower, cabbage	1TPH multi-produce line	10 MT	10 MT	50 MT
Sambalpur	Kuchinda	Main product: Chillies Other major: Brinjal, tomato, sweet potato, cauliflower, onion	1TPH multi-produce line	10 MT		30 MT

Besides these above mentioned districts, Angul, Kandhamal, Balasore, Puri, Khurda has been proposed for establishment of IPH.

Execution Process

- Discussion with the District Collectors and other line departments such as RMCs, Dept of Horticulture, and Mission Shakti Officials.
- Understanding the available infrastructural resources within the market yards such as power supply, water availability, logistics, and communications.
- Assessing the production status with the horticulture officials, wholesale, and retailers, price information
- Individual assessment from farmers, farmer institutions, buyers and traders.

Strategies for Strengthening the Value Chain of Fruits and Vegetables in Odisha

- Establishment of the Integrated pack houses and cooling units, assessing and extending the knowledge, attitude, and practices of farmers and stakeholders towards the value chain of horticultural produces, post-harvest losses.
- Strengthening and creating awareness of institutional trading through electronic platforms.
- Strengthening the farmer's institutions (PGs, FPOs, FPCs, SHGs) through business development and agri-enterprise development.
- Establishing collaboration with formal institutional buyers and promoting pre-harvest contracts, contract farming, and cooperative marketing.
- Implement demand-driven production, promote food safety and grading practices, Innovations, and Value additions for fruits and horticultural produces.
- Promotion of Integrated market and one-stop solution with innovation, risk coverage, value addition, collaboration, and institutional governance.

Integrated pack house

Onion Storage Structures - The need for onion storage structures in Odisha arises from the imperative to manage the seasonality of onion production, reduce losses, stabilize prices, and ensure a continuous and quality supply to meet market demand.

Onion Godown at Ghotia Market Yard under RMC, Junagarh

Engagement of Strategic management partner (smp)

Plan is afoot for engagement of Strategic Management Partner on pilot basis to take care of the following activities for organized marketing of Horticultural Products :

- Increase trade volume through e-NAM
- Assaying
- Operational Support

Buyer-seller meet

- Buyer-Seller meets both at State Level and District Level are being organized by OSAM Board on Agricultural marketing to involve private players in developing strategy to promote crop specific sourcing from the state through the WSHGs and Farmer Producer Organization (FPO)s.

- The event will attract buyers to trade on e-NAM portal and increase in use of RMC facilities for better quality control and value addition.

- Two district level buyer seller meets have already been conducted at Nabarangpur.

Cooling chambers - Small Cooling Chambers facilities contribute to meeting quality standards and certifications, enhancing the marketability of agricultural products, especially in export markets.

Sl. No.	Name of the RMC	Location	Nos of Cool Room (In Nos)	Storage Capacity (In MT each)	Present Status	Remarks
1	DIGAPAHANDI	GOLANTHARA	3	220 MT	Functional	Fruits & Vegetable
				15 MT		Sea Foods
				15 MT		
		AMBAPUA	2	25 MT	Functional	Flowers
				5 MT (Solar)		
2	HINJILICUT	HINJILICUT	1	30 MT	Functional	Fruits & Vegetable
		HINJILICUT (Chhatrapur)	4	30 MT each	Work Completed	
		HINJILICUT (Burudi MY)	2	30 MT each	Work Completed	
3	BOUDH	MANMUNDA	3	5 MT (Solar)	Functional	Fruits & Vegetable
		KHUNTABANDHA		5 MT (Solar)		
		MAIN MARKET YARD		5 MT (Solar)		
4	Dunguripali	Kalapathar Market Yard	4	5 MT each (Solar)	Functional	
			6	10 MT each (Solar)	Under work in progress	
5	Bargarh	Behera Market Yard	1	10 MT	Functional	
		Sarandapali	1	10 MT	Functional	
6	Sambalpur	Bareipali	1	10 MT (Solar)	Functional	
		Katarpaga	1	5 MT Solar (DMF)	Functional	
		Rengali	1	5 MT Solar (DMF)	Functional	
		Parmanpur	1	5 MT Solar (DMF)	Functional	
		Sahaspur	1	5 MT Solar (DMF)	Functional	
7	Kuchinda	MMY / Weekly Market Kuchinda	2	10 MT each (Horticulture/DMF/RMC)	Functional	
		k. Jamankira	1	10 MT (Horticulture/DMF/RMC)	Functional	
		Jamankira	1	10 MT (Horticulture/DMF/RMC)	Functional	
		Keseibahal	1	10 MT (Horticulture/DMF/RMC)	Functional	
		Bhojpur	1	30 MT (ITDA)	Functional	
		Jarabaga	1	30 MT (ITDA)	Functional	
		Kusumi	1	30 MT (ITDA)	Functional	
Total			40	775 MT		

Satellite mandis

Uncovered Aggregation points of Horticultural commodities will be identified and be provided with necessary infrastructure to support the farmers to sell their produce through e-NAM at remunerative price.

Inter state trade through e-nam

- Proposal has been initiated for incorporation of necessary amendments in the OAPM Act , 1956 to facilitate inter-state trade through e-NAM.
- Presently horticultural produces are traded across the state through inter-mandi under e-NAM.

Krushak bazar – 34 krushak bazars have been put in place to facilitate direct marketing of horticultural produce between the farmers and consumers

Sl. No.	Name of the District	Sl. No.	Name of the RMC	Name of the Krushak Bazar
1	2	3	4	5
1	ANGUL	1	Angul	Nalco Nagar (weekly once)
2	BARAGARH	2	Attabira	Attabira -do-
		3	Baragarh	Bargarh (weekly twice)
		4	Padampur	Sohela (weekly once)
3	BOLANGIR	5	Bolangir	Chudapali -do-
4	CUTTACK	6	Kendupatna	Deuli Sahi (Daily).
5	JAGATSINGHPUR	7	Jagatsinghpur	Chatra (thrice a week)
		8		Machhagaon(twice a week)
		9	Rahama	Rahama (Daily).
6	KALAHANDI	10	Junagarh	Junagarh (weekly once)
		11	Bhawanipatna	Balipada -do-
		12	Mukhiguda	Jaipatna (weekly once)
7	KANDHAMAL	13	Tikabali	Raikia (weekly once)
8	KENDRAPARA	14	Kendrapara	Chatta -do-
9	KEONJHAR	15	Champua	Jhumpura -do-
		16	Keonjhar	Padampur (daily)
		17	Keonjhar	Keonjhar (daily)
10	MALKANGIRI	18	Malkangiri	M.V.-79 (weekly once)
11	MAYURBHANJA	19	Baripada	Takatpur -do-
		20	Udala	Udala (Daily)
		21	Betnoti	Betnoti (weekly twice)
		22		Baisinga -do-
12	NABARANGAPUR	23	Nabarangapur	Nabarangapur(weekly once)
		24		Umerkote (weekly twice)
13	NAYAGARH	25	Bahadajhola	Bahadajhola (weekly once)
14	NUAPADA	26	Khariar Road	Udayanbandha -do-
15	PURI	27	Sakhigopal	Sakhigopal (Daily)
16	RAYAGADA	28	Rayagada	J.K. Pur (Daily)
17	SUNDARGARH	29	Sargipali	Sundargarh Town (Daily).
		30	Panposh	Civil Township, Rourkela(weekly twice)
18	SONEPUR	31	Dunguripali	Sarasmal (weekly once)
19	KORAPUT	32	Koraput	Semiliguda (weekly once)

Price dissemination

- 106 Nodes are operationalized in 63 RMCs under AGMARKNET.

- These Nodes are being used by the RMCs for price dissemination to the stakeholders through e-NAM portal, Agmarknet portal , Price Display Boards at mandi points.

- Commodity prices can also be accessed through e-NAM portal , e-NAM Mobile App and OSAM Board website.

Small Farmers | Big Aspirations

Bringing Prosperity , Unlocking Potential

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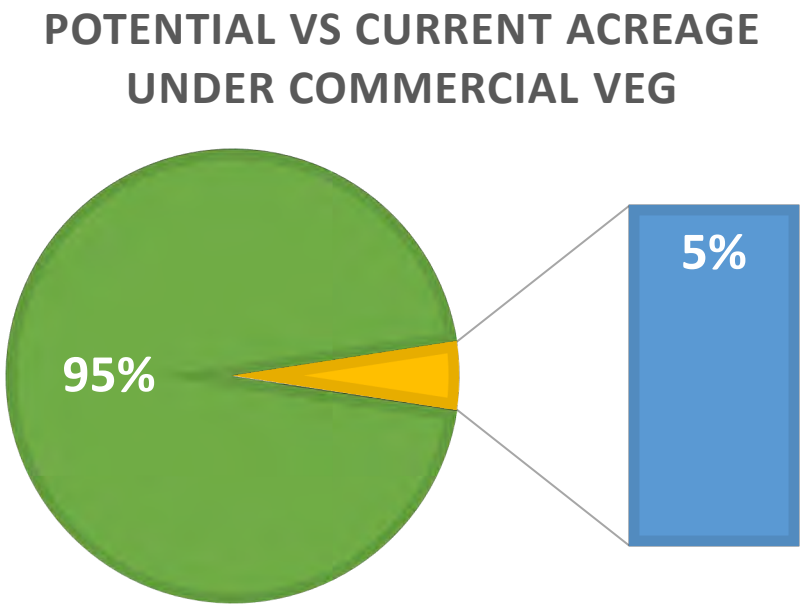
Project Scope

Keonjhar & Mayurbhanj

Selection Criteria

- ❑ **Tribal dominated block (at least 60%)**
- ❑ **Agriculture is primary means of livelihood**
- ❑ **Resource base (primarily land and water) are suitable for farm based livelihoods**

Context



Annual Rainfall	1400 mm
Ground water level	200-250 feet
Avg. Temperature	43 - 10
Import from neighboring states	
Households with agriculture as primary livelihood	>80%

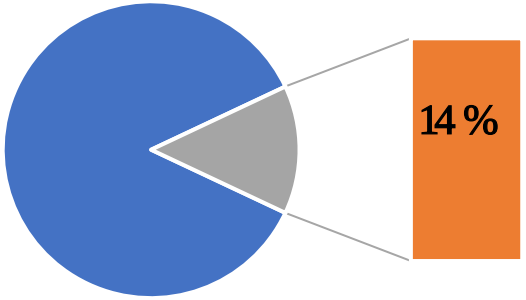
Baseline

Household Income

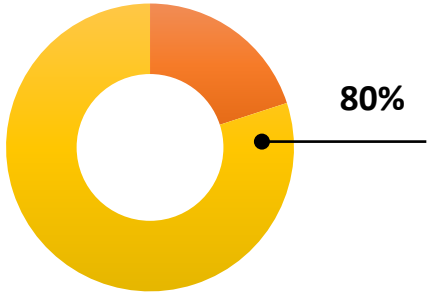
80%

< INR 40,000

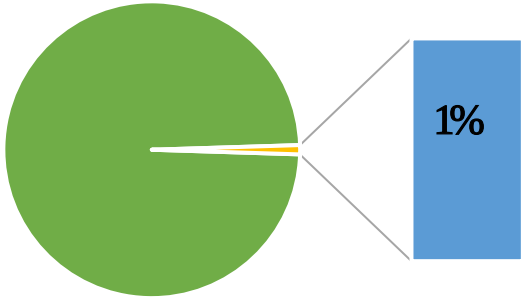
Irrigation Command and Farming



Community Segment (Tribal)



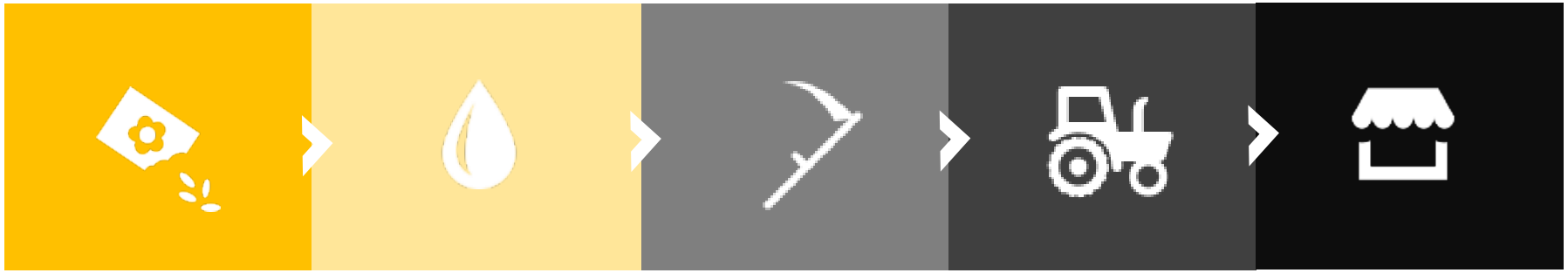
Technology Adopters



25-30 kms

Why smallholders remain distant from commercial agri-value chain?

Existing Value chain Network



Quality Input

Irrigation

Farm skill

Farm Machinery

Market

Missing Links

1 **Market Linkage**

2 **Irrigation**

3 **Inputs**

4 **Farm Equipment**

5 **Advance Knowledge**

Present Interventions

2 Districts

4 Blocks

25 GPs

125 Villages

30000 Families

Achievements

- First to demonstrate “Hi-Tech Commercial Nursery” by entrepreneurs – A **proven irreversible model** that scaled up beyond CInI
- **Demystified** drip farming for smallholders, first in the region – A definite way to become Lakhpati Kisan
- Hyper local Market linkage through Digital platform - **Farmers Paying** for information
- Livestock Service offering through Entrepreneurs – **reduced grant** dependency
- CInI as Livelihood Promoting Agency being acknowledged by District and State level

Market Led Production Hub

Production hub developed in pockets of Central Indian Tribal Belt engaging smallholder farmers

Production Hub, Mayurbhanj, Keonjhar Odisha

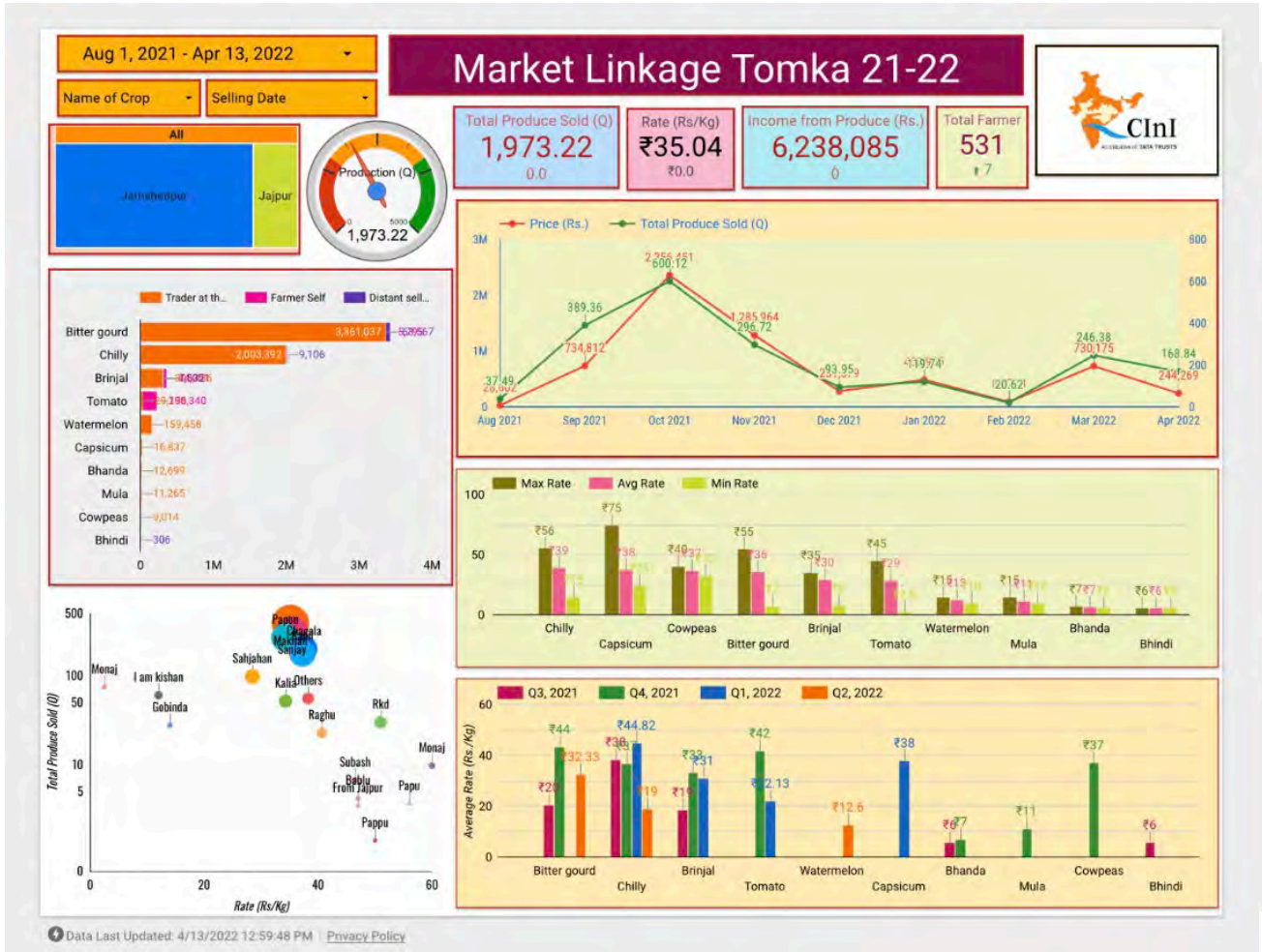
215MT
In 7 months

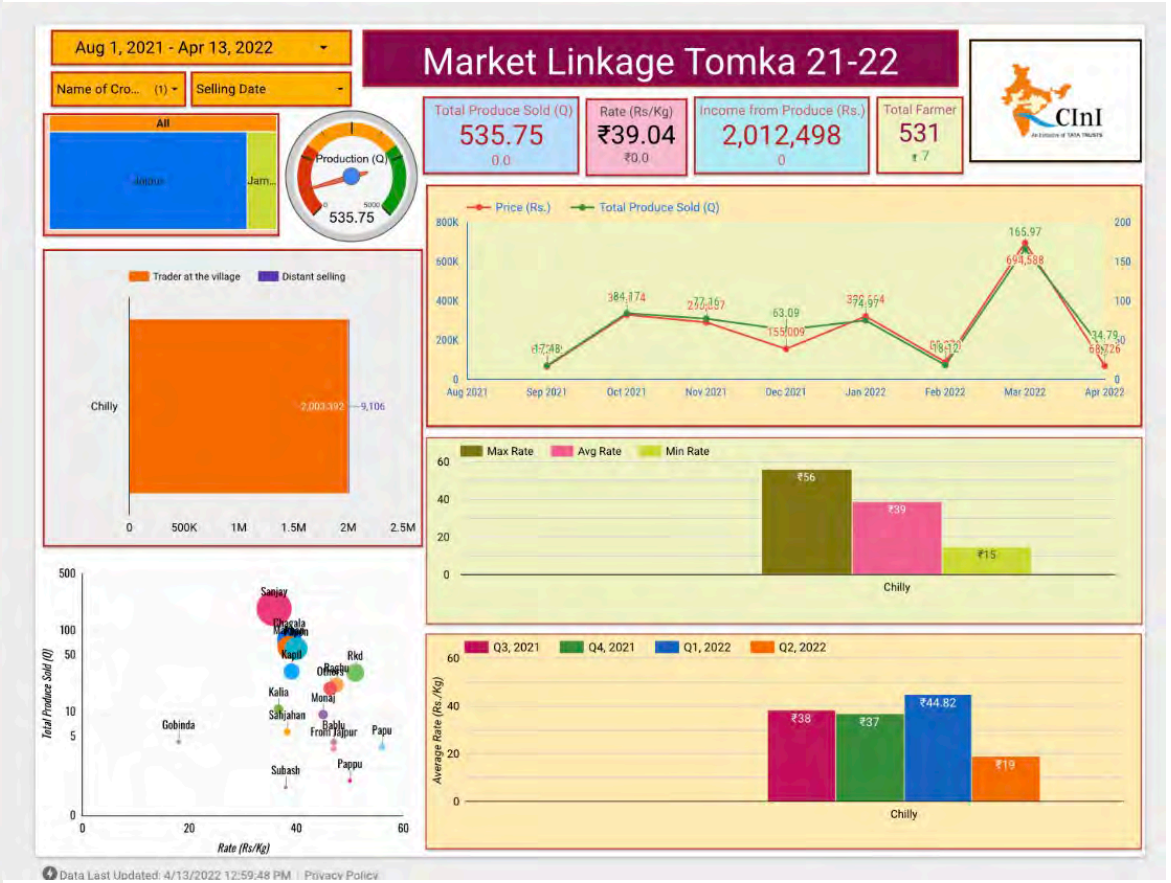
65.2 Lakhs
Sale Amount

High tech nursery Entrepreneurs

October 2021

Production Dash Board (Vegetable _Harichandanpur)





Scalling Up High-tech commercial nursery

10units

Two Districts |

Four Blocks

50 Lakhs

Annual Seedlings

Proof of sustainability | Pramod (100% self cont)

High tech nursery Entrepreneurs

October 2021

Pre production stage....

- Use of advanced farm machineries
- Adopt efficient water use technology

- Ensure and availability of quality seedling
- Availability of good quality seed

- Crop selection as per climate, season and soil
- Resource based proper plan

Production stage....

- Expert support in plant protection
- On field identification of pests and diseases

- Ensure fertigation as per suggestion of expert
- In-time watering

- Intime harvesting of crop produces

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Post Production stage....

- Rate finalization, Sorting and grading of produces as per market demand

- Packaging of produces as per marketable package.

- Market linkage of produces and ensure payment in time

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THANKS

Opportunities We See
Challenges We Face

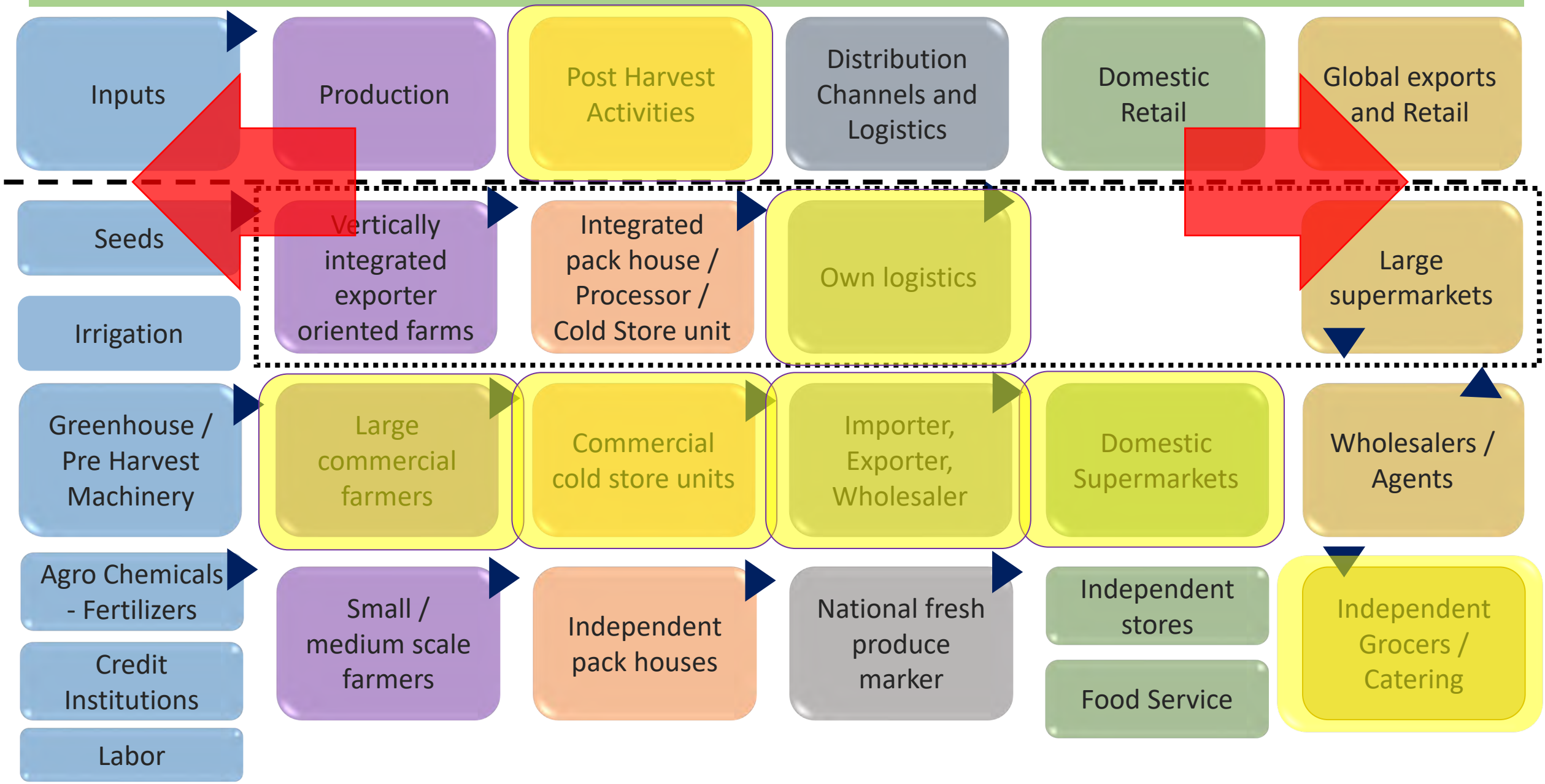
Debjyoti Dutta

Director,

PRB Superfoods Odisha

Photo: Original photo of PRB cold store facility at Khurdha Industrial Estate and its products

PRB Presence in the Horticulture Value Chain



PRB Superfoods – The Journey

2018

Inception

- Banana
- Fruits

2021

Transfer

- Imported
- Innovation

2023

Expansion

- Logistics
- Collaborations

Why Leadership Transfer?

Challenges

Need for diversification

PRB Superfoods – Mission

Commitment to Quality

Eating right is an important part of your life. We are dedicated to the highest quality standards, providing people nutritious, farm-fresh products that taste delicious and exceed expectations.

Why Obsession with Quality?

My first experience with importing dates from Iran

PRB Superfoods – Vision Plan

OUR VISION

Marketing the most nutritious of foods with the lowest environmental impact, our ambition is to make the world a healthier, more sustainable place. In bringing together collective strengths and reach and local on-the-ground resources and expertise to create a new global leader, we strive to harness the full potential of the fresh produce industry.

Our vertically integrated supply chain will allow us to further optimize the supply chain from farm to fork- forging the most direct route to market, while our iconic Rishi Pure brand will act as the focal point for innovation and new product development, adding value and providing a tangible point of difference. By doing so we seek to present to our customers a compelling proposition and to consumers worldwide, produce which meets and exceeds their expectations.

Jio Mart

RelianceSMART

big basket

A TATA Enterprise

amazon.in

Our Vision

Be major national player by 2030

Generate 1000 Jobs

Where do we stand today?

(Area: '000 Ha, Production: '000 MT, Productivity: MT/Ha)

Crop	Area			Production			Productivity		
	2004-05	2020-21	2021-22*	2004-05	2020-21	2021-22*	2004-05	2020-21	2021-22*
Fruits	5049	6930	7049	50867	102481	107242	10.07	14.79	15.2
Vegetables	6744	10859	11348	101246	200445	204835	15.01	18.46	18.1
Flowers	118	322	283	659	2980	3128	5.58	9.25	11.1
Aromatic & Medicinal crops	131	653	668	159	825	689	1.21	1.26	1.0

Source - Department of Agriculture and Farmers' Welfare Annual Report 2022-23

Are we benchmarking against the global best?

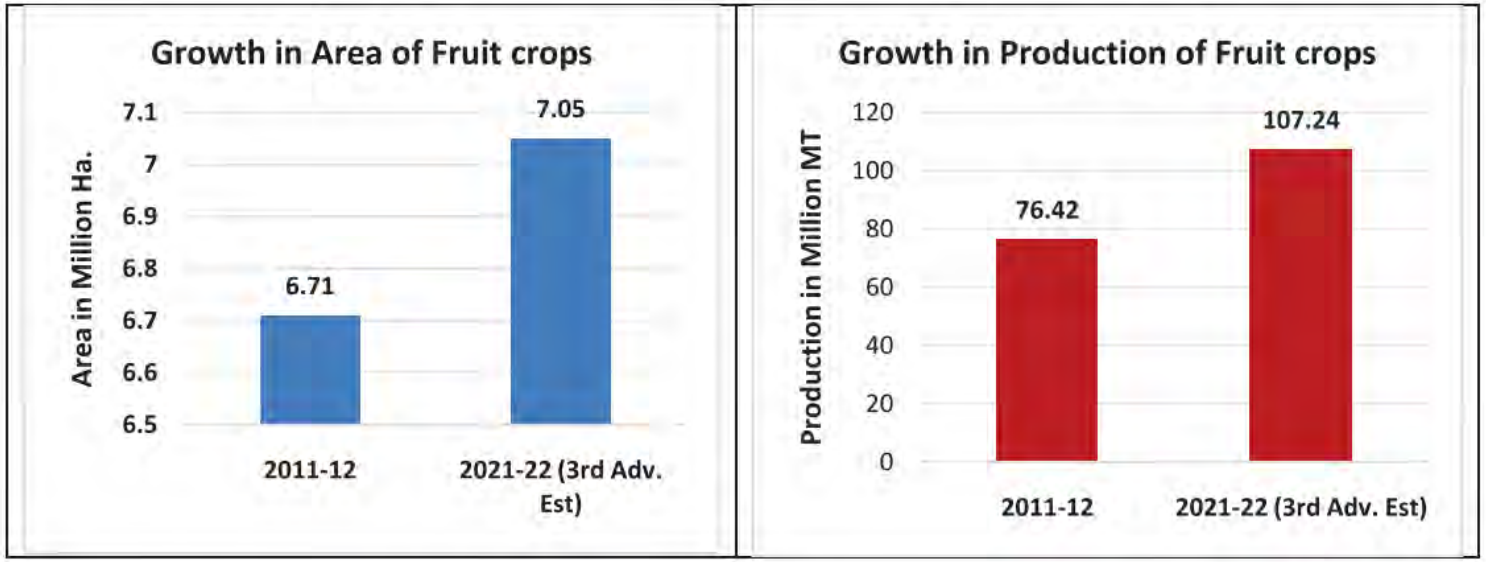
Area

Production

Productivity

National and State Schemes

Figure 1: Growth in Area and Production of Fruits

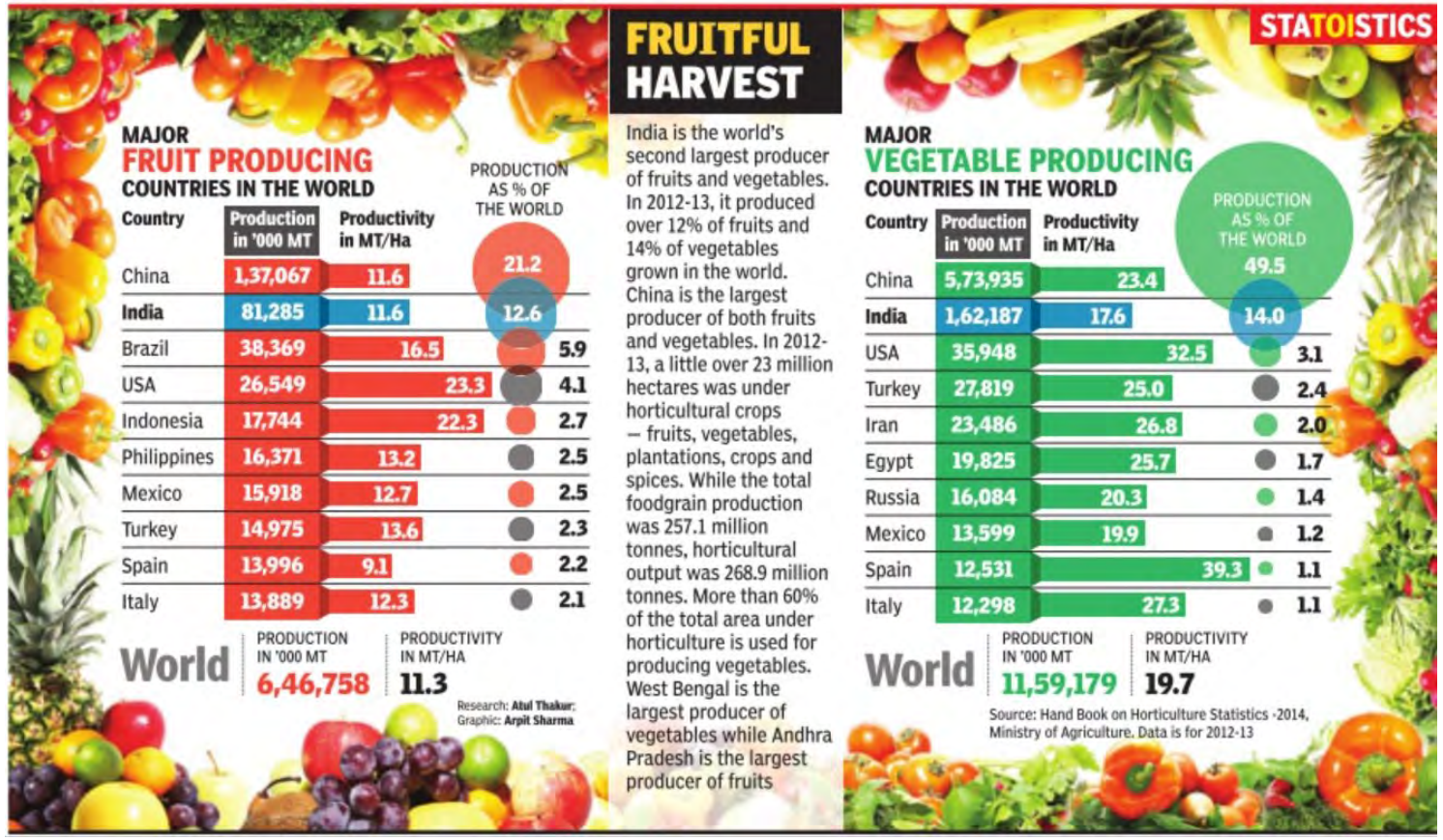


Source - Department of Agriculture and Farmers' Welfare Annual Report 2022-23

National and state level schemes

Opportunities we see

Opportunities in Export n Import

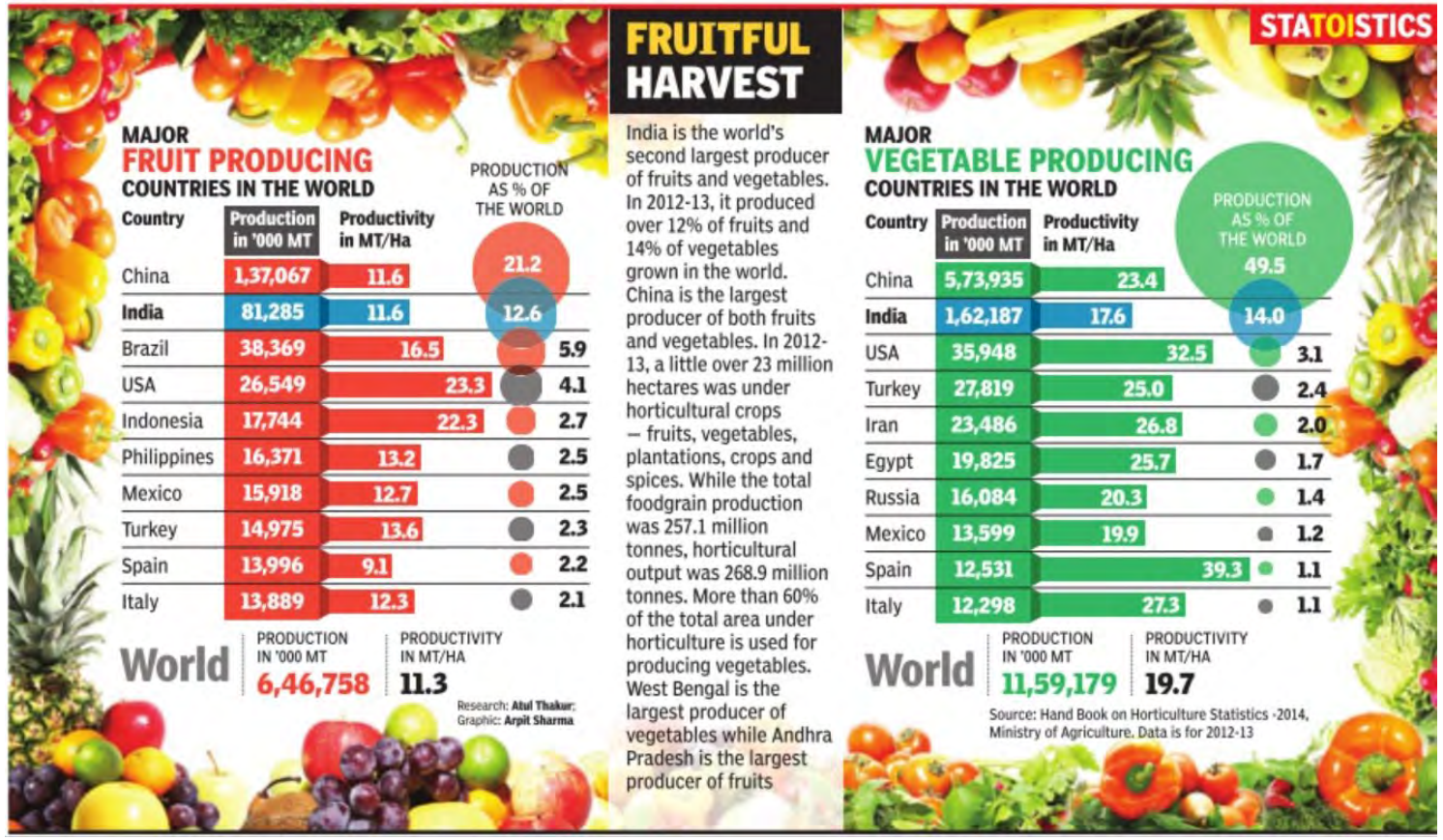


Source - http://www.indpaedia.com/ind/index.php/Fruit_production:_India

International Export and Import

Opportunities we see

Challenges in Export n Import



Source - http://www.indpaedia.com/ind/index.php/Fruit_production:_India

International Export and Import

Challenges we face

Road Ahead

Call for Collaboration
Need for expert advice
Specialized recruitment for agri-business

Recommendations for Govt of Odisha

New Schemes
Introduce single window for…

Stakeholders' Consultation Meeting on Agrifood value chains in Odisha – Challenges and Opportunities

Theme: Horticulture value chain

Roots and Tubers Policy Initiatives in Odisha: A Comprehensive Overview

Dr. Mohinder Singh Kadian: CIP

CIP
INTERNATIONAL POTATO CENTER
A CGIAR RESEARCH CENTER

Agri- Ecologies of Odisha for Potato Production

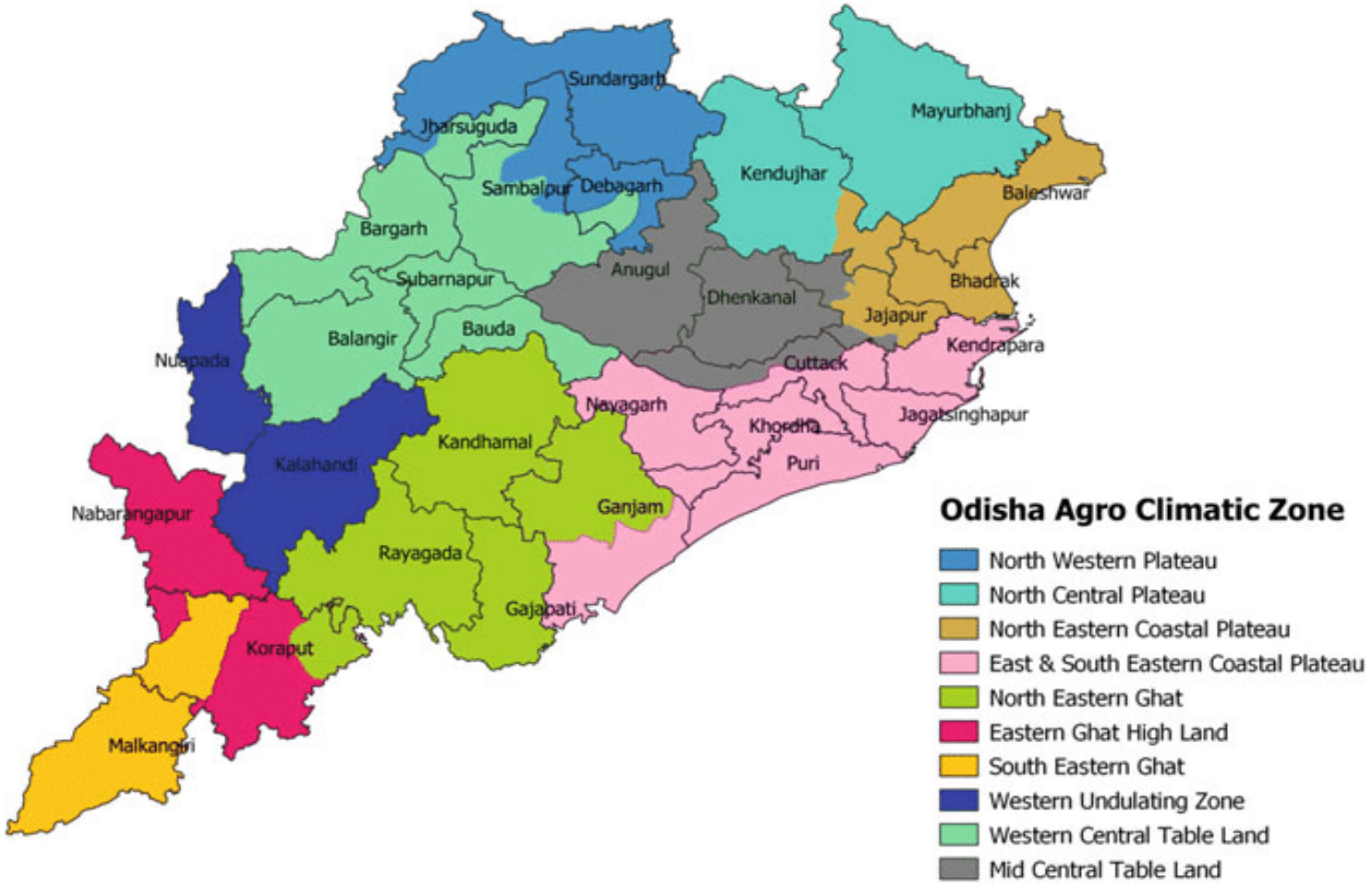
Mohinder S Kadian-CIP

Tropical Lowlands

1. Winter Potato
   Rabi season
2. Short Photoperiod

Highlands (plateau)

1. Summer Potato
   Kharif season
2. Short Photoperiod



Agro-ecology	May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May
	Rice Potato Rice

Potato Variety: 70-75 Day

Background Scenario of Potato

- 15,000 hectares with annual production 2-2.5 lakh tons
- The state's current potato deficit, approximately 800,000 tons,
- During the 1960s, Odisha cultivated 30,000 hectares of potato, now decreased by half ?
- The decline in acreage?
- Major potato growing districts:

Puri, Cuttack, Kandhamal, Mayurbhanj, Balasore, Sambalpur and Koraput.

Challenges

- Non-availability of quality Seed
- Short window for potato/seed production
- High aphid population preserve
- Non-availability of climate resilient varieties
- Lack of required storage faculty

Potato Seed Movement

Opportunities

Make Available Quality Seed at affordable price to farmers

- Use ARC (Apical Rooted Cuttings) for Quality Seed Technology
- Viruses Free Seed
- Low cost of planting Material
- Low cost of G0 produced from ARC
- 35000 G0 are sufficient to Plant in One Ha
- Develop Chain between seed producers and buyers

Providing Climate Resilient Potato Table and Processing varieties to farmers

---

- Heat Tolerant
- 70 -75 Day
- Early Bulking and Maturing
- High Dry Matter >20%
- Processing Quality
- Late blight Resistant
- Virus Resistant

Robust Climate Resilient Potato Varieties

1. Kufi Uday-Unica-Global

- Maturity/Bulking - Early 75 days
- Photoperiod insensitive (day neutral)
- Moderate Resistant to late blight and viruses
- Red skin with oblong tubers and pale cream flesh
- Yield: 40 MT/ha.
- Enhance farmers' income by 30% by early marketing and give window to the next winter's crop

Kufri Thar-2

- Maturity- Medium :80-90 Day
- Tuber- attractive, light-yellow, 20-21% dry matter and excellent keeping quality
- Water use efficient with high drought tolerance index (1.08). Suitable for arid and semiarid regions
- Yield: 30 t/ha under less water (<20%) and 35 t/ha under normal irrigation regime.


THANK YOU

Seafood Value Chain for Domestic & International Market

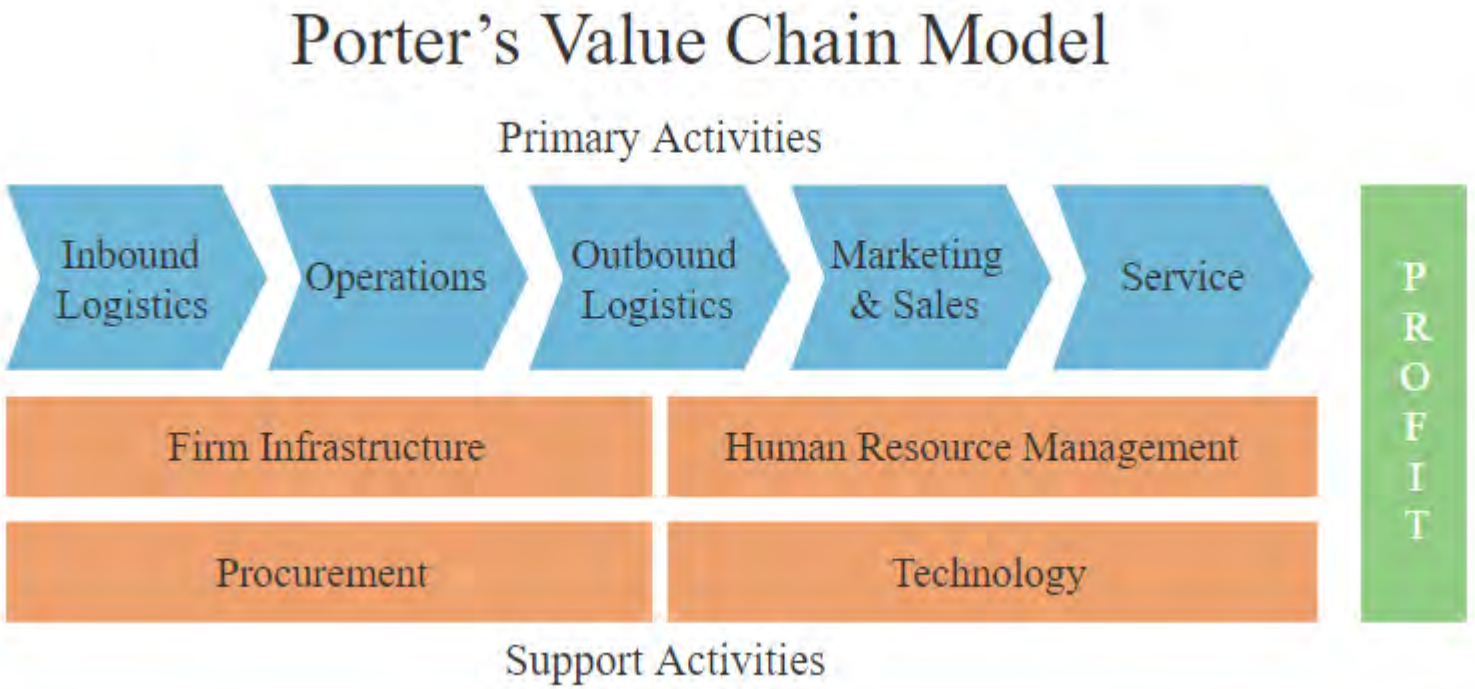
Dr. Kamalesh Mishra

Understanding Value Chain

Value chain analysis and its management is a strategic planning tool used in analyzing the value chain of a company or sector or a product.

Introduced by Michael porter in his book “Competitive Advantage‘ during 1985

Value Chain


Porter's Value Chain Model
Primary Activities
Inbound Logistics
Operations
Outbound Logistics
Marketing & Sales
Service
PROFIT
Firm Infrastructure
Human Resource Management
Procurement
Technology
Support Activities

Process

The full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final customers, and final disposal after use.

Five Best Approaches to Building a Value Chain Analysis

Identify all activities in the value chain

Calculate the cost of each value chain activity

Closer Observation on Customer's Perception

Examine the value chains of your competitors.

Make a decision about competitive advantage

Thank You

SRUSTI AGRO FARMS

DEBADUTTA BISWAL

DIRECTOR

Date: 29-Nov-2023

Odisha Egg Farming At A Glance

180+

Layer Farms

Distributed across all districts of Odisha.

30k

Direct Employment

in Layer Farming Industry

75k

Indirect Employment

in Layer Farming Industry

90%

Inhouse Consumption

Of Maize , Broken Rice produced

103 Lakhs

Production

Capacity in Odisha

96 Lakhs

Consumption

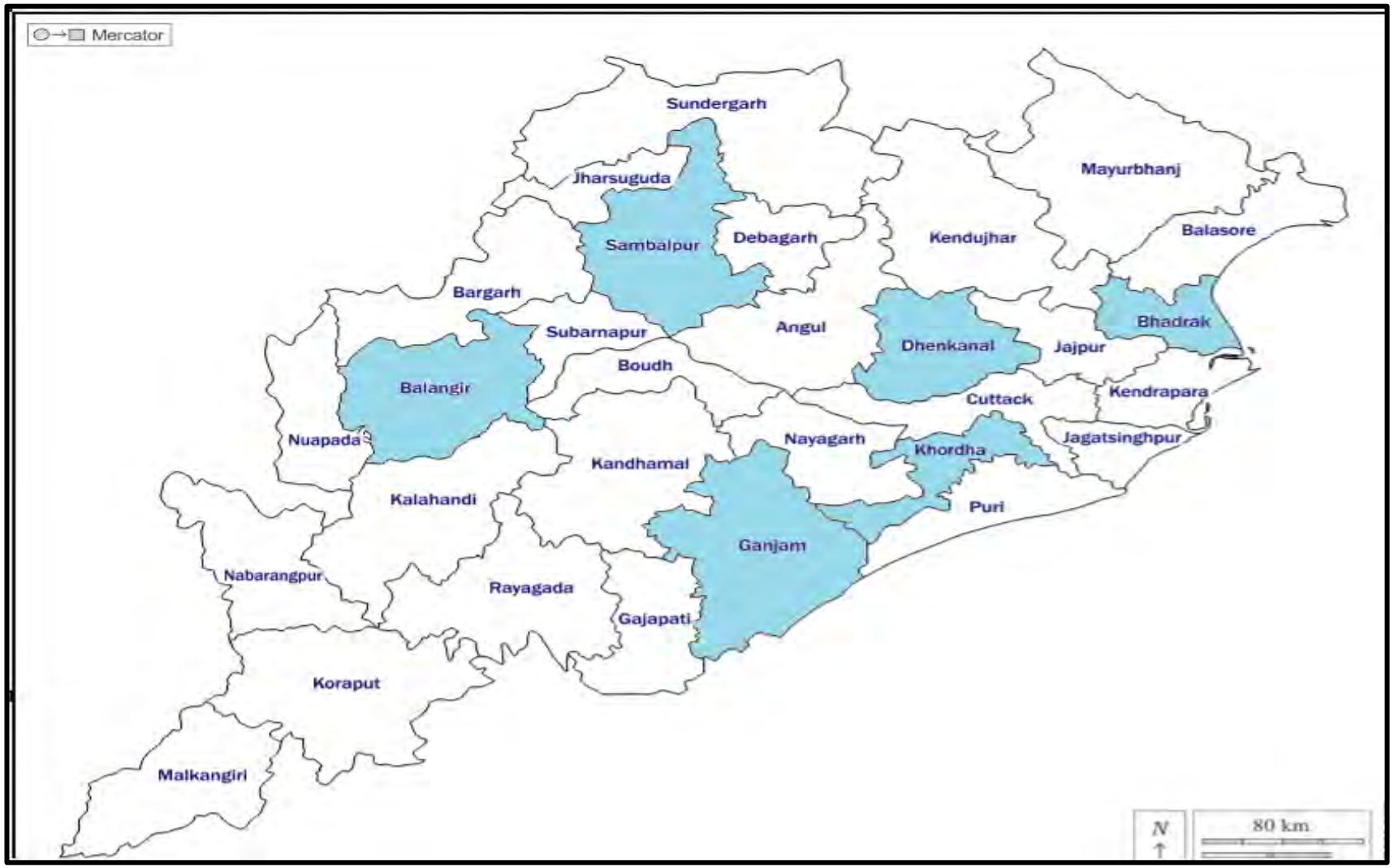
Capacity in Odisha

10%

Export

Due to low in-house demand

Odisha Egg Production Hubs



Success Story
“SRUSTI AGRO FARMS”
Dhenkanal , Odisha

- **75 Million Eggs Production Annually**
- **20 MT Fish Production Annually**
- **100 MT Mango Production Annually**
- **1 Million Lemon Production Annually**
- **10 MT Guava Production Annually**
- **4000 MT Organic Fertilizer Target Production Annually (Setup In Progress)**
- **10,000 + overall plantation in our farms**
- **Generated 200+ Local Employment**


POCO X5 PRO 5G


GARTECH
GARTECH


POCO X5 PRO 5G


HDR

Govt Support Received

- Subsidy on Capital Investment of the Poultry Project.
- Waiver of Land Conversion charges for the Poultry Project.
- Subsidy on Capital Investment of the Organic Fertilizer Project.
- Subsidy on Drip Irrigation of the Horticulture Projects.
- Subsidy on Pond Excavation of the Fishery Project

Key Success Drivers

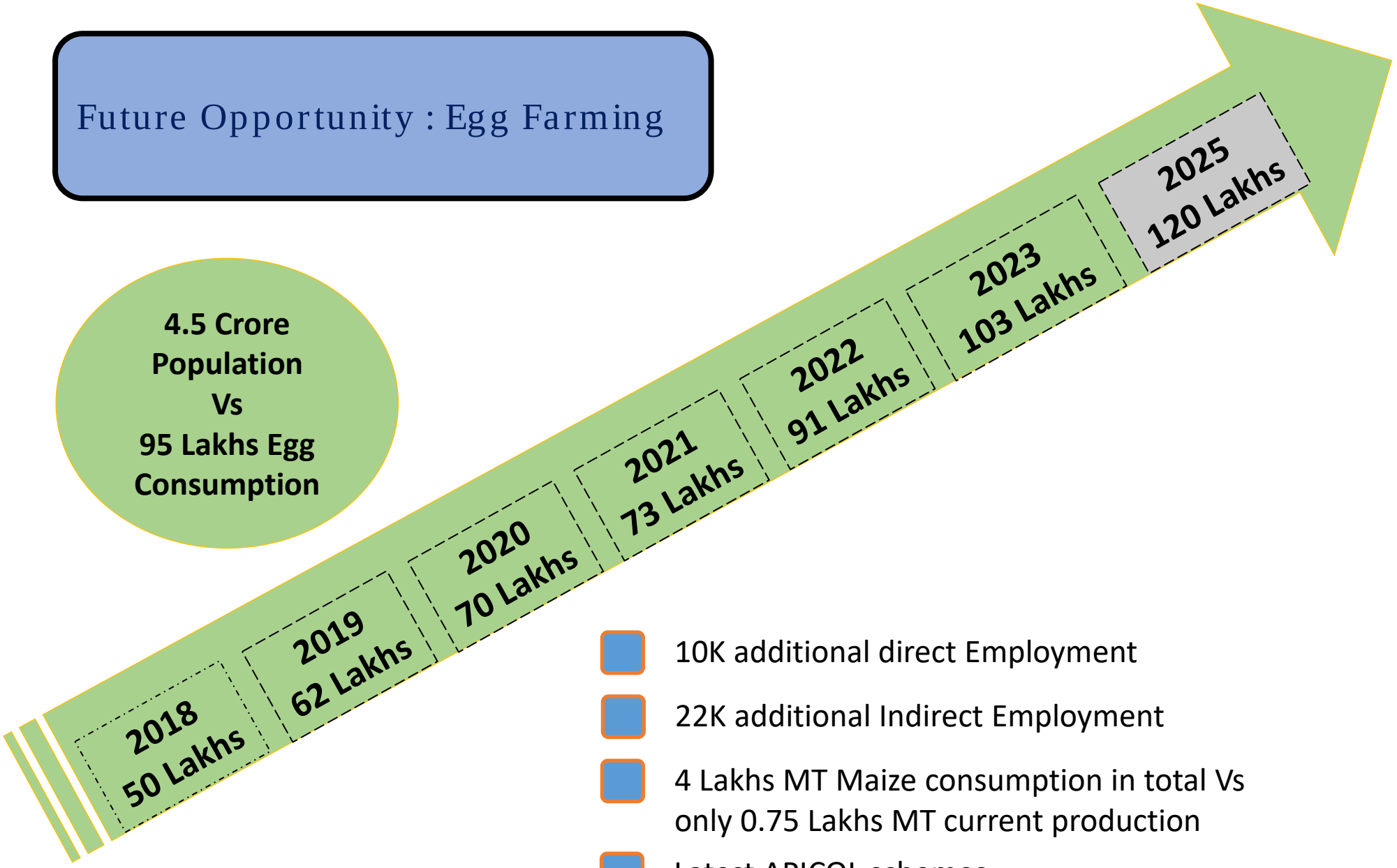
- Direct involvement in Farm Management on daily basis.
- Weekly monitoring of farm cost management
- Strict adherence to Bio Security inside the Poultry farm.
- Regular feed testing and analysis.
- Proactive management for prevention of diseases.
- Creating wider supply chain for the sale of Agri and Poultry products

Key Challenges as Egg Farmer

- High Capital Investment involved.
- Frequent fluctuation in Egg Price declared by NECC.
- High Feed Cost of poultry feed raw material
- Low inhouse Egg consumption in Odisha impacting the Egg sale.
- Unavailability of Cold Storage Facilities to store eggs , forcing the farmers distress sale of eggs.
- Unavailability of Lab testing facility and technical training facility at District level.

Future Opportunity : Egg Farming

4.5 Crore Population Vs 95 Lakhs Egg Consumption



- 10K additional direct Employment
- 22K additional Indirect Employment
- 4 Lakhs MT Maize consumption in total Vs only 0.75 Lakhs MT current production
- Latest APICOL schemes

Govt Scheme : Egg Distribution

- **Production Capacity :** **102 Lakhs vs 32 Crore (Pan India)**
- **Consumption :** **96 Lakhs vs 31 Crore (Pan India)**

DISTRIBUTION OF EGGS PER BENEFICIARY UNDER GOVERNMENT SCHEME				
PROGRAMME			ODISHA	ANDHRA
1	SNP			
	A.	Pregnant Women & Lactating Women	5 Eggs per week	6 Eggs per week
	B.	6 Month to 3 Years Child	3 Eggs per week	6 Eggs per week
	C.	3 Years to 6 Years Child	5 Eggs per week	0 Eggs per week
2	MDM			
	A.	Primary School	2 Eggs per week	5 Eggs per week
	B.	Upper Primary School		

Support from Govt

- Creating awareness among rural Odisha regarding the benefit of Egg.
- Focus on Enhancing alternative Maize Production in Odisha
- Establishing Lab facility and technical training facility at Zone Level.
- Increase Egg distribution in Govt schemes like MDM and SNP to create more consumption opportunity in state.

THANK YOU!

LIVESTOCK VALUE CHAIN STATUS AND FUTURE PROSPECTS

BY

DR. NRUSINGHA CHARAN MISHRA

ADDITIONAL DIRECTOR

ODISHA BIOLOGICAL PRODUCTS INSTITUTE (OBPI)

BHUBANESWAR

Role of smallholders in production

- **Smallholders continue to dominate livestock production** in many developing countries, including India, and particularly in the case of ruminants.
- **Smallholder farmers** are estimated to **produce the large majority of the small ruminants and 70% of the milk in India**.
- In contrast the **Indian poultry sector** has been rapidly commercializing and broiler production is estimated to be **70% in the organized sector**

- **"two worlds"** of livestock in India, competing sets of producers , differentiated mostly by state or region.
  "leading" zones = production is increasingly commercialized and market-driven (Haryana and Gujarat)
  "lagging" = subsistence and livelihood oriented (Odisha)

ILRI CGIAR

ODISHA –Milk production status

- Milk Production – 66 LPD
- Around 10% of milk production handled by OMFED
- < 5% Milk processed by Other organised dairy plants
- About 85% milk is being handled by unorganised sector.

OMFED

- Comprises of
  - **11 Milk Unions**
  - **3,600 Co-operative Societies**
  - **3,17,000 Members**
  - **1,08,000 Pouring Members**
- Capacity – 9 Lakh litres per day
- Present handling – 4,60,000 LPD
- Credit Linkages provided to Farmers
- Feed & Medicines provided at reasoable rates

Key strategies to address production challenges: cattle (by zone)

Management category	Hilly and mountain	Northwest	Coastal plain
Feed	Increase conservation of green fodder in the form of hay and silage	As industries dominate this zone, use corporate	Improve the storage mechanism for available crop residues and keep for cattle consumption during lean periods
	Use buffer stocks of feed during feed-scarce periods	Develop silviculture	Create awareness of the need to harvest green fodder before the cyclone season and store it at cyclone centers to feed distressed animals
	Ensure year-round availability of concentrate feed in markets	Promote short-duration fodder crops and dual-purpose crops	Promote short duration (seasonal) green fodder, including dual-purpose crops, in rice fallow land

	Improve the nutritional value of underutilized residues (e.g. maize stover, ragi and others) through treatment using chemicals like urea	Use underutilized crop residues (such as paddy straw, maize stover, groundnut haulm and green gram residue) as livestock feed	
	Allow farmers to access the periphery of forest areas for cattle grazing		Ask the Odisha State Disaster Management Authority to start a feed block manufacturing unit

Breeding	• Continue to conserve and upgrade recognized breeds (i.e. Khariar and Motu) in their native environment	• Improve AI coverage and success rates	• Adopt the early pregnancy test method
	• Train or recruit more technical staff	Study and characterize all nondescript cattle populations in collaboration with the National Bureau of Animal Genetic Resources	• Improve AI success rates
	• Ensure national and state AI programs continue	ABIP with sex sorted semen	• Facilitate conservation and upgrading of recognized breeds (i.e. Binjarpuri and Ghumsuri)

Management category	Hilly and mountain	Northwest	Coastal plain
Health	Increase availability of veterinary services	• Increase availability of veterinary services	Improve the accessibility of mobile clinics • Advance the disease surveillance and reporting system
	• Improve the accessibility of mobile clinics and operationalize existing subdivision-level diagnostic facilities	• Improve the accessibility of mobile clinics and operationalize existing subdivision-level diagnostic facilities	Organize health camps immediately after floods or cyclones • Deworm and vaccinate all cattle immediately before rainy season
	Make available year-round schedules/events for deworming and vaccination (haemorrhagic septicaemia, black quarter, foot and mouth disease and brucellosis) activities	Improve management at all farming levels Identify diseases .arising from industrial pollution Control worm infections in calves and adult cattle	Ensure proper drainage for relieving floods • Avoid feeding rotten paddy straw during the rainy season .Ensure proper drainage for relieving floods • Avoid feeding rotten paddy straw

Key strategies to address production challenges: goats and sheeps (by zone)

Management category	Hilly and mountain	Production zone Northwest	Coastal plain
Feed and fodder	• Develop a common approach for establishing a green belt in the fringe of the forest, on contour bunds and the embankments of the grazing area • Plant the periphery of forest areas with multipurpose fodder tree species • Plant fodder trees on roadsides during afforestation drives	• Develop an action plan for the utilization of pastureland for silvipasture programs by engaging women's self-help groups • Introduce short-duration, low-water consumption fodder species after harvest of kharif crops	• Introduce fodder tree plantations along the boundary lines of backyards • Establish small hydroponic units for daily green fodder production • Ask revenue authorities to release gochar land (cattle grazing field) under illegal occupation so that cattle owners can graze their animals

Management category	Hilly and mountain	Production zone Northwest	Coastal plain
Breeding/ genetic	• Recruit more technical staff in this zone • All unrecognized goat species should be distinguished scientifically to assert breed types and upgrade	• Upgrade the two recognized breeds (i.e. Ganjam and Black Bengal) through community- based selection • Supply an improved breed (i.e. Sirohi and Boer) to improve the body weight of the local breed	• Upgrade the two recognized breeds (i.e. Ganjam and Black Bengal) through community- based selection • Crossbreed Ganjam goats with other improved breeds in India (i.e. Sirohi and Jamunapari)
	• Introduce and promote goat AI in a pilot phase in a potential cluster • Provide quality bucks for breeding purposes		

Management category	Hilly and mountain	Production zone Northwest	Coastal plain
Health	• Pay special attention to nomadic goat farmers to ensure they understand the importance of vaccination and deworming • Increase the 24/7 coverage of goat animal health and management services via the use of community- based animal health workers, especially women (Prani Mitras)	• Conduct a massive campaign on the importance of deworming and vaccination • Ensure mobile veterinary units give priority to goat vaccination	• Conduct a massive campaign on the importance of deworming and vaccination • Ensure mobile veterinary units give priority to goat vaccination
	• Develop a basic training program to engage young, educated and interested female and male candidates, who, in turn, can act as guides and mentors on animal welfare to others in a self-sustaining manner • Develop a deworming and vaccination for routine preventive health care of goats		

Key strategies to address production challenges: backyard poultry,(all zones)		
Management category	**All production zones Backyard poultry**	
Feed	• Create awareness of balanced feeding (available feed resources and the number of birds in the locality) • Promote use of broken rice/other grains/locally available feed resources as feed supplements.	
Breeding	• Promote LIT BYP, with clear information about their performance and availability of chicks, and the dissemination of new management practices that can be adopted • Promote low-cost small hatcheries at the community level in backyard-intensive areas; this can be linked to WSHGs/rural unemployed youth	
Health	• Develop and implement area-specific deworming and vaccination calendars through community-based animal health workers (Prani Mitras) or public-private partnerships • Improve poultry disease surveillance and reporting systems starting at the grassroots level • Commercial layer production	

Key strategies to address production challenges: Layer poultry,(all zones)	
Management category	**All production zones layer**
Feed	Establish robust feed quality control, regulatory systems and laboratories
Breed	• Increase the availability of affordable parent stocks and day-old chicks
Health	• Establish robust disease surveillance, diagnostic, prophylactic and reporting systems

Key strategies to address production challenges: Commercial Broiler poultry,(all zones)	
Management category	**All production zones Commercial Broiler**
Feed	• Use broiler integrators to support farms with feed (starter, grower and finisher) and supplements • Establish robust feed quality control, regulatory systems and laboratories
Breed	• Promote integrators while strengthening input and product quality and price regulation and control • Use tested breeds of broiler chicken
Health	• Use broiler integrators to support farms with timely delivery of vaccines and vitamins • Improve capacities of local veterinarians • Create mass awareness among poultry farmers of high-threat emerging diseases • Encourage regular vaccination and proper management, maintenance of high-grade biosecurity, provision of appropriate vaccines as required and timely identification of exposure to diseases

Postproduction improvement strategies for the dairy sector in Odisha

Management category	Production zone		
	Hilly and mountain	Northwest	Coastal plain
Milk collection	• Increase the number of formal milk producer cooperative societies • Improve milk transportation from collection points through the use of refrigerated/ insulated tankers	Establish more milk collection centres with support from the district mineral fund	Offer milk price support in formal cooperatives
Milk processing	• Establish more processing plants at strategic locations with an inbuilt mandate for future expansion • Encourage private sector entities to establish dairy processing plants in different locations • Train women in milk processing (i.e. the production of ghee, paneer, rabidi, ice cream and cottage cheese) to support dairy farmers in rural areas who have problems selling their fresh milk • Introduce mobile milk processing units at the panchayat level to process surplus milk at farmers' doorsteps		
Sales and retailing	• Introduce milk or milk products to schools' mid-day meal programs and distribute them among pregnant women • Focus on food safety and hygienic handling during the selling of milk and milk products • Open milk parlours in village markets		
Complementary measures	• Encourage district authorities to recognize and acknowledge farmers adopting good management practices on dairy farms at annual public functions (e.g. Republic Day celebrations) • Invite WSHGs to participate in milk marketing or give them responsibility for operating milk parlours		

Postproduction intervention strategies for Poultry sector

Management category	All production zones
Backyard poultry	• Encourage female farmers to introduce enough chicks well in advance to maximize profit during the festive season • Educate and train female farmers to adopt good husbandry practices to reduce chick mortality and make sales at an appropriate time to maximize profits • Establish organized markets to sell BYP eggs and meat for efficient marketing of poultry produce • Arrange a special training program on the economics of BYP production
Layer production	• Entrust OPOLOFED with the task of egg marketing in the state • Increase capacity for eggs/meat storage facilities • Single-window disposal for the infrastructure development and project guidance • Use technology interventions to assist small farmer development • Provide education and training on export-quality egg production • Establish a nodal agency at the DAH & VS to regulate private layer farm activities

Postproduction intervention strategies for Poultry sector

Management category	All production zones
Broiler production	• Establish marketing facilities • Encourage branding, packaging and traceability of value-added products • Introduce transferring technology • Offer 'handholding' support to increase exports • Register all broiler farms with the state nodal agency

THANKS

Aquaculture value chain in Odisha-Challenges and Opportunities

Nagesh Kumar Barik

ICAR-Central Institute of Freshwater Aquaculture

Bhubaneswar (Odisha), India

Stakeholders' Consultation Meeting on Agrifood value chains in Odisha – Challenges and Opportunities

29 th November 2023

Auditorium, Department of Agriculture & Farmers' Empowerment (Krushi Bhavan)

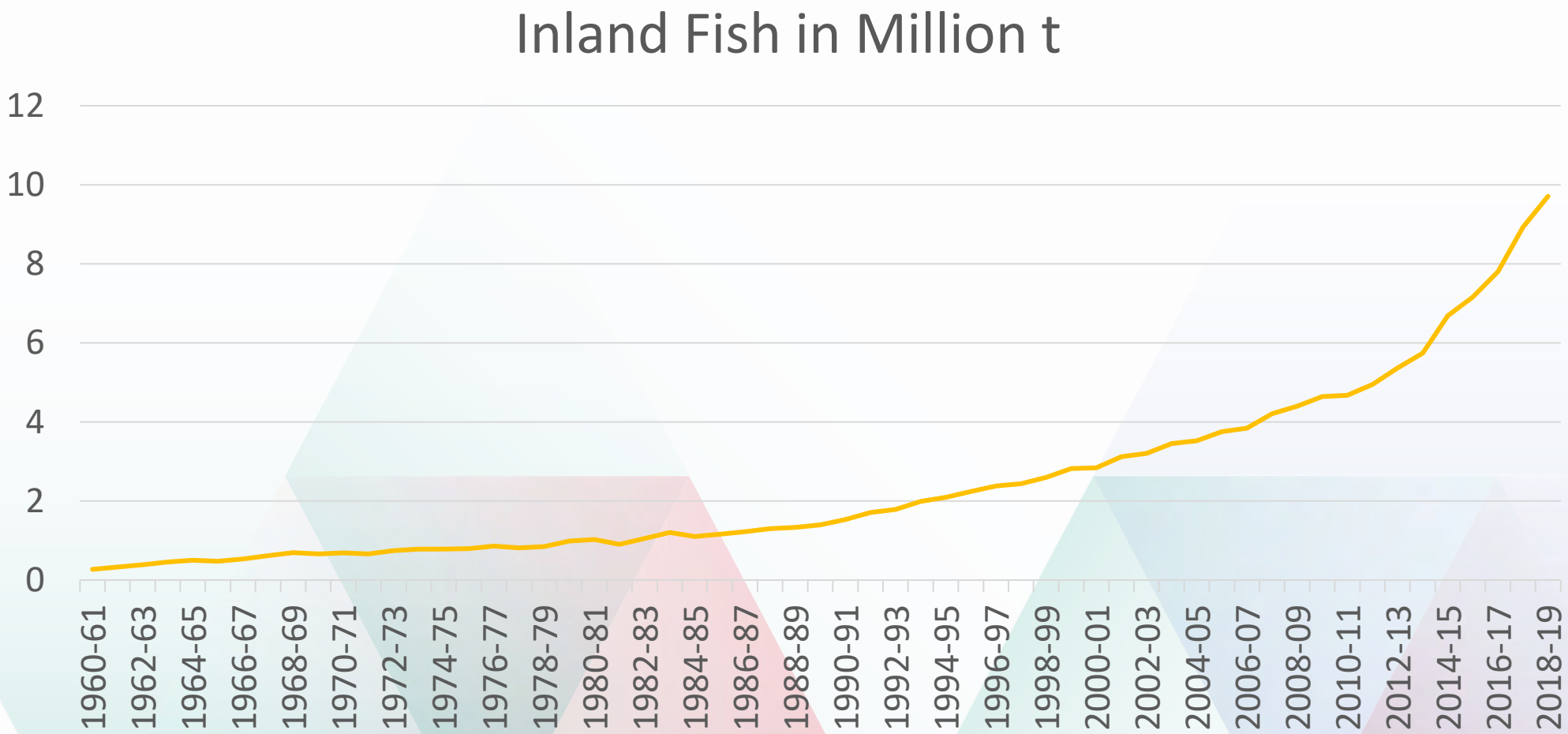
Bhubaneswar, Odisha, India

Part I: National Growth Story and Odisha

Part II- Value chain development in Aquaculture

Part- III:Drivers of change and Policy

National Growth Story- Freshwater Aquaculture


Inland Fish in Million t
12
10
8
6
4
2
0
1960-61
1962-63
1964-65
1966-67
1968-69
1970-71
1972-73
1974-75
1976-77
1978-79
1980-81
1982-83
1984-85
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1992-93
1994-95
1996-97
1998-99
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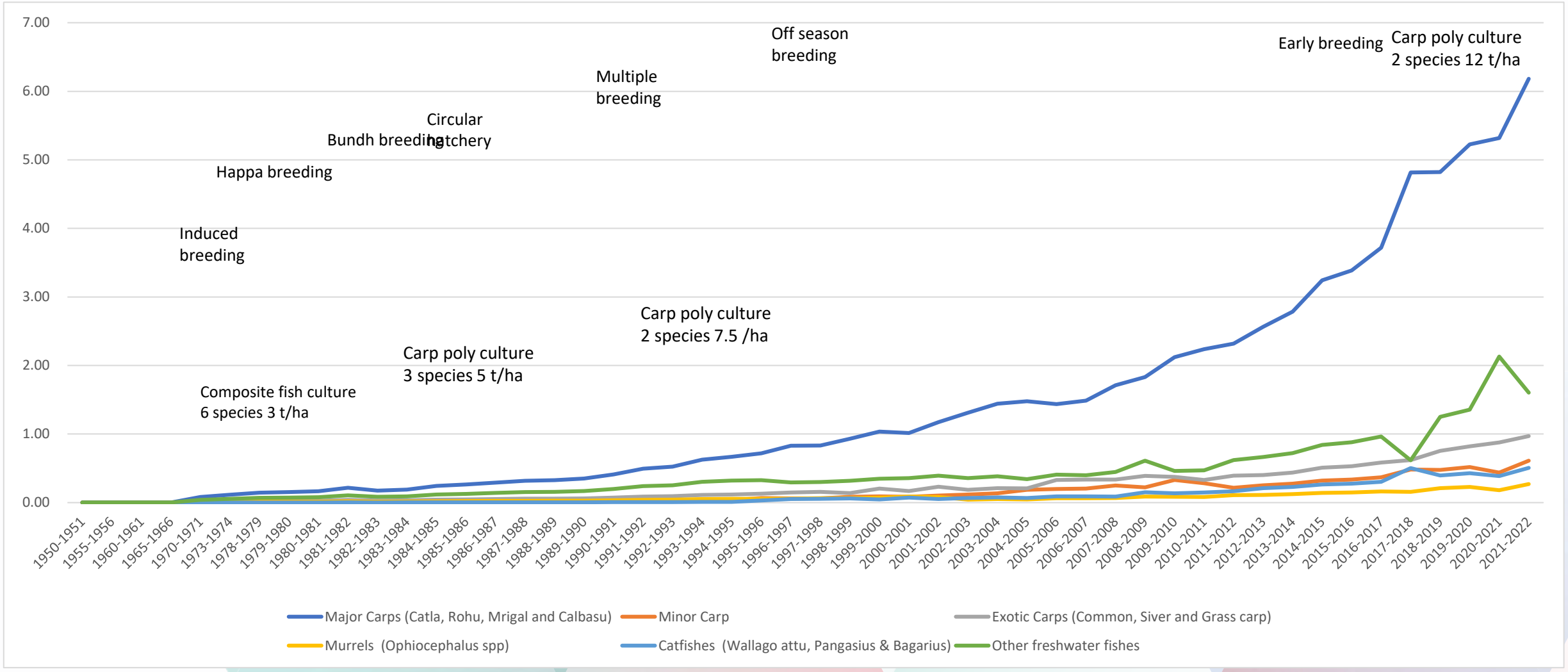
2018-19

Technical progress in aquaculture



Producitivty t/ha	0.6-1.0	1-4.5 t/ha	4.5-7.5 t/ha	7.5-12 t/ha
Policies and priorities	Use of available resource for food security	Establishment of aquaculture for nutrition security, farm income, use of available resoruces	Higher production and productivity to meet national demand and creation of national market	Public capital formation,new business models, improving business environment
Adoption	Extensive, community based aquaculture	Experimental stations in 27 places, community ponds, demonstration ponds	Commercial aquaculture in AP, WB, OD, AS, MP, UP, BH	Intensive aquaculture clusters in AP, OD, CH, WB
Innovation	Collection of seed, removal of slow growing, predatory fish, weed clearance	New feed ingredients, exclusive aquaculture ponds, farm ponds construction	Feed based aquaculture, Industrial aquaculture, large ponds, meeting national demands	Institutions for accessing capital, market, value chain
Technology	Extensive system stocking and harvesting	Composite fish culture (Pond management, species combination, water quality management, fertilization, feeding	Carp technology intensification	Breed, feed, medicine, input optimization, capital intensive inputs, two crop per year
Research	Exploratory, survey, identification	Basic principles of aquaculture	Commercial aquaculture	Competitive aquaculture
Period	1940-1960	1960-1980	1981-2000	2001-2020

Technology	Charectaristics	Productivity t/ha/yr	Element of carp culture technology
Level 1	8 month crop period high stocking multiple harvesting (Bihar backyard pond model)	1	Stocking
Level 2	10 month crop terminal harvest (Odisha farm pond model)	1.5	Stocking + Fertilisation (low)
Level 3	10 month adopted semi-intesive cuture (Chatisgarh Model)	3	Stocking+ fertilisation+ feeding (low)
Level 4	10 months crop scientifically managed (Odisha adopted farmers models)	5	Stocking+ fertilisation+feeding
Level 5	10 months crop (Best farmers West Bengal)	7.5	Stocking+fertilisation+feeding+farmers innovation
Level 6	6 months (Andhra Kolleru Model)	9	Stocking+fertilisation+ Intense feeding+farmers innovation
Level 7	5 months (West Bengal Moyna model)	12	Stocking+fertilisation+ intense feeding+farmers innovation + marketing innovation
Total		3.02	

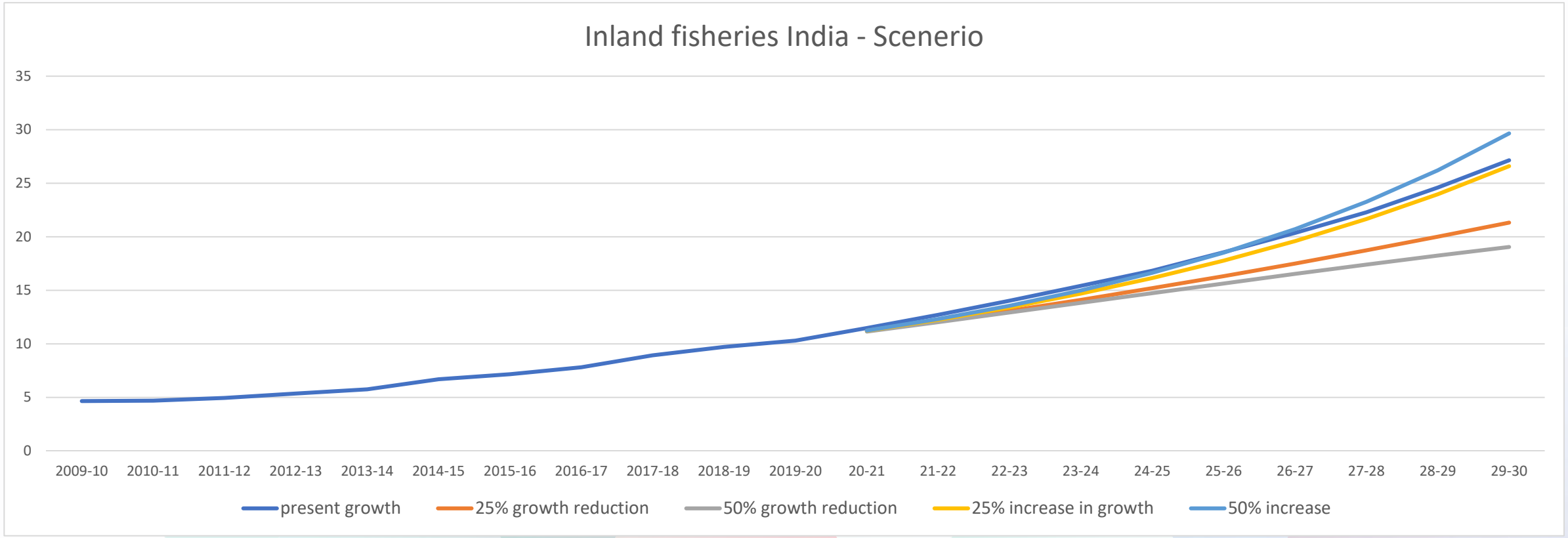
Cost of production /acre taking all cost

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Total Cost	116200	119950	160450	253300	332000	166950	241500
Gross Return	60000	78000	156000	290000	480000	207000	336000
Profit to management	-56200.0	-41950.0	-4450.0	36700.0	148000.0	40050.0	94500.0
Cost of Production/kg	290.5	199.9	133.7	126.7	110.7	92.8	100.6
Price Rs/Kg	150	130	130.9	145.1	160	115.6	140.0
Profit margin per kg	-140.5	-69.9	-3.7	18.4	49.3	22.3	39.4
profitability in %	-48.4	-35.0	-2.8	14.5	44.6	24.0	39.1

Summary of technological change

Technology	Area (million ha)	Adoption %	Production (million t)	Farmers price/kg	Cost of production Rs/kg (Monetary)	Cost of production Rs/kg (Opportunity)	Base line (1.5 t) (Efficiency %)	Base line (3 t) (Efficiency %)
Level 1	0.70	33.88	0.70	150.00	57.50	290.50		
Level 2	0.13	6.29	0.20	130.00	44.08	199.92		
Level 3	0.65	31.46	1.95	130.00	90.38	133.71	33.12	
Level 4	0.28	13.55	1.10	145.00	103.65	126.65	36.65	5.28
Level 5	0.13	6.29	0.74	160.00	103.33	110.67	44.64	17.23
Level 6	0.16	7.74	1.36	115.00	91.64	92.75	53.61	30.63
Level 7	0.02	0.77	0.19	140.00	100.21	100.63	49.67	24.74
Total	2.07	100.00	6.23	138.57	84.40	150.69		

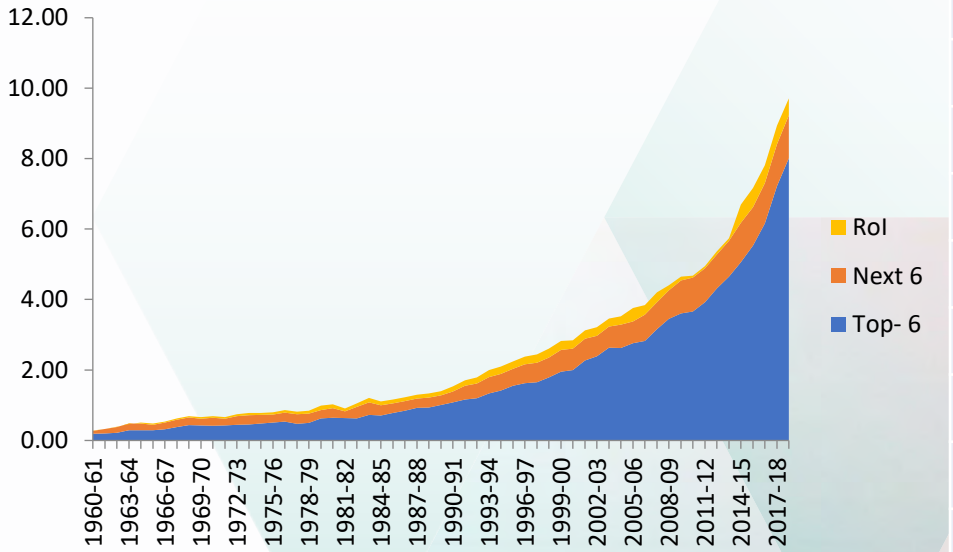
INLand Fisheries Outlook (India)



Growth Scenerios

Growth assumption	Scenarios	Conditions (assumptions)
50% reduction from present average growth rate of last 10 years	Scen.1	No new technology adopted, intensification of existing resources, no change in major players of the sector, issues like disease, climate change are not mitigated
25% reduction from present average growth rate of last 10 years	Scen.2	Constraints in availability of resources, new technologies are not fully adopted, critical problems like disease not fully addressed
Continuation of present rate as per average growth rate of last 10 years	Scen.3	Continuation of existing system of production, Same policies are followed, expansion of the existing system of production as per market demand
25% increase from present average growth rate of last 10 years	Scen.4	New areas brought under aquaculture, new technologies adopted, adequate flow of capital to the sector
50% increase from present average growth rate of last 10 years	Scen.5	New policies for faster growth, new technologies are adopted, new forms of organisation are adopted, no constraints in expansion of aquaculture

Distrubution of aquaculture production (1961-2019)



	State	Growth rate per year	Share in production (%) 1960-61	Share in production (%) 2018-2019
1	Andhra Pradesh (U*)	6.17	25.11	38.32
2	West Bengal	5.525	20.14	16.36
3	Bihar (U)	5.08	16.73	8.34
4	Uttar Pradesh (U)	7.74	3.30	6.87
5	Madhya Pradesh (U)	8.81	1.70	6.62
6	Odisha	6.83	1.85	5.95
7	Assam	6.21	0.09	3.41
8	Karnataka	3.09	9.38	2.04
9	Maharastra	5.32	3.76	1.17
10	Tamilnadu	1.2	14.14	2.26
11	Punjab	8.7	2.26	1.40
12	Haryana	11.04	0.00	2.24
	Top 6 states	5.85	68.83	82.46
	Next 6 states	3.73	29.63	12.36
	Top 12 states	5.29	98.46	94.98
	Rest of India (RoI)	4.95	1.54	5.08
	All India	5.28		

rates of inland fisheries in various phases in India

States	1961-1980 (Start-up)	1981-2000 (Expansion)	2001-2019 (Sustained growth)
West Bengal	9.23	5.56	3.24
Uttar Pradesh(U)	7.19	9.14	6.12
Bihar(U)	2.96	5.63	5.78
Madhya Pradesh(U)	4.46	11.49	9.45
Andhra Pradesh(U)	2.3	4.36	11.14
Tamilnadu	2.46	-1.8	4.4
Punjab	4.22	16.2	4.6
Karnataka	0.2	5.53	4.61
Haryana	10.0	10.44	10.29
Assam	6.87	8.44	4.29
Odisha	3.45	7.69	6.77
Maharashtra	4.51	9.3	2.46
Top 6	5.43	6.03	7.01
Next 6	3.99	4.56	4.54
Top 12	4.92	5.83	6.57
RoI	13.8	5.89	2.35
All India	5.37	5.83	6.37

Growth rate of inland fisheries in india (National Avarage growth 1990-2023: 8.76 %)

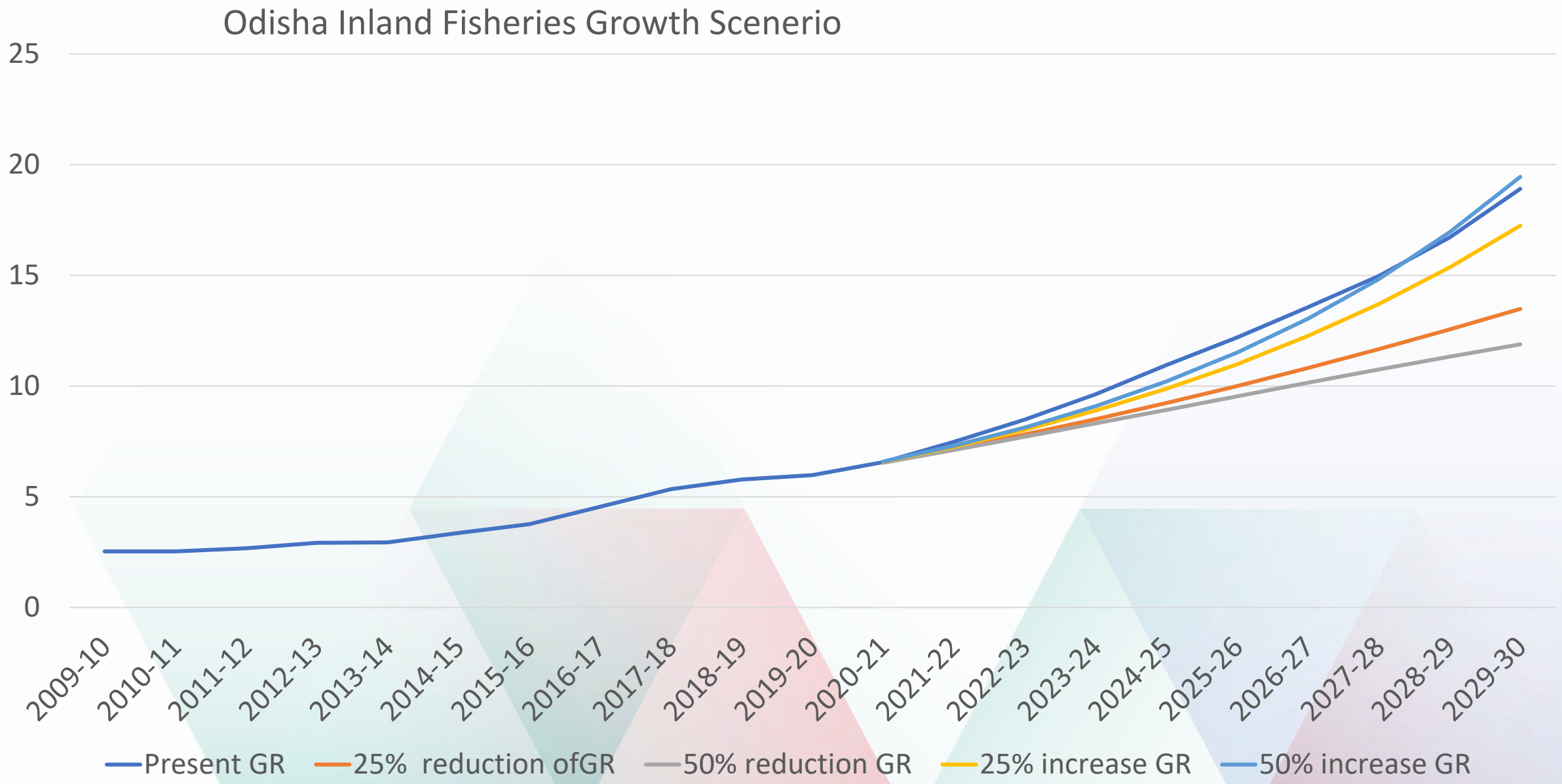
Lower (<5)		Moderate (5-7)		Miidle (7-10 %)		High (10-12)		Higher (>12)	
Goa	4.76	ArP	5.22	Bihar	8.38	MP	11.68	AP	13.06
J& K	1.14	Assam	5	Haryana	8.15	mizoram	11.83	Meghalaya	14.32
Karnatak	2.3	Gujrat	5.79	HP	7.22	Chattishgarh	10.18		
Kerala	3.33	Manipur	6.53	orissa	9.83	Jharkhand	11.76		
Maharastra	0.1	Rajstan	6.57	sikkim	8.61				
Nagaland	4.66	Tripura	6.96						
Punjab	3.34	UP	5.93						
Tamilnadu	1.88	Telengana	5.35						
Westbengal	2.61								
Uttaranchal	3.17								

Fisheries Budget for 2022-2023: odisha

FISHERIES SECTOR :			
	Programme Expenditure		
09	2405 - State Sector Scheme	FISHERIES	24119.23
10	4405 - Capital Outlay on Fisheries		3500.04
11	4059 - Capital Outlay on Public Works		10000.00
	Sub - Total (SSS)		**37619.27**
12	2405 - Centrally Sponsored Scheme		13661.60
13	4405 - Centrally Sponsored Scheme		4000.00
	Sub - Total (CSS)		**17661.60**
Total Programme Expenditure			**55280.87**

Note: Amount in lakhs

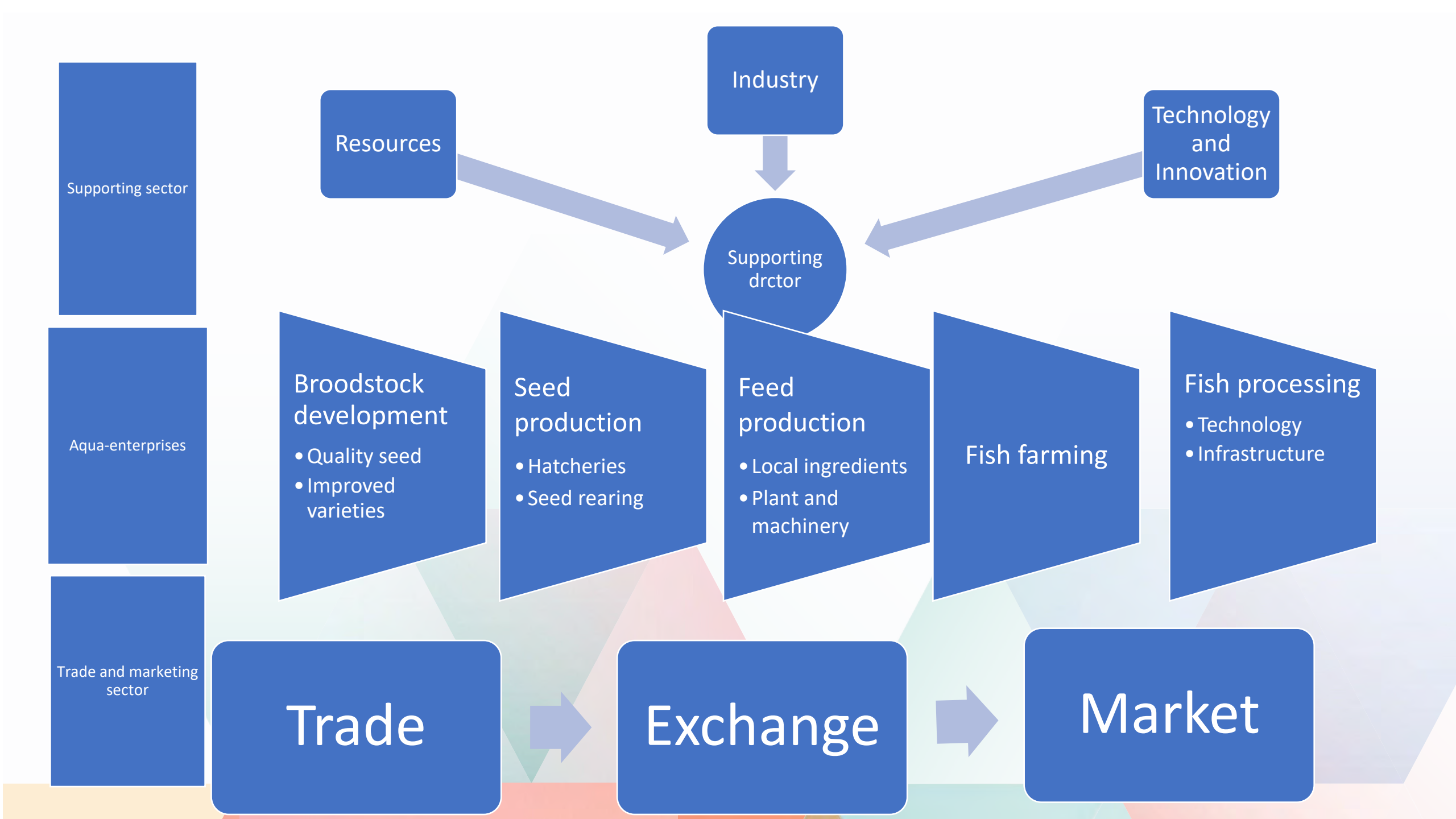
Source: https://fard.odisha.gov.in/sites/default/files/2023-03/budget_2282022111.pdf


Odisha Inland Fisheries Growth Scenerio
25
20
15
10
5
0
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
2025-26
2026-27
2027-28
2028-29
2029-30
Present GR
25% reduction ofGR
50% reduction GR
25% increase GR
50% increase GR

Part II- Value chain development

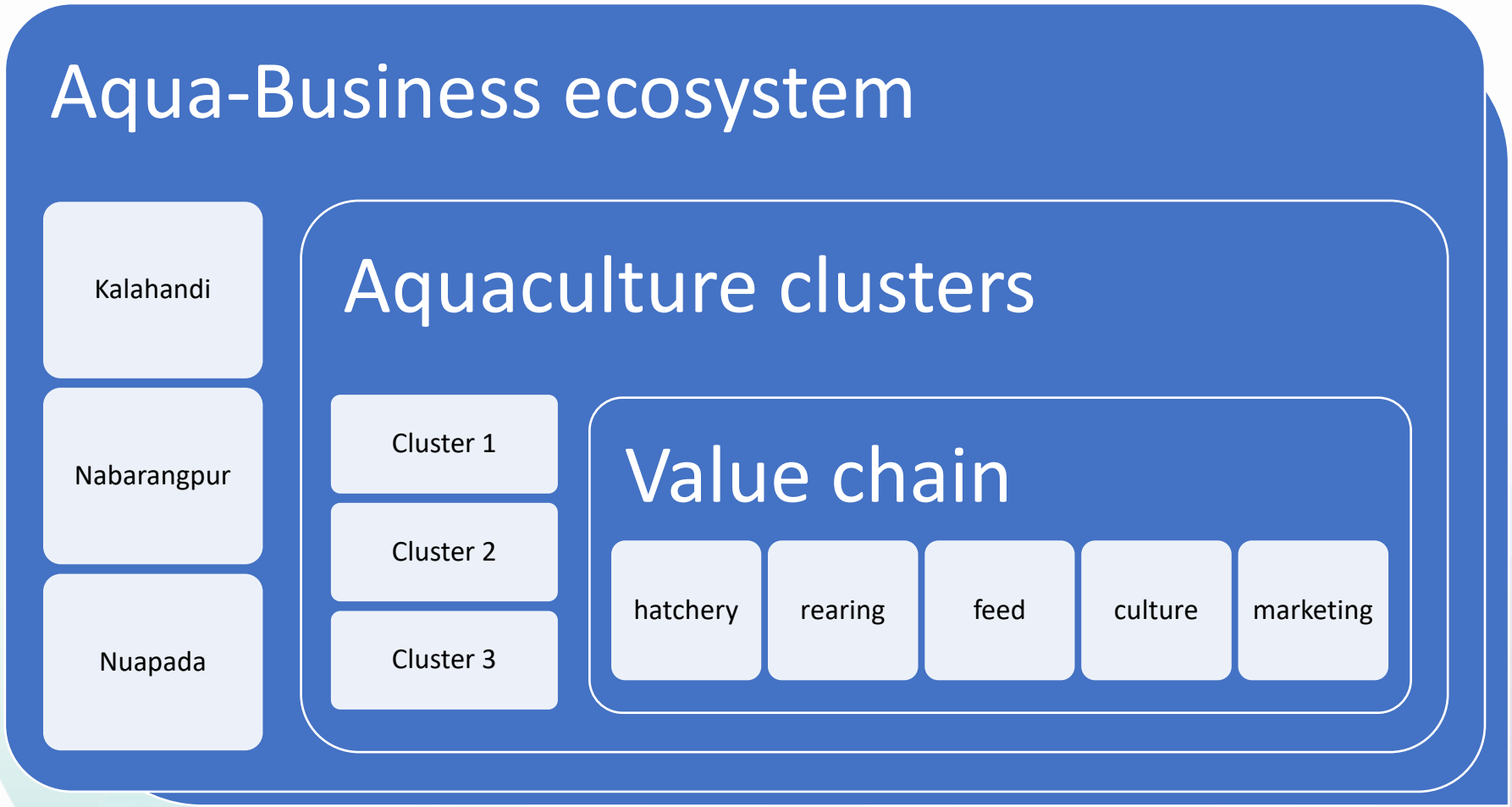
Dominant Value chains in freshwater aquaculture in India

Fish type/ Market	Fresh/live fish	Iced fish
Local market	Odisha	Remote areas
Regional/ national market	West Bengal	Andhra Pradesh


Supporting sector
Industry
Resources
Technology and Innovation
Supporting drctor
Aqua-enterprises
Broodstock development
• Quality seed
• Improved varieties
Seed production
• Hatcheries
• Seed rearing
Feed production
• Local ingredients
• Plant and machinery
Fish farming
Fish processing
• Technology
• Infrastructure
Trade and marketing sector
Trade
Exchange
Market

External trade

Embeded system of business ecosystem in Aquaculture



Internal trade

FW value chain

State

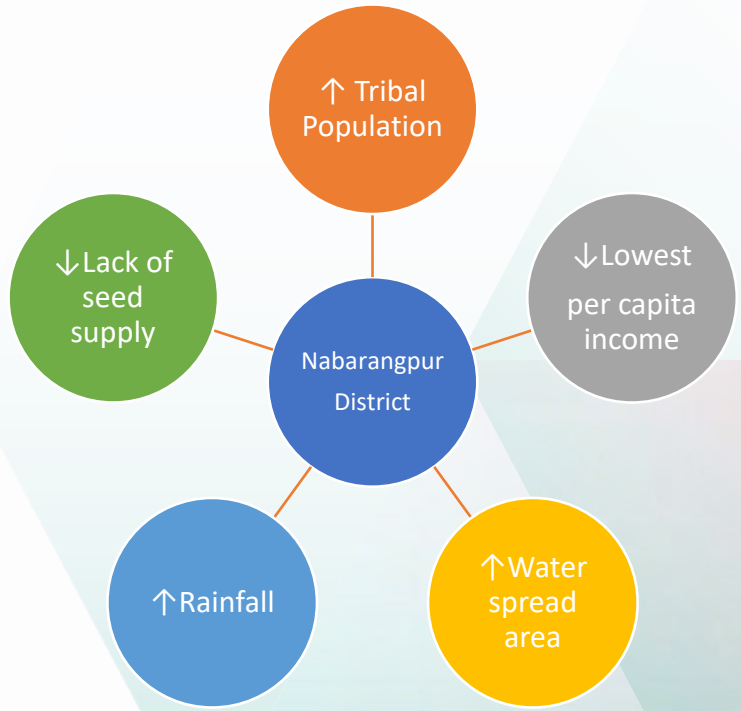
- Hatcheries (50%)
- Seed rearing (15-20%)
- Fish farming (Live/fresh)
- Whole sale (100%)
- Retail (100%)

Outside state

- Hatcheries (50%)
- Seed rearing (80-85%)
- Feed (95%)
- Fish (iced/live) 25-30%
- Chemicals (100%)

Value chain development in Nabarangpur (2018-2023) by ICAR-CIFA & Govt of Odisha

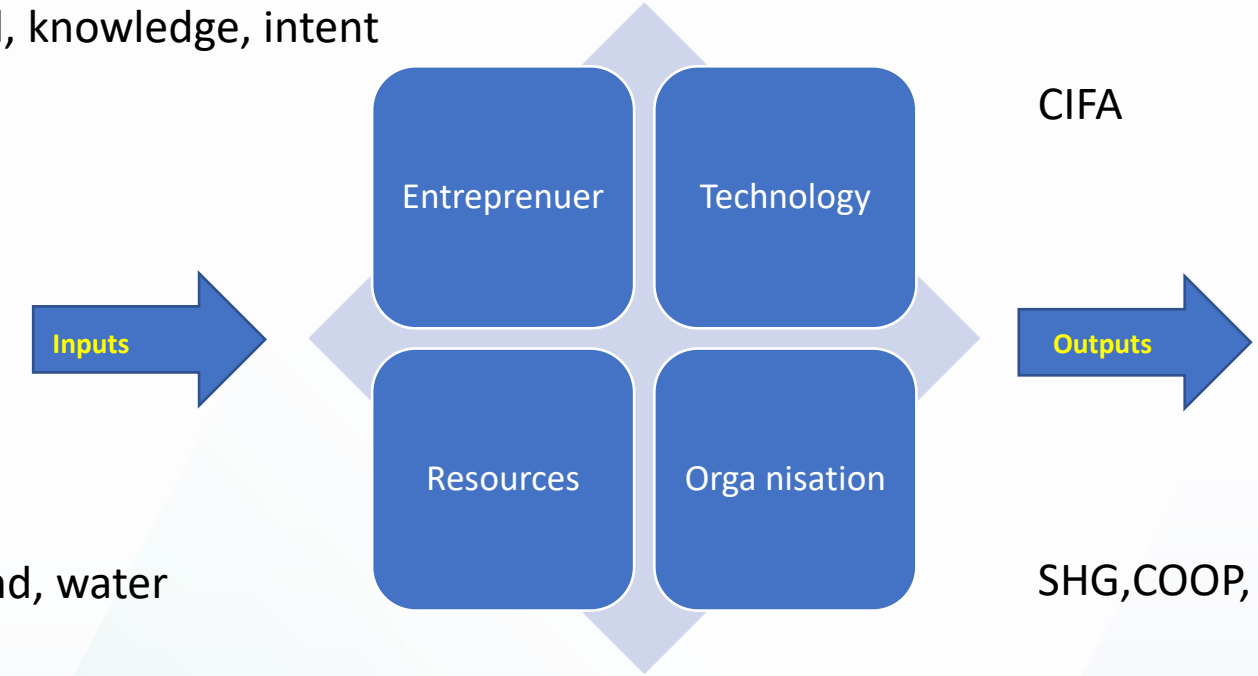
- Why Nabarangpur?



- 56% tribal and 15% Scheduled Caste population and lowest literacy rate
- The lowest per capita income of ₹24,139 per annum in Odisha (at 2011-12 prices)
- Total water spread area is nearly 5000 Ha (includes private ponds, GP ponds and revenue ponds)
- 16912.57 mm total rainfall and 1631.40 mm normal rainfall annually (Odisha – avg rainfall – 477.77mm)
- As per DFO data
- Spawn stocking before 2019 was 2.05 Cr and Fingerling stocking was 28 lakhs. The total Fish Production was about 550 tons and

Competence, skill, knowledge, intent

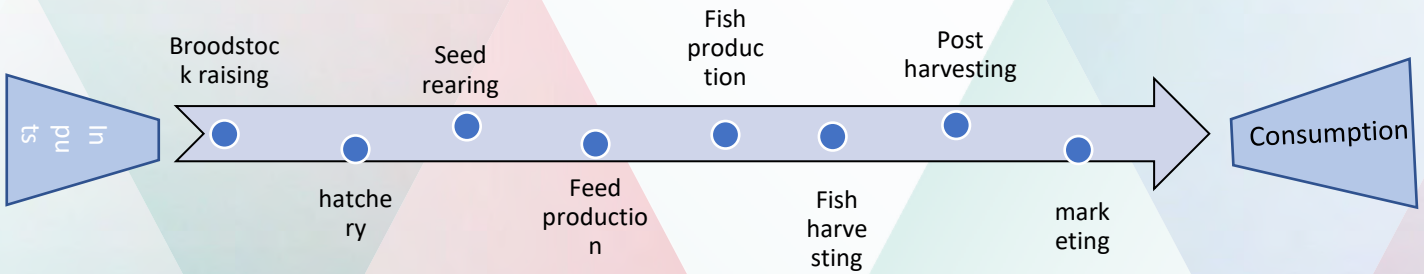
CIFA



DoF, Bank, savings, labour, land, water

SHG,COOP, FPO, Prop.,fam

Structure of enterprises



Value chain in freshwater Aquaculture in Nabarangpur

achievement and impact of Nabarangpur project operated by ICAR-CIFA as a part of the consortium of 12 institutes from ICAR-CSIR-DBT-ICMR during 2018-2020.

1. **Establishment of 5 hatcheries (Capacity of 25 cr spawn)**
2. **Establishment of 50 seed rearing units (capacity of 20 cr. Spawn)**
3. **Establishment of 9 feed making units (Capacity of 300 t/year)**
4. **Establishment of 300 fish production units (Capacity of 2000 t/yr)**
5. **Establishment of 1 live fish marketing units (capacity of 300 t/yr)**
6. **Establishment of 8 fish harvesting units (Capacity of 1500 operartions/yr)**
7. **Establishment of 50 retailers (Capacity of 1500 t/yr)**

An unique model of technology scientific system introduced first time in India by introducing Silver carp breeding at a non-season period ; kitchen garden supported in bonds and hatcheries fertile areas.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ngitude: 82.520827
evation: 572.08m
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me: 30-06-2019 10:09


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MI DUAL CAMERA


itude: 19.643168
ngitude: 82.196803
evation: 620.77m
curacy: 3.8m
imuth: 286° (W)
tch: -12.3° (1.0°)
me: 04-28-2020 14:29
ote: Hatchery
merkote

Three selected SHG's of Nabarangpur district supported with 3 Nos. of sinking feed machine with a capacity production of 50 Kg/hr and proposed to make a common brand and sell it on market.

LIVE FISH MARKETING UNIT

Part III- Drivers of change and policy stimulus

Drivers of growth

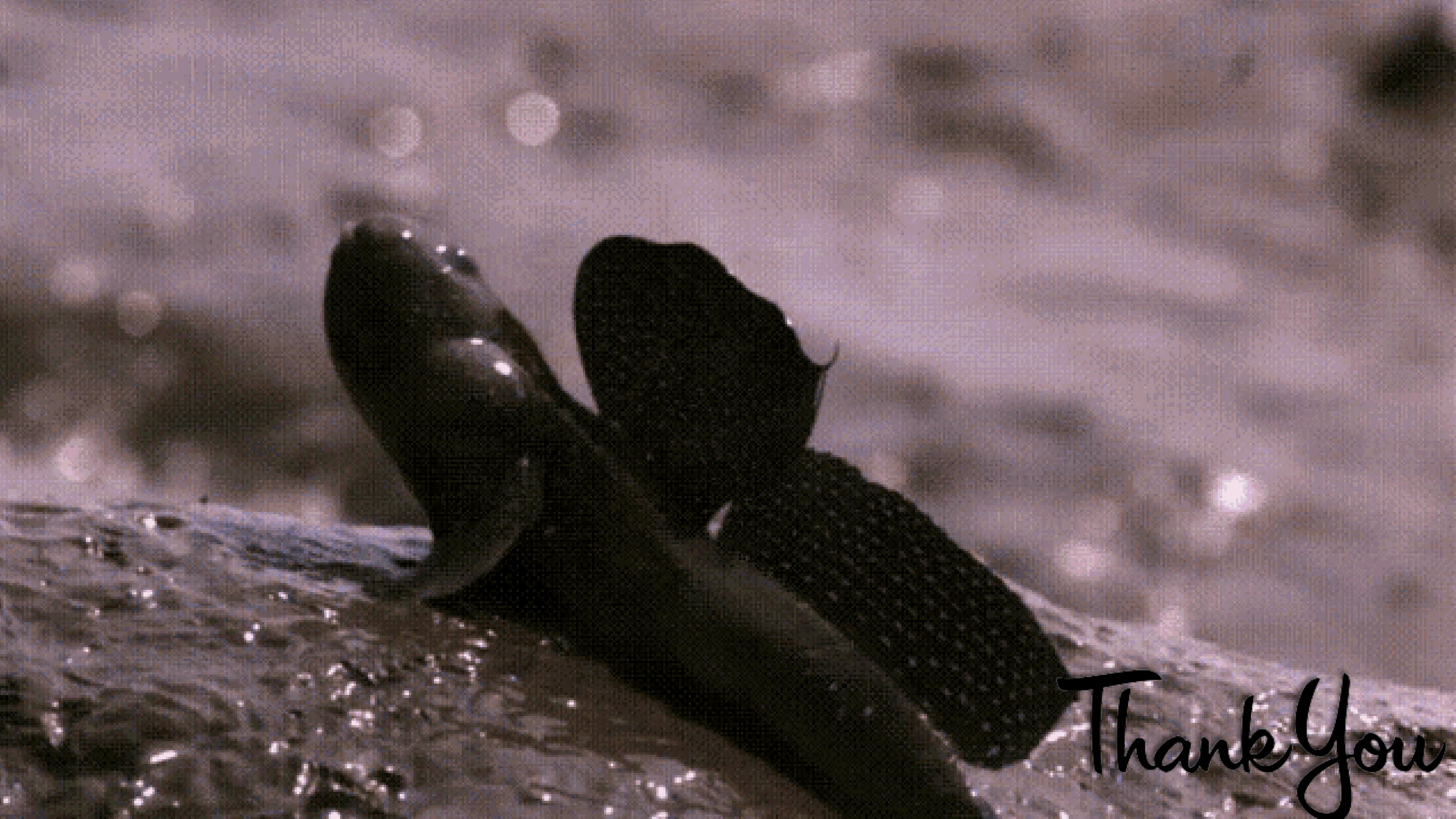
- Resource availability: (Freshwater 4-6 m^3 per kg of fish)
- Capital investment : (Fixed capital 300-500 Rs/kg, Working capital 50-100 Rs/kg)
- Technology: (Extensive, labour-intensive, resource-intensive, Capital-intensive)
- Institutions and Organisation : (access to land, water capital, market, management, value chain, innovation)
- Entrepreneurship: (New Business model, risk capital, new knowledge, socio-cultural charectaristics)
- Climate and environment
- Market and price

Critical factor for sustained growth

- Technological progress
- Adaptation of traditional technologies to non-conventional areas
- Use of efficient fish varieties or strain
- Productivity per unit water
- Productivity of unit time
- Use of non-conventional source of feed
- Improving feed efficiency
- Health management

Policy stimulus

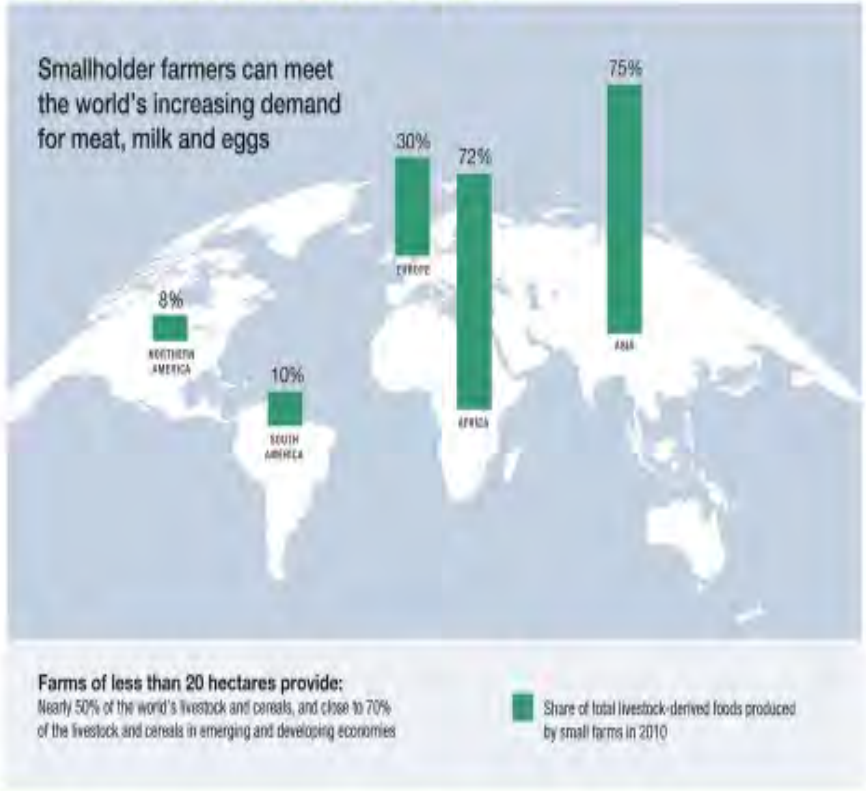
- **Investment in R & D in cutting edge technology (Biotechnology, genetics, fish health)**
- **Property rights and institutional development**
- **Capital investment and capital access (in remote zones)**
- **Investment in human resources (Skill in technology and management)**
- **Entrepreneurship development (Start-ups, new business model)**
- **Cluster development (New policy approach)**
- **Value chain development (producer-to-consumer approach)**


Thank You

UNLOCKING POLICIES AND INVESTMENTS WITH THE LIVESTOCK MASTER PLAN (LMP)

Sirak Bahta (ILRI)
29/11/2023
Bhubaneswar

Proportion of livestock-derived foods produced by small scale farms in 2010



- Smallholders are significant suppliers of livestock products globally. This is an important source of income, jobs and sustenance for nearly three-quarters of a billion people engaged in smallholder agriculture

Source: *Options for the Livestock Sector in Developing and Emerging Economies to 2030 and Beyond*. World Economic Forum White Paper January 2019

African Union | NEPAD | CAADP

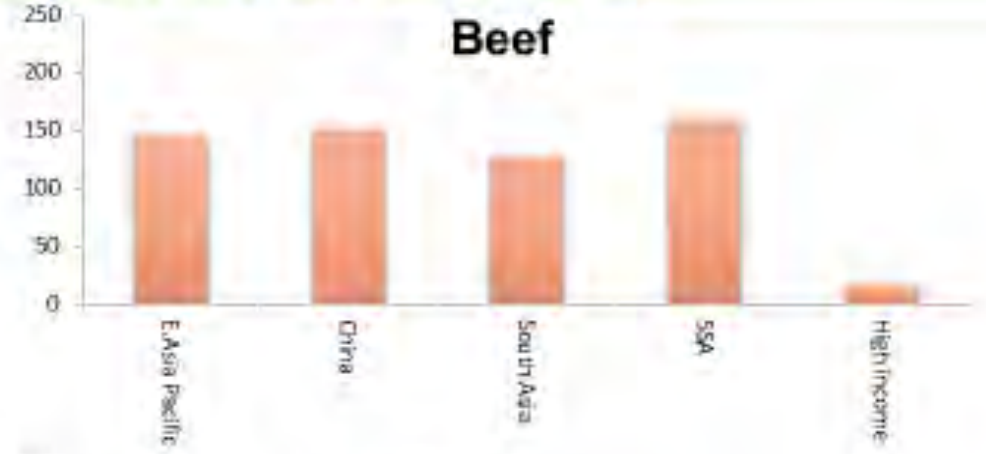
LIVESTOCK PRODUCTION ACCOUNTS FOR BETWEEN 20-40% OF AGRICULTURAL GDP IN DEVELOPING COUNTRIES

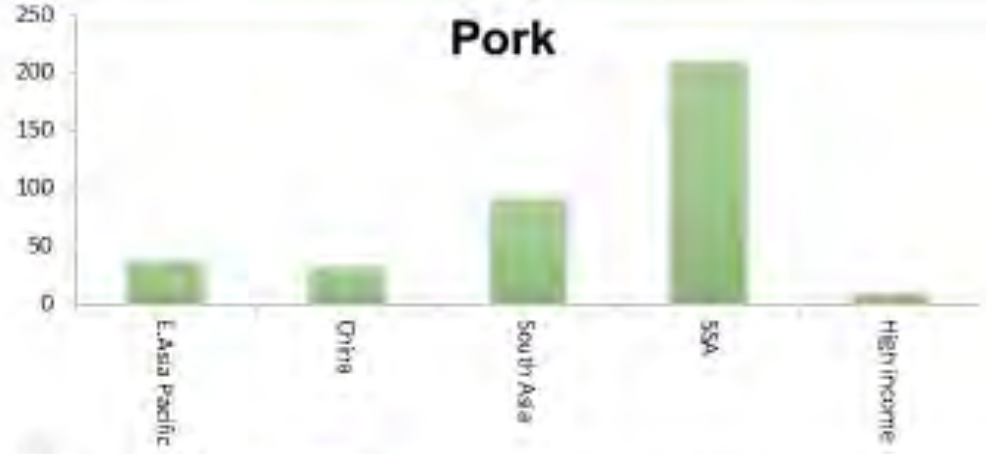
Chronic underinvestment

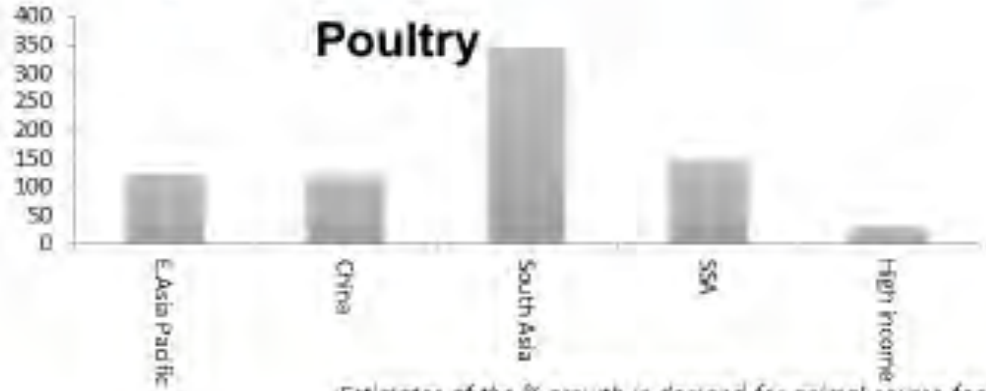
Lack of evidence base

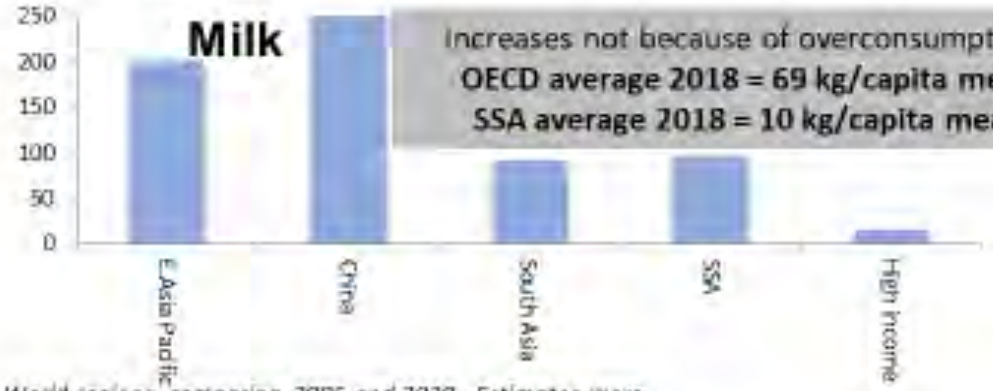
In adequate analytical Capacity

Demand for livestock products expected to rise (% increase to 2030)









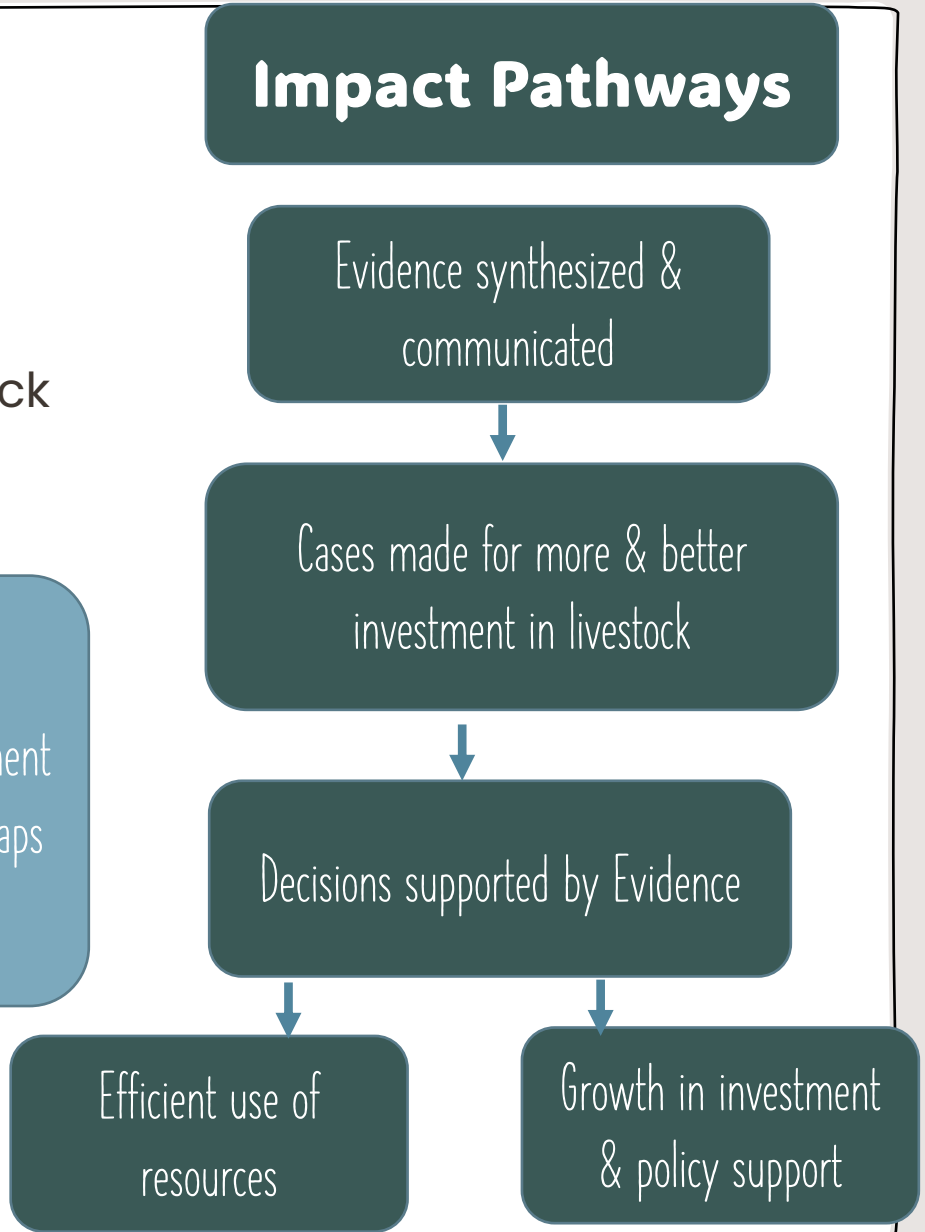
Increases not because of overconsumption!
OECD average 2018 = 69 kg/capita meat
SSA average 2018 = 10 kg/capita meat

Estimates of the % growth in demand for animal source foods in different World regions, comparing 2005 and 2030. Estimates were developed using the IMPACT model, courtesy Dolapo Enahoro, ILRI.

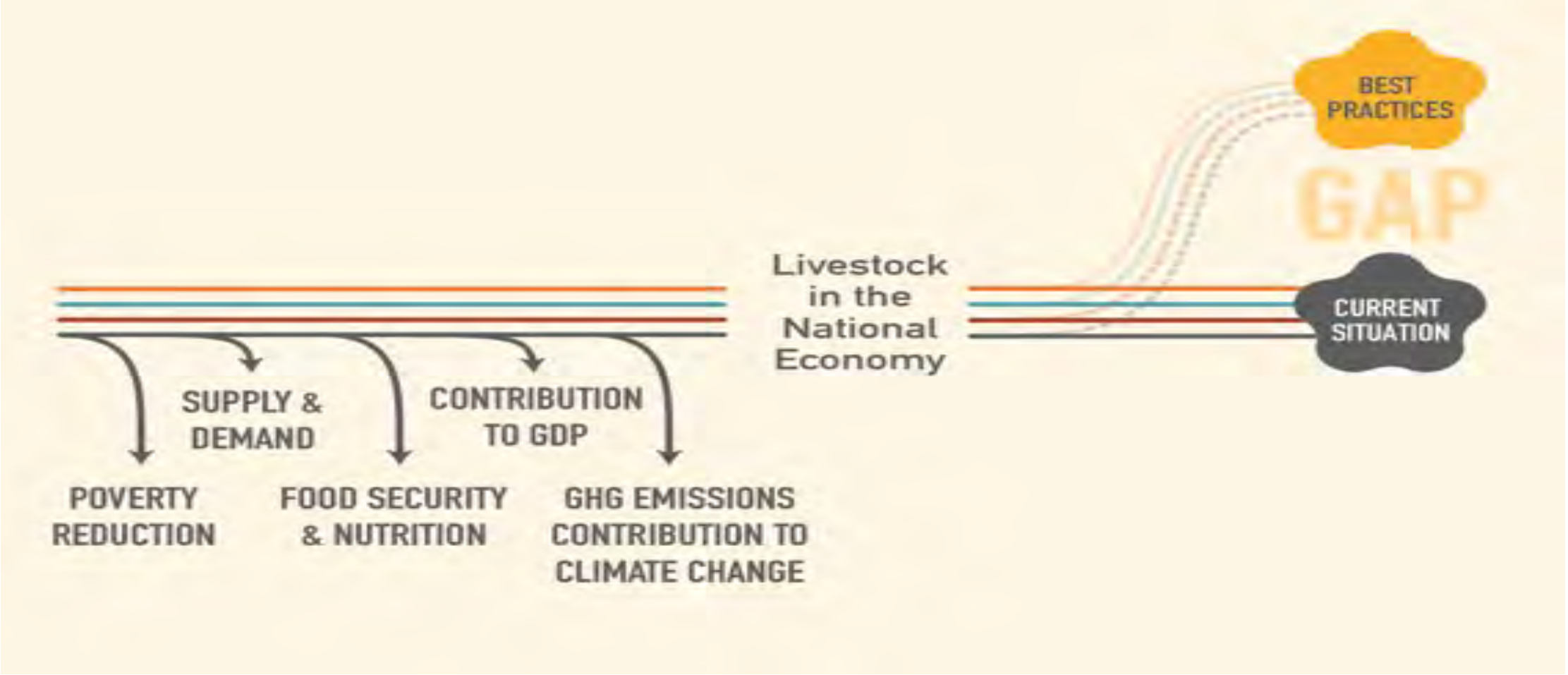
WHAT IS LMP

- Evidence-based quantitative analysis
- Includes both investment analysis and a budget—both a financial and a human resource budget
- Guides the development of a country's sustainable livestock sector.

Baseline/Livestock Sector analysis (LSA) → 15- year Livestock Sector Strategy (LSS) → 5-year investment plans/ Roadmaps



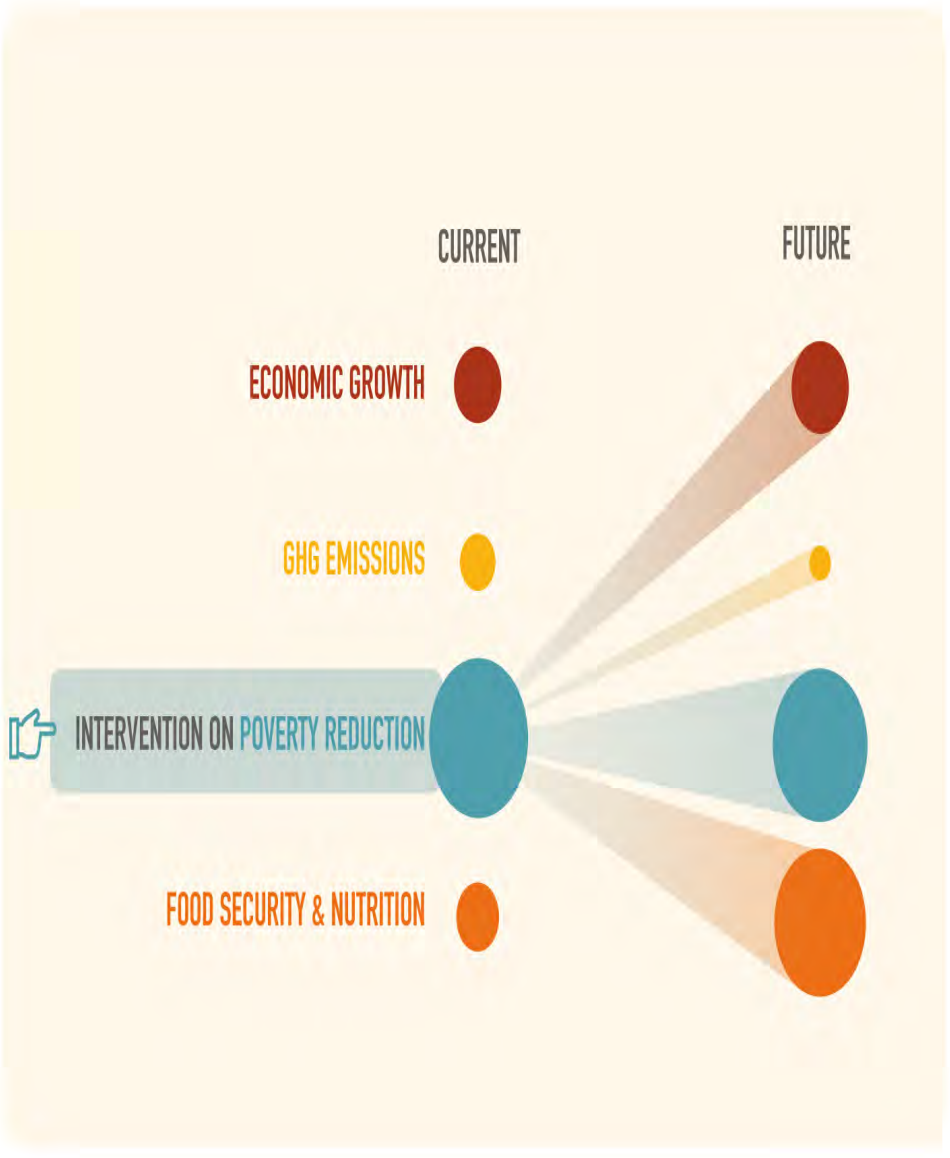
PROCESS


BEST PRACTICES
GAP
CURRENT SITUATION
Livestock in the National Economy
SUPPLY & DEMAND
CONTRIBUTION TO GDP
POVERTY REDUCTION
FOOD SECURITY & NUTRITION
GHG EMISSIONS CONTRIBUTION TO CLIMATE CHANGE

Why LMP?

Contribution of LMP in increasing investment in livestock

Possible tradeoffs

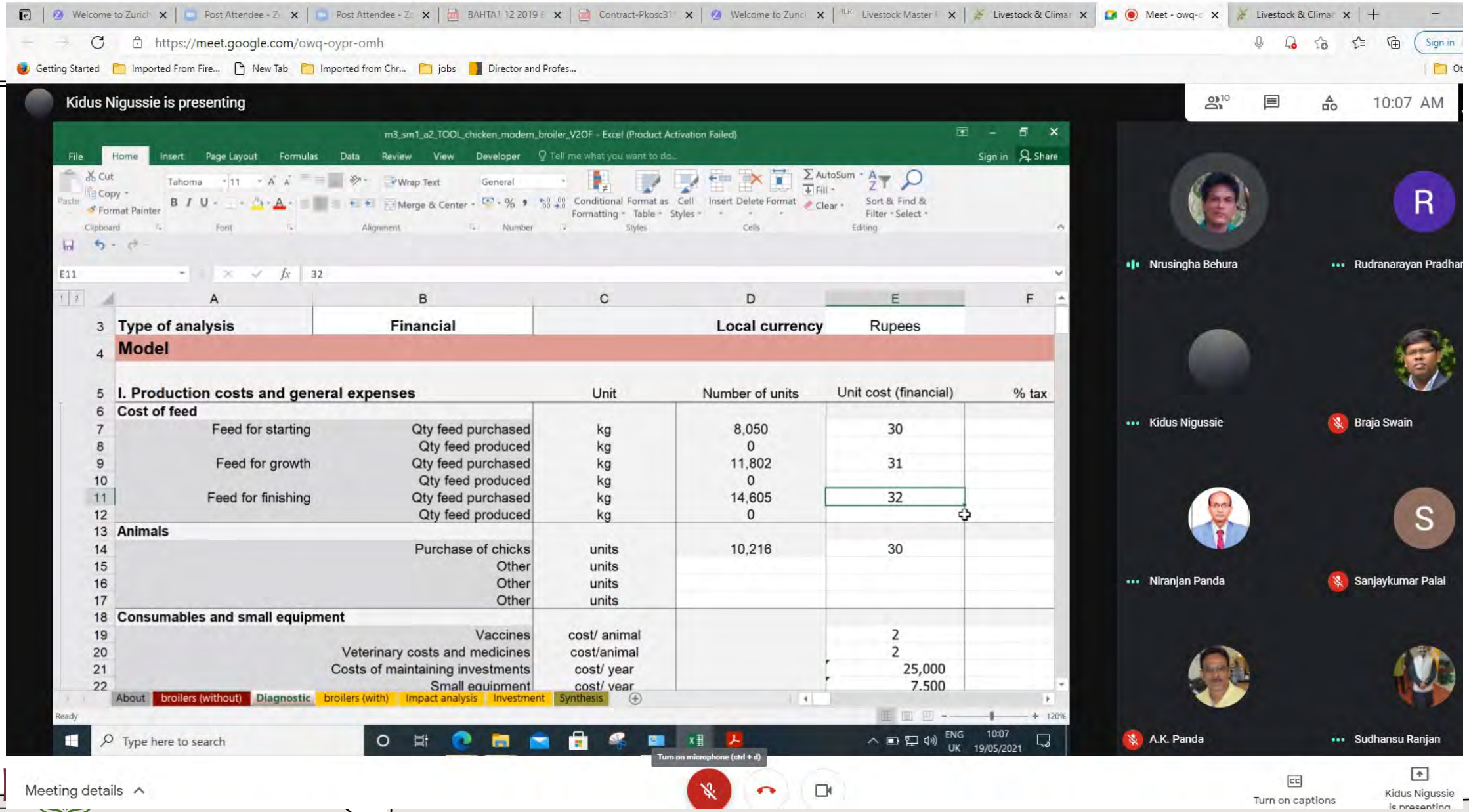


EXPERT AND ADVISORY TEAMS

State technical team- includes animal nutrition, breeding, veterinary, Extention, and marketing experts from DAH & VS Odisha.

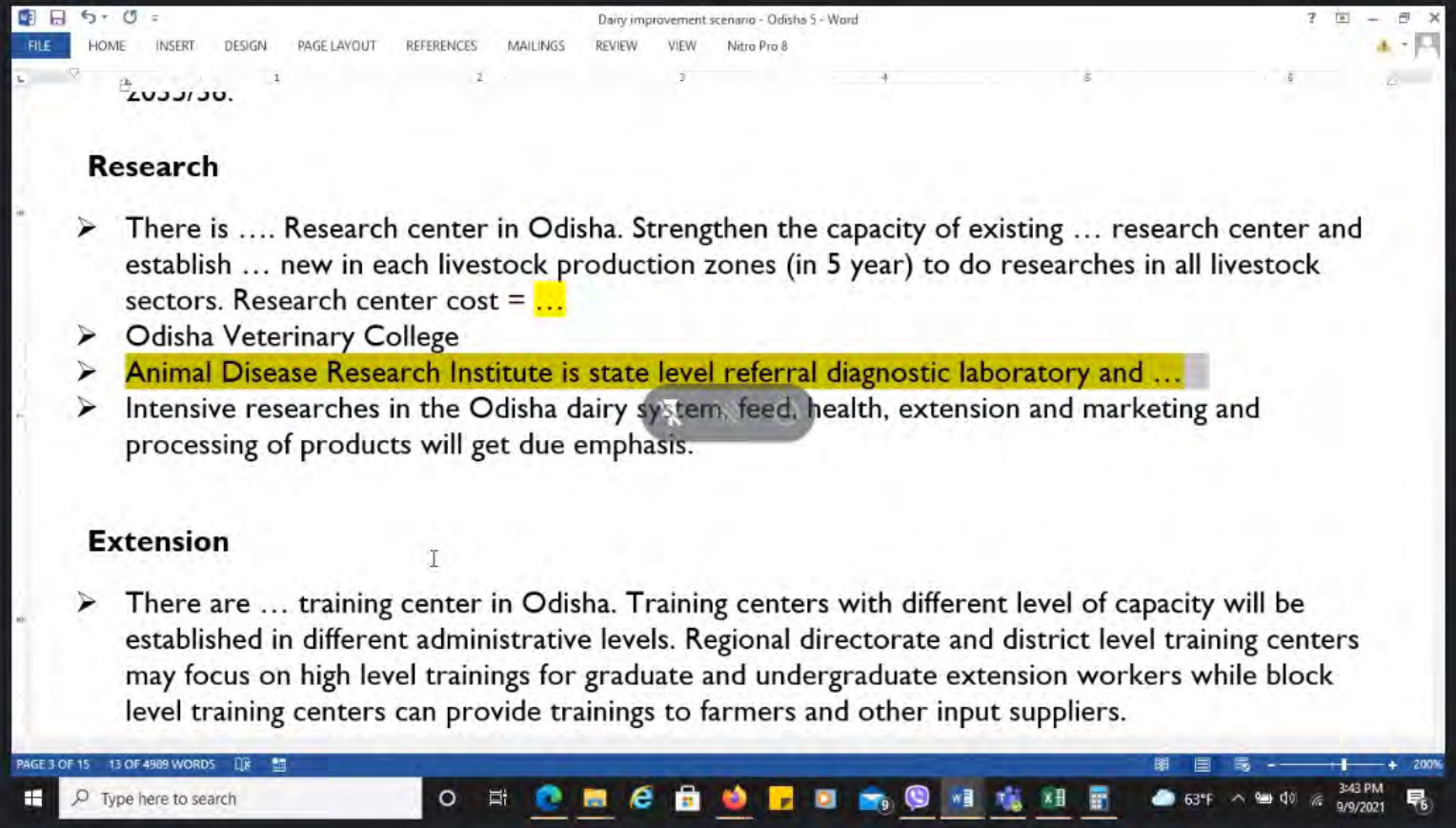
Additional experts from Odisha University of agricultural technology (OUAT), ICAR-CWA(center for women in agriculture), ICAR- DPR (directorate of poultry research), **BAIF Development Research Foundation and PRADAN-NGO.**

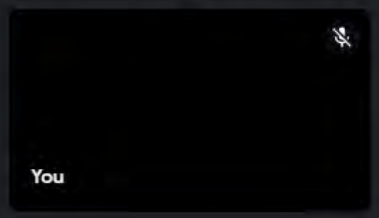
State Advisory committee- supposed to include both high-level officials/directors from public and private sectors.



	A	B	C	D	E	F
3	**Type of analysis**	**Financial**		**Local currency**	Rupees	
4	**Model**					
5	**I. Production costs and general expenses**		Unit	Number of units	Unit cost (financial)	% tax
6	**Cost of feed**					
7	Feed for starting	Qty feed purchased	kg	8,050	30	
8		Qty feed produced	kg	0		
9	Feed for growth	Qty feed purchased	kg	11,802	31	
10		Qty feed produced	kg	0		
11	Feed for finishing	Qty feed purchased	kg	14,605	32	
12		Qty feed produced	kg	0		
13	**Animals**					
14		Purchase of chicks	units	10,216	30	
15		Other	units			
16		Other	units			
17		Other	units			
18	**Consumables and small equipment**					
19		Vaccines	cost/ animal		2	
20		Veterinary costs and medicines	cost/animal		2	
21		Costs of maintaining investments	cost/ year		25,000	
22		Small equipment	cost/ year		7,500	

Kidus Nigussie is presenting





People

Search for people

In call

- Sirak Bahta (You)
- Braja Swain — Meeting host
- Dist. Vety. Office Sambalpur
- Dr. Pravat Kumar Sahoo
- Kidus Nigussie
- Kidus Nigussie — Presentation
- Niranjan Panda
- Sanjaykumar Palai
- Sukanta Jena
- Vijayabhasker Reddy

3:43 PM | udm-vyhc-pum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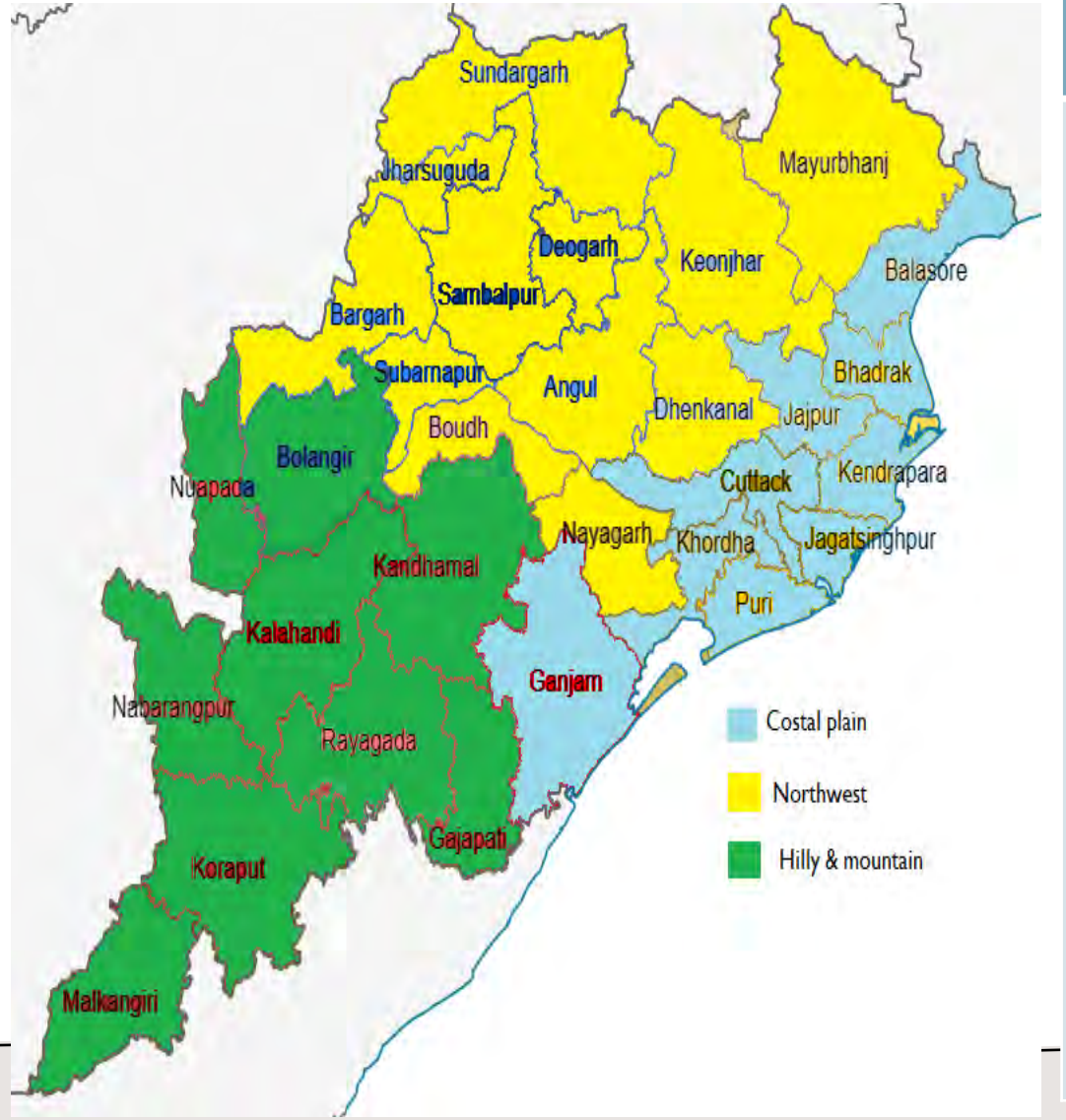
2021/9/17 10:29

LIVESTOCK PRODUCTION ZONES



Coastal Plain	Hilly & Mountain	Mixed Rainfed
1) Balasore,	1) Balangir,	1) Anugul,
2) Bhadrak	2) Gajapati,	2) Bargarh,
3) Cuttack,	3) Kalahandi,	3) Boudh,
4) Ganjam,	4) Kandhamal,	4) Deogarh,
5) Jagatsinghpur,	5) Koraput,	5) Dhenkanal,
6) Jajpur,	6) Malkangiri,	6) Jharsuguda,
7) Kendrapara	7) Nabarangpur,	7) Kendujhar,
8) Khordha,	8) Nuapada,	8) Mayurbhanj,
9) Puri	9) Rayagada	9) Nayagarh,
		10) Sambalpur,
		11) Subarnapur,
		12) Sundargarh

PRIORITY VALUE CHAINS

Livestock Production Systems of Odisha

	Coastal Plain Zone	North West Zone	Hilly & Mountain Zone	SP (Specialized)
Cattle (acc. to availability)	Indigenous: 1-10	Indigenous: 1-10	Indigenous: 1-10	Cattle: 10-50
	Crossbred: 1-10	Crossbred: 1-10	Crossbred: 1-10	Cattle: > 50
Goat (Acc. to herd size)	Small: 1-10 G	Small: 1-10 G	Small: 1-10 G	
	Large: >10	Large: >10	Large: >10	
Sheep (Acc. to Herd Size)	Small: 1-5	Small: 1-5	Small: 1-5	
	Large: 5-20	Large: 5-20	Large: 5-20	
Chicken	Traditional Small: 1-5 G			Broiler: 1000
	Improved: 1-5/ female owned farm			Layer: 5000

Major intervention areas for Dairy – State/ Production zone level

Investments to improve feeding

Pasture/fodder seed quality control laboratories – strengthen the existing one

Government fodder and fodder seed production farms – will be strengthened in the coming three years and will become up to 90% operational (manpower, machine, infrastructure - irrigation, fences etc.,)

Crop residue utilization – improve the utilization of available feed resources including common property resources - goes with improved extension services

Major intervention areas for Dairy – State/ Production zone level

Breeding Investments

Semen production center

- Upgrade the existing semen production to 20 lakh in the coming 5 years
- 2025/26-2030/31 - one more with a capacity of about 15 lakh straws/year

  - one sexed semen production center with 20 lakh straws/year capacity

Breeding farms

- By 2025/26, all the existing 8 breeding farms will be functional and upgraded.
- One farm for embryo transfer and molecular genetic; others for conservation of indigenous breeds, production of improved bulls

Liquid nitrogen storage

- To establish 3 in the coming five years.

Major intervention areas for Dairy – State/ Production zone level

Animal health investment

Veterinary Hospitals

Currently 30 hospitals - upgrade five to referral hospitals in every year

Veterinary dispensaries

- Increase from the current 541 to 650 by 2026/27, 750 by 2031/32 and 850 by 2036/37.

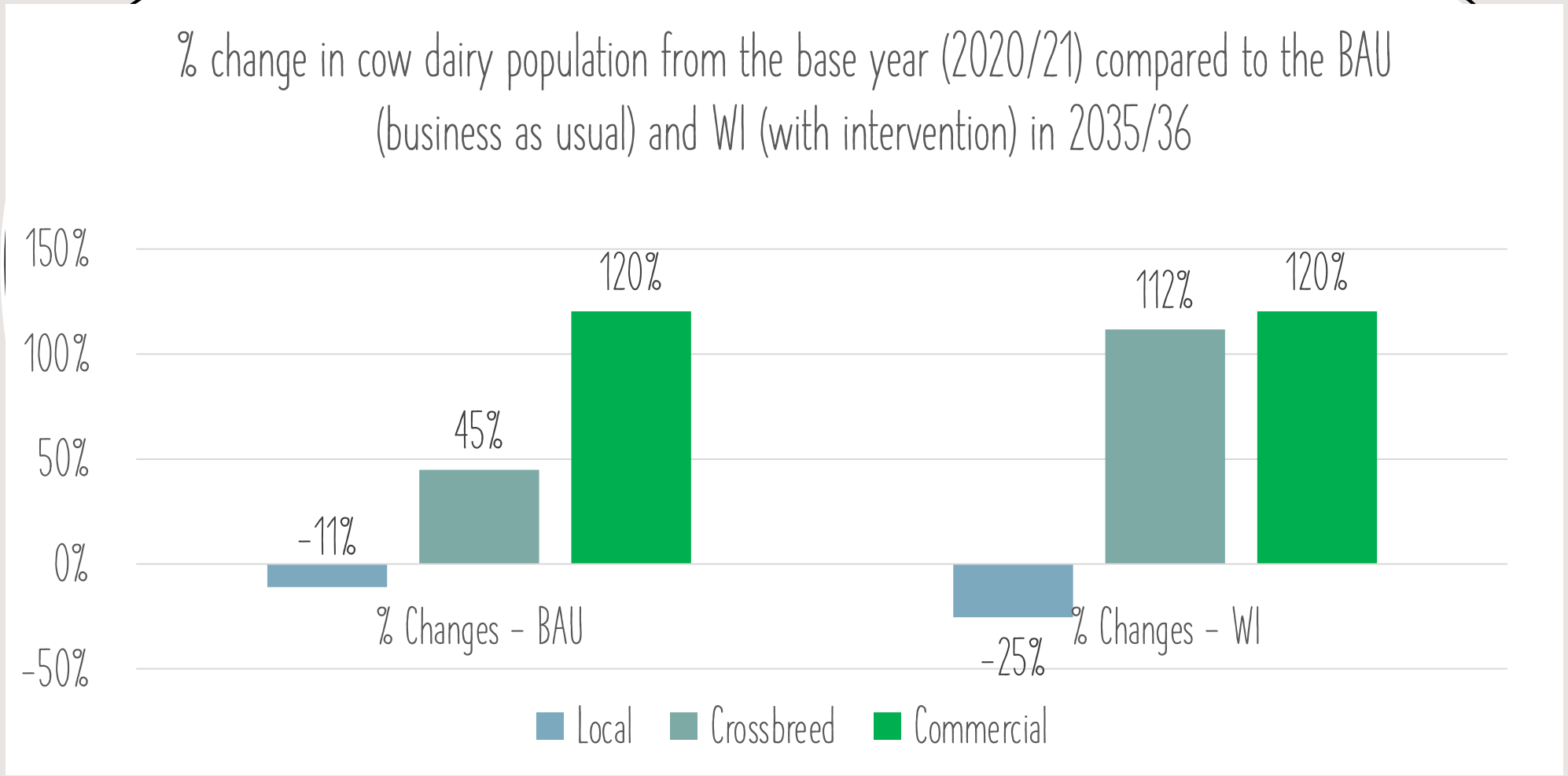
Aid centers

- Increase from the current 3,239 to 4,000 by 2025/26, 4,500 by 2030/31, and 5,000 by 2035/36

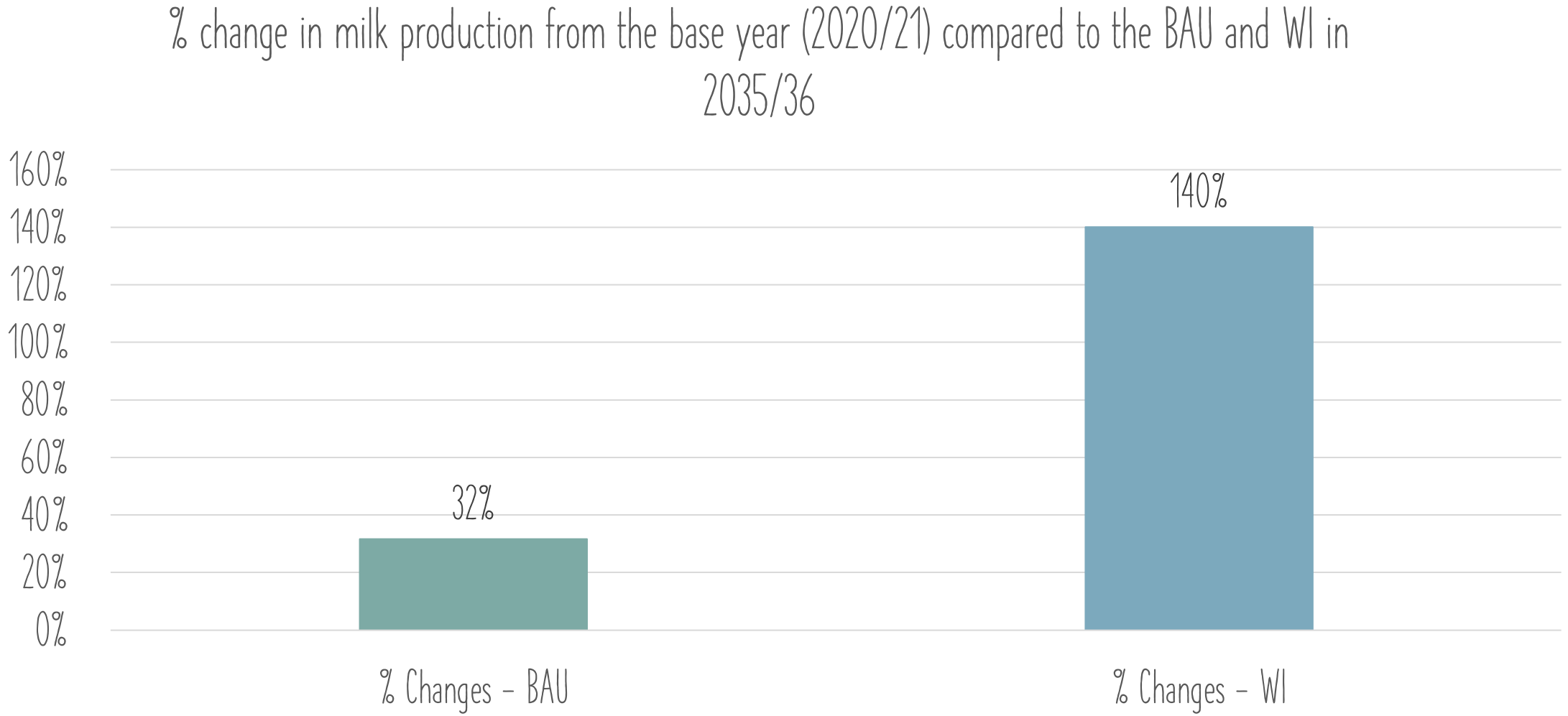
Increase the number of mobile veterinary service units (MVSU)

- There were 314 MVSU by 2020/21 – about 29,36,468 animals were treated and castrated and 40,36,564 vaccinated by MVSU.
- The achievements of MVSU should be encouraged and strengthened. It is targeted to increase 30 MVSU every year for the next 10 years.

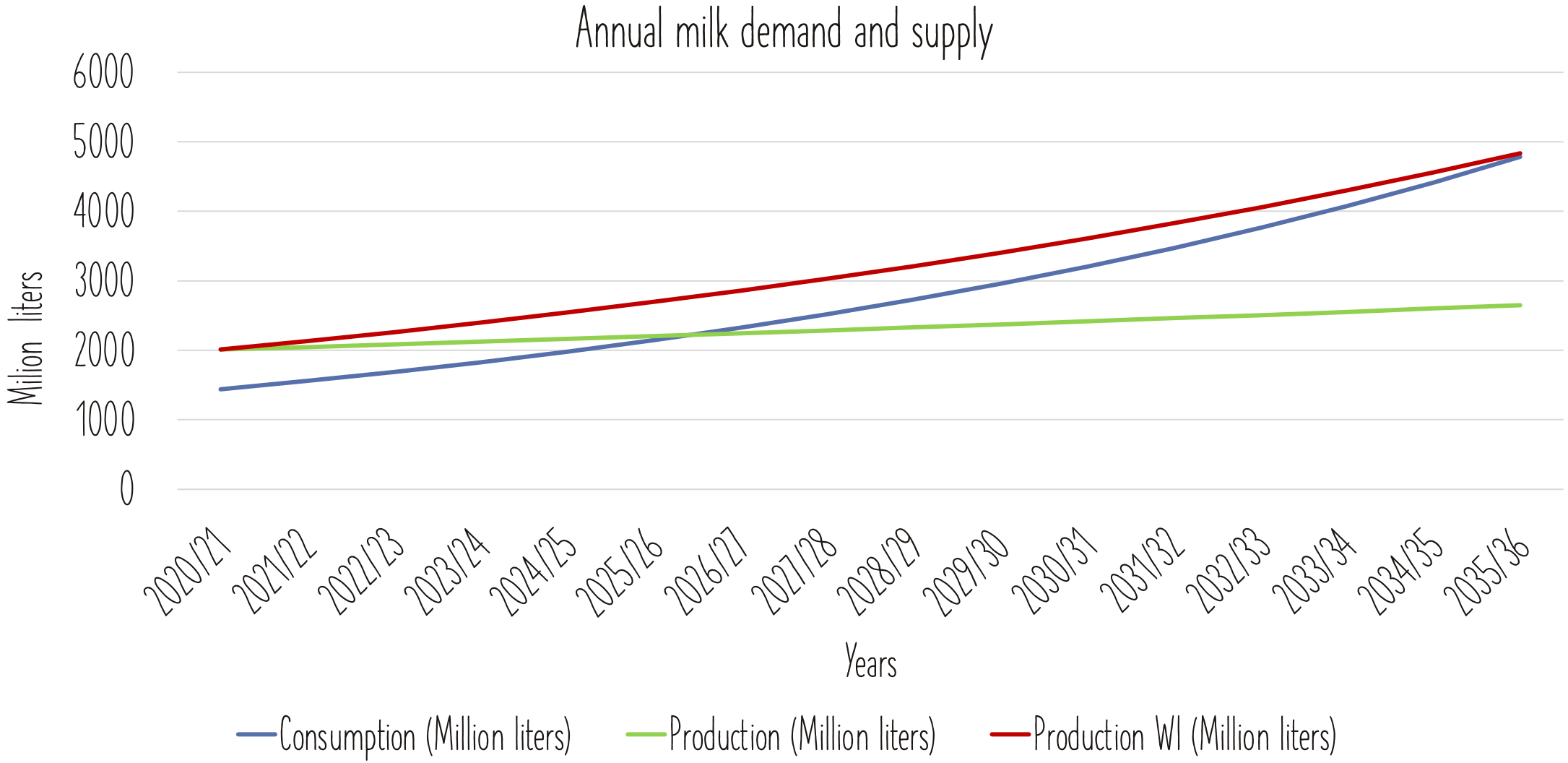
Key Impacts of interventions: Dairy



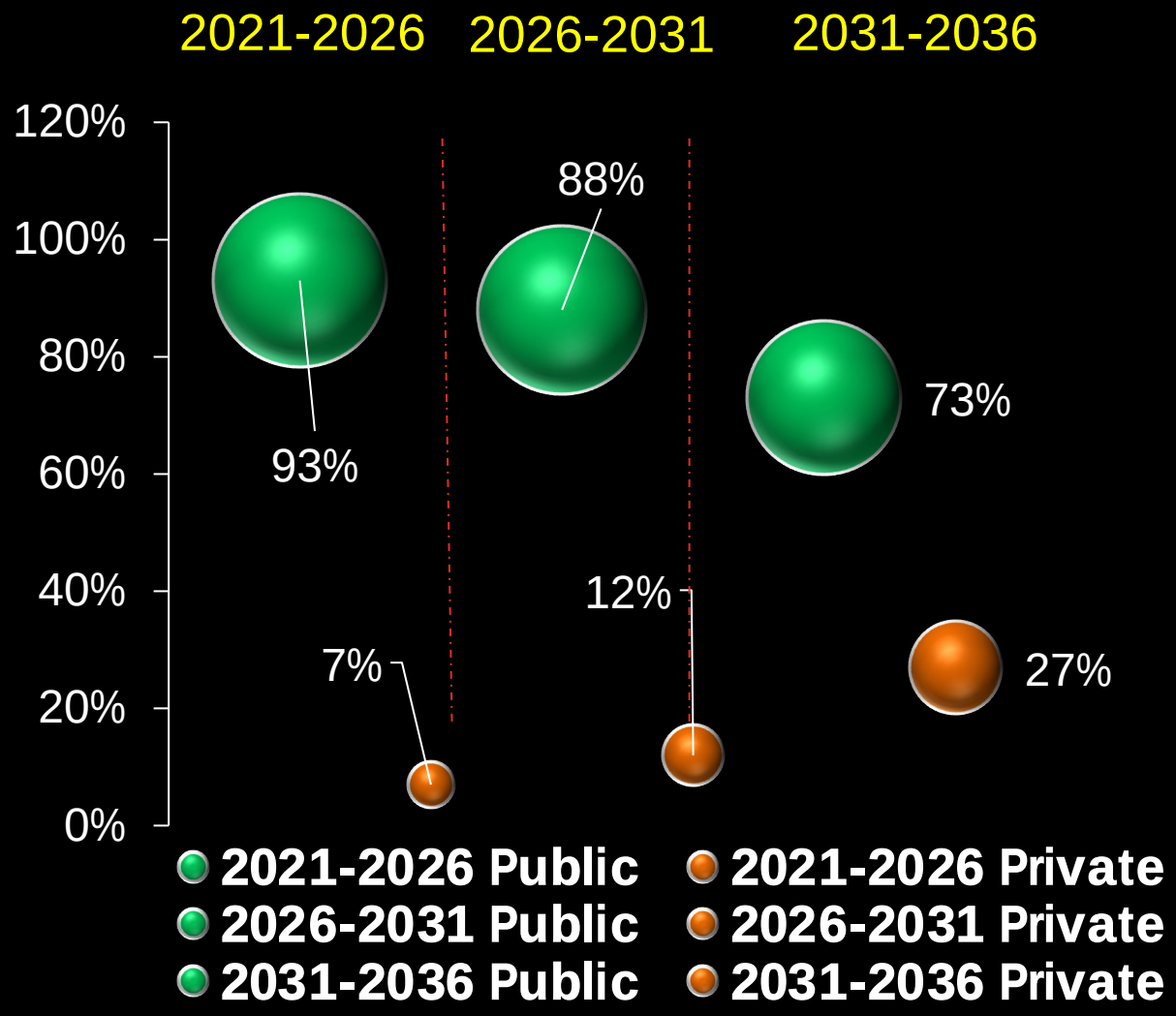
Key Impacts of interventions: Dairy



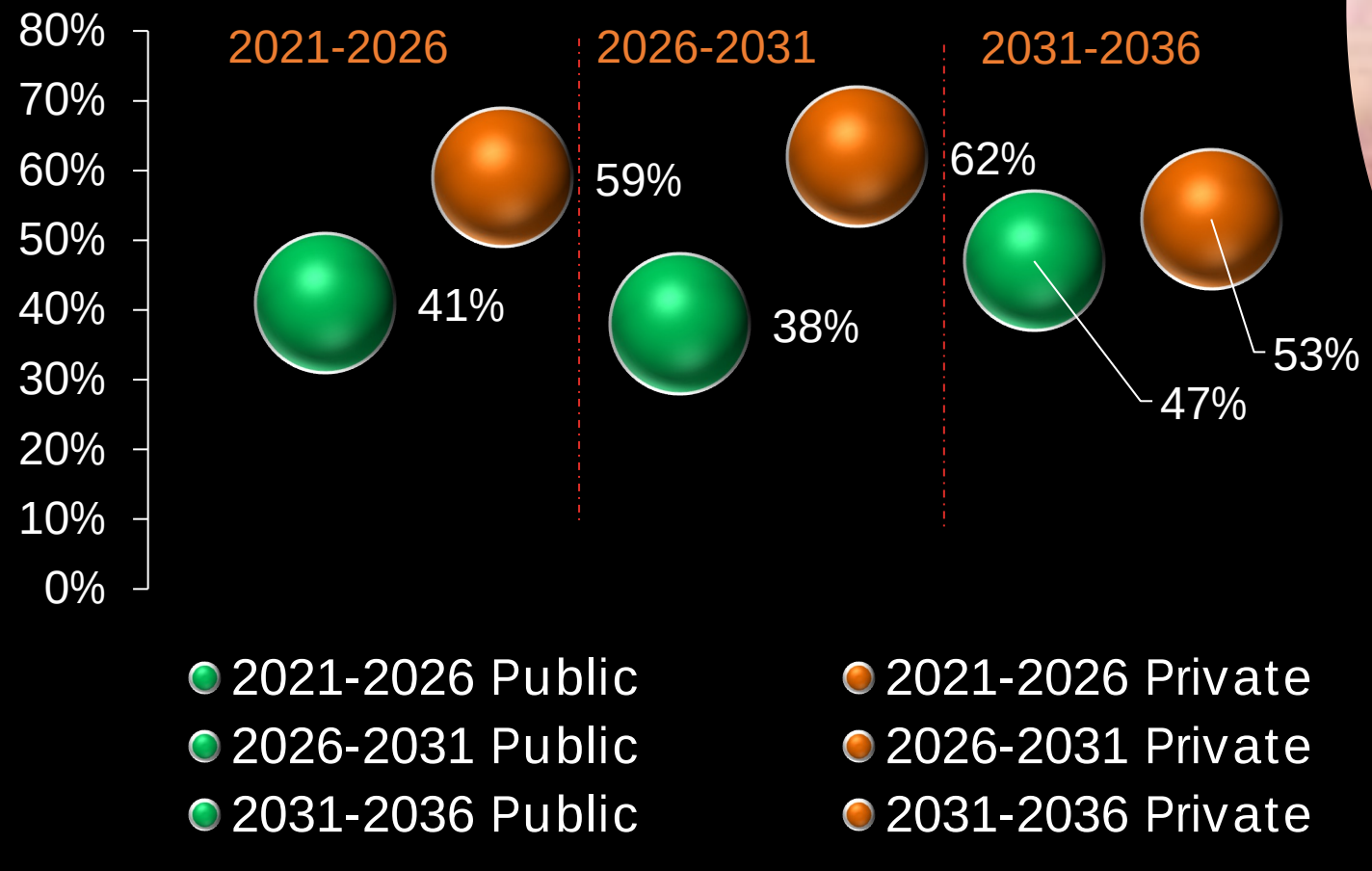
Key Impacts of interventions: Dairy



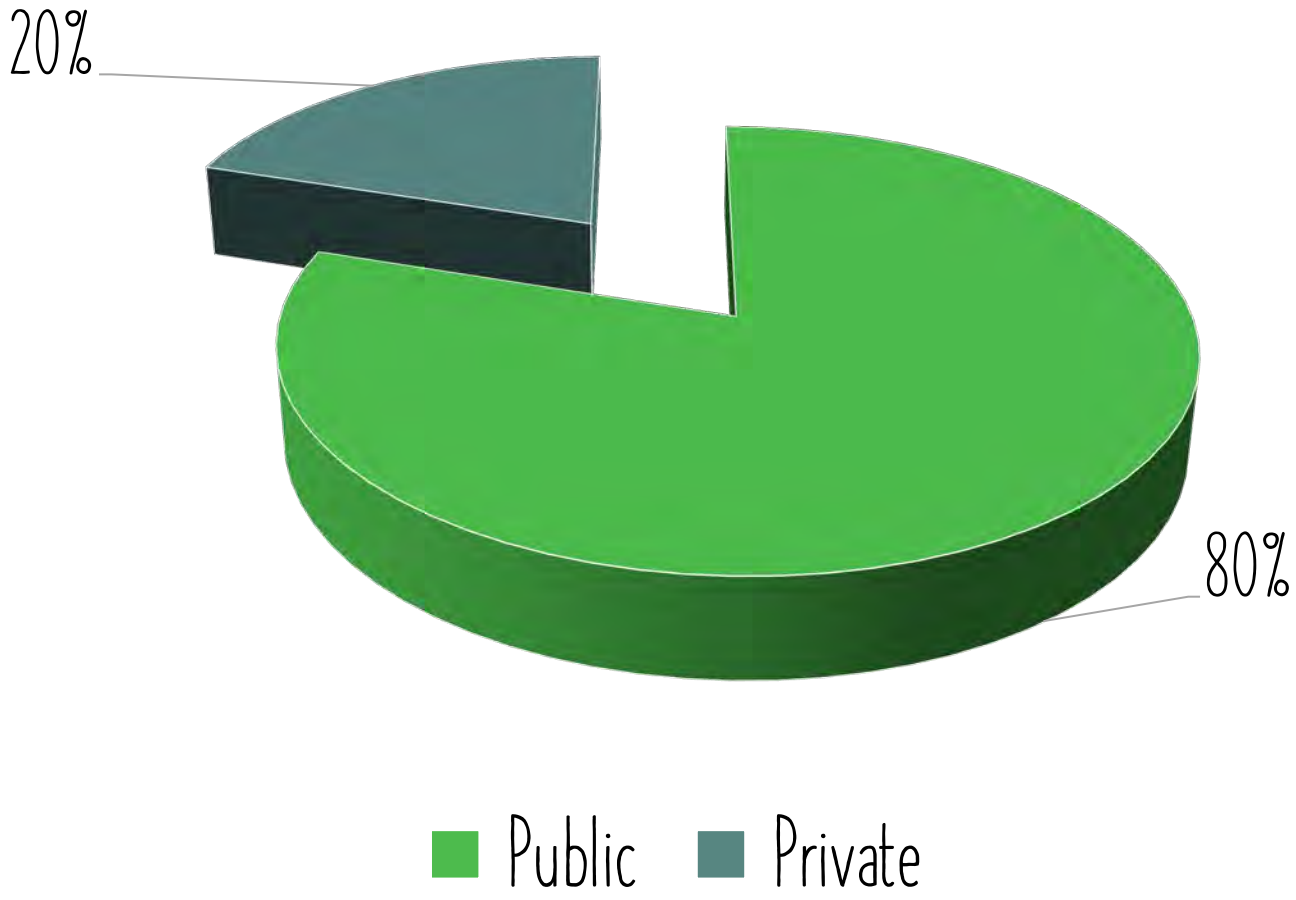
PUBLIC VS PRIVATE INVESTMENTS IN COW-DAIRY VC (WITHOUT MID-DAY MEAL) (ODISHA STATE/INDIA)



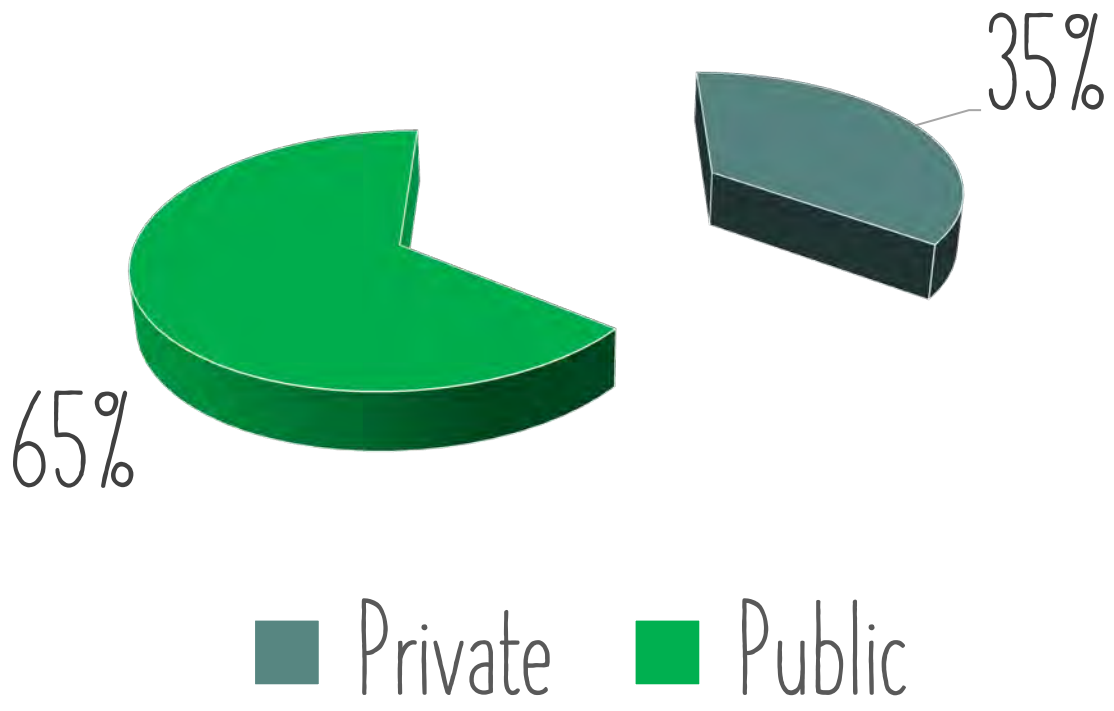
PUBLIC VS PRIVATE INVESTMENTS IN CHICKEN VC (WITH MID- DAY MEAL)



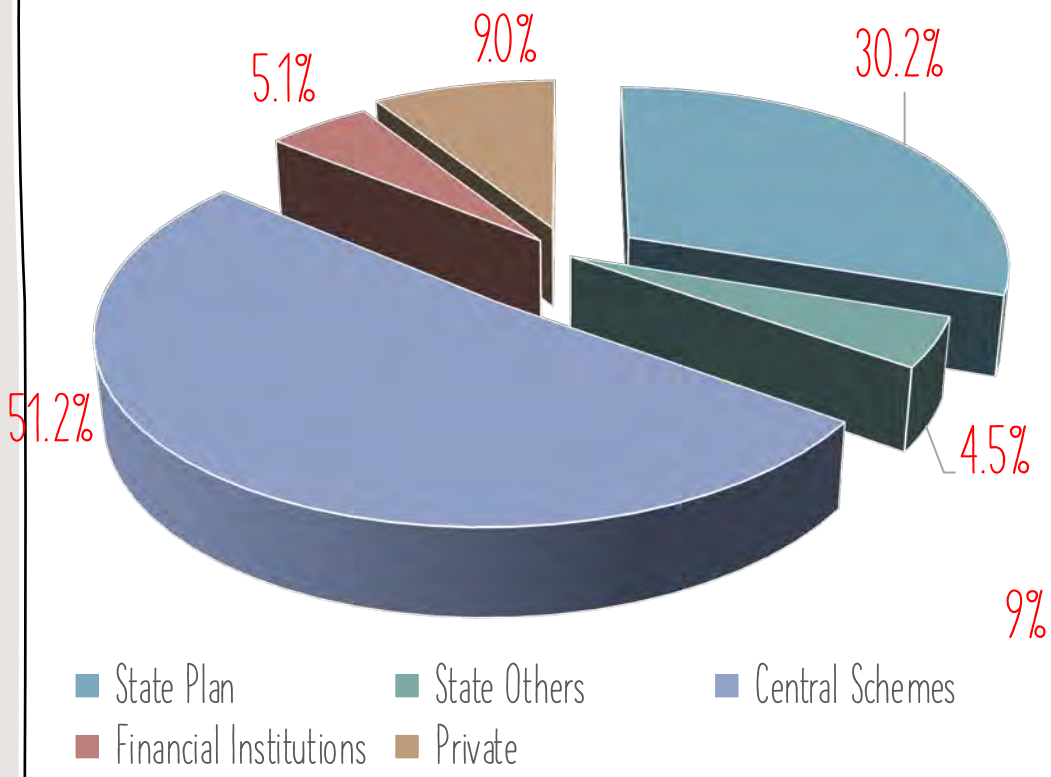
All value chains - All investments (subsidy mid-day milk & egg)

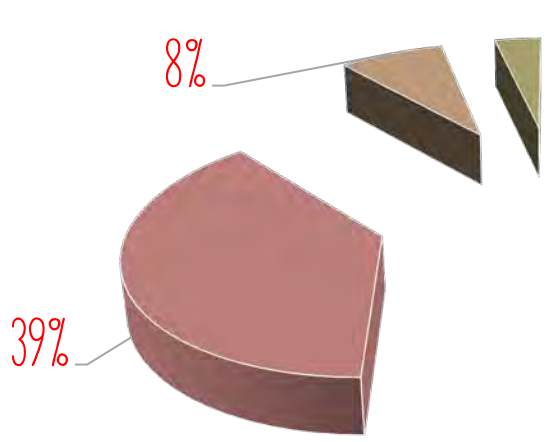


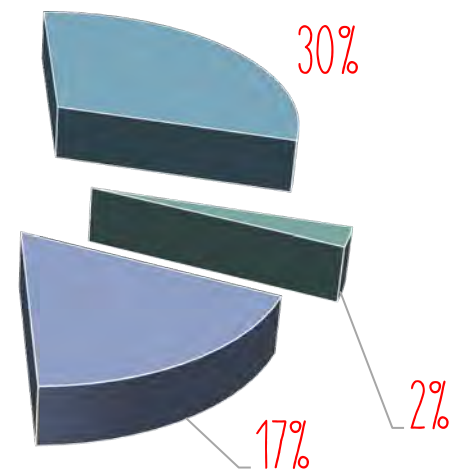
All value chains - All investments without mid-day milk & egg

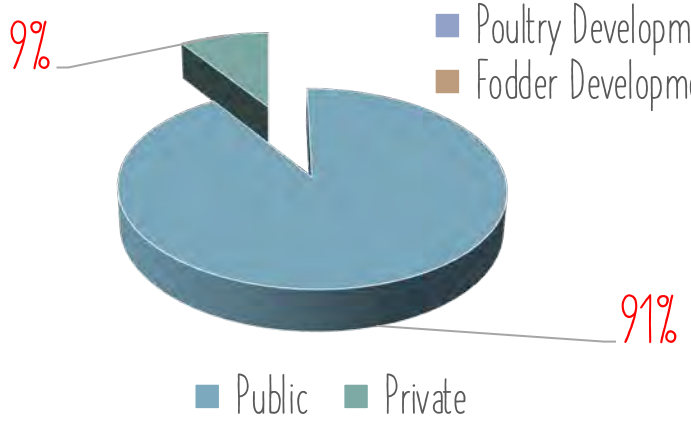


ARD PLAN 2010-20









The Odisha livestock sector analysis

The Odisha livestock sector strategy

Odisha livestock master plan 2022/23–2026/27

- IFAD project on Gender focusing on Goat value chain refers to Bihar LMP

"The Bihar Livestock Master Plan has identified the main investment areas

.....

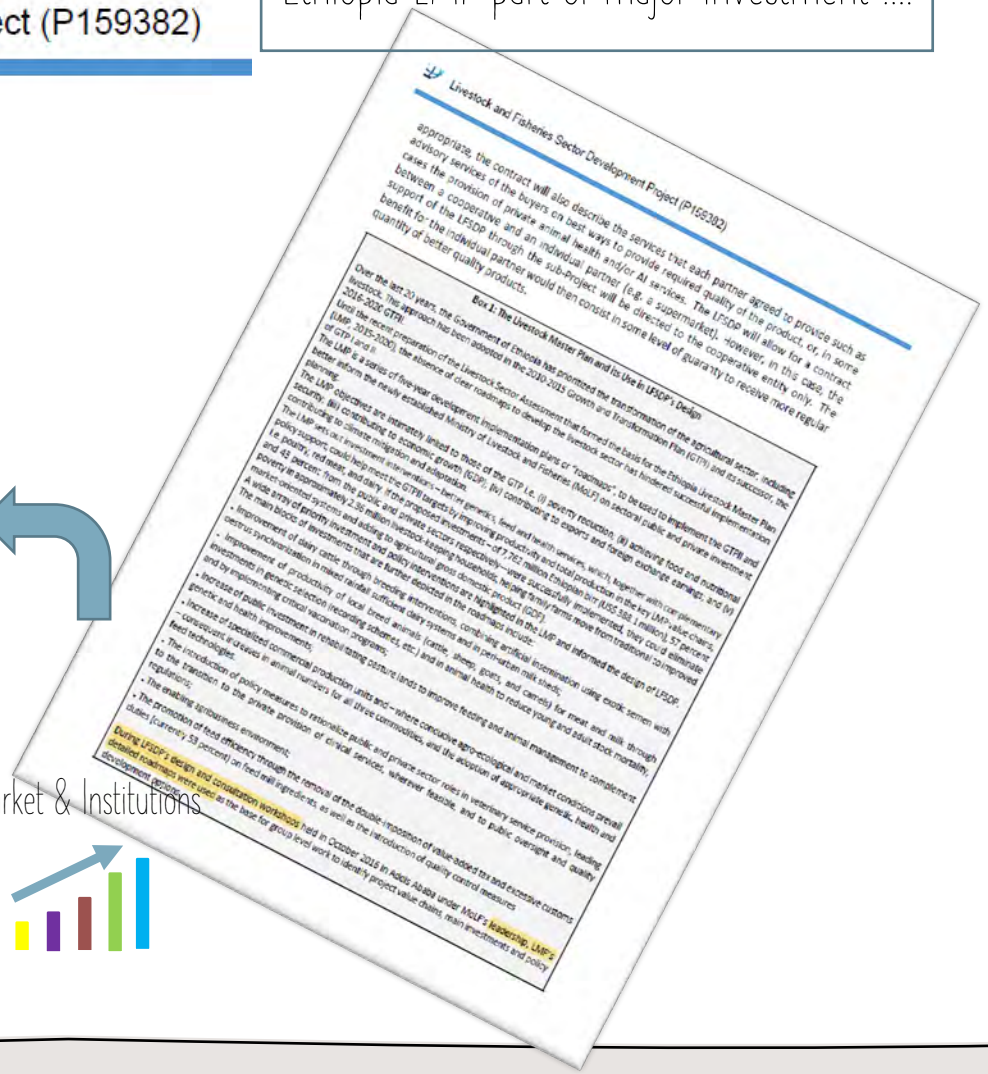
The present project addresses the investment requirements, while ensuring that project interventions are gender transformative, nutrition sensitive, youth focused and climate focused."

The World Bank
Livestock and Fisheries Sector Development Project (P159382)

Ethiopia LMP part of major investment ....

Project cost: 176 Million USD
Budget Source: World Bank
Borrower: local Farmer organizations

During LFSDP's design, LMP's detailed roadmaps were used as the base for group level work to identify project value chains, main investments and policy development options.


Livestock and Fisheries Sector Development Project (P159382)

appropriate, the contract will also describe the services that each partner agreed to provide such as advisory services of the buyers on best ways to provide required quality of the product, or, in some cases the provision of private animal health and/or AI services. The LFSDP will allow for a contract between a cooperative and an individual partner (e.g. a supermarket). However, in this case, the support of the LFSDP through the sub-project will be directed to the cooperative entity only. The benefit for the individual partner would then consist in some level of guaranty to receive more regular quantity of better quality products.

Box 1: The Livestock Master Plan and its Use in LFSDP's Design

Over the last 20 years, the Government of Ethiopia has prioritized the transformation of the agricultural sector, including livestock. The approach has been adopted in the 2010-2015 Growth and Transformation Plan (GTP) and its successor, the 2016-2020 GTP II.

Until the recent presentation of the Livestock Sector Assessment that formed the basis for the Ethiopia Livestock Master Plan (LMP, 2015-2020), the absence of clear roadmaps to develop the livestock sector has hindered successful implementation of GTP I and II.

The LMP is a series of five-year development implementation plans or "roadmaps", to be used to implement the GTPII and better inform the newly established Ministry of Livestock and Fisheries (MoLF) on sectoral public and private investment planning.

The LMP objectives are intensively linked to those of the GTP I.e. (i) poverty reduction, (ii) achieving food and nutritional security, (iii) contributing to economic growth (GDP), (iv) contributing to exports and foreign exchange earnings, and (v) contributing to climate mitigation and adaptation.

The LMP sets out investment interventions—both generic, feed and health unrelated, which, together with complementary policy support, could help meet the GTPII targets by improving productivity and total production in the key LMP's value chains, i.e. poultry, red meats, and dairy. If the proposed investments—GH 7,767 million Ethiopian birr (US$ 388.3 million), 57 percent and 43 percent from the public and private sectors respectively—were successfully implemented, they could eliminate poverty in approximately 2.56 million livestock-keeping households—helping family farms move from traditional to improved market-oriented systems and adding to agricultural gross domestic product (GDP).

A wide array of priority investment and policy interventions are highlighted in the LMP and informed the design of LFSDP. The main blocks of investments that are further depicted in the roadmaps include:

- Improvement of dairy cattle through breeding interventions, combining artificial insemination using exotic semen with indigenous synchronization in mixed rainfall sufficient dairy systems and in pastoralism milk sheds;
- Improvement of productivity of local breed animals (cattle, sheep, goats, and camels) for meat and milk through genetic and health improvements;
- Increase of public investment in animal health to reduce young and adult stock mortality;
- Increase of specialized governments;
- Improvements in genetic selection recording schemes, etc.) and in animal health to improve feeding and animal management to complement and by implementing critical vaccination programs;
- consequent investments in rehabilitating pasture lands to improve feeding and animal management to complement feed technologies;
- The introduction of policy measures to rationalize public and private sector roles in veterinary service provision, leading to the transition to the private provision of clinical services, wherever feasible, and to public oversight and quality regulations;
- The enabling agribusiness environment;
- The promotion of trade efficiency through the removal of the double-imposition of value-added tax and excessive customs duties (currently 53 percent) on feed/ animal ingredients, as well as the introduction of quality control measures.

During LFSDP's design and consultation workshops held in October 2015 in Addis Ababa under MoLF's leadership, LMP's detailed roadmaps were used as the base for group level work to identify project value chains, main investments and policy development options.

Animal Health

Animal feeding

Animal breeding

Market & Institutions

KEY MESSAGES - WHY LMP

- Coordinate sector stakeholders
- aligns and prioritises investments
- guides and prioritises policies and regulations that need to be reformed, revised or generated to contribute to the development objectives of the country.

ETHIOPIA

TANZANIA

RWANDA

UZBEKISTAN

BIHAR (INDIA)

ODISHA (INDIA)

The Gambia

EXISTING/COMPLETED LIVESTOCK MASTER PLANS (LMPS)

ODISHA/BIHAR STATES INDIA





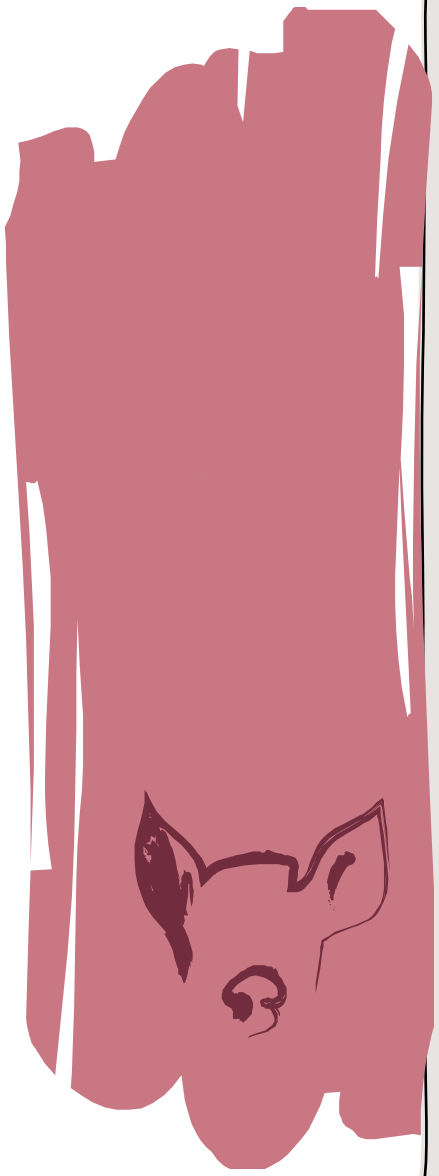
ONGOING LMPS

KENYA

NIGERIA

Proposals submitted- request from World Bank projects & governments:

- SADC livestock development program
- Maharashtra/India
- Madagascar
- Somalia
- Senegal
- Mauritania
- Zimbabwe



Thank You!

FARD

dr soumyendra dhal

dr lokanath behera

dr gopal krushna tripath

dr g ch mohapatra

dr rabi maharatha

dr k v k patnaik

dr sadasiv mohapatra

dr m subudhi

dr partha sarathi swain

dr gopal chandra bal

dr premananda rout

dr samir das

dr nigam nayak

dr rajeev sharma

dr nityananda das

dr pravat kumar sahoo

dr p k khamari

dr dipti mohapatra

ILRI

vijayalakshmy kennady

dr mamta dhawan

dr sirak bahta

kidus nugussie

dr isabelle baltenweck

dr joseph karugia

vijay reddy

sanjay palaj

dr habibar rahman

dr braja swain

dr immaculate omondi

SAMAGRA

pragya mathur

shailiza mayal

utkarsh vijay

shubham bansal

Government's Perspective on Fisheries

Department of Fisheries and Animal Resources Development

Government of Odisha

Overview of Indian Fisheries vis - a –vis Odisha fisheries

Inland fish Production (in LMT)

Sl No	State	2018-19	2021-22	% growth
1	Andhra Pradesh	33.91	42.19	24.42
2	West Bengal	16.19	16.52	2.04
3	Uttar Pradesh	6.62	8.09	22.21
4	Odisha	6	7.89	31.50
5	Bihar	6.02	7.62	26.58
6	India Total	97.2	121.21	24.70

Marine Fish Production (in LMT)

Sl No	State	2018-19	2021-22	% Growth
1	Gujrat	6.99	6.88	-1.57
2	Kerala	6.09	6.01	-1.31
3	Tamilnadu	5.2	5.95	14.42
4	Andhra Pradesh	6.0	5.94	-1.00
5	Krnataka	3.9	5.89	51.03
6	Maharastra	4.68	4.33	-7.48
7	Odisha	1.59	2.01	26.42
8	West Bengal	1.63	1.91	17.18
9	Goa	1.15	1.11	-3.48
10	India Total	38.53	41.27	7.11

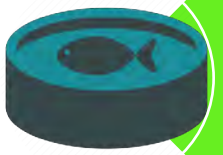
Annual per capita consumption Fish Consumption(Kg)

Sl No	State	2020-21
1	A and N Islands	77.84
2	Tripura	25.53
3	Puducherry	18.88
4	Manipur	18.25
5	Kerala	17.93
6	Odisha	16.34
7	Andhra Pradesh	8.91
	India Average (WB - NR)	6.31

Odisha ahead of National average in all parameters and also ahead of top state AP in %growth over last 5 years .

OVERVIEW OF ODISHA FISHERIES

4th highest Overall Fish production (2021-22)



4th highest in Inland Fish Production(2021-22)

↑ *Growth of 31.5%*

7th highest in Marine Fish Production(2021-22)

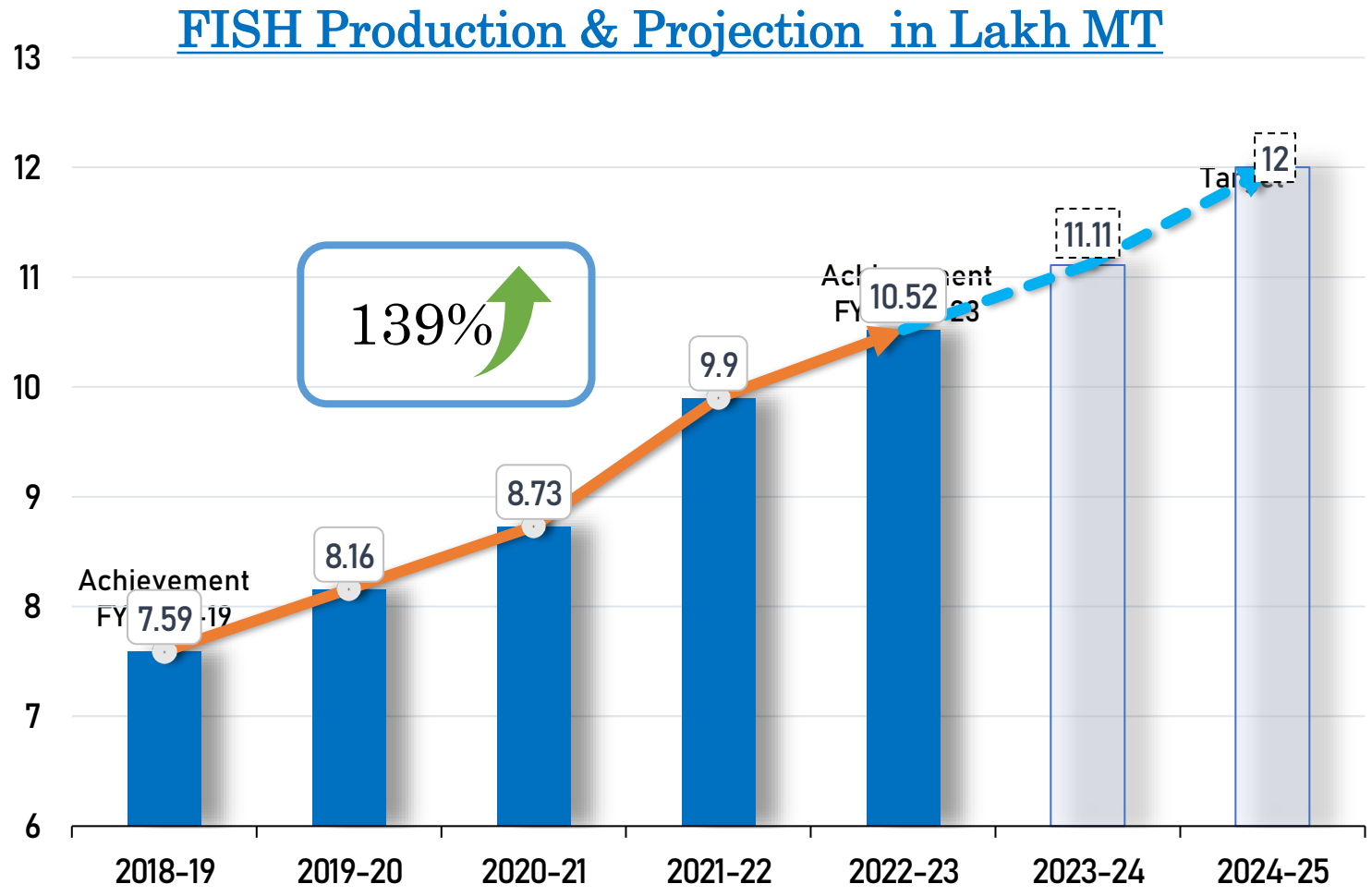
↑ *Growth of 26.42%*

6th in Per- capita Fish Consumption (2020-21)

16.34 Kg (more than national average)

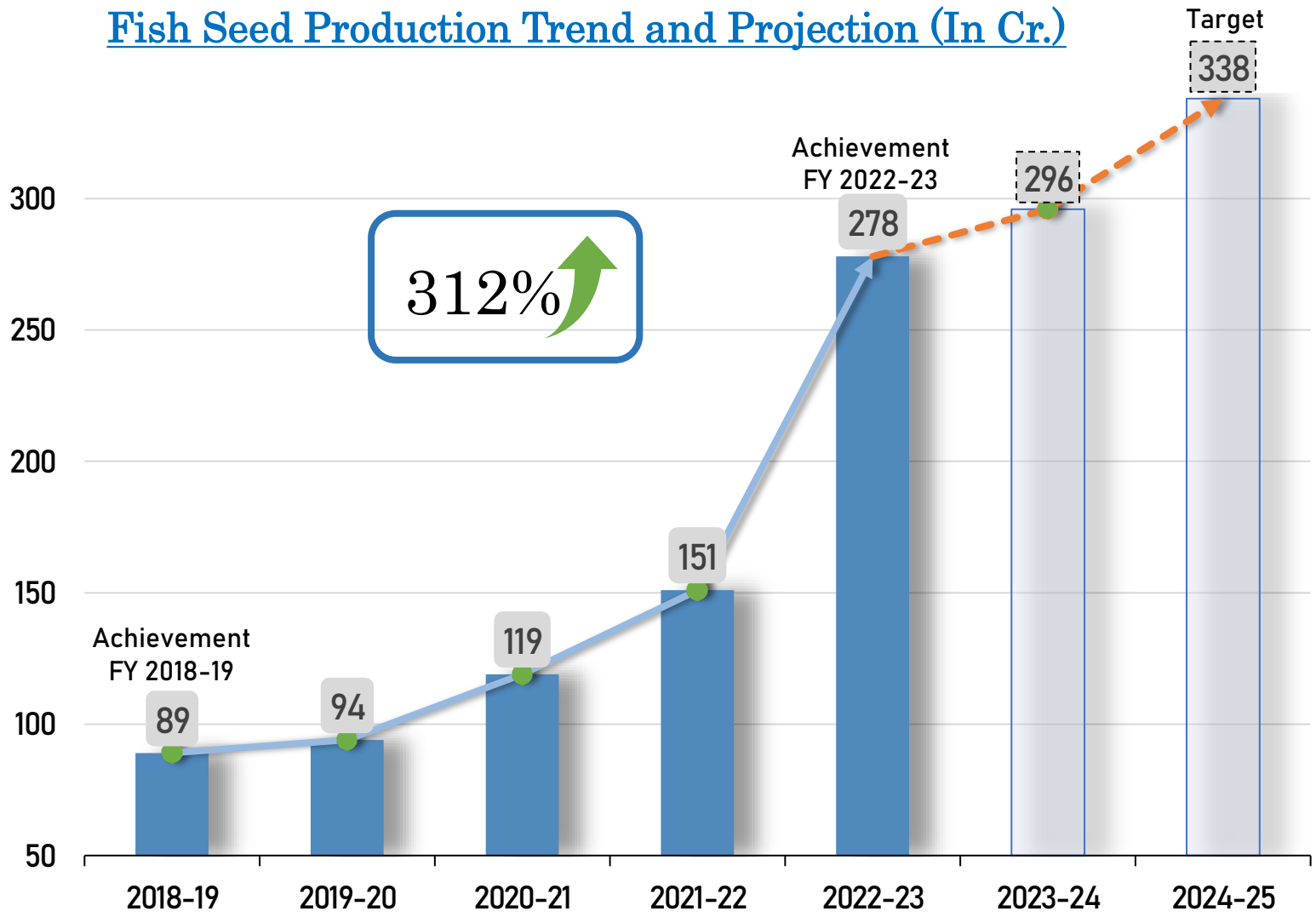
ODISHA FISHERIES SNAPSHOT

Resources	Total Area(In lakh Ha.)
Freshwater	
Tanks/Ponds	1.53
Reservoirs	2.00
Lakes/Swamps/Bheels	1.80
Rivers/Canals	1.71
Brackishwater	
Area Suitable for culture	0.33
Back Water	0.08
Chilika Lake	0.79
Estuaries	2.98
Marine	
Coast line length of odisha	480 Km.
Continental shelf area(approx.)	24000 Sq.Km
District-wise Coastal Length (in Kms.)	
Balasore	80
Bhadrak	50
Kendrapada	68
Jagatsinghpur	67
Puri	155
Ganjam	60
Total Coastal length	**480**

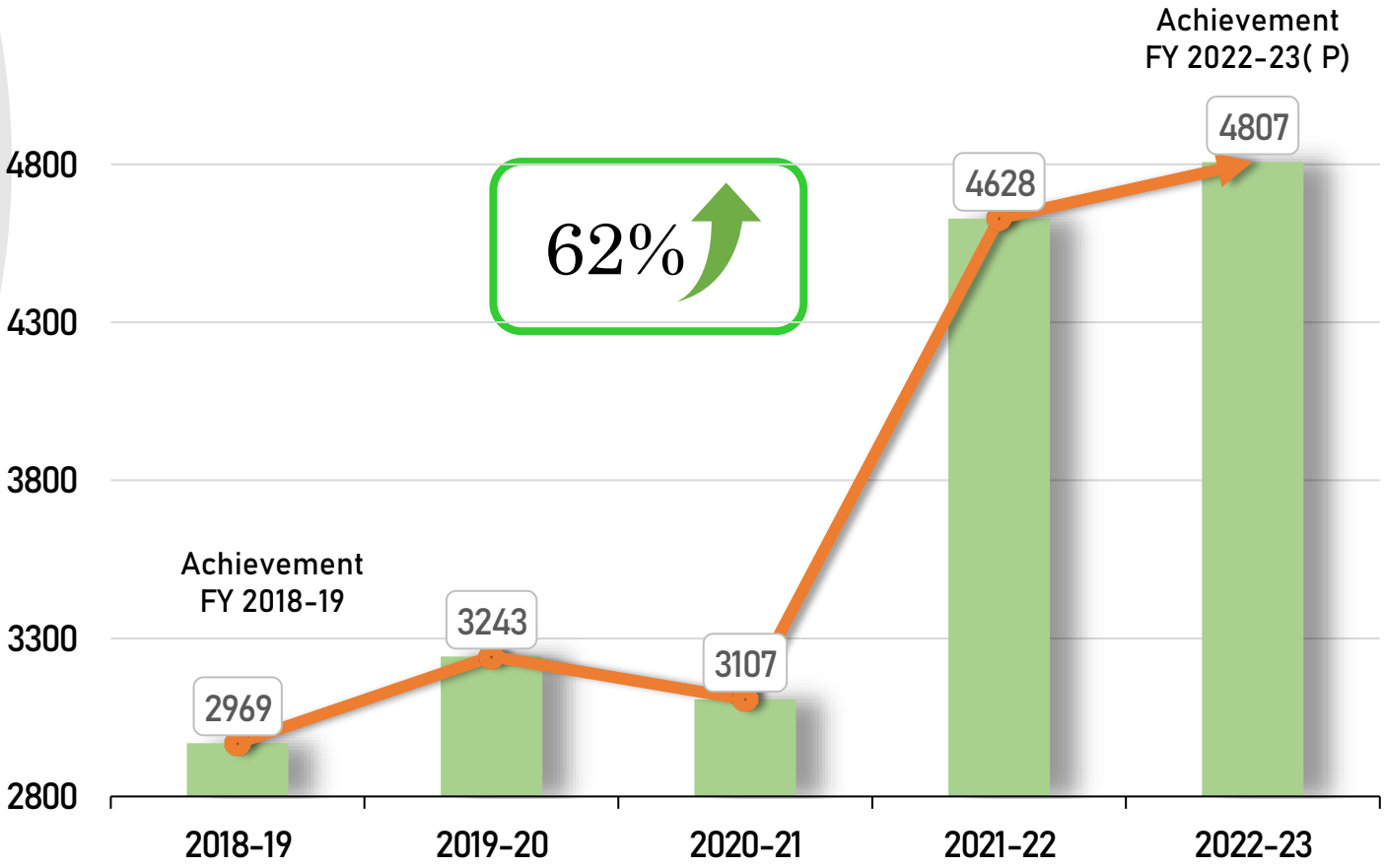


Rapid Growth in Fish Production

Fish Seed Production Trend and Projection (In Cr.)

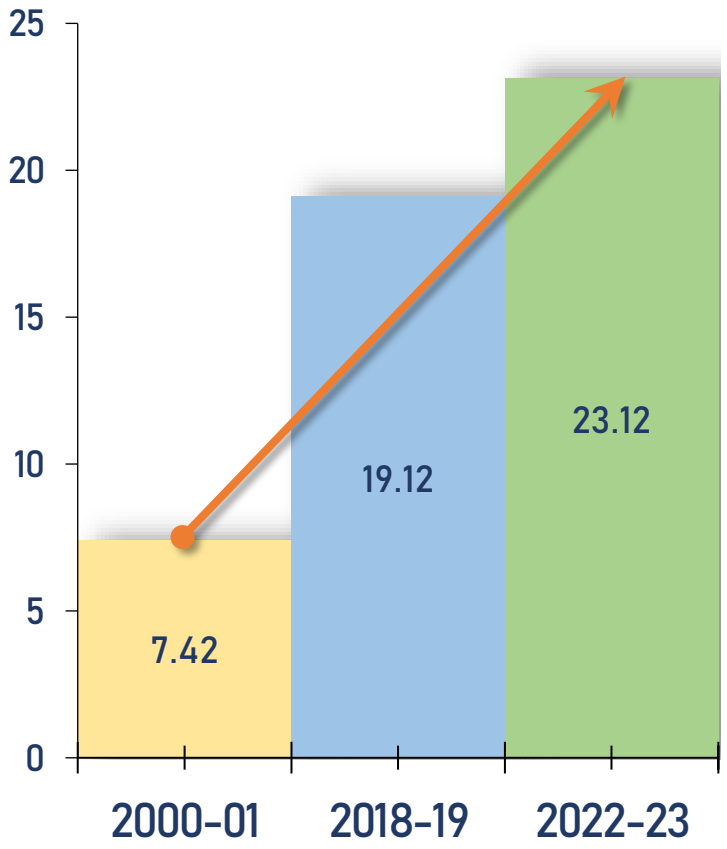


Trend of seafood export value (Rs. In Cr.)



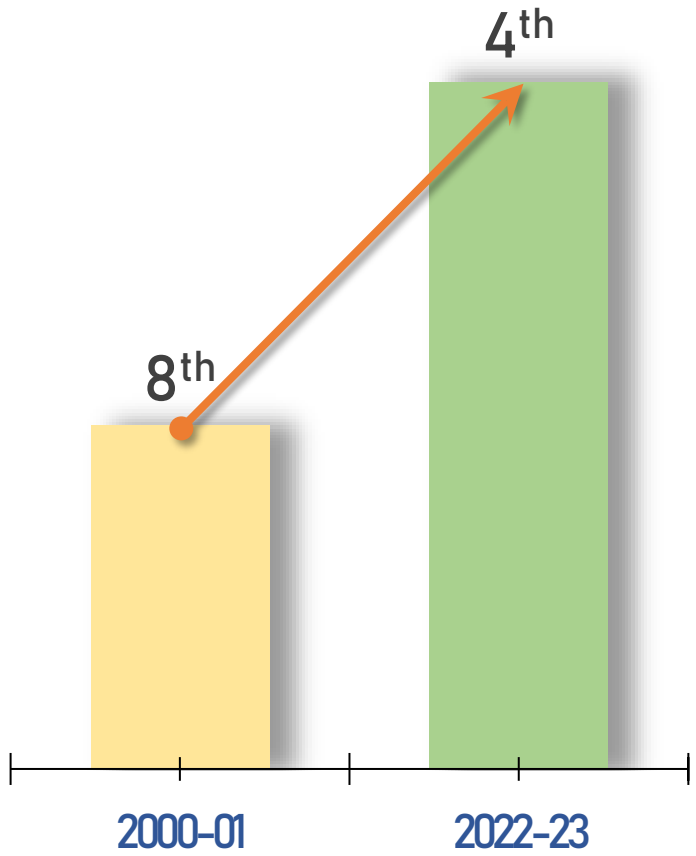
Significant Achievements

Per Capita Fish Availability (Kg/Annum)



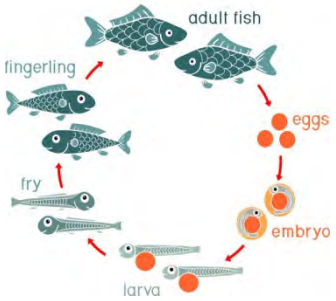
National Average- 6.32 kg/yr
National ranking-6th

National Ranking in Fish Production



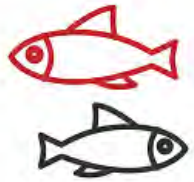
Key initiatives to boost Fisheries Sector

Key Initiatives



Early Breeding & Seed Sufficiency

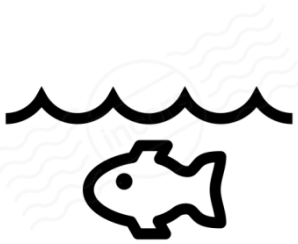
Intensification of Culture system



Diversification of Species

Entrepreneurship Development

Key Initiatives



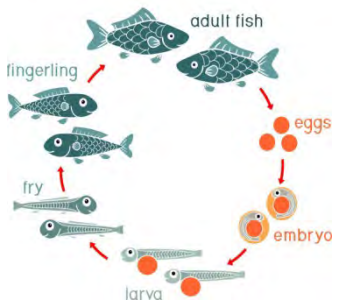
Utilization of underutilized water bodies

Innovative approach & way forward

Ranching in Open waters

Policy framework

Early Breeding & Seed Sufficiency



Early Breeding & Seed Sufficiency

Introduction of new components under the new umbrella scheme MMKY

Up to 60% subsidy on input assistance for breeding during pre-monsoon season to 60 nos. of private hatcheries

Establishment of new 40 private hatchery (PMMSY)

Introduction of both earthen and biofloc tank under seed raising programme upto 5 ac and 25 tanks respectively.

Target enhanced from 400 Ac to 2000 Ac under MMKY (Achieved 1700 ac)

Against demand of 296 Cr. So far 310 Cr fry produced during 2023-24 (**SELF SUFFICIENT)**

Intensification of Culture system

Intensification of Culture system

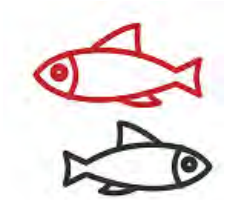
Enhancement of Input assistance from
- Rs.1.5 Lakh/ha to Rs.4.0 Lakh/ha (Freshwater)
- Rs.3.0 Lakh/ha to Rs.6.0 Lakh (Brackish water)

Up to 60% subsidy on input assistance for higher productivity under the umbrella scheme MMKY

Introduction of Bio-floc, Re-circulatory Aquaculture System, In Pond Raceway system for enhancement of productivity from 0.5kg/ cum/ yr in earthen pond culture to 30kg/cum/yr , thereby increasing the productivity by 60 times

Against the target of 12 LMT by 2024-25, reached 10.52 LMT

Diversification of HYV



Diversification of HYV

Establishment of GIFT multiplication centre at Kausalyaganga Govt. fish farm with 50 Lakh fry capacity

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Establishment of Sea-bass & Multispecies hatchery at Gopalpur, Ganjam, with 50 Lakh sea bass fry & 300 Lakh tiger shrimp seed/ annum (under progress)

Introduction of FW scampi, Pangasius, barbs, Amur, Magur, Crab and various cultivable commercial sps. as per local demand

---

Introduction of Improved IMC varieties Cryo upgraded IMC, Jayanti Rohu, GI Scampi

Promoting Aqua entrepreneurship through MKUY

Entrepreneurship Promotion

Revision of customized project with profit margin of Rs.1-2 Lakh for WSHG & individual entrepreneurs respectively

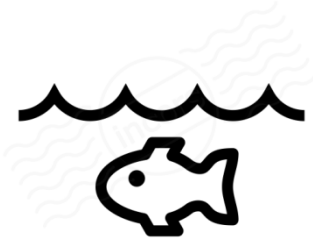
Up to 50% subsidy on capital expenditure of the project up to Rs. 1 Cr

Targeted campaign to promote Aqua entrepreneurship among Potential Agri-Entrepreneurs (~8000 in Fisheries sector) undertaken under MKUY

384 applications with project cost of Rs. 145.65 Cr received, 240 Go-ahead issued and 69 MKUY projects completed

78 MKUY projects assisted since 2018-19 under fisheries and integrated farming.

Utilization of underutilized water bodies



Utilization of underutilized waterbodies

Introduction of new component under MMKY-MPY for input assistance to low productive water bodies(2000 Ha target)

Introduction of Tapering assistance for 3 consecutive yrs. under Input assistance to 11000 WSHGs for pisciculture in 12000 ha GP tanks

.Renovation & up-gradation of defunct Govt. fish farms for best utilization.

Utilisation of Dead rivers and waterlogged areas for pisciculture

Ranching in Open waters

Ranching of Open waters

Stocking of 2.24 Cr. advanced fingerings in 4 rivers of 6 districts under River ranching Program

Stocking of 4 Cr. advanced fingerings in 138 reservoirs to enhance productivity from 186 kg/ha/yr (2018-19) to 390 kg/ha/yr

Introduction of pisciculture in MIPs under OIIPCRA project through stocking quality seed.

Introduction of pen culture for seed raising & stocking in reservoirs.

Policy framework

Steps taken to amend OMFRA

Introduction of Cage culture Policy 2020

Coastal Aquaculture Authority Act amendment 2023

Up coming Policy for Fish seed Certification and Inland fisheries Act

Input Assistance to take up Pisciculture in GP Tanks by WSHGs to enhance Fish Production in Community Tanks

Seed & Feed - WSHG

Fish Seed Stocking-WSHG

Brackish water initiatives

Brackish water initiatives

Long term lease of feasible Govt. lands for practicing Brackish water aquaculture, Lease executed- 100 no. of cases, (34.32 Ha.)

Uninterrupted power supply through “Odisha Dedicated Agriculture & Fishery Feeder project”. Installation of Distribution Transformer (DTR) – 479 no’s (at 19 clusters). Installation of DTR completed – 449, charged – 156 by OPTCL

Renovation and dredging of tidal channels and creeks, out of 14 channels work started in 7 by CE Drainage, Cuttack

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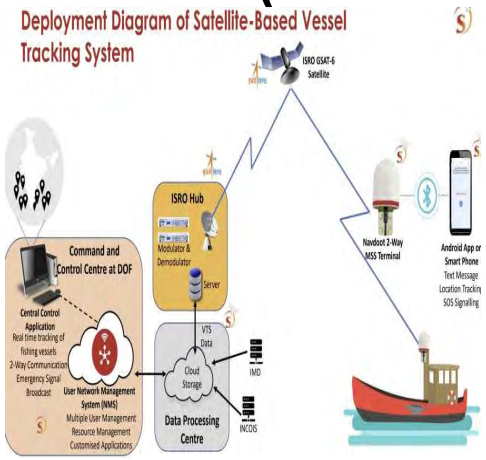
Draft Action plan has been prepared for culture of Vannamei in inland area beyond CAA jurisdiction (2 km from shore). Field level impact study to be undertaken

Growth in Marine Sector

Sl. No.	Key indicator	2021-22	2022-23	Growth %
1	New Boat , Net & Engine (No. of unit)	136	197	45%
2	Motorization of Traditional Craft (No. of engine)	244	447	83%
3	Livelihood support to marine Fishermen during Fishing Ban period (No. of Fishermen Families assisted)	14178	14228	14%
4	Popularization of Fisheries Machineries/Equipment (No. of units)	1433	2244	60%

Kev Initiatives (Marine)

Experimental Study of Marine Cage culture

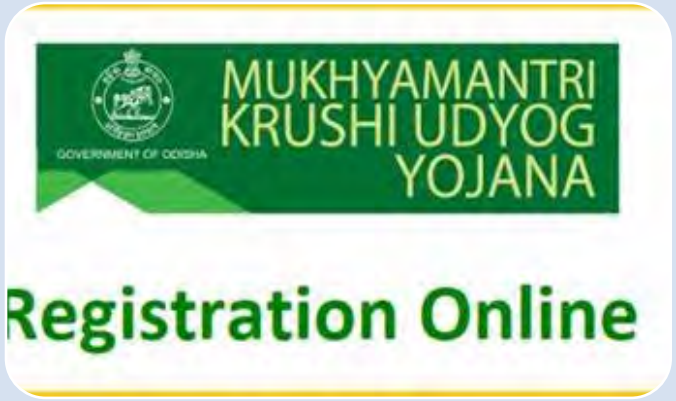


Installation of Transponder in Fishing Boats

Deployment of AR

Introduction of New Fisheries machineries/ Equipment

GOVERNMENT PROGRAMMES IN ODISHA FOR PROMOTING ENTREPRENEURSHIP IN FISHERIES SECTOR



MKUY

Mukhyamantri Krushi Udyog Yojana (MKUY), flagship initiative of the state government, is meant for encouraging capital investments in Agriculture and Allied sectors through Commercial Agri-Enterprises

MMKY

Mukhyamantri Maschyajibi Kalyan Yojana, umbrella scheme of the state government is meant for encouraging Fishery enterprises

PMMSY

Pradhan Mantri Matsya Sampada Yojana is Govt. of India scheme to bring about ecologically healthy, economically viable and socially inclusive development of the fisheries sector of India

Mukhyamantri Maschhyajibi Kalyan Yojana (MMKY)

DoF is following a 3-pronged strategy to boost Fisheries Infrastructure

Fishing Harbour/Fish Landing Centre

Wholesale/Retail Hygienic Fish Markets

Integrated Aqua park

Development of Fishing Harbour/Fish Landing Centre I

Fishing Harbours/FLCs

Chandipur Fishing Harbour, Balasore: Compound wall under progress by EE, FED, tender for execution is in process by Director, Ports & IWT, Project Cost:77.50 Cr

Astarang Fishing Harbour, Puri: CRZ clearance obtained, EC awaited, Project Cost:82.86 Cr

Renovation & Upgradation of Bahabalpur FLC, Balasore : Pre execution work & DPR under progress, Project Cost:14.00 Cr

Construction of Fish Landing Centres: Kaluparaghat (PC:17.62 Cr) & Sorana (PC:18.63 Cr) in Khordha and Kasia (PC:16.36 Cr) in Bhadrak district in progress,

Development of Hygienic Fish Market Infrastru

Fish Markets

State of the Art wholesale hygienic fish market at Basta, Balasore: Final DPR submitted, Project Cost:78.25 Cr

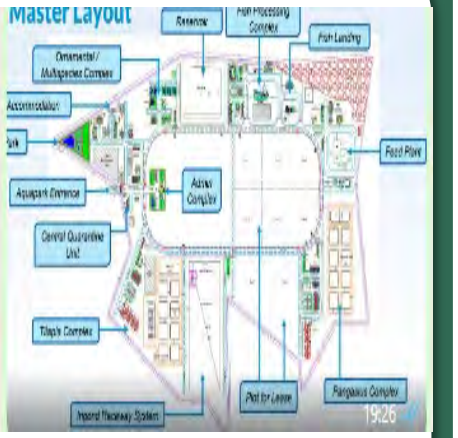
State of the Art wholesale hygienic fish market at Palasuni, Bhubaneswar: Land and Final DPR to be finalized by BMC, Project Cost:50.00 Cr

Retail Hygienic Fish markets at Brahmapur, Nayagarh & Odagaon completed. Work at Boudh, Jajpur, Puri under progress.

Huma Retail Dry Fish market completed, Wholesale Dry fish market under progress.

Upcoming Markets: Koraput, Malkangiri, Sambalpur, Gajapati, Athagarh, Cuttack

Integrat



AQUA PARK

Integrated Aqua Park : Final DPR preparation under progress, Project Cost:100.00 Cr

Land identified by IDCO (95.58 Ac) near Burla

Major components: Pangasius Hatchery, Feed plant, Ice plant & Cold storage, Fish processing units, Nursery and Rearing units, Training hostels & Administrative Buildings etc.

Dhanyabād

Sustainable energy based agri food value chain in Odisha

SELCO Foundation

SELCO Foundation : Key Focus Areas

CLEAN ENERGY ACCESS

ENERGY EFFICIENT TECHNOLOGIES

GREEN BUILT ENVIRONMENTS

AGRICULTURE

ANIMAL HUSBANDRY

MICRO BUSINESSES

TEXTILE AND CRAFTS

HEALTHCARE

COOLING

Introduction to Micro Businesses

Micro Businesses **contribute in boosting the local economy, creating local employment, and making decentralized services available**. Sustainable energy led micro businesses can promote balanced local/regional development in a sustainable manner.

Microbusinesses,

- Help in creating **safety nets** with decentralized assets-systems
- Show a higher degree of **resilience to shocks** and stresses
- Help in **diversifying** enterprise or household **income sources**
- Help creating **new job opportunities** and transferring skills

What is Resilience for a Sustainable Energy Led Micro Business?

Scaling Up (increased production)	Diversification (products + channels)	Value addition (quality improvement)	Sustainability (environment + business)	Aspiration and Futuristic Growth

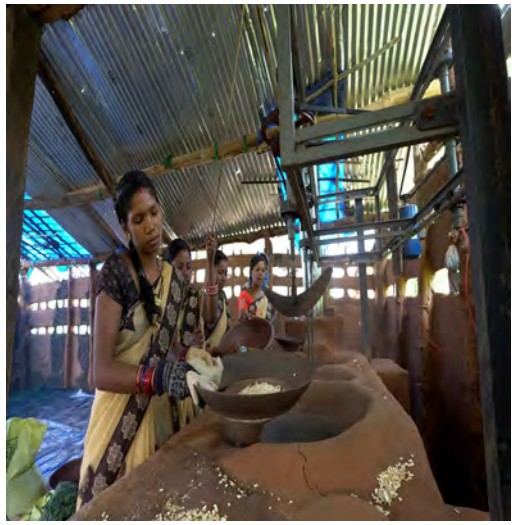
Equipping micro enterprises with sustainable livelihoods (that combine clean energy systems efficient appliances and efficient building designs with affordable financing models), can contribute to **increased productivity and income, reduced expenses (on other energy needs), diversification, improved well-being and resilient local economies.**

Solar-Powered Puffed Rice: Preserving Tradition Sustainability

Ownership Model: Individual Based, SHGs Group Based, PG Based

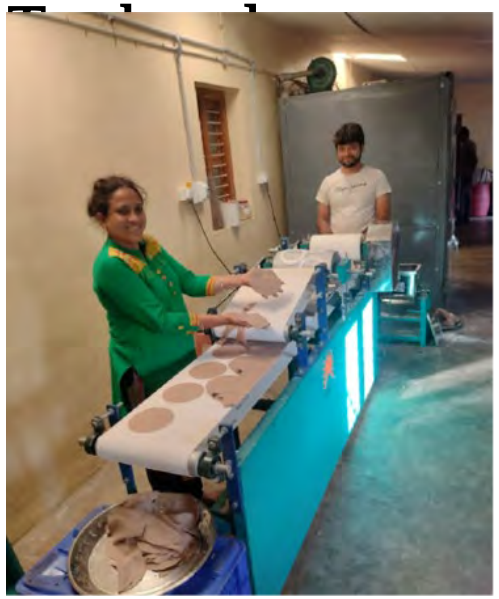
Unit Cost: Four lakh – Five lakh rupees

Tech Solutions: 1 Hp 3 Spindle puffed rice unit along with energy efficient lights and fan



- Significant **increase in monthly income** from **10,000 to 12,000** improving financial well-being
- **Reduction in physical exertion**
- **Three-fold increase in production efficiency**

Solar Powered Papad making - Hydraulic



Introduction :

- Papad is a crispy disc made from lentil, chickpea, black gram, or rice flour dough with spices. Dried and fried/roasted before eating, it comes in 30+ varieties.
- Papad holds a substantial market in India due to its widespread popularity. Found in households, restaurants, and stalls, it's influenced by regional diversity (e.g., spicy Rajasthani, distinct lentil/rice-based South Indian).

Papad making

Problem Statements and Challenges :

Labour Intensive	Papads were traditionally hand-rolled, labor-intensive, and couldn't keep up with demand
Energy Gaps	Mechanized papad machines struggle due to power cuts, impacting income and order fulfillment. Papad preparation process follows.

Solar Powered Papad Making Hydraulic Technology

Typology and Ownership :

Home based / Shop Based - Individual or SHG Model
(either in rural, semi-rural or urban areas)

End User Suitability :

The end user should have the **knowledge on kneading** the dough to the required level, minimum **2 labours are required for this machine.**

Technology Suitability :

Production Capacity - 6 to 8 kgs per hour
Suitable for Rice, Urdal, millet, ragi, and all the flavored papads from 1inch to 12 inch.

Physical Features and Space Requirements :

The Papad Hydraulic machine is a lever operated mechanism using the hydraulic oil base technology. There are two plates stationary and moving plate, where the dough is presses into the flat papad.
The pressed papad are then dried, usually by open sun dry or with the solar dryers. The machine is used in association with an atta kneader.
Dimensions - **2 x 2.5 x 3 ft** | Weight **- 120 to 150 kgs**

Technology and Solar Specifications :

Papad making machine : 0.5 Hp, 24Vdc, Production Capacity - 5kg/hr + Atta kneading : 0.25Hp, 24Vdc - 3kg/3mins and charge controller.

Solar Design Specifications
670 Wp module
3600 to 4800 Wh battery bank
50 A, 24 V Charge controller
6 Sqft space is needed to keep the solar battery bank and charge controller.

Cost of Solution (Tech + Solar) = INR 2,00,000

Sugarcane Juicing

Introduction :

- India produces about **22% of the total sugarcane in the world and 21% of the agricultural area in India is used for sugarcane cultivation**. Small and marginal farmers have been traditionally engaging in growing and selling sugarcane.
- Sugarcane juice is usually **sold commercially by street vendors, eateries or as a added service in small petty shops**. It is consumed in all seasons and serves as a popular refreshing drink during summers.

Problem Statements and Challenges :

Labour Intensive	The manually operated machine requires **continuous effort in extracting the juice** and poses a **high risk of operational mishaps.**
Energy Gaps & High Fuel Costs	In addition to power cuts, the **diesel and grid operated sugarcane juicing machines** use 1HP/2 HP motors which is **energy inefficient**

Solar Powered **Sugarcane Juicing** Technology

Typology and Ownership :

Shop based - Individual Model
(semi-urban and peri urban market areas)

End User Suitability :

No prior skilling is required and first time entrepreneurs can also take it up. It is also suitable for **disabled entrepreneurs** with mild physical limitations.

Technology Suitability :

Input - **60 to 75 kgs** of sugarcane
Output - **200 glasses per day**
Suitable for thick sugarcane

Physical Features and Space Requirements :

Dimensions - **1.8 x 1x 2 ft** | Weight - **25 to 30 kgs**
Portable machine, can be placed on the table top

Requirement : **Very little space required, Can be placed inside a vehicle as well. Needs space for waste bin and storage of sugarcane stalks**

Technology and Solar Specifications :

Juicer - **0.5 Hp, 230 Vac**
Solar Module - **500WP** | Solar Battery Bank - **3600 Wh**

Cost of Solution (Tech + Solar) = INR 138,000

Solar Powered **Sugarcane Juicing + DC Fridge** Technology

Typology and Ownership :

Shop based - Individuals selling commodities like curd, milk, cold drinks, packages water etc

End User Suitability :

No prior skilling is required and first time entrepreneurs can also take it up. It is also suitable for **disabled entrepreneurs** with mild physical limitations.

Technology Suitability :

Input - **60 to 75 kgs** of sugarcane
Output - **200 glasses per day**
Capacity of Fridge - **100L**
Suitable for thick sugarcane

Physical Features and Space Requirements :

Dimensions (Juicer) - **1.8 x 1x 2 ft** | Weight **- 25 to 30 kgs**
Portable sugarcane machine, can be placed on the table
Dimensions (Fridge) - **1x 1x 3 ft** | Weight **- 27 kgs**
Non portable, can be on wheels

Requirement : **Combo solution cannot be placed inside a vehicle. Minimum space of 4 x 4 ft to place both.**

Technology and Solar Specifications :

Juicer - **0.5 Hp, 230 Vac**
Fridge - **95 W DC**
Cooling Temperature - **5 to 8 degree Celsius**
Solar Module - **1000WP** | Solar Battery Bank - **9600 Wh**

Cost of Solution (Tech + Solar) = INR 234,500

Chips Making

Introduction :

- In India, chips are a popular **fried snack commonly made using potato and banana**. The process includes **peeling, slicing, drying, frying and flavoring**.
- Chips can be purchased from a wide range of **retail establishments, including pan shops, bus stops, train stations, roadside eateries, schools etc.**
- The market for potato chips is influenced by factors such as **changing consumer preferences, urbanization, increasing disposable incomes, and the expansion of retail networks.**

Problem Statements and Challenges :

Time & Labour Intensive	Manual peeling, slicing, frying, and seasoning of potatoes **limits the overall production capacity.**
Consistency & Quality Control	**Inconsistencies in slice thickness, frying time, and seasoning application** due to manual process, thereby affecting the overall quality.
Energy Gaps	Entrepreneurs are not able to meet the demand due to **erratic power supply**,and hesitate to expand order

Solar Powered Chips Making Technology

Typology and Ownership :

Home based/Shop based - Individual or SHG Model

End User Suitability :

Basic understanding of machine usage. First time entrepreneurs can also learn in a week. Entrepreneur should have **access to local markets.**

Technology Suitability :

Input -
Peeler Output - **5 kgs/batch in 3mins**
Slicer Output - **200 to 300 kgs / hour**

Physical Features and Space Requirements :

Dimensions - **1.5 x 1.5 x 3 ft** | Weight **- 60 kgs**
Portable machine, can be placed on the table top

Requirement : **Minimum 30 sq.ft. space for preparing the food and stationing the machine**

Technology and Solar Specifications :

Potato Peeler - **0.5 Hp, 24 Vdc**
Potato Slicer - **0.5 Hp, 24 Vdc**
Solar Module - **670 to 750 Wp**
Solar Battery Bank - **4800 Wh**
Charge Controller - **50A**

Cost of Solution (Tech + Solar) = INR 226,000

Solar Powered Chips + Vermicelli Making Technology

Typology and Ownership :

Home based/Shop based - Individual or SHG Model

End User Suitability :

Basic understanding of machine usage. First time entrepreneurs can also learn in a week. Entrepreneur should have **access to local markets.**

Technology Suitability :

Input -
Output - **30 kgs / day**

Physical Features and Space Requirements :

Dimensions - **1.5 x 1.5 x 3 ft** | Weight **- 60 kgs**
Non portable machine, has to be placed on the floor

Requirement : **Minimum 60 sq.ft. space for preparing the food and keeping both machines**

Technology and Solar Specifications :

Vermicelli Extractor - **1Hp, 230 Vac**
Solar Module - **1200-1500 Wp**
Solar Battery Bank - **600 - 800 Wh**

Cost of Combo Solution (Tech + Solar) = INR 500,000

Chakli Making

Introduction :

- Chakli is a popular Indian snack that **originated in the southern regions of India** and there are multiple variations across the country.
- It is a savory, crunchy snack made from a **mixture of rice flour, gram flour (besan), and various spices. Chakli has a distinctive spiral shape** achieved by extruding and frying the dough .

Impacts of the Solution :

Reduced time to make chaklis

Increase in production

Improved efficiency due to **increased reliability on energy**

Increased Income and savings on labour cost

Problem Statements and Challenges :

Time & Labour Intensive	Traditionally the kneading of the atta, making of dough ball and pressing of the chakli was done by hand, which is a very a **drugderous and time consuming** task, often requiring **hiring of external labour**
Energy Gaps	Entrepreneurs are not able to meet the demand due to **erratic power supply**,and hesitate to expand order

Solar Powered Chakli Making Technology

Typology and Ownership :

Home based/Shop based - Individual or SHG Model

End User Suitability :

Basic understanding of machine usage. First time entrepreneurs can also learn in a week. Entrepreneur should have **access to local markets.**

Technology Suitability :

Input -
Capacity - **7 to 10 kgs / hour**
Output - **50 kgs / day**

Physical Features and Space Requirements :

Dimensions - **3 x 2 x 3 ft** | Weight **- 30 kgs**
Portable machine, can be placed on the table top

Technology and Solar Specifications :

Can make 6 to 8 chaklis per minute
Chakli Maker - **0.5 Hp, 230 Vac**
Solar Module - **335WP x 1** | Solar Battery - **200Ah X2**
Charge Controller - **30A**

Cost of Solution (Tech + Solar) = INR 285,000

Solar Powered Flour + Chilly Processing

FLOUR MILL:

- Staple Food Production: Indian agriculture yields food grains for staples like chapati, roti, and puri.
- Historical Milling: Global grain milling used wind, water, and bulls.
- Modern Flour: Chemically processed wheat flour is now common for bread, cake, pizza.
- Common Grains: Rice, wheat, jowar, sambar powder make various flours.

Chilli Pounding Machine:

- Traditional Method: Rural Odisha pounds ripe chilies dried in sunlight
- Mechanization Impact: While grinding is common, pounded chilies are unique
- Distinctive Flavor: Pounded chilies offer a special taste and aroma.
- Outdoor Process: Chilli pounding is done in open areas to avoid inconvenience.

Problem Statements and Challenges :

Flour Mill	- Limited and unreliable electricity supply - Disruptions and delays in production - Need for sustainable solutions
Chilly Pounding	- Labour Intensive - Energy Gaps

Solar Powered Flour + Chilly Processing Technology

Chilli pounding &

Typology and Ownership :

SHGs/PGs/Individual with entrepreneurial skill
Peri urban, rural and remote geographies with 100 to 150 HHs as target

End User Suitability :

Steady input supply, Spice cultivation, and consumption belt.

Technology Suitability :

15 to 20 kgs /hr output capacity
2 HP hammer mill pulvuriser

Physical Features and Space Requirements :

Service model + Trader (Sales), Pulveriser can be used for both spice and flour mill purpose capacity up to 75 to 100 Kgs/ day.
Apporx processing upto 3.75 tonnes in a month.
Infrastructure: ~200 sq ft Min. area required to set up the unit

Technology and Solar Specifications :

Motor - **335 Wp x 6**
Solar PCU - **6KVA, 96V**
Solar Battery Bank - - **150 AH x 8**

Cost of Solution (Tech + Solar) = INR 4,50,000

Solar Powered Cold Pressed Oil Processing Technology

Introduction :

- Oil demand remains high in Indian cuisine.
- Traditionally, bull-driven mills yield 40% cold-pressed oil, while industrial hot-press methods, using heat and chemicals, raise concerns about health.
- Recent studies highlight benefits of cold-pressed oil due to preservation of micro elements, driving a shift towards it.

Problem Statements and Challenges :

Limited Productivity & Diversification	**More time taken to extract oil** and labour intensive
Adverse Effects on Health	**lot of manual work, w**hich is a very much time consuming and lot of drudgery involved.
Energy Gaps	Mechanized oil extraction struggles with power cuts impacting income, order fulfillment, and entrepreneur confidence in timely deliveries.

Solar Powered Cold Pressed Oil Processing Technology

Typology and Ownership :

10 Kgs per hour processing, suits for Coconut, groundnut, sesame seed oils.

End User Suitability :

Users need a week of training in machine operation and various oil seed processing methods before smoothly transitioning to a mechanized version, ensuring minimal impact on productivity; manufacturer provides follow-up clarifications in subsequent weeks.

Technology Suitability :

Oil Mill Cold press technology- 10 L per hour processing, suits for Coconut, groundnut, sesame seed oils.

Physical Features and Space Requirements :

In 2 types- 10ks per hour/ 20kgs per hour

Requirement : **Oil processing machine required a saparate work space minimum 400 Sqft area.**

Technology and Solar Specifications :

2000 to 2500 Wp Module
1200 to 1500 Wh battery bank
Solar PCU 7.5 KVA, 96 V.
3 hrs oapration in a day.

Cost of Solution (Tech + Solar) = INR 545,000

Solar Powered Khowa Making Technology

Introduction :

- **Process**: Khowa is produced through dairy farming by simmering milk until it thickens and solidifies.
- **Ingredient**: Milk is the primary ingredient used for making khowa.
- **Usage:** Khowa serves as a versatile ingredient for various sweets and desserts in Indian cuisine

Problem Statements and Challenges :

Labour and Drudgery	More time taken to make the khowa which involves constant monitoring and labor-intensive process
Inadequate Power Supply	Erratic power cuts disrupt mechanized processes, affecting productivity and output.
Health concerns	Entrepreneurs are not able to meet the demand due to **which health is affected by the intensive process**.

Solar Powered Khowa Making Technology

Typology and Ownership :

New/Experienced Khowa Maker, able to bear high capital and operational costs, Availability of Milk

End User Suitability :

Basic skilling on making the khowa
.Strong Input and Output Linkage- Require procurement of 175 l/day of cow milk + 74 l/day of buffalo milk.
Bear the cost of firewood of Rs 400 per month.

Technology Suitability :

180 ltr Firewood Machine - 40 to 60 ltr per batch processing. Access to market of at least 50 Kgs of Khowa. Able to bear transportation cost of Rs 15,000/month. Packaging Cost - Rs 750/month

Physical Features and Space Requirements :

Dimensions - **4 x 2 x 4 ft** | Weight **- 10 kgs with the table**
Non Portable machine, mounted on the table
Paddle or hand switch operated

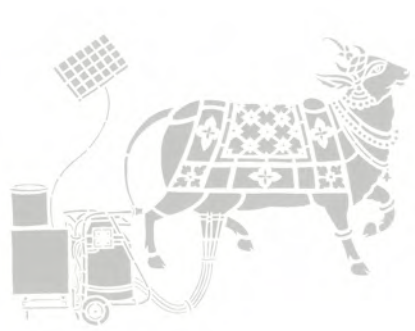
Requirement : **Khowa Entrepreneur with at least 200 sq ft working area with an ability to procure 250 liters of milk to produce khowa**

Technology and Solar Specifications :

900-1200 Wp Module
6480 Wh battery bank
60 A, 24 V Charge controller

Cost of Solution (Tech + Solar) = INR 2,68,000

Thank You



Agri- Value Chain in Odisha: 29.11.23: 12.30-01.30PM.

KASAM AS A START UP – ORGANIC ZINGER AND TURMERIC

Ekadashi Nandi,
Organic Certification Officer,
KASAM,PHULBANI
9437412411


KANDHAMAL APEX SPICES ASSOCIATION FOR MARKETING
TM
K
PHULBANI
(AN ISO 22000 (HACCP) CERTIFIED COMPANY)
KASAM
(Kandhamal Apex Spices Association for Marketing)
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KANDHAMAL halad

AROMATIC TURMERIC

KANDHAMAL APEX SPICES ASSOCIATION FOR MARKETING

PHULBANI

KASAM

An ISO 22000:2005(HACCP) Certified Company

WELCOME YOU ALL.

CLUSTER : MAYURBHANJ | ODISHA

AGRIFOOD VALUE CHAIN IN ODISHA
CHALLENGES AND OPPORTUNITIES

SUCCESS STORY
MILLET MAGIC FOUNDATION

CLUSTER : MAYURBHANJ | ODISHA

VISION

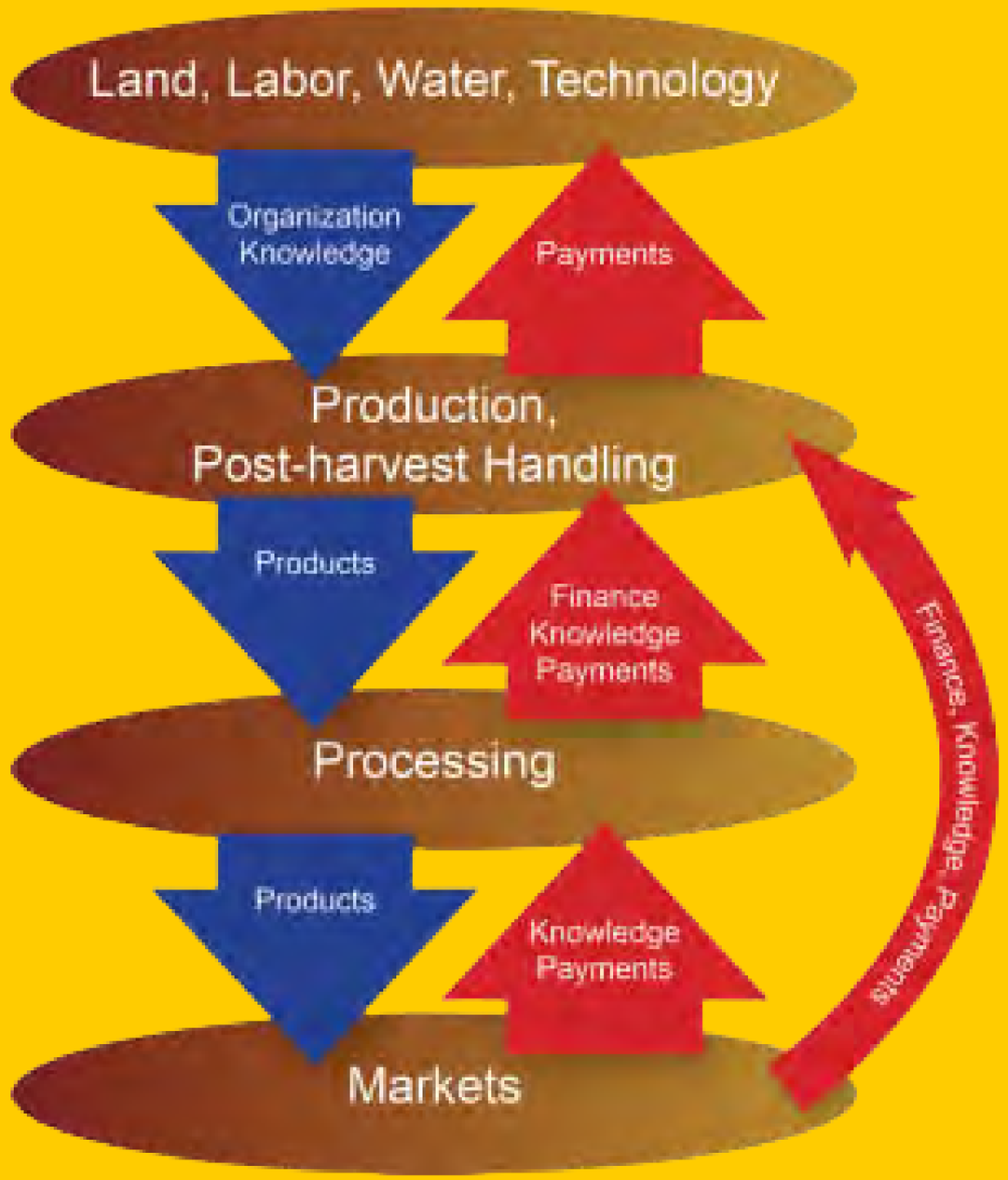
Creating value chain by joining villages to main stream market.

MISSION

5000+ Happy farmers with modern technique of farming & robust market linkage by 2025.

VALUE

1. Creating impact
2. Ensuring sustainability
3. Providing robust value chain
4. Empowering Women



THREE PILLARS OF AGRI VALUE CHAIN

- FINANCE
- KNOWLEDGE
- PAYMENT

980 beneficiaries for WOWMOM- Farmers, Technician, machine workers, packaging experts, stock managers, , sales persons and traders

Tribal Women at the forefront- we have 70% women workforce enjoying their financial independence. They are working on machines, to being bakers.

We are also working on Non Timber Sabai products under brand Hastrang we have added 3000 SHG workers across 11 villages

Our motive, all round development of the command area by creating complete value chain- From farming to training , Market linkage & community connect.

Forest produce like Honey is part of our product range and we proudly market it as Simlipal Forest honey . Procurement is done directly from villages in forest

We start with a research and understanding of the product marketability - We believe in FORWARD LINKAGE before getting into BACKWORD LINKAGE

Providing best possible market linkage : B2B, modern trade, E com. Website, Amazon, Export , Corporate connects , gifting solutions &3rd party tie-ups

We have signed MOU for Australia & PNG, in pipeline Georgia & Japan , work in progress for Vietnam & USA .

Besides, we are imparting training on livestock management & other non farm training and skill development, for the villagers who are not into farming

WOWMOM FOODS is now a national brand - We are now spread across Southern India, North India and now entering into West India

THEMATIC AREA OF OPERATION

Value Chain creation by adding Values

Market First- Forward Linkage -

For a robust Value chain creation market is a must . We are specifically focused on market creation as that gave us further confidence in working towards sustainability. And thus ensured payments to be secured .

K**nowledge imparting - Creating skill by training un-skilled workforce.**

We trained ladies of farmers family to work in the production unit . It gave us empowered workforce. Along with this women workforce added to their household income by increasing it 1.7 times.

milletmagicfounfdation.in

SUCCESS STORIES

foundation

23 SKU AND YET COUNTING

THE MAGIC OF MILLET

Wow mom FOODS

Scaling in Odisha

- CURRENT PRESENCE: MAYURBANJ
- LOCATIONS PROPOSED :(millet hub)
  - BERHAMPUR | KORAPUT | RAYGADA | NUAPADA |
- PROCESSING PLANTS PROPOSED:
  - MILLET GRAIN
  - MILLET FLOUR
  - MILLET COOKIES
  - MILLET NOODLES
  - MILLET PAPAD & PUFFED SNACKS

Market today needs packaged and instant food only.
Our products are Maida free, preservative free, yet tasty .

“FINANCE -A BIG PROBLEM, **IS A BIG MYTH**”

We just need to know the right way

We have been funded by different scheme of Government . our initial funding was for innovative ideas in processed millet product by SFURTI SCHEME and we raised 5 Cr (Aprox)

Subsequently for expansion & addition of more plugins in our value chain we were supported by AGRI INFRA FUND & MKUY schemes and we received 2 +1 Cr (Aprox)

WWW.milletmagicfoundation.in.

Our Pride

70%

WOMEN
WORK FORCE

Our Gratitude to Madam President for believing in us

Thank You

ABOUT KASAM

- **As a START-UP,** KASAM (Kandhamal Apex Spices Association for Marketing) was registered on **01.09.1998** by the members of 61 nos. of SDSs (Spices Development Society) with
- Collector & DM, Kandhamal as it's Chairman.

- **Objectives:**

1. To encourage tribal farmers for Natural/organic farming with their practices for generations together.
2. To set up viable marketing network to minimize the exploitation by traders.
3. To Produce quality and value added hygienic turmeric and other crops organically.
4. To obtain quality certification from accredited agencies.
5. To Promote direct export of spices from the district for generating premium and confidence among tribal farmers.

JOURNEY OF KASAM AS A START UP

1998-99

- Started with **of 80.00ha** under certification ,
- Crops- T**urmeric**
- Farmer members-**200**,
- staff-15, and
- income- Rs.2,33,196.00
- No middlemen involvement
- Procurement through 61 societies in 12 blocks

2023-24

- Present area under certification:
  - Third Party-**780.683**ha
  - PGS-**4900**ha
  - Crops taken: **Ginger, Turmeric, Black pepper, Rice, Pulses, oilseeds etc. including Forest Produce- honey, Triphala.**
- Primary Farmer members-**11237** no. of (ST-78%, SC-15% & other-7%).
- Staff-30, and
- Income- Rs**. 6,76,29,707.00**
- Education for Member families

TURMERIC PICTURE IN KANDHAMAL DIST : 2022-23.

- Total Area under the crop: 13710.00ha
- Total HH involved: 40,000.
- Dry production: 24000MT **(**approax.)
- Kandhamal Turmeric receives GI Tag: 1.4.2019
- Farmer’s Procurement price: 48 to 52 Rs/kg
- KASAM regd farmers get : 60Rs/kg fixed by dist administration.

TOTAL QUANTITY PROCURED AND SOLD BY KASAM (TURMERIC)

YEAR	Qty procured (MT)	Price paid(Rs)	Qty sold (MT)	Price received (Rs)
19-20	471.856	259,52,080	433.411	41,174,045
20-21	317.584	19,372,624	175.273	16,650,935
21-22	148.50	9,059,049	276.636	26,280,420
22-23	824.031	50,265,891	572.899	35,902, 930

GINGER PICTURE IN KANDHAMAL DIST

YEAR	20-21	21-22	22-23
Area **(ha)**	2867	2587	2820
Production **(**MT)	30276	24473	29780

ASSETS CREATED

- Own office building – Phulbani, Kandhamal.
- Business House at BBSR on rent
- Retail outlets- both in district and state level
- Spices Processing Unit- **5000MT** capacity per annum.
- Bi-products-

➢Ginger tea cut, powder, slice
➢Turmeric- powder, oil
➢Tamarind paste,
➢Brown, black rice and so many.

- Go-downs for storage of raw material and processed products.
- Developed one FPC .

FUTURE PLAN

- QPM/ SEED Production under certification both Ginger , Turmeric and Seed Spices.
- One more processing Unit, especially for Ginger, to cater the need of hour.
- Export House at BBSR
- Converting entire Kandhamal district to ORGANIC.

PROBLEMS TO BE ADDRESSED

- Poor & obsolete Post Harvest Management practices resulting in loss of perishable produce.
- Poor Economic condition of the farmers.
- Lack of Primary Processing and storing facility.
- Inadequate facility for centralized storage, processing and value addition.

- Lack of Supply Chain for marketing with Potential Buyers inside and outside the country.
- Distress Sale by the Farmers during seasonal production period.