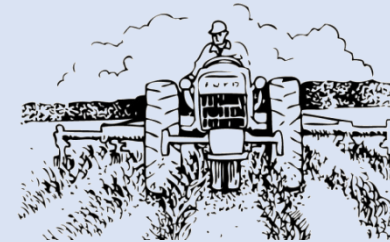




# Agricultural Machinery Manufacturers' Association (AMMA-India)





## **(AMMA-India)**

It is submitted that AMMA-India is the National body for the Agricultural Machinery Manufactures in India. We have 742 members in the Country. The Members are able to manufacture Agricultural Machinery not only for National Markets but for International Markets.



## Enhancing Africa-India Collaboration on Machinery Manufacturing And Supply



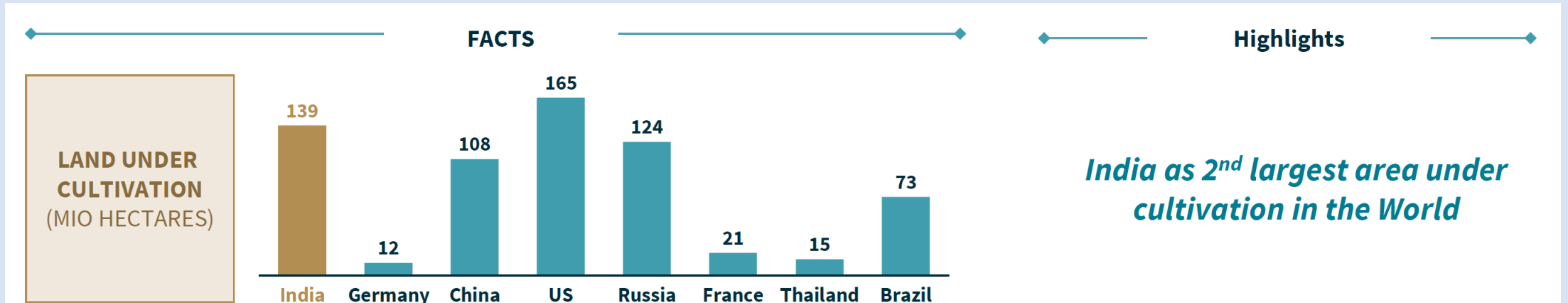
# Introduction

- In today's globalized world, fostering international partnerships is crucial for economic development and technological advancement. India and Africa share a rich history of trade and cooperation, and in recent years, this relationship has grown stronger, especially in the industrial and agriculture sector.
- Agriculture remains the backbone of many African economies, employing a significant portion of the population and contributing substantially to GDP. However, one of the major challenges faced by African farmers is the lack of access to modern and efficient agricultural machinery. This is where collaboration with India's robust machinery manufacturing industry can make a transformative impact.
- India, with its expertise in machinery manufacturing and a strong focus on affordable and adaptable agricultural technology, is well-positioned to support Africa in modernizing its agricultural sector. By sharing knowledge, expertise, and technology, India can help African countries increase their agricultural productivity, ensure food security, and promote sustainable development.



# INDIAN AGRICULTURE SCENARIO

TOTAL GEOGRAPHICAL AREA	328.7 MHA
NET CROPPED AREA UNDER AGRICULTURE	142.0 MHA
GROSSED CROPPED AREA UNDER AGRICULTURE	198.0 MHA
NET AREA UNDER IRRIGATION	60.0 MHA
<b>LAND DISTRIBUTION PATTERN</b>	
LARGE	10 HA (17 HA) 15%
MEDIUM	4-10 HA (6 HA) 25%
SEMI-MEDIUM	2-4 HA (2.7 HA) 24%
SMALL	1-2 HA(1.4 HA) 19%
MARGINAL	1 HA(0.4 HA) 17%



# LEVEL OF FARM MECHANIZATION IN INDIA

OPERATIONS	PERCENTAGE
Soil Working And Seedbed Preparation	60
Seeding And Planting	40
Plant Protection	50
Irrigation	45
Harvesting And Threshing	70-80% For Wheat And Rice & Less Than 25% For Others

**Overall About 55%**



# Contribution of Indian Agricultural Machinery In Africa



## Machinery for Different Crops

- **Cereal Crops:** Tractors, seed drills, and harvesters designed for rice, wheat, and maize
- **Pulses and Legumes:** Planters and threshers suitable for beans, lentils, and chickpeas
- **Root and Tuber Crops:** Equipment for planting and harvesting potatoes, cassava, and yams
- **Cash Crops:** Machinery for cotton, sugarcane, and tea cultivation



# Contribution of Indian Agricultural Machinery In Africa



## Tractor Horsepower (HP) Range of Indian Machinery

- **Low HP (15-30 HP):** Suitable for small farms and light-duty tasks, commonly used for horticulture and small-scale farming
- **Medium HP (30-70 HP):** Versatile tractors and equipment for medium-sized farms, handling plowing, seeding, and harvesting
- **High HP (70+ HP):** Heavy-duty machinery for large-scale farming, including powerful tractors and combines for extensive crop fields



# Contribution of Indian Agricultural Machinery In Africa

## Size and Adaptability



- **Compact Machinery:** Benefits for smallholder farms, easy maneuverability in tight spaces, and lower cost
- **Mid-sized Machinery:** Balance of power and size, suitable for mixed farming operations
- **Large Machinery:** High efficiency for large-scale commercial farming, reducing labor and time requirements



# Contribution of Indian Agricultural Machinery In Africa

## Economic and Productivity Impact

- **Increased Yields:** Mechanization leading to higher productivity and better crop management
- **Cost Savings:** Reduction in labor costs and time, improving overall farm profitability
- **Employment:** Job creation in machinery operation, maintenance, and supply chain

## Training and Capacity Building

- **Operator Training:** Programs to train African farmers and technicians on using and maintaining Indian machinery
- **Collaborative Research:** Joint efforts to adapt machinery to local conditions and crop types
- **Knowledge Exchange:** Workshops, seminars, and field demonstrations



# India-Africa Dialogue on Scale Appropriate Farm Mechanization

**4TH INDIA AGRI PROGRESS EXPO CONCLUDES SUCCESSFULLY, DRAWING OVER 50,000 ENTHUSIASTIC VISITORS**

**ADVERTORIAL**

The three-day 4th India Agri Progress Expo concluded on a successful note at the Lathiana Exhibition Centre in Sahnewal on January 21. With an overwhelming response from both exhibitors and visitors, the event marked a significant milestone in showcasing the latest advancements in agricultural technology.

The exhibition, which attracted over 50,000 visitors throughout its duration, recorded a remarkable turnout of around 30,000 visitors on January 21 alone. Attendees lauded the impeccable arrangements made by the organizers and expressed satisfaction with the diverse array of modern machinery and tools exhibited by the participating companies.

Farmers in attendance were particularly impressed with the innovative technologies presented at the expo. Subeinder Singh, a farmer from Abotah, highlighted the upgraded performance in tractors that now boast zero vibration. He praised the companies for introducing changes that contribute to smoother and more efficient field work.

A notable feature of this exhibition was the introduction of mobile potato grader machinery. Haseg Singh of Moga shared his excitement, noting that previously, fixed potato graders were limited to cold storage. The new mobile potato grader allows a group of farmers to collectively invest, saving both time and money.

Exhibitors were equally pleased with the event, reporting a surge in business queries. On the final day of the exhibition, Ujjain Singh Nagra, President of OICI, held a meeting with an international delegation led by Vijay Kumar, Director General of the World Association of Small and Medium Enterprises. Kumar highlighted the success of organized meetings between delegates from Nigeria, Niger, and Botswana and various groups of industrialists, including plastic manufacturers, textile industrialists, and foodstuff producers. He emphasized the expo's role as a catalyst for local manufacturers to secure deals with foreign clients and expand their businesses.

The exhibition was graced by the presence of Dr. Anwar Singh, Member of Parliament, Fatehgarh Sahib constituency, and former cabinet minister Piana Gupta Singh. They shared that it is great that local manufacturers are coming up with great technology to compete with global companies. They said that to make agriculture effective, there is a need for the latest technology and this exhibition serves the purpose of introducing modern machinery to farmers.

Dr. Diljit, Managing Director, Ujjain Mehta and Communication Pvt. Ltd., said that the expo has left an indelible mark on the agricultural landscape, showcasing cutting-edge technology and fostering fruitful collaborations between industry stakeholders. Plans are already underway for the next edition, promising even greater strides in the advancement of agricultural practices.

The exhibition was organized by Ujjain Mehta and Communications Pvt. Ltd. in collaboration with the Punjab State Agricultural Implement Manufacturer Association (PSAIMA) and supported by the Agricultural Machinery Manufacturers Association (AMMA).

There were over 3000 visitors on the day display by over 200 companies from across the country.

Others who graced the occasion included Baldev Singh, Chairman of the Punjab State Agricultural Implements Manufacturers Association; Harinderjit Singh Luvy, President of UKMFA; and Anil Kumar Verma, GM, NBS, Chandigarh, Bank of India, among others.

- January 21, 2024
- 12 officials from 8 African countries
- With collaboration with ICRISAT
  - Agri. machinery Importers
  - Agri. Machinery manufacturer
  - Machinery dealers & spare parts distributors
  - Farmers (rainfed region)
  - Agri. machinery research institutes



# India-Africa Dialogue on Scale Appropriate Farm Mechanization

## Objectives:

- Deliberate on state of mechanization in India and Africa to identify affordable and complementing farm mechanization solutions for African farmers/stakeholders.
- Foster public-private, private-private and public-public partnership among Indian and African stakeholders for strengthening the farm mechanization.
- Deliberate on India-Africa learning strategy on farm mechanization.



## International Delegates

Name	Position	Organization	Country
Daniel Annerose	CEO	Manobi Africa	Senegal
Dalisto Varegeyi	Provincial Mechanisation Director	Government of Zimbabwe	Zimbabwe
Randy Pote	Cluster Head, Farmec, Mealibrand, Valmec	Zimplow Holdings Limited	Zimbabwe
Okojokwu Kennedy Ogbole	Chief Mentor	Finic Nigeria Limited (Agro Processing Machines Producer)	Nigeria
Mr Abrhame Endrias	Managing Director	Lersha Digital Platform	Ethiopia
Jacob Nyirongo	CEO	Farmers Union of Malawi	Malawi
Sekou Sala Guindo	Head of the Mechanization Program	IER	Mali
Ibrahima Daouda Soumaila	Director of promoting mechanical Agri	Ministry of Agriculture and Livestock	Niger
Patrick Ketiem	Center Director	Kenya Agriculture and Livestock Research Organization (KALRO)	Kenya
Saidi Mkomwa	Executive Secretary and Chief Executive Officer	African Conservation Tillage Network (ACT)	Kenya
Omidul	Hasan		Bangladesh



## International Delegates

Name	Position	Organization	Country
MD Shabbir	Ahmed		Bangladesh
Kamrul	Hasan		Bangladesh
Mukit Mahbub	Khan		Bangladesh
Mohammad Saiful	Alam		Bangladesh
Mohd. Ajjul	Haque		Bangladesh
Mohd. Akash	Ahmed		Bangladesh
Md Masum	Haider		Bangladesh
Dr Surindra			India
Mr Monyadiwa Masilo,			Botswana
Mrs. Rabiataou Arzika Mamadou,			Niger
Dr (Mrs.) Fetchima Daddy Goah,			Niger



## Challenges & Solutions

	<b>Challenge</b>	<b>Solution</b>
Joint Venture Financing	Limited access to financing for joint ventures due to high upfront costs and perceived risks.	Explore financing options such as equity investments, venture capital, and project financing from both public and private sources.
Government Support	Insufficient government support and funding for collaborative projects.	Encourage governments to provide financial incentives, grants, and subsidies for joint ventures in machinery manufacturing and supply.
International Organizations	Limited access to international financing and development assistance.	Seek support from international organizations such as the World Bank, African Development Bank, and regional development banks for funding and technical assistance.



## Challenges & Solutions

	<b>Challenge</b>	<b>Solution</b>
Cultural Differences	Differences in communication styles, business practices, and cultural norms can hinder effective collaboration	Conduct cultural sensitivity training for teams involved in collaborative projects to foster mutual understanding and respect.
Logistical Issues	Poor infrastructure and inefficient logistics networks can lead to delays and increased costs in manufacturing and supply chain operations.	Establish robust logistics networks by investing in transportation infrastructure, warehousing facilities, and technology-enabled supply chain management systems.
Regulatory Barriers	Complex regulatory environments and bureaucratic hurdles may hinder the establishment and operation of joint ventures and cross-border trade.	Advocate for regulatory reforms and harmonization of standards between Africa and India to facilitate smoother market access and regulatory compliance.



## Challenges & Solutions

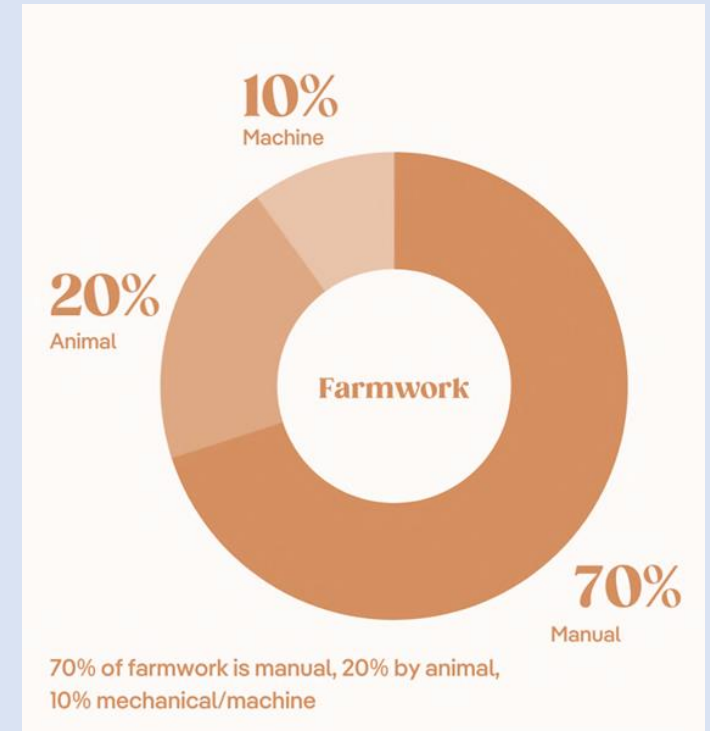
	<b>Challenge</b>	<b>Solution</b>
Private Sector Investment Opportunities	Reluctance among private sector investors to invest in collaborative ventures due to perceived risks and uncertainties.	Offer investment incentives such as tax breaks, duty exemptions, and preferential treatment for joint ventures in strategic sectors like machinery manufacturing.



# Understanding Low Mechanization

## Failures in effective technology access are primary drivers of low mechanization

- **Availability** - The machinery and equipment needed for agricultural mechanization may not be readily available in many parts of Sub-Saharan Africa. This can be due to factors like inadequate supply chains, poor infrastructure, and high import duties on agricultural machinery.
- **Affordability** - The high cost of imported agricultural machinery can be prohibitive for many smallholder farmers. This is exacerbated by a lack of access to affordable credit and financing options. Affordability also includes the costs of operating and maintaining the machinery, which can be high if spare parts and servicing are difficult to obtain
- **Awareness** - Farmers may not be aware of the potential benefits of mechanization, or they may have misconceptions or fears about it. This could be due to a lack of information or exposure to mechanized farming techniques. Effective extension services and farmer training programs can help to address this.
- **Abilities** - Even if farmers are aware of the benefits of mechanization and have access to machinery, they may lack the skills and knowledge to operate and maintain it effectively. This could be due to a lack of training programs, or the complexity of the machinery. Again, effective extension services and training programs are key to addressing this.
- **Agency** - This refers to the ability of farmers to make decisions and take actions that affect their lives. In the context of mechanization, this could be impacted by factors like land tenure (if farmers don't own their land, they may be less willing or able to invest in machinery), social norms (e.g., gender norms could limit women farmers' access to machinery)



# X Lab focus on three domains of intervention

## Technology



Transfer appropriate technology to smallholder farmers to enable the mechanisation of existing farmlands, developing a scaleable process for technology transfer across the continent.

## Education



Enable training and educational experiences that prioritise the principles, mindsets, and practices of regenerative agriculture to foster the capacity for food systems change.

## Innovation

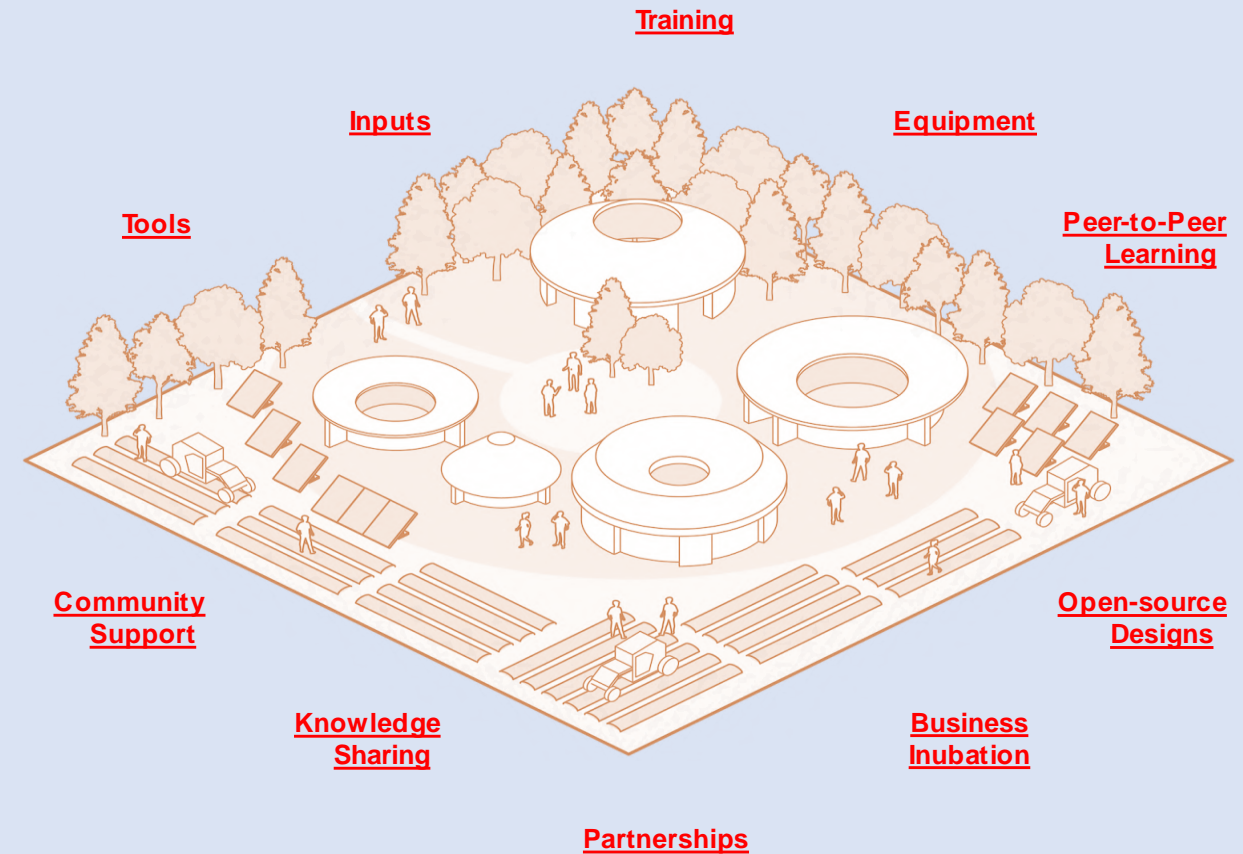


Build local capability to lead innovation processes that co-create agritech solutions and regenerative practices suitable for the challenges faced by smallholders farmers.



# Embodying a New System

- The NEW solution proposes an integrated technology transfer system as a core solution with X Labs serving as the visible nodes to enable the system. It aims to facilitate the exchange of knowledge, skills, and technologies from researchers and development organizations to smallholder farmers by establishing physical X Labs on-the-ground.
- X Labs will serve as the local hubs where farmers can access information, training, equipment, inputs and resources to improve their productivity, profitability, and resilience. By establishing a network of interconnected X Labs, farmers can learn from each other's experiences and best practices, access market information, and leverage their collective bargaining power – all enabling wider systemic impact.
- The creation of a technology transfer system with X Labs as the visible nodes holds the potential to create a virtuous cycle of innovation, learning, and collaboration that enhances smallholder farmers' livelihoods and contributes to achieving food sovereignty across Africa.



# X Lab: Business Model Canvas



# Opportunities for Collaboration

- **Economic Growth:**

- Joint ventures can stimulate economic growth in both Africa and India by creating new job opportunities, fostering technological advancements, and promoting industrial development.
- Collaboration can lead to the transfer of knowledge, skills, and technologies, thereby enhancing the overall competitiveness of both regions in the global market.

- **Enhanced Agricultural Productivity:**

- Access to advanced machinery manufactured through collaboration can significantly improve agricultural productivity in both Africa and India.
- Modern machinery, such as tractors, harvesters, and irrigation systems, can help increase efficiency in farming practices, leading to higher yields and better quality crops.
- Mechanization can also enable farmers to cultivate larger areas of land in a shorter time frame, thereby increasing overall agricultural output.



# Benefits for Collaboration

- **Improved Food Security:**

- By boosting agricultural productivity, collaboration in machinery manufacturing and supply can contribute to improved food security in both regions.
- Increased agricultural output can help meet the rising food demands of growing populations, reduce dependency on food imports, and mitigate the risk of food shortages and famines.
- Enhanced food security can also lead to greater stability and resilience in both African and Indian economies.

- **Technology Transfer and Capacity Building:**

- Collaboration presents opportunities for technology transfer and capacity building initiatives, where expertise and best practices in machinery manufacturing and agricultural mechanization can be shared between Africa and India.
- Training programs, workshops, and knowledge exchange activities can help local communities and businesses in both regions develop the skills and capabilities necessary to leverage modern machinery effectively.



# Benefits for Collaboration

- **Sustainable Development:**
  - Collaboration can promote sustainable agricultural practices by encouraging the adoption of eco-friendly and energy-efficient machinery.
  - By embracing sustainable technologies, such as precision farming equipment and renewable energy-powered machinery, Africa and India can minimize environmental impact, conserve natural resources, and mitigate climate change risks.
- **Trade and Investment Opportunities:**
  - Joint ventures in machinery manufacturing and supply can stimulate bilateral trade and investment between Africa and India, fostering deeper economic ties and partnerships.
  - Increased trade can lead to a more diversified economy, reduce trade deficits, and promote mutual prosperity for both regions.



## Concluding Remarks

- Public sector's role in generating and transferring knowledge
  - Indian experiences can offer much knowledge to Africa
  - Developing and enforcing policies that promote agricultural research and development.
  - Collaborating with international organizations and institutions for capacity building
  - Encouraging international collaborations to leverage global expertise and resources (Public-Private, NGO`s)
- Proposed by AMMA-India
  - Fostering partnerships between public and private sectors.
  - Developing machinery suited for major African crops like maize, cassava, and sorghum
  - Customizing machinery to handle diverse African agro-climatic conditions
  - Training programs for local farmers on machinery use and maintenance
  - Structured system to be define





**THANKS**

