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*The 6th Regional Forum  
for Sustainable Agricultural Mechanization in Asia  
and the Pacific  
- Enabling Environment for the Private Sector  
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# **Agricultural Mechanization a Sri Lanka Perspective**



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**Wuhan, China**



# **Agricultural Machinery Manufacturers & Suppliers Association**

Year of establishment	1989
Year of inauguration	1990
Members & Associates	42

## **Vision**

**To enhance agricultural productivity through Sustainable Mechanization leading to food security for the Nation**

## **Mission**

- **To Co-ordinate with Govt Institutions in developing, product testing, operator training and introducing appropriate and affordable machinery**
- **To keep abreast and inform stakeholders and recommend new developments in the agricultural mechanization worldwide**
- **Improve quality and safety of Men and Machine through a farmer and or operator educational and awareness programs Island wide**



**His Excellency Maithripala Sirisena, The President of the Democratic Socialist Republic of Sri Lanka**, is the first member of a rural agricultural population to be elected as President of Sri Lanka, and hails from Polonnaruwa, where is located the second ancient capital of the country.

- Established in 1070 AD, Polonnaruwa remains a rural region largely populated by rice cultivators, and is the home of many irrigation reservoirs,
- The Government launched in October 2017 the National Food Production Drive. The program, represented by all agricultural areas will primarily involve the agriculture sector, relevant government and non-governmental organizations, farmer communities and the participation of the corporate sector.
- The objectives are, non-contaminated food production, mechanization for higher yields, restrict use of harmful agrochemicals, upgrading irrigation water management systems, rehabilitation of over 1000 water reservoirs, alleviation of poverty and increased employment opportunities through agricultural investments.
- The agriculture sector contributes about 10.5 percent to the national GDP and over 30 percent of Sri Lankans are employed in the agricultural sector with about 76% of total population living in agricultural areas. Sri Lanka is a fertile tropical land with the potential for the cultivation and processing of a variety of crops.
- Sri Lanka's primary food crop is rice. Rice is cultivated during two seasons. Tea is cultivated in the central highlands, Rubber and Coconut in the Low Country which are a major source of foreign exchange earners for the country. Vegetables, fruits and oilseed crops are also cultivated and exported in smaller quantities.
- His Excellency President Sirisena's top priorities is to increase productivity in the agriculture sector in a sustainable manner in enhancing productivity including higher yields, creating employment opportunities, alleviating poverty, livelihood improvement and mitigating impacts of climate change.
- Sri Lanka Govt "Vision 2025" is Food Security and Nutrition towards Zero Hunger for achieving UN Sustainable Development Goal 2

# Challenges faced by the Agricultural Community in Sri Lanka

- Disasters such as Acute drought, heavy floods and landslides have been a regular occurrence this decade (over last 10 years) resulting in destruction of crops and farmer livelihood,
- Farmers inability to cultivate due to lack of capital thus seasons are missed resulting in loss of income over long periods,
- Inability to pay loans which affects their livelihoods and create serious social issues such as hunger and malnutrition,
- Unpredictable incomes and personal losses discourages farmers in expanding crops thus driving away the agricultural workforce due to food security resulting in reduced availability,
- The emerging youth in the agricultural sector migrating to more stable income generating sectors creating serious labour shortages resulting in limited cultivations during seasons, thus the labour force is diminishing,
- The remaining ageing agricultural workforce is in persistent poverty thus results in inefficient agricultural value chains,
- Low adoption of mechanization in farming directly by farmers and layers of middle men has emerged who fund such mechanization to a limited extent, due to high cost of credit financing / loans,
- Lack of large scale paddy, fruit and vegetable farming by the private sector corporates who are able to sustain climatic setbacks and invest in mechanized inputs for achieving significant levels of land productivity.
- Sri Lanka still imports a significant variety of agricultural products and food including wheat, lentils, sugar, fruits, grams, soya, dairy milk and milk products.
- Private sector corporates concentrating mainly in the agricultural plantation sector such as Tea, Rubber, Coconut, Oil Palm and horticulture which has significant demand and high processed value in export markets plus they have the ability to access and invest in marketing activity overseas

# The Role of Govt in providing an enabling Policy

- Sri Lanka Govt “Vision 2025” is Food Security and Nutrition towards Zero Hunger for achieving UN Sustainable Development Goal 2
- The President has initiated many schemes including the adoption of the Country Strategic Plan 2018-2022 with the objective of accelerating economic growth, human development, food security, nutrition, gender equality, geographic and socio economic development disparities,
- More capacity building through technical and policy support for efforts to ensure access to food, end malnutrition and improve small holder productivity and incomes
- Sri Lanka’s Strategic Plan seeks to achieve four strategic outcomes
  1. Crisis affected people have access to food
  2. School-age children in food insecure areas have access to food all year round
  3. Children under 5, adolescent girls and women of reproductive age have improved nutrition
  4. Vulnerable communities and small holder farmers have strengthened livelihoods and resilience to shocks (disasters) and stresses all year round

## Focus

- Achieving labour shortages and higher yields **through increased mechanization in the agricultural sector**. Many concessionary loan schemes and grants has been introduced to the farming community including crop insurance schemes in mitigating disaster losses,
- Assistance to grow **alternate and higher value cash crops** such as fruits, flowers, plants and other export crops including **animal husbandry** in diversifying their dependence,
- Through these initiatives, the Government hopes to herald a new awakening in the entire agricultural sector driving towards food security for the Nation and achievement of SGD 1 and 2 goals.

# Overview of Agriculture in Sri Lanka

## Crop

## Extent Cultivated

Paddy	870,000 hectares
Tea	220,000 "
Rubber	134,000 "
Coconut	394,000 "
Cinnamon	33,500 "
Pepper	44,450 "

## Other Agricultural Crops

Coffee, Cocoa, Cardamom, Green Gram, Maize, Cowpea, Gingerly, Ground Nut, Manioc / Cassava, Ginger, Turmeric.

# The general status of the Agricultural Machinery Industry in Sri Lanka

- **4 Wheel Tractor** - imports are approximately **6,000 a year** and mainly sourced from India. Such tractor usage has increased in land preparation, ploughing, threshing and haulage and increasing power needs thus during past few years the asset value has appreciated to farmer due to durability,
- **2 Wheel Tractor** - imports are approximately **5,000 a year** and mainly imported from China. 2 wheel tractor imports has drastically dropped over the last decade from as much as 25,000 a year due to lack of versatility, quality issues, spare parts issues and being unable to cater to increasing power needs plus having only a scrap value after usage thus no capital appreciation of asset,
- **Paddy Transplanters** - imports have gradually increased 300 per year due to shortage of labour lately and government too is encouraging such usage and mainly imported from Japan.
- **Combined Harvesters** - imports have increased to 900 per year for small harvesters due to small land areas but in areas where large land holding is available especially in the Eastern province a few large machines are in use. Small harvesters are mainly imported from Japan and large harvesters from India.
- **Sprayers** - imports are mainly from China and Indonesia and growth has been constant,
- **Water Pumps** - Mainly manufactured locally but the electric and diesel water pumps are been gradually replaced by imported Solar pumps due to cost and availability of power

A detailed list of machinery is given in the slides to follow for your understanding of demand



## Recommendations for the efforts – Public Sector, Academic & Research, Private Sector

- Formulation of an **Agricultural Mechanization Policy** - to ensure trouble free efficient Machinery, Spare parts availability and after sales services at a reasonable price,
- Recruitment of **Trained District Mechanization Officers** - who are able to conduct Machine operator training,
- Program to include **Women in Machine Operator Training** - which addresses issues with regard to labour shortage and lack of experienced and or qualified Machine operators,
- A **Farm Machinery Act - Draft form** to ensure that properly tested products are permitted to be imported in compliance with quality, durability and emissions as capital is a serious constraint,
- **Anti Dumping policy** - as poor quality farm machinery has driven farmers away from mechanization due to costly break downtime and maintenance costs,
- **Improvement of Farm Machinery testing facilities** and testing services with speedy expedition of approval process,
- **Incentives and subsidies for local assembly especially** in farming areas, capital at low interest to buy certified machinery,
- Government sponsored and or funded **Farm Machinery pools** for farmers who are unable to afford purchase & have access to such machinery at a subsidized rate. Private contractors / middle men charging high rates preventing affordability.
- Assistance in times of difficulty – speedy implementation **of Crop failure insurance** in meeting loan repayments of Agricultural Machinery and or a Moratorium on repayments.

# Machinery used in Paddy



4 wheel Tractors

Combined Harvester



Windmill Water Pumping



Tractors

Two Wheel Tiller



Sprayers

Knapsack Sprayers



Combine Harvesters

Combined Harvesters



Combine Threshers

Threshers



Rice Transplanter



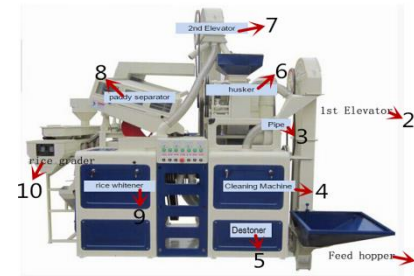
Solar Tubewell Water Pump

- Livestock
- Agriculture
- Irrigation

Solar Water Pumping

# Machinery for Post Harvest Processing & Storage

Rice Mills for the Small & Medium Business Sector



Boilers and Dryers



Power Generators, Husk fired, Steam, Diesel,



Kirloskar Diesel Generator

Rice / Paddy Storage Silos



# Machinery for Post Harvest Machinery Processing Paddy / Rice

Rice & Grain Colour Sorters



Paddy Seed Processors, Cleaners & Graders



Paddy, Rice & Straw Transportation



Moisture Meters



# Machinery used in Tea Harvesting



Flexible Shaft Tea Weeder & Grass cutter



Tea Augur



Tea Leaf Plucker



Tea Bush Pruner



Tea Plucker single man

# Machinery used in Tea Manufacture

Tea Leaf Withering Troughs

Tea Leaf Rollers

Tea Leaf Dryers

Tea Stalk Extractors

Power Generators

Sifters

Tea Colour Sorters

Tea Bagging Machines

Tea Blending Machines

Tea Moisture Meters



Kirloskar Diesel Generator



# Machinery used in Rubber Sheet Making

Rubber Sheet Rolling Mill

Rubber Crepe Machine

Rubber Mixing Mill

Rubber Sheet Making Machine

Rubber Sheet Smoking Chambers

Rubber Sheet Dryers

Power Generators

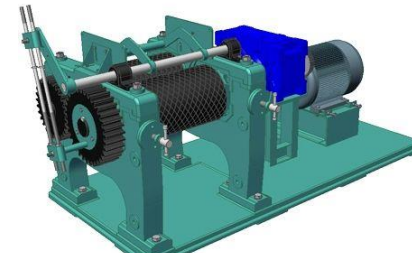
Value Added Rubber Industrial Machines

Rubber Tire Manufacturing

Rubber Shoe Sole manufacturing

Rubber Glove Manufacturing

Rubber Industrial Carpet Manufacturing



Kirloskar Diesel Generator



# Machinery used in Coconut

Coconut Plucking Machine

Coconut Weeding Machines

Coconut Plantation Brush Cutters

Coconut Plant Holing Machines

Coconut De husking Machines

Coconut Mat Making Machines

Coconut Fibre Bailing Press

Coconut Fibre Rope Making Machines

Coconut Chip Making Machines

Coconut Transportation





# Machinery for Coconut Product Manufacturing

## *Value Added Edible Coconut Products*

Coconut Oil Manufacturing

Desiccated Coconut Manufacturing

Coconut Butter Manufacturing

Coconut Milk

Coconut Flour

Coconut Cream

Shredded Coconut

Coconut Water

Coconut Hair & Massage Oils



# Machinery Supply Opportunities for Export Crops



Cinnamon



Ginger



Turmeric



Pepper

## Machinery required

1. Planting Ginger & Turmeric
2. Cinnamon peeling
3. Harvesting Ginger & Turmeric

## Locally made Pepper Thresher



# Machinery Made in Sri Lanka

Mainly Agricultural Produce Processing

# Agricultural Machinery Industry



Coconut Fibre  
Extractor



Threshers – 5 Models



MULTI SEIVER



Multy Chopper

# Agricultural Machinery Industry



**Agricultural Pumps**



**16 L STAINLESS  
STEEL SPRAYER**



# Processing Machinery Industry

DISK MILL MACHINE UD37



VIRGIN COCONUT OIL EXPELLOR UVCO - 01



# AgMMA Objectives

## Maintenance of continuous dialogue with

- Department of Commerce, Ministry of Trade and Commerce and Ministry of Foreign Affairs on foreign trade issues
- Liaising closely with Government stake holders related to agricultural machinery evaluation and approval

*Ministry of Agriculture – Department of Agriculture (DOA)*

*Sri Lanka Council for Agricultural Research Policy*

*Farm Mechanization Research Center (FMRC)*

*Institute of Post Harvest Technology (IPHT)*

*Denzil Kobbekaduwa Agrarian Research Center*

*Presidential Tariff Commission*

# AgMMA Challenges

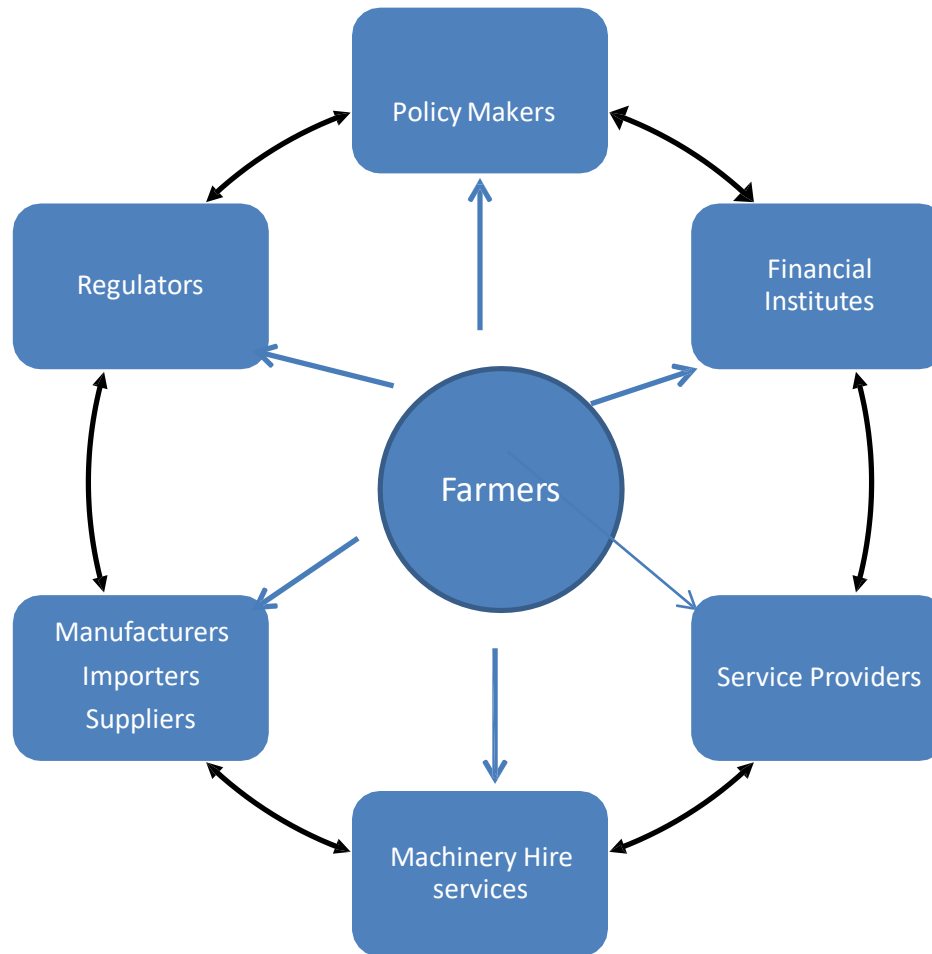
- Creating skillful farming community with appropriate technology and mechanization for sustainable development in agriculture,
- Make machines and shelters to Face Climate change and developing alternate income streams for affected communities,
- Minimize environmental pollution due to diesel emissions & low quality Machines by lobbying for standards followed by a certification system of quality and performance, and publish same in line with Govt stakeholder policy,
- Movement of educated labour into agriculture by developing the concept of smart machines with comfort in operation,
- Creating awareness that Farming is an **Entrepreneurial** activity and facilitate to improve the productivity and profitability of the farmer,
- Emphasizing the need of State intervention in making it happen and lobbying for low cost capital, subsidies to farmer, produce buy back guarantees, providing proper produce storage facilities.



## Wider Roles for Associations in Regional Cooperation

- ❖ To publish list of certified machinery with ranking,
- ❖ To assist farmers to identify certified tested machinery in the region,
- ❖ Train trainers on safe and correct use of farm Machinery & Implements,
- ❖ To conduct annual symposium on use of new technology and their benefits,
- ❖ To develop the Plant factory concept in the region to sustain food shortages due to climate change and disasters,
- ❖ Educate Government Officers in operational efficiency needed for Business sustainability.

# Distribution / Supply chain of Agriculture Machinery



# Thank You



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