

# Asia-Uzbekistan Dialogue on Sustainable Agricultural Mechanization

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## **PRIVATE SECTOR ENGAGEMENT IN AGRICULTURAL MECHANIZATION IN VIETNAM**

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# Brief overview of Viet Nam

- Total area: 331,211 km<sup>2</sup>
- Population: nearly 100 million people.
- Total land area: around 33 million hectares:
  - + Nearly 30 hectares for agricultural purposes (about 84,5% of the total area).
    - For rice cultivation: 3,9 million hectares;
    - For other annual crops: 2,8 million hectares;
    - For perennial crops: 4,9 million hectares.

# Status of agricultural mechanines and equipment in Viet Nam

## *1) Level of agricultural mechanization in Viet Nam:*

- Level of agricultural mechanization is low compared to other countries in the region.
- In some stages, the level of mechanization is high but not comprehensive:
  - + Tillage, caring for rice and sugarcane
  - + Rice harvesting
- The level is even further lower:
  - + Transplanting of rice,
  - + Caring for fruit trees,
  - + Harvesting of sugarcane and coffee.
- ▶ *Average farm power availability: estimated around 3.3 HP/ha of cultivated land across the country.*

# Status of agricultural mechanines and equipment in Viet Nam

- Number of agricultural machines by the end of 2020 (*Source: DCRD (2021)*)

No.	Type of machines	Quantity by 2014 (unit)	Quantity by 2018 (unit)	Quantity by 2020 (unit)
1	Total tractors	395,658	600,718	796,186
	- Large tractors ( $\geq 35$ hp)	24,380	27,182	32,200
	- Mid-size tractors (12 - 35 hp)	105,180	282,763	360,600
	- Small tractors ( $\leq 12$ hp)	266,098	290,773	403,386
2	Sowing machines	-	49,836	55,000
3	Rice transplanters	100	2,410	4,362
4	Combined harvesters	989	22,423	26,800
5	Combined sugarcane harvesters	-	-	12
6	Agricultural product kilns/dryers	7,352	68,841	80,100
7	Animal feed processing machines	38,264	58,405	137,200
8	Aquatic food processing machines	10,549	-	14,200
9	Water pumps	1,887,996		3,550,000
10	Pesticide spraying equipment	101,246	713,927	2,100,000

# Status of agricultural mechanines and equipment in Viet Nam

## *2. Import and export of agricultural machines and equipment*

Main machines: graders, bulldozers, land development machines, 4-wheel tractors, combine harvesters, transplinters, tea harvesters, insecticide sprays, etc.

\*) In general, Viet Nam has to import nearly 70% of agricultural machinery, most of which from China, and EU, Japan and ASEAN countries.

- ▶ Nearly 100% of equipment lines for processing of tea, sugarcane, rubber, and wood, and 40% of diesel engines are imported.
- ▶ Processing machines, combine harvesters, livestock equipment, and tractors: account for a high proportion of the total import turnover

\*) The volume of the exports of agricultural machinery is far lower than the import volume.

Some of the export destination of the machines and equipment produced in Viet Nam:

- Plows (mainly made in Viet Nam by Kubota and Yanmar – Japan): exported to Taiwan, Philippines, Malaysia, Singapore, Srilanka, Astralia, Italy, Germany, France, United States, Canada, Colombia, Liban, Iran, Tanzania.
- Seeders, planters and transplinters: exported to India, Malaysia, Indonesia, Thailand, Sri Lanka, Mongolia, United States.
- Other harvesters, beaters, combine harvesters (mainly made in Viet Nam by Kubota- Japan): exported to Philippines, Pakistan, Japan, Colombia, Tanzania, Togo, Dominican Republic. Other beaters to United Arab Emirates, Hong Kong, Republic of Korea, Bhutan, Guinea, Laos.
- Root or tuber harvesters: to Myanmar, Ethiopia.
- Machines for cleaning, sifting or sorting seeds, cereals or dried legumes: to Philippines, Malaysia, Singapore, Indonesia, Cambodia, India, Côte d'ivoire (Ivory Coast).
- Hand Tractors: to Philippines, Myanmar, Lithuania, Sri Lanca, India, Bangladesh, Japan, Germany.

# Manufacturing ability of Viet Nam

## *1) Manufacturing organization:*

More than 100 factories of agricultural machinery manufacturing.

- ▶ Viet Nam Engines and Agricultural Machinery Corporation (VEAM), under the Ministry of Industry and Trade, is the main corporation in manufacturing prime movers and agricultural machines in Viet Nam. VEAM currently has 27 members as sub-companies in the form of state-one-member limited company.
- ▶ THACO Agricultural Machinery Factory: mainly transfers technologies from LS Mtron Group (Korea). In the first phase, the factory had an annual designed capacity of 2,000 tractors, 3,000 sets of farming equipment and 1,000 combine harvesters. However, at present, the factory is still in the trial production phase with no product widely sold in the market.
- ▶ Vietnam KUBOTA Limited Company is a 100% Japanese owned enterprise: The Company operates in the field of distribution and assembly of agricultural machines such as tractors, combine harvesters, transplanters, sugarcane planting machines, etc.

Size of enterprises: most of the enterprises manufacturing agricultural machines are:

- + small enterprises : 53%,
- + microenterprises: 35.8%
- + medium enterprises 44%.

# Manufacturing ability of Viet Nam

## ***1) Manufacturing ability:***

The number of products: domestically manufactured products were to meet 45-50% of the demand by 2010, but until now, only 30% of the value achieved.

Quality and design: poor and uncomparable to those imported from Japan and Korea.

Price: are high and cannot compete with the similar ones imported from other countries, especially from China.

- For engines:

+ Produce 40,000 units diesel engines per year (occupying about 30% of the domestic market) with capacities up to 30 HP.

+ Diesel engines from 36-38 HP has been developed by Southern Agricultural Machinery and Engine One Member Limited Liability Company.

- Tractors:

+ Domestic tractor brands are quite limited compared to the foreign brands and only account for about 30% of the market share.

+ Tractors (under 30 HP) are mostly produced by Vietnam Engine and Agricultural Machinery Corporation (VEAM) and account for 25% of the market share.

+ Tractors with a capacity of up to 50 HP has successfully produced by Truong Hai Group Joint Stock Company (THACO).

+ Small 2-wheel tractors (<15 horse-power) can be produced, basically meeting the domestic demand.

+ Small 4-wheeled tractors (<30 horse-power) can be produced, meeting a small portion of domestic demand, most of which still has to import.

+ Tractors of the size > 30 HP are in trial production in country and therefore, are all imported.

# Manufacturing ability of Viet Nam

## *1) Manufacturing ability:*

- Water pump: centrifugal and axialflow water pumps including hydraulic ones are sufficient to meet irrigation water pumping requirements.
- Rice harvesters: domestic industry could produce 15% of the market share.
  - + Combined harvester: There are 15 enterprises with annual capacity of about 1,000 pieces. However, they are actually working about half of their installed capacities. The number of the machines that cannot meet the production requirements have to be imported.
- Scattered reaper: There are about 6 enterprises manufacturing spreader reapers to meet 100% of domestic demand.
- Threshing machines: many establishments in almost all provinces in the South. In the North: 3 types of rice threshing machines (capacity 6,000 units/year) to satisfy domestic requirements.
- Rice milling machines: Over 90% of rice milling and polishing lines (productivity from 4-48 tons/h), and dryers (productivity from 30-200 tons/batch) are manufactured by domestic enterprises with advanced technology (Bui Van Ngo, SINCO, LAMICO, etc...).
  - + Domestic companies manufacture silos for rice storage and auxiliary equipment for processing rice, maximum capacity of nearly 1,000 tons/silo.
- Preservation equipment for aquatic products: Equipment for refrigeration, cold storage and fish processing are fabricated and assembled locally.
- Coffee processing equipment: drying machines, advanced coffee processing (steam, wet polishing) equipment, coffee roasting systems, and instant coffee processing equipment system (productivity from 125-1,000 kg/h) are manufactured by some enterprises like Vina Nha Trang Mechanic and Viet Hien Mechanic.
- Rubber processing: Domestic mechanics provide 85% of the demand. Rolling machines, vibrating floors, baling presses can be exported to Africa, Indonesia, Cambodia, etc.



