

CURRENT STATUS OF AGRICULTURAL MECHANISATION IN VIETNAM

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I. THE RESULTS OBTAINED

The number and types of machinery and equipment for agricultural production, forestry and fisheries have seen rapid growth

a. In agricultural production

By 2009, there were nearly 500,000 tractors of all kinds with a total capacity of about 5 million horsepower (HP), an increase three times higher than in 2001, including two-wheeled tractors under 12 HP accounted for 65%, tractors over 12 to 35 HP 27% , a large tractors (over 35 HP) accounted for 8%. National average of power equipped level is 1.2 HP per ha of cultivated land. Average rate of mechanization in agricultural production activities as follows:

Agricultural production activities	Mechanization Rate (%)
Soil preparation for rice cultivation	72
Soil preparation upland crops	65
Active irrigation for rice	85
Transport in agriculture and rural	66
Rice drying in summer-autumn season in Mekong River Delta (MRD)	38.7
Rice harvester in MRD	15
Rice thresher	84
Rice milling	95

b. In forestry production

- 70% of stages in seedling production is mechanized: tillage, plant bags, etc.
- Some mechanized models successfully applied in soil tillage for cultivation in slope land and afforestation for wood
- Forest exploitation: machanization in some basic steps like tree cutting (80%), wood transportation (90%), use of chains for wood minimal-processing in the forest gate to reduce transport cost and increase usable wood rate

c. In fishing and Aqua-production

- Fishing ability is increasing rapidly:
 - app. 3.8 %/year in quantity
 - 10.17 %/year in power
 - 18.3 %/year in total capacity of boat engine
 - Currently, 95,600 fishing boats with total capacity of 5.8 mil. HP
- Over 90 factories:
 - produce 1.7 mil. tons of animal feed from aqua products,
 - meeting 60% of feed consumption in the whole nation

d. Irrigation

Irrigation water for agricultural production, including water supply and drainage. Currently, the level of mechanization reached about 50% (50% area is irrigated by machine, the remaining 50% is irrigated using gravity flow and by-hand pump means).

II. SUPPLY ISSUES

Rapidly forming agricultural machinery market:

- diversity (attachments, engines, tractors with capacity of 18-35 HP – either in-country manufactured or imported).
- agricultural machinery services (outlet, after-sale service).

III. POLICY AND INSTITUTIONAL ASPECTS OF AGRICULTURAL MECHANIZATION

Since 2004, Vietnam government has issued policies to support farmers to buy machines for agricultural production using budget's provinces

- In 2008, 30 provinces and cities implemented the supporting policy:
 - o 70-80% loan with a low interest rate, or
 - o 50-100 % of interest rate,
 - o the time to pay the loan: during 3 years
- During 2001-2008:
 - o tens of thousands of tractors and agricultural machines were used by farmers
 - o speeding agricultural mechanization
 - o training operation and maintenance skills of machines for farmers

Financial policy (tax) has many changes to be relevant to the WTO integration

- For ASEAN countries: tax rate since 2010 for imported agricultural machines is 0%, or 5% in some cases
- Manufacturers of tractors and agricultural machines: priority investment under the Key Program of Mechanization
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IV. CONSTRAINS

- Low level and uncompleted development of agricultural mechanization (average: 1.2 HP/ha)
- Low quality of agricultural and rural infrastructure makes it difficult to apply machines and equipment (farm land use of each household: 0.7 ha with 7-8 plots)
- Post-harvest technology is still poor with high Post-harvest loss rate for:
 - o rice: 12%
 - o corn: 18-19%
 - o soyabean: 6.2-14%
 - o peanut: 8.5-15%
- Inadequate research of science and technology in agricultural mechanization, delayed transfer of technologies
- Agricultural mechanic section does not meet the demand of agricultural production activities
- Low quality labor source, untrained operators/users of agricultural machines
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V. SUSTAINABLE AGRICULTURAL MECHANIZATION

- To ensure sustainability of soil, using appropriate machinery is needed (not using too heavy machinery/equipment)
 - o Zero tilage
 - o minimum/reduce tilage
 - o mulching soil
- For sustainable mechanisation development
 - o After-sale service: providing preparing network of maintenance, enough spare parts...
 - o Comprehensive mechnisation
 - o Organising training courses for operators
- Policy support for agricultural machinery manufacturers.

VI. CONCLUSION

- In the past years, Vietnamese agricultural production has obtained rapid, steady growth. Thanks to this, Vietnam basically ensured its food security, paved the path for shifting structure of agricultural economy and for developing non-agricultural industries. Several export agro-products of Vietnam have been in the world highest rank such as black pepper, coffee, rice and cashew nut.
 - According to the MARD of Vietnam; however, Vietnamese agricultural economy has achieved great initial results, but process of its development is seen not completely sustainable. The rapid shift of structure of crops and domestic animals makes changes of exploitation mode of resources of land, water and biology in large scale. Moreover, activities of survey, design, control and supervision are still insufficient; therefore, many dangers occur such as ecological imbalance, threat to the competitive ability of agricultural sector.
 - For this reason, simultaneous with application of mechanisation and safer technology to reduce environmental pollution, Vietnam has done its utmost to prevent deforestation, conserve biological diversity, improve environmental hygiene, create jobs and increase standard of living for the people. To protect the environment, many countries have waged environmentally friendly movements in various names as sustainable agriculture, ecological agriculture, appropriate agriculture, integrated agriculture, etc. with the activities of research and application of production modes oriented to sustainable development in all sectors.
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