

Promoting Sustainable Agricultural Mechanization Strategies and Policies of Viet Nam



Presented by

TAM THI DINH

Vietnam Institute of Agricultural Engineering and Post Harvest
Technology

5th Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific
12-14 December 2017, Kathmandu, Nepal



CSAM



I. GENERAL ASSESSMENT

- Agricultural production grows - application of production mechanization: rapidly developed.
- Agriculture development: still unsustainable; growth rate: tends to decrease; competitiveness: low; good resources for production development: not consolidated. Post harvest losses: very high:
 - paddy and rice: 11-13%
 - maize: 16-20%
 - vegetables and fruit: 20-30%

➔ Needs of application of technological advances and synchronously implementing measures, particularly those related to mechanization

I. GENERAL ASSESSMENT

1. Current situation:

- ▶ Number of engines and agricultural machines: increased rapidly:
 - Tractors: increased by 2.3 times compared with 2001;
 - Harvesters: increased 26 times compared with 2006 (primarily in Mekong delta (the South) - 75% of all harvesters in the country);
 - Pesticide spreaders: increased 6 times compared with 2006;
 - Water pumps for agricultural production: increased by 1.2 times compared with 2006.

I. GENERAL ASSESSMENT

- Some kinds of machines: reduced in numbers:
 - threshers: fell 50% due to the increase use of combine harvesters;
 - dryers: decreased 8% on number but drying capacity increased by 20% (small capacity - 1-4 tons / batch replaced by 10-30 tons/batch).
- Some types of machines: tend to shift:
 - 2-wheel to 4-wheel tractors (capacity of 12-35 HP: increased by 2.1 times compared to 2006)).

I. GENERAL ASSESSMENT

- ▶ Level of mechanization of some annual crops (rice, sugarcane, corn) at some stages: high
 - land preparation: at an average rate of 90%;
 - rice cultivation: 30%;
 - care and plant protection spraying: 60%;
 - rice harvesting: 35%;
 - drying (in Mekong delta- the South): 45%.

I. GENERAL ASSESSMENT

- ▶ degree of mechanization in agriculture: still low, inconsistent and not comprehensively developed.
- ▶ Compared to other countries in the region: Usage level of agricultural machinery: Vietnam only 1.6 HP/ha, Thailand: 4 HP/ha, South Korea: 10 HP/ha, China: 8 HP/ha)
- ▶ Agricultural mechanization focused mainly on:
 - soil preparation for annual crops, upland crops
 - threshing
 - rice transportation and milling
- ▶ For sowing, caring, and harvesting: low

I. GENERAL ASSESSMENT

- Manufacturing: domestic mechanical products: 33% (by value) of domestic demand. (not: tractors 30 HP, transplanters, sugarcane harvesters, maize harvesters)
- Foreign Investment in agricultural machinery and engine manufacturing, and machine assembling: small.

2. Problems and challenges

- Awareness of the importance of mechanization: limited and inadequate.
- Not any radical and comprehensive proposals of orientation and strategic policies for agricultural mechanization and post harvest loss reduction



I. GENERAL ASSESSMENT

- ▶ implementation of any resolutions or measures: still on individual actual situation, patchwork, and not systematic.
- ▶ Agricultural production: still small, seasonal, and dependent on weather.
- ▶ Efficiency of agricultural production: low, at high risk



Businesses are not encouraged to invest in agriculture sector

I. GENERAL ASSESSMENT

- ▶ technological level of manufacturing agricultural machinery (medium and large 4-wheel tractors, transplanters, harvesters ...): low
- ▶ size and number of manufacturers: decline
 - Some agricultural machine factories : switched to produce other kinds of machine
- ▶ knowledge on agricultural production of peasants: low and different among regions

LIMIT the application of new techniques in production



I. GENERAL ASSESSMENT

- Investment in research on agricultural mechanization: not paid adequate attention.



LACK of equipment and machines which meet the requirements of production

- Policies of the Government: not strong enough to create professional agricultural manufacturers
- Some of mechanisms and policies: difficult to apply into practical conditions

II. DEVELOPMENT VIEWPOINTS – LESSONS LEARNT

- Agriculture mechanization: important for process of industrialization and modernization
- Agricultural mechanization: must be conducted synchronously with scale, production level of each region; primarily focused on:
 - areas of goods production
 - concentrating, heavy production
 - large postharvest losses

II. DEVELOPMENT VIEWPOINTS – LESSONS LEARNT

- Focus on:
 - developing effective forms of production in rural areas
 - promoting the role of core businesses
 - link, support farmers to develop commodity production
- Combine importing machinery, equipment and advanced technology to meet the requirements of production
- Agricultural mechanization: career of all people, and all sectors.

Government should put high priority for improving farm investment, infrastructure development and post-harvest technology

III. SOME MECHANISM AND POLICIES TO DEVELOP AGRICULTURAL MECHANIZATION

- 1. Decision No. 186/2002/QĐ-TTg of Prime Minister on strategy for development of the mechanization sector of Vietnam until 2010, vision to 2020;
- 2. Decision No. 665 / QĐ-BNN-CB Date 09/3/2006 of the Minister of Agriculture and Rural Development on Action Programme promoting mechanization and reducing post-harvest losses in Mekong River Delta;
- 3. Decision No. 10/2009/QĐ-TTg 16/01/2009 on mechanism to support the development of production of key mechanical products and the list of key mechanical products, and the list of investment projects production of key mechanical products in the period 2009-2015;

III. SOME MECHANISM AND POLICIES TO DEVELOP AGRICULTURAL MECHANIZATION

- 4. Resolution No. 48/NQ-CP of the Government dated 23/9/2009 of mechanisms and policies to reduce post-harvest losses of agricultural and aquatic products;
- 5. Decision No. 3242 / QD-BNN-CB dated 02/12/2010 of Minister of Agriculture and Rural Development on Approval the Plan for Storage System reserving 4 million tons of rice in Mekong Delta;
- 6. Decision No. 124/QD-TTg dated 02/02/2012 of Prime Minister approving the master plan to develop agricultural production by 2020 and Vision 2030;
- 7. Decision No. 899/QD-TTg dated 06/10/2013 of Prime Minister approving the big project of Restructuring the agricultural sector towards improving value added and sustainable development;

III. SOME MECHANISM AND POLICIES TO DEVELOP AGRICULTURAL MECHANIZATION

- ▶ 8. Decision No.68/2013/QD-TTg dated 14/11/2013 of Prime Minister on support policies aimed at reducing losses in agriculture;
- ▶ 9 Decree No. 210/2013 / ND-CP of the Government dated 19/12/2013 on policies to encourage enterprises to invest in agriculture and rural development;
- ▶ 10. Decision No. 986/BNN-KHCN on 09/5/2014 of Minister of Agriculture and Rural Development issued Plan to promote research and application of science and technology for restructuring the agriculture sector towards improving value added and sustainable development;
- ▶ 11. Decision No. 1003 /BNN-CB dated 13/5/2014 of Minister of Agriculture and Rural Development on the approval of the Plan to enhance value-added agricultural, forestry and fishery products processing and reduce costs post-harvest losses;

III. SOME MECHANISM AND POLICIES TO DEVELOP AGRICULTURAL MECHANIZATION

- 12. Decision No. 879 / QD-TTg on 09/6/2014 of Prime Minister approving the strategy on development of Vietnam's industry to 2025, Vision 2035;
- 13. Directive No. 16/CT-TTg on 18/06/2014 of Prime Minister on resolving difficulties of implementing strategies to boost development of Vietnam's mechanical engineering;
- 14. Plan of agricultural mechanization to 2020 and vision to 2030 of Ministry of Agriculture and Rural Development;
- 15. Decision No. 3642/QD-BNN-CB dated 08/9/2015 of Minister of Agriculture and Rural Development on Plan to promote agricultural production mechanization.

IV. SUGGESTIONS ON SOME COOPERATION WITH OTHER COUNTRIES

- ▶ To accelerate the application of machine and equipment for agricultural production, contributing to:
 - improve labor productivity
 - reduce costs and reduce post-harvest losses
- ▶ Cooperate internationally:
 1. Machinery and equipment for comprehensive mechanization of some major crops:
 - tractors 25-40HP;
 - systems for carpet and tray seedling at concentrated scales;
 - transplanters;
 - corn seeder with fertilizer spreader combinations;
 - corn harvesters.

IV. SUGGESTIONS ON SOME COOPERATION WITH OTHER COUNTRIES

2. Machine and equipment systems for growing high-tech agriculture: concentrated production areas of vegetables and fruit:

- mini soil preparation machines;
- water saving irrigation system combined nutrient supplier;
- climate control system;
- management system for production of vegetables, flowers and fruit in green and glass houses.

3. Technology, pre-processing and storage equipment systems to improve grain quality and reduce rice loss:

- 2 - phase drying technology;
- design and produce tower dryers 15 tons / h;
- Research on technology, design, manufacture rice storage silo to suit climate conditions.

IV. SUGGESTIONS ON SOME COOPERATION WITH OTHER COUNTRIES

4. Technology and processing equipment to diversify agricultural products.
5. Machines and equipment for mechanization of industrial husbandry: processing of fresh food, silage food and other forms of synthetic fodder for livestock.
6. Technology and equipment for agricultural waste handling (rice husk, rice straw, corn cobs, sugarcane leaves) to create heat energy for semi-processing of agricultural products.
 - Producing pellet for livestock and cattle feed and fuel in rural areas and for industries;
 - Producing microbial organic fertilizer and construction materials.

