

Current Status and Future Prospects of Farm Mechanization in Thailand*

Suraweth Krishnasreni
President of the Thai Society of Agricultural Engineering
Senior Expert in Agricultural Engineering
Department of Agriculture, Ministry of Agriculture and Cooperatives
Jatuchak, Bangkok 10900 Thailand

Current Status and Future Prospects of Farm Mechanization in Thailand

Suraweth Krishnasreni

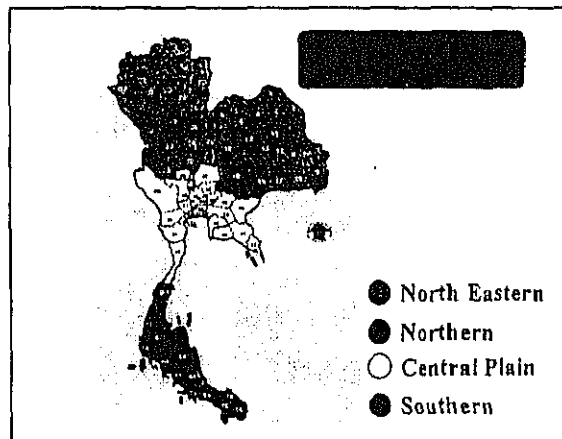
1

- 14 million hectares are rainfed
- Rice most important crop approximately 60% of total land
- Maize is the second crop 10% of total land
- other crop are rubber, cassava, sugarcane, mungbean, soybean, kenaf, groundnut and fruit crops etc.

3

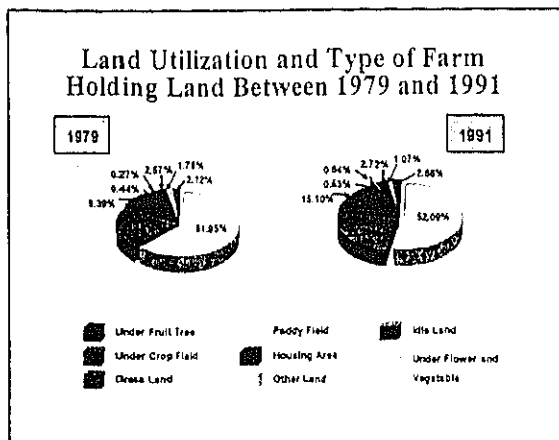
- Thailand is one of the world suppliers in agricultural production.
- 57 million population live in the rural areas
- Total area of 514,000 qu. Km of the country is under agriculture
- 17.5 million hectares of cultivated land

2

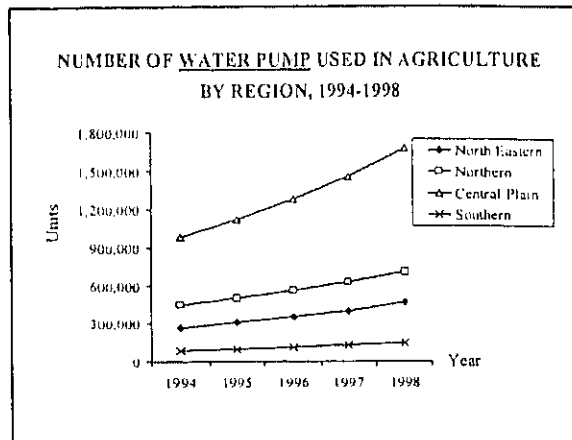


4

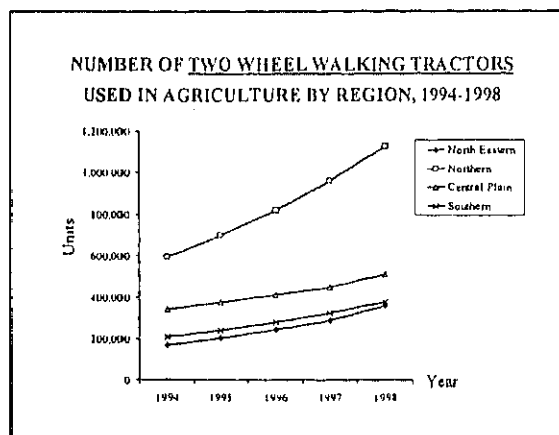
* This manuscript herein has been arranged by the Organizing Committee for publication using the hand-out materials.



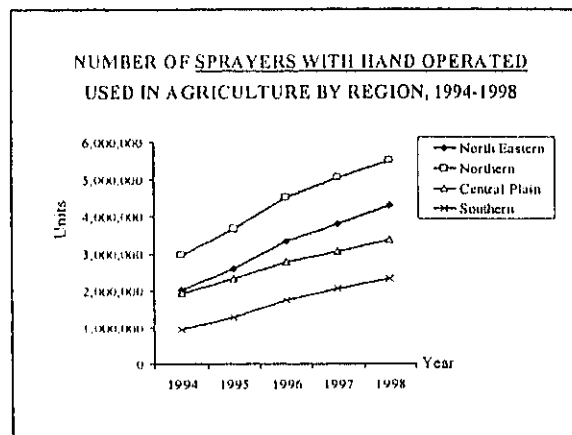
5



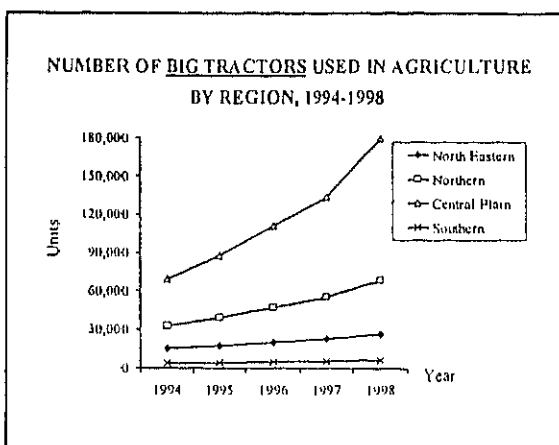
8



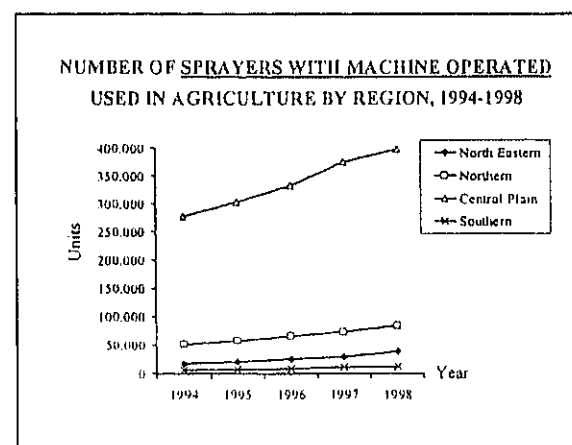
6



9

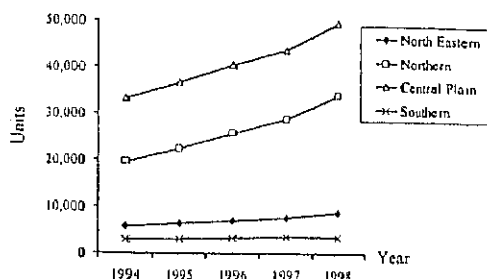


7



10

NUMBER OF THRESHING MACHINE USED IN AGRICULTURE BY REGION, 1994-1998



11

2. Development Stage (1951-1970)

- Introduction new crops to farmers; maize, cotton, watermelon, vegetable and fruit etc.
- Large size tractors were imported

14

Stages of farm mechanization development in Thailand

1. Primary Stage (1910 - 1950)
2. Development Stage (1951 - 1970)
3. Extension Stage (1971 - Present)

12

- Rice Department was established in 1954
- Agricultural Engineering Division was established in 1955.
- Large size tractor (70-80 hp) was used for land preparation



15

1. Primary Stage (1910-1950)

- In 1910 tractors were imported for demonstration and dissemination
- New pattern of agriculture was initiated by Siltporn Krisdukorn
- Mae Joe Agriculture Schools was established in Chiang Mai Province

13

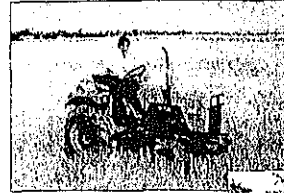
3. Extension Stage (1971-present)

- High yield variety (HYV) of rice (high yield and non-photosensitivity) was introduced by Rice Department
- Farmers in irrigated areas started planting rice 2 crops/year

16

- Two wheel tractor (powertiller) and four wheel tractor (6-25 hp) were locally made.
- Other agriculture machinery such a tillage equipment, planter, thresher, harvester, dryer were used milling machine, etc.

17



20

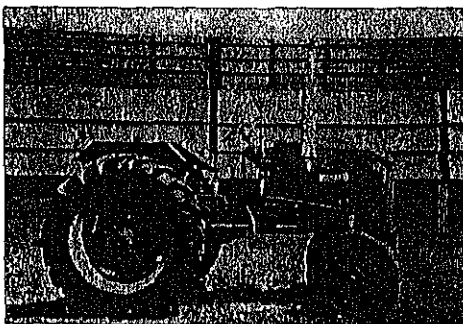


18

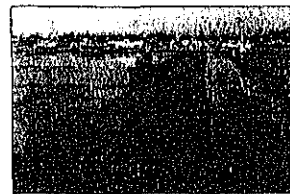
Development of Planter, thresher, harvester, dryer for rice



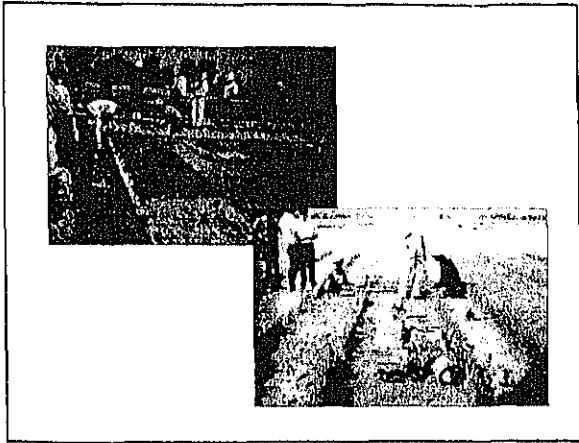
21



19



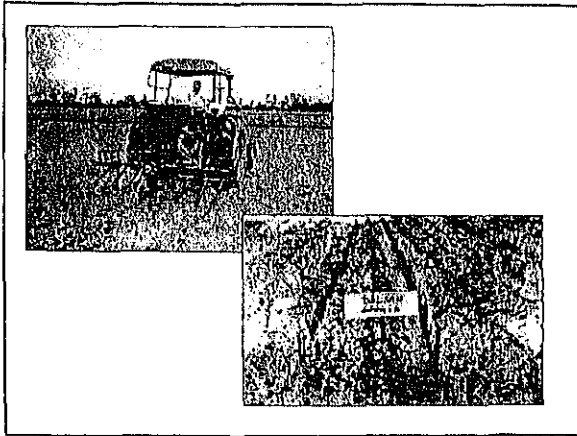
22



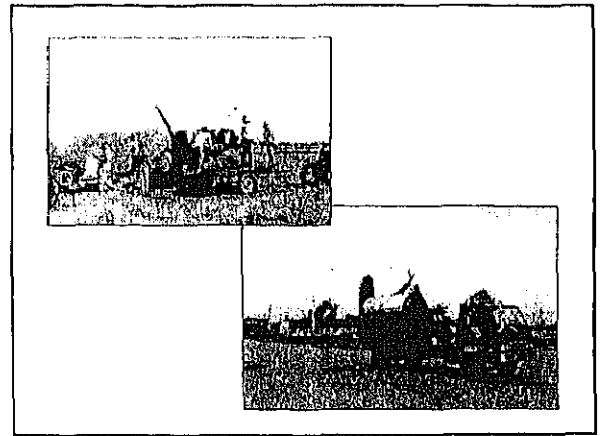
23



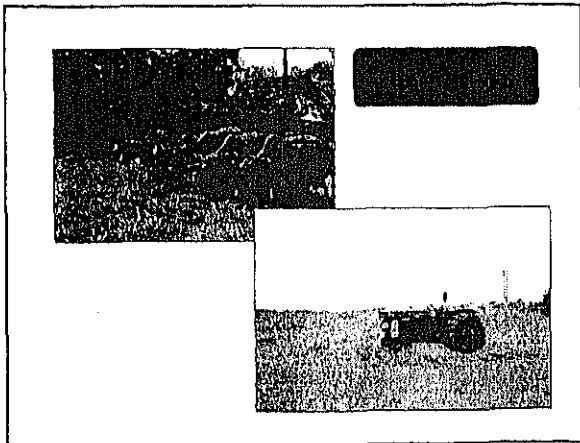
26



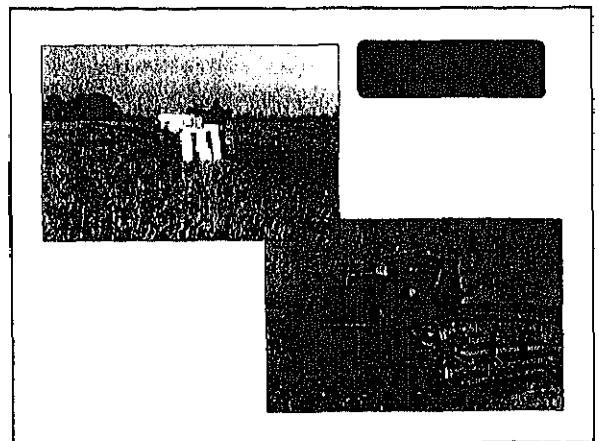
24



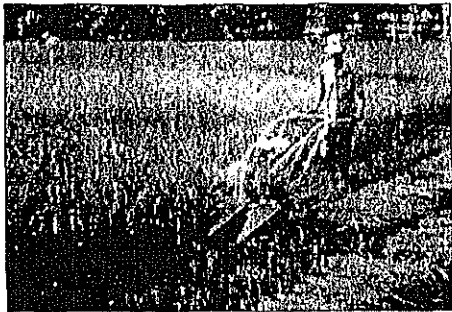
27



25



28



29

Agricultural Machinery Manufacturing Status

Manufacturers has been grouped is to 3 grouped

1) Small

- up to 10 employees
- 94 manufacturers or 40 %

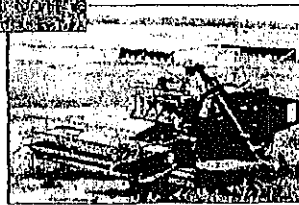
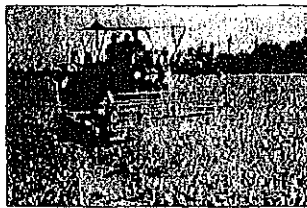
2) Medium

- more than 10 and 30 employees
- 72 manufacturers or 34 %

3) Large

- more than 30 employees
- 40 manufacturers 20 %

32

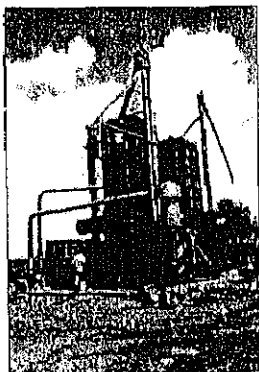


30

Extension of Agricultural Machinery



33

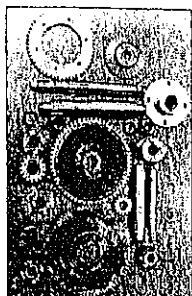
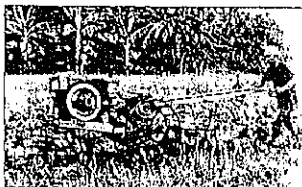


31

Standardization

Standardization of Agricultural Machines has been established in powertiller, thresher, rice mill and combine harvester etc. However, the existing role in standardization had been emphasized on standard parts of powertiller in order to reduce cost of manufacturing and spare parts. The standard parts of transmission system (gear box) has been development to be used by local manufacturers.

34



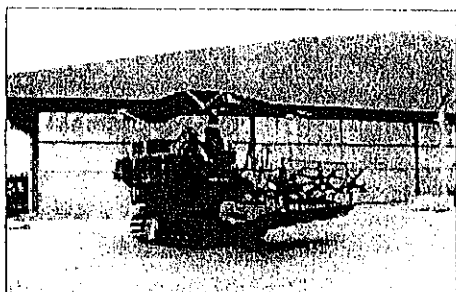
35

TSAE Activities

Annual National Seminars has been continuously conducted

- 2000 in Bangkok (hosted by TSAE)
- 2001 in Khon Kaen (hosted by Khon Kaen University)
- 2002 in Chiang Mai (hosted by Mae Joe University)
- 2003 in Bangkok (hosted by Kasetsart University)

38



36

- Hand book for Buy-Sell Agricultural Machinery was biannually published in 1999 and 2001

- Joint with JODC (Japan Overseas Development Cooperations) and Ministry of Science, Technology and environment of Training course for local manufacturers



39

Thai Association of Agricultural Engineering (TSAE)

- Established in 1975
- Members 461

37

Trend of Farm Mechanization

During this period of economic crisis, farm mechanization still has important role in improving agricultural production. The research and development aims to these activities :

1. Collaborations among researchers from government sectors, educational institutes and manufacturers are the important aspects to ensure that the research works will be continuously implemented to marketing production.

40

2. Cost reduction in manufacturing by using standard parts among different manufacturers. Standard parts will be benefit to not only cost reduction for manufacturers but also more convenient for farmers to buy spare parts. Powertiller standard parts (gear box) project is the example of a successful project. This project, supported by the Thai Research Fund (TRF), is a collaboration among AED and 13 local manufacturers.

41

3. Production value-added by improving machinery for postharvest technology and processing.

4. Researches under government fund are grouped into projects. Each project must be evaluated by the National Research Council. In the past, research proposals were evaluated by each organizations. By this new evaluation, researchers must propose the project concerning government policy.

42