

**Asian and Pacific Workshop on
Whole-Process Mechanization of
Potato Production**

Mechanization of Potato Production in Thailand

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CSAM

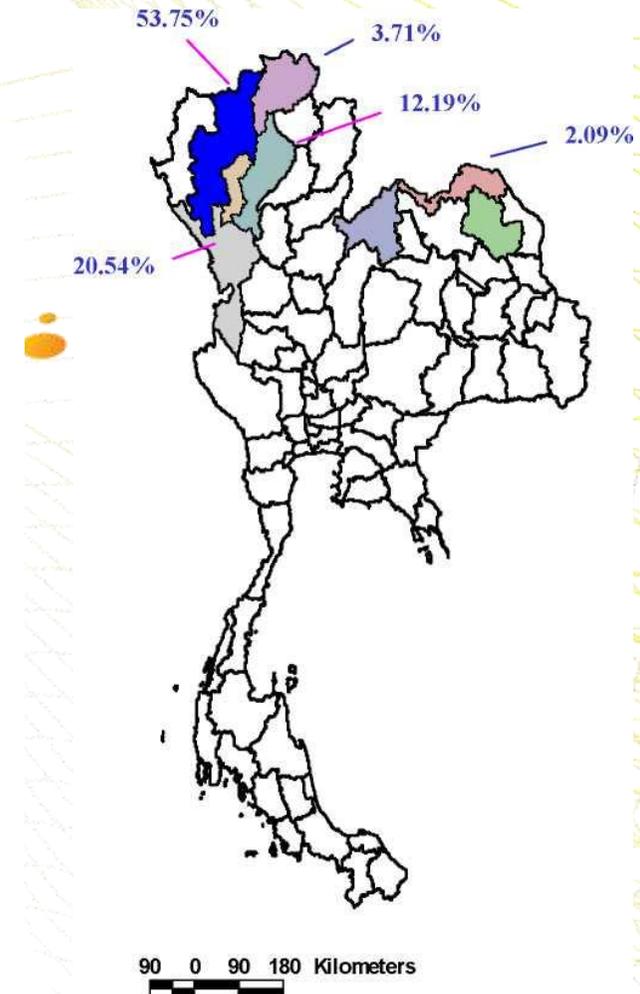
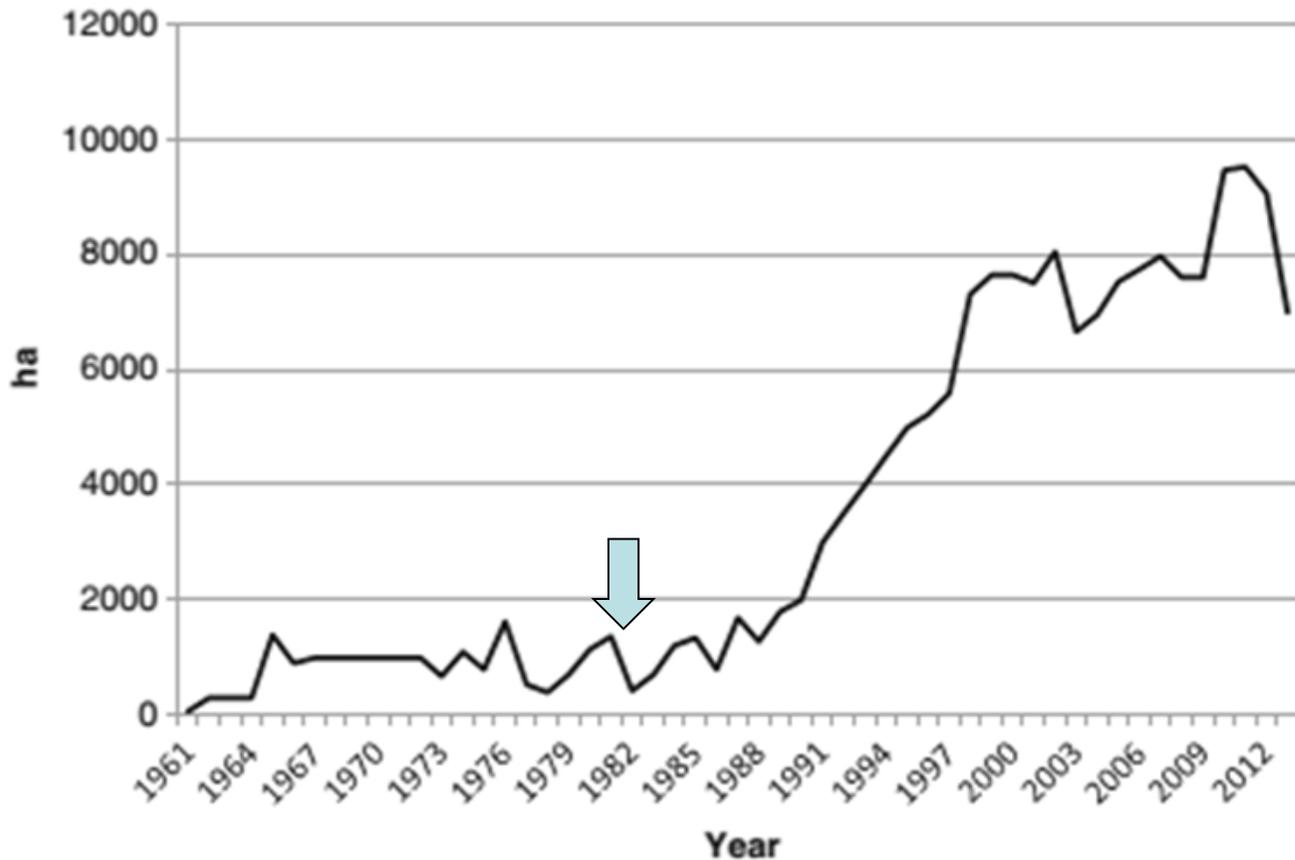


Overview of potato supply chain

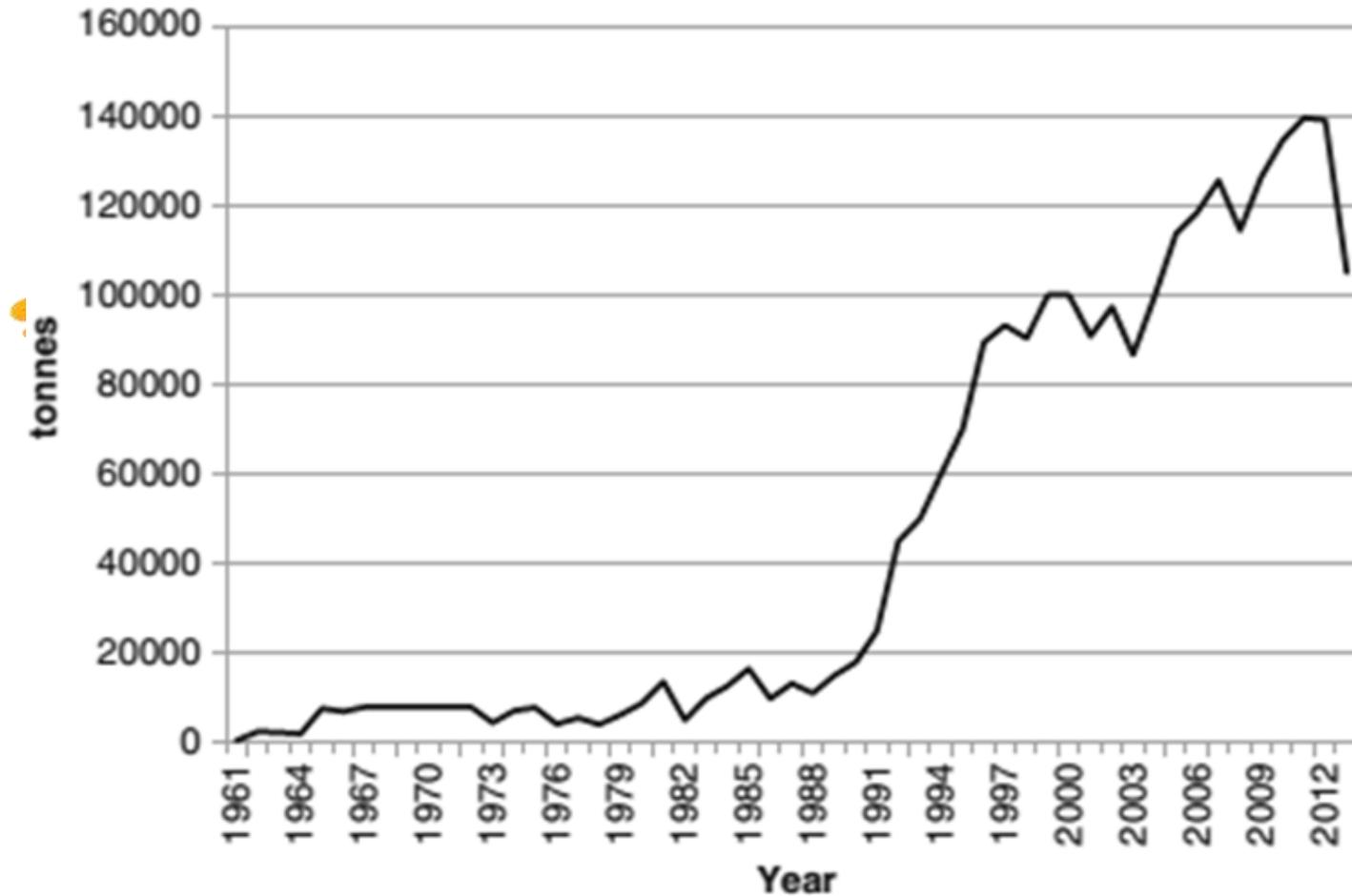
- Potato crop was introduced to highland farmers in 1960s.
- Potato not main food of the country
- An important cash crop
 - for potato chips or other snack food business
 - for tourism and foreigner in Thailand
- Thai government has implemented supply control policy up to present.
- Government allows firms to import Atlantic variety tuber seed as required for their contracted growers.

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- Almost all of the processing potatoes are grown under **contract farming system**.
 - Rapid rise in domestic demand
 - Market certainty and large absorption of processing industry encourage farmers to enter contract with business firms.

Planted areas



- About 97.6% of planted land is in the North and 53 % in Chiang Mai province
- Farm size: 0.08-1.6 ha (average 0.5-0.8 ha)
- 25-50% of potatoes has been per year



- Processing potato 90%, Table potato 10%
- Domestic production 70%, Import 30%
- Imported seed 4,500 ton/year
- Yield about 15-20 T/ha

Status of mechanization in potato production

Land preparation



Status of mechanization in potato production

Planting

I



II

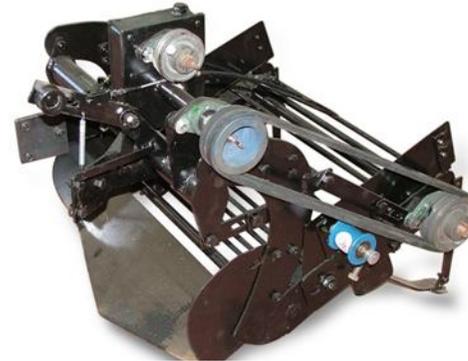
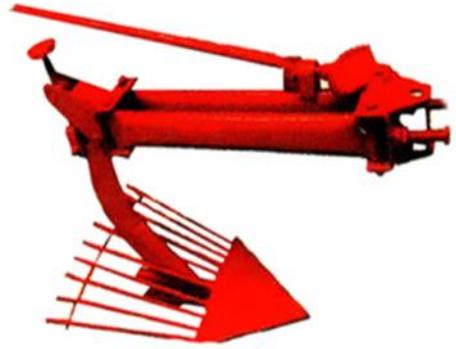


III



Status of mechanization in potato production (con.)

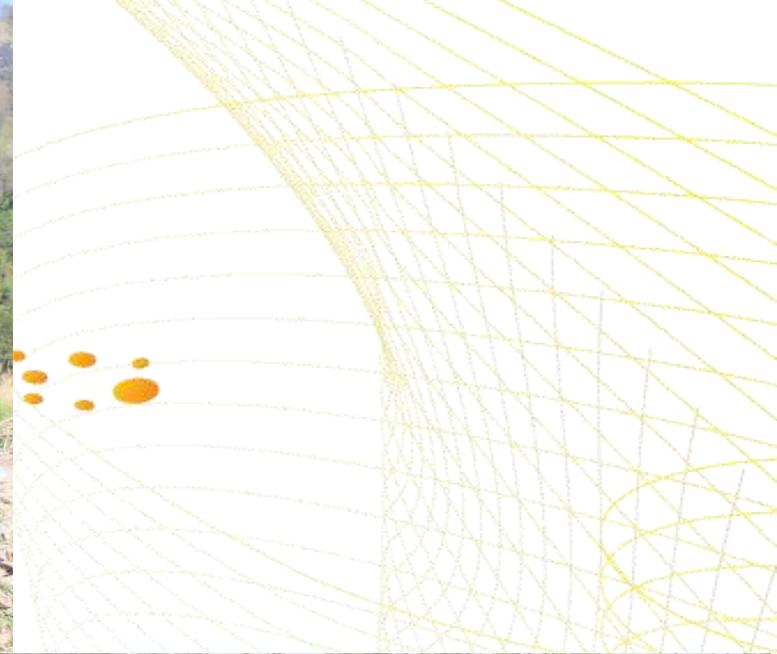
Harvesting



Harvesting (con.)



- Labor intensive is required and labor shortage faced with critical trend.



- Semi cassava combine harvester



Slide #



The need assessment of potato production mechanization in Thailand

Item	Mechanization	Rank
1	Machinery support to seed production (Lab to production seed) <ul style="list-style-type: none"> - appropriated green house - apparatuses to facilitate seedling after tissue culture process - system to control environment and irrigation - tuber grading apparatus - storage facility 	1
2	Potato planter	3
3	Facility and system management of seed storage for group of farmers	8
4	Appropriate agr. machinery for crop care	5
5	Machinery for harvesting operation	2
6	Grading facilities	4
7	Appropriate tech. for packaging and transportation	7
8	Mach. and tech. for processing and utilization of potato for farm level or farmer group level especially for substandard potato.	6

The background features a horizontal line of orange dots of varying sizes, some solid and some hollow, arranged in a slightly wavy pattern. To the right, a complex yellow wireframe structure of overlapping lines curves upwards and outwards, resembling a stylized wing or a network. The overall aesthetic is clean and modern.

Challenges and constraints faced

Challenges

1. High domestic demand and chance for exporting
2. Technology for domestic seed production have good progressed, (chance for reduce seed importing, seed cost, production cost and high income to farmers)
3. Increasing of capacity and efficiency for domestic seed production.
4. New zone for expansion of planted area is good trend to increase seed production and potato production
5. Absorb unemployed labor, strengthen housewives's group/farmer group result to sustain socio-economic development of farmer.
6. R&D for agr. machinery to support **increasing of production and solving of labor shortage problems.**

Constrains faced

1. Planted area limit the utilization of agr. Machinery
 - a) Hill planted area: small plot and deep slope
 - b) Dry season (rice and potatoes cropping system) : small plot with high ridge
2. Small farm holder and less annual used for some need machine is not economic efficient.
3. Labor shortage is trend to high and become critical for the few next coming years.
4. Climate change
5. Limited of irrigation system

Suggestions/potential contribution

1. All countries have to reduce imports of basic seed.
 - a) Improved yields of their own varieties
 - b) Special seed production and marketing of in-vitro plants, mini-tubers and different generations of tuber seed.
2. The efficient operation of a seed supply, quality control and distribution system.
3. R&D of appropriate agr. machinery for increasing production efficiency, cost reduction and labor shortage problem.

Conclusion

- Rapid rise in domestic demand
- Market certainty and large absorption of unemployment and good farm income
- Seed production is required to displace import and reduction cost
- Mechanization is required for whole process especially for seed production, planting, harvesting and storage