THAILAND

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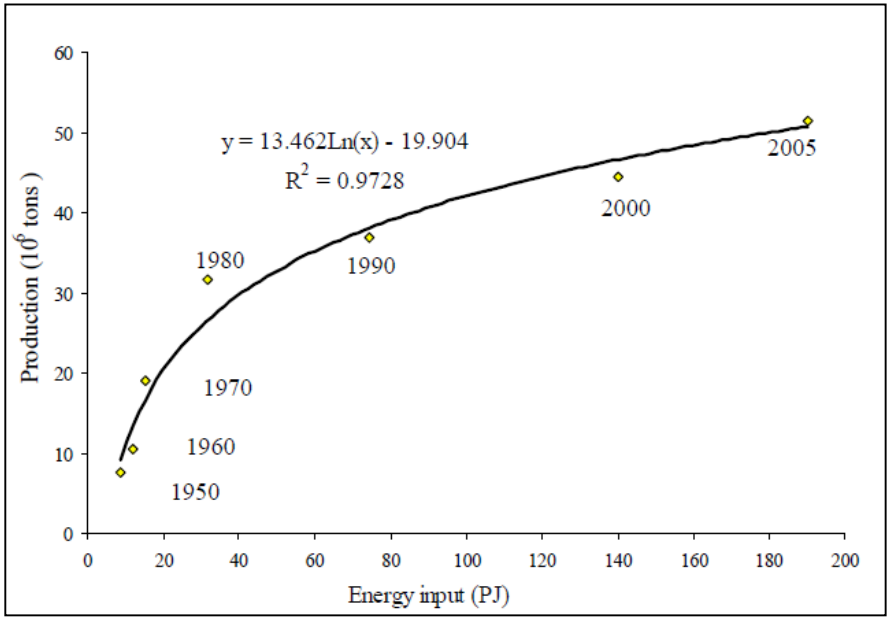
Research expert/Interest

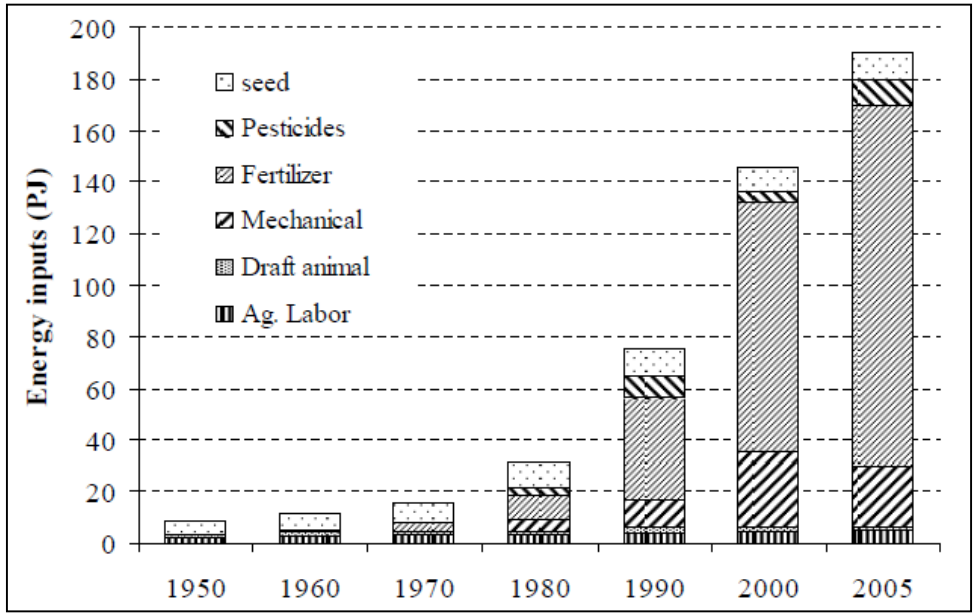
- Silk reeling
- Agricultural Mechanization
- Thai rice combine harvester
- Machinery for cassava production
- Precision farming Smart farming (Interest)
  - Data science
  - IoT
  - Variable rated machinery
  - Implement Guidance
  - Green house tech. and plant factory

Silk reeling

Agricultural Mechanization



Relationship between energy input and crop production in Thailand



Contribution of different energy inputs in crop production in Thailand

Agricultural mechanization support to “Mega Farm Policy”

- Machinery Pool
- Machinery Ring
- Testing Center
- Rental center of agr. machinery

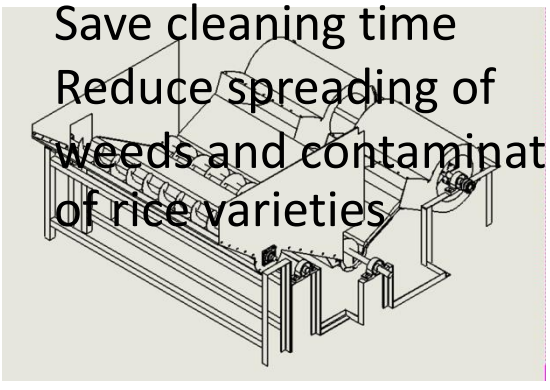
Thai-rice combine harvester

- Technical working group of Khon Kaen University for enhancement the development of Thai-rice combine harvester and reduce harvesting losses.
  - Harvesting losses has reduced from 10% to <3%
  - Manufactures has intended to standardization of production

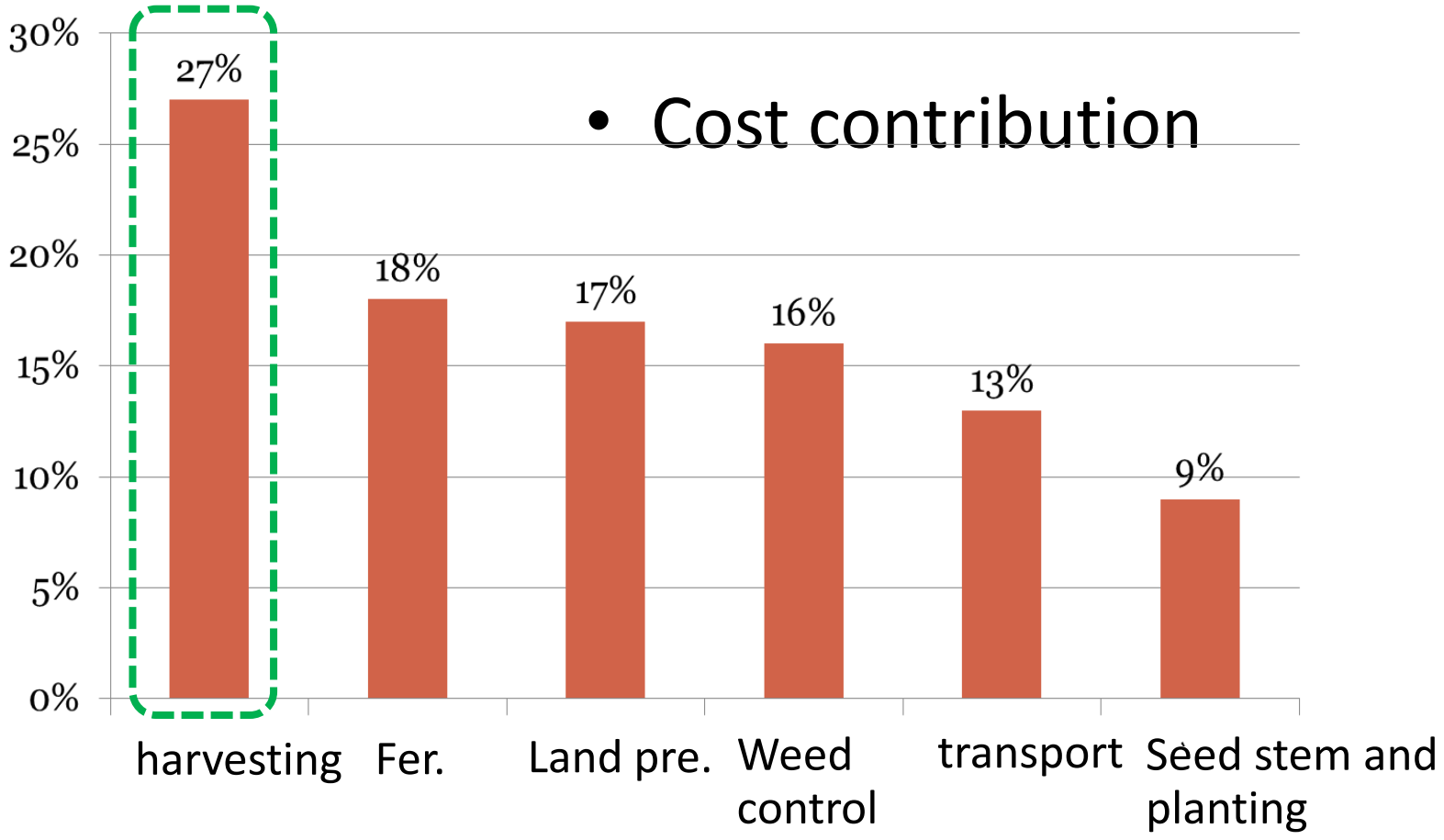


- R&D cleaning of the residue inside the rice combine harvester after harvesting


- Save cleaning time
- Reduce spreading of weeds and contamination of rice varieties



Machinery for cassava production

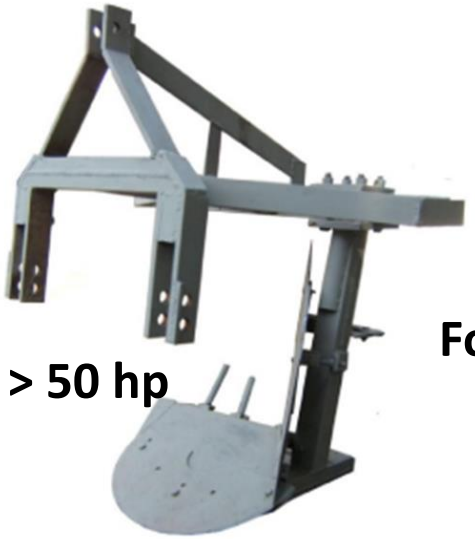


Activity in cassava harvesting system

Activity	Harvesting system	
	man	man + machine
Stem cutting	✓	✘
Pulling or digging	✓ 	✓ 
collecting	✓ 	✘
Cutting tuber from it rhizome	✓ 	✘
Conveying to truck		✘ 

Machinery for cassava production

Cassava digger



For tractor > 50 hp

For tractor 36-50 hp

- Fast penetrate to soil
- Maintain digging level
- Easy to control and reducing wear of tractor
- Reducing harvesting losses 2-5 times

DOA designed

Local shop designed

Semi-automatic cassava harvester

Selected orther machineries

Cassava stalk cutting

Cassava planter

Pilot Project on Smart Farm

Objective: Testing and disseminate smart technology for supporting of mega farm project policy and increasing farmer income

Expect Output: Smart demo farm
Increasing productivity, reducing cost, losses and solving problem on labor shortage problem

Co-operation Agencies

Government
- Departments under MOAC
- Out of MOAC (GISTDA, NECTEC, Hokkaido University)

Private company
- YANMAR
- Thai agricultural machinery manufactures

- CASSAVA
- RICE

Testing and comparison technology level
(common practice, modern, smart)
- good in mechanization
- variety selection based on crop model
- apply fetilizer based on soil fertility map
- Using of **IoT** for irrigation and data collection
- Using of drone and satellite for monitoring and crop protection as well as data collection

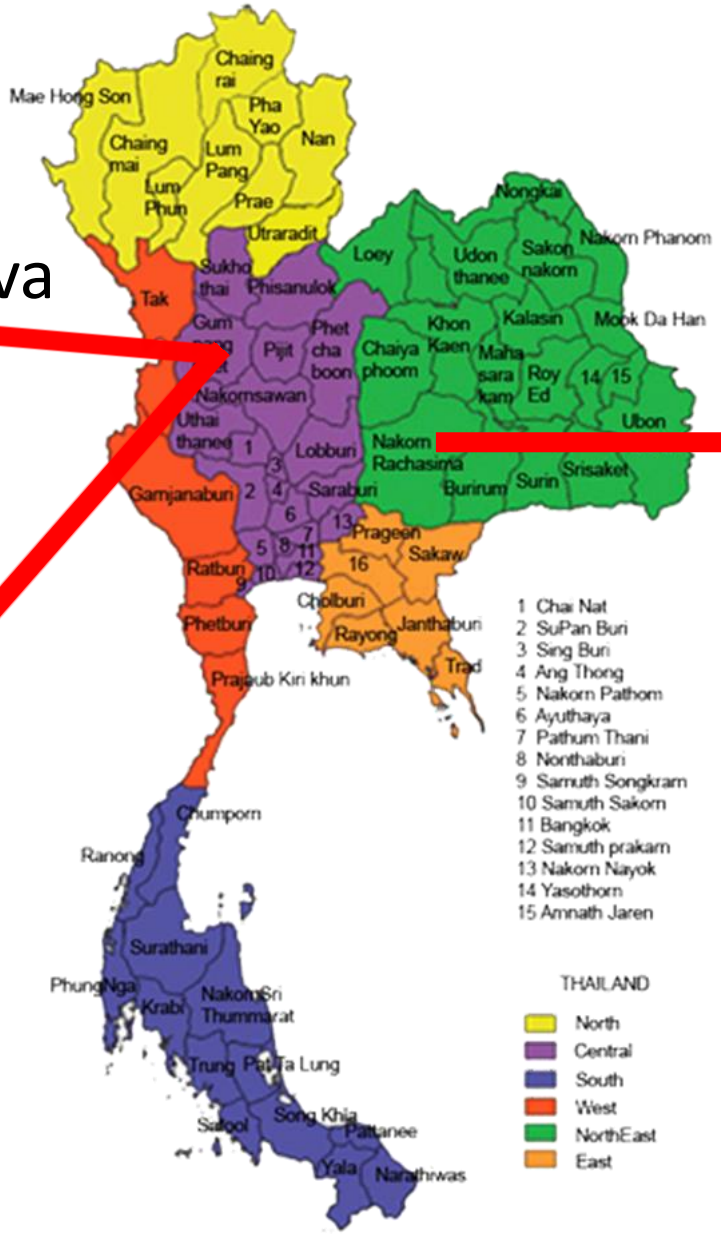
Expect outputs
- yield increasing
- reducing losses
- solving problem on labor shortage and aging or farmer.

Data will be collected and stored in platform of BIG DATA for analyzing to be smart data by using of AI and Cloud technology of Government

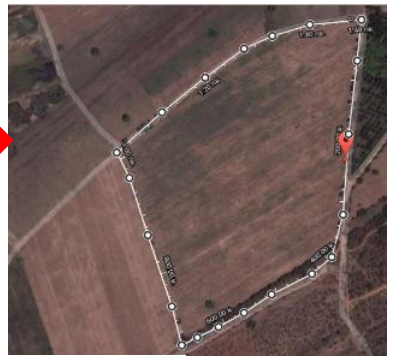
Crop and Site locations

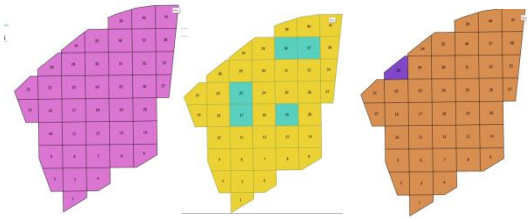
cassava

rice



cassava





Crop protection

- Chemical or bio-agent application
  - Labor based

  - Attached to tractor

  - Self propeller

Knapsack Sprayer

For horticulture

Drone

- Highly interest
- Lag in study support

Green house

Lag in technology and study support for general farmer

Thank you very much
for attention