

AGRICULTURAL MECHANIZATION & TRENDS OF AGRICULTURAL MACHINERY INDUSTRY IN INDONESIA



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Curriculum Vitae

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Education : Ph.D in University of Tsukuba Japan

: Master in Asian Institute of Technology – Thailand

: Bachelor in Universitas Gadjah Mada – Indonesia

Member of Profession Association :

- Indonesian Ass. of Engineer
- Ass. of Asian Agr. Engineering
- Ind. Society of Agricultural Engineering

Research Activities (in last 3 years) :

- Re-engineering of Bio-resources Management in Coastal Areas for Developing an Agroindustry System
- Monitoring of Hydraulic Gradient in Agricultural Land use Using Wireless Sensor Networks
- Application of Web-based Monitoring System for Plant Growing by Using Machine Vision
- Application of Neuro-Fuzzy Controller to Autonomous Agricultural Vehicle Operating on Unstructured Changing Terrain



6 Key Pointers

- STATUS OF AGRICULTURAL MECHANIZATION
- GOVERNMENT POLICY FOR AGRICULTURAL MECHANIZATION AND SUPPORT
- TRENDS OF AGRICULTURAL MACHINERY INDUSTRY
- IMPORT & EXPORT OF AGRICULTURAL MACHINE
- DISTRIBUTION SYSTEM AND METHODS OF AGRICULTURAL MACHINE
- MANUFACTURERS ARE IN COMPETITIVE RELATION TO FOREIGN COUNTRY

The Length of Indonesian Islands





Current Status of Agricultural Mechanization

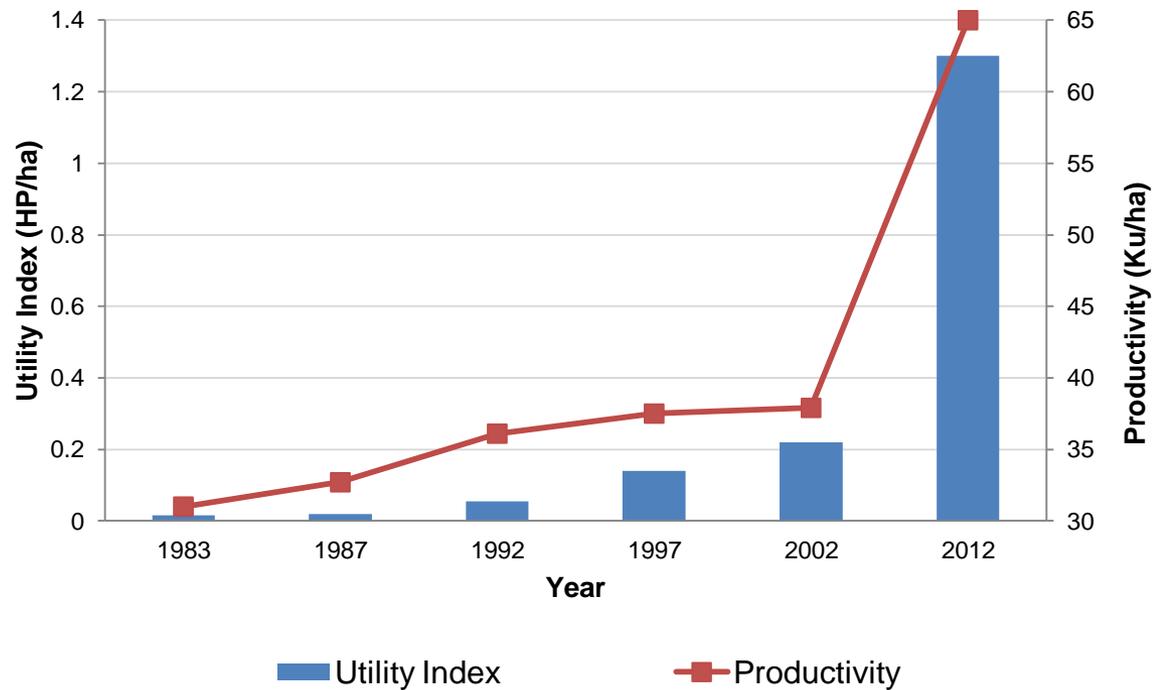


FIGURE: AGRICULTURAL MACHINERY UTILITY INDEX & RICE PRODUCTIVITY

Current Status of Agricultural Mechanization

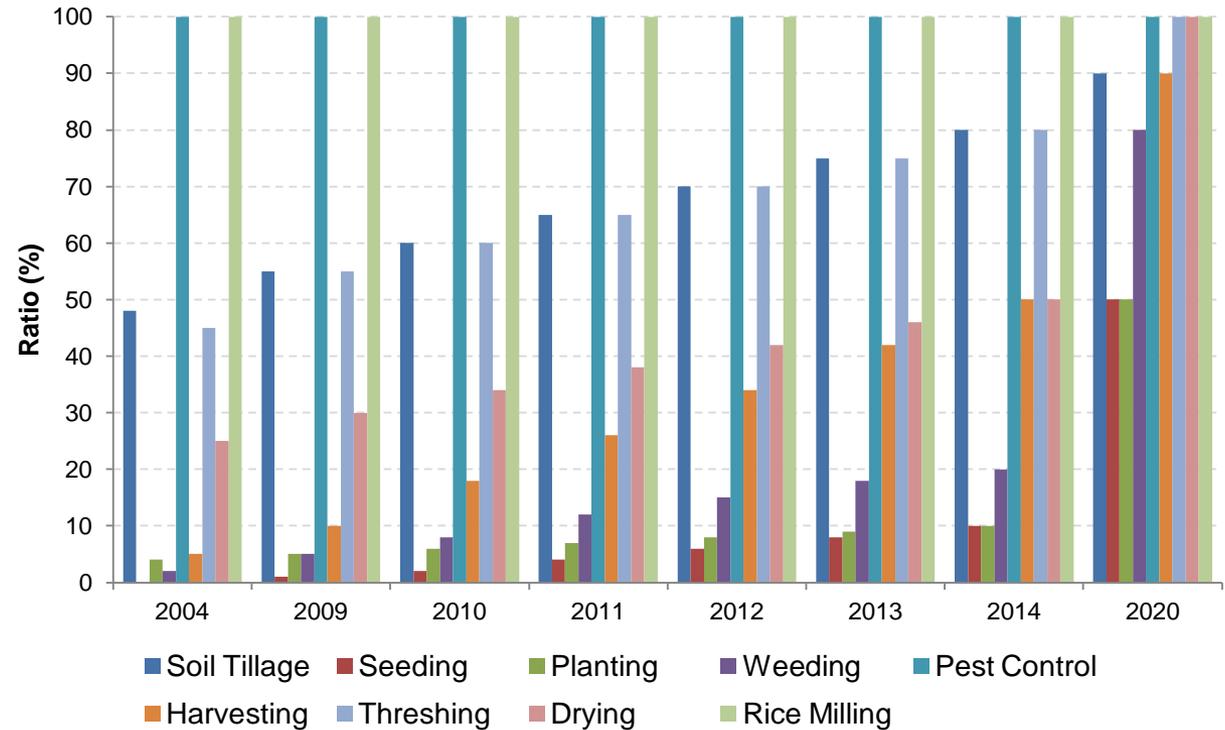


TABLE: MECHANIZATION UTILIZATION INDEX [%] FOR RICE PRODUCTION SYSTEM IN INDONESIA

Current Status of Agricultural Mechanization

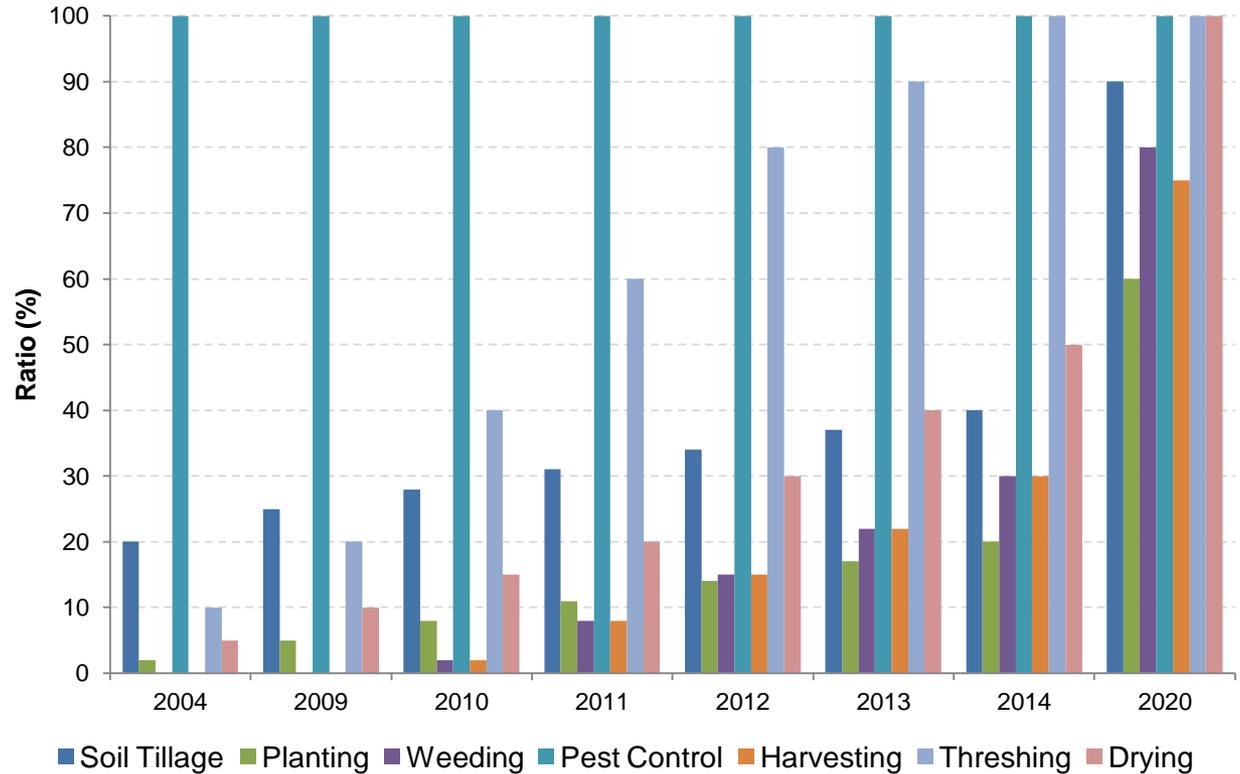
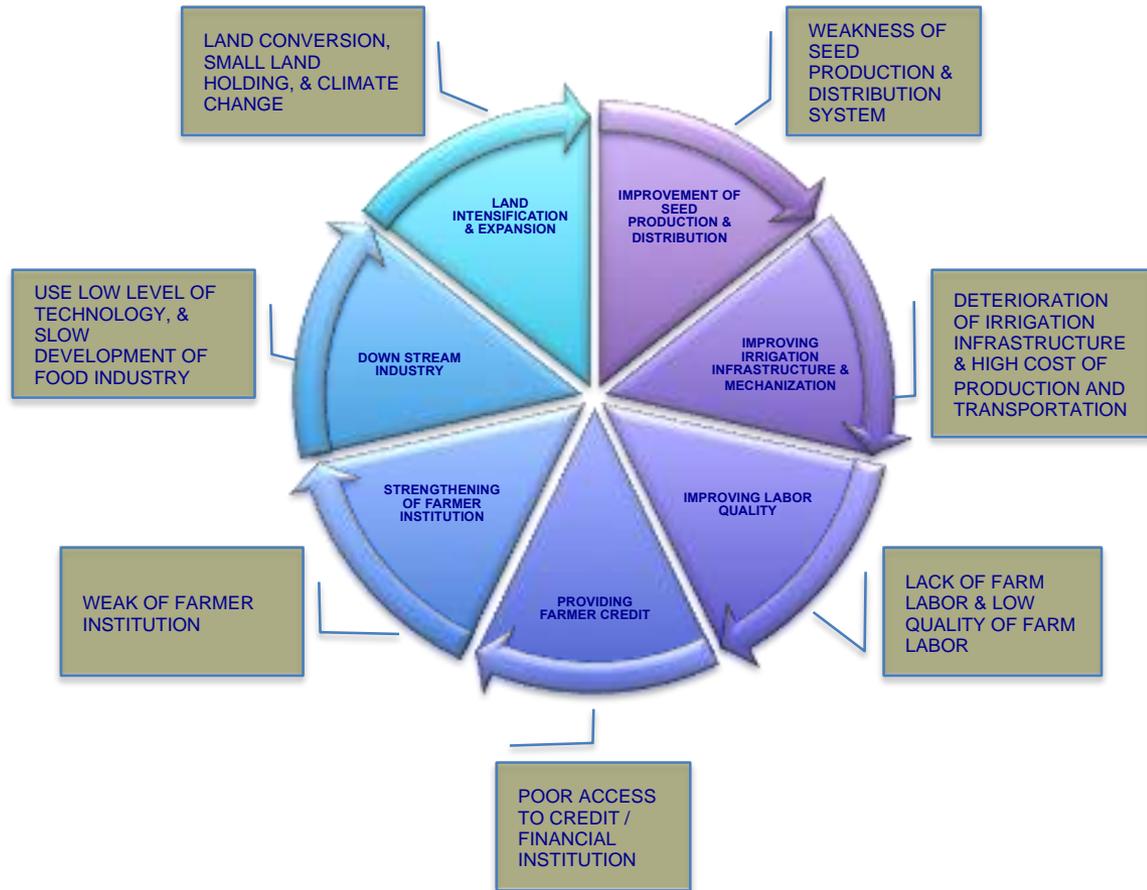


TABLE: MECHANIZATION UTILIZATION INDEX [%] FOR SOYBEAN PRODUCTION SYSTEM IN INDONESIA



GOVERNMENT POLICY FOR AGRICULTURAL MECHANIZATION & SUPPORT]

Problems in Agricultural Production





Policy for Agricultural Mechanization

PROMOTION & DISSEMINATION OF NEW TECHNOLOGY

REVITALIZATION FARMER GROUP & FARM MACHINERY SERVICE UNIT

CAPITAL SUBSIDY FOR FARMER GROUP TO PROVIDE AGRICULTURAL MACHINERY

INCREASING THE CAPACITY OF INFRASTRUCTURE

IMPROVEMENT OF NATIONAL STANDARD & CERTIFICATION OF AGRICULTURAL MACH.



Objectives of Development of Agricultural Mechanization

INCREASING CROPS PRODUCTIVITY & REDUCE POST HARVEST LOSSES

MAINTAINING & IMPROVING QUALITY OF AGRICULTURAL PRODUCT

INCREASING EFFICIENCY & PRODUCTIVITY OF AGRICULTURAL RESOURCES

PROMOTING LOCAL AGRICULTURAL MACHINERY MANUFACTURER

STRENGTHENING COLLABORATION AMONG SMALL, MEDIUM AND LARGE SCALE INDUSTRY



Strategies of Agricultural Mechanization

TO CONDUCT RESEARCH FOR AGRICULTURAL MECHANIZATION DEVELOPMENT

DESIGN & DEVELOP PROTOTYPES OF SUITABLE AGRICULTURAL MACHINERY

DEVELOP MODEL FOR AGRICULTURAL MECHANIZATION

TEST NEW PROTOTYPES & AGRIC. MACHINERY WHICH WILL BE MARKETED IN INDONESIA

TO CONDUCT RESEARCH FOR POLICY FORMULATION ON AGRIC. MECH. DEVELOP.



Financial Support for Agricultural Mechanization

THREE STRATEGIES TO ACCELERATE THE DEVELOPMENT OF AGRICULTURAL MECHANIZATION IN INDONESIA ARE;

1. POLICY AND GOVERNMENT REGULATION SUPPORT.
2. INSTITUTIONALIZATION OF FARMERS AND BUSINESS SERVICES.
3. SUPPORTING FACILITIES, INFRASTRUCTURE AND FUNDING.

VARIOUS FORMS OF FINANCING SCHEMES BY GOVERNMENT, INCLUDING:

1. AGRICULTURAL FINANCING SERVICES SCHEME.
2. COMMUNITY DIRECT AID FOR AGRICULTURAL INVESTMENT INCENTIVES.
3. DOWN PAYMENT ASSISTANCE FOR PROCUREMENT OF AGRICULTURAL TOOLS AND MACHINERY.
4. BUSINESS CAPITAL REINFORCEMENT FOR GROUPS.



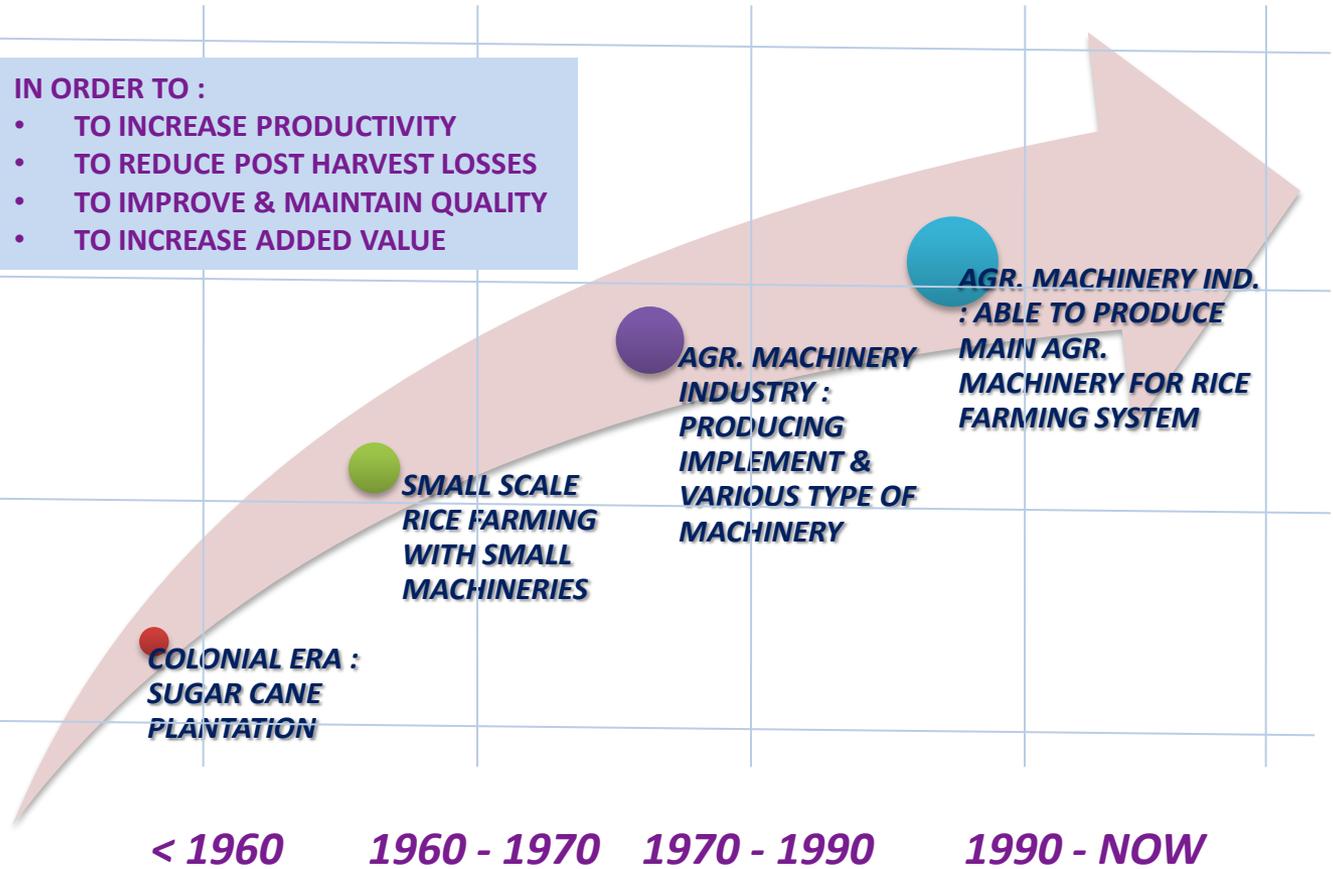
[TRENDS OF AGRICULTURAL MACHINERY INDUSTRY]

Trends of Agricultural Machinery Industry



IN ORDER TO :

- TO INCREASE PRODUCTIVITY
- TO REDUCE POST HARVEST LOSSES
- TO IMPROVE & MAINTAIN QUALITY
- TO INCREASE ADDED VALUE



Supply of Agricultural Machinery

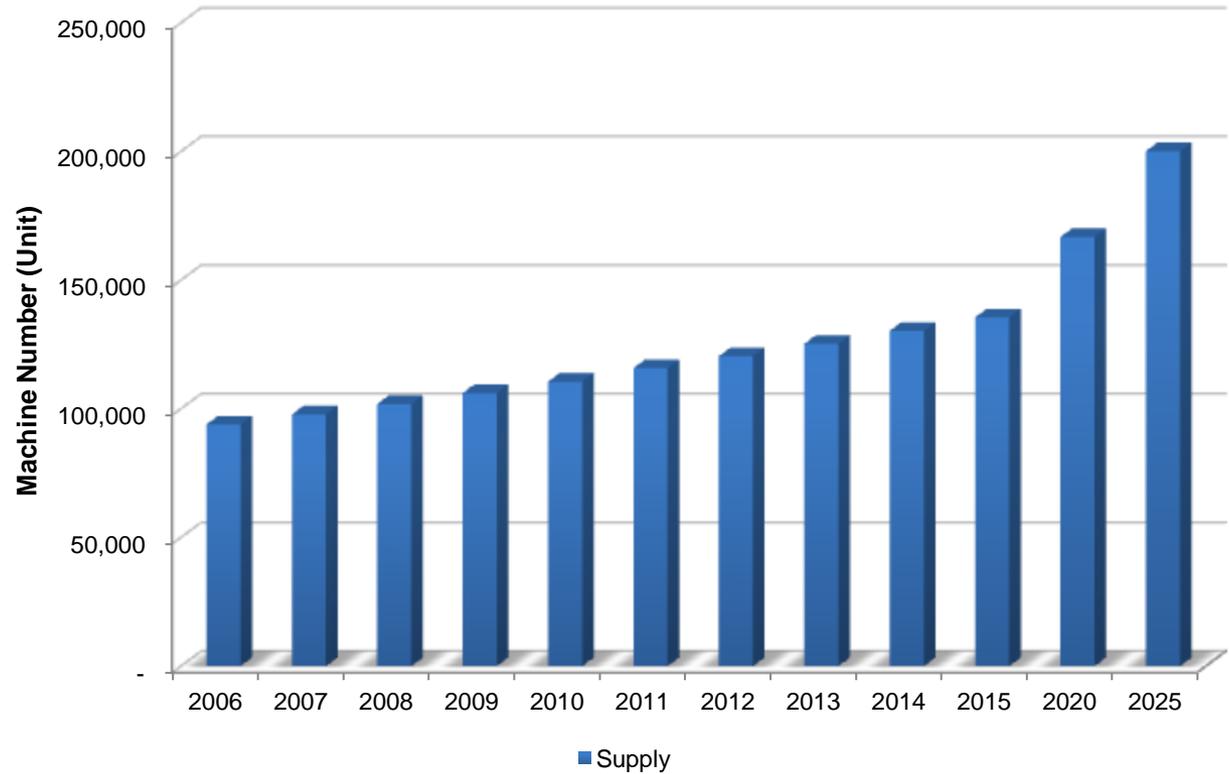


TABLE: ANNUAL SUPPLY OF 2 WHEEL TRACTOR AND THE PROJECTION IN YEAR 2015, 2020 & 2025



Profile of Agricultural Machinery Industry

- NUMBER OF AGRICULTURAL MACHINERY MANUFACTURER :
 - LARGE SCALE : 3
 - MEDIUM SCALE : 30
 - SMALL SCALE : 1063
- CATEGORY OF THE OWNERSHIP OF COMPANY :
 - PRIVATE OR LOCAL
 - STATE-OWNED
 - JOINT VENTURE
- LEVEL OF TECHNOLOGY : LOW & MEDIUM TECHNOLOGY
- TARGET : LOCAL MARKET AND EXPORT

**SOURCE : 1. INDONESIAN CENTER FOR AGRICULTURAL ENGINEERING RESEARCH AND DEVELOPMENT
2. INDONESIAN AGRICULTURAL MACHINERY ASSOCIATION**



[IMPORT & EXPORT OF AGRICULTURAL MACHINE]



Profile of Market of Agricultural Machinery

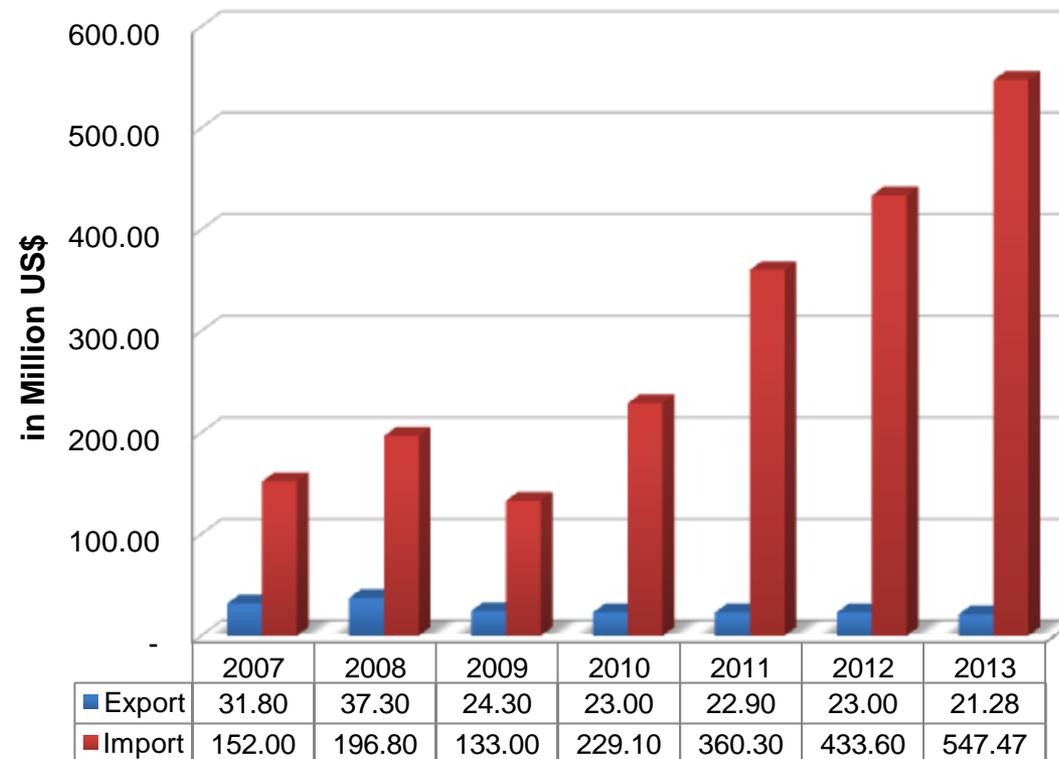


FIGURE: EXPORT – IMPORT OF AGRICULTURAL MACHINERY IN INDONESIA



Profile of Market of Agricultural Machinery

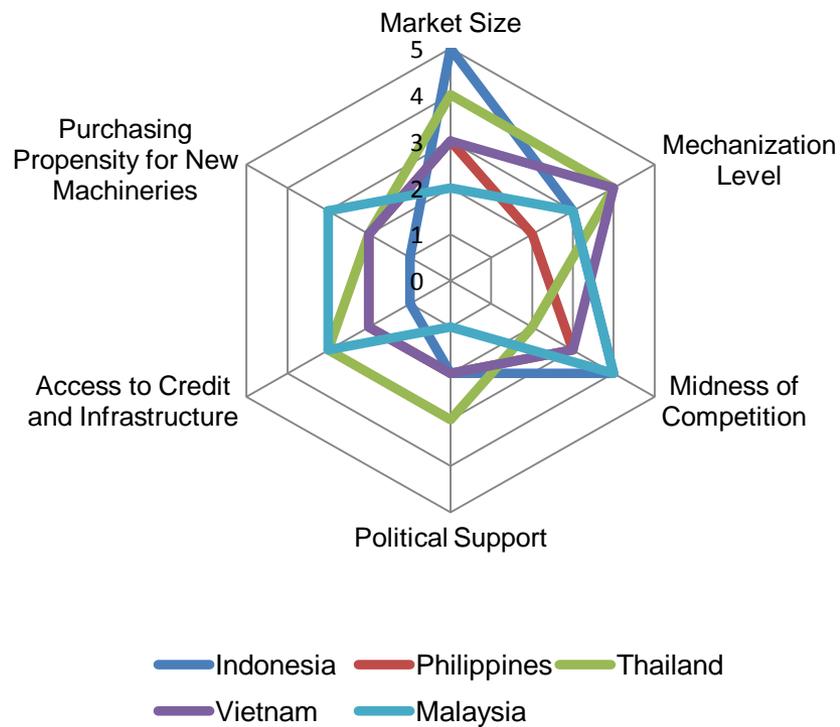


FIGURE: COMPARISON OF MARKET SIZE AND OTHER PARAMETERS RELATED TO AGRICULTURAL MACHINERY IN ASEAN COUNTRIES

Source : Tao Lin, Rogelio Bakels, and Luca Borroni, 2013.



Requirement of Agricultural Machinery

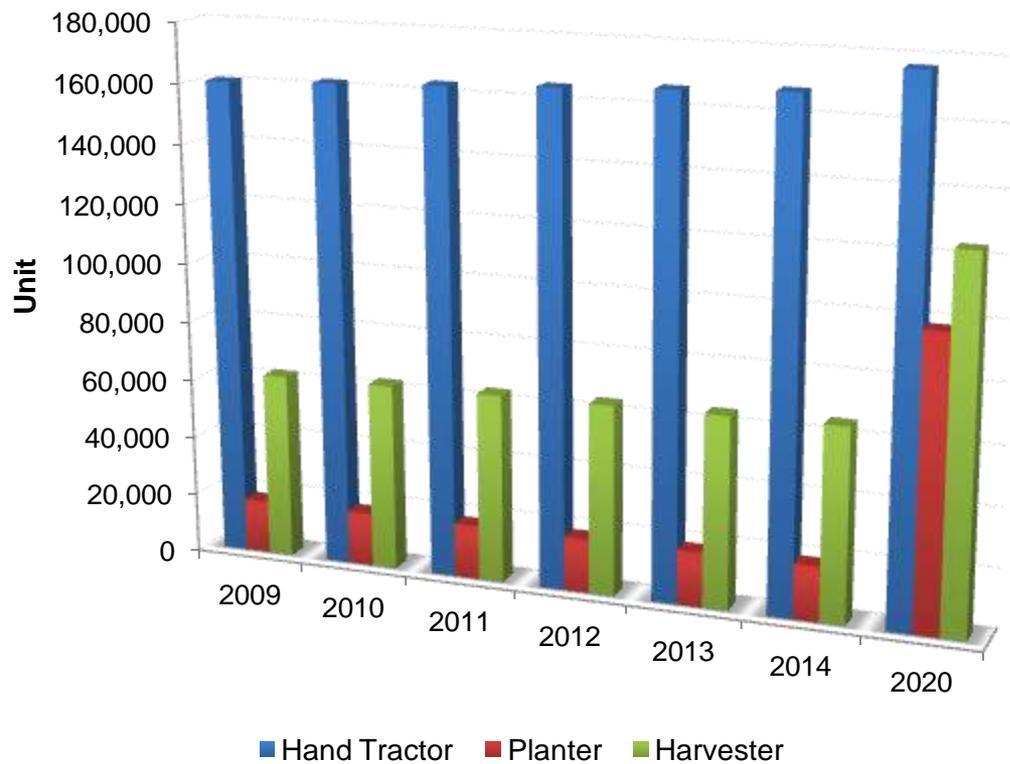


FIGURE : ANNUAL DEMAND OF AGRICULTURAL MACHINES IN RICE PRODUCTION SYSTEM



[DISTRIBUTION SYSTEM & METHODS OF AGRICULTURAL MACHINES]

Distribution System & Methods of Agricultural Machinery



SOME CONSIDERED FACTORS TO DISTRIBUTE AGRICULTURAL MACHINERY :

1. AREAS OF CROP PRODUCTION CENTERS FOR HAND TRACTOR, PUMP WATER AND RICE TRANSPLANTER, WHILE CULTIVATOR AND CHOPPER FOR THE AREAS OF HORTICULTURE CENTERS AND ANIMAL HUSBANDRY CENTERS.
2. THE SPECIFIC LOCAL CONDITIONS THAT ARE TECHNICALLY MEET OPERATIONAL REQUIREMENTS OF AGRICULTURAL TOOLS AND MACHINERY.
3. THE AREAS WHOSE SATURATION LEVEL IS STILL LOW AND HAS A STRONG COMMITMENT TO SUPPORT THE PROGRAM INCREASING AGRICULTURAL PRODUCTION.

Distribution System & Methods of Agricultural Machinery



1. AGRICULTURAL TOOLS AND MACHINERY ASSISTANCE FOR EACH PROVINCE ARE DISTRIBUTED BY SUPPLIERS APPOINTED BY THE MINISTRY OF AGRICULTURE.
2. THE DISTRIBUTED AGRICULTURAL TOOLS AND MACHINERY MUST BE IN GOOD CONDITION, PERFECTLY ASSEMBLED, HAVE PASSED A RUNNING TEST AND COME WITH MANUAL INSTRUCTIONS FOR USE AND MAINTENANCE.
3. IF THE AGRICULTURAL TOOLS AND MACHINERY ARE NOT USED BY THE RECIPIENTS, THE DEPARTMENT OF AGRICULTURE AT DISTRICT / MUNICIPALITY LEVEL MAY RELOCATE SUCH TOOLS AND MACHINERY TO THE OTHER GROUPS, EITHER WITHIN THE SAME SUBDISTRICT OR CROSS-REGIONS.



[MANUFACTURERS ARE IN
COMPETITIVE RELATION TO
FOREIGN COUNTRY]



Example of 4 Indonesian Manufacturers in Technical Joint-venture



NO	LOCAL COMPANY	FOREIGN COMPANY
1.	CV. KARYA HIDUP SENTOSA (KHS)	KUBOTA COOPERATION – JAPAN
2.	PT. EBARA INDONESIA	EBARA COOPERATION – JAPAN
3.	PT. KUBOTA INDONESIA	KUBOTA COOPERATION – JAPAN
4.	PT. YAMINDO	YANMAR COOPERATION – JAPAN



No	Name of Company	Name of Agricultural Machine	Annual Capacity of Production [unit/year]
1.	CV. Karya Hidup Sentosa	Hand Tractor 4-Wheel Tractor Power Thresher Water Pump Transplanter Diesel Machine Cast Iron Spare Parts	82,500 - - - - - - -
2.	PT. Agrindo	Spayer Water Pump Turbine Pump Hand Tractors Mini Tractors Medium Tractors Maxi Tractors Implement Rubber Roll Paddy Thresher Soybean Thresher Paddy Husker Paddy Separator Paddy Dryer Rice Polisher Rice Milling Unit Paddy Cleaner	100,000 2,000 2,000 1,500 1,500 - - 1,500 800,000 500 500 1,200 150 300 600 750 150
3.	PT. Yamindo	Mini Tractors Hand Tractors Rice Huller Rice Polisher Paddy Thresher	200 10,000 2,000 2,000 2,000
4.	PT. Kubota	Agricultural Tractor Diesel Engine Component of Diesel Engine	100,000 75,000 -
5.	CV. Guntur	Irrigation & Industrial Pump Rice Polisher & Rice Huller Gasoline Engine Generator	12,000 1,300 10,000 2,250



...thank you...