

GOVERNMENT POLICY AND STRATEGY IN PROMOTING AGRICULTURAL ENGINEERING DEVELOPMENT IN INDONESIA



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Presented at International Seminar on Restructuring and Strengthening Research and Development for Agricultural Engineering, Beijing, 27-28 April 2007

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INTRODUCTION

OBJECTIVES OF FARM MECHANIZATION IN Indonesia

INCREASE PRODUCTIVITY

REDUCE POST HARVEST LOSSES

INCREASE ADDED VALUE

QUALITY PRESERVATION

ADDITION TO THAT OBJECTIVES

INCREASE THE WELFARE OF HOUSE HOLDS

CREATE EMPLOYMENT OPPORTUNITY AT THE RURAL

→ NEED COMPREHENSIVE STRATEGIES of
AE DEVELOPMENT

Agriculture Revitalization

Increase food security systems

increase food production, land development, irrigation efficiency, optimum use of farm machinery and post harvest losses reduction

Develop agribusiness

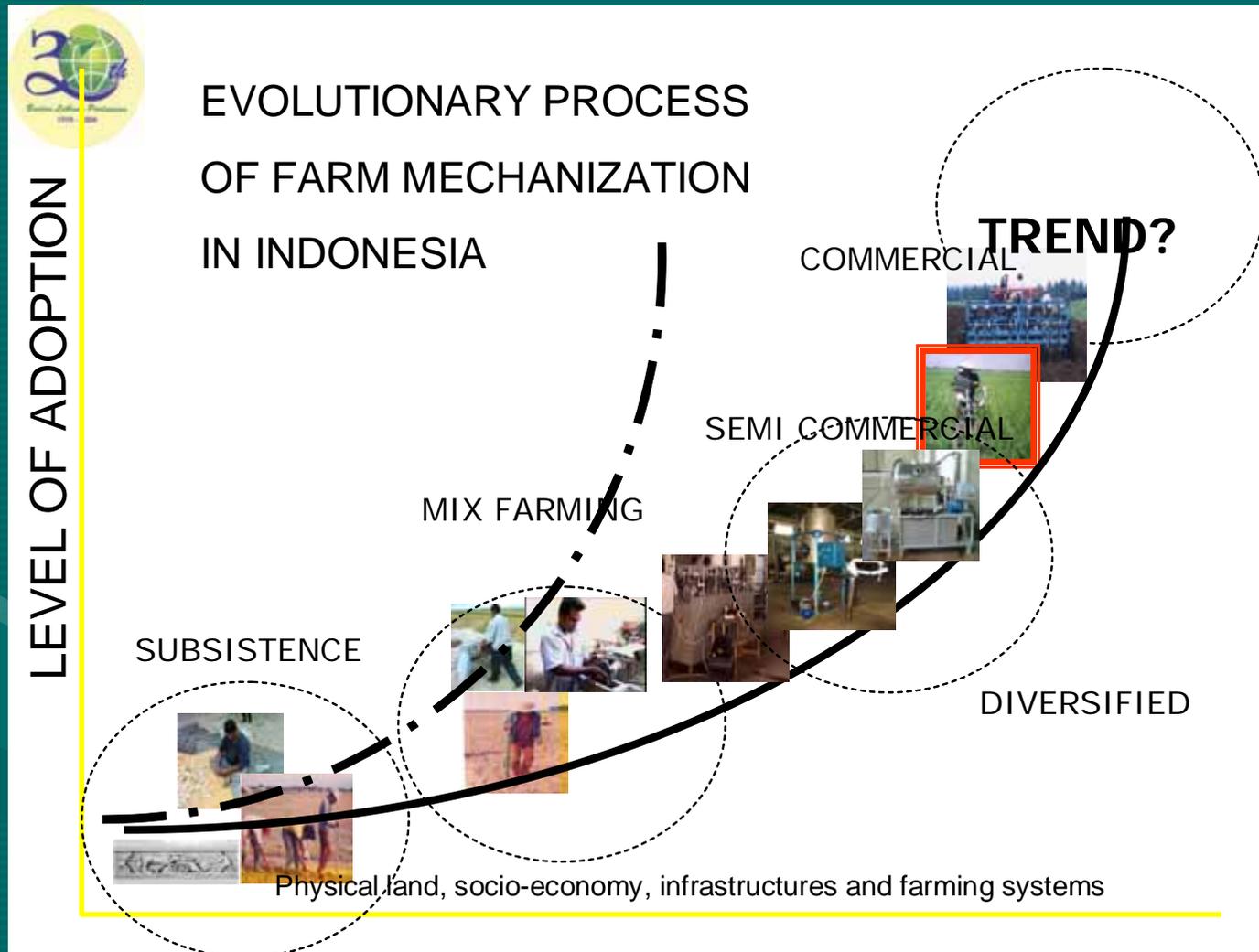
diversification, post harvest development, quality achievement, development of rural industry

Increase farmer's welfare

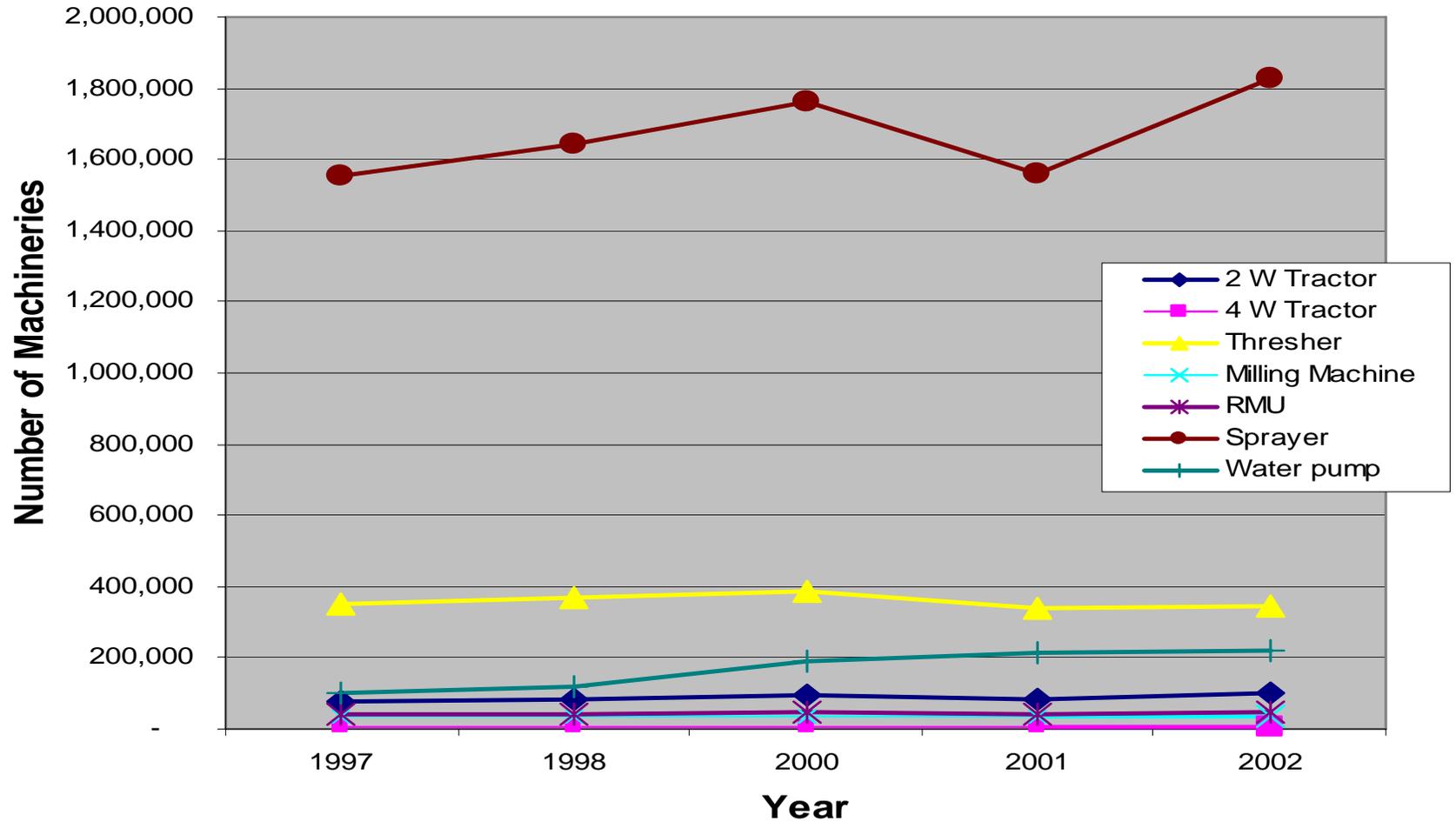
farmers and rural empowerment through pro poor development, strengthen and enhancement

CURRENT STATUS OF AGRICULTURAL ENGINEERING

Farm Mechanization Evolutionary Process



Number of Machinery Used in Indonesia



Status of agricultural machine use (rice) in several spectrum of farming system in Indonesia

No	Ativity	Traditi- onal (%)	Mechani- zation (%)	Remark
1.	Land preparation	62	38	Capacity 2 wheel tractor 40 ha /unit/yr
2.	planting	98	2	Manually or Traditional tool
3.	weeding	100	0	Manually or Traditional tool
4.	Pest and desease control	0	100	Hand sprayer or power sprayer
5.	irrigation	50	50	Pump Cap. 30 ha/unit/yr
6.	harvesting	95	5	Traditional tool
7.	Thresing	79	21	Power thresher cap. = 60 ha/unit/yr
8.	drying	85-90	10-15	Dryer cap. = 360 ton/unit/yr
9.	Milling	0	100	Cap.rice milling industry >97% in 1996. assump now > 100% in several areas.

Imports and exports

1999 to 2002 the growth of agricultural machinery export (pre harvest, harvest, and post harvest machinery) tended to decrease.

While the value of agricultural machinery import at the same period tended to increase.

CONSTRAINTS AND CHALLENGES

Constraints

- **Socio Economic Constraints**
 - Small and fragmented, high investment, low purchasing ability, low productivity
- **Technical Constraints**
 - Poor after sales, lack of training, poor extension service, less farm infrastructures (workshops and farm road)
- **Institutional Constraints**
 - Limited facility for credit, farmers association, dealership at the remote area, less accommodate farmer's need, less cooperation among AE institutions

Challenges

Possibilities to increase agriculture area through extensification program

Possibilities to increase cropping intensity through intensification program

High losses, low quality and low added value of agricultural products

Development of renewable bio-energy

POLICY, STRATEGY AND PROGRAM

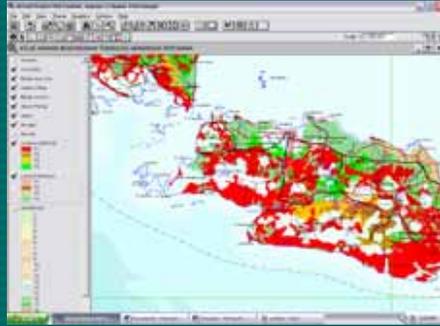
Development Policy

Policy for agricultural engineering development in Indonesia have been setup are directed to be able to create :

1. Increase of **productivity** and **efficiency** of agricultural resources
2. Increase of **quality** and **added value** of the agricultural products and its by products
3. Opportunity development of **local agricultural machinery industry** to produce better quality of the machines which are suitable to local conditions and purchase ability of farmers
4. Opportunity **collaboration** among small, medium and big scale industry

Development Strategy

Currently, appropriate strategy has been established in promoting agricultural engineering development is



selective (*suited to the local or region conditions: Physical land, socio-economic, infrastructures and farming systems aspects*)

Progressive (*levels of technology implemented are always gradually improved from low into higher level*)

Participative (*involving the active participation of agribusiness society, including consumers/farmers, related industry and producers and financial institutions*)

Development Programs

Objectives and Targets

1. Develop a **model/systems technology transfer** (adoption) from research institutions to local industries and end users
2. Strengthen **agricultural engineering institutions** which includes national level, provincial level as well as farm level, government and private institutions
3. Strengthen **research and development** program
4. Develop **better communication and strengthen collaboration** among agricultural engineering institutions
5. Provide adequate **technical knowledge and number of human resource**
6. Develop **financial support systems** which are accessible by the farmers.

Action Programs

1. Supporting infrastructures development
2. Improving accesibility credit schemes available for farmers
3. Strengthening capacity building of agricultural engineering institutions, national and provincial level, goverment and private institutions, research, development and extention
4. Strenghtening the use of locally made agricultural machinery
5. Improving procurement, testing and evaluation procedure and selections systems in order to insure quality of agricultural machinery used
6. Training and extention which cover operation, repair and maintainance
7. Development of human resources related to development of agricultural engineering especially in research and extension
8. Strengthening collaboration among agricultural engineering institutions in the field of research, development and dissemination of technology

Research and Development of Agricultural Engineering Program

Five main subprograms



1. Research and development for increasing productivity and efficiency of agricultural system



2. Research for improving or preserving quality and creating added value of agricultural products and its waste



3. Research for technology development of renewable alternatif energy in agriculture



4. Dissemination of research results and

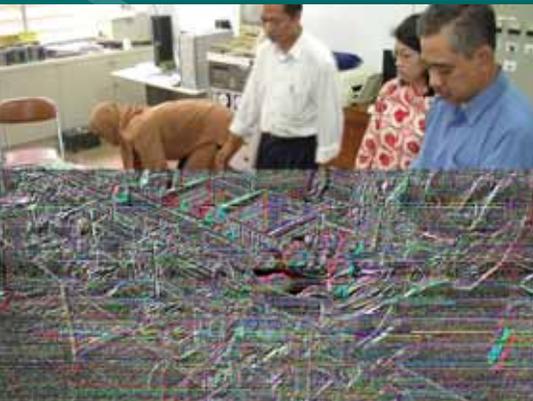
5. Study for establishing and improving policy and strategy of agricultural engineering development.



- In order to meet the stakeholders needs of agricultural engineering, setting priority of activities in research program have been done through **intensive communication** with stakeholders. Workshops, seminars and survey are organized each year before setting the priority of activities



- In order to accelerate technology adoption, the concept of **participative dissemination** has been established and implemented for the last two years



a visitor plot for introducing technology has been developed through active participation of agricultural engineering stakeholders at national as well as provincial level both government and private sectors. The field performance of the technology is evaluated in term of technical, economic, and social acceptability.

THANK YOU