

COUNTRY REPORT INDONESIA



The Second Session of the Technical Committee Meeting of APCAEM

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I. INTRODUCTION

- Transformation process from traditional to modern agriculture
- Modern Agriculture
 - Efficiency
 - High Productivity
 - Product Quality
 - Added Value
 - Market Oriented
- AGRICULTURAL ENGINEERING
 - Secure Production Process
 - Suitable farm mechanization system



General Situation of Indonesia Agriculture

- # Total Population : 220 million, > 60% live in Java Island with only 7% of total land area, the most fertile land with good irrigation facilities.
- # > 50% active population engage in agriculture
- # Contribution of Agriculture GDP is only 17%
- # Industrial GDP is about 25% with only 11% laborers
- # Ratio between agricultural income and industrial income is 1: 6



II. AGRICULTURAL ENGINEERING AND MANAGEMENT

- OBJECTIVES OF FARM MECHANIZATION IN Indonesia
 - INCREASE PRODUCTIVITY
 - REDUCE POST HARVEST LOSSES
 - INCREASE ADDED VALUE
 - QUALITY PRESERVATION

IN ADDITION TO OBJECTIVES

- INCREASE WELFARE OF HOUSE HOLDS
- CREATE EMPLOYMENT OPPORTUNITY AT THE RURAL

Agriculture Revitalization



■ Increase food security systems

- increase food production, land development, irrigation efficiency, optimum use of farm machinery,

■ Develop agribusiness core program

- diversification, post harvest development, quality assessment, development of rural industry

■ Increase farmer's welfare

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

EVOLUTIONARY PROCESS OF FARM MECHANIZATION IN INDONESIA

LEVEL OF ADOPTION or SUITABLE MECHANIZATION LEVEL

TREND?

COMMERCIAL

SEMI COMMERCIAL

MIX FARMING

SUBSISTENCE

DIVERSIFIED



Physical land, socio-economic, infrastructure and farming systems



Selection of Agricultural Mechanization Level (Technology)

- The physical land, socio economic, infrastructures and farming systems conditions drive in selection of mechanization level for sustainable development.
- Improper selection → premature mechanization development (inappropriate technology development)
- Come up with :
A map of suitable mechanization for Indonesia

Adoption and Utilization of Farm Mechanization



No	Type of works	Manual (%)	Mechanization (%)
1	Land Preparation	62	38
2	Transplanting	100	0
3	Weeding	100	0
4	Spraying	0	100
5	Harvesting	99	1
6	Threshing	70	30
7	Drying	85	15
8	Milling	0	100

* Based on the number of machinery used in 2002

CONSTRAINTS AND CHALLENGES

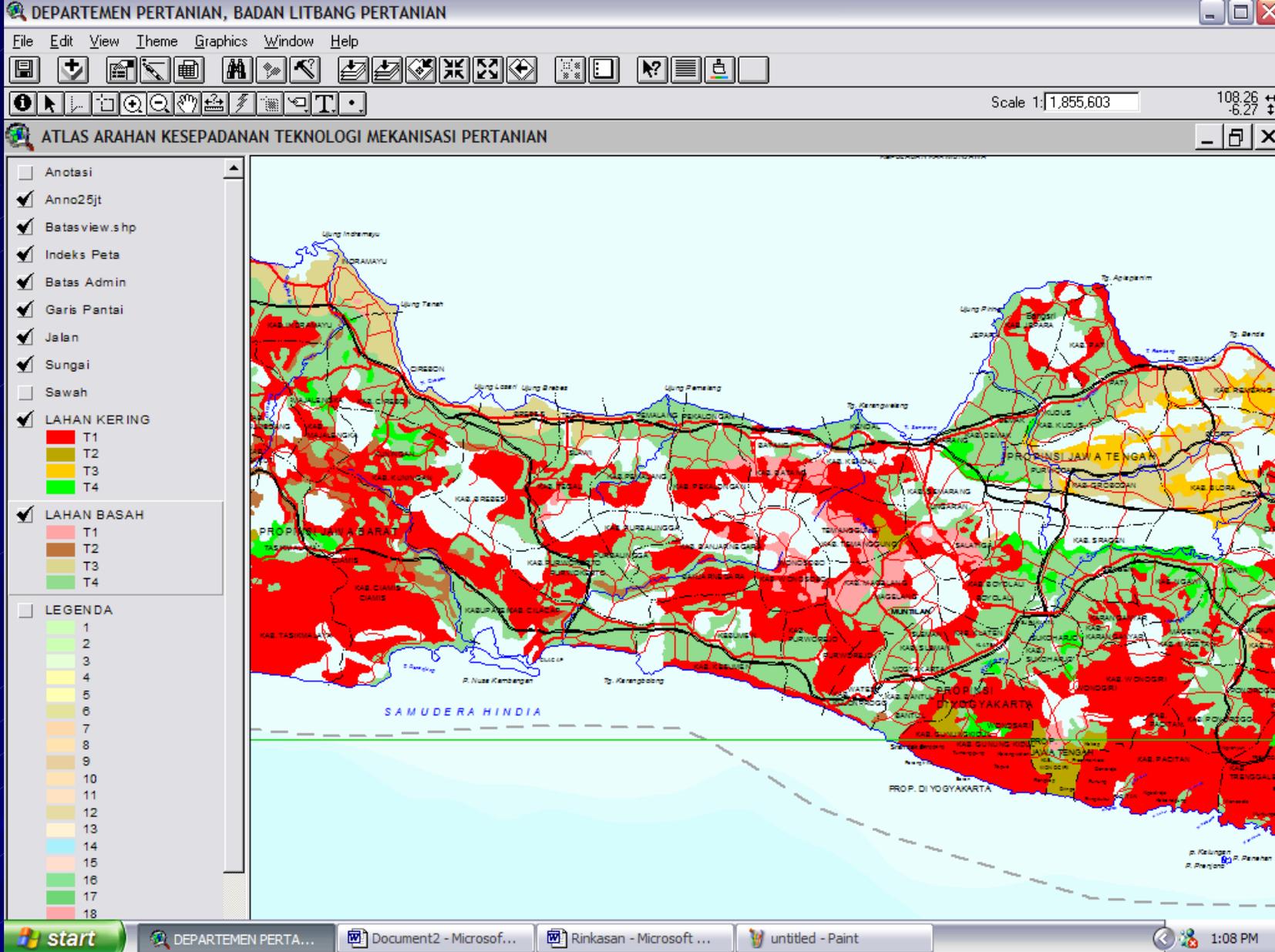


- Socio Economic Constraints
 - Small and fragmented, high investment, low purchasing ability
- Technical Constraints
 - Poor after sales, lack of training, poor extension service
- Institutional Constraints
 - Limited facility for credit, farmers association, dealership at the remote area



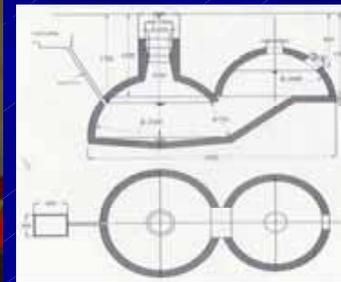
Strategy for Mechanization Development

- Proper selection of mechanization technology level
- Improve R&D Programme through intensively develop communication with *stakeholders* → *Formulate the stakeholders needs*
- Participative Dissemination of technologies developed
- Improve Quality and Standards of Farm Machinery used → through establishment regulations for testing and evaluation of agr. Machinery and development of testing Laboratory competency → Testing Laboratory of ICAERD has been accredited based on ISO 17025: 2005.
- Developing International Cooperation



A Map of Suitable Level Mechanization for Central Jawa

Prototypes Developed by Indonesian Center for Agricultural Engineering Research and Development Prospectively adopted and used by farmers (2005)





III. FOOD CHAIN MANAGEMENT

- Covers traditional post-harvest fresh handling and processing of agr. Products.
- During 2005-2006 :
 - Development of simple orange grader.
 - Study on improvement of quality and losses reduction of rice processing.
 - Introducing prototypes of vacuum frying into small food industry.
 - Introducing processing of agr. Product and its waste in a comprehensive concept of CLS (chopper, technology for producing organics fertilizer and quality improvement of main product)



IV. AGRO-ENTERPRISE DEVELOPMENT

- **Focused on** : Increase technical capability of small agricultural machinery enterprises (artisans, black smith and workshops)
- **Number of the small enterprise: 200-300 enterprises**
- **During 2005-2006**
 - Training on Design and development of power thresher, attended by 40 enterprises, conducted in two provinces.
 - Training on design and development of rice field power weeder, attended by 40 enterprises, conducted in two provinces.



V. CONCLUSION

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 - QUALITY PRESERVATION
 - INCREASE WELFARE OF HOUSE HOLDS
 - CREATE EMPLOYMENT OPPORTUNITY AT THE RURAL
- Farm Mechanization Systems in Indonesia is an evolution process that closely linked to the development of infrastructure, institutional arrangement, industrial dev', technological dev', economic dev, and cultural changes.
- Government should play as a facilitator in providing a favorable conditions for mechanization progress, based on the market mechanism
- The future mechanization in Indonesia will still dominated by small farm systems, small food and agricultural machinery industry.
- The post harvest mechanization systems will be strongly needed for improvement capability and capacity of small food industry.and more rapidly be adopted since it directly increase with the added value.



Cont.....**CONCLUSION**

- Technical training and guidance are still needed to improve capability of artisans.
- Increasing competency of NIs in conducting testing and evaluation is also important in order to ensure quality of machinery used by farmers local and imported).
- One of strategy in accelerating adoption of technology developed is through *participative dissemination* in which NIs and agr. Mech. Stakeholders work hand in hand in conducting dissemination.