# ENABLING ENVIRONTMENT FOR CUSTOM HIRING OF AGRICULTURAL MACHINERY IN INDONESIA

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**International Forum on Agricultural and Bio-system Engineering**
**Serpong, 9-11 September 2014**

# OUTLINE

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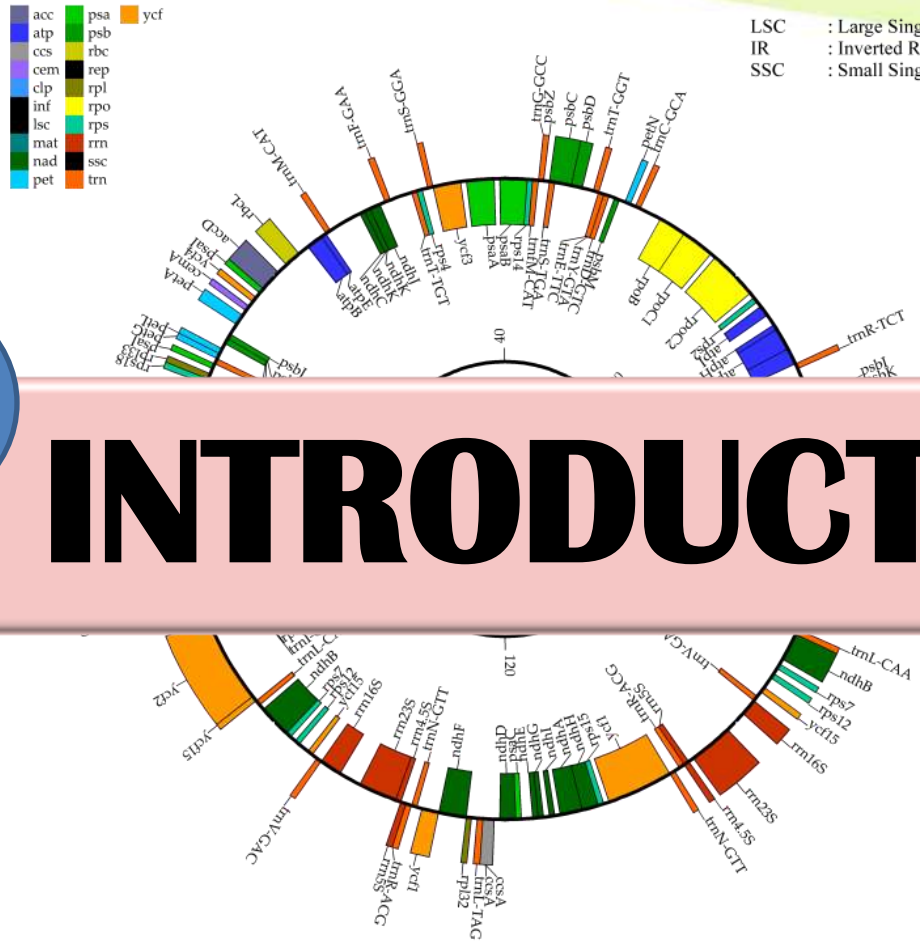
III • DEVELOPMENT PROBLEMS AND CONSTRAINTS

IV • FUTURE DEVELOPMENT

VI CONCLUDING REMARKS

# 1 INTRODUCTION




Peta Genom Kloroplast Kelapa Sawit

# Custom Hiring for Rental Services of Agricultural Machineries - CHRSAM

- Rural economic institution engaged in services to optimize agricultural machinery utilization, both for the farmer's group and the others to get profit

- Guideline for development of CHRSAM →MOA Decree 25/Permentan/PL.130/5/2008

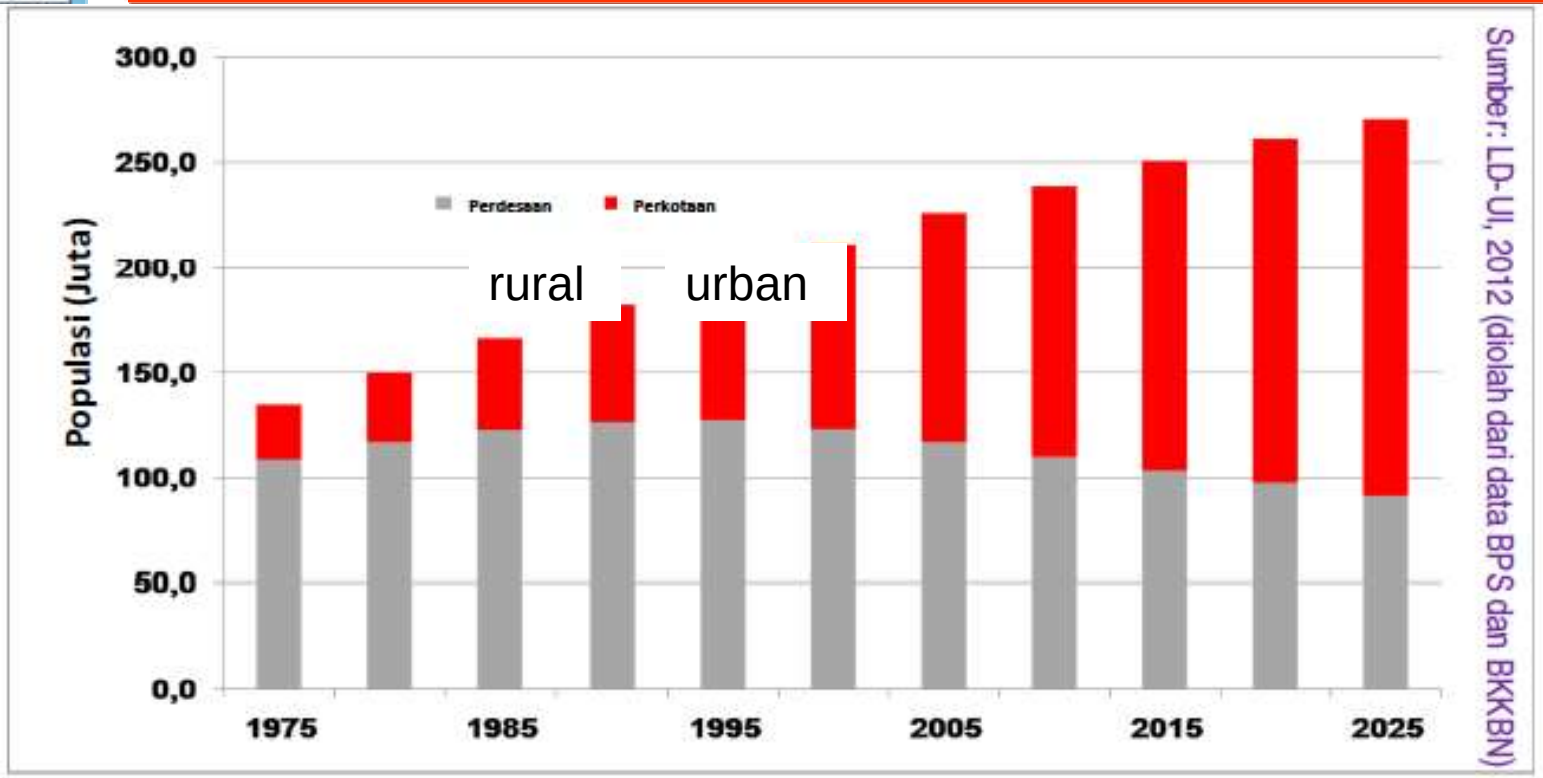
# Why needs CHRSAM Development

- The importance of agricultural machineries application in agricultural production ➔ food security and bio-energy
- Complement to agricultural labor ➔ due to social-cultural dynamic
- Small size of farmland ownership (0.4-0.9 ha/farmer household)
- Lack of education, skills and capital of farmers
- In-efficient utilization of agricultural machineries if owned by farmers
- Support agricultural modernization

# The Role and Support of Agricultural machineries on Agricultural Development

- Improving productivity and production ➔ through pre-harvest machineries application
- Increasing good diversification, improvement of quality and added value ➔ through post harvest and processing machineries application
- Improving efficiency and farm income ➔ through pre & post harvest machineries application
- Developing rural agribussiness and employment oppurtunities
- Reducing agricultural production cost

# Agricultural Labor Trend




- Less labor shortage in rural area from 1985, mechanization in Indonesia has been developed.
- Prefence of young people to work in agricultural sector

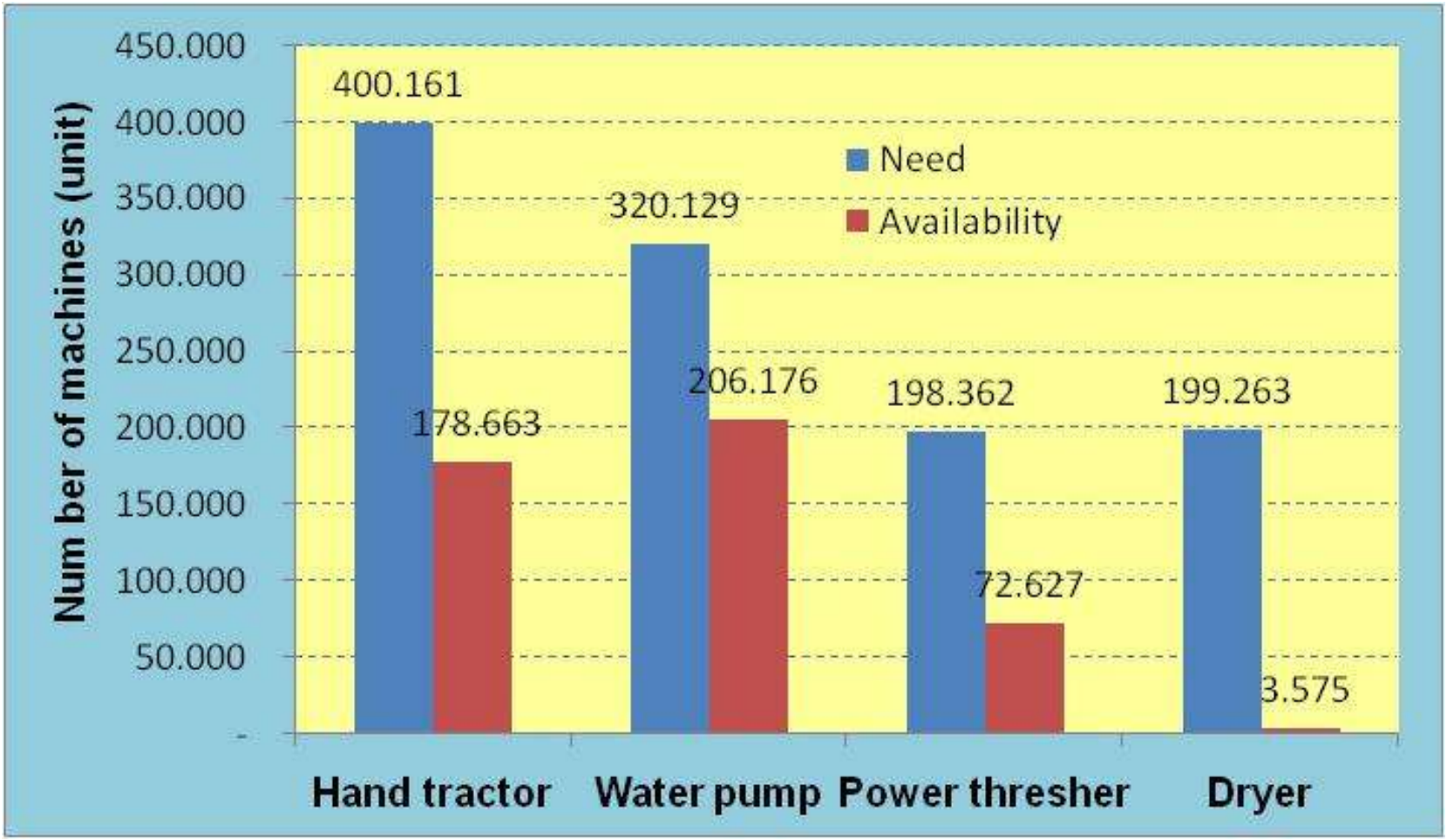
# Impact of Farm Machinery on Food Crop Production

| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **PADDY :** | | | | | |
| - Total land ( mil. ha) | 12.299 | 12.669 | 12.870 | 13.567 | 13.441 |
| - Productivity (ton/ha) | 4.89 | 4.94 | 5.06 | 5.02 | 5.10 |
| - Production (mil. ton dried) | 60.326 | 64.399 | 65.150 | 68.062 | 68.594 |
| **MAIZE :** | | | | | |
| - Total land (mil. ha) | 4.002 | 4.096 | 4.184 | 3.896 | 3.997 |
| - Production (mil. ton dried) | 16.317 | 17.041 | 18.016 | 17.392 | 18.945 |
| **SOYBEAN :** | | | | | |
| - Total land (mil. ha) | 0.590 | 0.701 | 0.678 | 0.592 | 0.566 |
| - Production (mil. ton dried) | 0.776 | 0.934 | 0.927 | 0.819 | 0.779 |

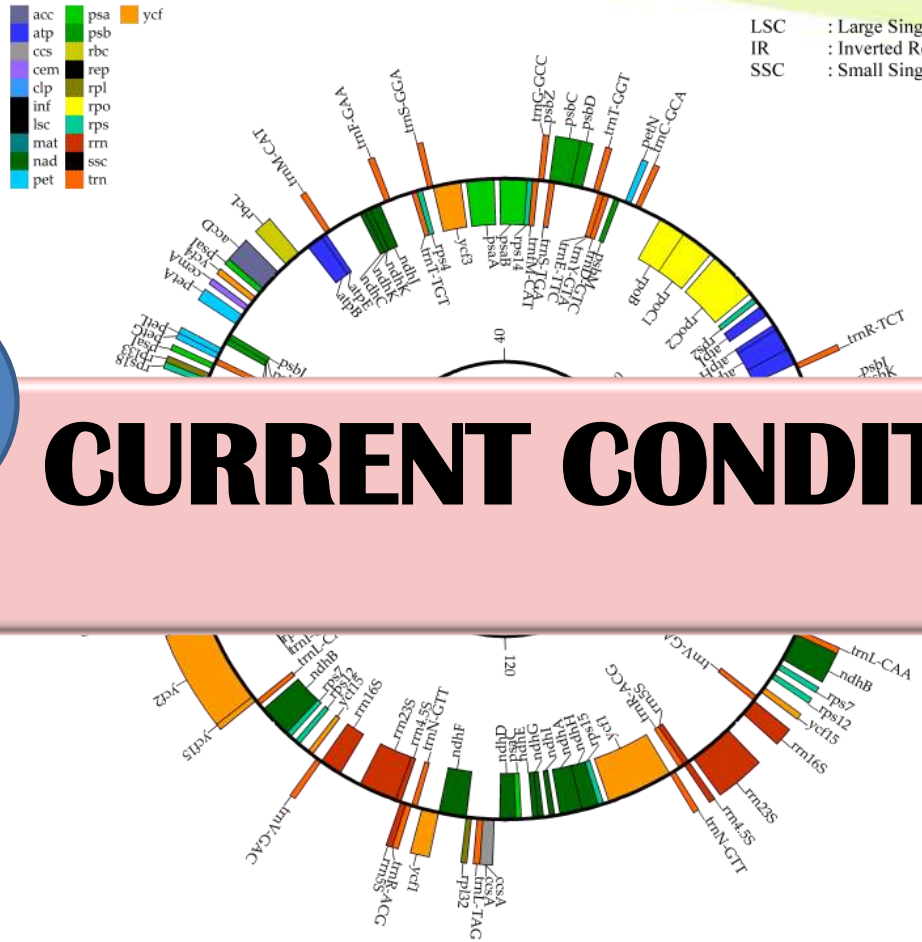
| Y e a r | Custom Hiring of Agric. Mach. (CHRSAM) class | | | T o t a l |
|---|---|---|---|---|
| | Beginner | Improved | Professional | |
| 2006 | 7,390 | 141 | 39 | 7,570 |
| 2007 | 7,543 | 409 | 65 | 8,017 |
| 2008 | 8,571 | 851 | 100 | 9,522 |
| 2009 | 8,145 | 1,783 | 318 | 11,103 |
| 2010 | 8,887 | 2,250 | 219 | 11,356 |
| 2011 | 8,801 | 2,693 | 453 | 11,947 |
| 2012 | 9,485 | 2,136 | 423 | 12,044 |

# NEED AND AVAILABILITY of AGRICULTURAL MACHINERY

*(Source: Ditjen Prasarana dan Sarana Pertanian, 2011)*



# II CURRENT CONDITIONS

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# CHRSAM Development

- Providing facilitation of agricultural machinery procurement,
- Developing demo areas, especially for new agricultural machineries
- Improving research and development capacity,
- Training and supervision
- Reforming existing regulations.

# Population of Tractor, Power Thresher and Irrigation Pump in in CHRSAM, 2010

| Machineries | Kendal | Batola | Pinrang | Kampar | OKI |
|---|---|---|---|---|---|
| Beginner | | | | | - |
| - Hand tractor | 1A | 3A | 2A | 2A | - |
| - Irrigation Pump | - | - | - | - | - |
| - Thresher | - | 1A | - | - | - |
| Improved | | | | | |
| - Hand tractor | 2A | 3A | 5A | 3A | 4A + 1B |
| - Irrigation Pump | 2A | 1A | 1A | 1A | 3A |
| - Thresher | - | 4A | - | 2A | 2A |
| Professional | | | | | |
| - Hand tractor | 1A | - | - | 7A | 12A + 2B |
| - Irrigation Pump | - | - | - | 2A | 1A + 1B |
| - Thresher | - | - | - | 1A + 3B | 7A |

**A : Government** **B : Private**

# Population of Tractor, Power Thresher and Irrigation Pump in each Class of CHRSAM

| Machineries | Kendal | Batola | Pinrang | Kampar | OKI |
|---|---|---|---|---|---|
| Beginner | | | | | - |
| - Hand tractor | 1A | 3A | 2A | 2A | - |
| - Irrigation Pump | - | - | - | - | - |
| - Thresher | - | 1A | - | - | - |
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| - Thresher | - | 4A | - | 2A | 2A |
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| - Irrigation Pump | - | - | - | - | - |
| - Thresher | - | 1A | - | - | - |
| Improved | | | | | |
| - Hand tractor | 2A | 3A | 5A | 3A | 4A + 1B |
| - Irrigation Pump | 2A | 1A | 1A | 1A | 3A |
| - Thresher | - | 4A | - | 2A | 2A |
| Professional | | | | | |
| - Hand tractor | 1A | - | - | 7A | 12A + 2B |
| - Irrigation Pump | - | - | - | 2A | 1A + 1B |
| - Thresher | - | - | - | 1A + 3B | 7A |

**A : Facilitation from Government**

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# Number of Custom Hiring for Rental Service of Agricultural Machineries (CHRSAM) in Indonesia, 2006-2012

| Year | CHRSAM class | | | Total |
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| 2006 | 7,390 | 141 | 39 | 7,570 |
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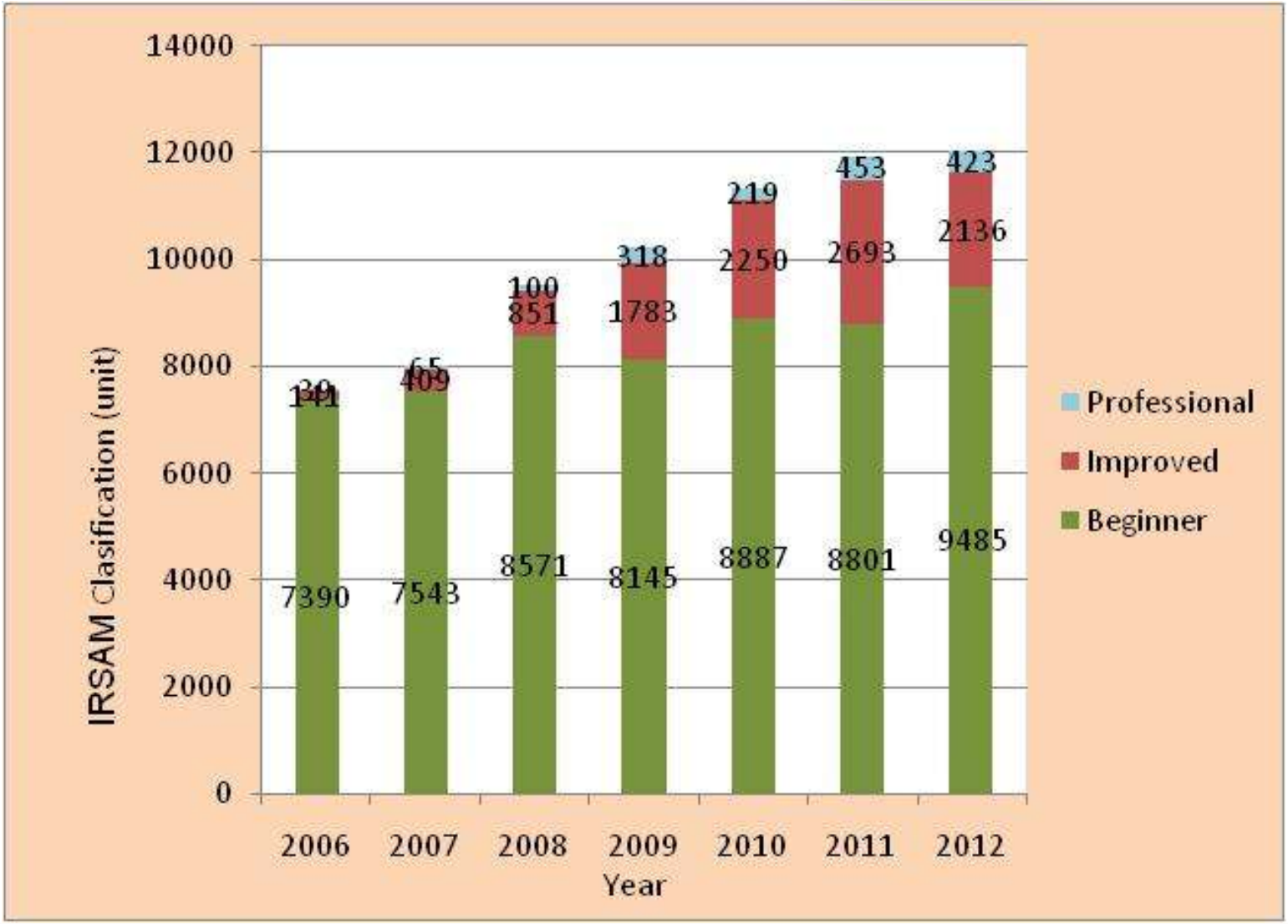
# CHRSAM development progress

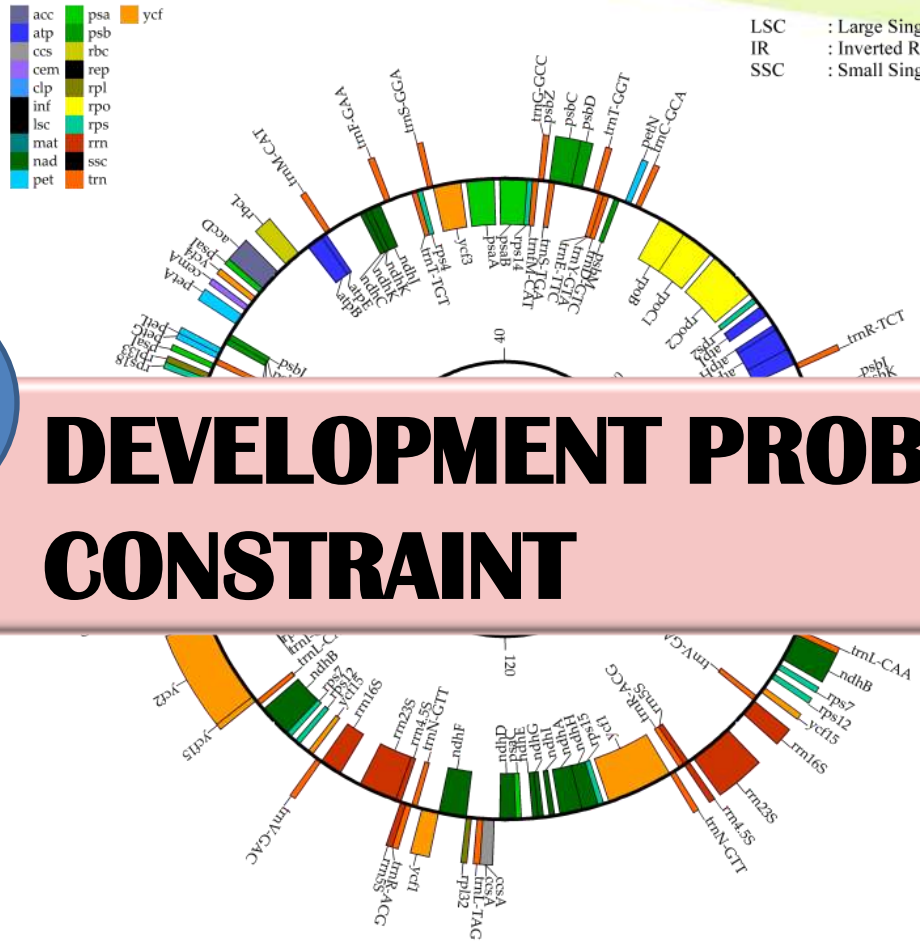


# Cost of land preparation and coverage area of hand tractor

| CHRSAM | Kendal | Batola | Pinrang | Kampar | OKI |
|---|---|---|---|---|---|
| **Beginner** | | | | | |
| - Cost of Land Prep. (Rp/ha) | 900,000 | 875,000 | 900,000 | 1,200,000 | - |
| - Coverage area (ha/musim) | 8 | - | 15 | 10 | - |
| **Improved** | | | | | |
| - Cost of Land Prep. (Rp/ha) | 600,000 | 700,000 | 600,000 | 800,000 | 800,000 |
| - Coverage area (ha/musim) | 15 | 10 | 10 | 9 | 10 |
| **Professional** | | | | | |
| - Cost of Land Prep. (Rp/ha) | 650,000 | - | - | 800,000 | 800,000 |
| - Coverage area (ha/musim) | 12 | - | - | 9 | 10 |

# III

# DEVELOPMENT PROBLEM AND CONSTRAINT

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# Development Problems and Constraints

- Limited capability of extension workers, manager and operator of CHRSAM
- Poor infrastructures : workshop, farm road, irrigation facility
- Lack of land forming and farm road for efficient operation and mobilization of agricultural machineries
- Limited budget and facility for training and supervision
- Poor access to the information of : agricultural machineries, capital n spare parts
- Poor management Information System of agricultural machineries

# Development Problems and Constraints

- **Most of extension worker has no agricultural and bio-system engineering background and has not been trained**
- **Manager and operator of CHRSAM are mostly not well trained**
- **Poor supporting mechanization infra-structures: storage, farm road, operational materials, workshop, small size of agricultural land**

# Condition of Supporting Element

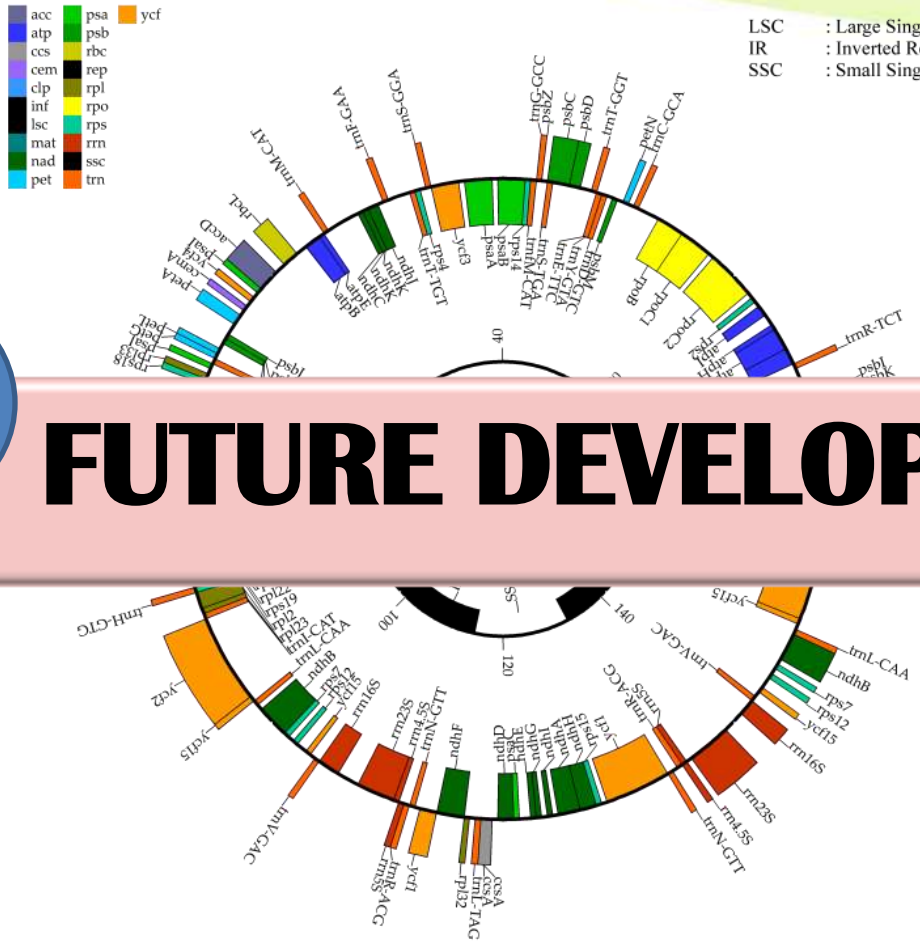








# IV FUTURE DEVELOPMENT

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# Alternative Efforts for Improvement of CHRSAM

- Encourage self development of CHRSAM through private sector and farmers paticipation and empowerment based on local needs and conditions
- Increase ownerships of agricultural machineries by farmers through various credit schemes, including down payment subsidy and purchasing guarantee
- Improve infra-structures related to CHRSAM development as well as operational materials
- Increase budget for training and supervision,

# Participant, materials, resource person and implementing unit

| Participant | Materials | Resource person | Implementer |
|---|---|---|---|
| AgriculturalRegional Office Staff | Introduction financial aspects of agricultural mechanization, identification of agricultural machineries need, CHRSAM business and management, monitoring, evaluation and reporting | ICAERD, University, Directorate of Agricultural Machinery | Directorate of Agricultural Machinery |
| Extension workers | Introduction and agricultural mechanization financial aspects , identification of needs, machineries operation and maintenance, agribusiness and CHRSAM management | ICAERD, University, Regional Office of Mechanization, BPTP, Agent of agricultural machineries | Province Agricultural Office |
| Manager of CHRSAM | Introduction and identification of needs of agric.mechanization, agribusiness and CHRSAM management | University, District Office of Mechanization, BPTP, Agent of agricultural machineries | District Agricultural Office |
| Farm machineries operator | introduction, operation and maintenance of agricultural mechanization | University, District Office of Mechanization, BPTP, Agent of agricultural machineries | District Agricultural Office |

# Future Development of CHRSAM

- Encourage farmers community and private sector participation
- Self-reliance based on the needs and conditions of the region and the potential of local resources
- Develop institution and infrastructure
- Introduce of new machineries and development of pilot models of agricultural development programs followed by intensive training
- Develop appropriate Management of Information System for agricultural machinery, integrated with Planting Calender
- The government acts as a regulator and facilitator in the selection and agricultural machinery procurement


PERTAHANKAN
SWASEMBADA BERAS
Thank you