

Panel Discussion on Smart Mechanization for Shifting Agricultural Demographics

*Integrating new technologies into agricultural mechanization
to address the changing demographics of the agriculture workforce*

Smart Farming Technology and Policy in the Republic of Korea

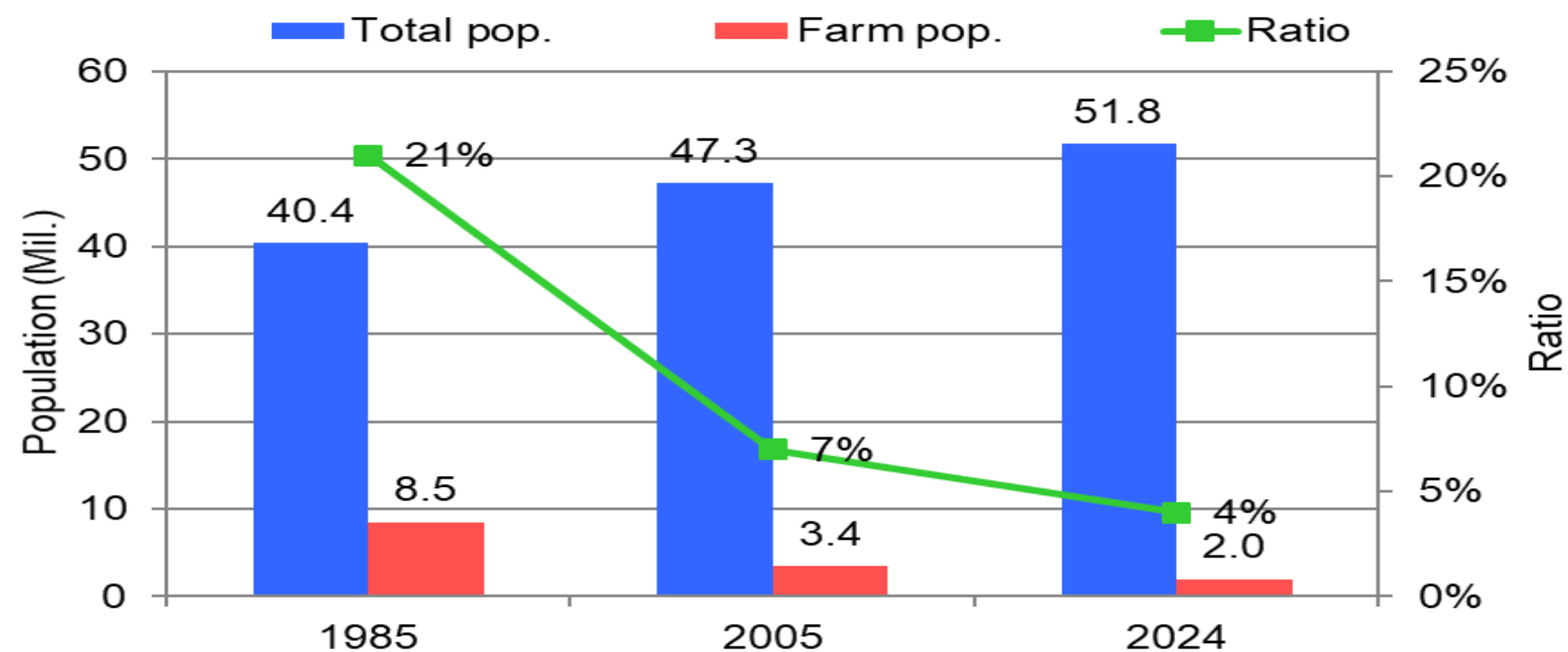
- Shifts in the agricultural workforce
- Smart technologies in the field
- Policies for smart farming

**Byounggap
KIM**

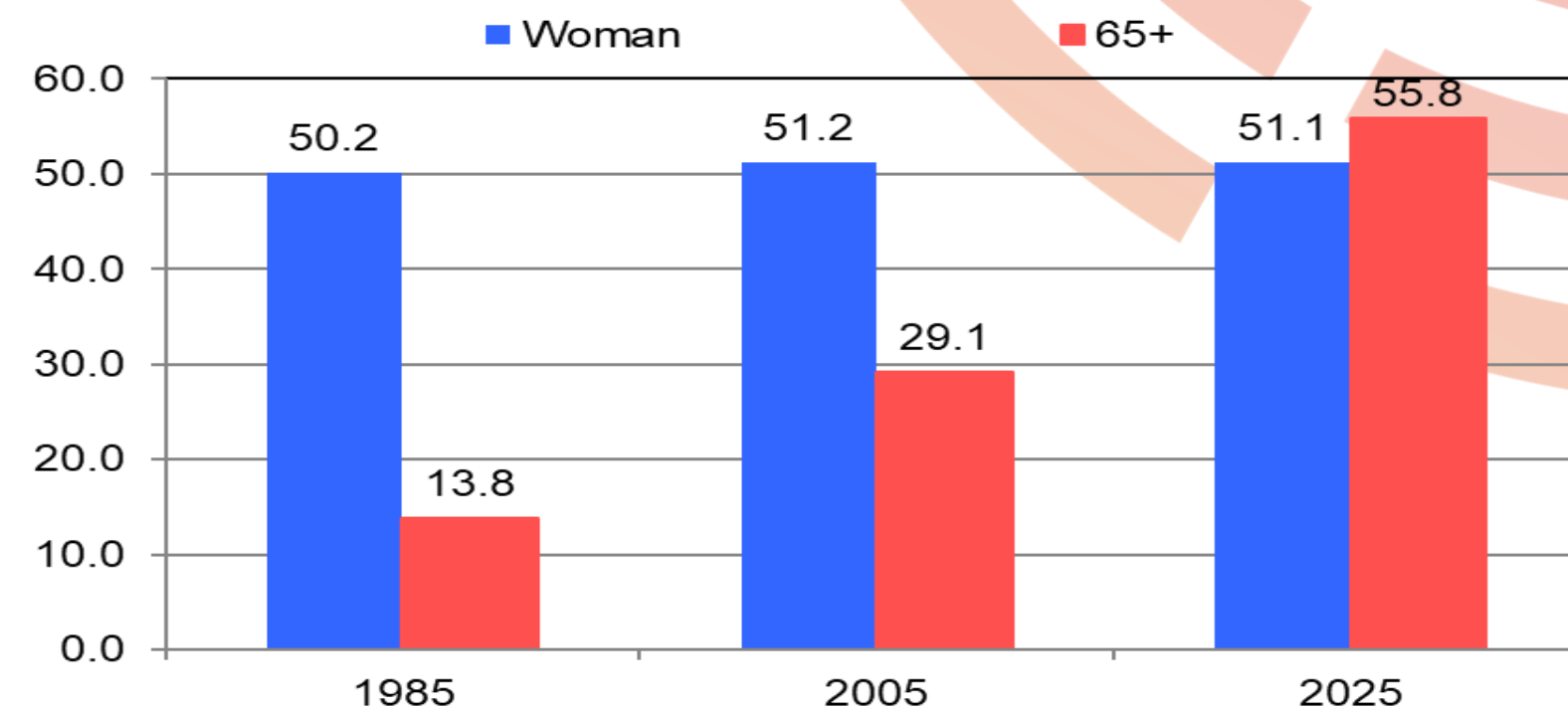
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Shifts in the agricultural workforce

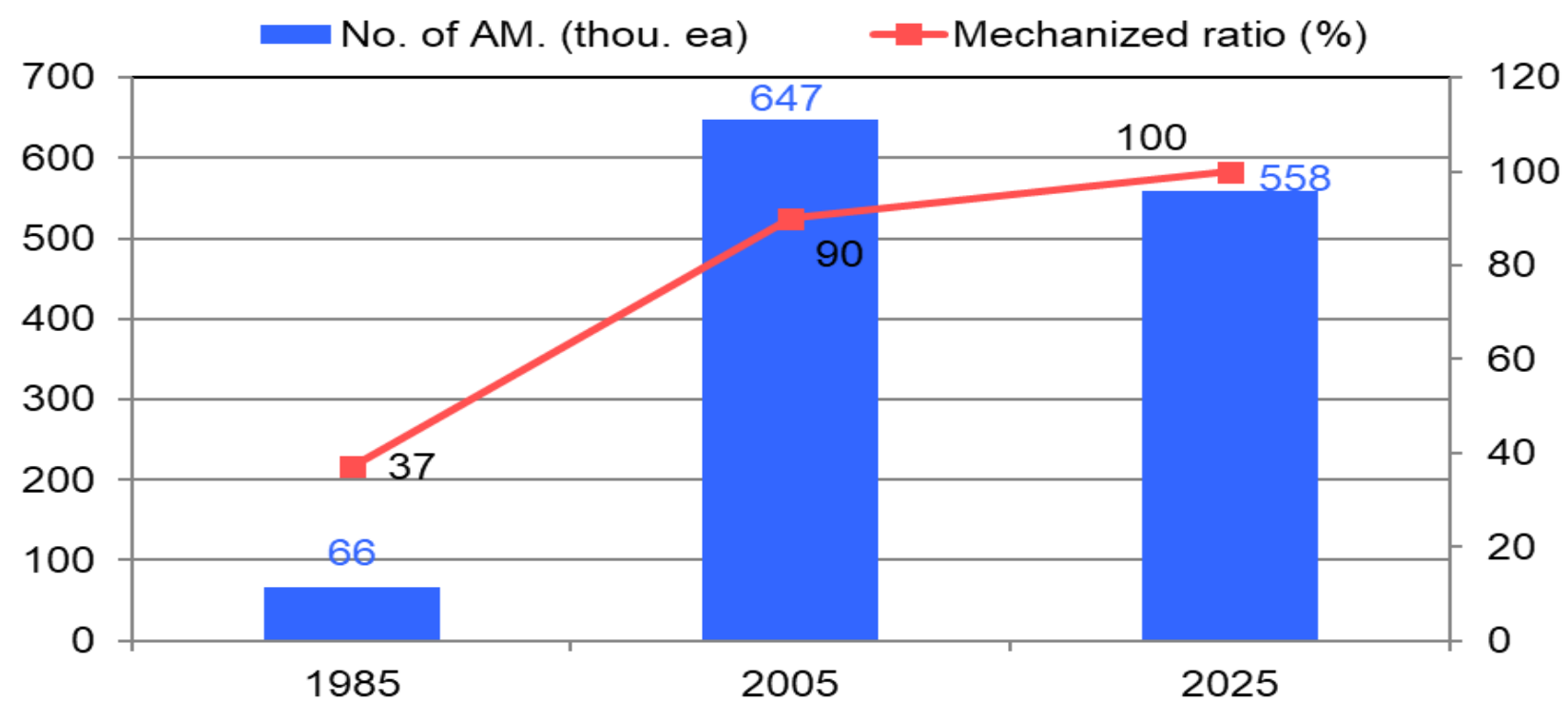
❖ Population trends



❖ Population structure changes(% of total pop.)

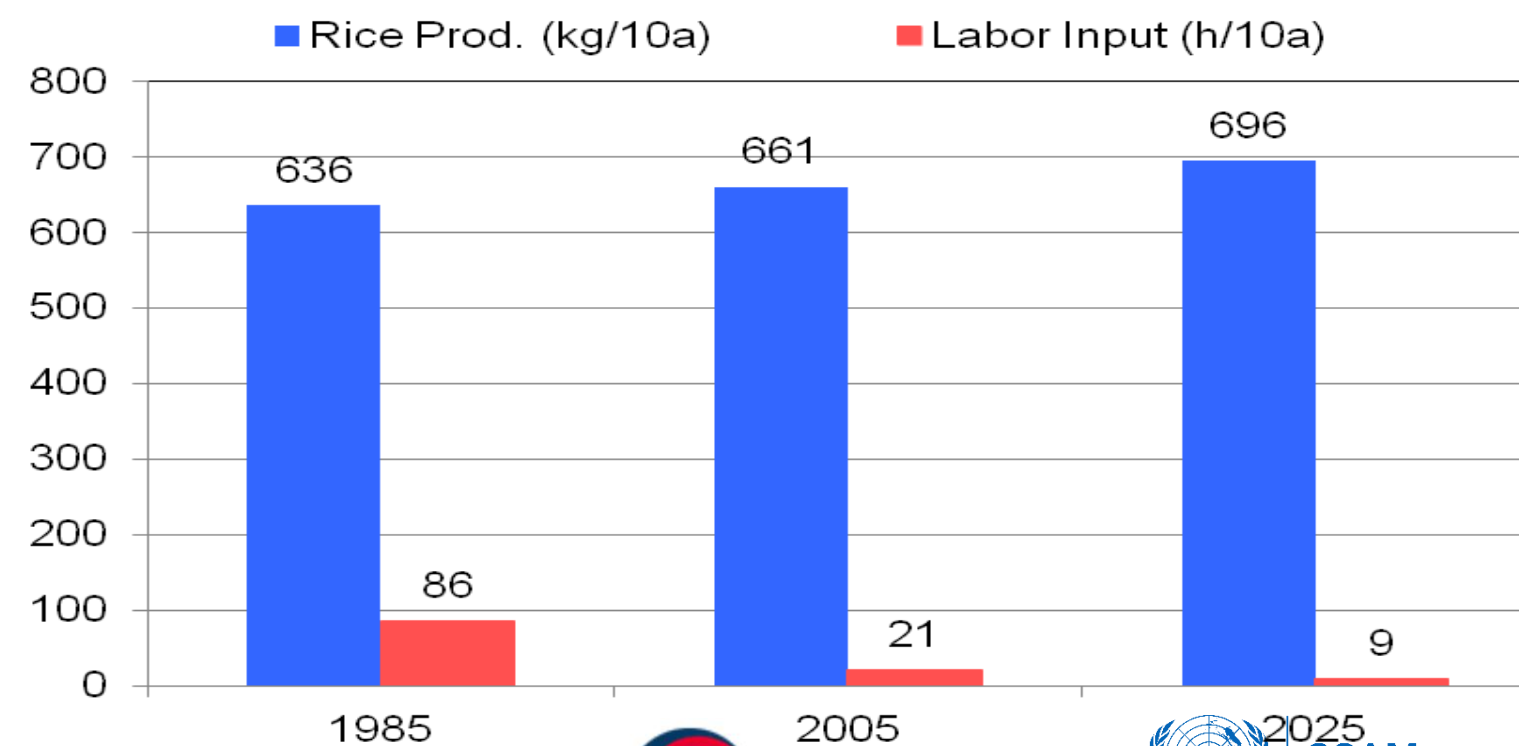


❖ Mechanization trends in rice farming



* AM: tractor + rice-transplanter + combine harvester

❖ Mechanization effect



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Smart technologies in the field

- ❖ **Autonomous machine ownership('23): tractor 3.9%, transplanter 5.7%, combine 4.1%**
 - Assist for straight driving and turning, autonomous operation possible in the field (Level 2)
- ❖ **Telematics service: Daedong connect, MyTYM, iTractor**
 - Operation management and efficiency analysis, machine monitoring, etc
- ❖ **Drone: 65.5% of pest control**
 - Pest control, collection of field image data
- ❖ **CWSI irrigation system: end of pilot stage**
 - Determine irrigation time and amount, auto watering
 - Production 34% ↑, labor 95% ↓



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Policies for smart farming

❖ Act on Fostering and Supporting Smart Farming (Jul. '23)

- Government must formulate master plan every 5 year
- Infrastructure: training institute, manager, development of technology, standardization, data platform, hub complex
- Distribution & dissemination: fostering district designation, implement, action plan, etc

❖ Smart farming testbed complex

- Innovation Valleys (4): '18~'23, 21~43ha, 100~161 KRW billion
- Unmanned & Automated Agri. Demo Complex: '20~'24, 54ha, 40 KRW billion
- Intelligent Ag. Machinery Testbed: '23~'27, 100ha, 102 KRW billion
- Digital platform: Smartfarm Korea, Bigdata platform, etc

❖ AI transformation strategy for agriculture and rural areas (Mar. '26)

- Produce more with less, Link markets better, Upgrade rural living, Strengthen the AX ecosystem
- Support for irrigation and pest monitoring solutions and equipment: 5 site ('26)
- Development and provision of AI agent (LLM), Next Farm (unman), smart AI model for less than 0.5ha, etc



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Policies for smart farming (continued)

❖ Outline of research on smart farming

Project name (Development of)		Period	Budget (KRW bil.)	No. of projects	Funding organ.	Target
Innovative tech.	1 st stage	'21~'27	387	20	MAFRA, RDA, MSIT*	Protected, livestock
	2 nd stage			N/A		
Utilization model	1 st stage	'22~'24	93	30	MAFRA, RDA, MOTIR*	Open field
	2 nd stage	'25~'28	41	15	MAFRA, RDA	

❖ Support for small farms to use smart technology by government

- Project name: Ag. Machinery lending project ('03~)
 - No. of participating cities/counties: 147('23)
 - Type: rental (1~3 days), lease (a year or longer), custom farming
- New sub-project: Smart Agricultural Machinery Sharing Center ('27~)
 - Target machine: machines adopted smart tech. such as autonomous tractor
 - Establishment plan in 2027: 5 centers, 2.5 KRW billion



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Thank you

x

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