

**“Leveraging digital innovations to improve the work of women in agriculture”  
Side Event: 12th Asia-Pacific Forum for Sustainable Development  
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China Agricultural University

# **Intelligent agricultural machinery and digital technologies empowering to improve the work of women in agriculture --Cases and practice**

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# Outline



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- **The importance of women in agricultural production**
- **Cases and practice from China**
- **Future prospects**



# The importance of women in agricultural production



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- On September 27, 2023, FAO held the **First Global Conference on Sustainable Agricultural Mechanization (GAMC)** in Rome.
- QU Dongyu, Director-General of FAO said: "Mechanization is **a strong driver** for Food Systems Transformation, while ensuring **environmental sustainability** and leaving no one behind, especially **women** and **smallholder farmers**." And stressed that the future of agriculture is integration of **"mechanization + industrialization + digitalization"**



# The importance of women in agricultural production

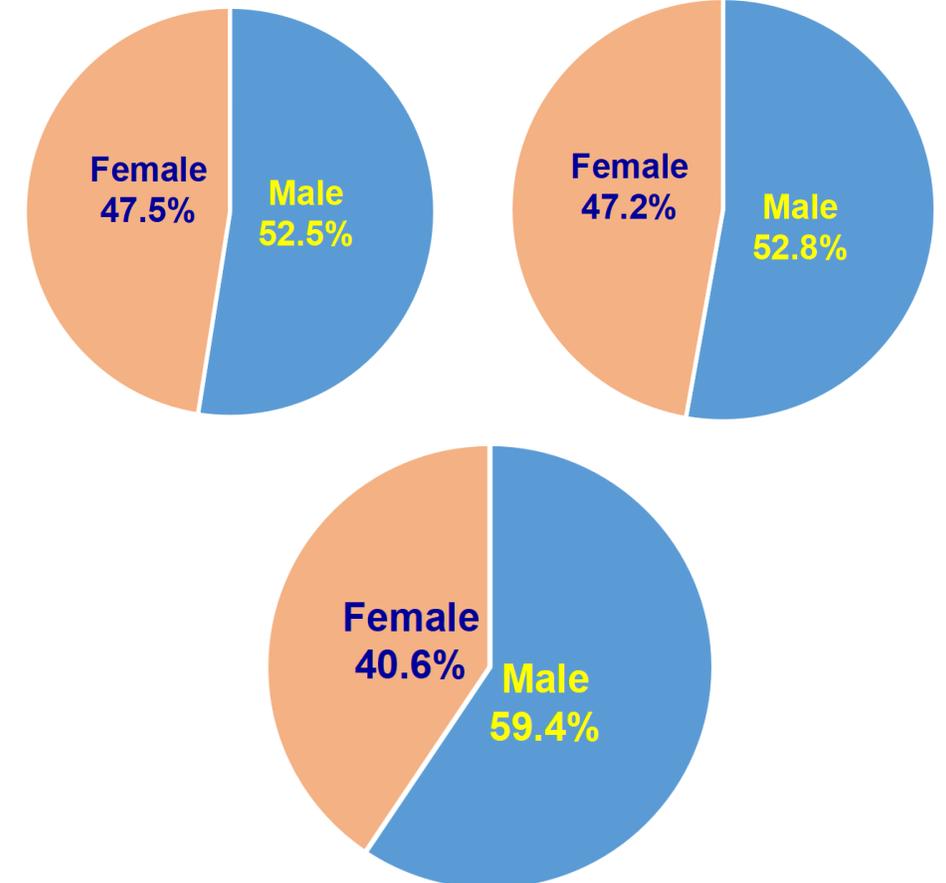


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## "Big country and small farmers" are the basic national conditions of China

- The number of small farmers in China accounts for **more than 98%** of the agricultural business bodies.
- The proportion of small farmers, which are **under 2 hectares**, is **95.8%**.
- The number of agricultural production and operation personnel in China is 314 million, of which nearly **150 million are women**, accounting for **48%**.
- The number of women of agricultural production and operation personnel in large-scale agricultural households is over 6 million, accounting for 47.2%;
- The number of women of agricultural production and operation personnel in agricultural business units is nearly 4.5 million women, accounting for 40.6%.
- How to **drive women** to develop agricultural production is a problem that must be considered in China's agricultural modernization.

China



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# Cases and practice from China



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- By 2023, China comprehensive level of tilling, planting and harvesting mechanization had reached **74%**.
- **Intelligent agricultural machinery and equipment, information and digital technology** have been applied in agriculture, greatly increasing agricultural productivity.
- Farmers (including women) can study mechanized technologies through **Field Day activities, technical promotion training** and **mobile phone APP**.
- This shows that farmers can easily obtain relevant knowledge by querying the **"Agricultural Machinery Know-It-All"** app on their mobile phones



# Cases and practice from China

## The Agricultural Machinery Big Data System Platform



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The Agricultural Machinery Big Data System Platform organized and developed by team of CAU and Golden Datian Technology Co., Ltd. has comprehensively improved agricultural production and management efficiency, guaranteed food security.



By Feb. 28 , 2025 nearly **2.15 million** agricultural machines, **744 billion** pieces of data, the total operation area of agricultural machinery is over **260 million hectares**, covering **29** of China's 31 provinces

# Cases and practice from China

## The Agricultural Machinery Big Data System Platform



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## The Agricultural Machinery Big Data System Platform

### 农机大数据数字大脑应用场景



By Feb.28 2025



Nearly 2.15 million agricultural machines



744 billion pieces of data agricultural machinery operation



Over 260 million hectares cumulative monitoring operation area



Covering 29 of China's 31 provinces

# Cases and practice from China

BI Lixia, President of Rice Planting Professional Cooperative, Hubei Province



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She built a **core smart farm demonstration area of 35ha** consisting of digital management center, field monitoring facilities, intelligent greenhouses, digital agricultural machinery and warehouse.

There are also demonstration areas for **rice and shrimp comprehensive cultivation** and demonstration areas for **multiple optimization models of "rice +"**.

There are **145 rural households** in the Cooperative, and agricultural machinery operation services cover more than **400 surrounding family farms, large grain growers and breeding households**.

To make farmers to achieve cost savings and increase benefit of more than **CNY 4,200 yuan (US \$580) per hectare**.



# Cases and practice from China

## LIN Hongmei, the farmer of the Hongmei family farm, Sichuan Province



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The farm covers about **140 hectares**.

The farm is mainly engaged in farmland cultivation, planting, management and harvesting of agricultural machinery operations.

Eleven young people are employed, **four of whom are women**.

The use of intelligent agricultural machinery **reduces labor, reduces seeding and harvesting losses, improves the quality of operation**

It has 40 agricultural machines, including rotary cultivator, intelligent rice transplanter, intelligent wheat planter, intelligent corn precision planter, intelligent rape planter, fertilization machine, plant protection drone, corn harvester.

The annual net income is **CNY 930,000 Yuan (US\$ 130,000)**



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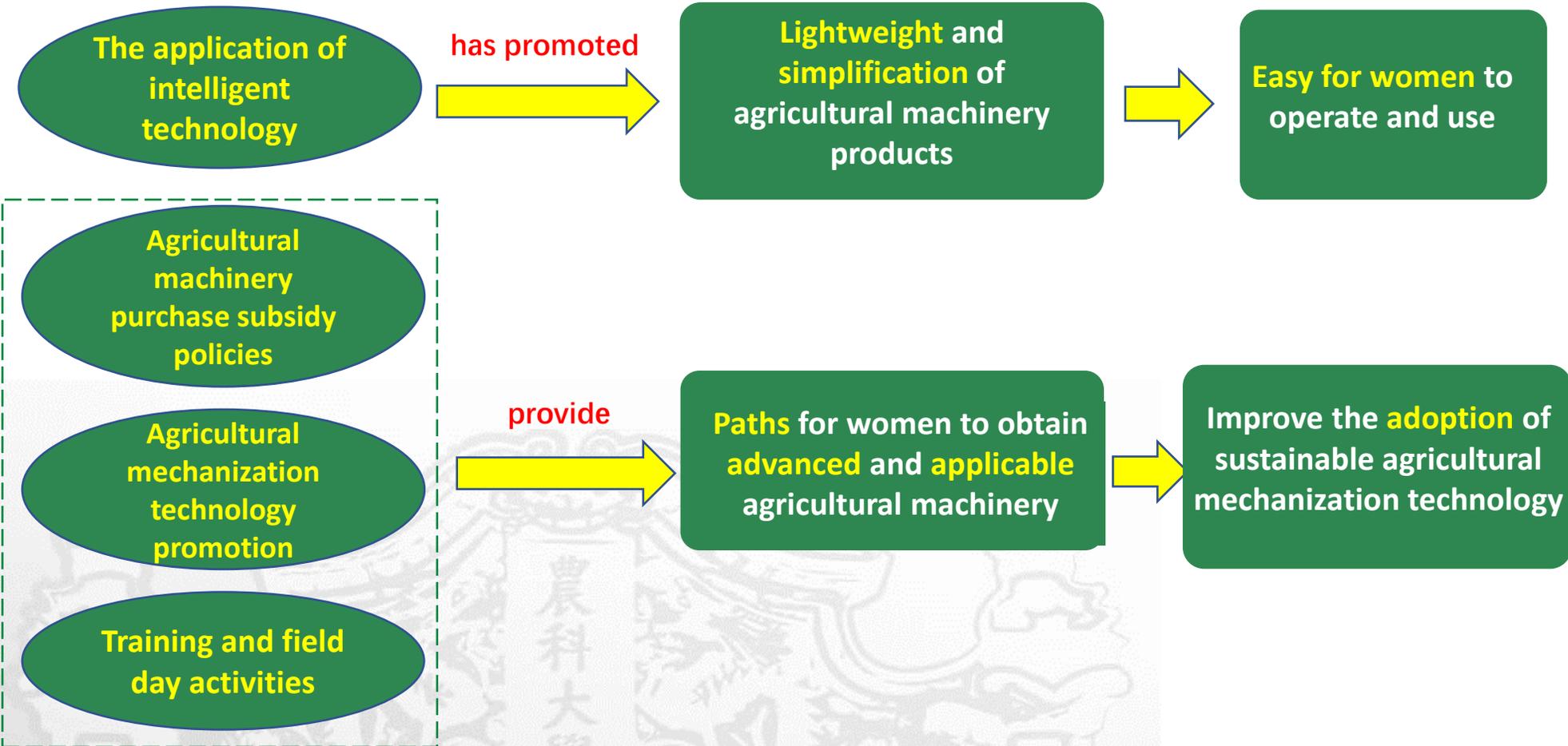
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# Cases and practice from China



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# Cases and practice from China: The Chinese model extends to Brazil



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## ➤ China-Brazil Family Farming Science and Technology Residence

### Mechanization + intelligence + digitalization



# Cases and practice from China: The Chinese model extends to Brazil



# Cases and practice from China: The Chinese model extends to Brazil



## Chinese agricultural machinery products arriving in Brazil

农机企业  
Agricultural machinery enterprise

7

Tillage machinery

Sowing and planting machinery

Field management machinery

农机种类

Types of agricultural machinery

22

Harvest machinery

Transportation machinery

农机数量

Number of farm machinery

31



農科大學

# Cases and practice from China: The Chinese model extends to Brazil



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The second batch of **over 30 sets agricultural machinery products from 13 Chinese enterprises** suitable for Brazilian family agriculture production arrived in Brasilia, including tractors, tillage machines, seeders, seedling sowing lines, transplanters, potato machines, fertilizer truck, plant protection machines, harvest machines, lifting operation platform and agricultural transport vehicles.



# Cases and practice from China: The Chinese model extends to Thailand



- CAU, KU and Sinomach Digital Technology Co., Ltd. cooperate to build
- ✓ Lancang-Mekong Countries Joint Innovation Center for Agriculture and Agricultural Mechanization Technology(China-Thailand)
- ✓ China-Thailand Science and Technology Backyard on Intelligent Agricultural Machinery and Smart Agriculture
- ✓ China-Thailand Rice Production Mechanization Demonstration Base and China-Thailand Sugarcane Production Mechanization Demonstration Base
- ✓ China Agricultural Machinery Training and Maintenance Center
- ✓ **Mechanization + intelligence + digitalization**



# Cases and practice from China: The Chinese model extends to Laos and Myanmar



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- CAU cooperates with local governments, universities, associations and enterprises
- ✓ China-Laos Joint Innovation Center for Agriculture and Agricultural Mechanization Technology
- ✓ Lancang-Mekong Countries Joint Innovation Center for Agriculture and Agricultural Mechanization Technology (China-Myanmar)
- ✓ China-Laos Agricultural Production Mechanization Demonstration Base
- ✓ **Mechanization + intelligence + digitalization**



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# Future prospects



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- Study policies to increase support for women farmers in agricultural digital innovation, and consider the proportion of women farmers in the allocation of government support projects
- Provide more opportunities for female farmers to receive education at different levels
- Provide more learning and training opportunities for women farmers
- The development of smart agricultural machines takes into account the ease of operation of female farmers





## Future prospects

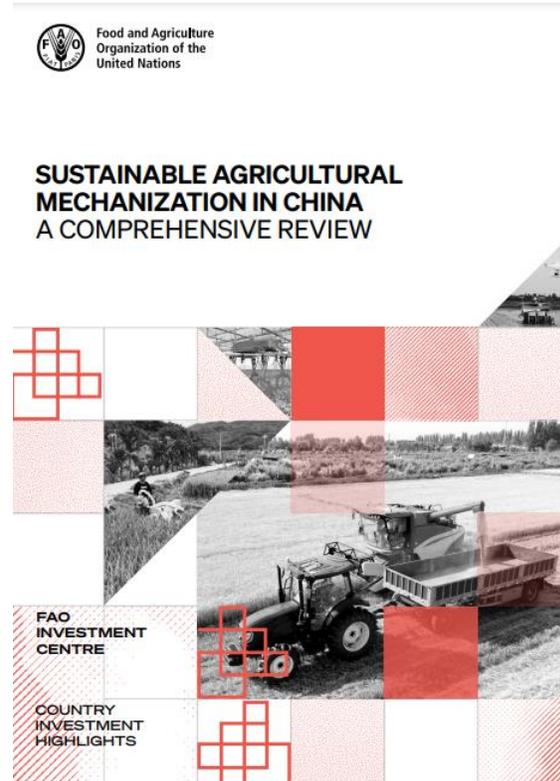
Personnel training

Scientific & technological  
cooperation

Technology promotion



# FAO publications



**Yang, M. & Jiang, S. 2023.**

**Sustainable agricultural mechanization in China –  
A comprehensive review.**

**FAO Investment Centre Country Investment  
Highlights No. 21. Rome. FAO.**

**<https://doi.org/10.4060/cc2867en>**

**PDF:**

**[www.fao.org/3/cc2867en/cc2867en.pdf](http://www.fao.org/3/cc2867en/cc2867en.pdf) (English)**

**[www.fao.org/3/cc2867zh/cc2867zh.pdf](http://www.fao.org/3/cc2867zh/cc2867zh.pdf) (Chinese)**



## China's Agricultural Mechanization and International Cooperation

Hope the cooperation project can be promoted and applied on a larger scale in the future, so as to bring

**more benefits to women farmers in the developing countries**



# Thank you

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