中国农机社会化服务的现状与对策

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中国农机社会化服务的现状与对策

The Status and Strategy on China’s Custom Hiring of Agricultural Machinery

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outlines

1. Achievements
2. Current status
3. Supportive policies
4. significance
5. Challenges
6. Strategies
The achievements of China’s agriculture

- **China is a large agriculture-based country**
  121.7 million hectares of farmland, 3th in the world.

- **China is also a populous nation**
  1.35 billion people, 1st in the world.

- **China has contributed to a remarkable achievement**
  60.2 million metric tons, a total crop production of in 2013. 
  grain output increase for 10 consecutive years.

- **China has also made significant contribution to global food security**
  feeding over 20% of the world’s population with less than 
  10% of the world’s farmland.
The achievements of China’s agricultural mechanization

- As is commonly quoted, science and technology are principal productive forces.

- Without the support from advanced agricultural technologies and equipments, it would have been impossible to be where we are in food production.

- Agricultural mechanization is what made modern agriculture possible.
1. 中国农业和农业机械化的成就

2000-2013 China's agricultural mechanization

![Graph showing total power of agricultural machinery (million kilowatts) and integrated mechanization level (%)](image-url)
## China’s agricultural mechanization development in 2013

<table>
<thead>
<tr>
<th>Item</th>
<th>Integrated Mechanization level (plowing, sowing, and harvesting)</th>
<th>Mechanical plowing</th>
<th>Mechanical sowing</th>
<th>Mechanical harvesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops</td>
<td>59.5%</td>
<td>76.0%</td>
<td>48.8%</td>
<td>48.2%</td>
</tr>
<tr>
<td>Wheat</td>
<td>93.7%</td>
<td>98.9%</td>
<td>86.7%</td>
<td>93.8%</td>
</tr>
<tr>
<td>Rice</td>
<td>73.1%</td>
<td>95.1%</td>
<td>36.1%</td>
<td>80.9%</td>
</tr>
<tr>
<td>Maize/corn</td>
<td>79.8%</td>
<td>97.7%</td>
<td>84.1%</td>
<td>51.6%</td>
</tr>
</tbody>
</table>
China’s agricultural mechanization

2004-2013: golden decade

• The growth of passed 10 years is equivalent to the sum of the previous 35 years.

• Agricultural machinery has taken on a major role in boosting Chinese food production.

• China’s agricultural production has witnessed a historic change from reliance on manpower and animal power to mechanization.
Custom hiring began at 1979

- Before 1979, China’s rural farmland and farm machinery were collectively owned. Custom hiring is impossible.

- After 1979, China began the reform of household contract responsibility system.

- This reform laid the foundation for the custom hiring of farm machinery in China, and custom hiring organizations and households began flourishing.
Current status of custom hiring of farm machinery

Â Nowadays, many Chinese rural households purchase farm machines not only to care for their own fields, but also for custom hiring.

Â 42 million are farm machine owners, 15.8% of the total rural households; the total operating income of farm machinery-owning households reached 430 billion RMB.

Â Households that make over 60% of their total income out of custom hiring services are called machinery service-providing households. In 2013, the number of such households reached 5.2 million, 12.3% of the total number of farm machinery-owning households.
machinery cooperatives were mushrooming

- 2007年: 0.4435
- 2008年: 0.786
- 2009年: 1.49
- 2010年: 2.18
- 2011年: 2.8
- 2012年: 3.4
- 2013年: 4.1
2. 中国农机社会化服务发展现状

cross-region machinery operation

![Graph showing the development of cross-region machinery operation in China from 1996 to 2010.](image)

- **Cross-region operation**
- **Cross-region area**

<table>
<thead>
<tr>
<th>Year</th>
<th>Cross-region operation</th>
<th>Cross-region area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>1675</td>
<td>13.3</td>
</tr>
<tr>
<td>1997</td>
<td>3774</td>
<td>14.7</td>
</tr>
<tr>
<td>1998</td>
<td>5551</td>
<td>5.8</td>
</tr>
<tr>
<td>1999</td>
<td>6408</td>
<td>6.9</td>
</tr>
<tr>
<td>2000</td>
<td>6525</td>
<td>12.3</td>
</tr>
<tr>
<td>2001</td>
<td>9072</td>
<td>14.5</td>
</tr>
<tr>
<td>2002</td>
<td>10067</td>
<td>15.2</td>
</tr>
<tr>
<td>2003</td>
<td>19.5</td>
<td>25.4</td>
</tr>
<tr>
<td>2004</td>
<td>15143</td>
<td>32.3</td>
</tr>
<tr>
<td>2005</td>
<td>16215</td>
<td>39.2</td>
</tr>
<tr>
<td>2006</td>
<td>21437</td>
<td>41.8</td>
</tr>
<tr>
<td>2007</td>
<td>23495</td>
<td>42.5</td>
</tr>
<tr>
<td>2008</td>
<td>24091</td>
<td>44.4</td>
</tr>
<tr>
<td>2009</td>
<td>27416</td>
<td>46.7</td>
</tr>
<tr>
<td>2010</td>
<td>28841</td>
<td>49.9</td>
</tr>
</tbody>
</table>
### Farmland supported by cross-region machinery operation from 2012 to 2013

<table>
<thead>
<tr>
<th>Item</th>
<th>2013</th>
<th>2012</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>national land area of cross-region machinery operation</td>
<td>36.7</td>
<td>34.3</td>
<td>7.1%</td>
</tr>
<tr>
<td>1. Cross-region machinery plowed land</td>
<td>6.7</td>
<td>5.7</td>
<td>17.6%</td>
</tr>
<tr>
<td>2. Cross-region machinery sowed land</td>
<td>3.0</td>
<td>2.6</td>
<td>19.6%</td>
</tr>
<tr>
<td>3. Cross-region machinery harvested land</td>
<td>26.0</td>
<td>24.9</td>
<td>4.2%</td>
</tr>
<tr>
<td>Among which, wheat harvested</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14.4</td>
<td>14.2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Rice harvested</td>
<td>7.7</td>
<td>7.4</td>
<td>3.6%</td>
</tr>
<tr>
<td>Corn harvested</td>
<td>3.2</td>
<td>2.7</td>
<td>18.5%</td>
</tr>
</tbody>
</table>
China’s supportive policies for custom hiring of agricultural machinery

To develop custom hiring of machinery, we need the guiding role of the market and the pushing role of the government.

The market and the government are like the two rows of wheels on a tractor--only when the front wheels are pulling and the rear ones pushing at the same time can the tractor proceed safe and fast.

DFH tractor made in China
supportive policies of custom hiring

Â (1) **Laws and regulations** on agricultural machinery has been promulgated.

Â In 2004 *the Law on Promoting Agricultural Mechanization of the People’s Republic of China* was implemented;

Â in 2010 the State Council released document *the Opinion on Promoting Sound and Fast Development of Agricultural Mechanization and Agricultural Machinery Industry*.

Â More than 30 provincial governments introduced *local regulations* on promoting agricultural machinery custom hiring.
supportive policies of custom hiring

(2) Subsidies for agricultural machinery purchase have been implemented.

Since 2004 the central government has been establishing a special fund for subsidizing farmers who purchase agricultural machinery. The subsidies for one unit of machinery are 15% to 30% of the sales price.

Annual subsidies rose quickly. From 70 million RMB in 2004 to 23,750 million RMB in 2014. The accumulative subsidies reached nearly 120 billion RMB.

The subsidy policy has significantly promoted farmers' willingness to purchase machinery, and custom hiring.
supportive policies of custom hiring

Â (3) Taxation on agricultural machinery operation has been reduced or exempted.

Â In 1997, six ministries jointly issued a notice, demanding relevant government agencies to ensure good organization, management and service concerning cross-region mechanized wheat harvesting; and the toll-free policy for combine harvesters working cross-regionally was introduced.

Â This toll-free policy has saved the machinery service-providing households tolls worth over 100 million RMB annually.
Since 2008, the government exempted mechanized plowing and other service items from business tax, and agricultural machinery operation and maintenance, etc., from corporate income tax.
The significance of custom hiring of agricultural machinery to China

Å By custom hiring of machinery, the farm machinery-owning households could reduce unnecessary purchase and promote shared use.

Å It could increase the utilization rate of machinery and farmers’ income on the one hand, and meet the others strong desire for mechanized operation on the other hand, realizing a win-win solution.

Å It could eliminate the conflict between small-scale household operation and large-scale mechanized production, charging a way of China-specific agricultural mechanization.
Challenges that China faces in promoting custom hiring of agricultural machinery

- Custom hiring is not to be applied in more fields of agricultural production, being limited to farmland operation in the plain areas, hence unable to meet the accelerated development of agricultural modernization.

- Machinery service-providing organizations including many machinery cooperatives are weak in general capacity, lacking a sound mechanism and sufficient management talent. A lot of mechanized operation services are segmented.
Challenges that China faces in promoting custom hiring of agricultural machinery

• The building of infrastructures, such as machinery tracks, garages and shelters, maintenance networks are strikingly lagging behind and resulting obstacles are quite prominent.

• Increase in the utilization efficiency of farm machinery is encumbered by the fact that farmland is highly segmented resulting from separate operation and consistently high international fuel prices.
Strategies of custom hiring of agricultural machinery in the future

In the *Opinion on Forcefully Promoting Custom Hiring of Agricultural Machinery* released by the Ministry of Agriculture, P. R. China, in October, 2013, the main objectives till 2020 are laid out: doubling that of 2010.

(1) The number of machinery service-providing households and organizations (over 500,000 RMB) in total exceeds 110,000, doubling the number of 2010.

(2) To raise the profits earned from machinery service. The total profits earned exceeds 800 billion RMB, doubling that of 2010.
（1）Soliciting more policy support

- The current machinery purchase subsidy policy will continue and help machinery service-providing households and organizations in particular.

- Active efforts will be made to introduce machinery operation subsidy policy and the other supportive policy.
（2）Fostering more market players

- Machinery service-providing households and farmers will be guided and encouraged to form new service organizations such as machinery cooperatives.

- The establishment of machinery share-holding companies and machinery lease companies will be actively promoted.

- Talent cultivation in the field of machinery custom hiring will be strengthened, aiming at bringing more competent machinery operators and professional managers.
6. 推进农机社会化服务的对策措施

（3）Identifying role models.

- Based on the progressive successes of custom hiring, role models will be identified. As of 2013, 1,022 machinery cooperatives nationwide are identified by the Ministry of Agriculture.

- Continued efforts will be put to brand establishment, including promoting the use of "China Agricultural Machinery Cooperative" logo.
Modern information technologies and equipments can serve for the collection, statistics and analysis of the supply and demand dynamics and operation pricing of custom hiring.

We has set up an on-line "information express of farm machinery cross-region operation".

We will create a mobile application of "dynamic monitoring and service platform of national agricultural machinery operation".
6. 推进农机社会化服务的对策措施

（5）Improving the market environment

- Codes of conduct and technology standards on custom hiring of agricultural machinery shall be established, so will be the service quality complaint and monitoring system.

- A custom hiring credit system, credit grading and service capability assessment will be encouraged.

- The goal is to establish a unified, open and benignly competitive custom hiring market.
the Asia-Pacific region represents the most vigorous and potential region in the world, where agricultural mechanization is gaining increasing momentum as well as strategic significance.

Thank you!