China
A Marketing Opportunity

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Agenda:

1. Introduction
2. Economic status of China
3. Cultural Differences
4. Agriculture in China
5. Tractor and Ag Machinery Production in China
6. Actual role of Western Manufacturers in China
7. Localizing Production
   - Establishing a company
   - Cost of production/Purchasing/Labour
8. Conclusions
2. Economic status of CHINA
China’s Economic position in global perspective

- GDP of 5,880 bn $, is world’s No.2 (US 1) actual 2010
- GDP Growth rate is world’s No. 5 (US 133)
- GDP per capita is world’s No. 128 (US 11)
- Biggest labour force with 820 million people No. 1 (US 4)
- Total annual investments 47.8% of GDP No. 1 (US 142)

CIA Factbook 2009

Chinas Economic position continued

- Market value of traded shares 5,008 bn $, No. 4 (US 1)
- Current Account balance of 272,5 bn $ No.1 (US 190)
- Reserves of foreign exchange and gold 2,622 bn $, No. 1 (US 130.8 bn)
- Population of 1.33 bn No.1 (US 3)
  will peak at 1,45 bn between 2025 and 2030
- Population growth at annual 0.494% No. 154 (US 121)
- Average school life 11 years (US 16 years)
- Over 15 can read and write 92%
- Education expenditure 1.9% of GDP No. 172
- Rate of Urbanization 2.7% annually (US 1.3%)
GDP Comparison USA/China

<table>
<thead>
<tr>
<th>Years</th>
<th>China GDP (bn $)</th>
<th>US GDP (bn $)</th>
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<tbody>
<tr>
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<td>2010</td>
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GDP Growth

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<td>2009</td>
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<td>2010</td>
<td>8%</td>
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</tbody>
</table>
Uneven Development East vs. West

- Territory: 80 / 20
- Population: 20 / 80
- GDP: 15 / 85
- Major OEM: 1 / 31

GDP per capita comparison

- USA
- Germany
- Europe
- World
- China

Regions:
- USA
- Germany
- Europe
- World
- China

GDP per capita ($)
3. Cultural differences to learn

Opinion

Get together

New Things

Problems
4. Agriculture in China

Agricultural Indicators in China:

- **Workers in Agriculture** 321.3 million; **39.5%** of Labour force (Industry 27.2%, Services 33.2%)

- **GDP 2010** 5,880 bn $, of which **Agriculture** contributes **13%**

- **Agricultural Production** 800 bn $, thereof animal production **35%**

- **Selfsufficiency ratio** has been around 100% in the past, but has now gone down to 80% sugar, 34% vegetable oil

- **Arable land** 121.7 million hectares, **13%** of total area, grassland 400 mn hectares, **40%** of total area
Agricultural Regions

Pasture

Grain

Rice

Agricultural commodity production 2008
5. Tractor and Ag Machinery Production in China
GLOBAL PRODUCTION OF AG MACHINERY
$75 bn 2009

Global Production of AG Machinery

1 Euro = 1.3 $
Global AG Machinery Growth 2006 - 2011

Nominale Veränderung der Produktion in % zum Vorjahr

Quelle: VDMA Landtechnik, Eurostat, nationale Verbände

China's National Statistics

National production value of the AG Machinery sector:
Includes also the whole processing sector
Increased by 28%pa over the last 3 years

Production value of Tractors:
2011 – 5.2 bn $, increased by 12%pa over the last 5 years.
This includes 400.000 4-Wheel tractors and 2 million walking type
Tractors with two wheels

Production value of AG Machinery:
Increased by 20%pa over the last 4 years.

VDMA production value: (only tractors and machines w/o walking type versions)
2007 – 5.5 bn $, 2008 – 7 bn $, 2009 – 7.7 bn $, increased by 14%pa
Production of agricultural machinery in China 2004-2010

Subsidies for the agricultural sector in China 2004-2010

Source: China Agricultural Industry Machinery Association

Source: Ministry of Agriculture
Agricultural Machinery Subsidy Policy in 2010

Central Government Subsidy:

• **2,2 bn $ in 2010** for the purchase of all kinds of Machinery from Tillage to Harvesting and on farm processing, incl. Energy and building.
  • **Max 30% of purchase price**, but capped at 7000 $.
    For high hp (>100) and large machinery the max spend is 17000 $ or 28000 $ for equipment with > 200 hp.

In the first half of 2010 3,25 million units of equipment were subsidized, affecting 2,36 million farmers and costing nearly 600 mn $.

Agricultural Mechanization Policies

• **By 2015** a continuesly growing Mechanization power in hp will have been seen and the Mechanization level of main crops farming will arrive at **55%**. (Level of Harvesting by machine was 50,8% in 2008).

• **By 2020** a further 20% increase in used hp is expected and the Mechanization level will arrive at **65%**, thereof with Wheat production 90%, Rice planting **60%** and Rice harvesting **85%**. Corn production will be mechanized to a degree of **50%**.

• Priorities for Mechanization are: Large tractors of > 100 hp, environment friendly paddy field tractors of 50-70 hp, self propelled harvestors (grain, corn, sugarcane, cotton), effective sprayers, energy saving equipment with view to irrigation, drainage etc.
**HP Development from 2004 to 2009**

Tractor production by power 2004-2009

- 25~59hp
- 60~69hp
- 70~79 hp
- 80~99hp
- >100hp

**Main Tractor Mfg Locations**

- Market demand area for tractor > 120hp

- 27 OEMs for L&M tractor
- 174 OEMs for < 25hp tractor
**Price Level of Tractors 2010**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Power(HP)</th>
<th>Price ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Deere Tianjin</td>
<td>1204</td>
<td>120</td>
<td>29.113</td>
</tr>
<tr>
<td></td>
<td>904</td>
<td>90</td>
<td>20.222</td>
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<td></td>
<td>824</td>
<td>80</td>
<td>15.889</td>
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<tr>
<td>YTO</td>
<td>904</td>
<td>90</td>
<td>14.878</td>
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<tr>
<td></td>
<td>804</td>
<td>80</td>
<td>14.091</td>
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<tr>
<td></td>
<td>754</td>
<td>75</td>
<td>13.578</td>
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<tr>
<td>Foton Lovol</td>
<td>904</td>
<td>90</td>
<td>17.355</td>
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<tr>
<td></td>
<td>824</td>
<td>80</td>
<td>16.033</td>
</tr>
<tr>
<td>Shandong Shifeng</td>
<td>300</td>
<td>30</td>
<td>3.472</td>
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<tr>
<td>Yancheng Tractor</td>
<td>350</td>
<td>35</td>
<td>4.778</td>
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<tr>
<td></td>
<td>250</td>
<td>25</td>
<td>3.474</td>
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</table>

**Annual demand of Heavy duty Rotary Tillers**
Chinese made Rotary Tiller

Rotary Tiller production
AG Machinery Demand in China

Import/Export of AG Machinery  2009

Imports:  240,5 mn $,  3,1% of local production

• Tractors  66,3 mn $,  1,5% of local production
• Harvesting Equipment  36,4 mn $,  x% of local production
• Soil preparation equipment 22,1 mn $,
• Sowing, Fertilizing, Planting, Spraying   115,7 mn $

Main importing countries: Japan, USA, Germany, S.Korea, Sweden, France
Import/Export of AG Machinery 2009

Exports: 657,8 mn $, 8,5% of local production

- Tractors 213 mn $, 4,7% of local production
- Harvesting Equipment 125 mn $, x% of local production
- Soil preparation equipment 96,2 mn $,
- Sowing, Fertilizing; Planting, Spraying 223,6 mn $

Main export destinations: USA, Germany, Italy, Japan, Thailand, Iran, South America
Harvesting Machinery

• Combine Harvesters 2010 160,000 units +30% vs 09
  SP 67,000
• Corn Harvesters 2010 50,000 units +56%
  SP 18,000
• Rice Harvesters 2010 40,000 units +25%
  SP 18,000
• Rice Transplanter 2010 70,000 units +20%
  walking type machines account for 80% of the market
  SP 15,000
• Total Harvesting Machines 430,000 units 2010 - 10%
  structural change to higher sophisticated machinery; less volume, more value

Stieler March 2011
Growth rates

Stieler March 2011

Harvesters (self-propelled)

Stieler March 2011
6. Actual Situation of Western Manufacturers

Foreign Investments in Ag Machinery production:

- Deere-Jiamusi Combines 1997 29.9 mn $ invest 60% JV
- Kubota Rice Harvesters 1998 100%
- New Holland Tractors 100-180hp 1999 70% JV
- Deere Tianjin Tractors 80-130hp 2000 51% JV
- New Holland Tractors<100hp 2001 75.8 mn $ 60% JV
- Iseki Rice Harvesters 2004 4.2 mn $ 100%
- Deere Ningbo Tractors 20-50hp 2007 85 mn $ 100%

Western Manufacturers continued

- Same Deutz Dalian, Liaoning Tractors 80-110hp 2009 55 mn $ 6000 large tractors pa, plans to increase to 30.000 2015

- Agco Tractor low to mid hp in Changzhou, Combines and high hp tractors in Daqing 2010 200 mn $ over 4 years, starting with 5000 units in 2011. Goal is 20.000 tractors in 2015.

- Belarus tractor works in Urumuqi, Xinjiang. 2010 100 tractors sold, 2011 assembly of 1000 tractors of 90-132 hp

- Maschio Quingdao 2006,

- Star Noki Shanghai 2005

- Monosem 2008
**Hay Machinery in China**

Hay making Machinery has just started to develop in China. Until now this has been a field for imported machinery. But now new JV companies have been established in this field of activity, e.g. Star from Japan.

**Combine Harvester in China**

- Harvester types are very varied due to different agricultural products.
- Combine harvester for wheat has the biggest share (account for 80% of total including tractor side-attached).
- Combine harvester for rice has quickly grown recently since more Japanese companies entered the market, e.g. Kubota, Yanmar, Iseki.
- Harvester for corn or green forage is still in development and more technology is needed, today supply rely on import machines from the West.
The Spray-bike

Major Ag Machinery Manufacturers

- Xinjiang Boman Baler
- Inner Mongolia Agricultiral University Mechanical plant Potato Harvester
- Yakeshi Baler/Potato H/Mower
- Inner Mongolia Huade Mower/Baler
- Inner Mongolia Agricultiral University Mechanical plant Potato Harvester
- Heilongjiang Hongxinglong
- Heilongjiang AMRI
- Heilongjiang Hongxinglong
- Shenyang Fangke Square Baler
- Hebei Huinan
- Hebei ShunDa Potato Harvester
- Beijing Xingyiyang
- MABN (GuAn branch) Hua Potato Harvester/Baler
- Maschio Qingdao Rotary Tiller
- BYCC Lianyungang(Jiangsu) Rotary Tiller
- Star Shanghai Mower/Baler
- Shanghai Mubang Square baler
- Delaval Shanghai Feeder Mixer
- Shenyang Fangke Square Baler
- BYCC Lianyungang(Jiangsu) Rotary Tiller
- Star Shanghai Mower/Baler
- Shanghai Mubang Square baler
- Delaval Shanghai Feeder Mixer
- Shanghai Ochuan
Price Level Ag Machinery 2010

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Price $</th>
<th>Manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice combined harvester</td>
<td>4LZ-1.5</td>
<td>11.917</td>
<td>Foton Lovol</td>
</tr>
<tr>
<td></td>
<td>4LZ-1.6</td>
<td>7.078</td>
<td>Jiangsu World</td>
</tr>
<tr>
<td></td>
<td>4LZ-0.5</td>
<td>2.687</td>
<td>Guangdong Dancia</td>
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<tr>
<td></td>
<td>4LZ-1.0</td>
<td>5.056</td>
<td>Hunan Longzhou</td>
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<tr>
<td>Potato Harvester</td>
<td>1520</td>
<td>3.756</td>
<td>MAEN</td>
</tr>
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<td></td>
<td>1600</td>
<td>9.389</td>
<td></td>
</tr>
<tr>
<td>Combined potato harvester</td>
<td>1710</td>
<td>31.633</td>
<td></td>
</tr>
<tr>
<td>Tiller</td>
<td>1GN-160</td>
<td>674</td>
<td>Hebei Shengeng</td>
</tr>
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<td></td>
<td>1GND-220</td>
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<td>1GND-240</td>
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<td>1GQN-180</td>
<td>770</td>
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<td>1GQN-230</td>
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<td>1.107</td>
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<td>Baler</td>
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<td>3.900</td>
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<td>square</td>
<td>10.833</td>
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Future development of AG Machinery Market

• between 10% and 15% growth per year, ahead of GDP
• still substantial lack of Mechanization (20 - 30 years behind)
• shrinking arable land due to Industrialisation and Urbanization requires more productivity of farming
• large resources required to be directed to Agriculture sector, subsidy policy will continue
• increase in demand for irrigation
• with rising income changing diets, largest consumer of wheat
Future Expectation of Tractor Manufacturers 2010 – 2015

1. AGCO 41.4% annual growth
2. Foton 30.6%
3. Mahindra 46.1%
4. Same Deutz 38.0%
5. YTO 29.7%
6. Shandong 38.0%
7. Jiangsu 32.0%
8. Zhejiang Combine 30.3%

Source: Interviews Stieler Consulting

7. Localizing Production
Establishing an foreign owned chinese company

A: Establish Whofe - Wholly owned foreign enterprise
   - local consultancy, US chamber of commerce
B: Select Joint Venture Partner
   - gain majority, define business activity

Select business location
   - local communities very helpful to find land or building in industrial parks
   - General Contractor for setting up the building, energy supply etc.

Business Model
   - Business license, Manufacturing and Trading
   - Assembly
   - Export share
Cost of production:

• Labour: +5-10% Inflation in major cities
  
  Worker 260 $/month  
  Clerk  600 $/month  
  Engineer 1300-1500 $/month  
  Buyer  1500-2000 $/month  
  Sales person 2500 $/month  
  
  plus 45% social security

• Material:
  - Forgings only little savings, but low tooling  
  - Castings savings >35% and tooling cost low, problem with quality  
  - Tubing saving can be as much as 50%  
  - Bearings great saving, even major western brands are being produced in China  
  - Plastics: depending on material great saving, tooling costs are very inexpensive

Consider transport cost as a major add up
8. Conclusion:

• In China already considerable volumes of Ag Machinery production exists, but mechanization rate below 50%.

• China’s growth in Agricultural Machinery demand will continue and with rates superior to other countries

• Machines will get bigger, stronger and more efficient

• Cost of local production will continue to be lower, but the gap is closing gradually (Inflation and currency needs to be managed)

• New technologies will become available through local production and so become lower in price (see hydraulics)

Conclusion continued

• Import will only exist, where technology is needed and where it is not economical to set up local production for those limited volumes

• Export will increase towards developing countries, but also as more companies are transferring their western products to China

• Purchasing activities are worthwhile, but need strict control on quality, delivery and price

• Engage yourself in an own or shared Representative office to watch the market development and supervise purchasing activities – and think of establishing a flexible assembly line for export and local market through Wholly Owned Foreign Enterprise
Sources: VDMA, FAO, USDA, CIA, CAAMM, GKN

Tractor and Combine Harvester data used from study made Feb. 2011 by Stieler Consulting, Lörrach Germany. www.joachim.stieler@stm-stieler.de

VDMA Germany started an own China study on Agricultural Machinery in March 2011 to be finalized end of June 2011. This study is dealing with the broad spectrum of Mechanization and Machinery beyond Tractors andCombine harvesters.