Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture
CAP reform and productivity in European agriculture

Arnaud PETIT, Director Commodities and Trade
Copa-Cogeca
– Increasing demand for agricultural products:
  • Change in dietary patterns
  • Food/feed/non-food demands (e.g. Bio-economy, energy)

– Agricultural production under increasing pressure:
  • Increasing strains on limited natural resources;
  • Climate change (Increasing risk of extreme weather events);
  • Trade liberalisation;

– Increase profitability
  • low farm income;
  • Extreme market volatility;
  • Unbalances and unfair functioning of the food chain

*European agriculture need increase its productivity while developing new practices more environmental friendly*
CAP reform what is new?
CAP reform what is new?

Ceilings of MFF in payments

% GNI

CAP reform what is new?
CAP reform what is new?

- Young farmers
- Coupled payments
- Greening
- ANC
- Redistributive payment
- Basic payment
- National ceiling
- Small farmers

Option 1
- Young farmers
- Basic payment
- Greening
- National ceiling
- Small farmers

Option 2
- Redistributive payment
- ANC
- Basic payment
- National ceiling
- Small farmers
CAP reform what is new?

• “Active farmer” & minimum requirements for receiving DPs

• Compulsory degressivity and voluntary capping of payments above certain limits

• Transfers between pillars

• External convergence: redistribution of DPs between Member States (MS)

• Internal convergence: move to a flat rate payment within MS
• **Crop diversification**
  ✓ Between 10-30 ha of *arable land*: at least 2 crops, with the main one not covering >75% of that land
  ✓ >30 ha of *arable land*: at least 3 crops, with the main one not covering >75% of that land and the 2 main crops together not covering >95% of that land

• **Maintain at least 95% of permanent grassland**

• **5% Ecological Focus Area on holdings with *arable land* >15ha**

• **Equivalent measures**
  ✓ Agri-environment-climate measures, only on land eligible for DPs
  ✓ National/regional certification schemes
• Intervention and private storage

• New safeguard clauses are introduced for all sectors to enable the Commission to take emergency measures to respond to general market disturbances. These measures will be funded from a crisis reserve.

• Systems of production limitation – end of milk quotas in 2015, end of sugar quotas in 2017 and end of vine planting rights in 2015, replaced by a new authorisation scheme until 2030

=> An increasingly market-oriented agriculture
• Producer Organisations & Inter-Branch Organisations: Now covering all sectors

• Extension of rules (e.g. Standard contracts, marketing standards)

• Possibility for farmers to collectively negotiate contracts for the supply of olive oil, beef, cereals and other arable crops

• In case of severe imbalance in the market, the Commission may authorise POs or IBOs to take certain temporary measures collectively (e.g. market withdrawal or storage by private operators) to stabilise the sector concerned

=> May contribute to a better position of farmers in the food chain
Is CAP reform able to respond to the challenges?
Main objectives – will they be achieved?

• Ensure maintenance of production in the EU
  → Support going to “active farmers”

• Further improve the environmental sustainability of farming in an effective, practical & fair way
  → Mandatory greening may bring some environmental benefits, but not very effective & costly

• Improve farmers’ economic position and reduce farmers’ dependency on DPs
  → Level of DPs going down but not compensated by enough measures to improve farmers’ economic position

• Help farmers to cope with climate change and manage risks
Main objectives – will they be achieved? cont’d

• Encourage “green growth”: integrate environmental protection and the production process in a way which improves or at least maintains production capacity whilst contributing to efficient and productive use of natural resources
  ⇒ technology will be a cornerstone for the future

• Strengthen farmers and agri-cooperatives’ position in the food chain
  ⇒ market risk will be more relevant in business decision

• Reduce red tape and administrative burdens
  ⇒ More not less red tape

• Targeted and flexible approach of Pillar 1
  ⇒ Flexible national implementation but coherent with a common EU policy
Time frame?
12 April 2010

Public debate on the CAP future
Communication from the Commission

24 September 2013

Legislative proposals
EP reports

Council mandate
Trialogues

Final political agreement
between the three Institutions

- Wider representation of interests
- New institutional reality: the European Parliament (EP) co-legislator for the first time in agriculture
- Budgetary constraints across the EU
• Finalisation of the basic acts
  ✓ Adoption by EP Plenary in November and by Council in December
  ✓ Publication and entry into force in January/February 2014

• Transitional Regulation for 2014
  ✓ Adoption by EP Plenary in November and by Council in December
  ✓ Publication and entry into force before end 2013

• Delegated and implementing acts (DA & IA)
  ✓ First meetings of experts groups and management committees have taken place
  ✓ Discussions to be finalised before end 2013 to allow for adoption by the Commission before the EP recess period
  ✓ Publication and entry into force of before the summer break 2014
Thank you
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Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture
Agricultural Development and Mechanization in 2013

A Comparative Survey at a Global Level

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University of Hohenheim

&

C. Jenane, N. Samarakoon
United Nations Industrial Development Organization
Outline

1. Major challenges for agriculture
2. Agricultural mechanization survey: Data sources and their limitations
3. Overview of agricultural mechanization in different regions of the world
4. Future trends and evolution of agricultural mechanization: Survey results:
   - Impact factors/drivers
   - Status and projection of agricultural mech. in surveyed regions
   - Cross regional comparison
5. Conclusions
1. Major challenges for agriculture

- Climate change
- Increase of Population
- Resource shortage
- Increasing demand For energy
- Polarization of wealth
- Financial problems of countries
- Aging population
- Increasing complexity
1. Major challenges for agriculture - World population

Increasing food demand and change in diets due to economic growth & urbanization

Source: FAOSTAT
1. Major challenges for agriculture - Arable land development

From 1950 to 2005 the land per capita has decreased approximately by 50%
1. Major challenges for agriculture - Rising global food commodity prices & supply volatility

Source: McKinsey(2011)
1. Major challenges for agriculture - Farm size distribution and how technologies could be adapted to these various sizes
1. Major challenges for agriculture - Different agro-climatical and technological levels: Yields of main crops

- Cereal yields are reflecting, beside agro-climatical conditions, also the overall development of the farming systems: Mechanization and other farm inputs.
1. Major challenges for agriculture

2. Agricultural mechanization survey: Data sources and their limitations

3. Overview of agricultural mechanization in different regions of the world

4. Future trends and evolution of agricultural mechanization
   - Impact factors/drivers
   - Status and projection of agricultural mech. in surveyed regions
   - Cross regional comparison

5. Conclusions
2. Global Agricultural mechanization survey – topics investigated

1. General development tendencies likely to affect the future demand of agri. Mech.

2. Most important staple crops and major drivers for mech. of such cropping systems

3. Trade related to agricultural machinery – including implements, tractors and combines

4. The impact that selected issues will have on the demand for agricultural mechanization

6. The technological trends for the sector over the next 10-20 years.
2. Global Agricultural mechanization survey: Data sources and their limitations

The underlying assumption is that responses received to the survey questions would provide a reliable indication of the evolution and trends of the targeted sector.

Two surveys (2009 and 2013): Agricultural machinery manufacturer associations and other institutions

Statistical data: Worldbank and UN data (FAO and UNIDO) and manufacturer association sources
### 2. Global Agricultural mechanization survey: Data sources for 2013

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<thead>
<tr>
<th>Country</th>
<th>Association and/or Institution</th>
<th>Region</th>
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<tbody>
<tr>
<td>Germany</td>
<td>VDMA – Verband Deutscher Maschinen- und Anlagenbaue</td>
<td>European Union</td>
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<td>Italy</td>
<td>UNACOMA – Unione Nazionale Costruttori Macchine per l’Agricoltura</td>
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<td>France</td>
<td>AXEMA – Union des Industriels de l'Agro-Equipment</td>
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<td>Finland</td>
<td>Federation of Finnish Technology Industries</td>
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<tr>
<td>USA</td>
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<td>JFOMMA – Japan Farm Machinery Manufacturer’s Association</td>
<td>Japan</td>
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<tr>
<td>China</td>
<td>CAAMM – China Association of Agricultural Machinery Manufacturers</td>
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<td>India</td>
<td>FICCI – Federation of Indian Chambers of Commerce and Industry IARI – Indian Agricultural Research Institute CIAE - Central Institute of Agricultural Engineering</td>
<td>Asia</td>
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<td>Morocco</td>
<td>Institut Agronomique et Vétérinaire Hassan II</td>
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<td>The University of Dschang</td>
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<td>Botswana</td>
<td>Botswana College of Agriculture</td>
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<td>South Africa</td>
<td>SAAMMA – South African Agricultural Machinery Association</td>
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</tbody>
</table>
2. Global Agricultural mechanization survey: Limitations of the data

- Data availability
- Global perspective <> Regional / local accuracy
- Relatively limited response rate (questionnaire survey)
1. Major challenges for agriculture
2. Agricultural mechanization survey: Data sources and their limitations
3. Overview of agricultural mechanization in different regions of the world
4. Future trends and evolution of agricultural mechanization
   - Impact factors/drivers
   - Status and projection of agricultural mechan. in selected regions
   - Cross regional comparison
5. Conclusions
• **Europe/EU**
  – High numbers of machines per ha reflecting over mechanization and a great variety of farm structures
  – Tendency to fewer and higher powered machines
  – Strong industry with high rate of export

• **USA**
  – Completely mechanized farms
  – Trend towards larger and higher horsepower equipment
  – Further technical progress tends towards automation
• **Japan**
  – The agri. sector has been diminishing in recent decades (agricultural land, population working in agriculture, etc.).
  – However, the sector is highly mechanized with about 461 tractors and 237 harvesters per 1,000 ha.
  – Mostly small, sophisticated and specialized machines.
  – Further technical progress tends towards more automation.
  – Strong industry with export to whole Asia and other regions of the world.

• **India/China**
  – Agriculture contributes large shares to the GDP and more than one third of the population gains income from agriculture.
  – Small scale farm operations (~ 0.5 to 1.5 ha) are predominant.
  – Structural change with tendencies to larger farms is increasing.
  – Rapid increase in number of machines and of mech. custom-hire services.
  – Fast growing tractor production: from 2002/03 to 2007/08 the production capacity doubled to reach 364,205 units in India.
• **North Africa / Middle East**
  – The levels of mechanization are significantly higher than SSA. The average number of tractors per 1000 ha is 11.
  – Large disparities can be observed in the region, for example:
    • in Morocco the Nbr of tractors per 1,000 ha averages 6.
    • in Egypt the data observed are on avg 31 tractors.

• **Sub-Saharan Africa**
  – Land productivity is the lowest in the world. Average grain and maize yields range at about 1 ton/ha.
  – 80% of agricultural area cultivated with only human power.
  – 5% of agricultural area with tractor.
  – 70% of all tractors are in South Africa and Nigeria.
  – Increasing imports from India and China.
1. Major challenges for agriculture
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5. Conclusions
### Impact Factors/Divers on the demand of agri. mechanization *

#### Natural conditions

<table>
<thead>
<tr>
<th>Factor</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Climate change</td>
<td>Low (+/-)</td>
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<tr>
<td>Land (availability, condition)</td>
<td>Low (+/-)</td>
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<tr>
<td>Water availability</td>
<td>Med. (+/-)</td>
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</table>

#### Economic conditions

<table>
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<th>Factor</th>
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<tr>
<td>Technical progress</td>
<td>Med./Strong (+)</td>
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<tr>
<td>Economic growth and welfare</td>
<td>Med. (+)</td>
</tr>
<tr>
<td>Oil price</td>
<td>Med. (+/-)</td>
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<tr>
<td>Economic crises,</td>
<td>Med. (-)</td>
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<tr>
<td>Energy supply</td>
<td>Med. (+/-)</td>
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#### Political conditions

<table>
<thead>
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<tr>
<td>Food safety goals</td>
<td>Low (+)</td>
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<tr>
<td>Education of farm operators</td>
<td>Med. (+)</td>
</tr>
<tr>
<td>Research</td>
<td>Low (+)</td>
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<tr>
<td>Subsidies</td>
<td>Med. (-)</td>
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<tr>
<td>Farm structure development</td>
<td>Med. (+)</td>
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<tr>
<td>Biofuel production</td>
<td>Low/Med. (+)</td>
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#### Demographic conditions

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<tr>
<td>Population growth</td>
<td>Med. (+)</td>
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<tr>
<td>Population age in rural areas</td>
<td>Med. (+/-)</td>
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<tr>
<td>Change in diets, consumer concerns</td>
<td>Low (+)</td>
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<tr>
<td>Urbanization and industrialization</td>
<td>Med. (+)</td>
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</tbody>
</table>

*Values for all 8 surveyed countries*
### Status and projection of agr. mechanization in surveyed regions: *Twelve levels of agricultural mechanization*

<table>
<thead>
<tr>
<th>Level</th>
<th>Farm power characteristics</th>
<th>hand</th>
<th>Draught animal</th>
<th>tractor s</th>
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<tbody>
<tr>
<td>1</td>
<td>Predominantly hand power</td>
<td>&gt; 80</td>
<td>&lt;= 20</td>
<td>&lt;= 5</td>
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<tr>
<td>2</td>
<td>Significant use of draught animal power</td>
<td>46 – 80</td>
<td>21 – 39</td>
<td>&lt;= 10</td>
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<tr>
<td>3</td>
<td>Significant use of tractors</td>
<td>15 – 45</td>
<td>&gt;= 40</td>
<td>&lt;= 19</td>
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<tr>
<td>4</td>
<td>Tractors predominant</td>
<td>20 – 50</td>
<td>15 – 30</td>
<td>20 - 49</td>
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<tr>
<td>5</td>
<td>Fully motorized technology level I</td>
<td>&lt;= 25</td>
<td>&lt;= 25</td>
<td>50 - 75</td>
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<td>6</td>
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<td>&lt;= 10</td>
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<td>&gt; 75</td>
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<td>8</td>
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<td>9</td>
<td>Fully motorized technology level V</td>
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<td>10</td>
<td>Fully motorized technology level VI</td>
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<td>11</td>
<td>Moderate share of autonomous vehicles</td>
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<tr>
<td>12</td>
<td>Significant share of autonomous vehicles</td>
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<tr>
<th>Nomin. speeds (km/h)</th>
<th>No. of speeds forw./rew.</th>
<th>Shift</th>
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<td>forw.</td>
<td>rev.</td>
<td>2 – 20 (25)</td>
<td>3 - 8</td>
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<tr>
<td>6/4 – 12/4</td>
<td>2 - 30</td>
<td>3 - 10</td>
<td>8/4 – 12/4</td>
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<tr>
<td>12/4 – 16/8</td>
<td>(0,5) 2 – 30 (40)</td>
<td>3 - 15</td>
<td>16/12 – 36/36</td>
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<td>16/12 – 36/36</td>
<td>(0,3) 2 – 40 (50)</td>
<td>2 - 20</td>
<td>SS, PPS, FPS</td>
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<td>0 – 50 (60)</td>
<td>0 - 25</td>
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<td>autom.</td>
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Status and projection of agr. mechanization in surveyed regions: Current status (2013)

Agricultural mechanization: Status
Status and projection of agr. mechanization in surveyed regions

Agricultural mechanization: 10 years prediction
Status and projection of agr. mechanization in surveyed regions

Agricultural mechanization: 20 years prediction
Status and projection of agr. mechanization in surveyed regions
Cross regional comparison: Domestic demand over the next 10 years

<table>
<thead>
<tr>
<th>Category</th>
<th>Germany</th>
<th>Italy</th>
<th>France</th>
<th>Finland</th>
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<th>India</th>
<th>Morocco</th>
<th>Cameroon</th>
<th>Botswana</th>
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<td>Medium size tractors (&lt;= 100 hp)</td>
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<td>Big size tractors (&gt; 100 hp)</td>
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<td>Spare parts for tractors</td>
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<td>Self propelling combines</td>
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<td>Draught animal implements</td>
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Legend

- [↑] >= 10% annual growth rate
- [↓] <= -10% annual growth rate
- [→] +/- 0% annual growth rate
- [↑] -10% to 0 % annual growth rate
- [-] not specified
- [↓] not relevant
## Cross regional comparison: Import dev. over the next 10 years

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<th>Germany</th>
<th>Italy</th>
<th>France</th>
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**Legend**

- **↑** >= 10% annual growth rate
- **[↑]** -10% to 0% annual growth rate
- **←** not specified
- **[→]** 0% to 10% annual growth rate
- **[↓]** <= -10% annual growth rate
- **[↗]** -/+ 0% annual growth rate
- **[↓]** not relevant
Cross regional comparison: Export dev. over the next 10 years

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**Legend**

- \(\uparrow\) >= 10% annual growth rate
- \(\downarrow\) <= -10% annual growth rate
- \(\uparrow\downarrow\) -10% to 0 % annual growth rate
- \(\downarrow\uparrow\) 0% to 10% annual growth rate
- \(\rightarrow\) +/- 0% annual growth rate
- \([\cdot]\) not specified
- \([/\cdot]\) not relevant
## Cross regional comparison: Market penetration of selected technologies

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<th>Plant protection</th>
<th>Guidance systems</th>
<th>Yield mapping</th>
<th>Driverless tractors</th>
<th>Fleet management (telematics)</th>
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<tr>
<td>Status 10 years</td>
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<tr>
<td>Botswana</td>
<td>1</td>
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<td>Status 10 years</td>
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<tr>
<td>South Africa</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Status 10 years</td>
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</tr>
</tbody>
</table>

**Legend:**
- Market penetration:
  - 0 to 2 %
  - 2 to 10 %
  - 10 to 30 %
  - 30 to 50 %
  - > 50%
1. Major challenges for agriculture
2. Agricultural mechanization survey: Data sources and their limitations
3. Overview of agricultural mechanization in different regions of the world
4. Future trends and evolution of agricultural mechanization
   - Impact factors/drivers
   - Status and projection of agricultural mechanization in selected regions
   - Cross regional comparison
5. Conclusions
Conclusions

General and Developed Economies

• The need for further mechanization to improve productivity in agriculture and to feed the world is undisputable in particular in the light of expected demographic developments.

• The political conditions and also expected socio-development factors seem to be very favorable for investments in agricultural mechanization.

• The use of precision farming will become standard in the short to the mid-term range, but also the use of control and automation systems will become common and offer new growth opportunities for the corresponding industries.

• Nevertheless, the quantitative saturation of domestic markets with a large number of different agricultural implements will force the industry to open potentials abroad.
Conclusions

Transition Economies

• The emerging countries such as India, China and South-Africa are seeing significant economic growth with associated technology transfer and progress in agricultural production.

• They are becoming important players on the world markets for agricultural machinery and also represent promising markets with high demands for further mechanization.

• Strong advances towards high levels of mechanization can be expected. However, this support that:
  - the current trends of technology transfer is pursued as part, for example of joint-ventures.
  - issues like e.g. property rights, taxation practices across countries, market access, etc. are further dealt with.
Conclusions

### Developing Economies

- The most challenging region for agricultural mechanization development remains Africa.

- While only limited progress has been achieved in terms of increased number of machines and market expansion, the predictions over the next ten years are positive.

- This supposes that increased investments are needed both from the national governments and the private sector to develop the sector.
Thank you for your attention
Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture
Global Agricultural Markets After the 2013 Harvest

JB Penn – Chief Economist
Deere & Co.
Brussels
17 October, 2013
Global Agricultural Markets

- Subtle Market Structure Shifts Occurring
- Looking Beyond 2013
- Concluding Observations
Brief Historic Review

Global Agricultural Markets
• Period of unprecedented prosperity in developed country agriculture

• Key drivers: population and income growth, urbanization
  – Dietary shifts
  – Renewed attention to developing country agriculture

• Now, “A Breather”? How long?
Global Macro Economy: *World GDP Growth*

Source: International Monetary Fund (IMF), World Economic Outlook Update, October 2013

GDP Growth Rates

- European Union
- Commonwealth of Independent States
- ASEAN-5
- Latin America and the Caribbean
- Sub-Saharan Africa
- United States
- Central and eastern Europe

Source: International Monetary Fund (IMF), World Economic Outlook Update, October 2013
Geographic Distribution of Population Growth, 2000 to 2013

*More Developed Regions: Europe, North America, Japan, Australia, New Zealand

Source: United Nations, World Population Prospects 2012 Revision
Urbanization: Rural-Urban Population Shift

Source: UN World Urbanization Prospects, The 2009 Revision Population Database
Commodity Index Prices, January 1990 - September 2013

Commodity Metals Price Index, 2005 = 100, includes Copper, Aluminum, Iron Ore, Tin, Nickel, Zinc, Lead, and Uranium Price Indices
Commodity Fuel (energy) Index, 2005 = 100, includes Crude oil (petroleum), Natural Gas, and Coal Price Indices
Commodity Food Price Index, 2005 = 100, includes Cereal, Vegetable Oils, Meat, Seafood, Sugar, Bananas, and Oranges Price Indices

Source: IMF Primary Commodity Prices
Subtle Market Structure Shifts Occuring
Global Agricultural Markets
Global Grain Market Dynamics

• Major shifts underway since 2000
  • not widely recognized

• Competitiveness among producing regions slowly shifting – due to:
  • On farm technology – cost/ton at farm gate
  • Infrastructure investment – cost/ton at export location

• Government policies shifting:
  • Subsidies policies shifting in developed and developing
Global Agricultural Markets: Subtle Market Structure Shifts Occurring

Major Grain Exporter Market Shares Shifting

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Global Agricultural Markets: Subtle Market Structure Shifts Occurring

US Dominant Role Declining Sharply

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Soy Market Shares Also Shifting

Share of World Exports

Source: Informa Economics, Weekly Soybean Complex, June 2013
Non-traditional Exporters Are Less Stable Regions

- Growing market instability likely as importance of non-traditional suppliers grows – price volatility, political instability, trade disruptions

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Global Grain Market Dynamics

- Major new consumers emerged
  - 1.1B since 2000 – mostly in lower latitudes
- New export producers emerged
China Emerges As Major Soy Importer (circa 2000)

- Policy to expand domestic corn and wheat output, import soy
- Imports approaching one-half of world trade
- Projected to surpass 100 MMT by 2020 – account for over 80% of global soy trade growth

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
China Leaves Global Wheat Market – Returning Again?

Forecast to import 9.5 MMT in 2013/2014

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Whither China and the Global Corn Market?

- Corn: from 3 MMT (2012) to 20 - 30 MMT (2022)
- Forecast 7 MMT for 2013/2014
- Will corn be added to soy as a basic import? Or import pork?

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Brazil Gains Preeminence as Global Agriculture Exporter (circa 2000)

- Captures much of global soy trade growth
- Rapidly expands grain, meat, poultry export sales
- Third-largest agricultural exporter (value) after US and EU
- #1 exporter: coffee, soy, beef, sugar, ethanol and frozen chickens

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Increasing Reliance on South American Exports

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Russian Ag Sector Stabilizes After USSR Breakup and Late 1990s crisis – Enormous Potential

Source: Foreign Agricultural Service, Official USDA Estimates, September 2013
Looking Beyond 2013

Global Agricultural Markets
Global Agricultural Markets: 
Looking Beyond 2013

Global Grains

Source: USDA/WASDE, September 2013
Global Grains

*Stocks to Use: 71 days*

- **Ending Stocks**
- **Stocks/Use Ratio**

10 Yr Avg. = 20%

Source: USDA/WASDE, September 2013
Northern Hemisphere Harvesting Large Grain Crops

<table>
<thead>
<tr>
<th>Country</th>
<th>2012</th>
<th>2013F</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU 28</td>
<td>280</td>
<td>301</td>
<td>7.5</td>
</tr>
<tr>
<td>China</td>
<td>477</td>
<td>480</td>
<td>1</td>
</tr>
<tr>
<td>USA</td>
<td>354</td>
<td>431</td>
<td>22</td>
</tr>
<tr>
<td>Russia</td>
<td>67</td>
<td>90</td>
<td>34</td>
</tr>
<tr>
<td>Canada</td>
<td>52</td>
<td>57</td>
<td>11</td>
</tr>
<tr>
<td>Ukraine</td>
<td>45</td>
<td>60</td>
<td>32</td>
</tr>
</tbody>
</table>

Large Southern Hemisphere Crops Again in Prospect for 2013/2014

<table>
<thead>
<tr>
<th></th>
<th>Argentina (mmt)</th>
<th>Brazil (mmt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>26.5</td>
<td>81</td>
</tr>
<tr>
<td>Soy</td>
<td>49.4</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>53.5</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>-2</td>
<td>-11</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

- Planting conditions in Southern Hemisphere now market focus
- Temperature, moisture, and soil conditions dominate next few weeks

Ag Commodity Prices Seeking New Trading Range

US Corn Prices Received by Farmers, 1900 - 2012

1900 to 1939 Average = $26.2

1940 to 1969 Average = $48

1970 to 2005 Average = $89.6

$217/mt

$157/mt

Source: USDA Feed Grains Database, September 2013
Concluding Observations

Global Agricultural Markets
Global Agricultural Markets: Concluding Observations

- Period of unprecedented prosperity – driven by largely external forces

- Sector structure/markets changed significantly – still not widely recognized – calls for new mental models

- After 2013 – new parallels – entirely new situation

- Ag commodity markets seeking new trading range – worldwide weather will be key determination for 2014
Global Agricultural Markets After the 2013 Harvest

JB Penn – Chief Economist
Deere & Co.
Brussels
17 October, 2013
Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture
Latest Trends and Developments in the dairy industry

Kevin Bellamy
Senior Dairy Analyst
Rabobank
World dairy demand is growing…

Global dairy demand CAGR

Source: IDF 2012, Rabobank analysis
But the growth is asymmetric...

Global dairy demand by market

Source: Rabobank analysis
And the product mix required is changing...

Relative growth by product

- **High growth**
  - Infant Milk formula
  - Nutritional food and beverages
  - Hybrid beverages (juice/dairy)
  - Substitute products
  - Healthier variants of traditional products

- **Moderate growth**
  - Yoghurt
  - Cheese (food service)

- **Slow growth**
  - Cheese (retail)
  - Fluid milk
  - Butter

- Strong demand for milk powder, WPCs, MPCs and lactose
- Slowing production of cheese (and hence whey/lactose)
There are some important regulatory changes taking place …

Key regulatory changes:

- EU Removal of Milk quotas 2015
- Allowing FDI in multi-brand retailing
- Government led consolidation
- Potential for environmental legislation
- Farm Bill in final stages based around margin insurance
- Potential for EU trade agreement involving dairy
The rising demand is means prices for raw milk have increased.
There are only a few regions which can increase export surpluses...

Projections of changes in self-sufficiency

Source: Rabobank analysis
Trade has become more focused and regional ....

Source: Rabobank
In the past year the surpluses have declined causing a price spike....

Milk production growth of Big 7 exporters combined

Source: Rabobank
Note: Includes EU 27, USA, NZ, Australia, Brazil, Argentina, and Uruguay *Feb 2012 Adjusted for leap year.
Global commodity prices have indicate a growth in value.

Source: USDA
Prices will continue to be volatile....

- Dairy market is inherently prone to volatility
  - Demand and supply are inelastic in the short-term
- Market shocks have become more frequent
- This unleashes dairy’s inherent potential for volatility
  - Supply side: input volatility, climate volatility, rise of less stable suppliers
  - Demand side: economic turmoil, rise of less stable and more opaque buyers

Source USDA, Rabobank analysis
Note 1 As of 17th of May 2013
High demand means milk can also be sourced from high cost regions.

Farmgate costs of milk production

Source: Rabobank analysis
Some EU regions will expand following quota removal in 2015

Grassland productivity (tonnes / DM / Ha)

We estimate that production will increase in Europe by 10m tonnes (7%-8%) following 2015

Milk will flow from most efficient production regions to least efficient regions

Legend

Grass productivity

- <= 1 ton/ha
- 1 - 3 ton/ha
- 3 - 5 ton/ha
- 5 - 7 ton/ha
- 7 - 9 ton/ha
- > 9 ton/ha

Source: Alterra
In others production will continue to decline

European milk quota's over and under 2008/09 to 2012/13

Source: EU, Rabobank
But, expansion will also take place in developing regions.

Source: Rabobank analysis
For some the volume of production and animals are more important.

Milk supply grew by 59.6m tonnes between 2009 and 2012.

More animals will be required

Additional required in 2016

Assume 1% gain per year in yields based on genetic/technical progress

Source: Rabobank analysis
Will the opportunities continue…?
Conclusions

- Global demand for dairy continues to increase, but growth is asymmetric and the product mix is changing
- There are significant regulatory changes in both the developed and developing markets
- Prices are increasing and the world is supply constrained meaning that milk will be sourced from higher cost regions
- Relatively low levels of marginal traded milk, and other factors will make prices volatile and the industry has yet to develop mechanisms for this
- Few regions will have the opportunity to expand export surpluses but most regions will expand production, with farm sizes generally rising and the formal sector expanding
- While markets in the west have matured developing markets continue to expand the need for animal protein suggesting that the demand increases will be sustained

Source: Rabobank analysis
Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture
Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture
Indian Market Perspectives

CEMA-CECE SUMMIT
ECONOMIC FORUM
Bruxelles, 17th October 2013

Mirco Maschio
CEO Maschio Gaspardo
SUMMARY:

- MASCHIO GASPARDO: Short Company profile
- INDIA: Country figures
- INDIA: Agricultural Sector
- Conclusions
Who is

MASCHIO GASPARDO?
<table>
<thead>
<tr>
<th>Product Range</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Soil preparation</td>
<td>Lavorazione del terreno</td>
</tr>
<tr>
<td>Seeding</td>
<td>Semina</td>
</tr>
<tr>
<td>Green Maintenance</td>
<td>Manutenzione del verde</td>
</tr>
<tr>
<td>Haymaking</td>
<td>Fienagione</td>
</tr>
<tr>
<td>Fertilizing</td>
<td>Concimazione e trattamento</td>
</tr>
</tbody>
</table>
MG GROUP IN THE WORLD – PRODUCTION PLANTS

- ITALY
- ROMANIA
- INDIA
- CHINA
- USA
MG GROUP IN THE WORLD - SALES BRANCHES

- NORTH AMERICA
- RUSSIA
- SPAIN
- FRANCE
- GERMANY
- POLAND
- UCRAINE
- TURKEY
- IRAN
- ROMANIA
- INDIA
- CHINA
- GEORGIA
MG INDIA PVT LTD – FOCUS ON BUSINESS

EXPORTING TO ALL SOUTH-EAST ASIA
MG INDIA PVT LTD – PLANT OPENING CEREMONY (Pune, Sept. 2012)

- Total Area 25 000 m²
- Covered Area 12 000 m²
- 200 Employees

Mr. Sharad Pawar - Ministry of Agriculture
Mr. Egidio Maschio - MG President
Mr. Mirco Maschio - MG Ceo
INDIA
COUNTRY FIGURES
INDIA GENERAL OVERVIEW (font: Cia Factbook)

GEOGRAPHY:
• total: 3,287,263 sq km (7° in the world)
• land: 2,973,193 sq km
• water: 314,070 sq km

POPULATION:
• Total: 1,220,800,359 (July 2013 est.) (2°)
• growth rate: +1,28%
• 0-14 years: 28.9%
• 15-24 years: 18.2%
• 25-54 years: 40.4%
INDIA GENERAL OVERVIEW (font: Cia Factbook)

ECONOMY:
- **GDP power Parity:** $4.761 trillion (2012 est.)

GDP COMPOSITION:
- agriculture: 17.4%
- industry: 26.1%
- services: 56.5% (2012 est.)

LABOUR FORCE: 486.6 million (2012 est.)
- agriculture: 53%
- industry: 19%
- services: 28% (2011 est.)
### INDIA ECONOMIC DATA

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</thead>
<tbody>
<tr>
<td>Gross domestic product - volume - market prices (%)</td>
<td>3.9</td>
<td>8.5</td>
<td>10.5</td>
<td>6.3</td>
<td>3.7</td>
<td>5.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Gross domestic product - deflator - market prices (%)</td>
<td>8.7</td>
<td>6.0</td>
<td>8.9</td>
<td>8.3</td>
<td>7.8</td>
<td>6.9</td>
<td>6.3</td>
</tr>
<tr>
<td>Consumer price - headline inflation (%)</td>
<td>9.1</td>
<td>12.4</td>
<td>10.4</td>
<td>8.4</td>
<td>9.8</td>
<td>7.8</td>
<td>6.9</td>
</tr>
<tr>
<td>General government financial balance – (% of GDP)</td>
<td>-8.3</td>
<td>-9.4</td>
<td>-6.8</td>
<td>-8.1</td>
<td>-7.5</td>
<td>-6.9</td>
<td>-6.5</td>
</tr>
<tr>
<td>Current account balance - (% of GDP)</td>
<td>-2.3</td>
<td>-2.8</td>
<td>-2.7</td>
<td>-4.2</td>
<td>-4.9</td>
<td>-4.7</td>
<td>-4.2</td>
</tr>
</tbody>
</table>

*OECD Economic Outlook 93 Projection, May 2013, summary of projections*
INDIA

AGRICULTURAL SECTOR
INDIA AGRICULTURAL FEATURES

- Cultivated Area: 1,922,060 Km²

- Main Cultivation:
  - Rice 440,060 Km²
  - Wheat 298,640 Km²
  - Cereal 264,220 Km²
  - Legumes 244,620 Km²
  - Cotton 121,780 Km²

- tractors: (1° quarter 2013)
  - CHINA: 608,438
  - INDIA: 139,418
  - USA: 37,335
  - WEST EU: 33,971

(www.mapsofindia.com)
“India accounts for only 2.4 % of the world’s geographical area and 4% of its water resources, but supports about 17% of the world’s human population and 15% of the livestock”

....

“Food grains are the major and cheapest source of energy and protein as compared to other food items and are thus vital for food and nutritional security. Therefore, food grains would continue to be the main pillars of food security in our country.”

(Dept. of Agriculture & Cooperation Krishi Bhawan, New Delhi NATIONAL CONFERENCE ON AGRICULTURE FOR RABI CAMPAIGN – 2013 Sept.2013)
## BEST PRACTICE: INDIA WHEAT PRODUCTION (font: OECD)

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA</td>
<td>120 580</td>
<td>120 665</td>
<td>121 258</td>
<td>127 106</td>
</tr>
<tr>
<td>INDIA</td>
<td>94 880</td>
<td>88 438</td>
<td>92 258</td>
<td>111 829</td>
</tr>
<tr>
<td>USA</td>
<td>61 753</td>
<td>59 595</td>
<td>57 477</td>
<td>56 722</td>
</tr>
<tr>
<td>RUSSIA</td>
<td>39 000</td>
<td>54 325</td>
<td>55 899</td>
<td>66 220</td>
</tr>
</tbody>
</table>
INDIA AGRICULTURAL DEVELOPMENT PROGRAM

National Food Security Mission (NFSM) to enhance the production of rice, wheat and pulses for ensuring food security in the country. The major objectives of the Mission are:

i) increasing production of rice, wheat and pulses through area expansion and productivity enhancement

ii) restoring soil fertility and productivity; creating employment opportunities;

iii) enhancing farm level economy to restore confidence of farmers of targeted districts.

NFSM program implemented in 27 States
Examples: Assam, Bihar, Chhattisgarh, Jharkhand, Odisha, Eastern Uttar Pradesh, West Bengal,..

1) NFSM-Rice (target 2011-12: +10 million tons)
2) NFSM-Wheat (target 2011-12: +8 million tons)
3) NFSM-Pulses (target 2012-12: +2 million tons)

Budget 2013-2014: Rs. 2250 crore (≈269 million €)
MARKET DATA

Cropping pattern in India – Area in Million Hectares

<table>
<thead>
<tr>
<th>Years</th>
<th>1990-91</th>
<th>2003-04</th>
<th>2009-10(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area Under Crops</td>
<td>185.74</td>
<td>189.67</td>
<td>192.20</td>
</tr>
<tr>
<td>Net area sown</td>
<td>143.00</td>
<td>140.71</td>
<td>140.02</td>
</tr>
<tr>
<td>Cropping Intensity (percent)</td>
<td>129.89</td>
<td>134.80</td>
<td>137.26</td>
</tr>
<tr>
<td>Area under Food Crops</td>
<td>141.03</td>
<td>142.12</td>
<td>141.06</td>
</tr>
<tr>
<td>Area under Non-Food Crops</td>
<td>44.71</td>
<td>47.55</td>
<td>51.14</td>
</tr>
<tr>
<td>Net Irrigated area</td>
<td>48.02</td>
<td>57.05</td>
<td>63.26</td>
</tr>
<tr>
<td>TOTAL/Gross Irrigated Area</td>
<td>63.20</td>
<td>78.04</td>
<td>86.42</td>
</tr>
</tbody>
</table>

Gross cropped area has grown by 6Mn Hectares which is increased up to 192.2Mn Hectares due to increase in cropping intensity from 129 to 137 per cent.

Crop-wise share % in area

Crop-wise share % in area

<table>
<thead>
<tr>
<th>Crops</th>
<th>1990-91</th>
<th>2003-04</th>
<th>2009-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>24.1</td>
<td>25.1</td>
<td>26.6</td>
</tr>
<tr>
<td>Wheat</td>
<td>4.1</td>
<td>4.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Coarse Cereals</td>
<td>13.5</td>
<td>13.8</td>
<td>14.9</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>4.9</td>
<td>4.9</td>
<td>5.4</td>
</tr>
<tr>
<td>Fruits &amp; Vegetables</td>
<td>13.4</td>
<td>12.9</td>
<td>12.5</td>
</tr>
<tr>
<td>Condiments &amp; Spices</td>
<td>19.5</td>
<td>16.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>12.9</td>
<td>14.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Pulses</td>
<td>12.9</td>
<td>14.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Coarse Cereals</td>
<td>12.9</td>
<td>14.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Wheat</td>
<td>12.9</td>
<td>14.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Rice</td>
<td>12.9</td>
<td>14.2</td>
<td>14.9</td>
</tr>
</tbody>
</table>

# Coarse cereals – Sorgo, Bajra, Mais, Ragi, etc.
# Pulses – Tur, ceci, Moong, Urad, etc.
# Oilseeds – arachidi, colza, mostarda, soia, etc.
# Non food crops – Tea, Coffee, gomma, cocco, Tobacco, etc.
MARKET DATA

Top 10 food grains producing states

1. Uttar Pradesh 41657
2. Punjab 25943
3. West Bengal 16250
4. Madhya Pradesh 14164
5. Haryana 13219
6. Andhra Pradesh 13123
7. Rajasthan 11653
8. Maharashtra 10786
9. Bihar 9964
10. Karnataka 9642

Top 10 cereals producing states

1. Maharashtra 9018
2. Karnataka 5788
3. Rajasthan 48803
4. Uttar Pradesh 3437
5. Andhra Pradesh 2689
6. Madhya Pradesh 2331
7. Gujarat 1940
8. Bihar 1470
9. Tamil Nadu 1139
10. Haryana 872

(www.mapsofindia.com)
MARKET DATA

Top 10 Cotton producing states

Top 10 Sugarcane producing states

[Maps showing the top 10 cotton and sugarcane producing states in India].

[Links to more information on the maps and market data].
MARKET DATA

Top 10 wheat producing states

Top 10 Rice producing states
RICE

SOUTH:
<1 ha plots, 2-3 rotations. Plain lands.
Mechanization is considerably higher in TN, due to a shortage of labour. Farmers who cannot afford to buy new equipment rent them from other farmers.

NORTH:
2 ha plots, rice and wheat 1 rotation. Plain lands.
Soil preparation implements large and medium-sized enterprises e.g. rotary tillers / cultivators, disc ploughs, etc...

EAST:
2 acres (<1 ha) plots
Low level of mechanization.
Mainly used small motorized rotary equipments. In most cases, they work with small tools and manual labour. Small volumes of tractors; manual planting and harvesting.
SOYA

- Soybean represents 5.5% of the Indian Agriculture market
- Soya is the most exported product and India is the biggest soya oil consumer in the world
- Soybean production is increasing since 1998
- Soybean: small-scale farmers (<2 ha)
- Very low yields (<1MT/ha)
- Large farms have at least 20 ha and represent 1.6% of farmers.
• India 2nd producer and exporter of cotton in the world
• Very low yield, ≈500kg/ha. (but 70% of total world cotton production)
• India has the biggest cotton farmed surface with 3 main areas:
   Northern area: Punjab, Haryana, Rajasthan
   Southern area: Andhra Pradesh, Karnataka, Tamil Nadu
   Central Area: Madhya Pradesh, Maharashtra
• Plot ≤ 2ha: 62% of total farmers
• 2ha< Plot ≤10ha: 37% of total farmers.

COTTON AREA VS. PRODUCTION

- Harvested Area (Million Ha)
- Production (Million Bales of 170 Kgs)
In the last 10 years, fertilizer and pesticides usage has increased about 50% (150 Kg/ha).

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<thead>
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</thead>
<tbody>
<tr>
<td>Nitrogenous (N)</td>
<td>Lakh Tonnes</td>
<td>115.92</td>
<td>109.20</td>
<td>113.10</td>
<td>104.74</td>
<td>110.77</td>
<td>117.13</td>
<td>127.23</td>
<td>137.73</td>
<td>144.19</td>
<td>150.91</td>
<td>155.80</td>
<td>165.58</td>
<td>173.00</td>
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<tr>
<td>Phosphatic (P)</td>
<td>Lakh Tonnes</td>
<td>47.99</td>
<td>42.15</td>
<td>43.82</td>
<td>40.19</td>
<td>41.24</td>
<td>46.24</td>
<td>52.04</td>
<td>55.43</td>
<td>55.15</td>
<td>65.06</td>
<td>72.74</td>
<td>80.50</td>
<td>79.14</td>
</tr>
<tr>
<td>Total (N+P+K)</td>
<td>Lakh Tonnes</td>
<td>180.69</td>
<td>167.02</td>
<td>173.60</td>
<td>160.94</td>
<td>167.99</td>
<td>183.98</td>
<td>203.40</td>
<td>216.51</td>
<td>225.70</td>
<td>249.09</td>
<td>264.86</td>
<td>281.22</td>
<td>277.40</td>
</tr>
<tr>
<td>Per Hectare</td>
<td>Kg.</td>
<td>94.94</td>
<td>89.63</td>
<td>91.13</td>
<td>91.45</td>
<td>88.05</td>
<td>94.52</td>
<td>105.50</td>
<td>111.76</td>
<td>115.27</td>
<td>127.21</td>
<td>135.27</td>
<td>146.32</td>
<td>144.33</td>
</tr>
</tbody>
</table>

| Consumption of Pesticides | Thousand Tonnes | 46.20 | 43.58 | 47.02 | 48.30 | 41.00 | 40.67 | 39.77 | 41.51 | 43.63 | 43.86 | 41.82 | 55.54 | 50.58 |

| Area Covered Under | Lakh Hectares | 4.36 | 4.70 | 4.30 | 5.55 | 7.37 | 8.67 | 11.41 | 7.34 | 6.82 | 5.28 | 7.49 | 4.72 |
MG INDIA PVT LTD – PRODUCTS RANGE

ROTARY TILLER

**SALES:**

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Sales</td>
<td>3000</td>
<td>10000</td>
<td>11000</td>
<td>15000</td>
</tr>
</tbody>
</table>

**STRONG POINTS:**

- Transmission and gearbox engineered and guaranteed by Maschio
- Gear driven with reduced maintenance
MG INDIA PVT LTD – PRODUCTS RANGE

MULCHERS

DETAILS:
• In 2013 MG India started up the production and will introduce about 2,000 units.

STRONG POINTS:
• Rotor with self-sharpening hammers that can shred wood residues up to Ø 4 cm
• Reliable toothed belt transmission
In the economic growth of India, Agriculture is one of the main sectors and employs about 257 million people (53% of the workforce).

The contribution of agriculture to GDP has decreased in the past 5 years and is influenced by weather conditions as the South-West monsoon.

India is a very interesting market for its peculiar conditions: small plots, subsistence farming, poor irrigation, difficult weather conditions, low HP tractors.

The key solutions for this market could be: entry level products with competitive prices; therefore local production.
TARGETS:
• Governmental projects: to increase crop production (+30%) in the next 5 years.
• The Agri vision: to double the current production by 2025 to cover the growing population’s requests.

WHAT IS NECESSARY:
1. To develop a whole chain, from seeds to fertilizers and implements.
2. To perform work in time, adapting the fast changing of weather conditions.
3. To increase Input energy: from 1.35 kW / ha to 2.5 kW / ha.

HOW TO SPEED UP THE DEVELOPMENT OF INNOVATIVE MARKET:
1. Developing the cooperation among manufacturers, Government, Research Institutes and Universities to introduce new concepts and new ways of working.
2. Endorsing the after-sales services in India.
3. Offering direct special warranties from excellent post-sales services or through dealers (all successful Companies do that).
AGRICULTURAL BUSINESS IN INDIA

GENERAL MILESTONES:

• Agricultural machinery Industry should contribute to soil protection and water conservation.

• The mechanization is reaching a level of maturity, and the tractor market is the 2nd largest volume in the world.

• Agricultural machinery Industry has to strength the network between farmers and mass media programs focused on the agricultural sector.
CONCLUSIONS
CONCLUSIONS

• India has largely been viewed as an outsourcing destination where organizations from many countries could reduce their cost-base.
• This approach to India is, however, rapidly changing and the country is increasingly recognized for what it will soon become – the world’s largest potential market for goods and services.
• India, therefore, represents a huge business opportunity. Whilst the government is trying to open up the country to foreign investments, many sectors remain stubbornly closed and there is a considerable internal pressure to keep these entry barriers strong.
• One of the biggest obstacles to overcome when entering the India market or doing business with India is definitely the cultural differences you will undoubtedly have to face.
• Understanding the impact of a hierarchical mindset, the complex communication patterns and a myriad of other subtleties can help you refine your approach and hugely improve your chances of success.

(http://www.worldbusinessculture.com/Business-in-India.html)
CONCLUSIONS

- Many Organizations think to make business in India as they are operating in other markets – it probably won’t!

- Understanding the Indian mindset;
- meeting the needs of Indian Agricultural market;
- Following carefully the rapid changes that continuously take place in India

THESE ARE THE KEYS TO SUCCESS IN INDIA.
Thank you
Towards a competitive industrial production for Europe

Constructing our future, advancing agriculture