Agricultural Machinery

VDMA

Economic Report 2012

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Condensed Version for the Public

Foreword

With this economic report, the VDMA Agricultural Machinery Association again offers its member companies and the public a current overview of the economic environment in which the agricultural machinery industry operates. Because of the nature of available market figures, they frequently provide a retrospective view of developments in past months and years. At the same time we attempt to outline the trends and influences affecting the future business situation.

Our annual economic report is a central element of our range of services relating to information about markets and the general industry economic situation. We divide these themes into four areas:

- Statistics
- Surveys
- Reports
- Network

As an overriding strategic goal, the VDMA Agricultural Machinery Association is placing emphasis on “internationalism”. Analogously to the opening of the association to European (instead of formerly only German) companies, the information concerning market developments shall also take this expansion into account.

A prerequisite for this is the availability of good primary sources which an association can rely upon as a neutral platform for its members. The association’s own statistics represent an important specific service for individual companies. In corresponding working groups – naturally always in compliance with competition law regulations – “customised” statistics can be created which show companies their own position in the market. The VDMA Agricultural Machinery Association already has a long tradition of carrying out this activity, and currently regularly conducts approximately 50 surveys for the individual machinery sectors. Many of these statistics are related to the German market. However the goal is an additional regional (European or worldwide) focus in cases where there is a need for this. This year the association is celebrating a small in-house anniversary: For the past 10 years all association statistics have been processed via the modern, specially created platform VDMA Internet Statistics (VISTA). The high acceptance level of this interface is demonstrated by steadily increasing numbers of users. At the same time the database and its functionality are being developed further. A new version is planned for the end of the year.

While statistics thus represent a traditional “bread-and-butter” activity of VDMA Agricultural Machinery Association, surveys in a regular form have been conducted only for the past couple of years. With respect to future developments, by means of

customer surveys we attempt to portray trends in the demand for machinery in important markets – particularly in Central and Eastern Europe. The results can offer individual manufacturers a valuable basis for controlling their production and distribution chains. On behalf of the European umbrella organisation CEMA, VDMA determines the mood prevailing in Europe's agricultural machinery companies on a monthly basis via a representative survey of manufacturers. The result is a widely used business climate index.

In its reporting the VDMA Agricultural Machinery Association endeavours to provide customised information via various formats. Here the challenge is for an association to address very diverse target groups. For instance, we provide collated information for individual sectors or countries. Here too, internationalism is the key! Since member companies have an export ratio of more than 70 percent, the Association follows them with its services to the most important export markets, and aims to support them in identifying niches and business opportunities. We divide the world into categories, according to the importance and relevance for German and European machinery manufacturers. The goal which is to be continuously pursued further is the ability to provide market information for this purpose, in correspondingly differentiated detail.

The international market research activities of the VDMA Agricultural Machinery Association are possible only with the aid of a good network. Without direct contacts in the markets and regular exchanges with specialists from member companies, VDMA would be unable to realise its ambition of being able to provide an always current, international overview of the agricultural machinery economic situation. We are therefore pleased that last year in particular we had good success in acquiring new association members. At the same time, step by step, we are endeavouring to develop our collaboration with relevant industry organisations worldwide.

Yours sincerely,

Dr.-Ing. Hermann Garbers
Chairman of the VDMA Agricultural Machinery Association

Frankfurt, May 2012

1. Agricultural Production and Framework Condition

In the introductory section of our 2012 economic report, as usual, we would like to examine agricultural framework conditions. For the past two years the agricultural markets have been in a new boom phase, similar to the situation in 2007/2008. However, there is an essential difference: We are observing fewer excessive prices than was the case four years ago. Instead, price trends reflect a supply situation with structural shortages. However the markets are functioning, and thus the supply curves for some commodities are again showing upward movement. As a result we are seeing a slight downward price trend, for example, in the case of milk.

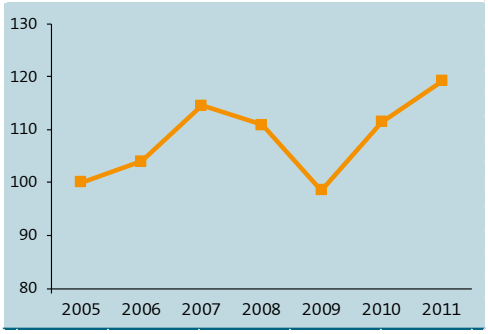
Rather than describing market and price developments, this year we will use this "Agriculture" section to examine more closely the underlying global supply and demand structure for the important agricultural products milk and grain/oil seeds.

Good earnings achieved with agricultural products

First, however, the basis for the present good economic situation of the agricultural machinery industry is to be presented once more: The increased income of customers. In the year 2011 the corresponding index per agricultural worker in the European Union (EU) was 9% higher than the average of the five previous years. Even in comparison to the preceding year, when the level was already good, there was an increase of 7%.

Agricultural Income in the EU

Index per worker (EU 27 average); 2005=100



Source: Eurostat

Only in a few – moreover smaller – countries of the EU, such as Greece and Portugal, did earnings fall. In contrast, in the new EU countries, over the course of recent years earnings have exhibited a continuous upward trend – thanks to inclusion in the support system of the Common Agricultural Policy as well as the structural change initiated. In 2011, price increases for agricultural products in particular contributed to the growth in income, while quantities, for example of grain and even more so in the case of rapeseed, declined considerably in some countries. Nevertheless, fruit and vegetable growing – traditionally more important in the Southern European countries – continued to contend with economic difficulties. Business was generally positive for producers of animal products, primarily milk and meat.

And the outlook for 2012? The initial months already show a slightly declining income trend for dairy farmers: Lower prices with constant or increasing costs. Meat prices are maintaining a high level. No definite statements can yet be made with respect to grain cultivation. Yield prospects are still very uncertain, and as well there are uncertainties concerning additional market leverage for 2012/2013, as discussed in the section below regarding grain and oil seeds. With regards to European agriculture overall, for 2012 we anticipate a slightly declining income

level which, however, will continue to be above the long-term average.

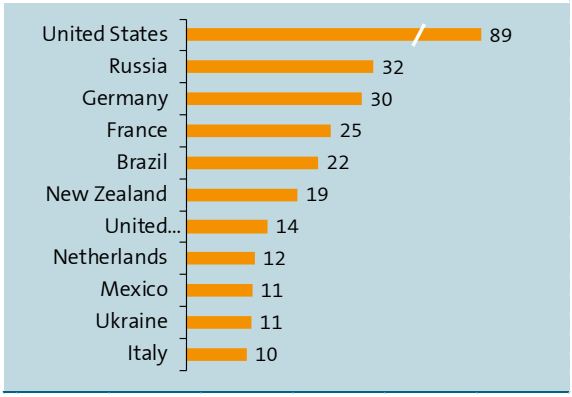
Long-term increasing demand in the milk market

Worldwide milk production is steadily increasing. In the mid-1990s it amounted to approximately 530 million tonnes, and in 2010 it already exceeded 700 million tonnes. Most of the growth in production occurred in Asia. However it can also be presumed that part of this increase is attributable simply to better recording and publication of statistics in the countries concerned. Nevertheless, the trend is clear, and reflects the influencing factors of a larger world population and a greater per capita consumption of milk and milk products.

In the light of further increasing growth of the world population, by approximately one billion in the next 15 years, the research network IFCN[1] anticipates that as a result milk production will increase by an additional 200 million tonnes to 900 million tonnes by 2025, amounting to an annual growth of around 15 million tonnes. Where does production primarily take place, and are regional shifts foreseeable?

The largest milk producer is the European Union, with a milk equivalent of 139 million tonnes in the year 2011, corresponding to a share of around 20% of global production. Due to increasing milk yields per cow, the number of dairy cows in the EU has declined to the present 24 million, with an approximately constant level of production. In view of excessive market imbalances at the time, quotas were applied to milk production by the (at that time called) EC Commission in the year 1984. However in recent years, partly because of high quota allocations (in the case of new EU countries) and continuing structural change at the expense of the milk sector (e.g. France), some countries have delivered considerably less than their quota amounts, so that as a control element the quotas have only a regional significance.[2] In 2015, 31 years after the quotas were introduced, the EU will dispense this instrument. At some favourable locations the liberalisation of the market will lead to noticeable increases in production, however for most of the Member States probably no sudden change in supply will result.

The Main Milk Producers
in million tons (2011)



Source: ZMB

The second largest production location for milk is India, followed by the USA and China. In comparison to other agricultural commodities, trade volumes are low, with altogether only around 7% being exported internationally. The most important exporter of dairy products overall, with an export ratio of just under 90%, is New Zealand where the primary export products are whole milk powder and butter. Although altogether exports from the European Union are only in second place, Europe ranks first in terms of processed products such as yoghurt and cheese. The processing of milk takes place in comparatively small-scale structures. For instance, even in Europe to some extent there continue to be very small dairies, which operate primarily in a regional market. The largest processor in the world, the Fonterra co-operative in New Zealand, with a volume of approximately 20 million tonnes of milk, has a market share of only 3% worldwide.

The interesting question, not least for machinery manufacturers, is whether a significant shift in the locations of milk production will result. As

[1] "IFCN" stands for "International Farm Comparison Network". This is an international scientific network, with a corresponding subdivision for the milk sector.

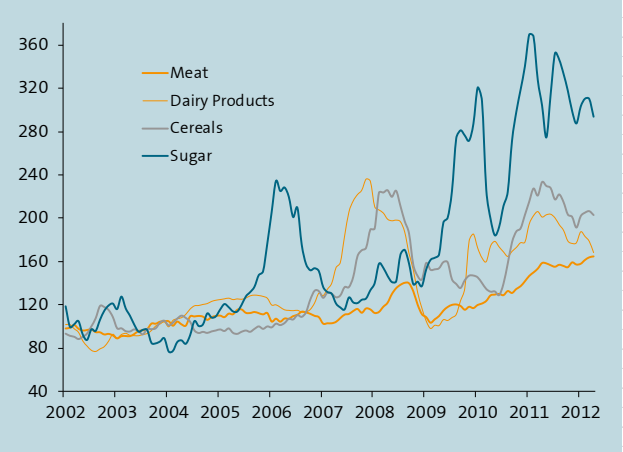
[2] The reference quantity for milk production in the EU amounted to 151 million tonnes for the "milk year" 2011/2012. In accordance with preliminary estimates, deliveries fell short of this value by approximately 8%. At the same time, due to a national approach, in some cases fines resulted from excess delivery.

mentioned initially, in the past decade milk production has essentially expanded in Asia. However, the proportion of milk which is delivered to processors in countries such as India and Pakistan, and which must therefore be subject to professional production and hygiene standards, continues to amount to less than one-fifth.

Although China has a high demand and a significantly expanding dairy industry, for the foreseeable future it will remain the largest importer worldwide – ahead of Russia, Mexico and Japan. The second largest growth region for milk production in the past decade was South America. Brazil is currently in fifth place among the world's largest milk producers, and Argentina is likewise among the top fifteen. Due to sharply increasing opportunity costs in countries such as China, India, Brazil and Poland, in the view of the IFCN the production of milk in Western Europe and the USA will probably continue to become more attractive. After all, structures for production that meets the standards of international food groups, high milk quantities per cow, and the necessary processing chains are already available in these regions. Simultaneously, there are political endeavours in some countries to increase the degree of self-sufficiency for milk and milk products. Russia is one example that can be mentioned. In the medium term, this could likewise be a factor promoting an expansion of milk production in individual locations.

FAO Food Commodity Price Indices

Index 2002-2004=100



Source: FAO

The heavyweights in the market for grain and oil seeds

Due to dependence on the weather, the supply of grain and oil seeds fluctuates more sharply than that of milk. There are also rapid changes on the demand side due to substitution possibilities – whether for the processing of food or feed or for the production of energy in the form of power, fuel or heat. Energy production from renewable raw materials now plays an important role, for example accounting for 13% of world production in the case of oil seeds.

It is estimated that for the marketing year 2011/2012, 2.23 billion tonnes of grain (wheat, coarse grains and rice) and 460 million tonnes of the most important oil seeds (including soybeans and rapeseed) were harvested worldwide. Trade volumes vary with the type of product. For instance, only around 10% of coarse grains (e.g. rye and barley) are traded internationally, whereas for the typical "cash crops" wheat and soybeans, exports amount to 20% and as much as 38% respectively.

It is interesting that in the past 30 years, overall only marginal regional shifts in the worldwide production of grain have occurred: At the beginning of the 1980s the largest producers China and the USA each already accounted for 18% of global production, followed by the EU (12%) and India (10%). Only in the region of the present Commonwealth of Independent States (CIS) have harvest quantities declined noticeably following the end of the communist era, with the global share of grain volumes falling from 10 to 7%. In recent years much has been done to regain the former position. The production of maize and soybeans in particular is playing an increasing role in Ukraine and Russia, and is meeting a steadily growing demand in Asia.

Sharper increases have occurred for oil seeds. On the one hand, over the past 30 years overall quantities have increased by a factor of 2.5 (from 180 million to 460 million tonnes), considerably more than in the case of grain (with a growth factor of 1.5). On the other hand, individual locations have specialised in production. In the 1980s Brazil was already the second largest producer of soybeans. However, by quadrupling quantities, Brazil has now significantly closed the gap between its production and that of the USA.

In Argentina, recently seven times more soybeans were harvested than was the case 30 years previously. In contrast, Chinese soybean production has remained relatively stable over the past three decades. Production amounts of rapeseed have multiplied, particularly in Europe and Canada. Russia and Ukraine have become the leading locations for sunflowers, replacing Argentina as the most important suppliers. Indonesia is the largest producer of palm kernels. The well-known negative aspect of this development is that it has occurred as a result of clearing large areas of rainforest.

The continent of Africa continues to play only a very marginal role as an agricultural producer, and despite large areas of potentially fertile arable land remains dependent upon imports. This includes not only commodities such as grain and milk powder, which are supplied to Africa from various regions of the world, but increasingly also finished food products. In many countries these are in demand on the part of the growing middle class with purchasing power. The continent continues to be at the initial stages in terms of an adequate level of self-sufficiency for feeding the local population. In any case the potential for African agriculture as well as the downstream food industry is still very great and needs to be utilised.

What is the current supply situation in the grain and oil seed markets? The evaluation varies with the sector. Wheat, a grain important for trade, is readily available following the conclusion of the 2011/2012 season. Worldwide stocks are currently calculated to be sufficient for approximately 110 days, whereas following poor global harvests in 2007 stocks were adequate for only around 60 days. In contrast, despite steady growth in supply, the maize market continues to be undersupplied, and stocks are sufficient for only 50 days. There is likewise excess demand for rapeseed and soybeans.

Overall the harvest was good in the southern hemisphere, particularly in Australia. In contrast, the impending 2012 harvest in the northern hemisphere remains subject to considerable uncertainty. Whereas for the USA reports are predominantly positive, in the EU and Ukraine winter kill damage is playing a role, in addition to regionally severe drought. Futures prices on the stock markets therefore tended to rise in the spring of 2012, and there will probably be some pressure on inventories. In times of increasing crude oil prices it is to be presumed that the production of biodiesel and bioethanol will not diminish.

2. Agricultural Policy

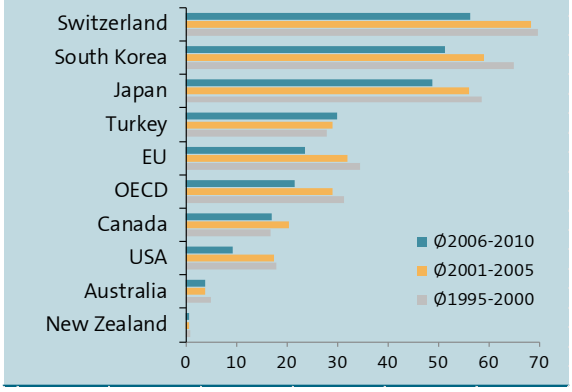
Trade policy as an important component of agricultural policy

Food security is always a very political concern. Thus, as a rule, the state tries to control food production – whether by subsidising individual stages of production and distribution, or by intervention in the export and import business, in other words: through trade policy. Both aspects are examined in the following section, based on comparative examples of locations that are important for the agricultural industry. However, in this year's report we discuss the agricultural policy of the European Union only briefly – this will be done in detail in 2013, when the framework conditions for the new period of validity from 2014 to 2020 have become clearer.

In light of new shortages, including in the agricultural markets, trade policy has recently changed considerably. The rivalries between individual trading nations have become more pronounced. "States are again flirting with protectionism. There are complaints sometimes about too many exports or too few, sometimes about unfair subsidies, and other times about taxes that distort competition."[3] Many states are relying increasingly on protective mechanisms. In 2011 three times as many measures to protect markets were set in motion as measures for market liberalisation. The most extreme example worldwide was Argentina with 191 protectionist measures, followed by Russia with 172 decrees.[4]

While a decade ago, in the coastal city of Doha, Qatar, the international community developed an agreement for the general liberalisation of world trade, in the meantime the likelihood of its ratification has become remote. Instead many countries and economic zones are relying on bilateral agreements. This in turn results in a relative disadvantage for all other trade partners. As a supplier for an economically and politically important and sensitive sector – agriculture – the agricultural machinery industry must deal with these developments on a daily basis.

Agricultural Subsidies
in % of the agrarian production value



Source: OECD

European Union

The protection of the agricultural sector has special historic significance for Europe. Right behind the mining sector, agriculture has developed into a political link between the various European countries after the Second World War. Currently 40% of the EU budget is still earmarked for the agricultural sector, including the strengthening of rural areas.

The EU's Common Agricultural Policy (CAP) has been gradually reformed towards market liberalisation since the end of the 1980s. Production-based subsidies were mostly converted into acreage-based subsidies. Now the subsidy "from Brussels" is no longer based on a tonne of wheat delivered to grain dealers, but on the cultivated area. Up to now, a distinction has been made between grassland and arable land; there are plans to provide a regionally uniform amount as a subsidy in the future.

The CAP subsidy model is based on two pillars: The first pillar consists of direct payments and market support measures for agriculture. The second pillar is dedicated to rural development, with an obligation for member states to carry a portion of the financing for the various projects (co-financing). The EU draft budget for 2012 earmarked €43.7 billion for the first pillar and approximately €14.6 billion for the second pillar.

Most of the payments under the first pillar are provided as individual payments to farms – without an associated production obligation. Countries may withhold up 10% of these payments for redistribution purposes (via the instrument of modulation). The second component of the first pillar, market support, is designed as protection against abrupt market changes. For example, if the price of wheat or sugar falls below a defined reference level, the EU will enter the market as a buyer for the product up to the level of the intervention price.

The second pillar of the current CAP period (2007 to 2013) has three focus areas: Increasing the competitiveness of agriculture and forestry, improving the environment and rural areas, as well as improving the quality of life in rural areas and the economic diversification for rural communities.

[3] Quotation from "Die tägliche Wasserschlacht" (The daily water battle), Die Zeit, 4 April 2012.
[4] Source: Global Trade Alert.

Improvements for the 2014 to 2020 time period will be defined during the course of the next year. Items currently under discussion include the alignment of direct payments per hectare within the EU, the introduction of a "green premium" which is linked to certain criteria related to agricultural practice, minimum requirements for subsidy eligibility (via the definition of an "active farmer") and a cap on payments for large agricultural holdings.

The effects of CAP on the new EU members is discussed below. The last 12 new countries were added to the CAP scheme over a ten-year adjustment period. Initially, 25% of the payments as compared to the EU 15 were granted. The adjustment phase for the ten countries that joined the EU in 2004 expires in 2013, and in 2016 for Bulgaria and Romania.

During the time prior to their accession, and several years afterwards, farmers in the EU-12 countries could access pre-accession assistance, also known as SAPARD, and the EU structural funds under the programmes for rural development. The assistance measures, which were quite extensive, related to several areas: from infrastructure projects in villages and support for young farmers to subsidies for the purchase of agricultural machinery. Priorities and implementation can sometimes differ significantly from country and country. But without a doubt, all markets in Central and South-East Europe and in the Baltic region have benefited from this assistance.

Candidate countries for the European Union: Croatia and Serbia

Independent of each other, Serbia and Croatia took another big step towards EU accession during the first half of this year. In Croatia, a majority voted in favour of joining the EU during a referendum held on 22 January 2012. Last year, the European Parliament approved EU accession for Croatia, which has been an official candidate country since 2004. This means that Croatia is expected to join the EU on 1 July 2013. Serbia, on the other hand, received accession candidate status at the beginning of this year. Even though it will take a number of years until this Balkan state becomes a member of the EU, the achievement of candidate status nevertheless represents an important step forward. In relation to agriculture, it also entitles Serbia to receive financial support through IPARD. IPARD stands for "Instrument for Pre-Accession Rural Development" and is designed to help future EU members to develop a competitive agricultural sector. Subsidy resources of approximately €40 million annually will be made available to Serbia's agricultural sector between 2014 and 2020. IPARD measure 101 is of particular interest to the agricultural machinery industry. It relates to "investments in farms", and hence also includes agricultural machinery. Based on the negotiations held to date, the list of machinery eligible for subsidies currently includes machinery for the production of fruit and vegetables as well as milk and meat.

Croatia has already been receiving IPARD support since 2007. The total annual budget is between €34 and 37 million; similar to the situation in Serbia, two thirds of the budget are derived from the EU budget and one third from the government's own resources. However, the first IPARD tender in Croatia was met with a relatively low number of applications. This was partly due to the fact that information regarding the existence of subsidy options was not communicated across the entire country. On the other hand, many application processes were cancelled because farmers found it difficult to complete the relatively extensive application forms and provide the necessary documents (e.g. documents of ownership). However, the number of applications gradually increased as a result of measures taken by the government, such as the establishment of advisory centres. Investments in machinery currently subsidised by IPARD are limited to

agricultural machinery in the areas of dung/liquid manure, feed and water supply. In the future, Croatia will request that the list of subsidised equipment is expanded to include balers, baler-wrapper combinations, potato harvesters and field sprayers, among others.

Russia

Current changes to Russian agricultural policy are characterised by the country's imminent membership in the World Trade Organisation (WTO). What can we expect in this context? Measures designed to open markets to goods and services are the key components of the WTO membership package. The implementation of protectionist measures will be made more difficult, as Russia must reduce a number of export duties and restrict import duties. In addition, WTO provisions also demand a higher degree of transparency with regard to customs clearance, the collection of duties, the privatisation of state enterprises and government price control.

"The accession of Russia to the World Trade Organisation offers a welcome perspective for the global economy and fulfils an important objective on the way to an integrated European economic area", said Eckhard Cordes, chairman of the German Committee on Eastern European Economic Relations, on the occasion of the start of the WTO Ministerial Conference in Geneva.[5]

During the membership negotiations, Russia also made a number of concessions in the agricultural sector. Average agricultural duties will even fall below those instituted by the EU. This will also benefit German exporters of food products. In the case of agricultural products, average bound duties on import products will be reduced from 15.6% to 11.3%, according to the business journal Expert. German experts expect average duties of 11.5% in the future. Another new development is Russia's willingness to assume European veterinary and plant protection standards. Similarly, import duties on agricultural machinery will be gradually reduced between 2013 and 2016, and will likely range between 0 and a maximum of 7%. This is a particularly welcome development for tractors and self-propelled harvesting machinery, which are still subject to import duties ranging from 15% to 25%.

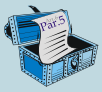
Current efforts by the Russian government to introduce upper limits for interest-subsidised loans are causing some concern. This regulation would mainly affect high-performance modern tractors and self-propelled harvesters. This suggestion, which was published on the official website of the Russian agriculture ministry, is currently under discussion in a number of different committees.

Several companies and industry associations, including the VDMA Agricultural Machinery Association and the Committee on Eastern European Economic Relations, are criticising this suggestion. In the case of a price cap introduction, Russian farmers would be more or less forced to buy cheap and technologically outdated and low-quality machinery. This regulation would run counter to the desired expansion in the production of tractors and combine harvesters in Russia. Manufacturers would be forced to remain within the defined price range. In this context it has to be pointed out that Russia is already considered to be a rather expensive production location due to an inadequate supplier structure.

[5] VDMA is one of the supporting organisations of the Committee on Eastern European Economic Relations.

The "Box System" of the World Trade Organization (WTO)

for classification of "permitted" and "non-permitted" agrarian subsidies

	**"Amber Box"** (to be eliminated)	All domestic support measures considered to distort production and trade, to be diminished/eliminated with priority. A minimum degree of support remains allowed ("de minimis" rule). Examples: price support, export subsidies, custom tariffs
	**"Blue Box"** (permitted with conditions)	Government payments which are linked to production, but with limited validity. Examples: EU direct payments linked to production during the phase out period, deficiency payments in the USA
	**"Green Box"** (unlimited permission)	Government support which is not linked to production and does not distort trade. Examples: rural area development, payments to farmers working in disadvantageous areas, programs for investigation, education or consultancy

Source: WTO, German Farmers´ Union

United States of America

American agricultural policy as we know it today had its origins in the economic crisis of the 1930s. Prices for agricultural goods had drastically declined, and many farmers were facing the prospect of losing everything. The response to this crisis consisted of the first ever instruments designed to support prices and incomes. While the general economic environment soon improved, support measures nevertheless became ever more extensive in subsequent decades. Equalisation payments, which were used to compensate farmers when prices for their products did not reach a defined minimum price, played a key role in this regard.

Current agricultural policy is based on the "Food, Conservation and Energy Act" from 2008 – the so-called "Farm Bill 2008-2012". Much of it builds on Farm Bill 2002. Traditionally, most of its budget (about two thirds) is assigned to food programmes, while 15% is earmarked for agricultural support, 8% for harvest insurance and another 8% for environmental measures. Agricultural support is comprised of direct payments, which make up the largest part of the budget. They consist of classic instruments such as loan programmes and anti-cyclical assistance as well as the new programme "Average Crop Revenue Election" (ACRE).

Conventional price assistance systems were frequently criticised for leading to overcompensation in times of low prices and good harvests, and undercompensation in times of high prices and poor harvests. Therefore ACRE is not oriented solely along prices but takes into account total yields, hence the price and harvested volume and quality. Farmers themselves can decide whether they wish to take advantage of conventional price assistance or the ACRE programme. A decision in favour of ACRE results in the removal of conventional anti-cyclical assistance and lower direct payments. In addition to introducing ACRE, Farm Bill 2008 also features a stronger focus on environmental protection, renewable energies and organic agriculture than its predecessor. Moreover, it now also contains support measures for horticulture as a new feature.

Even though US agricultural policy is made up of a relatively diverse number of measures, the actual amount of financial support is nevertheless relatively low. Subsidies make up only 7% of agricultural earnings, putting the US in third-last place as compared to other OECD states.

Since the beginning of the year, the Senate and Congress have been working on "Farm Bill 2012", as the current version of the Farm Bill will expire on 30 September of this year. American government policy as a whole is characterised by austerity. At the same time, there is a need to address new challenges (e.g. climate change and global food supplies). The extent to which the various factors will affect the design of the new Farm Bill is still unclear – as is the degree of influence yielded by the various interest groups. The lobby of mega farms – which are virtually like factories and very typical for the United States – and the food industry is confronted by a growing community of interests consisting of environmental activists and advocates of sustainable and organic agriculture. It remains to be seen just how

these opposing interests will be reconciled. However, if a consensus cannot be reached soon, it is possible that the current Farm Bill will be extended until next year. This is precisely what happened with the last Farm Bill, which was originally named "Farm Bill 2007".

Brazil / Mercosur

Brazil is doubtless one of the major agricultural nations of the world. Its agriculture policy is essentially based on two pillars, which are based in two different ministries.[6] On the one hand, the agriculture ministry manages the commercial agricultural sector mainly through loan subsidy programmes, which facilitate the purchase of machinery in the face of very high interest rates. The second ministry is responsible for agricultural development, and is guided by the requirements of small family farms, some of which are located in structurally disadvantaged regions. These farms receive price guarantees for their products as an incentive to increase production. The benefits of these price guarantees may be felt by each farmer, while expenses remain manageable for taxpayers.

The loan subsidy programmes are a key factor in machinery investments. The successor of the long-standing "Moderfrota" programme for the purchase financing of tractors and agricultural machinery is called PSI (programme for sustainable investments). Under this programme, farmers can obtain loans for machinery purchases with a term of approximately 10 years and an average interest rate of 2.5%. Of course the programme has been designed to only cover machinery that is manufactured in Brazil. Insurance premiums are also subsidised. In recent years, approvals under the subsidy programme have been tied to criteria related to environmental protection and sustainability. A programme for the reduction of CO2 emissions was established in 2010; it subsidises agricultural practices such as the reseeding of degraded grassland areas.

Importers of agricultural machinery are affected by the exclusion from the loan subsidy programmes and the existence of trade barriers. A bilateral free trade agreement between the EU and the Mercosur zone has so far failed because of the issue of agricultural products, among others. At the same time, efforts are also under way to prevent machinery imports. The tariff rate of 14% is further increased by numerous additional fees that apply in the various states, and thus amounts to 50% of the actual import value. Anyone wishing to establish Brazil as an important sales market cannot get around a domestic production site.

This trend is even more pronounced in Brazil's neighbour country of Argentina. Compared to Brazil, Argentina does not have a wide range of agricultural machinery that is manufactured in the country. The main focus is on machinery for seeding purposes – not all companies survived the 2001 economic and government crisis. Four out of five combine harvesters sold in Argentina are imported from abroad. The government is not happy about this dependency. Similar to other industries, companies in the agricultural machinery sector are also confronted with the need to match each import peso with an export peso.

China

The Chinese government explicitly includes the agricultural sector in the major objectives for the country's development. With a population of 1.3 billion people food supply is one of the crucial issues for the stability of the country. The development of the agricultural sector is clearly in hands of the national government, but with growing influence of the province or local administration.

[6] These comments are based on an OECD report on agricultural policy from the year 2011.

The current twelfth edition of the Five Year Plan of the Chinese government (extending from 2011 to 2015) contains a comprehensive chapter for the agricultural sector as well as explicit indications for agricultural machinery. The key mission is to "speed up the development of modern agriculture" as the government recognises that the other sectors of the Chinese economy have developed at a much faster pace than agriculture in the past decade.

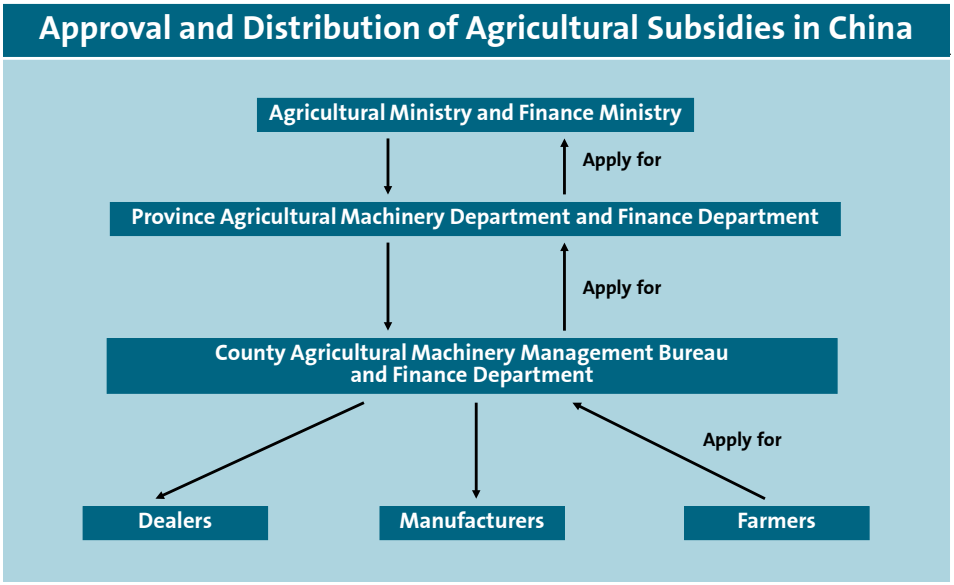
Regarding agricultural machinery, the Five Year Plan foresees an increase in the mechanisation level of tilling, planting and harvesting of crops from the current 52% to over 60%. Thus, grain yields should increase by 10%. Priorities are currently given to mechanising paddy rice production, especially in north-east China and along the middle and lower reaches of the Yangtze River.

There is also a scenario for the agricultural machinery sector included in the government strategy paper: "China will become the great power of world agricultural equipment manufacture". The goal is a gross output of CNY 400 billion (€45 billion) and an export trade volume of USD 12 billion (€9 billion), which should account for 20% of the sales revenues of the industry. One target is creating five large state-owned Chinese agricultural enterprise groups with an annual turnover of CNY 17 billion (€2 billion) each that are able to represent the Chinese capability for international competition.

Imported machines are non-eligible for subsidies if they are not produced in China with only few exceptions. Receiving a status as a Chinese manufacturer requires a local production or assembly. The approval to be included on the subsidy list does not depend on a certain local content level as a percentage value, but on the decision of the local authorities and on the demand of the market.

The expectation within the agricultural machinery sector in China is that subsidy payments will be maintained at a high level in the coming years. For the current Five Year Plan, this can be almost guaranteed, although slight changes within the policy rules are probable.

Approval and Distribution of Agricultural Subsidies in China



India

The big challenge for Indian agricultural policy is to provide long-term food security for a rapidly growing population in the face of declining cultivation areas and water resources. Hence the primary objective of Indian agricultural policy is to maximise agricultural production on a limited land base while attempting to alleviate the poverty of the rural population.

Notwithstanding an increasing trend towards liberalisation, Indian agriculture nevertheless

continues to be strictly regulated and monitored by the government. Key control instruments in this regard include production licenses and contracts, compulsory purchase and sale transactions, as well as bans on exports. Farms receive financial subsidies by way of minimum price supports and subsidies for fertiliser, irrigation and electricity, and also for seed and pesticides. In addition, harvest insurance premiums, loan interest and agricultural machinery investments are also subsidised. At the beginning of each year, subsidy amounts for different agricultural machinery are set for each federal state. The government also promotes the establishment of farm implement cooperatives and establishes agricultural machinery competence centres to increase the use of modern agricultural machinery. The centres are designed to familiarise people with the advantages of modern technology and communicate the proper handling of high-tech machinery.

Like in the neighbour country China, Indian agricultural policy is formulated in so-called five-year plans. The 11th five-year plan covers the 2007–2012 period, and will be replaced by the 12th five-year plan at the beginning of the 2012/13 Indian business year. The first draft of the new plan targets annual agricultural growth of 4% – as compared to the two to three percent growth rates of recent years. The plan places special emphasis on the use of fertiliser and pesticides. Farmers in many of the poorer regions cannot afford mineral fertiliser or pesticides, resulting in less favourable production results. At the same time, high rates of subsidies in other parts of the country have lead to an excessive use of fertiliser and pesticides, so that the quality of soils and water reserves has deteriorated drastically in some areas. There are efforts to ensure the sustainable use of operating materials across the entire country through awareness campaigns, increased controls and a better distribution of the budget.

Additional measures contained in the 12th five-year plan include the expansion of a partly underdeveloped rural infrastructure, irrigation systems and the electricity grid. Similarly, the government also intends to take steps to ensure sufficient supplies of high-quality seed for all regions of the country. In addition, farmers are to receive more assistance for the improved storage and profitable marketing of their products.

Hence the Indian government is taking a variety of measures in its efforts to reduce poverty and provide food security for a growing population. However, the inadequate implementation of these plans is a frequent subject of criticism. A lack of cooperation between political bodies along with corruption and misuse mean that funds do not always reach those who need them the most.

3. Technological Trends

The contribution of agricultural machinery to sustainability

Nowadays, the subject of sustainability also plays an increasingly important role in the agricultural machinery industry, as is the case in almost all sectors. The term “sustainability” itself originates from the forestry sector and is thus closely associated with the agricultural machinery industry[7]. But what exactly does

[7] The original definition of sustainability dates back to a forestry regulation in the Electorate of Saxony in the 16th century. In 1713, the Saxon Hans Carl von Carlowitz coined the term in his publication Sylvicultura oeconomica to support the regrowth of the forest stands that had been strongly decimated through mining. (Source: Wikipedia)

sustainability mean in this context, and what technological developments are employed in the endeavour to meet the requirements of sustainability?

In today's discussion, sustainability is associated with three aspects: economy, ecology and social affairs. When sustainability is demanded from agriculture, the focus is therefore on both the environment and society. The main demand that society makes is for the satisfaction of the needs of a strongly growing world population regarding food and energy in the long term. The seven billionth person was born in 2011; for the year 2050, it is estimated that there will already be nine billion people. Today already, it is not possible to intensify agricultural production through the expansion of cultivation areas without accepting considerable environmental degradation. Thus, the challenge is to intensify agricultural production on the existing or shrinking areas and, at the same time, cause as little environmental degradation as possible.

Intelligent production methods, which have been developed in recent years and grouped under the umbrella term "precision farming", are a revolutionary step in this direction. One of their most important features is the automatic **capture and documentation of data**. During production, the machine automatically captures data that can be of relevance for the future cultivation of the area using sensorics or video technology. Examples of such data are the exact application amount of fertilisers, plant protection products or seeds, the constituents of plants or soil, or the weight and moisture of harvested agricultural products. Through satellite navigation, it is possible to record the exact location in which the data were captured. In addition, machine data such as the distance driven, the lane used, labour time, fuel consumption or speed can also be recorded automatically. Immediately after capture, all information is automatically transmitted to the farm computer.

From an economic point of view, the data collected this way offer a higher degree of transparency. Furthermore, they can serve as the basis for so-called **automated precision farming**. The entire area for agricultural cultivation is divided into partial areas and mapped according to the different local conditions of soil and plants. This is done either using existing data, through real-time data capture or through remote sensing. The machines programmed accordingly can then cultivate each partial area according to the individual needs. This means that fertiliser spreaders, sprayers and the like automatically use the exact resources needed for each partial area, in exactly the amount required for maximum output. This is economical for the farm, on the one hand, and, on the other hand, also sensible from a sustainability viewpoint. For this way a maximum yield is achieved on limited areas, without additional pollution of the environment by excess amounts of plant protection products or fertilisers.

Parallel guidance systems are an important element in precision farming. Steering systems are the simplest version. By means of satellite navigation, they show the driver the best lane on a display, without intervening in steering. In contrast, steering assistance or automatic steering systems detect the lane with a degree of accuracy of up to two centimetres by means of satellite navigation, sensors and/or video technology and actively take over steering. Turning at the end of the field, so-called headland management can also be fully automated. Through exact navigation, overlapping and missed spots can be avoided, reducing operating materials such as fuel, plant protection products and fertilisers, and maximising yields.

The long-term objective of precision farming is the better combination of information and integration of processes with each other on a larger scale in order to finally achieve a perfectly **interlinked and automated process chain**. The first successful attempts have already been made, especially in the production of potatoes and sugar beet. However, there are still some obstacles to overcome on the way to a closed overall process. The **compatibility of machines and equipment** from different manufacturers still poses a challenge. Here the Agricultural Industry Electronics Foundation (AEF) consisting of agricultural machinery manufacturers, VDMA and the American manufacturers' association AEM is searching for a remedy through the further development of the ISOBUS standard. The ISOBUS standard defines the physical features of the network, plugs, wiring and data formats so that devices can exchange data with each other. More than 50% of the tractors and self-propelled

agricultural machines are already equipped with ISOBUS systems – within the high-performance spectrum almost 100% are.

In addition, there is still scope for improvement with regard to **data capture and analysis** on the machines. It is conceivable that the machine sensors could be developed further to enable the assessment of yet more plant and soil constituents than currently possible. This would allow an even more precise use of plant protection products and fertilisers. External information such as climate data could also be included in the analysis. Ultimately, the capture of data should focus on providing a clear and sensible basis for decision-making – a point that has been criticised by some users in the past. Up to now, some farmers have felt that, while they have access to a large quantity of collected data, they do not receive concrete aid for further steps. In summary, however, one can say that – even if there is still scope for fine-tuning some of the instruments – modern precision farming is a revolutionary step towards resource efficiency, protection of the environment and social sustainability.

4. Production and Business Climate

Worldwide production volume grows to €80 billion

After the damper in 2009, the production of agricultural machinery recovered quickly. According to VDMA estimates, turnover amounting to €80 billion was generated in 2011. This was an increase of 18% compared to the previous year. VDMA still estimates that the European Union is the largest location in terms of turnover value. However, its share has decreased steadily in the past few years and is currently about one third.

The main reason for this is growth of China's production. Five years ago, it did not even represent 10% of the worldwide volume but is currently already between 15 and 20%. In 2011 too, China was one of the regions with above-average growth in turnover. Exports rose by one fifth; total production is likely to have increased slightly more as the Chinese agricultural machinery market is still very dynamic.

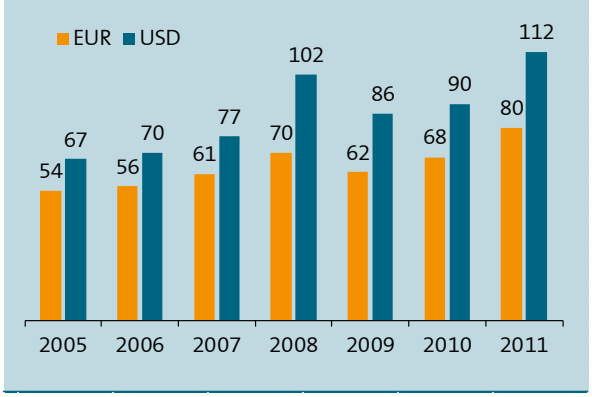
For the second year running, growth was very strong in Turkey, where almost 63,000 tractors were manufactured. Both impulses from the domestic market and demand from abroad helped Turkish companies to achieve this enormous upswing.

For the majority of companies, 2012 will also close with an increase in turnover. The market environment remains favourable, supported by the income opportunities of the farmers and the demand for mechanisation in emerging markets. VDMA expects global production to grow by 7% to €86 billion, which will be a new record level. Growth of about 5% is predicted for Europe and North America, the traditional locations for machine construction, while the relocation of manufacturing plants to emerging economies and the growth of the national industries in those countries will lead to slightly higher growth in these regions – particularly in China and Eastern Europe. Turkey will not be able to maintain its excellent results of the previous year, but will continue to achieve good sales. Latin America and

Japan should also remain slightly below the level of the previous year.

Global Turnover with Agricultural Machinery

in Bn. Euro / US-Dollar



Source: VDMA (own estimations)

World trade volume increases to €40 billion

The globalisation of the agricultural machinery industry continues to increase; this development is evident from the trade volume, but also from direct investment by established manufacturers at new locations. According to VDMA calculations, the world trade volume[8] increased by 20% to €40 billion last year; tractors accounted for 31% of this volume. With a share of 19%, Germany remained the largest exporter, followed by the USA with 16% and Italy with 9%. Some countries expanded their export volume considerably during the last years (e.g. China, France, Poland).

European manufacturers follow a dual strategy to achieve growth targets

Pure export business has reached its limits due, among other things, to the tightening of trade policies already described in the previous chapter. For many companies, the expansion of production locations is therefore an important strategic goal. Approximately one third of those responding to a current VDMA survey among European manufacturers reported ongoing or planned investment in expansion. The European industrial sector is aiming in the following two directions:

1. Expansion of capacities at the domestic location

In the past two years, the high demand since the end of the recession in 2010 has already led to bottlenecks. Expansions planned before 2009 are now being carried out, or new plans exist for expanding the capacity at the company's main location. The main focus of investments is on Germany and France. However, production plants are also currently being expanded in the Netherlands and Italy. Three aspects are particularly important when investing at domestic locations: Expansion of capacity, ensuring the quality of products, and the optimisation of cost as well as logistic processes.

These activities show that Western Europe is still an attractive production location, and the existing cost structure and efficiency in the factories are good reasons for strengthening the headquarters. The strategy of outsourcing parts of the production to low wage locations is no longer a priority.

2. Erection of new production and assembly plants

Regarding the goal of breaking into new markets, the situation is a different one. In the chapter on agricultural policy it became clear that many governments impose very high barriers on the pure import of agricultural machinery, wanting to have at least a part of the value creation generated with the machinery in their countries. As a consequence, the list of countries in which European or multinational enterprises from this sector build new factories is comparatively consistent. These are mainly the “BRIC” countries (Brazil, Russia, India and China), which, at the same time, offer high sales potential for agricultural machinery. In the past five years, several new factories have been built in Russia; now China is in first place. There are also ongoing projects in Turkey.

Local production offers a number of advantages regarding market access. Apart from the elimination of some expenses (customs duties, transport), inclusion in the subsidy programmes of the respective governments for the purchase of new agricultural machinery is a major one. This is

[8] Based on exports and from a national viewpoint, i.e. trade between EU member countries is included as export.

likely to be the main argument, as is demonstrated by the fact that a European tractor manufacturer also plans to build a new assembly line in Serbia in order to be one of the first to benefit from the exceptional boom triggered by the country's future accession to the EU.

Companies in the BRIC countries are in turn currently expanding their capacities and cooperation arrangements in their home countries, either with the aim of enlarging their production programmes or expanding existing capacities. Chinese manufacturers are particularly intent on internationalising their presence, also on the most challenging markets in Europe.

European production increased by one fifth in 2011

With regard to turnover, Western Europe is the largest production location for agricultural machinery. European production stands for technology leadership based on the impulses from the domestic market. There is a worldwide demand for anything developed by European engineers, with enough imitators in other countries. The European Union's production volume amounted to more than €26 billion in 2011, which corresponds to one third of the worldwide production as estimated by VDMA. Germany has increased its weight within Europe even more with growth of 27%. In terms of value, it has a share of 27% of the total production in the EU, followed by Italy (18%) and France (14%). Measured against the respective market size, 16 of the 27 EU member states have noteworthy production volumes; the other countries are purely import markets.

Upturn without significant capacity problems in Germany

Things have changed sooner than expected for German manufacturers of agricultural machinery after the sharp drop in turnover in 2009. Nevertheless, the strong growth was managed more "gently" than in 2007/2008, when there were considerable bottlenecks in the supply chain. Cost per unit also increased disproportionately due to high material prices, among other things. In the upswing phase in 2011, on the other hand, companies were able to fall back on improved internal processes and prepare suppliers better or earlier for the increased demand. The number of jobs was increased, although German companies still enjoy the flexibility that comes with hiring temporary workers from agencies. In some companies, these temporary workers account for one third of the staff.[9]

The agricultural machinery industry in Germany was able to increase its turnover by 27%, as already mentioned, to €6.98 billion in 2011. Mowers, combine harvesters and forage harvesters from German production generated above-average growth in turnover. However, 2011 meant recovery from a low level for the two first mentioned machines. Tractor production was increased to 60,600 units.

Production of Selected Machines in Germany

in units	2009	2010	2011	Change
Combine harvesters	6.608	5.460	8.026	47%
Forage harvesters	1.876	1.890	2.548	35%
Mowers	14.349	14.737	18.474	25%
Tedders and rakes	16.600	15.453	19.039	23%
Balers	4.807	5.474	6.548	20%
Ploughs	4.934	3.739	4.610	23%
Seed drills[1]	8.183	7.125	9.465	33%
Field sprayers	3.045	2.982	3.450	16%

Source: Turnover statistics VDMA Agricultural Machinery Association, [1] without precision seed drills

For 2012, VDMA expects further growth in turnover by 5% to €7.3 billion. In the first quarter, turnover already reached €2.23 billion, a record value. Order books are currently still filled, but in the meantime the value is sinking below the level of the previous year. This means that, expressed in production months, orders on hand are gradually decreasing, based on about four months at the moment. Production capacity utilisation in the German agricultural machinery industry was 93% in April. This represents practically full use of the capacity in the main season before the harvest. The calculation for the second half of 2012 must be more conservative –

[9] Result of a representative CEMA survey in December 2011. The average share of temporary workers of the total number of employees in the agricultural machinery was 15% in Germany and 13% in Europe.

VDMA expects stability close to the high level of the previous year.

Prospects are not bad for 2013. As already described, part of the capacity expansion is also taking place in Germany, which means that, in the medium and long term, the effects of higher demand from emerging economies will also be felt at the assembly lines in this country. Turnover slightly below that of the previous year is assumed due to the saturation of the Western European market, which still accounts for two thirds of turnover. At the same time, an abrupt downward spiral is unlikely; thus, the average turnover level of the past five years – that would be €6.6 billion – would still be exceeded, provided that no external shocks occur. The last recession in the agricultural machinery sector was mainly triggered by the financial crisis – beginning when the Central and Eastern European markets fell away. On the other hand, the sector is subject to mega trends, which are constant and reliable determining factors: population growth, migration to urban agglomerations, changed eating habits, additional demand for agricultural products for the generation of energy. These circumstances increase pressure on yields per hectare and on sustainable production – e.g. through farming methods that require less water.

Business expectations become more cautious

The agricultural machinery industry is currently achieving record turnovers worldwide, as described earlier on. After a pronounced drop in sales in 2009, the volume of investments by farmers at the important agricultural locations worldwide increased relatively quickly.

Satisfaction with the business situation has remained at a high level during the past year, while, given the very high comparative level, expectations that sales will continue to increase, are naturally becoming lower. Currently, no longer 80%, but only 30% expect increases in sales. At the same time, so far only about 27% see falling sales figures for the coming six months, and the others see stability at the current high level. Here, regional differentiation must be taken into account. For months now, the boom has already been a thing of the past for the Italian and, particularly, the Spanish agricultural machinery industry including dealers, due to the weak domestic market.

Prospects are not gloomy, but VDMA expects that things will change for the entire European industrial sector in the second half of 2012. The “skid marks” in several markets, not only in the southern part of Europe, have in the meantime become all too clear. The good news is that conditions for investment are still good in the emerging economies and in the important regions of Eastern Europe, which means that the existing demand for mechanisation in agriculture can be covered.

5. Market Developments in Individual Industry Segments

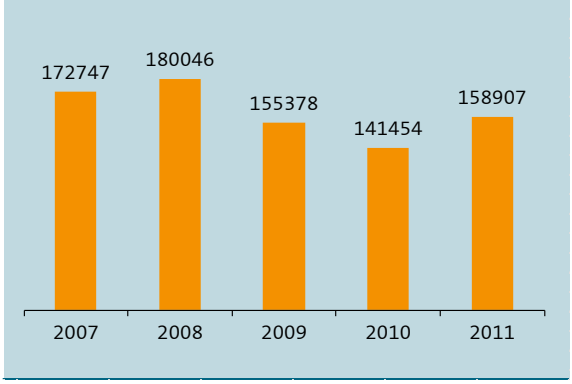
The main products at a glance

The discussion below focuses on market developments broken down into the main industry segments, with a regional focus on Western and all of Europe.

Almost a third of the sales volume for agricultural machinery in Europe can be attributed to one machine – namely the **tractor**. After two weak years, 2011 was a year of recovery for the Western European market. The statistical annex to this report lists sales and registrations of tractors in Western Europe by country. What becomes clear is that the two largest markets, France and Germany, greatly influenced the overall development of the market. Of the 159,000 new registrations in Western Europe, 45% occurred in these two markets (previous year: 41%). In Germany,

compact tractor sales saw above-average growth, while demand for these units was stagnant in France. The introduction of new emission levels is likely to have a similar effect in both countries, which will however be distributed over two or more years due to the presence of previous series. It is likely that some tractors in the IIIa emission stage will be introduced to the market in 2012.

Tractor registrations in Western Europe
in units



Source: CEMA Statistical Group, VDMA

The average motorisation of tractors can differ widely among countries, analogous to their different structures. In this vein, the proportion of tractors with more than 160 hp (118 kW) is 8% in Italy, 20% in France and 31% in the United Kingdom. But the trend of recent years is also clear: Growth is mainly taking place in the upper power classes – a process that corresponds to the developments regarding the size of towed units, higher work speeds on fields or grassland, but also higher capacities and driving speeds for transport, e.g. for harvested material.

What is the European market trend for tractors this year? In the first three months, registrations in Western Europe achieved the previous year´s level again in total, but a clear drop of the market in the Scandinavian and South European region could be observed. Another trend for this year is a decrease in demand for compact tractors. In Germany, manufacturers will have to face a declining market following last year's record sum in 28 years. However, the decline will not be very significant due to the high number of back orders from 2011. During the first four months, new registrations were still 11% higher than last year, but the market is also facing an imminent change in trend in view of less new orders during the next few months. In France, during the first quarter registrations were still 15% higher than the previous year.

Following a depressed market in 2011, the Western European **combine harvester market** grew by a fifth to approximately 6,900 units[10]. This volume is within the long-term average. The two largest markets, Germany and France, moved along the same lines, each finishing at slightly more than 2,000 units. This also represents an average value. However, arable farmers in Western Europe had good incomes with a slightly smaller harvest and higher prices. On a global scale, the increase was somewhat more moderate, although European manufacturers were able to attain one of their best results with a sales volume of 38,000 units. The world's large arable farming regions continued to invest heavily in combine harvesting capacities, as shown by the examples below[11]: Brazil (+17%), Canada (+8%), Australia (+65%[12]), Russia (+39%). In the United States, the market shrunk by 7%, but still remained at a relatively high level.

Overall, manufacturers continue to enjoy a good season. Regional developments vary significantly. Arable farmers are very cautious in North America, while sales of combine harvesters in Brazil increased by a fifth during the first quarter

[10] The market volumes for harvesting equipment listed below refer to the so-called Western brands.
[11] including national production
[12] increase in deliveries from the USA, the largest supplier, in 2011

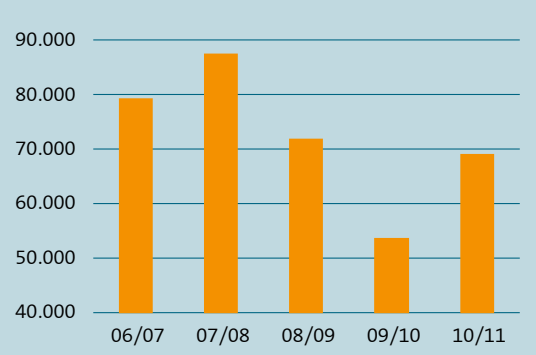
of 2012. The Western European market is likely to remain relatively stable. Some markets (e.g. Turkey, Ukraine, Australia), however, will experience a decline during 2012 that can be explained by a very high comparative level in the previous year.

The global market for self-propelled **forage harvesters** was comprised of approximately 2,700 units in 2011 – with a quarter attributed to Germany alone, which has expanded its leadership position in front of the United States with almost 700 forage harvesters. The biogas boom continues – in Germany, this has already led to the eighth consecutive year of growth for this type of machine. The biomass volume to be harvested for energy purposes will continue to increase, which stabilises the market trend for forage harvesters, and not only in Western Europe.

In the case of **balers**, a distinction is made between machines for round bales and (big) square bales. In 2011, around 3,200 big square balers were sold worldwide. This resulted in a trend reversal from the low sales figures of the previous year. The global round baler market for Western brands most recently amounted to about 27,000 units, of which 10,000 were sold in Western Europe. The increase in demand for balers is also due to the fact that prices paid for straw and forage are very high. In Germany, it has also been observed that many farmers are again deciding to purchase their own baler (usually the smaller round baler), in order to gain more independence from contractor capacities.

Global Sales of Grassland Machinery

Mowers, tedders, rakes - in units for the seasonal year



Source: VDMA

The market for **forage harvesting equipment** (mowers, tedders and rakes), which is rather stable when examined over a longer time period, experienced a special boom period during 2007/2008, with a growth of 11% to 88,000 units[13]. During the following two years, the market initially declined by 15%, and then by another 25% to 54,000 units. Investments in hay harvesting equipment depend directly on milk prices, and reflect their similarly strong volatility during the 2007 to 2009 period. Investments increased again during the second half of 2010. Replacement demand, combined with requirements for more powerful machinery and greater widths, has led to significant market growth. During the 2011/2012 season, sales figures again came close to reaching the aforementioned recent record numbers of four years ago. By the end of 2011, incoming orders worldwide were 27% above the previous year. At the same time, not all delivered machines will reach the final sale stage, but will stay in reserve at the dealers – a reserve that has been declining over the last two years.

Market developments were similar for the **forage loading wagons**, which are mainly used in Western and Central European grassland locations. The 2012 sales volume will increase by approximately 20%.

The discussion on harvesters is followed by a summary of market developments for arable farming equipment. Unit sales of **soil cultivation equipment** increased by about a third across Europe in 2011, and many manufacturers recorded new sales records. The plough continues its strong position in Europe, alongside a strong trend towards short disc harrows and tined cultivators. In addition to soil conditions, the selection of machinery is also influenced by costs, yield certainty and the plant's resistance to disease. The variety of equipment offered by machinery manufacturers is increasing. With respect to sales, a stable trend is expected for 2012, although order books have become increasingly empty during the last two months.

Electronic controls represent one of the most important development trends in the area of **seed drills and fertiliser spreaders**. In view of higher fertiliser prices, European farmers and contractors

[13] Unit numbers refer to the result of a VDMA statistic. It represents the market but does not include all sales figures for Western manufacturers.

are increasingly turning to machines with weighing equipment in the case of mineral fertiliser spreaders. In general, 2011 was a very good year for fertiliser spreader sales. Sales figures in Europe increased by 30%. It will not be possible to maintain this level in 2012. Sales of seed drills also increased by a third. It is also possible to observe a number of clear trends in this segment: The renaissance of the sugar beet in some European countries, including Germany and Russia, has led to a strong increase in sales of precision seed drills. The importance of minimal soil cultivation is growing steadily.

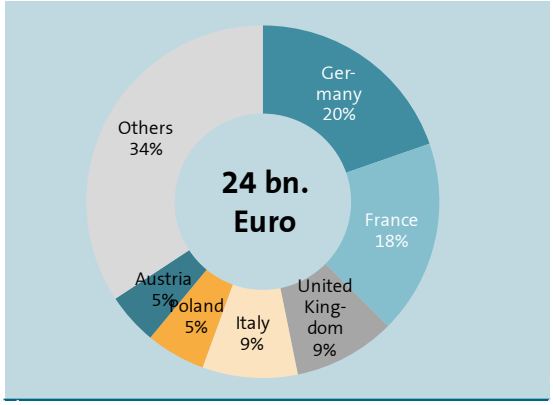
Finally, a status description of the **plant protection sprayer** market: The trend towards larger widths and requirements for higher speeds continues. The inside cleaning of the tank also plays an important role, showing an overall trend of consistent increase in the sophistication of the equipment sold in Europe. GPS-controlled technology is also making headway in Eastern European markets. Unit numbers of new machines increased noticeably in 2011, but fell short of the record level of 2008. However, the strengthening of the Eastern European market has also increased the significance of self-propelled machinery.

6. Market Development by Regions

Investment volume very high in the EU

The European agricultural machinery market has again levelled off at a high level due to the good income situation of farmers. In 2011, the industry achieved a turnover of €24.2 billion in the EU, almost reaching the record level of 2008. Germany and France, the two largest markets, were the driving force for the entire region, with growth of approximately one quarter each. Only the small markets Greece and Portugal showed a drop in turnover. Italy, Ireland, Spain and Poland were markets with very little growth. While the first three of the mentioned countries have entered a downturn phase, Poland has developed into a very strong market over the past few years and is now ranked in fifth place in the EU.

EU Agricultural Machinery Market
2011



Source: VDMA

The annual result for 2012 will show a significant north-south divide: The Southern European agricultural machinery markets have lost a considerable amount of impetus and potential, while the region further north has a substantial order backlog from last year, which will be sufficient to provide further modest growth. But: all good things come to an end; thus, in the second half of the year, declines in sales are to be expected in Europe in general compared to last year.

Investment fever has subsided in Germany

In Germany, we are very "self-satisfied" as far as the market level is concerned. Volumes of investments made by farmers and contractors increased to €4.76 billion in 2011, which represents growth of 23% compared to the previous year and, at the same time, a new record. Accompanied by continuing structural change and good incomes, the machinery inventories were modernised to a large extent.

The fact that new machinery sales were so good was, however, also due to the simultaneous tight supply of used machinery, which meant that particularly low-priced alternatives were missing. The dealers were very successful in selling redundant equipment in third markets. For example, the number of used tractors exported from Germany increased to more than 4,700 units in 2011 and was thus one fifth above the

average of the five previous years. Here Poland and Hungary were the most important distribution channels.

Market growth involved all groups of machinery. Tractors achieved a particularly surprising result with just under 36,000 new registrations in 2011. Although this figure includes a higher-than-average number of compact tractors, sales of tractors with over 190 hp also rose sharply. Adapting to the new exhaust emission standards did play a marginal role but is not likely to have had a decisive influence on this trend. Rather the higher incomes of the past two years – whether from milk or grain – were used. At the end of 2011, the manufacturers again received very large order volumes, which are still leading to an overall increase in registrations in the first half of the year. At the same time, the order backlog is already decreasing continuously; this will determine the trend as from the second half of the year. However, it is currently not foreseeable that the market will decline by more than 10% in the calendar year 2012. This means that the comparatively high level well above 30,000 new tractors will be maintained this year.

Market Volumes in Germany
in units, referring to the calendar or seasonal year

	2008	2009	2010	2011
Tractors	31.250	29.464	28.587	35.977
Combine harvesters	2.365	2.324	1.457	2.015
Balers	2.592	2.077	1.915	2.144
Forage harvesters	524	456	608	695
Mowers	11.895	9.279	8.439	9.681
Tedders and rakes	10.366	8.307	7.231	8.702

Source: VDMA

Regarding the general mood and an outlook for the German market: The business barometer for the German agricultural sector rose again by three points in spring 2012. This demonstrates that customers are satisfied with the current economic situation. The situation has eased most notably for pig farmers, who only achieved a low profit margin in 2011. At the same time, arable farmers and fodder crop farmers are as satisfied as they were during the last boom phase in the agricultural sector in 2007/2008.

The optimistic climate and the good income situation are one thing; investments are another. 17% of the farmers and 27% of the agricultural contractors recently stated that they wanted to invest in (new or used) machinery and equipment. These are comparatively high percentages. Expressed in euros, however, planned investments are already 10% lower than they were last year. Investments in renewable energy are decreasing more noticeably than those in agricultural machinery. From 2012 on, not many new biogas plants are likely to be built.[14]

European agricultural machinery companies still regard Germany as one of their growth markets and one of the pillars of their economies for 2012. The high order backlog from last year will also lead to good sales figures for the first half of the year. However, incoming orders are decreasing, and, after the orders currently on hand have been invoiced, business is expected to be quieter. Replacement demand has dropped after the years 2011 and 2012, in which investment was very strong.

Very strong growth in France

In 2011, the French market for agricultural machinery experienced an impressive growth spurt. According to our calculations, market volume increased by a quarter to €4.31 billion, reaching the level of 2008, until then the record year. The French association believes that the market boom is due to the good prices for grain and milk as well as the positive prospects for sugar beet. They also report an improved situation in the viniculture sector but say that 2011 was the most chaotic year in the last half-century for the manufacturers of machinery for the maintenance of grassed areas – with fluctuations that, in the end, led to slight total growth.

The tractor market increased to 35,400 units – an average value for France. In view of the high investments made by arable farmers, the upper performance classes played an important role.

[14] Deutsche Kreditbank, the bank that finances the majority of the biogas plants in Eastern Germany, shares this opinion. According to this bank, virtually only order backlogs from 2011 were being completed while hardly any new plants were added. Thus, the number of new plants is decreasing by more than a half in 2012. However, they believe that the Eastern German region remains interesting for further biogas plants due to the available space.

Market Volumes in France
in units, referring to the calendar or seasonal year

	2008	2009	2010	2011
Tractors[1]	40.716	36.800	31.312	35.409
Combine harvesters	2.671	2.455	1.637	2.008
Balers	6.411	4.751	3.198	4.047
Forage harvesters	365	313	240	296

Source: Axema, [1] excluding telehandlers

Development in 2012 appears to be comparatively stable. The level of incoming orders is still high, although orders fluctuate strongly from month to month. It is therefore anticipated that the number of units for the different machinery types will be more or less at last year's level. The market for combine harvesters is expected to grow by 5%; growth should be even higher for balers, coming from a comparatively low level. The used machinery business ought to pick up slightly more. The statutory terms for payment, which have gradually become shorter since 2009 – from formerly 270 days to the current 60 days – are an issue that concerns the trade sector. This matter has triggered complaints with regard to the possibility of financing inventories and will tend to put pressure on them.

Changes in statutory depreciation allowances in the United Kingdom

During the past few years, the British agricultural machinery market has been developing to the general satisfaction of the industry. The two huge scandals in the agricultural sector, BSE and foot-and-mouth disease, that led the market into a deep recession that lasted almost a decade from 1997 on, have long since been overcome. In 2011, the sales figures of the manufacturers of agricultural machinery in the United Kingdom increased by 14%, reaching €2.26 billion. This makes the United Kingdom the third largest market in Europe – previously Italy's position.

The tractor market for the class from 50 hp upwards grew by 6% to 14,000 units, thus remaining 2% below the average for the past decade. The development for harvesting machinery was particularly dynamic with growth of almost one third, reaching €310 million. This includes combine harvesters with sales of 1,000 machines (+22%).

The forecasts for combine harvesters and forage harvesters are also very favourable for 2012. The sales season has generally got off to a very good start. In the first four months, the tractor market was 13% above the previous year.

It can be assumed, however, that in the case of large-scale machinery there were some anticipatory effects ahead of the expiry of a depreciation allowance rule in March: until now, investors in the agricultural sector were able to write off an amount up to GBP 100,000 for machinery in the year of purchase. Since April, the amount is GBP 25,000. Harvest prospects and the exchange rate for the British pound on 30 September, the fixed date for payment of the determined subsidies by the European Commission to the British government, also have effects on farmers' liquidity. According to the grain-trading industry, harvest prospects remain at last year's level, although some regions in the south of the United Kingdom are affected by a drought.

Market Volumes in United Kingdom
in units, referring to the calendar or seasonal year

	2008	2009	2010	2011
Tractors (> 50 hp)	17.104	15.013	13.347	14.094
Combine harvesters	1.065	945	825	1.005
Balers	2.000	1.820	1.600	1.545
Forage harvesters	140	150	180	155

Source: AEA

Economic downturn in Southern Europe

Last year, the Italian market moved down to fourth place in the ranking of the largest agricultural machinery markets in Europe, as mentioned earlier on. Based on the entire year 2011, the market registered growth of 6%, reaching €2.11 billion, due to a slight upturn in the first half of the year. In the second half, however, a downturn set in. It is obvious that this trend is continuing at a faster pace in 2012. In the first quarter, the number of tractor registrations was one quarter lower than in 2011. A lot of market participants mention the lack of access to loans as being a major problem. Whether on the part of end customers, dealers or manufacturers of agricultural machinery: financing opportunities are

described as being very inadequate. This is a problem for the economy of the country as a whole that is now affecting the agricultural machinery sector.

Sales in Spain are also not expected to be high in 2012. For the past three years, the market has remained at a low level and, corresponding to the general economic situation, does not appear to be recovering. According to VDMA calculations, market volume in 2011 was just under €950 million. This puts the country in eighth place within the EU. On the other hand, with regard to the value added by its agricultural sector, Spain is in third place in the European Union, behind France and Germany. The area of arable land is almost 12 million hectares in size, which is equivalent to that of Germany and Poland.

This comparison intends to illustrate how great the investment needs of the Spanish agricultural sector have become with regard to machinery. However, the Spanish association expects a new lowest value on the tractor market for 2012 with 9,000 units. To make matters worse, a long dry period in significant locations once again makes harvest forecasts uncertain for 2012. Farmers are currently increasingly falling back on cheap or used machinery.

Polish agriculture has become more competitive

Polish agriculture has a small-scale structure and is geared towards subsistence. The large majority of the 2.4 billion farms are less than 5 hectares in size. The agricultural production is concentrated on grain, maize and sugar beet as well as potatoes, rapeseed, meat and milk. Nevertheless, in the past years – also in the course of inclusion in EU agricultural policy since the country's accession in 2004 – considerable change has taken place. A large number of farms have developed strongly and now produce under competitive conditions. The ratio of the produced milk delivered to dairies is rising steadily. Last year alone, the milk production increased by 3% to 9.28 million tonnes. Now, almost as much milk is produced for the market as in Italy.

At the beginning of this year, the Polish agricultural business climate index dropped slightly. Farmers expect higher production cost and less government support. Furthermore, due to considerable damage caused by winterkill, losses must be expected for income from this year's harvest. Altogether, 30% of the winter grain and winter rapeseed had to be ploughed up. It can be assumed that the climate on the agricultural machinery market will become cooler.

Solid purchasing power in the Czech Republic and Slovakia

In the Czech Republic and Slovakia, about 90% of the agricultural area is cultivated by farms with a size exceeding 100 hectares. This means that the largest farms in the whole of Central and Western Europe lie in the Czech Republic. The agricultural production of both countries is concentrated on wheat, barley, rapeseed and potatoes as well as sugar beet, meat and milk. Particularly in the Czech Republic, organic farming is steadily gaining in importance and is already approaching an area target of 15%. The number of organic farms has already reached almost 4,000, which means that every tenth farm is an organic farm.

Agricultural income and, with it, purchasing power for agricultural machinery have increased once more due to the good harvest and stable prices for agricultural products last year. In the Czech Republic, imports of agricultural machinery amounted to €559 million in 2011; this means growth of 43%. Similar growth rates were achieved in Slovakia. Last year, the country imported agricultural machinery worth €241 million, which represents a growth rate of 41%. The mood among the Czech and Slovakian farmers remains positive. A favourable develop-

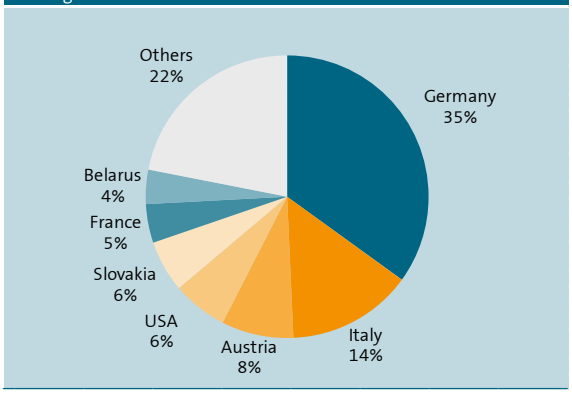
ment, both in the agricultural sector and on the agricultural machinery market, is still expected for 2012.

General economic recession in Hungary affects the agricultural sector too

So far, the majority of Hungary's farms are small and family-run. There is, however, a growing tendency towards larger structures. The average farm size is currently about seven hectares. Agricultural production is mainly concentrated on maize, followed by grain and sugar beet as well as rapeseed, sunflowers, meat and milk.

The income situation of the farms improved clearly last year. Following a relatively poor harvest in 2010, agricultural production value increased by 25% in 2011. In addition, government subsidies increased by about 15%. The Hungarian agricultural business climate index reached a record level in 2011. This also had an effect on investments in agricultural machinery. Hungarian imports of agricultural machinery increased by 66% compared to 2010, reaching €326 million. Here growth on the tractor and harvesting equipment markets was particularly high – especially the import of potato, beet and forage harvesters rose rapidly.

Origin of Hungarian Ag. Machinery Imports
Average of 2009-2011



Source: National Statistics Agencies

Altogether, approximately 90% of the agricultural machinery used in Hungary is imported. There was no government aid worth mentioning for investments in agricultural machinery last year, and in the coming months too, only investments in a few product fields such as gardening and landscaping equipment are likely to be supported.

After the positive last year, the Hungarian agricultural business climate index fell slightly at the beginning of this year. The general economic situation in Hungary is very strained and the government's budgetary situation very precarious. Therefore, the farms can no longer rely on government support. It could indeed have a negative effect on future agricultural development if support funds were frozen (the EU has threatened to suspend aid in view of the country's budgetary problems). Furthermore, it is likely that damage caused by winterkill and dry weather will have a negative effect on the harvest income of farms this year. According to estimates, the Hungarian agricultural machinery market will at best stagnate this year.

Subsidies play a key role in Bulgaria

In Bulgaria there are just under 700,000 farms, most of which are family-run subsistence farms, with an average of six hectares of cultivated land. Half of the working population in Bulgaria works full- or part-time in agriculture. Agricultural cooperatives also continue to play a major role. In addition to tobacco, fruit and vegetables, agricultural production is focused on wheat, sunflowers, maize and rapeseed. Bulgaria is a net exporter of agricultural commodities, but is dependent on imports of milk products and meat.

The agricultural machinery used is relatively outdated – almost 80% of the machinery is more than ten years old. With the exception of a couple of small component manufacturers there is scarcely any local production. German agricultural machinery plays an important role in Bulgaria and represents almost 40% of imports. In addition, machinery is frequently purchased from the CIS, Turkey and China.

The Bulgarian market for agricultural machinery has recently developed dynamically. For instance, in the year 2011 the country imported tractors and agricultural machinery with a value of €359 million – 57% more than in the previous year. The high rate of increase in investments has resulted partially from good harvests in the years 2010 and 2011. However, Measure 121 in particular –

Modernisation of agricultural holdings – of the EU programme for rural development had a strong influence on growth. Through this measure the acquisition of agricultural machinery can be subsidised by public funds. The demand of Bulgarian farmers for the subsidies was high and the rejection rate relatively low. However, the budget for Measure 121 was thus rapidly disbursed, resulting in cooling of the investment climate again by the end of the year. The redistribution of funds from other measures of the programme for rural development that are in less demand is being discussed, since there continues to be a great need for modern agricultural machinery.

Further development potential in Romania

Last year the Romanian agricultural machinery market reached an unprecedented size. According to VDMA calculations, the turnover with tractors and agricultural machinery was just under half a billion euros, with most of the machinery originating from abroad. Unlike the situation in other countries of Central Europe, farmers in Romania import not only high-performance Western machinery from the EU but also less sophisticated machinery from Belarus, Turkey and the Far East. The larger farms are located in the Danube delta in the southern part of the country, as well as in the northwest near the Serbian and Hungarian border. Here most farms have a cultivated area of a hundred to several thousand hectares, and exhibit a high level of productivity through the use of efficient, modern machinery. However the majority of farms in Romania cultivate areas of a few hectares and cannot afford modern Western machinery. Even the subsidies from the structural funds for rural development can accomplish little. The farms can rarely afford the co-financing percentage. The area premiums of the EU amount to less than €100 per hectare.

In favourable circumstances, Romania could develop similarly to Poland, since the two countries share many similarities. Romania is slightly behind Poland in terms of agricultural area, however the Polish agricultural machinery market is almost three times larger than that of Romania. In the medium term further growth in the Romanian agricultural machinery market is to be expected. The large farms will continue to invest in order to increase their effectiveness, and the medium-sized and smaller farms are joining machinery rings. Contractors are already becoming established. There are initial signs of a structural change. Young people are migrating to the cities and are leasing land inherited from their parents and grandparents to the remaining farmers.

High expectations in Croatia regarding EU accession

Croatia's agriculture has a small-scale structure. Most of the just under 200,000 farms cultivate an area of less than three hectares. Agricultural production is focused primarily on maize, wheat, sugar beets, potatoes and meat, as well as fruit, olives, sunflowers and soybeans. Croatia so far has a negative trade balance for agricultural commodities.

Local production of agricultural machinery is presently limited primarily to combine harvesters produced by the Same Deutz-Fahr plant in Županja, as well as a couple of small manufacturers of soil tillage equipment. Imports of agricultural machinery thus play an essential role. Western brands are particularly in demand. In the year 2011, German deliveries to Croatia alone rose by 29% to €36 million. Particularly strong growth was seen for the import of tractors and combine harvesters. However, despite generally high growth rates, the market volume is still far below the level attained before the last financial

crisis. The even greater demand at that time is attributable among other things to the fact that until 2010 the Croatian government subsidised the acquisition of a wide range of agricultural machinery, by up to 40%. The subsidies from the pre-accession funds of the EU that are presently available have no comparable effect on the development of the overall market, since they are restricted to a relatively small range of agricultural machinery (primarily for the areas of dung/liquid manure, feed, and water supply).

Croatia is expected to join the EU in July 2013. This will have a major impact on the further development of the agricultural sector. At present the productivity and efficiency of Croatian agriculture is still far below the average for the EU. EU subsidy programmes attempt to close these gaps progressively, however it is not easy to reach the level of competitors. In addition, accession to the EU will be associated with withdrawal from the free trade agreement CEFTA (Central European Free Trade Agreement), which means the loss of important sales markets in the area of the former Yugoslavia. Croatian agriculture will thus face major challenges in the immediate future. However it is expected that integration into the EU, similarly to the situation with recent candidate countries, will stabilise the economy of the country as a whole, as well as agriculture in particular.

Fewer obstacles for sales in Serbia

Serbian agriculture is one of the few industries in the country with a positive trade balance. The just under 800,000 farms have an average size of only three hectares, the smallest size among European countries. Serbian agriculture is characterised by pronounced differences from north to south. Larger arable farms tend to be found in the north of the country, focused mainly on the production of maize, wheat, barley, rye, potatoes and sugar beets. In contrast, in the south farms are extremely small and production is primarily limited to fruit, vegetables, wine and meat.

Serbian agriculture is still far from being adequately mechanised, so as to establish modern, efficient production. On average, the machinery used is relatively old, and many farms do not yet have sufficient cultivating equipment. At the same time, due to the fertile black earth soils, the country has great potential for high yields in arable farming. Because of this, combined with the prospect of EU membership, which has recently come within reach, in the short term the country can already be regarded as a potentially attractive sales market for agricultural machinery.

Ongoing structural change in the Turkish farm sector

Guest submission by Selami Ileri, General Secretary of Tarmakbir, the Turkish Association of Agricultural Machinery and Equipment Manufacturers (extract)

According to the OECD, Turkey ranks 7th worldwide with an agricultural output of USD 62 billion. In recent years it has been shown that mechanisation in agriculture can reduce dependence on natural conditions, particularly precipitation. Following the drought crisis in 2007, the agricultural sector has seen strong growth. Total agricultural exports reached USD 12.7 billion in 2010, compared to USD 4 billion eight years before. This has also been accompanied by an increase in agricultural imports.
In terms of individual products, important developments have been achieved. For instance, Turkey has had a long-term supply deficit in the production of unhusked rice; however domestic production has increased by 150% over the past 10 years, while maize production has doubled. Sunflower seed production has risen from 850,000 tonnes to 1,364,000 tonnes. While the cultivated area of some crops such as wheat has declined, there have been important gains in productivity for all major crops in recent years. Cattle stocks in Turkish farms have also grown considerably. Today, Turkey has approximately 24,000 farms with more than 50 animals each. On average, agriculture accounts for 25% of total employment.

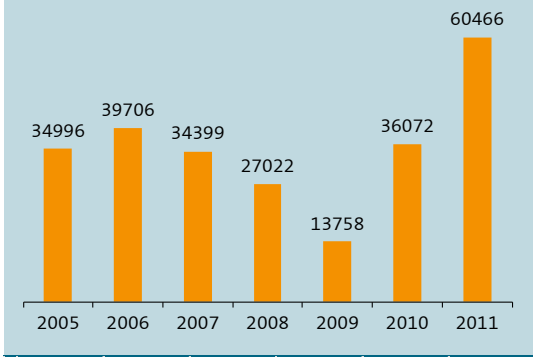
Reform plans for consolidating agricultural land

An important aspect of agricultural infrastructure in Turkey is the division of land. Farms in Turkey have an average size of around six hectares, and

on average each farm is comprised of seven parcels of land. Since there are 3.1 million agricultural holdings in Turkey, this corresponds to 22 million parcels of agricultural land. Currently the division of agricultural land into parcels smaller than two hectares is not permitted; previously parcels as small as 0.1 hectares were allowed. There are further policy plans for the reallocation of land.

Sales of new Tractors in Turkey

in units



Source: Tuik, Tarmakbir

The state also attaches priority to support for agriculture, pursuing the objectives of improving living conditions in rural areas, raising agricultural activities to a higher technological level, and modernising the food processing and packaging industry.

In addition to rural development programmes, support for agriculture is provided in various forms, including support related to inputs, products, agricultural insurance, regional support for animal breeding, and research and development.[15] The country has been divided into 30 regions for the purpose of production planning and forecasting the demand for agricultural products.

Boom of the Turkish agricultural machinery market

In 2011, approximately 61,000 tractors were sold in the domestic market, setting a new record. National production quantities were correspondingly high, amounting to 62,750 units. Due to this high level and the expectation that state support will decline, a drop is anticipated for the year 2012. However, weather conditions are currently favourable. Bank credit periods for agricultural operations have already been shortened; this appears to be having a negative impact on sales.

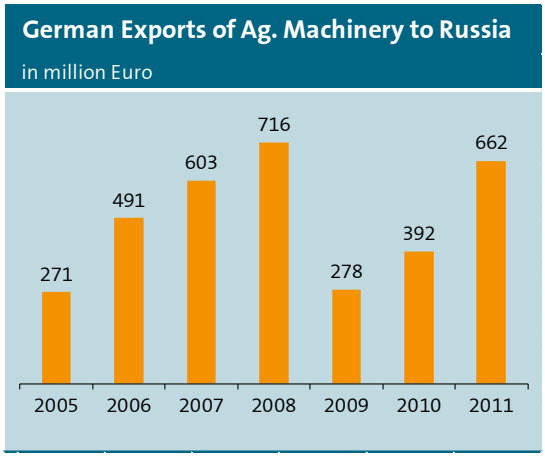
Russian market has almost regained record level

In Russia a mixed mood currently prevails in agriculture and in the agricultural machinery market. Last autumn an above-average harvest was achieved. Following the lifting of the ban on exports of grain and oil seeds in the summer of 2011, important purchasers in North Africa, the Middle East and some Asian countries were regained as major customers. Although as a rule Russian grain generally is of low quality, exporters benefited from the high world market prices. Domestic prices also rose, which in turn had a negative impact on meat and milk production. The proportion of grain, particularly feed wheat and barley, used for feed in animal husbandry is very high and so far is declining only slightly. Only in the northwest of Russia, where there is considerable milk production, is feed gradually being changed to hay silage and feed maize.

Strong growth was exhibited by the agricultural machinery market in the Russian Federation in 2011. Both machinery from domestic production and imports were affected by this trend. Following two years of good growth, total turnover reached approximately €3 billion, roughly corresponding to the level of the year 2007, and still half a billion below the level of the record year 2008. Local production accounted for around €1.3 billion. The tractor and combine harvester market provided intensified impetus for growth.

For 2012 market observers anticipate additional growth which, however, will depend greatly upon the continuation of subsidy programmes, and upon early accession to the WTO with the associated reduction of import duties for self-propelled machinery. At the same time, further investments by leading Western manufacturers in local production can be expected. Suppliers also intend to be more involved locally in future.

[15] Note: Credit subsidies had a special effect on the strong investment in 2011. For the purchase of irrigation and livestock equipment, there was a 100% interest rate subsidy, for the other agricultural machinery, including tractors, it was 50%.



Source: German Statistics Agency

Agricultural sector in Ukraine comparatively stable

In the year 2011, the Ukrainian agricultural machinery market was one of the markets exhibiting the greatest growth. According to estimates of local market observers, the sale of agricultural machinery rose 50% in comparison to the previous year. Imports from Germany increased by more than 70%. What are the reasons for such positive dynamics? Is this a sustainable growth that will continue in the coming years?

To provide a perspective, we will first consider past trends. The development of the Ukrainian agricultural machinery market from 2005 to 2008 could not have been better. Rates of increase for imports were from 30 to 50%. Ukrainian farmers and agricultural holdings considerably expanded their investments in modern machinery. German manufacturers in particular benefited from this. The German manufacturers are now strongly represented in the market, and in addition to high quality and reliability also offer consultation, technical support, and the quick supply of spare parts. In 2008 German agricultural machinery with a value of approx. €280 million was supplied to Ukraine. For German manufacturers, Ukraine thus developed into the third most important export market outside of the EU, immediately following agricultural giants such as the USA and Russia. In the year 2009 exports then virtually collapsed, with a drop of more than 60%.

The recovery, which had already begun in the year 2010, developed very dynamically in 2011. Total sales of agricultural machinery increased by more than 50%. For individual segments, including tractors with more than 300 hp and ploughs, the number of units doubled. German exports to Ukraine increased by 80%, exhibiting stronger growth than the overall market. The most important German exports were combine harvesters, soil tillage equipment and livestock equipment.

The rapid rise in the agricultural machinery market certainly has diverse causes, which are partially based on politics and on the overall economic recovery. However, many indicators also point to the role of the learning process in the agricultural sector, the results of which can be seen in professionally run agricultural operations equipped with state-of-the-art technology. This applies to the agricultural holdings, large vertically diversified enterprises with a size of 10,000 to more than 200,000 hectares, which cultivate almost half of the arable land suitable for agriculture. In recent years they have invested heavily in modern technologies, machinery, seeds, fertilisers and plant protection. Over the past years they have acquired considerable know-how. Through the involvement of financially strong investors or IPOs they also have the capital cover required to adapt quickly to market conditions.

No appreciable recovery in Kazakhstan

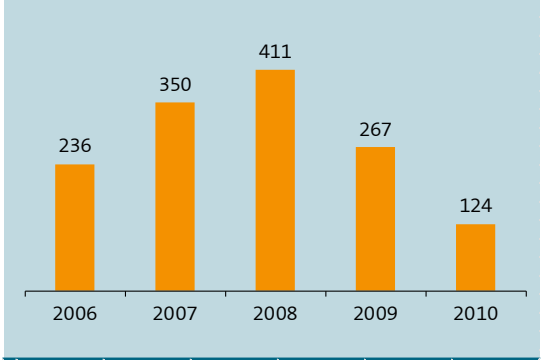
Unlike the situation in Ukraine and Russia, in Kazakhstan the learning process in agriculture is still far from complete. Although the professionalism of farms is increasing from year to year, the risks, particularly those associated with the weather, continue to be very high. In Kazakh agriculture the limiting factor is the precipitation. Depending upon the region, annual amounts range from 200 mm to 400 mm. In the grain belt in the north and northeast of the country, most of the precipitation falls in the form of snow. The task of farmers is to ensure that the snow remains on the arable land and is not blown away by the often very strong winds. The stubble left standing after the threshing of wheat, barley or maize is helpful in this regard. Some farms are investing in fences or establishing windbreaks of trees between the individual fields. They are also investing in new resource-saving technologies that enable notable results to be achieved with

the small amount of water available. Despite a certain amount of progress, it will still take a long time before the existing risk is reduced to a minimum. The good harvest last year was based primarily on a sufficient amount of precipitation. The consistently high quality of Kazakh wheat, with a high level of gluten and protein, should be noted.

What Kazakhstan lacks is effective subsidy programmes for the arable farming sector, as still existed prior to the 2008/2009 crisis. Subsidies via state (KazAgroFinance) and in some cases private (Astana Finance) institutes in particular provided for a strong boost in investment in the years 2006 to 2008. Since 2009 the financing and leasing of machinery has been severely limited. The livestock equipment sector has been given priority. Currently the potential of Kazakh arable farming is thus not being effectively utilised; investment remains at a low level. On the other hand, the machinery used is subject to extreme operating stress and after only three or four years exhibits strong signs of wear. Other factors which are associated with greater production profitability and the simultaneous reduction of risks are likewise not being supported. If subsidy priorities are not re-evaluated soon, it is conceivable that the good results of 2011 will remain only a temporary phenomenon.

Kazakh Imports of Agricultural Machinery

in million Euro



Source: VDMA, total of 42 countries´ exports

Despite the record harvest and greater export volumes, the mood in the Kazakh agricultural machinery market remains troubled. In terms of available potential, with its vast agricultural areas, Kazakhstan is clearly in a leading position in Central Asia. In the years 2007 and 2008 the market experienced a short-term boom. In a market study of the German Ministry of Agriculture from the year 2008, the agricultural machinery market was estimated at €900 million. Since the financial crisis, sales have been around €300 million. Last year the overall market grew by 15%. Deliveries of Western machinery, primarily from the USA, Germany and Italy, remained at the level of the previous year, while deliveries of tractors and agricultural machinery from the CIS increased.

The main reason for this shift is the rise in import duties at the beginning of 2011. As a member of the customs union, Kazakhstan has recognised the import duties of the Russian Federation. The exemption from value-added tax has also been largely eliminated. Within a year, the costs of acquisition have thus risen by up to 40%, depending upon the sector. Even though only part of the increased cost was passed on to customers in the form of higher prices, for the most part investments did not occur. The existing credit squeeze and insufficient subsidies are further obstacles to investment.

The few investments presently come almost exclusively from the leading agricultural holdings. The agricultural holdings have a fixed production cycle and must increase the level of mechanisation and make replacement investments more quickly due to the high degree of wear on the machinery. At the same time, they process the products and conclude direct contracts in the export business, and thus have greater added value and margins. They are among the few customers of the international agricultural machinery industry in Kazakhstan with a strong ability to pay, and are adept at bringing their dominant position into play in price negotiations.

For the current year, a continuing moderate sales market is to be expected. In the medium-term perspective, the Kazakh agricultural machinery market will reach a size of around one billion euros. However, how soon this will occur depends upon many factors, particularly the elimination of tariff trade barriers, the increase of subsidies and the availability of loans.

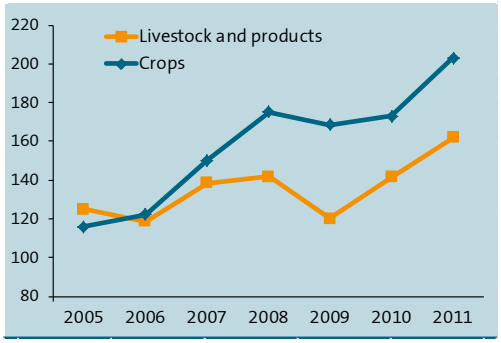
US farmer incomes stabilise the market

The US market for agricultural machinery has impressed with its ability to maintain considerable growth over the last few years. Apart from the special economic boom in the "hobby area", particularly from 2003 to 2007, the investment volume for professional farmers has increased significantly. Therefore 2011 closed with continued stable sales. Sales of tractors from 40 hp upwards increased by 3% to 83,800 units, whereas sales of combine harvesters were only slightly below the very high level of the previous year, at 9,900 units. VDMA has calculated the US market volume for 2011 at USD 23.4 billion (€16.8 billion), which corresponds with an increase of 13% as compared to 2010. Machinery imports grew by 16% to USD 6.3 billion, with much higher deliveries from the EU (Germany, France) in particular.

The number of tractor sales with more than 40 hp averaged 65,000 units per year during the 1990s. This value had increased to over 90,000 units during the second half of the last decade. Of course the year 2009 was also one of crisis for the US agricultural machinery market. However, it had a much greater effect on the meat-producing than the grain sector. In the end, farmers were able to bring in a good harvest which could be sold at good prices.

Cash Receipts of US Farmers

in billion US Dollars



Source: USDA

Based on good income expectations, farmers will also be making investments this year. Tractor sales were slightly above the previous year's level during the first quarter, but combine harvesters returned to the level of previous years following a very strong first quarter of 2011. Dealers report of low inventory levels of new machinery and long delivery times for selected models.

According to information provided by the US Department of Agriculture, cultivated arable acreage for 2012 has increased by approximately 2%. Farmers are growing more maize and wheat and not as many soybeans as last year. Amazingly, agricultural earnings reach new record heights every year.[16] Last year saw an increase of 16%; however, the agriculture ministry is now also considering the possibility of a decline. The large agricultural machinery corporations expect the North American machinery market go grow by up to 5% in 2012. Any potential effect from the presidential elections remains to be seen. But more cautious market forecasts will likely be appropriate for 2013.

Brazil as South America's heavyweight

Brazil is one of the world's large agricultural nations. Agricultural production has expanded and continues to expand – in the direction of the country's interior and also at the expense of the tropical rainforest. A new political objective is the expansion of agricultural production in the periphery areas of coastal urban areas, near the consumers, so to speak. The harvest volume of the 2011/2012 season remained under the previous year's level due to a lack of precipitation. However, exports are being driven forward – Brazil is currently overtaking the US as the world's largest supplier of soybeans. And it is not just arable farming but also animal production that is experiencing rapid growth. Rising demand in emerging countries has driven the price for poultry to a new record high. This boom has especially benefited Brazilian farmers: After the US and China, Brazil is the world's third-largest producer and largest exporter of poultry meat.

According to VDMA estimates, the Brazilian agricultural machinery market has a volume of approximately €3 billion. Market and domestic production cycles fluctuated strongly in recent

[16] According to the investment bank JP Morgan, a US farmer could make a profit of 216 USD per acre in average (= 530 USD per ha) in the season 2011/2012 with maize; in this year, the amount is supposed to reach 170 USD per acre (or 420 USD per ha).

years, as export markets virtually collapsed in 2009. The government has established a variety of support programmes for the domestic market. In the agricultural area, these include the loan subsidy programmes "mais alimentos" (food security programme), PSI (Programa de Sustentação de Investimento, i.e. a programme targeting sustainability) and Finame (programme for the renewal of the machinery fleet). The programmes are managed by the national development bank BNDES, which is considered the world's largest promotional and development bank with a loan sum of €60 billion (in 2011). Local agricultural implement manufacturers view the extension of these programmes for this year as an important positive factor affecting demand in the market.

Even though the agricultural machinery sector already exhibited clear signs of overheating in 2010, sales nevertheless continued at a high level in 2011. While sales of tractors and harvesters declined by 7% (to 52,300 units), they were still significantly above the average of the last few years. The decline did not affect the larger tractors, but merely consisted of a correction in the special demand for compact tractors in 2010, which was the result of a subsidy programme for small farmers. According to information provided by the Anfavea association, there is increasing demand for large agricultural machinery and tractors used to increase productivity. While approximately 26% of tractors had more than 100 hp in 2009, this proportion increased to 39% by 2011. 2012 could lead to a mixed situation for the agricultural machinery market. Demand for combine harvesters appears to be strong at this time, while tractor sales slightly declined again during the first four months of the year. But in general, the market remains relatively insulated from importers – as described in the section on agricultural policy.

Attractive niche markets in other South American markets

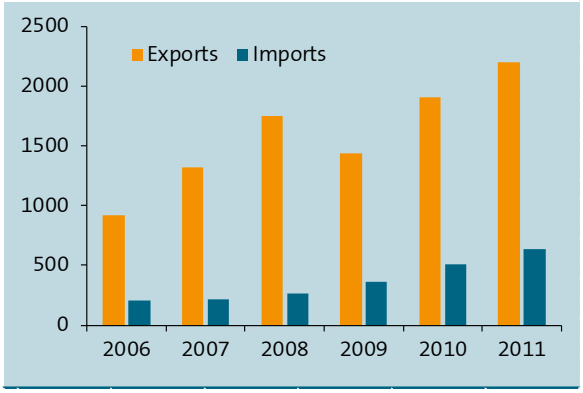
Despite the impressive growth potential of Brazil, it is also important to take a look at the other countries on this sub-continent. German exports of agricultural machinery into the region are relatively minor, while the US and increasingly also China are more important players. On the German side, about half of the deliveries to the subcontinent are destined for Argentina, consisting mostly of combine harvesters and forage harvesters. Another emerging player is Chile, where agriculture does not quite have the same standing as in Argentina and Brazil, but where machinery is required for interesting niche markets such as viniculture and fruit growing. And without doubt, from a European standpoint it is easier to sell agricultural machinery in Chile, as there are no particular barriers to imports. Rather, imports from the EU are exempt from duties as a result of a bilateral treaty.

Continued growth in China

The growth trend on the Chinese agricultural machinery market continues unabated. Annual growth rates have ranged between 20% and 30% in recent years. For this year, the Chinese industry association CAAMM is again expecting a similar growth rate. On the other hand, the association reported a decrease of tractor sales in the segment above 30 hp by 5% in the first three months 2012.

Chinese Agricultural Machinery Trade

in million Euro



Source: National Statistic Agency, VDMA

One important goal for the Chinese central government is to achieve a high degree of self-sufficiency in basic foods, including rice, wheat, maize, as well as potatoes, milk and meat. The central government is using the subsidies to support the increasing mechanisation of agricul-

ture. In addition, the state is creating the condition for the establishment of larger farms. On the one hand, the government promotes the establishment of cooperatives, which are able to access additional regional subsidies. On the other hand, this process also encourages the establishment of contractors that service multiple cooperatives.

Areas that are freed up due to the outmigration of the rural population into urban areas can be rented to cooperatives. They obtain better conditions with regard to the rental agreements with the government. In the province of Heilongjiang, there are efforts to increase the size of the cooperatives from currently 600 hectares to 2,000 hectares. Since migration flows into the cities continue, more and more areas are also becoming available in other regions. This is a favourable prerequisite for the further modernisation of Chinese agriculture.

In addition to Chinese agricultural machinery manufacturers, some of the leading Western and Japanese companies are also participating in market growth. They have local production sites. Their products can be found on the subsidy lists. Particularly larger cooperatives and contractors invest in the machinery offered by Case New Holland, John Deere, Kubota, Yanmar etc., since this machinery is powerful and reliable, and also allows for a higher return of investment. Opportunities to gain a foothold in the Chinese market are also fairly good for European implement manufacturers. Attached or towed equipment for arable farming purposes currently have priority with respect to subsidies. Demand is huge, and local competition is not as strong as in the tractor area.

Agricultural Machinery in the European Union

Values in Million Euro, including tractors

Country	Production				Exports			
	2009	2010	2011	%	2009	2010	2011	%
Germany	5614	5485	6984	27%	3916	3912	4999	28%
France	3010	2882	3601	25%	1931	2076	2511	21%
United Kingdom	1758	1779	2042	15%	1229	1338	1572	18%
Italy	4223	4245	4839	14%	2835	3072	3644	19%
Austria	1142	1141	1300	14%	983	999	1163	16%
Netherlands	756	813	960	18%	1331	1492	1832	23%
Spain	557	601	646	8%	368	452	513	14%
Sweden	397	451	567	26%	389	529	670	27%
Finland	757	977	1179	21%	462	574	752	31%
Denmark	697	652	803	23%	554	559	725	30%
Belgium-Luxembourg	707	676	797	18%	1281	1145	1389	21%
Ireland	150	132	146	10%	131	135	152	13%
Portugal	66	66	68	3%	43	40	44	10%
Greece	48	50	58	17%	36	41	47	16%
EU 15*	**19883**	**19948**	**23990**	**20%**	**7337**	**6330**	**8054**	**27%**
Poland	659	775	912	18%	429	493	636	29%
Czech Republic	437	500	609	22%	324	383	487	27%
Romania	31	35	45	26%	32	42	54	29%
Hungary	352	365	463	27%	330	319	445	39%
Bulgaria	29	36	41	14%	35	51	65	28%
Rest of new EU members	152	181	227	25%	282	352	485	38%
EU 12* (Entry 2004 and 2006)	**1661**	**1892**	**2296**	**21%**	**1099**	**1249**	**1654**	**32%**
EU 27*	**21544**	**21841**	**26285**	**20%**	**5555**	**5144**	**6398**	**24%**

Country	Imports				Market Volume			
	2009	2010	2011	%	2009	2010	2011	%
Germany	2236	2295	2773	21%	3934	3868	4758	23%
France	2812	2609	3220	23%	3891	3415	4310	26%
United Kingdom	1581	1548	1795	16%	2110	1989	2264	14%
Italy	697	824	918	11%	2085	1997	2113	6%
Austria	716	744	855	15%	987	1003	1146	14%
Netherlands	804	853	1027	20%	894	931	1097	18%
Spain	732	739	814	10%	921	888	947	7%
Sweden	535	691	789	14%	663	788	898	14%
Finland	272	316	372	18%	567	719	799	11%
Denmark	535	498	634	27%	678	591	712	20%
Belgium-Luxembourg	1100	956	1195	25%	572	526	602	15%
Ireland	217	203	266	31%	279	247	259	5%
Portugal	157	212	205	-3%	180	238	230	-3%
Greece	137	103	87	-15%	149	112	98	-13%
EU 15*	**3008**	**3072**	**3766**	**23%**	**17911**	**17311**	**20232**	**17%**
Poland	749	976	1042	7%	979	1258	1318	5%
Czech Republic	372	392	559	43%	492	517	687	33%
Romania	291	346	442	28%	289	340	432	27%
Hungary	393	196	326	66%	415	242	344	42%
Bulgaria	253	228	359	57%	246	214	335	57%
Rest of new EU members	622	671	978	46%	597	623	856	37%
EU 12* (Entry 2004 and 2006)	**2298**	**2428**	**3220**	**33%**	**3019**	**3192**	**3971**	**24%**
EU 27*	**2561**	**2624**	**3191**	**22%**	**20930**	**20503**	**24203**	**18%**

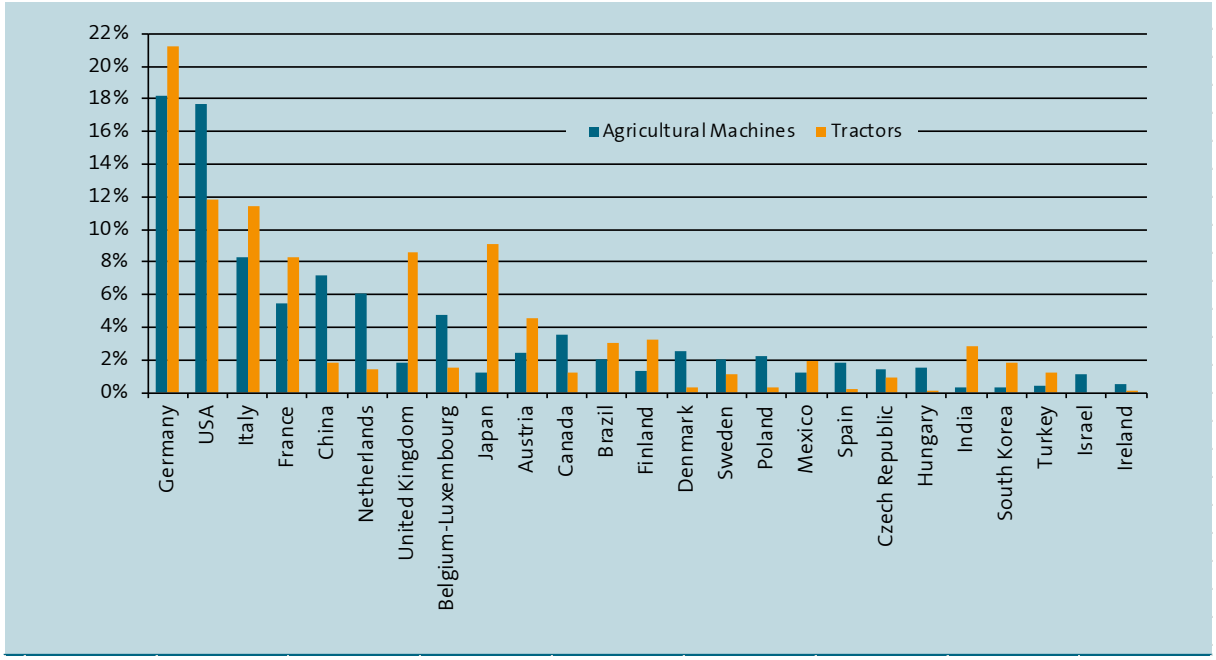
* excluding EU intra trade

Some countries including transfers (e.g. Netherlands, Belgium - reason for exports exceeding production)

Sources: Eurostat, VDMA (incl. own calculations and estimation production 2011), CEMA

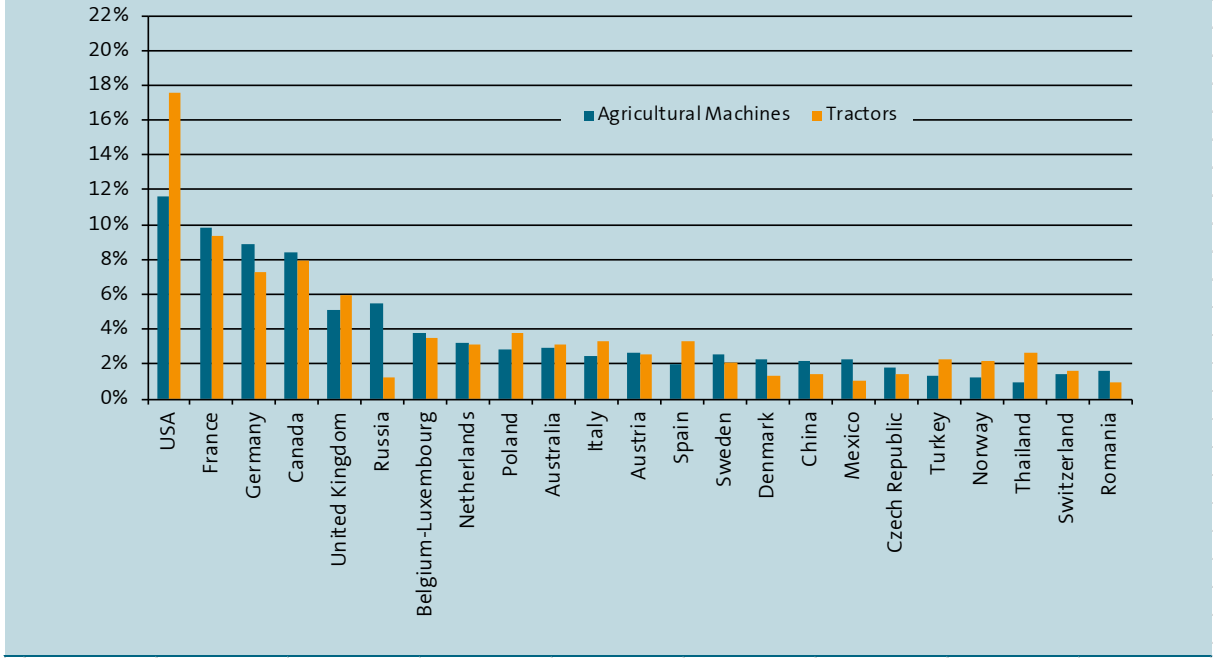
Exports of Agricultural Machines and Tractors Worldwide

Share of total volume in % (2011)



Imports of Agricultural Machines and Tractors Worldwide

Share of total volume in % (2011)

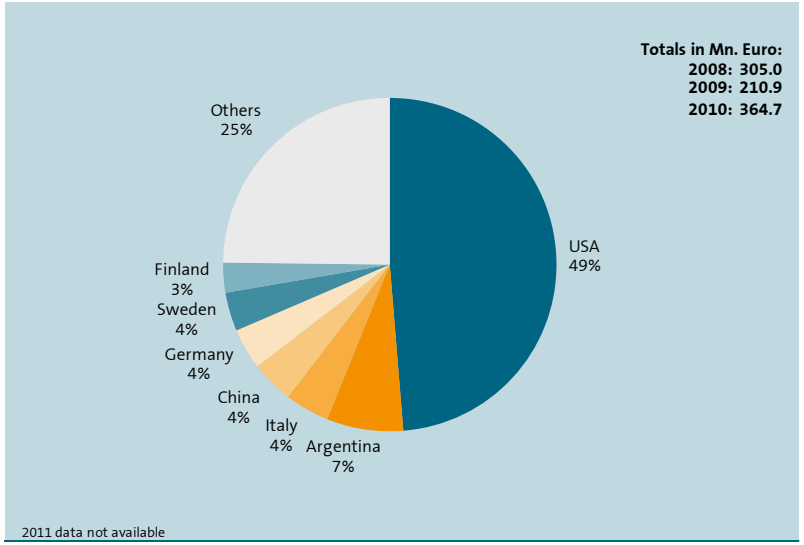


Sources: official national statistics, VDMA, total of the ex- or imports from 47 countries

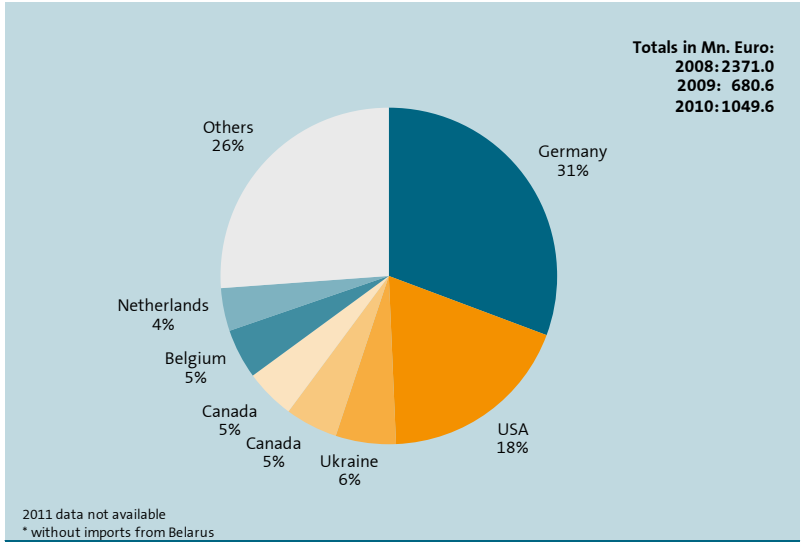
Origin of Agricultural Machinery Imports of Selected Countries

Average of the years 2008-2010 or 2009-2011

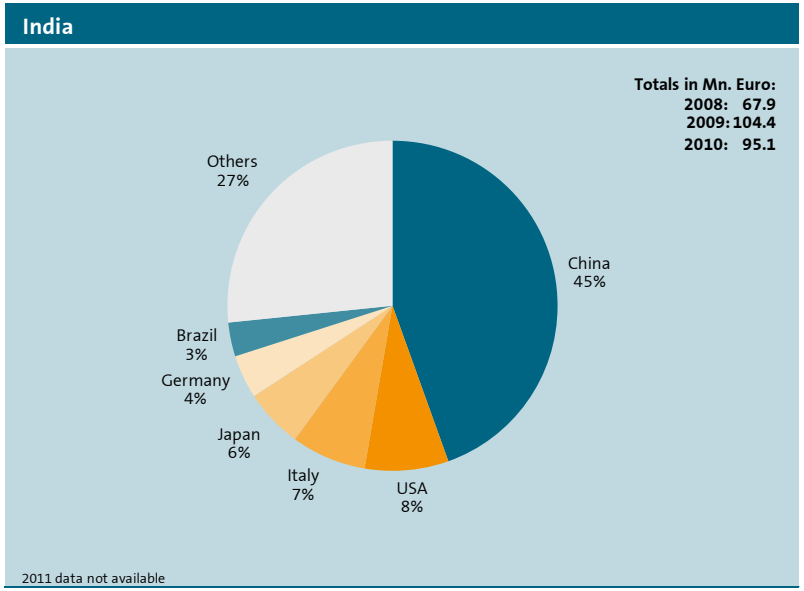
Brazil



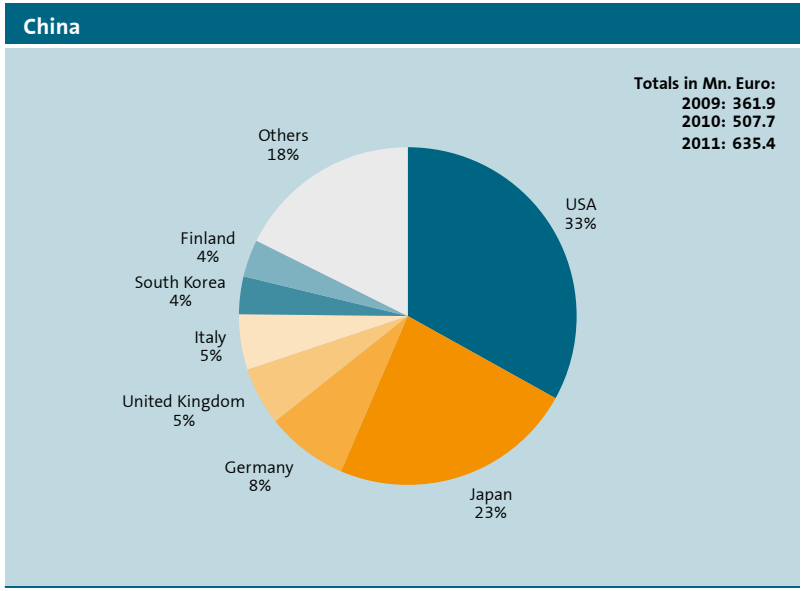
Russia*



India



China

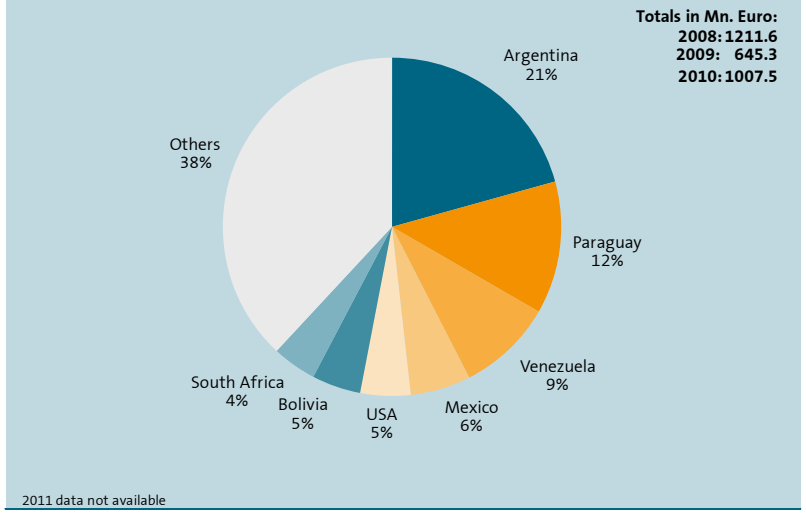


Source: National Statistics Agencies

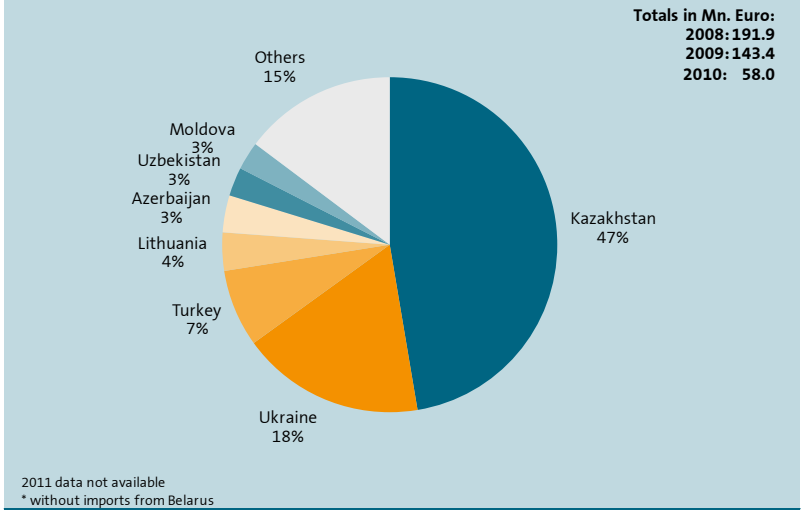
Destinations of Agricultural Machinery Exports of Selected Countries

Average of the years 2008-2010 or 2009-2011

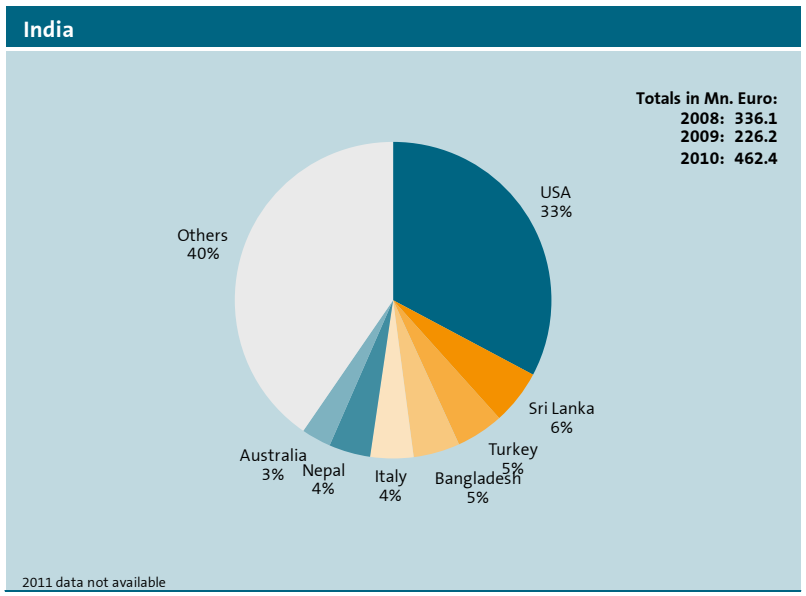
Brazil



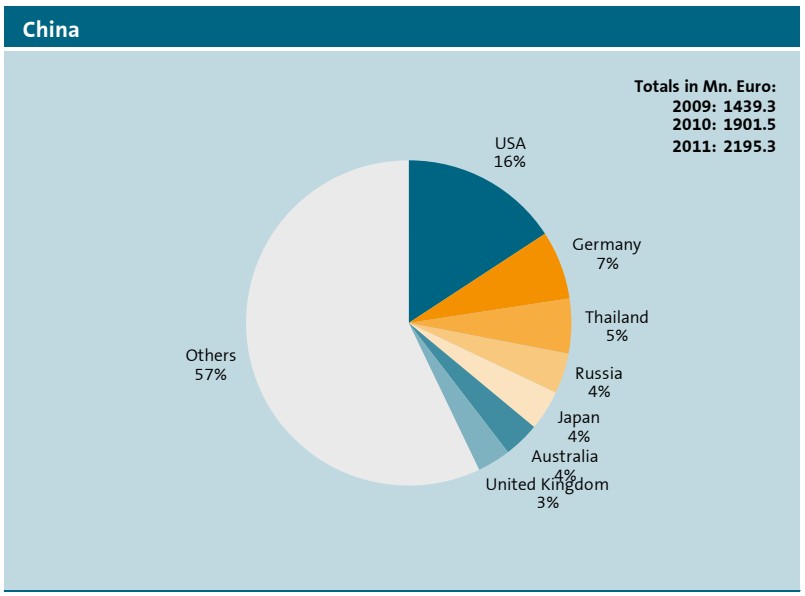
Russia*



India



China



Source: National Statistics Agencies

German Market Volume for Agricultural Machinery by Segments

Value in 1,000 Euro

Kind of machinery	2009	2010	2011	%-change
Tractors	1.342.492	1.345.117	1.698.747	26,3%
Soil Working Equipment	184.740	171.295	198.681	16,0%
Machines for sowing, plant protection and fertilising	178.910	170.170	197.132	15,8%
Harvesting machinery	712.737	587.735	758.290	29,0%
Equipment for husbandry	194.081	210.499	258.657	22,9%
Conveyor equipment for agriculture	49.435	53.396	65.114	21,9%
Trailers for agricultural use	46.258	54.110	68.049	25,8%
Other machinery*	1.225.645	1.275.291	1.513.496	18,7%
Total	**3.951.711**	**3.867.613**	**4.758.166**	**23,0%**

Sources: Turnover Statistics VDMA Agricultural Machinery, Federal German Statistic Agency, * incl. parts, lawn and garden maintenance, forest equipment, repair, others

Tractor Registrations in Western Europe

in units

	2007	2008	2009	2010	2011
France*	35.083	40.716	36.800	29.123	35.409
Germany	28.451	31.250	29.464	28.587	35.977
Italy	26.836	27.264	27.057	23.323	23.429
United Kingdom	17.089	18.564	16.326	14.486	15.217
Spain	17.250	15.826	11.796	10.547	10.002
Austria	7.558	7.722	7.735	7.921	7.766
Finland	4.245	4.491	4.036	4.292	4.561
Sweden	4.634	4.462	3.609	4.098	4.877
Portugal	4.199	4.129	2.983	3.583	3.186
Belgium	3.472	3.897	2.909	2.858	3.281
Netherlands	4.568	4.520	2.782	2.733	3.682
Switzerland	2.591	2.590	2.653	2.746	3.083
Norway	4.187	3.708	2.631	3.232	3.829
Denmark	3.961	3.427	1.878	1.791	2.286
Ireland	5.029	4.531	1.748	1.315	1.543
Greece	3.002	2.610	745	525	496
Luxembourg	224	206	197	263	234
Iceland	368	133	29	31	49
Total	**172.747**	**180.046**	**155.378**	**141.454**	**158.907**

* exclusive telescopic handlers
Source: CEMA Statistical Group, VDMA, Federatie Agrotechniek

Agricultural Income in the European Union

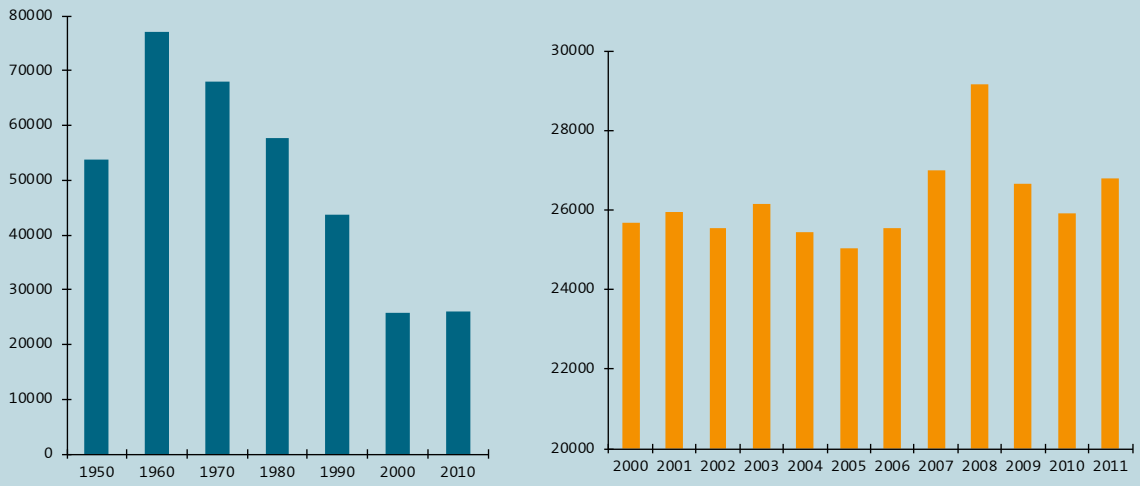
Indicator A: Index of the real Factor Income in the Agriculture per Year-Work-Unit, 2005=100

	2004	2005	2006	2007	2008	2009	2010	2011
Belgium	109,8	100,0	123,1	132,6	107,2	113,4	141,1	109,3
Bulgaria	87,4	100,0	97,5	98,8	167,9	121,4	123,5	152,2
Czech Republic	96,4	100,0	105,2	109,4	115,3	93,4	129,3	160,0
Denmark	98,8	100,0	112,8	114,4	66,6	66,3	113,8	136,7
Germany	111,9	100,0	108,9	126,5	134,7	94,8	113,2	128,7
Estonia	95,3	100,0	100,0	140,1	112,4	95,7	156,9	188,7
Ireland	80,9	100,0	83,4	93,5	87,2	67,6	79,6	101,5
Greece	102,5	100,0	95,2	102,9	88,5	90,4	83,5	78,9
Spain	113,3	100,0	95,5	107,4	91,1	91,6	99,0	97,5
France	105,2	100,0	111,3	121,1	104,6	84,5	113,0	110,7
Italy	114,6	100,0	96,3	93,7	95,2	90,4	79,9	88,7
Cyprus	97,2	100,0	90,0	90,1	85,7	89,8	92,0	93,5
Latvia	95,9	100,0	130,2	135,6	114,0	101,8	134,5	148,0
Lithuania	92,5	100,0	88,9	133,2	123,2	106,0	120,8	144,8
Luxembourg	131,3	100,0	104,8	133,0	91,8	60,6	61,5	76,7
Hungary	98,6	100,0	107,3	115,2	152,2	104,3	123,2	183,8
Malta	96,9	100,0	97,5	94,5	90,1	98,7	89,9	77,3
Netherlands	100,4	100,0	123,0	121,8	104,4	86,7	112,7	102,6
Austria	101,8	100,0	110,8	124,8	121,9	93,7	106,5	123,7
Poland	108,8	100,0	112,9	137,8	119,5	134,0	165,9	180,8
Portugal	105,0	100,0	102,0	93,8	98,6	87,7	96,6	86,7
Romania	175,2	100,0	99,3	76,8	114,4	97,1	87,7	137,5
Slovenia	99,6	100,0	97,4	109,5	97,2	92,6	100,9	106,0
Slovakia	107,3	100,0	122,1	128,9	143,5	110,5	114,4	133,9
Finland	90,0	100,0	98,9	112,6	96,7	115,6	129,0	121,7
Sweden	91,7	100,0	111,3	135,7	119,1	93,4	122,4	123,9
United Kingdom	101,2	100,0	101,9	109,3	143,3	134,5	138,8	150,4
European Union	**110,4**	**100,0**	**104,0**	**114,5**	**110,8**	**98,5**	**111,4**	**119,1**

Source: Eurostat

Companies and Employees in the German Agricultural Machinery Industry

Development of the number of employees - long-term and in the course of the past years



Current number of enterprises: 206, number of employees: 27.000

Source: Federal German Statistics Agency, total for companies > 20 employees

Key Facts for the Agricultural Sector in the European Union

Country/Item	Agricultural land and farm structure						Number of agricultural businesses			
	Total ag. area	Grassland	Arable land	Wheat yields	Milk cows	Cattle stock	Total	> 5 ha	> 50 ha	Share ag. land
	1000 ha	1000 ha	1000 ha	100 kg/ha	in 1000	Index	in 1000	in 1000	in 1000	Farms > 50 ha in %
Austria	3.266	1.788	1.405	94	525	0,8	165,4	110,1	11,3	39
Belgium	1.374	511	842	80	524	2,8	48,0	35,8	8,8	52
Denmark	2.590	201	2.452	78	551	1,7	44,6	43,0	15,3	77
Finland	2.264	38	2.248	41	296	0,5	68,2	61,6	14,1	49
France	27.591	8.131	18.339	75	3.759	0,8	527,4	396,9	197,1	81
Germany	17.035	4.929	11.903	26	4.087	1,1	370,5	286,9	85,4	73
Greece	3.984	824	2.058	82	150	0,6	860,2	205,0	7,1	16
Ireland	4.219	3.130	1.008	35	1.088	1,4	128,2	119,9	22,7	46
Italy	12.708	3.347	7.040	66	1.839	0,8	1.679,4	448,7	40,0	39
Luxembourg	129	68	61	93	40	1,2	2,3	1,9	1,1	84
Netherlands	1.958	821	1.059	49	1.490	3,4	76,7	55,3	11,2	45
Portugal	3.680	1.769	1.241	17	306	0,6	275,1	75,5	9,8	63
Spain	24.855	8.653	11.937	61	903	0,6	1.043,9	492,6	101,2	70
Sweden	3.193	487	2.627	27	366	0,6	72,6	61,7	17,9	71
United Kingdom	15.957	9.809	6.114	79	1.977	0,9	299,8	180,6	74,0	85
EU 15	**124.802**	**44.508**	**70.334**		**17.900**	**0,9**	**5.662,4**	**2.575,4**	**616,9**	**67**
Bulgaria	2.729	107	2.523	42	336	0,4	493,1	25,3	6,2	79
Cyprus	152	0	110	30	24	1,7	40,1	5,4	0,4	25
Czech Republic	3.518	909	2.571	36	407	0,6	39,4	19,6	6,6	93
Estonia	907	273	627	42	103	0,4	23,3	14,9	2,6	73
Hungary	4.229	504	3.553	-	266	0,6	626,3	66,1	12,2	71
Latvia	1.774	640	1.111	42	180	0,3	107,8	63,7	5,1	43
Lithuania	2.649	819	1.809	24	405	0,4	230,3	90,9	6,9	37
Malta	10	-	8	40	8	4,8	11,0	0,3	-	-
Poland	15.477	3.271	11.756	40	2.677	0,7	2.391,0	753,7	23,6	24
Romania	13.907	4.530	8.867	52	1.573	0,4	3.931,4	400,6	14,4	40
Slovakia	1.879	530	1.319	39	180	0,4	69,0	8,8	2,9	94
Slovenia	489	288	173	26	117	1,1	75,3	30,9	0,4	10
EU 27	**172.522**	**56.381**	**104.760**	**49**	**24.176**	**0,8**	**13.700,4**	**4.055,6**	**698,1**	**61**

Source: Eurostat; definition of cattle stock density index: cattle units per hectare; status of the data: agricultural land, milk cows, cattle stock and number of farms: 2007, wheat yields: 2009 and 2010

International Fairs Supported by VDMA Agricultural Machinery Association

Agritechnica

Hanover, Germany
Next date: 10 - 16 November 2013

Worldwide leading exhibition and innovation show (arable and grassland cultivation equipment)
Main target groups: Farmers of Germany and total Europe, representatives of the agriholdings, investors of main agricultural countries

Agrosalon

Moscow, Russian Federation
Next date: 10 - 13 October 2012

Leading fair for arable and harvesting equipment in the CIS
Main target groups: Plant manager of big farms of Russia and some other CIS countries, representatives of agriholdings, investors, banks

Bataagro

Stara Zagora, Bulgaria
Next date: May 2013

Leading national fair for arable cultivation and harvesting equipment including live machinery demonstrations
Main target groups: Farmers of the whole country, investors, banks

Demopark

Eisenach, Germany
Next date: 23 - 25 June 2013

Leading specialised fair for gardening / landscaping, municipal and golf court equipment
Main target groups: Greenkeepers, purchasers of municipal administrations in Germany and Europe

Interagro / Agroanimalshow

Kiev, Ukraine
Next date: 29 - 31 October 2013

Leading national fair for arable, harvesting and livestock equipment
Main target groups: Plant manager of big farms of Ukraine and some other CIS countries, representatives of agriholdings, investors, banks

Kazagro / Kazfarm

Astana, Kazakhstan
Next date: 24 - 26 October 2012

Leading national fair for arable, harvesting and livestock equipment
Main target groups: Farmers, investors, banks

Romagrotech

Near Bucharest, Romania
Next date: May 2013

Leading national fair for arable cultivation and harvesting equipment including live machinery demonstrations
Main target groups: Farmers of the whole country, investors, banks

Zentral-Landwirtschaftsfest

Munich, Germany
Next date: 22 - 30 September 2012

Traditional trade show for arable, harvesting and livestock equipment
Main target groups: Farmers (small, medium, big holdings) of the region South Germany / Austria

Members of VDMA Agricultural Machinery

Company	Webpage	Tractors	Trailers / Transport	Livestock	Soil Working	Sowing	Fertilizing	Plant Protection	Harvest	Lawn and Garden	Components	Others
Aebi & Co. AG Maschinenfabrik	www.aebi-schmidt.com									•		
AGCO Netherlands BV	www.agchemeurope.com							•				
AGCO GmbH	www.fendt.com	•	•						•			
AGCO Vertriebs GmbH	www.masseyferguson.de	•	•						•			
Agria-Werke GmbH	www.agria.de									•		
ALÖ Deutschland Vertriebs-GmbH	www.alo-deutschland.de		•									
altek GmbH	www.altek-gmbh.de										•	
AMAZONEN-WERKE H. Dreyer GmbH & Co. KG	www.amazone.de				•	•	•	•				
Argo GmbH	www.argotractors.com	•										
AUTOKÜHLER GmbH & Co. KG	www.akg-gruppe.de										•	
AVL LIST GmbH	www.avl.com										•	
Röhren- und Pumpenwerk Bauer Gesellschaft m.b.H.	www.bauer-online.com			•							•	
Becker Landtechnik	www.becker-lt.de				•	•						
Beinlich Agrarpumpen und –maschinen GmbH	www.beinlich-beregnung.de										•	•
BELIMPEX-Handels GmbH	www.belimpex.de	•										
Ludwig Bergmann GmbH	www.l-bergmann.de		•						•			
BONDIOLI & PAVESI GmbH	www.bypy.de										•	
Bosch Rexroth AG	www.boschrexroth.de										•	
BPW Bergische Achsen KG	www.bpw.de										•	
BSK & Lakufol Kunststoffe GmbH	www.bsk-lakufol.de											•
BUCHER HYDRAULICS GmbH	www.bucherhydraulics.com										•	
Th. Buschhoff GmbH & Co.	www.buschhoff.de		•									
Bernard van Lengerich Maschinenfabrik GmbH & Co. KG	www.bvl-group.de			•								
Carcoustic International	www.carcoustics.com										•	
Caterpillar Motoren GmbH & Co. KG	www.cat.com										•	
Claas KGaA mbH	www.claas.com	•	•						•			
Claas Agrosystems	www.agrocom.com										•	
Claas Industrietechnik GmbH	www.claas-cit.com										•	
CNH Deutschland GmbH	www.cnh.com	•							•			
Continental Teves AG & Co. oHG	www.contiteves.de										•	
CRAMER GmbH	www.cramer-technik.de								•	•		
Daimler AG - Mercedes-Benz Werk Gaggenau	www.daimlerchrysler.de	•										
Herbert Dammann GmbH	www.dammann-technik.de							•				
Deere & Company	www.deere.com	•	•			•		•	•	•		
John Deere Vertrieb	www.deere.com	•	•			•		•	•	•		
De Laval GmbH	www.delaval.de			•								
DEUTZ AG	www.deutz.de										•	
Dickey-john Europe S.A.	www.dickey-john.eu										•	
Gerhard Dücker KG	www.duecker.de									•		•
Eifelwerk Fahrzeugtechnik	www.eifelwerk.de											•
Franz Eisele & Söhne GmbH & Co. KG	www.eisele.de		•	•								
Emitec Gesellschaft für Emissionstechnologie mbH	www.emitec.com										•	
ESM Ennepetaler Schneid- und Mähtechnik GmbH & Co.	www.esm-ept.de									•	•	
Etscheid Anlagen	www.etscheid.de			•								
Euro-P Kleindienst	www.europumpen.de										•	
Faresin Deutschland GmbH	www.faresin.de			•								
FELLA-Werke GmbH	www.fella-werke.de								•			
Fliegl Agrartechnik GmbH	www.fliegl.com		•									
Flötzinger Gerätetechnik GmbH	www.floetzinger-										•	
Freudenberg Sealing Technologies GmbH & Co. KG	www.freudenberg.de										•	
Frielinghaus GmbH	www.frielinghaus.de										•	
FRITZMEIER Systems GmbH & Co. KG	www.fritzmeier.de										•	
GEA Farm Technologies	www.gea-farmtechnologies.com			•								
CARL GERINGHOFF Vertriebsgesellschft mbH	www.geringhoff.de										•	
GKN Walterscheid GmbH	www.walterscheid.com										•	
Gloria Haus- und Gartengeräte	www.gloriagarten.de									•		
Friedrich Graepel AG	www.graepel.de										•	
GRAMMER AG	www.grammer.com										•	
Grasdorf - Wennekamp GmbH	www.grasdorf-wennekamp.de										•	
Grégoire-Besson GmbH	www.gregoire-besson.eu				•	•						
Grimme Landmaschinenfabrik GmbH & Co. KG	www.grimme.de								•			
Hako-Werke GmbH	www.hako-werke.de	•								•		•
System Happel GmbH	www.system-happel.de			•								
HARDI GmbH	www.hardi-international.com							•				
HJS Emission Technology GmbH & Co. KG	www.hjs.com										•	
Max Holder GmbH	www.max-holder.com	•								•		•
Honda Deutschland GmbH	www.honda.de									•		

Members of VDMA Agricultural Machinery

Company	Webpage	Tractors	Trailers / Transport	Livestock	Soil Working	Sowing	Fertilizing	Plant Protection	Harvest	Lawn and Garden	Components	Others
Horsch Maschinen GmbH	www.horsch.com				•	•		•				
Kalkwerk Hufgard GmbH	www.hufgard.de						•					
HYDAC Technology GmbH	www.hydac.com										•	
IAV GmbH	www.iav.com										•	
ifm electronic gmbh	www.ifm-electronic.com										•	
InMach Intelligente Maschinen	www.inmach.de										•	
INTER CONTROL Hermann Köhler Elektrik GmbH & Co. KG	www.intercontrol.de										•	
INTERKAT Katalysatoren GmbH	www.interkat.com										•	
Inuma GmbH	www.inuma-aschara.com							•				
ISEKI-Maschinen GmbH Deutschland	www.iseki.de	•								•		
Isringhausen GmbH & Co. KG	www.isri.de										•	
iwis Antriebssysteme	www.iwis.com										•	
JCB Deutschland GmbH	www.jcb.com	•	•							•		
Jensen Service GmbH	www.holzhackmaschinen.com											•
Jetter Aktiengesellschaft	www.jetter.de										•	
Maschinenfabrik KEMPER GmbH & Co. KG	www.kemper-stadtlohn.de								•		•	
Dipl.-Ing. Georg Kersten Maschinenfabrik	www.kersten-maschinen.de									•	•	
Franz Kleine GmbH	www.franz-kleine.com								•			
Köckerling GmbH & Co. KG	www.koeckerling.de				•	•						
Kongskilde Industries A/S	www.kongskilde.com				•	•						
Köppl GmbH	www.koeppl-motorgeraete.de									•		
Kramer-Werke GmbH	www.kramer.de		•									
Maschinenfabrik Bernard Krone GmbH	www.krone.de								•			
Kubota (Deutschland) GmbH	www.kubota.de	•								•		
KUHN MASCHINEN-VERTRIEB GMBH	www.kuhn.de			•	•				•	•		
Kverneland Group Deutschland GmbH	www.kvernelandgroup.com				•	•	•	•	•			
LECHLER GmbH	www.lechler.de										•	
Lely Industries N.V.	www.lely.com			•					•			
Lely International N.V.	www.lely.com		•	•					•			
Lely West N.V.	www.lely.com			•								
Lemken GmbH & Co. KG	www.lemken.com				•	•		•				
Lemmer-Fullwood GmbH	www.lemmer-fullwood.info			•								
MAN Truck & Bus AG	www.man-mn.de										•	
MANITOU Deutschland GmbH	www.manitou.com		•									
Maschio Deutschland GmbH	www.maschio.de				•							
matev GmbH	www.matev.org									•		
Mecalac Baumaschinen GmbH	www.mecalac.de		•									
Merlo Deutschland GmbH	www.merlo.de		•									
MESTO Spritzenfabrik Ernst Stockburger GmbH	www.mesto.de									•		
MFT Motoren- und Fahrzeugtechnik	www.mft-cunewalde.de										•	
Michelin	www.michelin.de										•	
Motec GmbH	www.motecgmbh.de										•	
MTD Products GmbH	www.mtdeurope.com									•		
Müller-Elektronik GmbH & Co.KG	www.mueller-elektronik.de										•	
MWS Schneidwerkzeuge	www.mws-sm.com										•	
MX GmbH	www.m-x.fr		•									
NIEMEYER Agrartechnik GmbH	www.niemeyerweb.de				•							
OSB AG	www.osb-ag.de										•	
Alois Pöttinger Maschinenfabrik GmbH	www.poettinger.at				•				•			
Pumpenfabrik Wangen GmbH	www.wangen.com										•	
RAFI GmbH & Co. KG	www.rafi.de										•	
Rapid Technic AG	www.rapid.ch									•		
Rauch Landmaschinenfabrik GmbH	www.rauch.de					•	•					
Reform-Werke Bauer & Co Gesellschaft m.b.H.	www.reform-werke.at	•								•		
Reichhardt GmbH	www.reichhardt.org										•	
SAME DEUTZ-FAHR Deutschland GmbH	www.deutz-fahr.de	•										
SAUER-DANFOSS GmbH & Co. OHG	www.sauer-danfoss.de										•	
Schanzlin Traktoren und Maschinen GmbH	www.schanzlin.de	•										
Schmidt GmbH	www.schmidt-auma.de			•							•	
Schmiedag GmbH & Co. KG	www.schmiedag.de										•	
Schmotzer Agrartechnic GmbH	www.schmotzer.de					•		•				
Schneider Landmaschinenzentrum KG	www.sgariboldi.de			•								
Schuitemaker Machines B. V.	www.schuitemaker.nl		•	•					•			
Gebr. Schumacher GmbH	www.gebruederschumacher.de										•	
SHW SCHMIEDETECHNIK GmbH & Co. KG	www.shw-fr.de										•	
Sontheim Industrie Elektronik GmbH	www.s-i-e.de										•	
SPRAYING SYSTEMS Deutschland GmbH	www.spray.de										•	

Members of VDMA Agricultural Machinery

Company	Webpage	Tractors	Trailers / Transport	Livestock	Soil Working	Sowing	Fertilizing	Plant Protection	Harvest	Lawn and Garden	Components	Others
Wilhelm Stoll Maschinenfabrik GmbH	www.jf-stoll.com			•								
B. Strautmann & Söhne GmbH & Co. KG	www.strautmann.com		•	•								
Südharzer Maschinenbau GmbH	www.bgu-maschinen.de											•
SUEVIA HAIGES GmbH	www.suevia.com			•								
Sulky-Burel	www.Sulky-Burel.com				•	•	•					
TECNOMA TECHNOLOGIES SAS	www.tecnoma.com							•				
TeeJet Technologies Denmark	www.teejet.com										•	
THIELE GmbH + Co. KG	www.thiele.de										•	•
Thomas Magnete GmbH	www.thomas-magnete.com										•	
Julius Tielbürger GmbH & Co.KG	www.tielbuerger.de									•		
Gebr. Tigges GmbH & Co. KG	www.tigges.com				•							
Trelleborg Wheel Systems GmbH	www.trelleborg.com										•	
Trioliet Mullos B.V.	www.trioliet.nl			•								
Väderstad-Verken AB	www.vaderstad.com				•	•						
Valtra Vertriebs GmbH	www.valtra.de	•										
Vector Informatik GmbH	www.vector-informatik.de										•	
VETTER Umformtechnik GmbH	www.vetter-forks.com										•	
Vogel & Noot Landmaschinen GmbH & Co. KG	www.vogel-noot.info				•	•		•				
VOSS Fluid GmbH	www.voss.de										•	
Wabco Fahrzeugsysteme	www.wabco-auto.com										•	
Wachendorff Elektronik GmbH & Co. KG	www.wachendorff.de										•	
Walker-Technik GmbH & Co. KG	www.walker-technik.de			•								
Hans Wanner GmbH	www.wanner-maschinenbau.de							•				
WEBER-HYDRAULIK GMBH	www.weber.de										•	
WELGER Maschinenfabrik GmbH	www.welger.com								•			
Wiedenmann GmbH	www.wiedenmann.de									•		
WIKA Alexander Wiegand GmbH & Co. KG	www.wika.de										•	
WM Kartoffeltechnik GmbH	www.wm-kartoffeltechnik.de								•			
WTK-Elektronik GmbH	www.wtk-elektronik.de										•	
Yanmar Europe BV	www.yanmar.nl										•	
Zetor Deutschland GmbH	www.zetor.de	•										
ZF Friedrichshafen AG	www.zf-group.de										•	
ZF Passau GmbH	www.zf.com										•	

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Vogel&Noot Landmaschinen GmbH & Co KG (p.9)
CLAAS KGaA mbH (p. 12)
B. Strautmann & Söhne GmbH u. Co. KG (p. 14)
Bernard van Lengerich Maschinenfabrik GmbH & Co.KG (p.16)
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