Investigation of Potentialities and Development Tendencies as well as Derivative of Recommendations for Action in the Market Segment Grain

TENTacle: WP 2, Activity 1

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Abbreviations

ABCDG	Group: Archer Daniels Midland, Bunge, Cargill, Louis Dreyfus and Glencore
ADM	Archer Daniels Midland
ATR	ATR Landhandel Ratzeburg
COFCO	COFCO International (CIL), Chinese grain trading Group
CPPIB	Canadian Pension Plan Investment Board
DB	Deutsche Bundesbahn
FBL	Fehmarn Belt Link
HAGE	Hauptgenossenschaft Nord AG, Kiel
USDA	U.S. Department of Agriculture

1. Summary

The present study regards within the context of a representation the five most significant, world-wide acting enterprises in the grain trade, the so-called " ADCDG group", and their subsidiary companies with their processing, logistics and commercial activities with agricultural raw materials. Their commercial activities and the effects on the port Rostock are examined in more detail in that study. The transatlantic harbor Rostock plays an ever more important role for the agrarian trade. For the import, however, and particularly for the export large Panamax ships can be transshipped more tide- and more depth-independent than over Hamburg for world-wide goals. Also for the imported goods of e.g. Rape seeds made of Scandinavia and Eastern Europe is Rostock the ideal place of transshipment. In order to become durably fair this advantage, it requires an improved and above all economical logistics e.g. by railway from the cultivation regions to the appropriate real estate properties in the port Rostock. In addition, with the import investments are necessary in the future, in order to be able to serve the increasing import quantities of Rape seeds.

In this study besides it is examined whether the planned building of the Fehmarnbelt tunnel has a larger influence on the agrarian goods stream, which crosses so far the eastern Baltic Sea. As far as from planning and scheduled figures for the goods and passenger traffic for the project „Fixed Fehmarnbelt link“ is to be recognized, neither the goods stream of western link nor the goods stream of eastern link will mutually significantly affect each other. The project "Fixed Fehmarnbelt link" fundamentally acts as removal of already today existing bottlenecks at the railway segment between Maschen and Padborg, as load relief of the Great Belt link in addition of expected by Denmark increasing goods traffic activities from Germany and South Jutland, for the reduction of the route Hamburg - Luebeck - Copenhagen and the saving of travel times in particular with the regrouping from the ferry onto the road and/or railway. Therefore the risk, that alone by the project "Fixed Fehmarnbelt link" itself agrarian quantities from the port Rostock could be cancelled substantially, is not only very small but also not probable and has thereby on the sea port Rostock no direct or significant effects by the project "Fixed Fehmarnbelt link".

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2. Short description of the task of the study

Task of the study is to analyze investigation of market tendencies, future potentials and the competitive position of the sea port Rostock in the handling of grains (including rapeseed). Against this from the identified grain stream (sources and/or. quantities and dealers as well as lowering) and their regulation factors are to be derived recommendations for action before the background of future traffic infrastructure changes in the Baltic Sea area.

3. The Global players in the Grain trade

The grain trade in Germany differentiates in principle between the single-tier system and the two-tier-system at the trade system. The single-tier system prevails forwards, if between the farmers and the export trader or the processing industry no further company is inserted. The market in the East German countries differs clearly from the market in the West Germany. In East Germany more than 50 Percent grain and rapeseed are traded in a single-tier system. The export trader at the sea ports, like for example the Getreide AG, buys directly from the farms and transport directly the commodity into the see ship. In West Germany there exists the two-tier-system nearly with 100 per cent. That means, private merchants and the cooperatives are in competition in the trade with the agriculture goods on the farm. These private merchants collect the agrarian goods at farming and bundle these to uniform batches. And after that they sell the agrarian goods to the export trades or to the processing enterprises. Particularly in the East German countries the single-tier system will ever more become generally accepted, since the traditional collection trade has hardly still another function. The agricultural enterprises have today large storage capacities and can prepare those grains to dry and clean. The function of the collection trade is omitted thus, so that the tendency is to be recognized to single-tier system clearly. In West Germany against it is not to be observed in such a way, since the farms are not usually many smaller and don´t have any financial resources for building of own drying and storage capacities.

Wheat, corn and soybeans are the three most important goods of the world trade with agricultural raw materials. Depending from the market situation, quality and price these products are sold as food, Agro fuel or feedstuff. The next-important global commodities are all kinds of sugar, palm-oil and rice. Four companies dominate the import and export of such agriculture raw materials: Archer Daniels Midland, Bunge, Cargill, Louis Dreyfus and Glencore. They are together well-known as „ABCDG group“ or simply „ABCDG“. Archer Daniels Midland (again ADM shortened), Bunge and Cargill are US-

Companies; Louis Dreyfus has its registered office in France capital city Paris and Glencore is situated in Swiss.

All five were established between 1818 and 1902, and apart from ADM, they stand until today under the influence of their founder families. They act and transport and they process also many raw materials. The companies possess high-sea-going ships, ports, railways, refineries, silos, oil mills and factories. Their world market share is with 70 per cent. Cargill is the number one, followed by ADM, Glencore, Dreyfus and Bunge.

In the past years the Chinese corn dealer COFCO, a state-owned enterprise, has caught up with them and replaced ABCD as a main speculative purchaser of Brazilian corn and Soybeans. The portion of ABCD of the grain exports of the country was reduced from 46 per cent in the year 2014 to 37 per cent in the year 2015; 45 per cent were allotted to COFCO. For the first time the corn trader RIF took up the top place under the exporters in Russia in the year 2015. This 2010 founded private business from the Russian City at the Black Sea "Rostov at the Don" displaced the three up to now dominant dealers Glencore from Switzerland, Cargill as the only of the four world largest ones and Olam from Singapore. These developments reflect the ascent of Russia as important wheat exporter and the role of China as an important grain importer.

The ABCD group is optimally informed about harvests, prices, currency fluctuations, meteorological data and political developments in all parts of the world. Daily information from the cultivation areas come in to them, which are analyzed by their experts of financial politics. All four companies possess own subsidiary companies, which protect the trade with agriculture raw materials against price risks and which are aligned with speculative business at the commodity futures exchanges, everything in front of those at the world most important stock exchange in Chicago.

The trade with agriculture raw materials represents the traditional emphasis of the ABCD companies, but it becomes ever more the accessory parts. The subsequent treatment of grain or of Soybeans as well as the production of food such as orange juice or chocolate belongs for a long time to its business. Since the 1980s the vertical integration - the integration of value-added up- and downstream steps - becomes more and more important. Thus ADM bought up three enterprises in the year 2014, which out of nuts, leguminous plants and fruit produce flavor for beverages and ingredients for food. It lures higher profit margins and fast growth. Thus ADM belongs to the largest oil seed processing and refinery complex of Europe in Hamburg. There rapeseed and Soybeans are converted to margarine, pharmaceutical glycerin and Agro-Diesel.

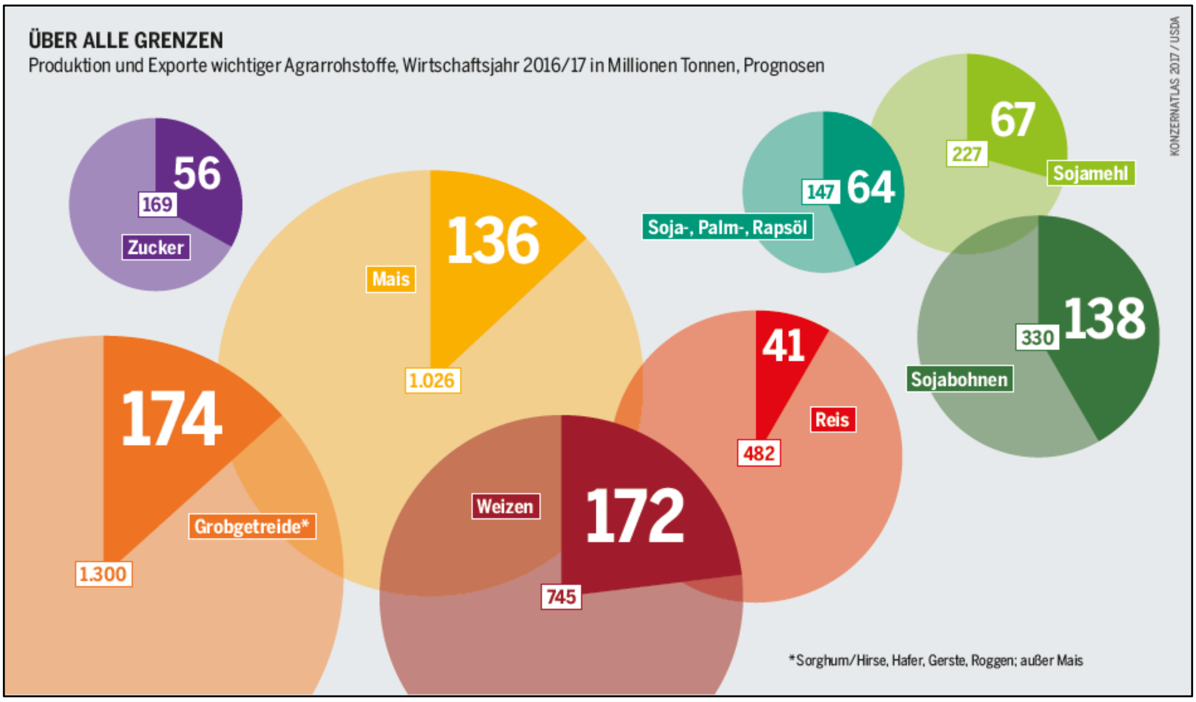

Figure 1: Production and Exports of the most important Agrarian Commodities

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4. Description of the commodity flow of relevant varieties of Grain

An overview of the position of the port Rostock within the world-wide grain trade: Analysis of the global grain market/trade (e.g. Characteristics and expiration of the grain trade, exporting/importing country) under comprehension of country-specific grain qualities (e.g. Volume of additional purchases/imported products for admixtures for quality improvement regarding protein content and the like).

The flow of trades of far parts of the agriculture in north and northeast Germany are aligned to the export of grain via the port terminals in Rostock as well as to the processing state places in the dockland of Rostock. So that these are supplied in time with sufficient raw commodity, the enterprises endeavor to be efficient in the purchase of export grain, rapeseed and brewing barley with the agricultural partners. In order to increase the flexibility and delivery security, the procurement trade is enough into the origins in overseas including the respective suppliers from the wholesale level. Vertically integrated product streams guarantee the competitive ability of the international trading firms.

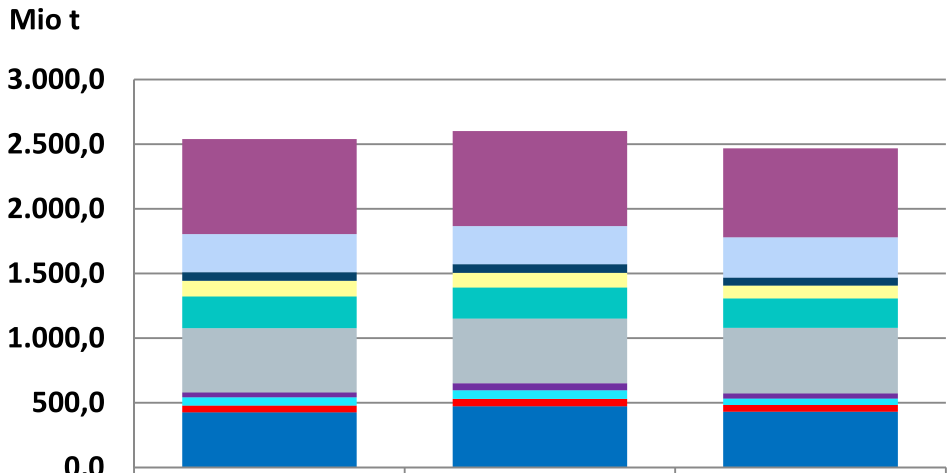
An outstanding role plays the selling of wheat and barley straight in Northern Germany into the world. In addition, export and selling of malt, brewing barley, vegetable oils and protein feeding stuffs take an ever more important role in Rostock. Around the world customers within these fields of activity become aware of the safe supply and place of Rostock.

The American Ministry of Agriculture (USDA) acts on the assumption of a comfortable situation for the most important varieties of grain in 2016/17. In the financial year 2016/17 global grain production should be 2.56 Mrd.t and therefore the offer of the previous year exceeds around 102 Mio.t. [1] However, not only the global offer is estimated on a renewed record level but also the world-wide demand. The rise on a consumption of 2.54 Mrd.t Grain would be even still slightly larger. Nevertheless from this estimation would result an increasing inventory onto 626 (2015/16: 603) Mio.t. Thereof 253 (241) Mio.t would be allotted to wheat and 221 (210) Mio.t to corn, which would correspond to a new peak value in each case. For the evaluation of the supply situation it is still more important the relationship of the final stocks to the consumption, and since the financial year 2001/02 it is the highest value for the whole of all varieties of grain with about 24.7 per cent after the previous year with 24.8 per cent. For wheat it results a value of 34.2 (33.8) % and for corn of 21.5 (21.9) %.

In the current financial year 2016/17 the European Union is the only important region, in which the grain harvest failed disappointing. Particularly wet weather affected negatively the wheat harvest in France and in parts of Germany at the end of May. The industry service Stratégie Grains estimates the wheat harvest on 136 (151) Mio.t only. The exports are estimated likewise clearly smaller with approx. 23 Mio.t in 2016/17 than those with scarcely 32 Mio.t t of the previous year. The final inventories are said to decrease from approximately 16 Mio.t onto less than 12 Mio.t. Until middle of April 2017 wheat exports altogether are with 18.8 Mio.t nearly five Mio.t under the previous year's value, and barley exports are with 4.1 Mio.t straight once half as highly as before period of one year. Up to now Germany is present with 4.2 Mio.t wheat export. Nearly a third of this quantity was shipped over the transoceanic harbor Rostock in this financial year.

Weltgetreideproduktion***

(ADM Germany GmbH, Marktbericht 31. August 2017)



	2017/18 **	2016/17 *	2015/16
Restwelt (USDA)	736,4	737,0	689,2
EU-28 (verschiedene)	294,9	294,9	312,1
Ukraine (USDA)	65,0	66,1	60,7
Russland (USDA)	121,0	114,0	99,2
Indien (USDA)	246,2	239,2	229,6
China (USDA)	498,0	501,1	507,4
Australien (ABARE)	36,0	53,4	37,7
Agentinien (USDA)	65,6	66,9	50,1
Kanada (Stats. Can.)	50,5	57,5	53,2
USA (USDA)	426,3	472,6	429,3

Produktionsjahr (* vorläufig / ** Schätzung / *** inkl. Reis)

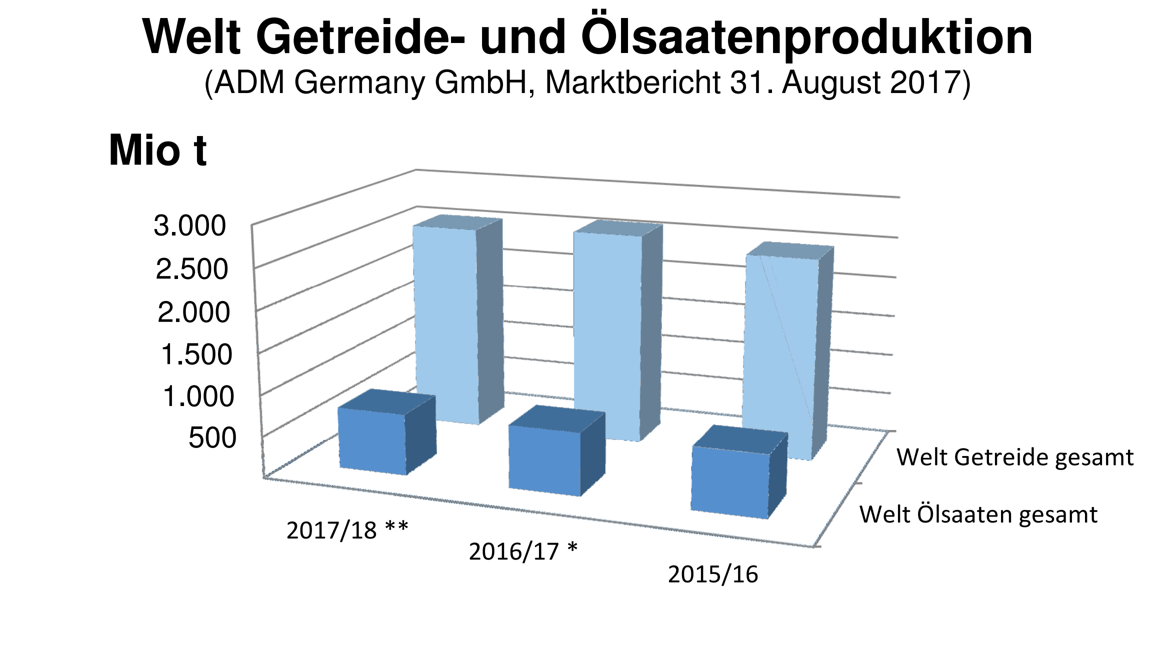
Figure 2: Global Production of Grain

5. Analysis of the periphery of the marketplace including foreseeable changes at the sector of agricultural products (in particular grains)

Identification and characterization of current and prospective corn dealers with view of additional grain quantities and - kinds (including Rapeseed)

Rostock, as location for the world-wide agriculture trade, enables the close, regional contact to the agricultural ancillary companies just as the direct entrance to the world agricultural commodities markets.

This location ensures an ideal supply by favorable purchase possibilities, prompt availability of all agriculture products in the desired quality and ideal marketing conditions. The grain intended for the export is shipped from here to ports at all world.



	2017/18 **	2016/17 *	2015/16
Welt Ölsaaten gesamt	**743,2**	**755,0**	**737,0**
Welt Getreide gesamt	**2.539,9**	**2.602,7**	**2.468,5**

Figure 3: Global Production of Grain and Oilseeds

Also from the neighboring country Poland large quantities of grain are supplied to Rostock. A good link road with the motorway A 20 permits a brisk logistics. Furthermore one of the largest oil mills of the world for processing of rapeseed is based in Rostock. Therefore larger quantities of rapeseed from Poland arrive at Rostock as well. In contrast the influx of grain and rapeseeds out of Czech Republic focuses primarily onto Hamburg port. Favorable train connections and a shipment over the river Elbe provide for a brisk commodity flow from the direction of Czech Republic into Hamburg port.

6. Company specific identification and designation of to-day's and future stream of goods

Utilization and designation of shipment and ports of destination for grain quantities of identified corn dealers (as well as assigned tonnage and time-table concepts) and designation of (un-) restricted reasons of the transportation route choice.

Strategically and conveniently located port Rostock is in the center of the three large agriculture states of the Federal Republic of Germany: Mecklenburg-West Pomerania, Brandenburg and Saxony-Anhalt. In the sea port Rostock quantities of grain are bundled to large export units, stored and marketed at all world. The enterprise Raiffeisen Hauptgenossenschaft Nord AG Kiel has the largest share of the grain export over the port Rostock. Nearby Getreide AG and ADM Germany with its partner ATR Ratzeburg ship large quantities of grain over the port Rostock too.

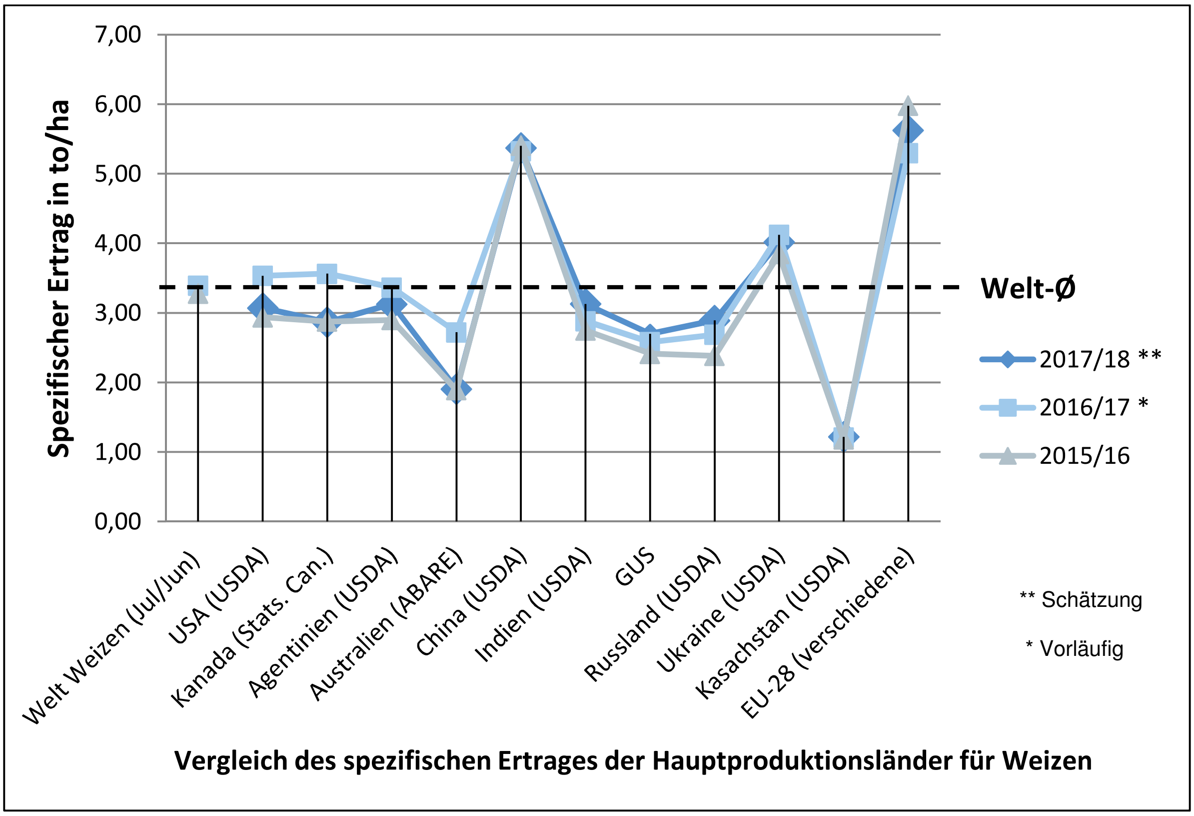


Figure 4: Comparison of the specific Yield of Wheat

Within the European Union there are large differences. The acceding countries of the European Union have admittedly become more importance in the last years, but a strikingly decreased level of production and very strongly varying yields, especially on the Balkans, lead to it that the stability function is ensured particularly by two countries in the European Union, in particular France and Germany. For the export Northeast Germany is important, since the highest surplus amounts at grain are produced here. Globally, these countries are on place 5 (France) and on place 7 (Germany) of the most important wheat producers in this year. And the production is not only extra-large here, but also particularly stably. A large part of the exports is therefore denied from France and from Germany.

In Great Britain the grain in many different ports at the east, south and west coast is shipped. Usually the shippers export the feed wheat to the feed meal industry to south Oldenburg in Germany and import on the other side large quantities of bread wheat in high quality from Germany. In England there are only few baker industries. Most baking goods are major industrial produced. The mill industry in Great Britain concentrates also in a few enterprises. So that the own wheat qualities in East Germany to bring their own Wheat quality in a good standard for the production is bought. From that point the port of Rostock is imported for the milling industry in Great Britain. The agriculture in Great Britain works very closely with the futures exchange in London. For the farmers it is the same, storing 100 t wheat in their own warehouse or holding paper contracts from the stock exchange with 100 t wheat worth. If the prices are good, then as in Germany grain or rapeseed doesn't be sold with pre-contracts to the merchants. But in England the farmers sell paper contracts at the stock exchange to secure their proceeds.

In France the export of grains is mostly over the port of Rouen. Over this largest port in Europe more than 70 percent of the French exports are shipped. In the port of Rouen there are multiplicities of export plants with very high loading capacities. Particularly into the North African states the French wheat is shipped. The second flow of goods in France is the shipment of wheat on the river Mosel to the German mills at the river Rhine. Here, more than 1.5 Mio.t of French wheats arrive to the German processors.

Poland exports ever larger grain quantities. The wheat exports in the year 2016 had reached the record extent of more than 4.3 Mio.t. In comparison to the previous year a rise is calculated by 10 per cent. The classification to countries shows success for Polish wheat in third countries.

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2016 went to nearly 1.3 Mio.t to Saudi Arabia that was about the double quantity like 2015. On the other hand the Polish wheat exports gave way to Germany on 22 percent less than 800,000 t. Beyond that Egypt bought 2016 well 400,000 t in Poland. Poland developed 2016 also the corn exports. The rise in comparison to the previous year amounts to 26 percent on more than 850,000 t. Three quarters of it flowed off to Germany. Further Poland had 2016 nearly 1.0 Mio.t rye, triticale, and barley and oats exports. The high grain exports show up also in the statistics of the three Baltic Sea ports, over which a majority flows off. Together the ports in Danzig, Gdynia and Stettin had shipped 2016 approximately 7.3 Mio.t grain for the export. That amounts 6 percent more as in the previous year and 74 percent more than before five years. Most wheat leaves Poland over Gdynia, followed by Stettin and Danzig.

	Exporte und Importe (in 1.000 t) ADM Germany GmbH, Marktbericht 31. August 2017			
	EU-28 01/07/2017 - 22/08/2017		**EU-28 01/07/2016 - 23/08/2016**	
	Export	**Import**	**Export**	**Import**
Weizen	2.026	317	4.491	427
Weizenmehl *	127	5	155	6
Durum	44	136	150	138
Durumgrieß *	20	0	33	0
Gerste	404	186	1.155	150
Gertsenmalz *	361	3	436	1
Mais	37	2.033	211	1.317
Roggen	1	1	8	0
Roggenmehl *	0	0	0	0
Hafer	65	0	19	0
Sorghum	0	2	0	2
Andere	0	0	0	0
Insgesamt	**3.085**	**2.683**	**6.658**	**2.041**
Quelle: EU-Kommission			* in Getreideäquivalent	

Table 1: EU-28 Exports and Imports / EU-Commission, ADM Germany

Due to different climatic conditions and thus accompanying differences in the production possibilities both countries serve very different markets. Most important export product of France is wheat with 11.5% protein, which usually finds its sales in North Africa. Germany exports mainly wheat with 12.5% protein, a lot of wet glows of 26% and 250 sec. falling number. Thus countries are served like Iran, Saudi Arabia and especially many countries in Sub-Saharan Africa. If Germany should fail as exporters, the threefold surface would have to be cultivated with wheat in other regions of the world, in order to adjust the balance. Before this background it appears less meaningful to want to do without wheat production in the high yield location Germany how it is demanded by some organizations.

7. Investigation of effects regarding the logistic organization of the grain trade (commodity flow)

> Estimate of the accessibility of additional or endangered existing grain quantities from the potential hinterland (including the processing quantities of in the port located enterprises: e. g. Brewing barley for the Rostock Malthouse, Rapeseed for „Power Oil "or „Bio-Petrol ") in consideration of the ship canal recess.

The well removed countryside of the port Rostock provides for an excellent connection to Europe and makes Rostock attractive for many enterprises as place of transshipment and as processing place for agriculture commodities. An environmentally responsible port management of the port Rostock handles the increasing transshipment volume and ever more largely becoming requirements of the environment by a splendidly constructed infrastructure for inland waterway crafts and trucks.

A danger of dropping agriculture exports over the seaport Rostock is the fertilization regulation, which was legally adopted straight. It represents an endangerment of the role of Germany as an important and reliable supplier of quality wheat into the European Union and into third countries. Many countries in Asia, South America, sub-Saharan Africa and especially the Near East are, as already above described, dependent on wheat imported commodities, because their natural conditions are not suitable to guarantee a sufficiently own production. The import quantities are steered usually in such a way from these countries that the contingent is only imported, which cannot be covered from domestic production. In particular in years with harvest losses these countries are dependent on imported commodities.

In their advertisements third countries specify in their specifications the demanded protein content beside humidity, falling number or weight of hectoliter. This is indicated predominantly as 12.5 to 13.0%, in order to be able to ensure an appropriate further processing. Now it is to be feared that Germany as so far world-wide significant grain exporters could not satisfy these quality requirements any longer with the entry into force of the new fertilization regulation. With that the position of Germany is endangered as a reliable supplier of a high share of the worldwide protein supply. The farmers will legally strong reduce the use of nitrogen fertilizers. [2] Although the necessary grain qualities could be produced with appropriate supply of the plants in Germany, the supply deficits would have to be closed in the future if necessary by imported goods. With view of the high quality standards demanded by the foodstuffs industry and the consumer an extensive grain import for food purposes cannot be in the sense of the German consumer. The new fertilization regulation will lead to the unnecessary shortage of the world-wide offer at quality grain, with the consequence of higher prices for baking goods and bread inland as well as higher import prices straight in the past customer countries of Germany. That might also become a danger for the port of Rostock.

8. Investigation of feasibility and chances of success (increase of grain quantities) of a "Hub-Funktion" of the Port Rostock

Investigation and discussion of the development "Transatlantic harbor Rostock" in co-operation with "partial loading ports" at the Baltic Sea coast

Germany is an exporter of quality wheat, meaning world-wide. Straight one in crisis years turns out Germany as important market participants to the safety device of the wheat supply at the non-European grain market. "Rostock will be kept also in the future the dominating role in the North European export, because on each day, each ship in nearly each order of magnitude with each variety of grain can be loaded", said an international trader from Rotterdam in the discussion with the author of this study. As a result of the development of the port in Stettin and the port locations at the Baltic Sea in Mecklenburg-Western Pomerania in Vierow and Mukran risks arise for the transatlantic harbor Rostock. In Mukran the full loading from Panmax ships will become possible after the development of the port. Past practice to part-load in Mukran and to guarantee the full load for ships of the Panmax class ships in Rostock, will possibly completely be void after the development of the port in Mukran.

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9. Investigation of conditions and effects of the establishment of a corn exchange at the site Rostock

Establishment of a corn exchange at the location Rostock on acted grain prices (FOB) as well as transshipment volume of grain in Rostock before the background of the ship canal recess (e.g. quantity potentials for Rostock).

In Germany there are different stock exchanges, which have still little meaning for the market with the exception of the quotation commission. The only still really active commodity exchange is under the umbrella of the Hamburg grain trader registered association (Verein der Hamburger Getreidehändler e.V.). The quotation commission with five or six market participants meets once weekly Tuesday and notes prices for 27 different agricultural products. The quotations are published in the specialist press and given to the agencies of the agricultural commodities market administration in Bonn and Brussels to the knowledge. In addition to that one of the most substantial tasks of the stock exchange consists in the execution of stock exchange arbitral tribunals. Approx. 70 - 80 procedures are processed annually. Arbitral awards of fundamental importance were published in the law reports of the Chamber of Commerce Hamburg. At present for our industry are available 30 different form contracts resp. contract terms. From our view the establishment of a corn exchange is not reasonable in Rostock, since both price transparency and the arbitral tribunal are well taken care of the stock exchange in Hamburg. Furthermore the Fob price for agricultural products is established in Rostock in the market and it is also physically acted at the market each day.

10. Increase of added value at the site Rostock

Creation of added value by higher attainable grain prices due to transport-conditioned cost savings (compared with Hamburg). Based on the results of the investigations before-mentioned it is deducted the achievable, additional grain quantities for Rostock within the identified commodity streams and defined recommendations for action for the client including a representation of co-operation possibilities between the regions Guldborgsund (Denmark) to the stronger integration into the examined logistics concepts.

World-wide only a scarce dozen at export countries faces the large number of importing countries. Thus the ten most important exporters supply more than

90 per cent of the world market. In the past year 2016/17 most important export region was for the first time the European Union with 31 Mio.t, followed by the USA, Canada and Russia. The importance of the European Union is hardly to be underestimated thereby. It is globally not only one of the largest wheat producers and exporters but also the most stable production region. Harvest fluctuations fail clearly lower in our country than in the continental Countries like in Eastern Europe, Australia, Argentina or Canada. And in addition of that political conditions are in the European Union stable. So it is to be explained that the European Union supplies always then the world market with wheat, if production in other countries precipitates being due to adverse weather conditions or due to political crises like at present in Russia and the Ukraine. The European Union is thereby a very important stability region at the world wheat market. The world price for wheat would be clearly higher and the price increases still very much higher in years, in which Russia, the Ukraine or Australia have production or export losses, unless the European Union with its large production and storage potential would offer a buffer.

The export country Germany with shipments over the seas port Hamburg and Rostock is an excellent supplier. German wheat competes frequently with Russia, Australia or the Baltic states. The import quantities rose in the last years continuously, and thus the export quantities of Germany. Above all, however, losses of production or political crises lead to the fact that Germany is pretty often the only remaining supplier, who can export considerable quantities. Such a situation occurred during the Russian export stop 2010 or also in the spring 2015. By the connection of rail logistics and Deepwater Seaport Rostock will go up in future rapidly significance. In the international agriculture trade so the export chances for grain from the cultivation regions in Germany, Poland and Czech Republic for the goal markets increase also outside of Europe.

The Port Rostock will extend the development of railway connections and the storage periphery of the port. So in 2018/19 there will be an enlargement at the bulk material registration for railway wagon and the ship handling. Beside the export for grain the port is strengthened thereby also as high performance starting point for the import of feedstuffs and fertilizers. With a railway connection for standard goods the port Rostock will profits from an efficient logistic.

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11. Description of the participants at the site Rostock

The world-wide important agriculture trading enterprises are also active with supplies of agriculture commodities at the location Rostock. The companies act internationally with grain as well as oil seeds and process partially the agriculture raw materials. The year 2015 was turnover-weaker for all enterprises because of decreasing the raw material prices. Up to now the large ABCDG of the international trade with agriculture raw materials comprise not more than four names: Archer Daniels Midland (ADM), Bunge, Cargill, Louis Dreyfus and Glencore. The first three enterprises have their headquarters in the USA, the fourth in Switzerland and France (Paris).

Their share of the transnational grain trade was 2016 with 73 per cent, international traders estimates even currently the share more than 90 per cent. The large four bought already 2016 four fifth of the soybean harvest, three quarters of the corn harvest and approximately two thirds of wheat.

11.1 Austerity programs and job cuts; surplus to lower margins and forces major grain trading companies to consolidate

The low grain prices, generated by a world-wide surplus, cause for the US agriculture companies discomfort. The consequence is decreasing yields, which the enterprises want to get under control by restructuring and budget cuts. So for the third quarter 2016 Bunge announced a drop in profits of approximately 22 per cent. Primary reason is the weakness with the grain trade and with the processing of soy beans.

“2017 is a humiliating year for corn traders yet“, said Bunge´s chief executive officer Soren Schroder to the press agency Thomson Reuters in November 2017. The problem of the surplus could be solved according to his estimation, if US farmers would reduce their grain production. However, many of them make straight the other thing and cultivate evermore, in order to compensate the low prices.

Therefore the reserves will remain however high and the prices low. For this reason the farmers remain dependently of the highly competitive export market furthermore. Bunge has reacted with an austerity program onto the retrogressive profits and has reduced 150 jobs in the third quarter in addition to that. Starting from 2018 the company wants to cut its annual expenditures around 250 Mio. USD (214 Mio. EUR). The situation looks similar with Archer Daniels Midland (ADM), too. The company announced a dropping in profits of 44 per cent in the third quarter. Above all the decreasing grain exports have struck on the balance of the enterprise located in Chicago. ADM justifies the decrease with cheap grain exports from Brazil, which has undercut the US commodity concerning the price. ADM chief executive officer Juan Luciano deplored the missing competitive ability in relation to the Brazilian products. As reaction to the bad figures ADM has announced to decrease its expenditures around approximately 200 Mio US-$ in the coming year. Among other things investments in grain trade and transport are to be reduced. Cargill had already communicated dropped results in the grain trade and with the processing in comparison to the previous year in September. For reason the enterprise called slow grain markets and weak prices. Also other enterprises from the agriculture sector are pressurized because of the current situation in the grain sector.

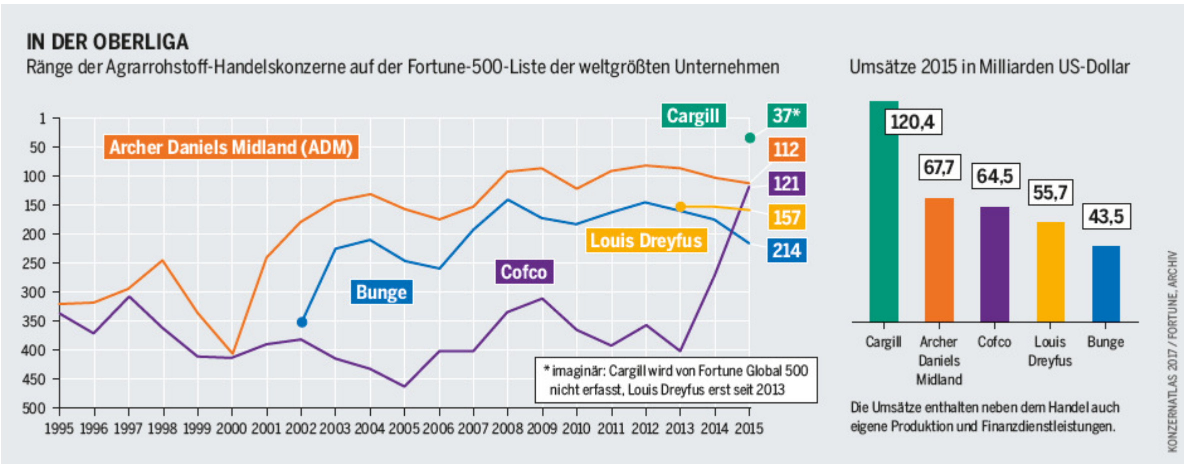

Figure 5: Rank List of the largest Agrarian Trade Enterprises / Konzernatlas 2017

11.2 The major international grains and oilseeds trading enterprises: Archer Daniels Midland, Bunge, Cargill, Dreyfus, Glencore

11.2.1 Archer Daniels Midland (ADM)

Archer Daniels Midland (ADM) is part of the international agriculture trade group, called the predominant ABCDG group, which includes ADM, Bunge, Cargill, Dreyfus and Glencore. In Germany ADM operates oil mills in Hamburg, Spyck, Mainz and Straubing as well as Bio-Diesel factories in Hamburg, Leer and Mainz. In addition to that the ADM Germany GmbH is situated as trading company in Hamburg (in former times this part was called Toepfer International Hamburg). At the location Rostock ADM in conjunction with the agriculture trading company ATR GmbH & Co. KG Ratzeburg operates an export silo. The company has obtained a turnover of approximately 68 Mrd. US-$ in 2016 and failed therewith around 17 per cent the previous year level. In contrast to the previous year ADM accounts for net profit well 1.8 Mrd. US-$, and thus means 18 per cent less. At that time the private agriculture trading company Archer Daniels Midland (ADM) bought itself into Toepfer International Hamburg GmbH already 1983. The following, somewhat description in more detail of the trading company Toepfer points an important part out of the history of the German grain trade. The enormous development of the transatlantic harbor Rostock is a part of this history, because since the reunification 1990 Toepfer International has shipped a majority of its grain exports over the transatlantic harbor Rostock world-wide.

11.2.1.1 Toepfer International:

It began with 100 hundredweights straw! Alfred C. Toepfer International GmbH (ACTI) was a German enterprise in the range of the agribusiness as well as logistics. The enterprise was created in 1919, and the company headquarters was situated from the beginning in Hamburg. 95 years later, in the year 2014, ACTI was finally absorbed by the US-American agriculture company ADM (Archer Daniels Midland). Since the acquisition the ACTI operates within the entrepreneurial group under the name of ADM Germany GmbH.

ACTI belonged to the prominent internationally active grain and feed commercial companies. Together with their participation within the ranges agricultural trade, compound feed industry and navigation the enterprise already reached a turnover of more than five Mrd. D-Mark in the middle of the 70´s. World-wide the Toepfer AG operated 42 branch establishments. More than 2,000 workers were there employed finally. In the financial year 2012/2013 approx. 9.9 Mrd. € was turned over. Because of the grain production increasing strongly in France the interest of Toepfer on export silos at the Atlantic coast of France grew in the sixties and the seventies. At several places in France Toepfer acquired silo contingents. In Nantes and at the delta of the Loire the enterprise built a grain silo with 60,000 t, in Antwerp a grain silo with 90,000 t was acquired.

In the center of the 80's there was begun to supply the processing industry within the European Union direct with imported agriculture raw materials. Arkady Feed UK and Arkady Dublin, two subsidiary companies of Toepfer International, were active in the range of the compound feed industry in United Kingdom and in Ireland. Ceralto, an affiliated company of Toepfer International, worked on the market in Spain starting in 1986. Additional commitment showed that Hamburg trading house also in Singapore. Apart from the development of this region for the procurement of agriculture raw materials the Toepfer International paid attention increasingly to develop and serve the increasing sales markets in this region. The enterprise was also present in the East after the fall of the "Iron Curtain": in Central and Eastern Europe developed thereupon quickly different branch establishments including also in Moscow. Particularly the enterprise set top priority in the Ukraine. There the enterprise developed its registration capacities noticeably. With the purchase from now six countryside silos and further investments into logistics standards were set here. The grain trade is tightly organized by Toepfer in the Ukraine: The purchase of grain and oil seeds was made by the own last fifteen countryside elevators with the following direct shipment into third countries. With the grain and oil seed export in the nineties a market share was reached by 15 per cent. Toepfer was the first international trading company that at that time under the direction of Björn Stendel was occupied with the domestic registration in the Ukraine. A similar organizational structure was also developed in Romania. Toepfer continued to expand in the black sea region as well as in Argentina. Africa has southern of the Sahara not only a large potential for agricultural production but also a region with a very strong population growth and concomitantly a rising demand. Toepfer positions itself in this market by a representative of the enterprise in Johannesburg, South Africa. In the years up to 2013 approximately 900 coworkers in the offices and establishments work world-wide. Additional 1,200 workers were assigned in the fifteen establishments in the Ukraine.

11.2.2 Bunge Limited

Bunge´s locations in Germany and Austria belongs to the internationally active Bunge group (Bunge Limited), which is also active world-wide with over 35.000 people employed in 40 countries in the Agriculture and Food business. In Germany and Austria the Bunge oil mills in five locations. The Bunge group is world-wide one of the largest trading and processing enterprises of oil and cereals seeds. To the corporate business fields belong among other things the trade and the processing of agricultural products, the production and the selling of fertilizers and production of food. The company manages the smooth connection between farmers and customers. That happens especially with the qualitatively high-quality products such as animal feed, foodstuffs or renewable fuels.

So far Bunge in Europe operates the oil mills in Mannheim and in the Austrian Bruck a. d. Leitha as well as at further locations in Hungary, Poland and Portugal. In Germany the Bunge commercial company has its registered office directly in the heart of the city Hamburg. There is the Northwestern European agriculture raw material commercial center of the company. This is where agriculture raw materials are acted and moved by five trade and logistics departments. The transatlantic harbor Rostock is thereby for the North European freight transport of crucial importance, so a trader of Bunge. The city Hamburg with their multiplicity of associates in foreign trade, shipping, bank and logistics represents thereby the ideal place for the Bunge activities in co-operation with the world-wide Bunge offices. Thus the grain commercial table of Bunge in Hamburg assumes the function of a registration enterprise of European grain and worries about logistics up to the German deep-water ports Hamburg and Rostock, before the international grain commercial trades in Geneva in the world-wide market of grain.

In addition, feeding stuff (in particular soya-, sunflower- and rapeseed pellets) is traded from North and South America to Northwest Europe and into the Baltic states. With the vegetable oils are shipped among other things sunflower oils from Eastern Europe into the Mediterranean area and there are traded Soya oil out of South America and Spain as well as intra-European rapeseed oils. The seed commercial table concentrates predominantly on the trade of rape and sunflower seeds. The Hamburg Bio-Diesel department controls responsible Bunge's Bio-Diesel currents in Europe.

11.2.3 CARGILL

The Cargill Inc. is with an annual turnover of approximately 110 Mrd. US-$ largest agriculture enterprise of the world. In Germany the US-Company with a good history going back 150 years is active since 1955. Beside the ingredient business in the foodstuff division the company belong the oil mills Riesa and Salzgitter, the Bio-Diesel factory in Frankfurt-Hoechst, the Malthouse Salzgitter, the starch factory factories Barby and Krefeld as well as the alcohol factory in Barby. In Europe the company streamlined the business in the past years. The German Cargill GmbH had already announced in March 2016 to close the oil mill located in Mainz because of weak margins in the rapeseed processing. Prior to this the US-Company separated from the trade with fertilizer and plant protection agents as well as seeds in numerous Eastern European countries of the EU as well as in Russia and the Ukraine. Also of its two oil mills in the Netherlands and France the enterprise separated into 2016. They were sold at Bunge. It concerns on the one hand the Cargill oil mill in Amsterdam, which processes soya and rape with the attached logistics mechanisms at the port. The second oil mill, which is likewise aligned to soya and rape, is located in the French port Brest. Both oil mills together have a processing capacity of approximately two Million oilseeds. Bunge continues to employ according to the information of the companies the 120 workers in the Netherlands and the 51 workers in France, too.

In the first quarter of the financial year 2018, which began in June 2017, the Cargill Inc. has a turnover of 27.3 Mrd. US-$ and with that it obtains somewhat more than in the last year´s period. However, since some years the profit key figures are more decisively for the US-Company. Cargill reports an operational profit of 888 Mio. for the months June until August 2017 US-$ and with this 7 per cent more than in the first quarter of the previous year. The net profit increases even around 14 per cent onto 852 Mio US-$. Since already the previous financial year has set a high standard, Cargill boss David MacLennan is more than content with the results.

World Oilseed Production

	Production (Mill. t)		
	2017/18 **	2016/17 *	2015/16
World Soybeans (Sep/Aug) ***	**347,4**	**351,7**	**312,9**
USA (USDA)	119,2	117,2	106,9
Argentina (USDA)	57,0	57,8	56,8
Brazil (USDA)	107,0	114,0	96,5
China (USDA)	14,0	12,9	11,8
India (USDA)	10,0	11,5	6,9
Welt Rape (Jul/Jun) ***	**72,7**	**69,2**	**70,0**
Canada (Stats. Can.)	18,2	19,6	18,4
Australia (ABARE)	3,3	4,1	2,9
China (USDA)	13,1	13,5	14,9
India (USDA)	7,2	7,1	5,9
EU-28 (miscellaneous)	21,9	20,5	22,5
Ukraine (USDA)	2,1	1,3	1,7
Welt Sunflowers (Sep/Aug) ***	**47,3**	**46,5**	**40,5**
Argentina (USDA)	3,4	3,4	2,7
Russia (USDA)	11,5	10,9	9,2
Ukraine (USDA)	14,5	14,2	11,9
EU-28 (miscellaneous)	8,2	8,4	7,7

Table 2: Global Oilseed Production / ADM Germany

“We are well started into our new financial year, powered by the successful efforts of the past years, and we will continue to increase our achievement “, commented MacLennan the performance in the first quarter. Like already in the financial year 2017 the integrated livestock production and meat processing of the company brought the profit growth. Up-to-date Cargill profits from a lively beef demand in the USA. The animal foodstuff business was again as productive in the summer months as one year ago. Likewise profitable was for the company the business with foodstuff additives. Than one year ago the earnings were in contrast somewhat weaker in the registered business. The fourth large global harvest in consequence reduces on the international prices and limits the profit possibilities in the trade because of the eager price volatility. „Our enhanced profitability gives us the confidence that we achieve our structural improvements. " Cargill converts its business for some time. In addition also it belongs to shut up consistently the business of not any longer profitable divisions. (Source: Agrarzeitung).

11.2.4 Dreyfus

Louis Dreyfus is resident as only member of the ABCDG group still in Europe, namely in France, where the house was founded 1851 by the son of a farmer from the Alsace. The family company gained previous year 2016 alone with its raw material division a conversion of 59.6 Mrd. $ (46.8 Mrd. €). Dreyfus trades in 55 countries with grain, oil seeds, coffee, sugar and rice. The enterprise plays a leading role at the Brazilian ethanol market and operates the largest Bio-Diesel plant of the USA.

11.2.5 Glencore

Glencore, ranked with the ABCDG group, has gained an agriculture turnover of approximately 23 Mrd. US-$ in the year 2016. Glencore operates a Bio-Diesel factory in Rostock (Germany) and bought the oil mill of the insolvent Prokon-Group in Magdeburg in 2016.

Glencore was founded 1974 by Marc Rich under the name Marc Rich & Co AG. Since that 1994 in facto forced separation of the founder the enterprise operates under the name of Glencore (Global Energy Commodity and Resources). Initially Glencore concentrated on the physical trade with metals, mineral raw materials and crude oil. In the consequence the enterprise expanded with oil and coal products into the energy sector. By the acquisition of the

Dutch grain trading company in the year 1982 Glencore entered by the assumption of a Netherlands grain house into agricultural economics.

Only in June 2012 the raw material giant Glencore acquired the Canadian grain company Viterra. Because of its grain storages in Canada Viterra was particularly an attractive takeover target, which offers desired access to the Canadian supplies of rape, summer wheat, oats and durum, and it has available enormous storage capacities in the ports of South Australia. The largest Canadian pension fund Canada Pension Plan Investment (CPPIB) bought 40 per cent of the shares of the agriculture section of Glencore. CPPIB paid for it 2.5 Mrd. US-$; the entire agriculture business would thereby evaluated with 6.25 Mrd. US-$, the enterprise reported recently from the Swiss Baar. With the Canadian pension fund as an investor the Swiss see themselves now well set up: CPPIB has much experience in the agriculture business and sees similar growth potential like the company, said Glencore chief executive officer Ivan Glasenberg. CPPIB sees with Glencore enterprise in its agriculture portfolio a “good addition“. In the Canadian market Glencore is well positioned since the takeover of the registered dealer Viterra in the year 2012. The takeover of the Canadian corn trader of the Viterra before four years disbursed itself according to company information, because Glencore could strengthen its position at the Canadian and Australian market.

The Swiss enterprise Glencore is in discussions with the US agriculture dealer Bunge Limited about pooling of the agriculture sections, reported the press agency Reuters in October 2017. Prior to this Wall Street Journal had reported that Glencore wanted to buy Bunge. In a reaction Bunge contradicts shortly thereafter however intentions over a union. The enterprise is not in any discussions with Glencore. “Bunge will pursue far its global Agriculture-Foodstuff-Strategy and use all chances for growth and creation of value“, is called it at the company headquarters in New York. Glencore boss Ivan Glasenberg plans already for a long time an additional purchase. „The Glencore agriculture division must grow “, said he rather exactly at a conference of investor one year ago and justified this in such a way: „It is not a secret. We are rather weak in the USA “. However, Glencore had to do until recently to diminish debts which had accumulated 2015 after the assumption of the mining industry activities of Xstrata. From own power Glencore cannot lift such a turnover from Bunge currently. The company is highly in debt and wrote dark-red figures in 2015. To it, however, the agriculture sector is not debt.

In October 2017 it was called then in Reuters a message: The raw material commercial company Glencore based in Switzerland considers separating from parts of its agriculture business; the prospective customers are already constituted. The interest of China to secure by an entrance a larger share of the world-wide agriculture trade goes beyond a rumor. The raw material company Glencore based on Swiss side Zug wants to sell shares of its agriculture business for reducing the oppressive burden of debts of about 30 Mrd. US-$. In addition the enterprise hired Credit Suisse and Citigroup, in order to separate from a minority shareholding. The business would evaluate thereby with approximately 12 Mrd. Dollars. Chinese enterprises are interested now in these shares; with the national China National Cereals, Oils and Foodstuffs Corporation, called Cofco, leading the way. If Cofco should get a chance, a new giant at the agricultural commodities market could come into existence, comparably with the present large four ABCD. This message was not confirmed up to now.

11.3 Further enterprises at the location Rostock, active in agri-commodities

11.3.1 YARA

The YARA continues to expand its international business. Yara is an enterprise located in Norway and converts energy, natural minerals and nitrogen into plant nutrients and industrial products. 2016/17 the Yara keeps their position as a supplier of nitrogen-based mineral fertilizers and manufactured products leading world-wide. The enterprise is global Leader with ammonia, nitrate and special fertilizers. By continuous activities in more than 50 countries and sales in 150 countries Yara enjoys a unique position in the world-wide fertilizer and industry market. Yara´s present activities range from phosphate mines and ammonia/urea production over raw material trade to high-specialized agriculture and industry of products. Production and sales are based on a deep view of the global and local markets. In Rostock Yara has available the following production units: two Nitric acid plants, two Nitrate fertilizer plants for the production of Calcium Ammonium Sulfate as well as sulfurous- and magnesium containing Nitrate fertilizer, one AUS plant (Ammonium Urea Solution) and two plants, in which different Nitrate of Ammonia qualities are produced up to the pharmaceutical quality. The factory possesses its own chemistry port with storage facilities for liquid products such as Ammonia and AUS, not far from the sea port Rostock. Pipelines connect the chemistry port with the production location in Poppendorf. The location of the YARA in Germany was founded 1959 in the research center Hanninghof nearby the Ruhr-Stickstoff AG Bochum.1985 Norsk Hydro took over the Ruhr-Stickstoff AG. Six years later the selling agency moved from Bochum to Dülmen. Subsequently, the Norsk Hydro own wholesale company Agricultura resettles from Essen to

Dülmen and consolidates with Hydro Agri. The research center works global for Hydro Agri. 1999 Hydro Agri Rostock and the selling agency in Dülmen combines into the Hydro Agri GmbH & Co. KG. Since that July 1st, 2005 there exist a common location for the selling of fertilizers and industrial products in Dülmen and the research center Hanninghof. Up-to-date the Yara Internationally ASA negotiates about the acquisition of the fertilizer division of Adubos Sudoeste in the Brazilian Federal State Goiás. Yara has thereby above all the agricultural plants in Goiás in the view. There are cultivated soy beans, corn, beans, tomatoes, potatoes, bulbs and garlic especially for the export. Lair Hanzen, responsible for the Brazil business of Yara, can imagine increasing also the production from fertilizer with that assumption. He sees in the region a large growth potential. Fertilizers are imported up to now on a large scale.

At present the capacities of Adubos Sudoestedas amount to approximately 300,000 tons per year. The assumption must the authorities in Brazil still agree. Yara enters ever more into the desirable fertilizer market into Brazil. According to the company information the investments of the past years amount to approximately 1.5 Mrd. US-$. In the purchase is contained in the year 2013 Bunge Fertilizantes and in 2014 the Joint venture with Galvani. Fertilizer plants come in addition in Sumaré Porto Alegre and Rio Grande.

11.3.2 HaGe-Group

The HaGe-Group with the parent company “Hauptgenossenschaft Nord AG, Kiel” with a turnover of 2.7 Mrd. € (2016) belongs to the large agricultural trade companies in Germany. Headquarter of the corporate head office is the state capital of Schleswig-Holstein Kiel. In the company group approximately 1,600 workers are employed. With its Scandinavian chief partners of the Danish dlg and the Swedish Lantmännen the HaGe forms a strong group of particularly societies interlaced in Northern Europe - with many advantages for the domestic agriculture.

The HaGe binds the domestic agriculture logistics chains and transshipment plants in the local and above all international grain and oil seed markets. The enterprise has efficient foodstuff factories, which manufacture high-quality foodstuffs. Furthermore modern and efficiency-increasing operating supplies and seeds are distributed. Beyond that the HaGe is likewise active in the processing of oil seeds and also in the trade with agricultural engineering, the sales of commodities for the leisure and garden requirements and the marketing and processing of products of the bio agriculture.

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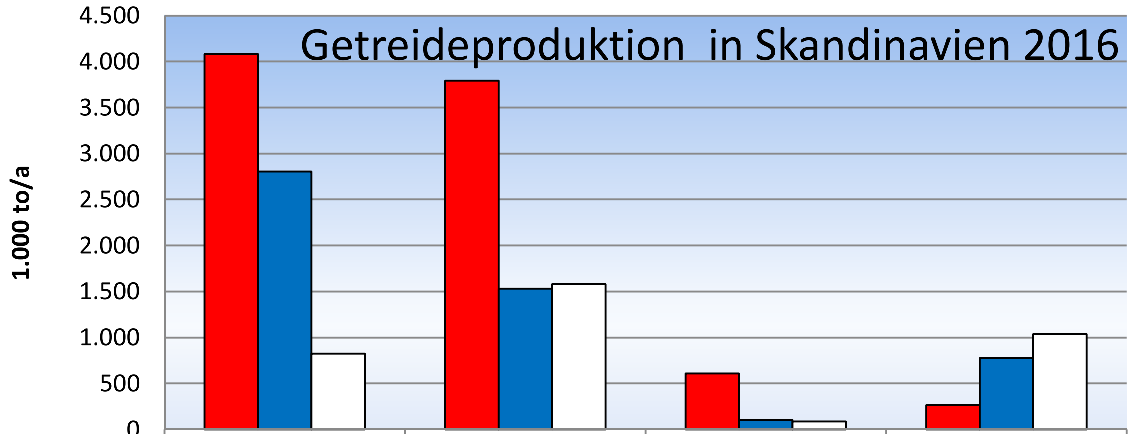
The HaGe-Group acts in the conviction that the domestic agriculture in its varieties - which is adapted to the respective location actualities and regional market conditions -, not only produces high-quality food, but also achieves a lasting contribution to the protection of the nutrition of an increasing population of world - and also knows to carry out in the future. The divisions of the HaGe-Group are organized for this in the following sections: Grain, Rape and leguminous plants, supplies for vegetable production of foodstuff and logistics. Beyond that there are discharged in the headquarter office, region agencies and subsidiary companies functions for trade and logistics. In the market area in the north of Germany (Schleswig-Holstein, Mecklenburg-Vorpommern and parts of Brandenburg), worked on directly by the HaGe, the business with the agriculture is responsible by the regions HaGe Schleswig-Holstein (region center in Rendsburg) and HaGe Nordland (region center in Neubrandenburg).

With qualified and competent marketing teams and a powerful logistics the HaGe is directly the partner locally for the agriculture. In the states of Hessen, Saxony-Anhalt, Thuringia and Saxony this task is aware of our subsidiary Roth Agrarhandel. Over the wholesale company BSL (Supplies, Service, Logistics GmbH) the HaGe in the wholesale manages the regional market partners of the agriculture in completely Germany with fertilizer, chemicals, seeds and agriculture plastics. With own port transshipment facilities in Hamburg, Kiel, Rostock and Stettin and experience of many years in the grain export the HaGe company is set up outstanding and sets since years standards in the marketing of bread and feed cereals as well as rapeseed.

That nationwide active agriculture trader HaGe (Hauptgenossenschaft Nord) in Kiel expanded the net of the own locations for the transshipment of grain from Northern Germany. To the ports Kiel and Rostock it was added now high performance transshipment terminals in the Polish port of Stettin (Szczecin). The purchase of the enterprise Andreas Sp z.o.o. gives the HaGe an additional annual handling capacity of 600.000 t and storage possibilities of 32.000 t in silo plants. However 200,000 t cereals from the area of the HaGe Nordland (Mecklenburg-Western Pomerania and northern Brandenburg) are transshipped over the HaGe-site. By border opening and by good logistic connection of the port Stettin these goods stream become more important and is placed to the debit of the logistic throughput of Rostock port.

Since the transshipment terminal is led as a separate company, raw goods can be dispatched such as grain or fertilizer, foodstuffs components or biomass for other enterprises, too. The location offers an optimal concept for loading and unloading as well as warehousing. An own rail connection as well as extensive parking possibilities for trucks and a berth for ships up to a size of 8,000 t loading capacity and 6.20 m depth are further characteristics of the plant. “In eight minutes a 25-t-LKW is loaded at this location” describes HaGe-chief of the logistics department Joachim Pinn the advantages. The purchase of the Polish company optimizes the commercial structures of the HaGe in the Baltic Sea area. It closes the gap between the location of the Danish parent company dlg in Liepaja and the port location of the HaGe in Rostock.



	Weizen o. Durum	Gerste	Roggen	Hafer
Dänemark	4.081	3.791	610	265
Schweden	2.803	1.532	103	775
Finnland	824	1.581	87	1.035

Quelle: Verschiedene Statistikämter und Ministerien, ADM Germany GmbH / Marktbericht 31. Aug. 2017

Figure 6: Cereal Species Production at Scandinavian Countries 2016

Source - Various Statistic Offices and Ministries / ADM Germany

11.3.3 Getreide AG

The Getreide AG is a grain trading company with emphasis, acting worldwide, in the ranges agriculture trade as well as production of rapeseed oil, malt and food products. The locations at the deep-water ports Hamburg and Rostock offer outstanding conditions for an optimal logistics and the loading of grain and oil seeds in Panmax large ships for the international export. In the case of foodstuffs production by the Power Oil Rostock GmbH, Erfurter Malzwerke GmbH and Wurzener Nahrungsmittel GmbH Getreide AG makes use of those excluding raw materials of best quality and origin. The enterprise ensures the high quality standards of the raw materials by a direct contact to the farmers. The Erfurter Malzwerke GmbH is for years a considerable producer for malt of highest quality at the locations Erfurt and Hamburg.

The Power Oil Rostock GmbH is one of the largest oil mills of Germany. It produces annually up to 400.000 t rapeseed oil, from which 200,000 t can be refined to food quality. The enterprise was founded in 2006 and operates one of the largest oil mills of Germany. Power Oil Rostock produces annually up to 200,000 t food oil, 200,000 t rapeseed oil and 600,000 t rape meal pellets for the foodstuffs industry and the trade. The bio fuel industry and the foodstuff industry are one of the largest oil mills of Germany. By the unique location in the transatlantic harbor of Rostock is the enterprise in the position to offer to its customers an optimal import and export logistics. Power Oil benefits from the good infrastructure and the short ways from the rapeseed fields into the own warehouse at the location in the transatlantic harbor of Rostock. „On the shortest way from the farm into the production or into the Export“, that is the premise of the company owner Alexander Rothe.

The classical function of the registered trade is discharged in the future by the agricultural enterprises themselves: receiving the harvest commodity, drying process, cleaning, warehousing and distribution of the commodity all year round. Buying directly from the farms into the own production in Rostock is also under the cost criteria the most favorable way for the Getreide AG.

The oil mill of the Power Oil Rostock presses and extracts rapeseed oil made of rapeseed. As by-product rapeseed extraction pellets are produced and sold as high-quality feed. The cleaned and from slurry separated rapeseed oil is used as technical oil in Bio-Diesel production. Beyond that it is used as food oil for fish cultures and for other animal species. The supply to important customers takes place by tank trucks, ship or railway.

For the production of food oil from crude oil the unwanted odorants, flavors and coloring matters are removed in several work procedures. The result is out nutritional-physiological point of view a very high-quality as well as versatile usable food oil. The food oil is supplied in tank trucks, intermediate bulk container (IBC) as well as palletized small trading units to the customers from the foodstuffs industry and the trade. Additionally Power Oil offers deep-frying oils as well as rapeseed oils with butter flavor. Beside the own brand PORA these oils are filled up also individually for important customers. The resulting rapeseed pellets are well inquired due to its good quality and its less susceptibility for micro-biological infestation from the mixing foodstuff producers.

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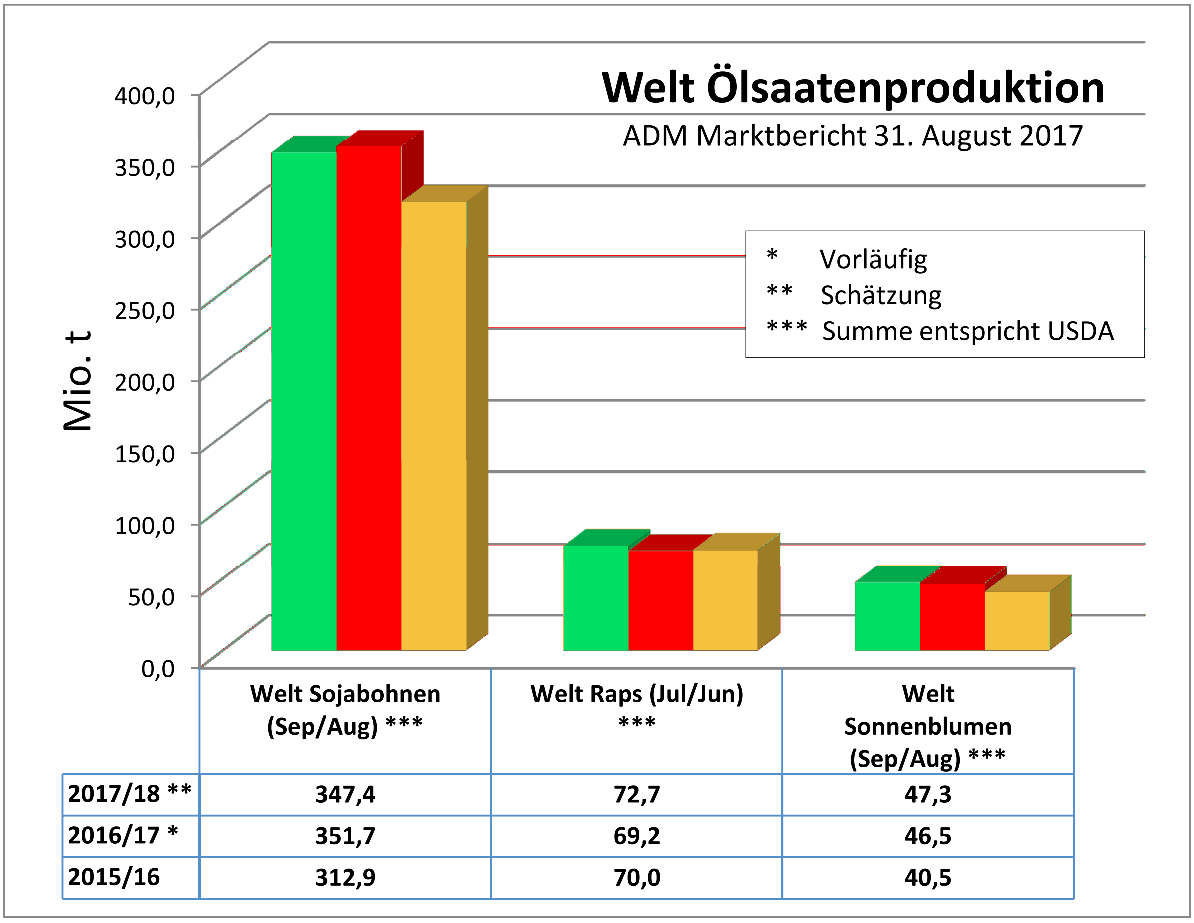

Figure 7: Oilseed World Production of Soy beans, Rape, Sunflowers

It can be used excellently in the animal nutrition by the processing of erucic acid poorer rapeseed sorts. The distribution takes place predominantly by ship in addition, by truck.

12. Effect by the planned Fixed Fehmarn-Belt link (FBL) on the port Rostock

- Fehmarn-Belt link (description of the project generally)
- Conclusion to chances and risks

In September 2008 the responsible Ministries of Denmark and Germany decide a convention with the goal of a fixed Fehmarn-Belt link on rail and road between both countries. An idea, which already before 150 years engineer Gustav Köhnke invented and which was again taken up in particular in recent time by politics and economics in Denmark, in order to shorten the distance to the markets in Western Europe, important for Scandinavia, substantially.

Figure 8: FBL integrated into the trans-European Net (TEN-V)

Since the project has effects the far beyond two frontiers, the European union regards fixed Fehmarn-Belt link as a new component for the European traffic axle and thus as an indispensable project for the structure of the North-South axis of the trans-European Network (TEN-V), which ranges from Finland to Sicily. The EU takes part thereby in the project from means of the CEF financial assistance.

By fixed Fehmarn-Belt link, as by the example of the Øresund bridge from Copenhagen to Malmö is to be seen, but also the region will more closely together grow according to experience between Hamburg and Copenhagen and with it not only new touristic concepts makes possible the economy to an important traffic axle to tie up. [3]

Figure 9: FBL connects Central Europe and Scandinavia without detours

Fixed Fehmarn-Belt link is an extension of crossing over the Øresund and the railway/road axle Nordic Triangle and represents a completion of the highway main link between Central Europe and the Nordic countries. It will replace substantially the present ferry link between Rødby and Puttgarden. After completion of the Fixed Fehmarn-Belt link a passenger traffic and a goods traffic arising of presumably 3.3 Mio.-Mio. motor vehicles and 30,400 to 35,100 trains per year are expected and it in particular thereby on the train network to the discharge of the distance leading across the large Belt by Denmark will contribute. At present less than 20% of the freight traffic run over the Fehmarn-Belt with the ferry. Afterwards then a rise is estimated around the quadruple in the freight traffic with approximately 15-17 Mio.tons in the year, whereby about 8-11 Mio.tons to the railway traffic were allotted. [4]

Denmark and Germany divide the work: On the northern railway to the Baltic Sea and from coast to coast the project responsibility is with the Danish (Femern A/S). For the development the responsibility is appropriate for the transnational rail and road connection in the south with the Germans. In the course of the countryside connection on the German side it was stated that the monument-protected building Fehmarnsund-Bridge (connection between Heiligenhafen and Puttgarden) will not withstand the future volume of traffic due to accomplished load tests in the summer 2010 after completion of Fehmarn-Belt link. Of the DB AG as responsible agency for the project and the national federal state authority of road construction and traffic (LBV-SH) in common tuning were written out four variants for a replacement construction of the bridge for the preliminary planning: The new building of a combined structure for rail (2-tracked) and road (4-lane), the new building of two separate structures (2-tracked, 4-lane), the new building of a combined immersed tunnel (2-tracked, 4-lane) and the new building of a bored tunnel with at least four tubes (2-tracked, 4-lane). Also a variant of improved performance for the existing bridge as a condition for the far use is integrated supplementing into the preliminary planning. The next steps for this are following: Comparison of the main variants by the end of 2018 and from this the determination of a main variant. Parallel corrective maintenance work at the existing bridge are accomplished presumably between 2017 and 2021. [3][5][7][9][10]

Figure 10: A-Road 207, 4-Lane Expansion

The structural concept of fixed Fehmarn-Belt link (FBL) is a so-called immersed tunnel under the Fehmarn-Belt and connects the islands Fehmarn (Germany) and Lolland (Denmark). The length of the tunnel amounts to about 18 km and is divided into 2 x 2-lane road tube with an emergency and a

maintenance passage lying between them as well as into a 2-track electrical railway connection, which is accommodated in 2 separate tubes.
The then direct way from Hamburg to Copenhagen with the rail shortens the travel time of 4 ½ hours on 2 ½ hours. The past drive over Flensburg / Padborg for the freight traffic shortens with the FBL over approx. 160 km. The project company belongs to the Danish state to 100%. [5]

Prognosis of the traffic for Fehmarn-Belt Link, road and rail [3][11]

Vehicles/Trains per 24 h	Prognosis 2011 for 2025	Prognosis 2016 for 2030
Cars	9.694	10.321
Truck and Bus	1.989	1.837
Rail passenger local traffic	16	15
Rail passenger long-distance traffic	24	23
Rail freight traffic	78	73

Quelle: NIT 2011, S. 32-33 mit Rückgriff auf Femern A/S (linke Spalte), Erläuterungsbericht Planfeststellungsunterlagen vom 3.6.2016, Seite 48 (rechte Spalte)

Table 3: Prognosis of the Traffic for Fehmarn-Belt Link for Road and Rail

The traffic prognosis for Fehmarn-Belt link prove 78 freight trains per day with the scheduled figures used by the DB AG on basis of the Federal Transport Infrastructure Plan, whereby with the explanatory report for planning approval also conditions are actually to be gone out with 3.6.2016 in accordance with the values represented in table A. The prognosis 2025 for 2030 shifts thus easily and instead of the 78 freight trains incorporate only 73 freight trains per day into the prognosis. The scheduled figures used by the DB AG on basis of the Federal Transport Infrastructure Plan 78 freight trains per day prove exclusive on the new building/developed road, which essentially follows the alignment of the BAB 1. [11]
The status of the project Fehmarn-Belt link changed concerning the construction and the completion in relation to earlier planning substantial.
Due to still on German side insisting the objections (approx. 12,600 objections) and their legal working on and clarifying on the fact it is counted that the commencement of construction of the tunnel and the hinterland connection can be begun only starting from 2020. From this it results that with a completion

and an opening of the project from today's viewpoint can take place and be given freely to the passenger and freight traffic only 2028. [5]

The planned rail freight traffic for the project FBL will drive exclusively on the new construction/expansion road of the German hinterland connection „rail“, starting from Luebeck.

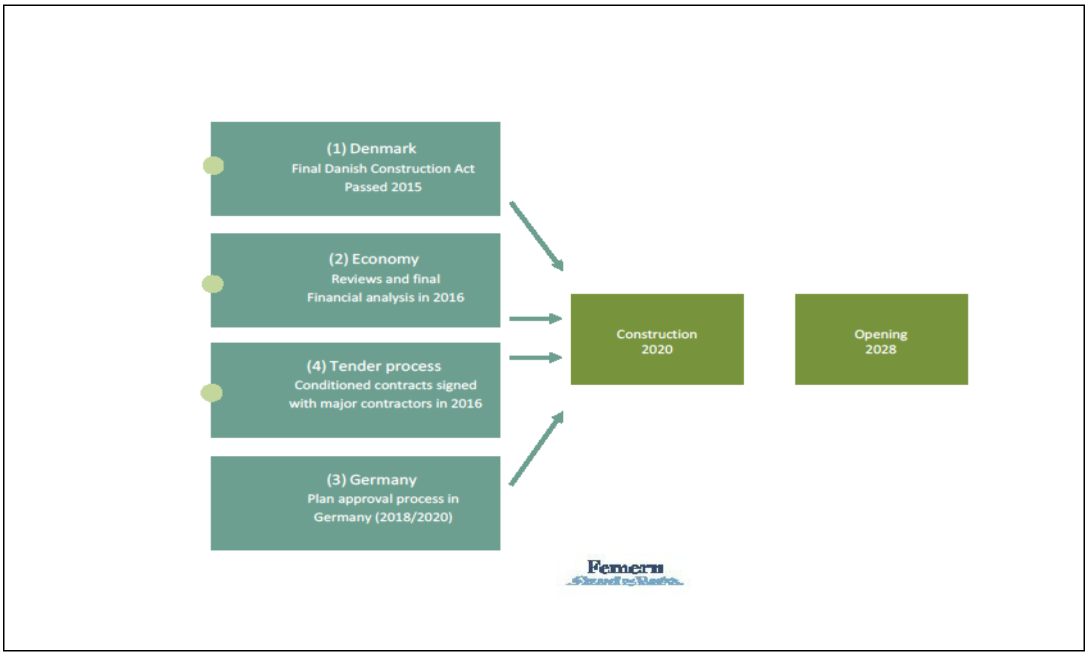

Figure 11: Status of Fehmarn-Belt Tunnel 2017 [5]

The predominant part of the new construction (approx. 160 km track) becomes a double-railed route with the by-pass close lying baths and health resort at the Baltic Sea coast (result of the regional planning procedure). This distance is

Figure 12: Status of Rail System FBL September 2017 / Source - DB Netz AG [6]

electrified and laid out for a speed of 160 km/h, whereas the Danish hinterland connection „rail “ is to be trained not only electrified but for passenger trains with a speed of 200 km/h.

With the building of fixed Fehmarn-Belt link a spacious relocation of freight traffics operating of the distance over Elmshorn is expected on the distance Luebeck. The benefit from this expansion/reconstruction should get the traffics from Luebeck and from Lüneburg toward Scandinavia. In the rail freight

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traffic this distance serves on the one hand as discharge distance for the knot Hamburg (Maschen) and on the other hand the connection over Schwerin toward Stendal. [8]

For the German road connection the federal highway B 207 is to be removed as northern extension of the 4-lane motorway A1 on 16.3 kilometers between Heiligenhafen and Puttgarden. [7][9]

A not insignificant plan for the German rail freight traffic is making longer freight trains possible, in order to comply the growth prognosis in the freight traffic in the future more fairly. At present freight trains on the important main street are as far as possible limited to a train length by 740 m, depending upon one spread existing effective length of the passing track of up to 750 m, which are however completely missing. Usually approx. 64% of the operating freight trains on the net of the DB AG have a length under 600 m. European-wide standards for the length of a freight trains are 740 m, which nevertheless replaces with this train length 52 trucks. Isolated even train lengths of 835 m are in the use. One finds also freight train lengths of 1.000 m, 1,500 m and more world-wide. For the hinterland traffic of the largest German ports, as by the example Hamburg is to be seen, the larger train lengths play an important role. However, in Hamburg port operate at working-days approximately 200 freight trains with approx. 5,000 railroad cars, whereby the transport of bulk goods is prominent. The containerships from which the goods are transshipped in the ports, become constantly larger, which means in the reversal conclusion that larger quantities in ever shorter times are carried off. [12]

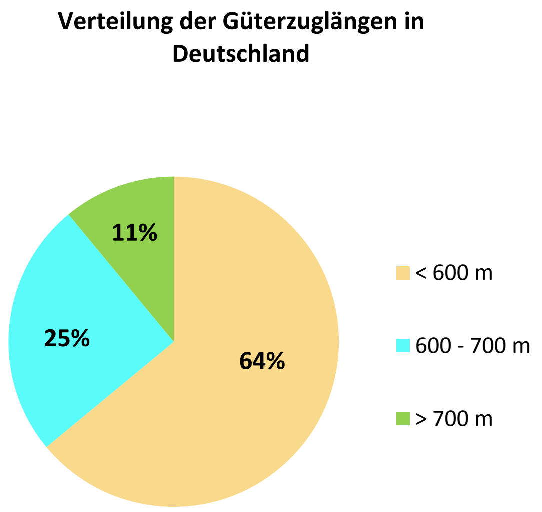

Figure 13: Distribution of Length of Goods Train in Germany / Source DB Netz AG

Since Decembers 2012 freight trains with a length of 835 m are able to be driven in commercial operation on the relation of the trans-European Network Padborg (DC) - Maschen at Hamburg (distance approx. 210 km), after the effects on security and infrastructure were identified and necessary structural and operational action were converted. Since December 2015 the direct connection Hamburg port to the relation Padborg (DC) - Maschen is also certified for trains up to 835 m (40 railroad cars). In Denmark already were 835 m freight trains in use for quite some time, which, however, at the frontier station Padborg had to be isolated and which after release are now able to drive continuous at the edge of Hamburg port. [12] [13]

For further efficiency increase research and development are already started some test runs as well as successfully with 1.000 m enough for freight trains have been accomplishing on another relation. The test runs took place during a build-conditioned operating phase, in which no other trains were allowed to run. The DB AG suggested long freight trains therefore for the further increase of the net capacity the continuous practicability of the centerlines for 740 m for the admission into the new federal traffic route plan. This suggestion predominantly refers to the shown railroad lines of the TEN core network in Germany.

The DB Netz AG will examine far, whether following the pilot distance Padborg (DC) - Maschen further distance sections do exist, on which longer freight trains up to 835 m without considerable infrastructure development can run. Supplementing still the goal of a further project is to be mentioned, which is to prove train lengths up to 1.000 m and in the further step up to 1.500 m by means of a technical, operational and economic feasibility study also. [13]

On the one hand the project „Fixed Fehmarn-Belt Link “serves almost exclusively within the scope of the North-South axis of the trans-European network (TEN-V) as shortened connection Scandinavia-operates „road and rail “from Northwest Germany - Hamburg - Luebeck to Copenhagen / Malmö and further toward Oslo and Stockholm and on the other hand it secures with it not insignificantly the freight traffic stream from the North to the South and in reverse. The passage Sweden - Northeast Germany - Berlin via Gedser and/or Trelleborg - Rostock remains with the project „ Fixed Fehmarn-Belt Link “untouched. Therefore planned fixed Fehmarn-Belt link for the existing transshipment with grain and oil seed products from and for the area Northeast Germany - Poland – Czech Republic has direct and noticeable effects for the port Rostock hardly. However planning and prognoses for fixed Fehmarn-Belt link point out that, for example, the planned traffic volumes of the Fehmarn-Belt tunnel represent only a fraction of the today's traffic volumes of the Øresund link.

Denmark expects until the year 2030 a clear increase (triple) of the goods traffic activities and the traffic volumes coming from Germany and south Jutland will drive further the western Baltic Sea link. Therefore with Fehmarnbelt link will take place a regrouping of the other routes (Great Belt / Ferry Scandlines Puttgarden - Rødby) and a bottleneck removal of the route Maschen - Padborg. The Fehmarnbelt tunnel cannot take up under any circumstances also only conceivably possible, rerouted goods transportation made of East Germany in accordance with its past prognosis to Scandinavia to larger quantities. Independently of it this means a too large and expensive detour for traffic streams with source or goal Poland / the Baltic / Finland over Fehmarnbelt link. [14]

Therefore the risk, that alone by the project "Fixed Fehmarnbelt link" itself agrarian quantities from the port Rostock could be cancelled substantially, is not only very small but also not probable and has thereby on the sea port Rostock no direct or significant effects by the project "Fixed Fehmarnbelt link".

Already 2010 were taken up the port Rostock by the European Union to the trans-European net for the high-speed sea routes „ Motorways of the sea "for the connection of the member states of the Baltic Sea area to the member states to central and Western Europe with. Main objective is the constitution of the concentration of the freight flow on sea-based logistics chains and taking up improvement of more existing or creation of newish, more acceptable, more regular and more frequent connections in the freight traffic between the member states. [15]

Rostock was merged thereby both into the so-called passage Scandinavia - Mediterranean and into the passage Orient - eastern Mediterranean. The priority admission of the ferry route Rostock - Gedser (Denmark) into the core net of the trans-European traffic axles were welcomed at that time by the then Secretary of Transportation of the state Mecklenburg-Western Pomerania, Volker Schlotmann, it was not only appreciated by him but also judged pragmatically: "Who drives from Copenhagen into direction Hamburg, will use Fehmarn-Belt link. Who is toward Berlin on the way drives fastest with the sea motorway over Rostock" [16]

Greater chances rather appear to reside in efficiency-enhancement through fast expansion of the freight rail net in Eastern Germany above all longer freight trains can be caused to run on existing routes. The management of the Havelland railway (HVLE) speaks of efficiency gain of up to 25% with freight train lengths of 740 m, which corresponds to the European standard. The volume of goods of bulk material and grain, which could be transported with longer trains instead of the trains long limited of under 600 m, is quantified of the HVLE on an order of scale of 2.400 trucks per month. The net expansion for the standard length could be achieved with comparatively „small “money. [12] The use of longer freight trains is recompensed by:

a) The better extent of utilization of the railway system by increase of the traffic capacity,

b) The increase of the productivity and operating cost lowering, since more goods are transported,

c) The lowering of the energy consumption, because of longer trains the volume of traffic is mastered by the smaller number of trains and so that power for the electric operation is saved,

d) The enlargement of the demand in the freight rail traffic by deflection of the traffic from road to the rail and thus to the climate protection (CO_2-saving) is contributed.

13. Recommendations for action / chances and risks

So far thereby the export quantities from the European Union were high. In the current financial year 2017/18 a change of the market shows up. Is this year it will be a lower export quantities for German wheat? On the physical side of the business there is this year 2017/18 to note that the large harvests brought very heterogeneous qualities out that the demand in the destinations for milling wheat, in addition, due to its presence the demand for feed wheat rose substantially and that the European Union with a harvest of approx. 151 Mio.t (previous year 2016/17 144 Mio.t) an export potential higher around 6 Mio.t. For this it assorts that the past European Union export licenses for the current campaign 2017/18, which constitutes a third with wheat well, are under the amounts of the comparable previous year. With the barley in 2017/18, however, it was exported already somewhat more than in the previous year.

The large harvests in Russia and the Ukraine sent the international wheat markets on downward trend and the quotations for bread wheat with 12,5% protein FOB to Russia had touched bottom with 183, - US-Dollar/t FOB in the second half of July. Today in December of 2017 the market notes with 193, - US-Dollar/t a good piece above the prices from July 2017, which is to be justified with seasonal market influences. Russia could export about 8.6 Mio.t up to the beginning of October 2017 and the Ukraine about 7 Mio. t wheat in the current campaign 2017/18, which underlines the very good demand situation. It generally gives much in the world more feed wheat than in 2015. That meets too for the Baltic countries, France, Ukraine, Russia, which are all countries, with which Germany in the previous campaign were hard in the competition. If one divides the wheat balances of the individual countries after feed and milling wheat, then the milling wheat balances don´t look any longer so overloaded.

As soon as the marketing from the agriculture picks up a pace, the export will start up in this country also. The prices in the Black Sea area went up to USD 183, -. FOB Hamburg/Rostock has themselves due to the weak Euros on USD 191, - reduced in price. Thus the extra charge for German wheat dropped under USD 10, - compared to the Black Sea price. That is the point, starting from activity in the German ports begins.

If the extra charge still declines, the export activity increases considerably. Starting at the end of December 2017 the traders expect a considerably increasing activity in the wheat export.

If we look on the price change for B-wheat since the harvest, then it gave to here hardly a development. Should it give neither a drought in South America nor a large black frost at the Black Sea region the price change will remain moderate. There is still eight month time to concern the marketing and thus is enough time to go to possible sharp drops in prices out of the way. However, also the risk rises not to escape from a low phase any longer with timing. Before this background it would be reasonable, if one served the market as a producer during the export phase, thus starting from November or December continuously. Two thirds of the German exports take place in the last six months of the campaign. Then, presupposed a favorable dollar rate, one should find a possibility of placement in the upper half of the price margin for some sales and whereupon to trust in obtaining with several sales a good average price for its marketing.

What is to be expected now in the coming five years? With the cereal is to be counted on a dismantling of the export surpluses. In view of the stronger dependence on the world markets the meaning of rate of exchange fluctuations for all market participants grows. In addition, safeguard instruments like the commodity futures exchanges will change the marketing behavior. Old wisdom says: “Who does only move with the time, does not go off with the time.” In other words: An increasing volatility of the markets is to be expected, both the new chances, in addition, new risks will involve. Timely to prepare for the developments with its enterprise is the order of the day.

Increasingly dark clouds hang at present over the local oil mills and Bio-Diesel manufacturers. Declining crude oil quotations at the world markets lead to considerably declining benefits of the enterprises. The transatlantic harbor

Rostock is a very good location for investments in logistics. However, many locations of oil mills and Bio-Diesel factories lead in Mecklenburg-Vorpommern. There is a hard competition around the raw material rapeseed. Often commodity can be prized in the producer hand only with extra charges. Even in ten years Bio-Diesel will have its place in the European energy-mix.
It must be featured only once, when BTL-fuels will be available for necessary quality in sufficient quantity, and to competitive production costs for order. So it must be considered in particular that also the prices for biomass will follow potentially increasing energy prices.

The Bio-Diesel production at the Rostock location covers at present a production of 450.000 t. The situation of Rostock with the sea port and the proximity to the rapeseed cultivation areas was the decisive points for the investments of the investors, the Family Rothe. The marketing of the glycerol a large challenge for the enterprises, resulting during the Bio-Diesel production, is free of doubts. With the up-to-date falling need of rapeseed oil the European Union does not have generally any longer so good chances to hold the rapeseed cultivated area on the today's high conditions. The reduction of the cultivated area must be good in the sense of the local agriculture straight regarding the crop rotation problem.

The competition at the German export places for grain increases considerably. The Baltic countries as well as the Central European countries such as Hungary, Czech Republic and the Slovakia urge with their cereals into the traditional sales countries for German cereals. France in addition, England created it to improve continuously the wheat qualities. The good German wheat qualities left themselves nevertheless in the past years well marked out. Internationally even some new customers were added. Unquestionably the competition from the Black Sea region played a large role also in the current financial year 2017/18. Especially the two large countries Russia and the Ukraine got weaving strongly with the marketing of the harvest into late November inside and could book thus new records with the export of grain. Only with the onset of the winter the pressure of the Russian and Ukrainian supplier grow usually weak and then European Union cereals can regain lost ground with the exports after third countries.

The export trade has accomplished to open up new sales markets for north German grain in the two past years. In particular the wheat qualities with high order within the protein range of above 13 per cent were already in the past financial year 2016/17 in demand. Certainly the international competition became with the marketing of German cereals larger. It will come also in the coming years always again to displacements of the commodity flows. The height of the respective harvest quantity in the individual countries, the respective qualities, the development of the sea freights, the development of the currencies and not least the Brussels agricultural policy, in order to call only some basic data here, play a vital role. To what extent new branches of processing for agricultural products change like the bioethanol production, biogas or the burn of grain the market balances here, remains being waiting, is however surely not to be underestimated. Tendentious the production in the countries of the Black Sea region will surely increase. Due to the continental climate it will come however to large fluctuations again and again, that showed us the past always again.

Very large harvests are possible. If the weather does not along-play however, it can come unpredictable again and again to a large production.

In Germany it is differentiated between the following qualities: E-wheat with at least 14% protein, A-wheat with at least 12.5% protein, B-wheat with at least 11% protein and feed wheat. In addition, durum wheat, especially Saxony Anhalt, is produced for the pasta industry. 70 percent of E-Wheat in eastern Germany is produced by farmers in Thuringia, Saxony and Saxony-Anhalt. There are the preferred locations for the wheat with high protein values of at least 14 percent protein. When farmer are producing E-wheat, they have 15 percent lower yield as in the usually produced. This lower production has a higher price. In recent years, the premiums from E-wheat to B-wheat have always been well over 20 Euro/t. In the past marketing year 2016/17, E-wheat was also sold outside Europe for the first time in significant quantities to Turkey. The port in Rostock profited from this export. The quality of E-wheat is so good that in some countries it replaces the imports of wheat from the USA and Canada. The A-Wheat with 12.5% Protein is produced in Mecklenburg-Vorpommern, Brandenburg and Saxony Anhalt and is considered the „best German export quality". In the West Germany federal states mostly the A-wheat and the B-wheat are cultivated. In Schleswig Holstein, a lot of A-Wheat is grown, but the protein quality usually reaches just under 12%.

EU-wide we proceed from with just as high harvesting of cereals in the next campaign 2018/19. Overall the commodity is surely abundant and above all the North German areas having a surplus would have also to align itself at the international markets in the coming financial year. With a rate of exchange EUR/USD from at present over 1.17 in December 2017 exporting is however considerably more difficult.

A large advantage of the location Rostock for the grain registration is the area-wide attendance on-site. Many agricultural trade and cooperative enterprises maintained in the regions strong locations and have a short hotline with suitable qualified workers toward agriculture. The organization of the commodity flows and the many powerful transshipment plants grant a short and economical way of the grain to the consumer world-wide. „The high competition, engaged entrepreneurs and Rostock as port, in which day and night each kind of grain can be loaded into all possible sizes of ships, makes this port extremely attractive for our international trading companies “, meant a grain exporter of Rotterdam.

14. Result

The directly commercial contact without any intermediate trade is already established between the agricultural enterprises and the wholesale and / or exporter in the East German States of the Federal Republic for a long time. Of this also benefits the harbor of Rostock. According to the opinion of Dr. Hans-Bernhard Overberg, managing director of the company Beiselen Ulm, the new plant of the company Beiselen Ulm at Rostock Port does not conduce to an aggravation of the competition of the enterprises on site. In the future Beiselen intends seizing larger quantities of grain out of far distant regions such as Saxony, Thuringia and northern Bavaria and embark via Rostock. These new flows of commodity starting from the financial year 2018/19 will lead to significantly higher handling volumes in the harbor of Rostock. The neighboring harbors of Rostock like Vierow, Saßnitz or the Polish harbor Szczecin, which Beiselen has handled a lot of grain over, will lose transshipment volume. In these harbors investments are also made by various companies. Nevertheless, Rostock is the predestined port for worldwide grain export, according to Dr. Overberg. By transporting grain with train-load consignments, it is also planned to transport grain from the Czech Republic and southern Poland to Rostock. The loading capacity increases through a further loader to an hourly capacity of 1,200 t / h at the end of 2018. This is a substantial reason for the company Beiselen for the investment in Rostock. The railroad car acceptance of the new plant will reach a capacity of 300 t / h. "If you concentrate strongly the flow of commodity on Rostock Port in the future, then it can be purchased additional quantities over much greater distances and be handled via Rostock," meant Overberg opposite the author of this study over.

Cereal Production	Production (Mio.t)		
	2017/18 **	2016/17 *	2015/16
World Cereal Total (incl. Rice) * **	**2.539,9**	**2.602,7**	**2.468,5**
USA (USDA)	426,3	472,6	429,3
Canada (Stats. Can.)	50,5	57,5	53,2
Argentina (USDA)	65,6	66,9	50,1
Australia (ABARE)	36,0	53,4	37,7
China (USDA)	498,0	501,1	507,4
India (USDA)	246,2	239,2	229,6
Russia (USDA)	121,0	114,0	99,2
Ukraine (USDA)	65,0	66,1	60,7
EU-28 (miscellaneous)	294,9	294,9	312,1
World Wheat (Jul/Jun) * **	**743,2**	**755,0**	**737,0**
USA (USDA)	47,3	62,9	56,1
Canada (Stats. Can.)	25,5	31,7	27,6
Argentina (USDA)	17,5	17,5	11,3
Australia (ABARE)	24,2	35,1	24,2
China (USDA)	130,0	128,9	130,2
India (USDA)	96,0	87,0	86,5
CIS countries	133,8	130,5	118,0
Russia (USDA)	77,5	72,5	61,0
Ukraine (USDA)	26,5	26,8	27,3
Kazakhstan (USDA)	14,0	15,0	13,7
EU-28 (miscellaneous)	150,1	144,6	160,2
World Corn (Sep/Aug) * **	**1.033,5**	**1.070,5**	**969,5**
USA (USDA)	359,5	384,8	345,5
Australia (ABARE)	40,0	41,0	29,0
Brazil (USDA)	95,0	98,5	67,0
China (USDA)	215,0	219,6	224,6
South Africa (USDA)	12,5	16,7	8,2
Ukraine (USDA)	28,5	28,0	23,3
EU-28 (miscellaneous)	58,7	61,1	59,3
Wold Barley (Jul/Jun) * **	**140,1**	**147,9**	**149,2**
USA (USDA)	3,1	4,3	4,8
Canada (Stats. Can.)	7,2	8,8	8,2
Australia (ABARE)	8,1	13,4	8,6
Russia (USDA)	18,5	17,5	17,1
Ukraine (USDA)	8,7	9,9	8,8
EU-28 (miscellaneous)	57,2	59,2	61,4
Argentina (USDA)	3,0	3,3	4,9
* Preliminary ** Estimate *** Sum equal to USDA			

Table 4: Global Production of types of Grains

/ ADM Germany GmbH / Marktbericht August 31st, 2017

Grain Yields for major grains and key producing countries	Spezic. Yield (t/ha)		
	2017/18 **	2016/17 *	2015/16
World Cereal Total (incl. Rice)	**3,61**	**3,68**	**3,49**
USA (USDA)	7,94	8,12	7,40
Canada (Stats. Can.)	3,71	4,26	3,69
Argentina (USDA)	5,21	5,48	5,06
Australia (ABARE)	2,01	2,86	2,02
China (USDA)	5,43	5,37	5,37
India (USDA)	2,48	2,45	2,31
Russia (USDA)	2,87	2,70	2,42
Ukraine (USDA)	4,58	4,62	4,10
EU-28 (miscellaneous)	5,25	5,15	5,48
Restwelt	**2,44**	**2,46**	**2,31**
World Wheat (Jul/Jun) *	**3,37**	**3,39**	**3,27**
USA (USDA)	3,07	3,53	2,94
Canada (Stats. Can.)	2,87	3,56	2,88
Argentina (USDA)	3,13	3,37	2,90
Australia (ABARE)	1,91	2,72	1,89
China (USDA)	5,37	5,33	5,40
India (USDA)	3,13	2,88	2,75
CIS countries	2,70	2,58	2,41
Russia (USDA)	2,89	2,69	2,38
Ukraine (USDA)	4,02	4,12	3,85
Kazakhstan (USDA)	1,22	1,21	1,18
EU-28 (miscellaneous)	5,62	5,30	5,98
Restwelt Weizen (Jul/Jun) *	**2,55**	**2,57**	**2,54**
Welt Mais (Sep/Aug) *	**5,66**	**5,82**	**5,43**
USA (USDA)	10,64	10,96	10,57
Australia (ABARE)	8,16	8,37	8,29
Brazil (USDA)	5,37	5,60	4,19
China (USDA)	6,14	5,97	5,90
South Africa (USDA)	4,31	5,57	3,73
Ukraine (USDA)	6,33	6,51	5,68
EU-28 (miscellaneous)	6,75	6,94	6,59
Restwelt Mais (Sep/Aug) *	**2,99**	**3,01**	**2,92**
Welt Gerste (Jul/Jun) *	**2,95**	**3,06**	**2,97**
USA (USDA)	3,88	4,30	3,69
Canada (Stats. Can.)	3,43	4,00	3,42
Australia (ABARE)	2,08	3,35	2,10
Russia (USDA)	2,34	2,19	2,14
Ukraine (USDA)	3,22	3,19	2,93
EU-28 (miscellaneous)	4,73	4,74	4,99
Argentina (USDA)	3,75	3,67	3,77
* Preliminary ** Estimate *** Sum equal to USDA			

Table 5: Specific Yields of types of Grains

/ ADM Germany GmbH / Marktbericht August 31st, 2017

Import / Export Wheat		
Wheat trade (Mio.t)	**2017/18**	**2016/17**
World	**179,9**	**182,3**
Exporters		
USA	26,5	28,7
Kanada	20,5	20,3
Agentinien	11,5	11,7
Australien	19,0	24,0
Russland	31,5	27,8
Ukraine	16,0	18,0
Kasachstan	7,5	6,8
EU-28	29,5	27,0
Indien	0,5	0,4
Importers		
Brazil	7,2	7,1
Mexico	5,2	5,3
South Korea	4,5	4,7
Japan	5,8	5,9
Indonesia	10,0	10,0
Iraq	2,5	2,3
Egypt	12,0	11,5
Morocco	4,8	5,5
Algeria	8,0	8,2
EU-28	6,5	5,3
China	3,0	4,8

Table 6: Significant Wheat Import and Export Countries / USDA

Import / Export Soy Beans		
Soybeans trade (Mio.t)	**2017/18**	**2016/17**
World	**151,2**	**145,0**
Exporters		
USA	60,6	58,5
Argentina	8,0	7,0
Brazil	64,0	61,0
Paraguay	5,5	6,6
Importers		
Mexico	4,3	4,2
China	94,0	91,0
Japan	3,3	3,2
South Korea	1,4	1,4
Taiwan	2,4	2,5
Thailand	2,9	3,1
Indonesia	2,6	2,4
EU-28	14,6	13,8

Table 7: Significant Soy Beans Import and Export Countries / USDA

Import / Export Rapeseed		
Rapeseed trade (Mio.t)	**2017/18**	**2016/17**
World	**15,7**	**16,0**
Exporters		
Canada	11,0	11,1
Australia	2,6	3,2
EU-28	0,4	0,3
Ukraine	1,4	1,0
USA	0,1	0,1
Importers		
USA	0,7	0,7
Mexico	1,8	1,8
China	4,3	4,1
Japan	2,5	2,5
Pakistan	1,2	1,2
UAE	0,8	0,8
EU-28	4,0	4,8

Table 8: Significant Rapeseed Import and Export Countries / USDA

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