

# Regional perspectives on food supply and demand

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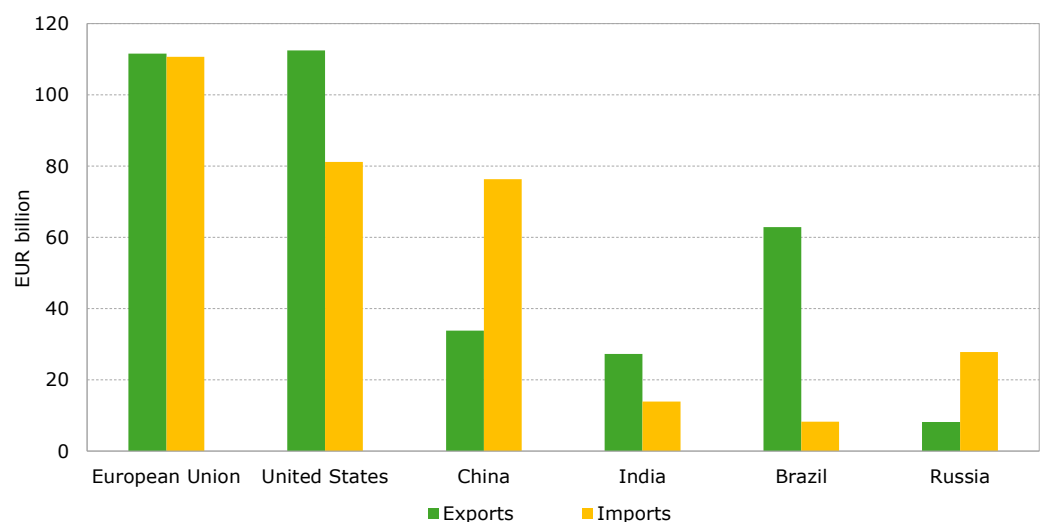
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Since the mid-2000s agricultural and food prices moved to a higher level and in parallel with prices of other commodities – and at times have also been very volatile. These events led to concerns which, in different ways, brought to the forefront a debate about food security. Both developed and developing countries saw their consumers facing the impact of higher food prices, and their producers feeling the pressure from higher input costs.

In a series of *Briefs* (on Demand, Regional influences, Supply and Stocks) we analyse evolutions in different drivers responsible for these price developments separately and bring them together in a concluding *Brief*.

This third *Brief* focuses on developments in supply and demand in the countries which are considered to be the new engines for growth in the coming decades.

**Graph 1 Imports and exports of agricultural commodities for main trading blocks (average 2011-2013)**



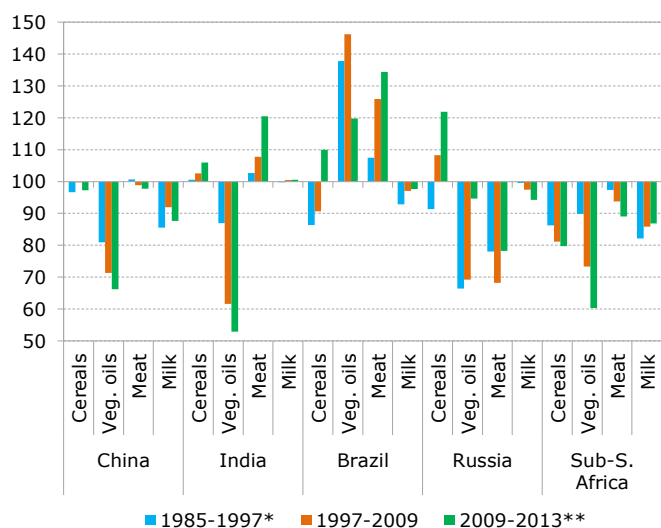
Source: [DG Agriculture and Rural Development](#) based on data from Eurostat-Comext and GTA.

## 1. Introduction

This *Brief* focuses on developments in supply and demand in the countries which are considered to be the new engines for growth in the coming decades. The high food price spike in the previous decade is often related to the increasing demand and import of these major emerging economies. In what follows we describe the main elements explaining the state of food self-sufficiency in these countries. To focus on how these patterns changed during the last 30 years and make the story more tangible, we distinguish between three periods<sup>1</sup> characterized by important macro-economic or geo-political events and between developed and developing countries<sup>2</sup>.

## 2. Country-specific strategic reactions to internal demand growth

**Graph 2 Evolution in degree of self-sufficiency for BRIC and Sub-Saharan Africa**



\*1992-1997 for Russia; \*\*2009-2011 for milk in Russia and Sub-Saharan Africa.

Note: Self-sufficiency computed as  $\text{Production} / (\text{Production} + \text{Imports} - \text{Exports})$ ; figures above 100 indicate self-sufficiency.

Source: DG Agriculture and Rural Development based on data from FAO ([Faostat](#)).

In their quest towards self-sufficiency to respond to increasing domestic consumption, different countries

<sup>1</sup> The period of 1985-1997 was characterized by strong political and institutional reforms. In the period 1997-2009 world economy boomed under the liberalisation of markets and the growth of middle income countries, to end with the bubble of the financial and economic crisis of 2009. The last period, from 2009 till today, shows the recovery of the world economy after its major economic crisis.

<sup>2</sup> Following common practice, we have considered Europe, United States, Canada, Australia, New Zealand and Japan as 'developed'. In some cases and for statistical reasons, all former USSR countries have been considered as 'developed'.

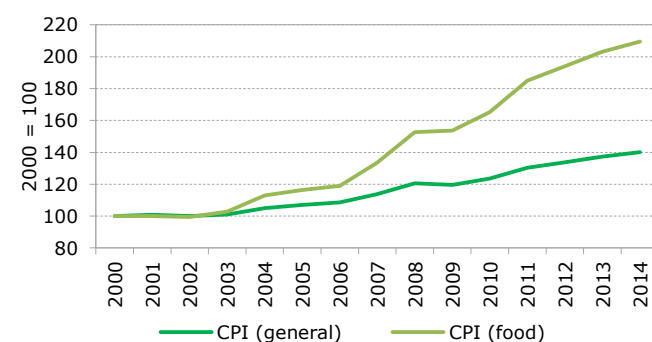
across the globe followed different trajectories, albeit with different degrees of success. India, China, Sub-Saharan Africa and Russia depend on imports, especially for vegetable oils. Brazil confirms its status of net exporter, although domestic demand is accelerating.

## 3. China

China has radically redrawn the balances and relations in world agricultural production and trade given its continuous growth in population, GDP, per capita income, total food demand and agricultural production (Table 1 in Annex). This growth can amongst others be attributed to a changing policy environment, increased national investments and improved factor productivity<sup>3</sup>. While pursuing rapid production growth to meet the increasing demand, China bumped into natural limits to growth, such as low land availability per capita, erosion and scarce water resources, as well as socio-technological limits, such as economies of learning and logistical, managerial difficulties in setting up new value chains for quality food.

In the last decade, prices for food have increased more than twice as fast as general consumer prices (Graph 3), indicating that China is not spared from the food price increase described in the first section. Moreover, the imbalance between China's food demand and supply is often cited as one of the driving factors for the increase in world agricultural prices. Total domestic demand growth accelerated from the 1980s onwards. Population growth in China is however, also due to the former one child policy, not as high as the world average and decreasing over time.

**Graph 3 Food prices versus inflation in China**



Source: DG Agriculture and Rural Development based on OECD statistics ([OECD.Stat](#)).

CPI = Consumer Price Index, i.e. general inflation.

<sup>3</sup> [OECD-FAO Agricultural Outlook 2012-2021](#).

With national income growth surpassing population growth, income per capita has increased significantly, allowing for a higher general household expenditure. Although its share in total spending has decreased, household food expenditure has also grown, both in real and nominal terms. The recent wealth is mainly accumulated in the large and expanding cities, but rural livelihoods have also benefitted. About 50% of national income is possessed by the 60% of middle income households, a share which remains rather constant over time.

The Chinese menu has changed both in portion size and composition. Daily calorie intake increased from 2 530 kCal per person in 1985-1997 to 3 065 kCal in 2009-2013, making growth in per capita consumption in China the fastest in the world, exceeding the average world calorie intake (2 870 kCal/p). The diet has also considerably shifted, with cereals declining from 62% of total calorie intake in 1985-1997 to only 46% in 2009-2013, while mainly meat (from 9 to 15%) and fruit and vegetable intake (from 10 to 15%) profited. The share of rice in human cereal consumption remains fairly stable at around 50%, but the share of rice in overall cereal use, including for feed and biofuel production, is steadily decreasing (from over 40% in the 1960s to 30% now). The non-food use of the other cereals has gained importance, as confirmed by the high growth rates of non-food wheat and maize consumption from '85 onwards.

The share of meat in the Chinese diet equals twice the world average. The Chinese prefer pork (11% of total calorie intake) over other meat types. With China approaching the OECD average protein and calorie intake (about 90% in 2009<sup>4</sup>) and the marginal population growth<sup>5</sup>, total demand growth is expected to further slowdown.

China's agricultural trade deficit amounts to USD 57 billion (average 2011-2013) and has increased over the years. The Chinese government has devoted many efforts to improve self-sufficiency<sup>6</sup>, especially for food security commodities such as basic grains. Taking into account the limited agricultural land availability compared to the population size, they have become rather successful in cereal production, mainly at the expense of oilseeds and vegetable oils production, for

<sup>4</sup> [OECD-FAO Agricultural Outlook 2014-2023](#).

<sup>5</sup> This trend might change in the long term given the lifting of the one child policy.

<sup>6</sup> New guidelines from the state-council in 2014 called for removing the self-sufficiency policy, acknowledging china's incapacity to meet internal demand for basic grains.

which self-sufficiency was deteriorating until recently. The latter is also explained by the fact that China is heavily dependent on feed imports for their domestic meat production, primarily soybeans. China imports nearly 60% of globally traded soybeans<sup>7</sup>. For these livestock products, mainly pork and chicken, China was less dependent on imports, but the dependency is recently increasing. Also for milk products, self-sufficiency is lagging (88%), and has declined in the last few years as Chinese consumers see imported products as of better quality than domestic dairy products while the domestic dairy processing sector is also restructuring.

The demand growth in China is often referred to as one of the drivers for the increased world prices after 2005. The OECD-FAO outlook<sup>8</sup> confirms that China's higher food imports indeed affected world prices. A recent World Bank study<sup>9</sup> also shows how a change in China's demand for maize and wheat would affect world prices and volatility considerably.

Regarding future developments, China's outlook<sup>10</sup> for the coming ten years varies by commodity. In general, consumption growth is projected to exceed production growth. China's cereal imports are expected to increase, as production growth will slow down while feed consumption further increases with the growing meat production. Per capita meat and fish consumption will reach OECD levels within the next ten years. Meat and fish consumption growth is however expected to slow down due to increasing prices. Pig meat will continue to dominate. Dairy imports will remain high as milk production will grow slower compared to the current period. Although growth in dairy consumption is also expected to slow down, consumption of dairy products is expected to increase by around 36% in the coming decade<sup>8</sup>. In its own Outlook<sup>10</sup>, China reports that its agricultural production will keep on developing steadily in the coming decade, although with lower growth rates compared to the previous decade. Most rapid growth, driven by a dynamic demand, is expected for maize, dairy and aquatic products. China expects to maintain its cereal self-sufficiency rate (near to 100%). China expects that the interaction between domestic and

<sup>7</sup> Roache, S. (2012), China's impact on world commodity markets. IMF working paper, WP/12/115.

<sup>8</sup> [OECD-FAO Agricultural Outlook 2014-2023](#).

<sup>9</sup> Miranda, M.J., Glauber, J.W. and Romero-Aguilar, R. (2014), Effects of Trends in Chinese Production, consumption and Price Support Policies on World Grain Price Volatility and Food Security, World Bank. DECAR Food Conference, September 2014.

<sup>10</sup> China Agricultural Outlook 2015-2024.

international agricultural commodity prices will be strengthened further, given its improved market pricing mechanism. It also projects higher and more volatile prices, especially for the commodities with strong links to international markets (such as cotton, oil, sugar, pork, poultry). China is implementing a strategy of Restructuring and Remodelling to make the transgression from a quantitative to a qualitative growth pattern. While major agricultural output growth will slow down, production quality and diversity is expected to increase in pursuit of changing consumer demand. This also entails the development of the agricultural processing industry.

#### 4. India

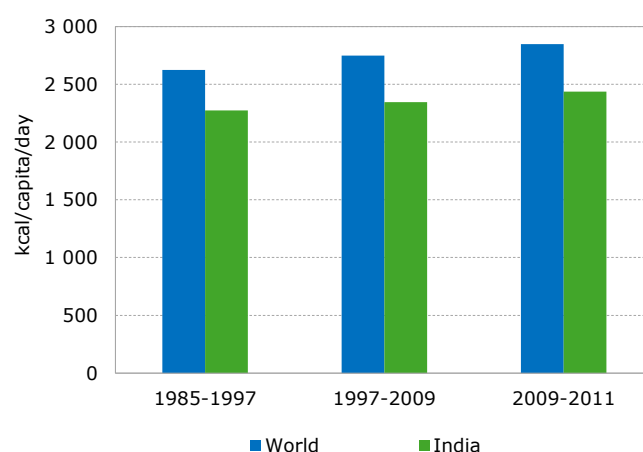
India, with the world's second largest population, shows a considerably different dynamic compared to China (Table 2 in Annex). While natural constraints are not so binding, India's main challenge is to feed its large share of undernourished rural and urban poor while keeping its export ambitions. Although population growth is slowing down over the years, India still faces the challenge of feeding more than 1.25 billion inhabitants. To tackle undernourishment, India recently (2013) launched the National Food Security Act (NFSA), providing monthly food grains to 800 million inhabitants at subsidised prices. Both GDP and income per capita show significant increases and considerable growth rates across the different time periods, but in absolute terms income per capita remains far below the world average. Food still accounts for a large share (30% in 2013) of the total household expenditure.

The total food supply per capita remains below the world average and is only slowly increasing over time (Graph 4). Per capita food consumption is not following income and GDP growth<sup>11</sup>. Cereals remain by far the main dietary component (about 60% of total calorie intake). As most part of the population is vegetarian for religious reasons, meat and fish consumption are negligible (both less than 3% of total protein supply per capita). The importance of dairy products in total protein supply is showing a mildly positive evolution over the different periods.

As regards production, India has some particular assets. Production growth, mainly driven by productivity growth, has increased rapidly over the

last decades, and there is still some scope for further improvement as some yield gaps remain<sup>12</sup>. At world level, India ranks first in the production of milk and second in rice, wheat, vegetables, poultry and sugar cane. India also has the largest bovine herd in the world. India is self-sufficient for the majority of products, with the exception of vegetable oils. Especially for meat, domestic production largely exceeds low consumption. At world market level, buffalo meat is becoming a heavy competitor of beef from traditional producers such as Brazil and the US. Also for rice, cotton and fisheries products, India show positive and growing trade surpluses.

**Graph 4 Total food supply per capita in the World and India**



Source: DG Agriculture and Rural Development based on data from FAO ([Faostat](#)).

Prospects for India<sup>12</sup> confirm a further increase in production, outpacing population growth, as well as a reduction in undernourished people, with calorie and protein consumption per capita expected to grow even faster than currently. The combination of the large production and the specific government support policies could make India an important factor on agricultural world markets and prices, especially for cereals, bovine meat and skimmed milk powders. Looking further towards 2050<sup>12</sup>, average per capita caloric intake is expected to reach about 2 825 kcal. Direct cereal intake is expected to decline from 60% to 48% of total caloric intake, while meat intake, predominantly poultry, is expected to more than double, although it will remain still well below the level of countries with comparable household consumption expenditure given the continued

<sup>11</sup> Alexandratos, N. and J. Bruinsma. 2012. World agriculture towards 2030/2050: the 2012 revision. ESA Working paper No. 12-03. Rome, FAO.

<sup>12</sup> [OECD-FAO Agricultural Outlook 2014-2023](#).

prevalence of vegetarians. Dairy consumption could increase by over 50% per capita, while sugar, vegetable oil, fruit and vegetable intake are also expected to increase considerably, but within nutritional limits.

## 5. Brazil

While Brazil's population growth rate is decreasing, its GDP growth rate increases (Table 3 in Annex). As a consequence, income per capita is increasing rapidly, capitalising on economic reforms implemented in the 1990s and early 2000s that reduced the sky-high inflation and restored steady economic growth<sup>13</sup>. The middle class is further expanding, although the majority of wealth is still captured by the high income households. As indicated by the FAO household surveys, between 2002 and 2008 the share of food consumption expenditure in total household consumption expenditure declined slightly from 20.8% to 19.8%, an effect more pronounced in rural areas (from 34.1% to 27.6%). Food consumption per capita is increasing to a level similar with developed countries. Brazil is a meat eating country, with meat consumption per capita increasing consistently and meat shares in total diet surpassing the developed country level. Dairy products have also become progressively popular in the diet.

Brazil is self-sufficient for a majority of commodities (with the exception of dairy products), and is an important exporter of meat and oilseeds (particularly soy). Although production shows high growth rates, the rate of self-sufficiency is recently decreasing, indicating that domestic demand is catching up (Graph 5).

Brazil is also particular due to its high biofuel consumption (ethanol from sugar cane). Brazil launched its biofuel policy after the first oil crisis in 1973 to increase its energy self-sufficiency. Brazil consumes about one fifth of world's ethanol production, and produces about one fourth (2011-2013 average<sup>14</sup>). Nearly all the domestic use is meant for fuel use, where ethanol captures a volume share of 55% in gasoline type fuel use.

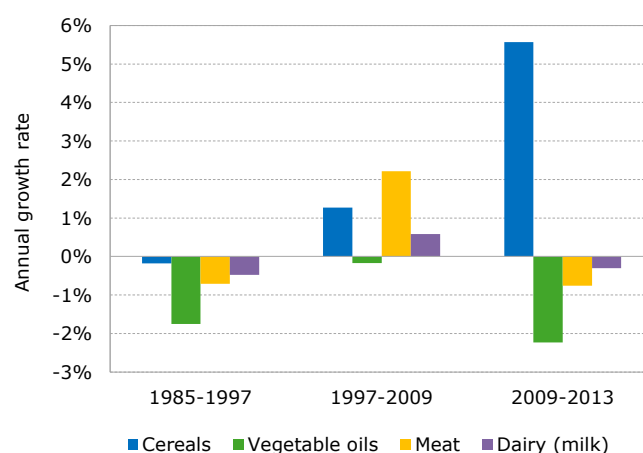
Regarding future prospects<sup>14</sup>, despite of its recent economic slowdown, Brazil is expected to maintain its solid growth, with an average GDP growth of 3.7%

<sup>13</sup> C. Valdes *et al.* (2009), 'Brazil's Changing Food Demand Challenges the Farm Sector'. Choices, AAEA, 24(2).

<sup>14</sup> OECD-FAO Agricultural Outlook 2014-2023.

over the next 10 years and to remain one of the main drivers for world economic growth. Due to an anticipated further currency depreciation compared to the US, Brazil could maintain its competitive export position for many agricultural products. Brazil will remain the world's leading sugar exporter with around 50% of world trade. Bio-ethanol production will also further expand. Brazil will also account for the greatest share of additional beef produced and remains one of the main oilseed exporters.

**Graph 5 Evolution of self-sufficiency in Brazil, by commodity**



Note: Self-sufficiency computed as Production / (Production + Imports - Exports).

Source: DG Agriculture and Rural Development based on data from FAO (Faostat).

## 6. Russia<sup>15</sup>

As opposed to other emerging countries, the Russian population is shrinking (Table 4 in Annex). The GDP on the contrary increased considerably in the period after the Russian crisis in 1997, with growth rate numbers above 4.5%. Growth was still positive before the recent crisis, although not as high as previously. Russia was also quite strongly hit by the 2009 economic crisis, with GDP growth following a volatile path and the Russian economy is currently in turmoil. The population decline combined with the growth in GDP triggered a strong upward increase in (real) income per capita, with a 70% increase in the last period compared to 1997-2009. The wealth is not only accumulated by the highest income households, as the share of middle income households in total income remains fairly constant. The expenditure on food in total expenditure declined from 52% in 2000 to 33%

<sup>15</sup> As it is difficult to have reliable data for Russia before 1992, we restrict our analysis to the last two periods.

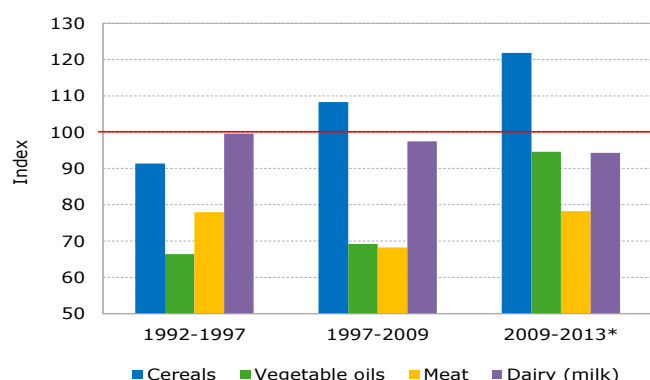
in 2007<sup>16</sup> (FAO household survey), and as a result per capita income increase has mainly shifted to non-food expenditure. From 2000 to 2013, the change in CPI for food is, although in line with the general change in CPI, spectacular (times 4).

The total calorie intake has steadily increased over the periods and exceeds the world average. Cereal consumption per capita remains more or less stable while meat and vegetable oils show positive growth rates. Meat consumption varies more, with a recovery in the current period compared to the previous one.

From a production perspective, a positive growth rate is achieved for meat, while vegetable oils remain stable and cereal and especially milk production growth are declining.

Russia is only self-sufficient for cereals, while it depends heavily on imports for meat, and to a lesser extend for milk and vegetable oils (Graph 6). For dairy products, Russia's self-sufficiency decreased over the different periods. Russia's agricultural product imports exceed exports (by 4 times in value). Main imported products (in value) are sugar, beef, pork, cheese, fruits and vegetables. For vegetables e.g. self-sufficiency decreased from nearly 90% in early 2000 to 77% in 2013. Import growth is also accelerating compared to the previous period. The main exported product is wheat.

**Graph 6 Evolution of self-sufficiency in Russia, by commodity**



\*2009-2011 for Dairy (milk).

Note: Self-sufficiency computed as Production / (Production + Imports - Exports); figures above 100 indicate self-sufficiency.

Source: DG Agriculture and Rural Development based on data from FAO ([Faostat](#)).

In the medium term, Russian population is projected to shrink further, while its GDP is expected to grow moderately (around 3% p.a.). Per capita meat consumption is expected to go on increasing and will mainly be captured by poultry. Russia's cereal and meat (particularly beef and pig meat) production are projected to grow further due to government programs aimed at reducing import dependency, reducing Russia's net meat imports significantly. As milk production is projected to remain virtually stable, Russia is expected to remain the main world importer of cheese and butter.

## 7. Sub-Saharan Africa

Sub-Saharan Africa is expected to become one of the regions of growth in the coming decades, both on the demand and supply side. A large consumer base is available, expected to grow further in numbers as well as in prosperity. On the supply side, the two main promising assets are its vast agricultural area as well as its extensive labour force.

As indicated by a FAO-study<sup>17</sup>, Africa shows a food trade deficit since the mid 1970's, due to strong population growth, low and stagnating agricultural productivity, policy distortions, weak institutions and poor infrastructure. Sub-Saharan Africa shows high annual population growth rates of nearly 3%, doubling its population over a period of 30 years (Table 5 in Annex). Available income per capita remains low compared to the rest of the world, but growth rates are improving. The same story holds for the total food supply per capita, which is far below the world average and is only growing at a small pace below 1% per year (Graph 7). Similarly to India, animal products are largely absent in the Sub-Saharan diet, which mainly consists of cereals, roots and tubers.

Urbanisation is rapidly increasing (urban population increased from around 20% in 1961 to 40% in 2013), having an influence on the available income and the dietary preferences. Food expenditure as percentage of total expenditure averages 45%, with extremes of 73% in Nigeria and Tanzania<sup>17</sup>. Demand for cereals, meat and especially dairy products also grow fast with increasing income.

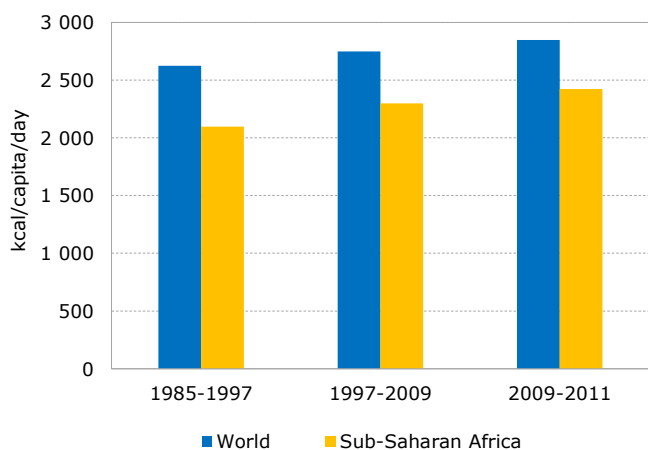
The Sub-Saharan region shows high production growth numbers for all commodities over the different periods, although these are not sufficient to meet the rising domestic demand. Self-sufficiency is decreasing

<sup>16</sup> In 2009 it increased again to 35.4% due to the economic crisis.

<sup>17</sup> FAO (2012), [Why has Africa become a net food importer](#).

for all commodities with the exception of dairy, where a status-quo below the self-sufficiency border is maintained. Especially for vegetable oils, a core element of the diet, the situation has worsened over the different periods.

**Graph 7 Total food supply per capita in the World and Sub-Saharan Africa**



Source: DG Agriculture and Rural Development based on data from FAO ([Faostat](#)).

The outlook for Africa's economic and agricultural performance is expected to be positive<sup>18</sup>. Economic growth is projected to remain strong, while the trade deficit is expected to increase due to higher income driven demand increase. The income growth of the middle class is triggering dietary changes towards more processed and perishable food. The consumption share of purchased food, amongst others from supermarkets, is expected to increase at the expense of home-grown products. This offers opportunities for the agribusiness development but might put pressure on smallholders and small enterprises.

<sup>18</sup> IFPRI (2015), 2014-2015 Global food policy report. Washington, DC: International Food Policy Institute.

## 8. Conclusions

Analysis of demand patterns showed that the epicentre of increased future growth resides in the developing countries. A closer look on the BRIC and Sub-Saharan Africa reveals important differences in food demand drivers and in the achievement of self-sufficiency across these countries.

China's economic and agricultural growth is expected to remain solid, although at a lower growth level compared to the past. During the transition towards more qualitative and diversified production, China does not look likely to be able to fully close the trade deficit and become self-sufficient. Fish and dairy products will become increasingly important in the Chinese diet.

India on its turn is struggling to get its nutrient intake growth in line with its economic growth. It is expected that a shift in nutrient intake will take place further away from cereals towards meat, dairy, sugar, oilseeds and vegetables. India's influence on world trade will depend on the policy agenda trading-off between domestic consumption and export growth.

Brazil, with its positive trade surplus, is expected to remain an important player on the world market, albeit at a slower pace as domestic consumption is catching up.

Russia is struggling with its self-sufficiency for the majority of products, especially with growing GDP and income per capita. Government programs are set-up to reduce the dependence on meat and cereal imports.

Sub-Saharan Africa is lagging behind with respect to food and nutrition intake. Self-sufficiency is also decreasing. General GDP and income growth, especially of the middle class, is projected to trigger changes in food intake towards more quality and processed food.

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## Annex – Demand indicators by country/region

**Table 1 Demand indicators for China from 1985 onwards**

Indicator	Average quantity			Annual growth rates		
	1985-1997	1997-2009	2009-2013	1985-1997	1997-2009	2009-2013
<b>Population</b> (million inhabitants)	1 146	1 286	1 344	1.3%	0.7%	0.5%
<b>GDP</b> (billion USD, constant 2005)	663	2 039	4 179	10.0%	9.8%	8.8%
<b>Income per capita</b> (USD/capita, constant 2005)	473	1 229	2 277	9.0%	8.4%	7.2%
<b>Share of middle income households (%)</b> *	51	47	48	-	-	-
<b>Consumption</b> (million tonnes):						
Cereals	333	383	453	2.2%	0.8%	4.7%
Vegetable oils	8	20	31	7.1%	7.6%	3.1%
Meat	34	63	82	7.4%	3.9%	3.0%
Dairy (milk)	9	26	47	5.8%	11.8%	3.5%
<b>Total food supply</b> (kcal/capita/day):	2 530	2 855	3 065	1.0%	0.8%	0.9%
Cereals	1 577	1 485	1 422	-0.5%	-0.9%	0.1%
Vegetable oils	134	173	191	3.0%	2.4%	-2.4%
Meat	233	375	461	5.1%	3.1%	2.2%
Dairy	12	33	57	4.6%	10.8%	2.4%
<b>Self-sufficiency</b> **						
Cereals	97	100	97	0.0%	-0.1%	-0.5%
Vegetable oils	81	71	66	-2.3%	-1.3%	1.0%
Meat	101	99	98	-0.1%	-0.2%	-0.2%
Dairy (milk)	86	92	88	0.6%	0.4%	-3.3%

\*Share of the national income possessed by the 60% middle income households.

\*\*Computed as Production – Net exports / Consumption; figures above 100 indicate self-sufficiency.

Sources: DG Agriculture and Rural Development based on data from the World Bank ([World Development Indicators](#)) and FAO ([Faostat](#)).

**Table 2 Demand indicators for India from 1985 onwards**

Indicator	Average quantity			Annual growth rates		
	1985-1997	1997-2009	2009-2013	1985-1997	1997-2009	2009-2013
<b>Population</b> (million inhabitants)	886	1 092	1 221	2.0%	1.5%	1.3%
<b>GDP</b> (billion USD, constant 2005)	368	761	1 316	5.6%	7.0%	7.2%
<b>Income per capita</b> (USD/capita, constant 2005)	353	587	913	3.6%	5.2%	5.6%
<b>Share of middle income households (%)</b> *	50	49	49	-	-	-
<b>Consumption</b> (million tonnes):						
Cereals	158	190	212	2.6%	1.3%	1.4%
Vegetable oils	6	12	17	4.9%	4.9%	4.4%
Meat	4	5	5	2.1%	2.4%	-3.4%
Dairy (milk)	56	90	126	4.0%	4.2%	3.6%
<b>Total food supply</b> (kcal/capita/day):	2 274	2 347	2 441	0.8%	0.2%	0.5%
Cereals	1 455	1 409	1 376	0.5%	-0.4%	-0.4%
Vegetable oils	156	200	215	3.7%	0.9%	-2.1%
Meat	18	17	17	0.0%	0.0%	-3.1%
Dairy	102	105	126	0.5%	0.9%	1.8%
<b>Self-sufficiency</b> **						
Cereals	101	103	106	0.0%	0.2%	2.1%
Vegetable oils	87	62	53	1.0%	-4.2%	-2.6%
Meat	103	108	121	0.2%	0.5%	4.8%
Dairy (milk)	100	100	101	0.1%	0.0%	0.3%

\*Share of the national income possessed by the 60% middle income households.

\*\*Computed as Production – Net exports / Consumption; figures above 100 indicate self-sufficiency.

Sources: DG Agriculture and Rural Development based on data from the World Bank ([World Development Indicators](#)) and FAO ([Faostat](#)).



**Table 3 Demand indicators for Brazil from 1985 onwards**

Indicator	Average quantity			Annual growth rates		
	1985-1997	1997-2009	2009-2013	1985-1997	1997-2009	2009-2013
<b>Population</b> (million inhabitants)	152	181	197	1.7%	1.2%	0.9%
<b>GDP</b> (billion USD, constant 2005)	632	849	1 110	2.6%	2.8%	3.4%
<b>Income per capita</b> (USD/capita, constant 2005)	3 681	3 918	4 803	1.5%	0.7%	3.3%
<b>Share of middle income households (%)</b> *	34	36	39	-	-	-
<b>Consumption</b> (million tonnes):						
Cereals	45	59	72	2.7%	2.4%	4.0%
Vegetable oils	3	4	6	2.3%	6.2%	6.6%
Meat	8	14	18	7.3%	2.7%	4.4%
Dairy (milk)	17	24	32	4.2%	2.9%	3.1%
<b>Total food supply</b> (kcal/capita/day):	2 753	3 003	3 239	0.7%	0.9%	0.8%
Cereals	918	932	957	-0.8%	0.7%	0.3%
Vegetable oils	340	393	428	0.5%	2.3%	0.6%
Meat	234	358	422	6.2%	1.7%	3.5%
Dairy	160	199	247	3.0%	1.7%	2.2%
<b>Self-sufficiency</b> **						
Cereals	86	91	110	-0.2%	1.3%	5.6%
Vegetable oils	138	146	120	-1.8%	-0.2%	-2.2%
Meat	107	126	134	-0.7%	2.2%	-0.8%
Dairy (milk)	93	97	98	-0.5%	0.6%	-0.3%

\*Share of the national income possessed by the 60% middle income households.

\*\*Computed as Production – Net exports / Consumption; figures above 100 indicate self-sufficiency.

Sources: DG Agriculture and Rural Development based on data from the World Bank ([World Development Indicators](#)) and FAO ([Faostat](#)).

**Table 4 Demand indicators for Russia from 1992 onwards**

Indicator	Average quantity			Annual growth rates	
	1992-1997	1997-2009	2009-2013*	1997-2009	2009-2013*
<b>Population</b> (million inhabitants)	148	145	143	-0.3%	0.3%
<b>GDP</b> (billion USD, constant 2005)	533	722	958	5.4%	3.0%
<b>Income per capita</b> (USD/capita, constant 2005)	2 357	3 349	5 832	6.8%	8.8%
<b>Share of middle income households (%)</b> **	43	48	47	-	-
<b>Consumption</b> (million tonnes):					
Cereals	88	70	70	0.9%	-1.6%
Vegetable oils	1	2	3	5.5%	3.4%
Meat	8	8	10	2.0%	2.4%
Dairy (milk)	41	33	34	-0.4%	-0.2%
<b>Total food supply</b> (kcal/capita/day):	2 892	3 074	3 322	1.2%	1.2%
Cereals	1 185	1 170	1 163	-0.1%	0.4%
Vegetable oils	165	251	309	3.8%	3.0%
Meat	281	240	279	0.6%	1.4%
Dairy	196	249	287	2.1%	0.0%
<b>Self-sufficiency</b> ***					
Cereals	91	108	122	2.5%	-2.7%
Vegetable oils	66	69	95	7.5%	-2.2%
Meat	78	68	78	1.2%	3.5%
Dairy (milk)	100	97	94	0.0%	-1.2%

\*2009-2011 for Food supply (all) and Self-sufficiency for Dairy (milk); 2009-2012 for Income per capita; 2009-2012 for GDP.

\*\*Share of the national income possessed by the 60% middle income households.

\*\*\*Computed as Production – Net exports / Consumption; figures above 100 indicate self-sufficiency.

Sources: DG Agriculture and Rural Development based on data from the World Bank ([World Development Indicators](#)), FAO ([Faostat](#)) and OECD-FAO ([OECD.Stat](#)).

**Table 5 Demand indicators for Sub-Saharan Africa from 1985 onwards**

Indicator	Average quantity			Annual growth rates		
	1985-1997	1997-2009	2009-2013*	1985-1997	1997-2009	2009-2013*
<b>Population</b> (million inhabitants)	523	721	888	2.8%	2.7%	2.7%
<b>GDP</b> (billion USD, constant 2005)	417	613	882	1.8%	4.5%	4.3%
<b>Income per capita</b> (USD/capita, constant 2005)	602	621	782	-0.9%	1.7%	3.0%
<b>Consumption</b> (million tonnes):						
Cereals	63	93	126	3.2%	3.9%	2.9%
Vegetable oils	3	6	8	4.4%	5.2%	1.8%
Meat	5	7	9	2.1%	3.8%	3.5%
Dairy (milk)	10	15	22	0.7%	5.8%	2.2%
<b>Total food supply</b> (kcal/capita/day):	2 097	2 298	2 423	0.8%	0.7%	0.9%
Cereals	1 024	1 078	1 139	0.5%	0.6%	0.5%
Vegetable oils	173	198	196	1.6%	0.4%	0.6%
Meat	56	60	65	0.0%	0.9%	2.3%
Dairy	40	44	52	-1.3%	2.7%	2.8%
<b>Self-sufficiency</b> ***						
Cereals	86	81	80	0.2%	-0.8%	1.0%
Vegetable oils	90	73	60	-0.6%	-2.4%	-1.2%
Meat	97	94	89	-0.1%	-0.5%	-1.1%
Dairy (milk)	82	86	87	1.6%	0.1%	-0.1%

\*2009-2011 for Food supply (all) and Self-sufficiency for Dairy (milk); Income per capita data starts in 1990.

\*\*Share of the national income possessed by the 60% middle income households.

\*\*\*Computed as Production – Net exports / Consumption; figures above 100 indicate self-sufficiency.

Sources: DG Agriculture and Rural Development based on data from the World Bank ([World Development Indicators](#)), FAO ([Faostat](#)) and OECD-FAO ([OECD.Stat](#)).