

Wheat: Technological and Economic Options from a Global Perspective

Presentation Dr. Yelto Zimmer¹ at the
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1. Outlook for global commodity markets less bullish

It has to be expected that the global agricultural sector will enter into a phase of a slow-down regarding the global demand for food. This development will be driven by a slow-down in population growth, an increasing share of global population that has reached some degree of saturation with respect to food consumption, and an increasing share of elderly people.

Therefore, it should be assumed that in the mid to long term global agricultural markets will return to a lasting trend of a decline in real commodity prices as we have witnessed for more than a century. And hence we will most likely see commodity prices coming down again. In any case it is not realistic to assume that global wheat prices will be as high as 270 USD/t for the remainder of the decade and beyond as projected by OECD and others.

agri benchmark based analysis suggest that at least for a short term it might be possible that farm gate wheat prices can be as low as 80 to 100 USD/t. The reason for this: at this price level most wheat producers in the *agri benchmark* network will be able to generate a positive gross margin. This in turn implies, with an ongoing production, that these producers will reduce their losses because they will be able to cover at least parts of their fixed cost.

However, it should be noted, that the global wheat market – more than e.g. the global corn trade – is expected to grow by more than 2 % annually.

When looking at *agri benchmark* figures it appears that well managed Russian wheat producers are relatively well positioned with their relatively low cost of production. However, this is mainly because of low land cost, which of course will increase to internationally comparable levels as the crop production in Russia evolves. Furthermore, it has to be noted that Russian farm gate prices are about 50 USD/t lower than the international peers, which are even more remotely located. Hypothesis about the causes for these differences are:

- (a) Russian wheat quality tends to be lower when compared to Canadian, US, and Australian farms.
- (b) The performance of the infrastructure is lower when compared to major international competitors. Therefore, cost of shipping produce to harbors is higher and discounts for farmers are higher, too.
- (c) There is a lack of competition among service providers in transport and logistics. This would enable them to generate additional rent income at the expense of growers.

2. Russian wheat production: a lot of room for improved productivity

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In order to assess the wheat yield potential for the Central Black Soil Region (CBSR) a comparison with data from North Dakota in the USA is undertaken. These two regions are comparable as far as natural and climatic conditions are concerned. However, they tend to be a bit better in CBSR as far as precipitation is concerned. The first finding is that wheat yields in both regions went up improved approximately at the same pace with 1.5 % per annum, but wheat yields in North Dakota seem to be higher by a margin of about 0.5 t/ha.

The second finding is that water productivity of cropping systems applied in North Dakota is not only higher, but also the growth is higher than in CBSR. Furthermore, the statistical analysis also suggests that wheat yields in CBSR are much more affected by other issues than water supply. Only 10 % of the variation in yields can be explained by water availability while this figure is more than twice as high in North Dakota.

3. Potential for the CBSR region to become a major producer in corn and soybeans

When looking at the evolution of acreage it appears that corn and soybeans acreage – while starting for a rather low level – has been expanded by more than 30 % annually over the last 13 years.

As far as figures from a typical *agri benchmark* farm in the CBSR show, this increase should have been driven by superior economics: in two of three years corn profits exceeded those from wheat by about 200 USD/ha and more. However, it should be noted that in 2010, when crop production was heavily affected by draught, the losses realized in corn were 100 USD/ha higher than in wheat.

In order to assess the perspectives for the competition between corn and wheat, the evolution of yields does provide some insight: While corn and soybean yields increased by more than 7 % respectively 6 % per year wheat yields only grew by about 1 %. Assuming that this trend would continue until 2021 and using official yield statistics it appears that the current advantage in gross revenue in the CBSR of about 300 USD/ha would rise to about 500 USD/ha. A similar development can be expected for the South region of Russia – even on a lower level.

4. Conclusions

- (1) Both, growers and policy makers should be prepared for an ongoing downward trend on global wheat market prices. In the short run farm gate prices may go down as low as 80 to 100 USD/t and wheat production (as other commodities) will still be rather stable.
- (2) Global commodity markets are constantly growing – wheat trade by more than 2.5 % p.a. Hence increasing wheat production will most likely find a market.
- (3) When comparing international farm gate prices, it should be possible to increase Russian farm gate prices. Further investigation is advised in order to figure out whether and to what degree this price gap is driven by one or more of the following factors: (a) quality issues of the produce which leads to a discount on global markets, (b) a poorly developed and performing infrastructure and/or (c) a lack of competition among service providers in the transport and logistics industry.

- (4) A comparison of wheat yields in the Central Black Soil Region and North Dakota shows that yields in the CBSR tend to be low even though climatic conditions are more favorable in Russia. In particular the production systems applied in the North American state seem to be more productive when it comes to use the scarcest factor - water: While in North Dakota from every mm of precipitation 9 kg of wheat are being produced, the respective figure for CBSR is only roughly 6 kg. This finding suggests that there should be room to boost wheat output significantly in the CBSR and beyond.
- (5) Both, evolution of yields and economics suggest: major transition in CBSR to a corn/soybean system which has been established on comparable sites around the globe is rather likely.
- But:
- (a) compared to wheat financial risk and liquidity requirements are higher in corn .
 - (b) as the late harvest of corn results in higher moisture contents than in wheat, investment in additional drying capacities is needed.
 - (c) access to western technology (seeds and machinery) and know how is important to fully exploit the potential.