

SUSTAINABILITY ASPECTS OF THE GRAIN SECTOR

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ABSTRACT

The present study tries to answer questions and uncertainties related to economic, social, and environmental sustainability in the grain sector. We take the view that the notion of sustainability can be defined on a case-by-case basis. In our case, grain production will provide the context of this concept. In respect to economic sustainability, the following question will be analyzed: Can a given sector be economically efficient and competitive in the long-run? As regards the environmental dimension, new environmentally friendly cultivation techniques can support the sector to develop in a sustainable way. In the long-run, nature will decide what is sustainable and what is not. We actually believe that from the social dimension sustainability should mean keeping consumption at a constant level. This kind of approach is particularly important from the point of view of the grain sector, since this sector produces significant amount of direct and indirect ingredients for food. We consider it important to highlight the aforementioned standpoint, because the world population is continuously growing, while the amount of cultivated area in the grain sector has not indicated significant changes over the past few years. Without increasing yields, serious reduction may occur in long-term per capita production of the grain sector. This means that current consumption level will not be sustainable in medium-term. Over a longer period it may even influence the consumption level of other food products.

Keywords: grain sector, sustainability, competitiveness, production, consumption level

INTRODUCTION

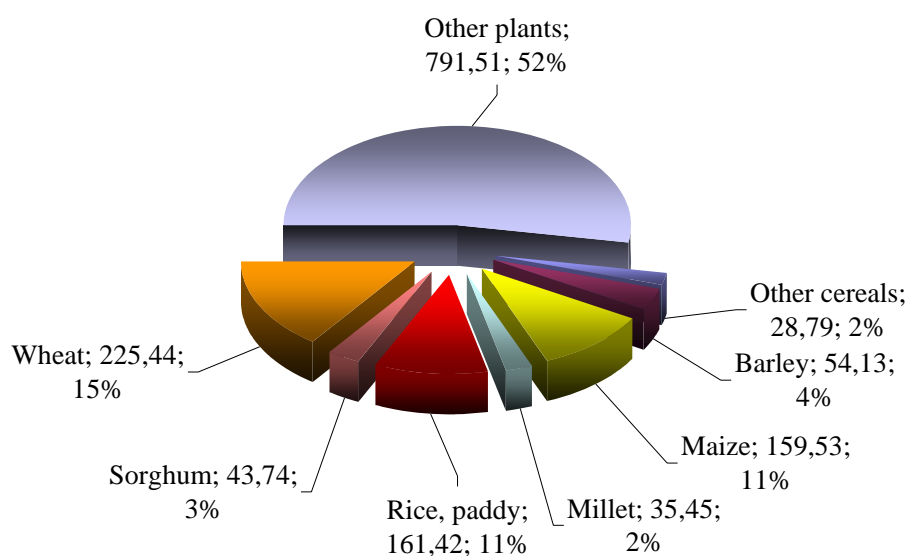
Sustainability has three main dimensions: social, economic and environmental. Present study mainly introduces the social and economic aspects of this concept. But what is sustainability? As in the summary we have already realized sustainability can not be defined by a concept hidden in an abstract period. Today's important issue is how demand for continuous development of human world can be satisfied in sustainable way. Can serious social differences be reduced between developed and developing world? Or on the contrary will this aforementioned difference increase? Can difference between classes of society be sustained in long-term? In the economic aspect of sustainability we examine the long-term competitiveness of the sector. Will so much income be generated in the sector that farmers will continue production in the future as well?

World has plant production area of around 1500 million hectares. *Figure 1* shows the sowing structure of the world in 2009. In this figure it can be properly seen that

growers are producing cereals on 48% of sowing area in the world. Corn, rice and wheat have to be pointed out within cereals. Share of these three plants is 36% from entire sowing area, which is equivalent to 546 hectares. Wheat has the largest proportion within cereals. Owing to its sowing area of 225 million hectares it occupies 15% of area being under plant production in the world. Proportions of three main cereals are stable on average of number of years. As per me in the future significant displacement are not expected in sowing structure.

Figure 1

**Division of sowing area in the world in 2009
(in million hectares and percentage)**



Source: *FAO*, 2011

Beside wheat, proportion of the previously mentioned rice and corn is also significant. Proportion of remaining cereals in comparison to entire sowing area of the world is under 5%.

SUSTAINABILITY OF WHEAT SECTOR

Social dimension

Table 1 shows the tendency of world's wheat production from 1990 to 2009. There are minimal differences in case of sowing area regarding each year.

The table illustrates the world's wheat production between 1990 and 2009. In our view social sustainability is the maintenance of current consumption level. It can be seen at first sight that in the last twenty years there was no significant change neither in totally produced quantity in the world nor in the size of the arable land of wheat. However the world population continuously increases. The size of per capita

production area reduces in the world, by contrast per capita quantity of produced wheat does not reduce significantly.

Table 1

Wheat production is between 1990 and 2009

Years	Area harvested (million hectares)	Production (million tons)	Average yield (t/ha)	Area/capita (hectare/capita)	Production/capita (kg/capita/year)
1990	231.26	592.31	2.56	0.0437	111.9880
1991	223.35	546.88	2.45	0.0416	101.8027
1992	222.49	565.29	2.54	0.0408	103.5951
1993	222.95	564.47	2.53	0.0403	101.9122
1994	215.12	527.04	2.45	0.0383	93.7892
1995	216.32	542.60	2.51	0.0379	95.1881
1996	226.85	585.20	2.58	0.0392	101.2357
1997	226.25	613.36	2.71	0.0386	104.6855
1998	220.11	593.53	2.70	0.0371	99.9768
1999	213.34	587.62	2.75	0.0355	97.7170
2000	215.44	585.69	2.72	0.0354	96.1781
2001	214.60	589.82	2.75	0.0348	95.6557
2002	213.81	574.75	2.69	0.0343	92.0721
2003	207.66	560.13	2.70	0.0329	88.6559
2004	216.88	632.67	2.92	0.0339	98.9515
2005	219.74	626.84	2.85	0.0340	96.8895
2006	211.82	602.89	2.85	0.0324	92.0959
2007	216.65	612.61	2.83	0.0327	92.4841
2008	222.76	683.41	3.07	0.0332	101.9860
2009	225.44	681.92	3.02	0.0333	100.6256

Source: *FAO*, 2011

It is true that no single year achieved the per capita yield of the year 1990. However there is a kind of stagnation. The reason is that the yields have increased somewhat in the past 20 years. The question is how long the current level of consumption will be maintained by increasing the yields? We believe that the sector will be sustainable in this regard, since the yield was about 3 tons/ha in the world in 2009. This plant has much larger genetic potential, of course each country can exploit it differently due to their different conditions. Even if the current level of consumption is theoretically sustainable apart from that people are dying of hunger in the world and that is another serious problem which we have to face.

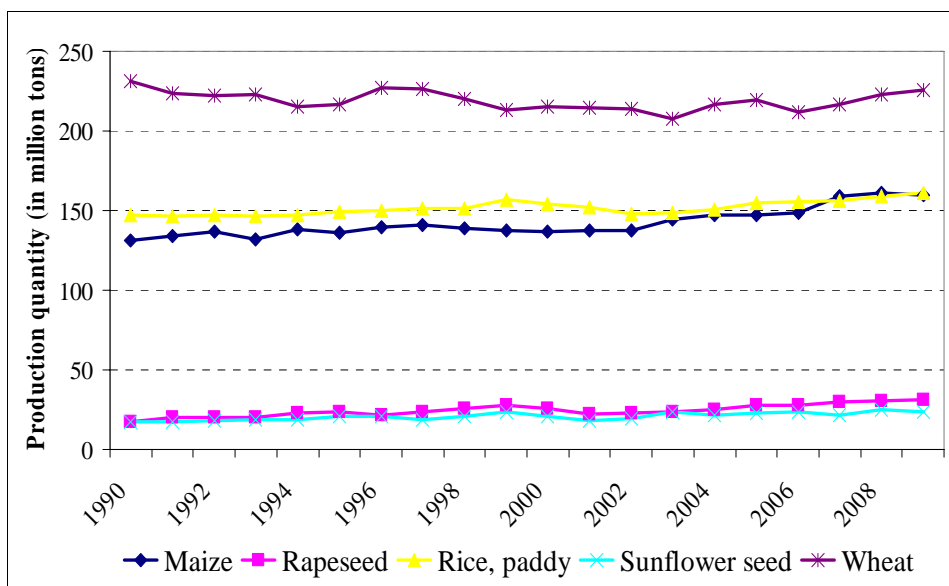
What about them? Can the social gap be maintained between the Third World and us? Not in our view, because it is only a matter of time and the ever deepening social tensions can also cause the downfall of the current system.

Economic dimension

Will so much income be generated in the sector that farmers will continue production in the future as well? In this case we compared the wheat sowing area with the evaluation of other important crops' sowing area (Figure 2).

Figure 2

The evaluation of the major crops' sowing area between 1990 and 2009



Source: FAO, 2011

The wheat sowing area stagnated in the investigation period. However rape, maize, sunflower and rice increased slowly but continuously. Increase in the sowing area of maize, sunflower and rape is partly due to their energy recovery and the higher profit arising from it. The wheat sowing area has not reduced despite the increase in the sowing area of these crops.

In our view the world economic importance of wheat production sector has not been reduced in short-term by the more favorable profitability of other crops and connected with this we can also claim that the aforementioned level of consumption can also be maintained by the increase in yields.

CONCLUSIONS

Overall in our view the wheat sector can be sustainable in short term. In social terms the per capita wheat production can be sustainable despite the growing world population due to the increase in specific yields. Another question is how long this situation can be maintained with the complete utilization of the current genetic potential if the population growth does not stop.

Regarding the economic dimension of sustainability it was found that although there was a slight increase in the sowing area of other important crops, but this increase was not to the detriment of the wheat's sowing area. In Hungary in many cases the profitability of the sector is lower than in case of other crops and it several times caused that the Hungarian producers decreased the ratio of wheat in their sowing structure. However this is not a permanent phenomenon, since regarding the situation of the sector in 2010 and the high wheat prices expected in 2011 the profitability of this sector can be considered competitive against other crops with similar production technology. The high wheat price due to the high food prices is a natural phenomenon and it refers to the social dimension again. Whether these prices are sustainable in the middle of the serious social differences being present in the world? In our view it can lead to serious social tensions in those developing countries, where the shortage of food is a decisive problem.

REFERENCE

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