

**INEFFICIENCIES OF INSTITUTIONAL
ARRANGEMENTS IN INTERNATIONAL
WHEAT TRADE – A PRELIMINARY
INVESTIGATION OF EASTERN EUROPE
AND SOUTH AFRICA**

by

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INEFFICIENCIES OF INSTITUTIONAL ARRANGEMENTS IN INTERNATIONAL WHEAT TRADE – A PRELIMINARY INVESTIGATION OF EASTERN EUROPE AND SOUTH AFRICA

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1. INTRODUCTION

The beginning of the new century marked important changes in the world wheat market. These changes relate to traditional wheat export countries. In future, non-traditional wheat export countries in Eastern Europe, such as the Ukraine, may increasingly put pressure on traditional wheat suppliers in the world market.

Following a protracted transformation crisis, some of the agricultural sectors of the former Soviet Union Republic recovered. A number of these sectors have the potential to become important agricultural exporters. For instance, due to excellent growing conditions in the 2001/02-marketing year, the Ukraine exported 5,493 million tons of wheat and became the sixth largest world exporter after the European Union, USA, Australia, Canada and the Argentine. Ukrainian grain export totaled nine million tons, or 22,7% of Ukrainian agricultural production. Future growth was expected. According to the Ukrainian Agricultural Confederation, grain exports will total 12,8 million ton in the 2003-calendar year, with exports forecasted to reach 13,5 million tons and 15 million tons in 2004 and 2005 respectively. The actual total grain export in the 2002/03-marketing year was 11,2 million tons (28,8% of grain production), including seven million tons of wheat (33,9% of wheat production). The continued growth in wheat exports did not realise as previously expected.

The Ukraine has excellent natural resources, including fertile soil, and a suitable climate to support future increases in agricultural production. The average yield during 1990 has been 4,02 tons per hectare (winter wheat) and 3,02 tons per hectare (spring wheat). During 2001 the average yields were much lower than those attained in 1990 with winter and spring wheat yielding only 3,14 tons per hectare and 2,06 tons per hectare respectively. These yield levels were also considerably lower than those reached in the European Union. The 1990-level of wheat production in the Ukraine reached 30,374 million tons, a level of production that has not been equaled since. It does, however, confirm the Ukraine's great potential as a wheat producer. In comparison to the previous year, production in 2001 doubled by 100,9 percent from 10,2 million tons to 21,3 million tons.

The Ukraine's production potential, coupled with its changing institutional environment, may have considerable consequences for traditional wheat export countries and other small wheat importing countries such as South Africa. Production and exports are, however, limited due to a lack of comparative technology and the absence of a transport and marketing

infrastructure. Nevertheless, institutional reforms are an ongoing process. According to White (2003) the Canadian Wheat Board stated that non-traditional exporters have the potential to diversify world wheat supply geographically and permanently as well as to reduce the chance of strong price movements at times when uncertainties related to the weather prevail. Early in the 2002-crop year, grain from non-traditional suppliers was offered for approximately US\$100 less per ton than that offered by traditional sources. Later in the same year, this differential tightened to about US\$40 per ton following a decrease in traditional exporters' top-end prices.

2. PROBLEM STATEMENT AND RESEARCH OBJECTIVES

South Africa's current institutional arrangements in the wheat marketing environment may not be efficient enough to counter the effect altered wheat production and export by a number of East European countries will have on the market.

Under certain world market conditions it is possible that wheat exports from non-traditional countries to South Africa could be a feasible option -- especially when non-traditional wheat exporting countries produce surplus wheat, while traditional export countries suffer shortages. As the USA's wheat prices increase, South African import tariffs drop, resulting in excellent opportunities for international traders to export wheat from non-traditional export countries to South Africa. Accordingly, South African import parity prices may be influenced by the prices of non-traditional export countries. As a result, South African producers do not share in the higher prices received by producers in traditional export countries. Additionally, when the growing conditions in South Africa favour good yields (e.g. 2002-crop year), wheat of an even lower quality may find a market in South Africa.

Three problem areas can be identified that need to be addressed.

- a. Wheat prices in transitional East European countries seem to correlate poorly with international wheat prices governed by the USA.
- b. The ongoing institutional reforms with regard to infrastructure and the marketing environment increase the future comparative advantage of wheat producers in Eastern Europe.
- c. Southern Africa's institutional arrangements (wheat trade policy) are based on the price of wheat of a comparative quality in the United States of America.

For the purpose of this paper, and based on the aforementioned three problem areas, the following objectives are presented:

- a. A preliminary investigation to determine why the wheat price in some of the East European countries has a low correlation with global wheat prices has been conducted.

- b. The potential impact of institutional environment reforms on the future production of wheat in the Ukraine has been analysed.
- c. The possible future implications for South Africa have been identified.

3. METHODOLOGY

The methods and techniques used include a relevant literature study of primary and secondary sources as well as unstructured interviews with several companies in the Ukrainian and South African grain supply chain. The sources utilised to obtain marketing information include internet-based enquiries as well as scientific and public research reports.

The preliminary investigation is based on the theory of new institutional economics. Interpretations are provided, and analytical and comparative methods are used to explain the future developments in the grain markets of South Africa and Ukraine.

Slangen (2000) developed a framework used by Van Meijel (2002) to analyse the institutional setting of agriculture in the Ukraine (Figure 1).

According to Van Meijel (2002), institutions and good governance are very important in the transition process of European countries. Institutions have an effect on national welfare, and are thus important from an economic point of view.

The institutional environment, institutional arrangements or governance structures, and the competencies of people and organisations impact on a country's agriculture. The institutional environment comprises man-made constraints, which structure political, economic and social interactions. The institutional environment deals with the rules of the game. It defines the governance structure's environment on a daily basis. Institutional arrangements are mechanisms employed to coordinate economic transactions, and are also known as governance structures. These arrangements comprise both formal and informal rules, and deal with the play of the game (Slangen, 2000), (Van Meijel, 2002).

There are differences between the institutional environment and governance structures. First of all, a governance structure is a way of implementing and controlling the rules of the game as defined by the institutional environment. The agricultural sector has to develop new institutional arrangements to counter changes in the institutional environment. Secondly, the institutional environment operates at a higher level of generalisation than markets. And, thirdly, the institutional environment facilitates and supports the functioning of the institutional arrangements (Slangen, 2000), (Van Meijel, 2002).

According to Nooteboom (1999) and Van Meijel (2002), competencies are embodied in people and organisations. At the organisational level, competencies include elements of the institutional environment. People and organisations are involved in developing agriculture.

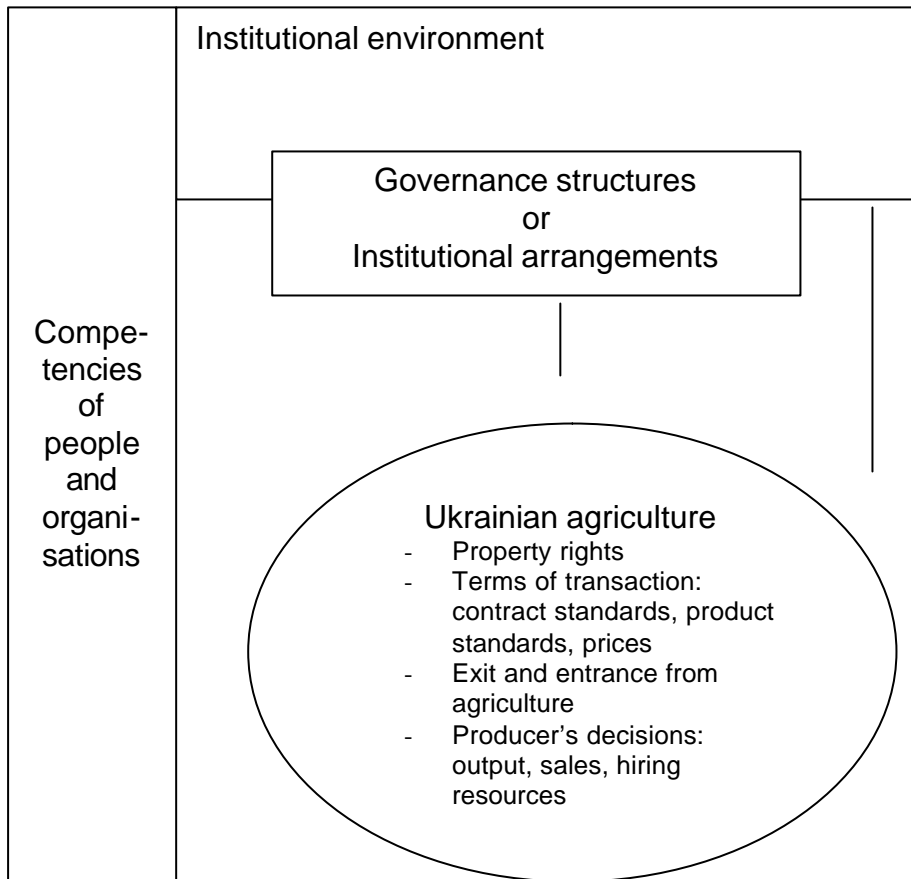


Figure 1: The impact of institutions on Ukrainian agriculture
 Source: Van Meijel (2002) – Adapted by authors

Some of the specific elements of economic organisation and new institutional economics supporting the research objectives include:

- The efficiency principle. “If people are able to bargain together costlessly and can effectively implement and enforce their decisions, then the outcomes of economic activity will tend to be efficient.” (Milgrom and Roberts, 1992: 293).
- Property rights. “Individual accountability for performance is necessary for soviet farms to become as productive as their western counterparts” (Milgrom and Roberts, 1992: 297). “The existence of markets for productive assets is the most important feature of a market-exchange system based on private property” (Eggertson, 1999).
- Opportunistic behaviour. Opportunistic behaviour is described as self-interest behaviour. The existence of opportunistic behaviour results in distrust with regard to incomplete contracts. Because it is very difficult and expensive to answer the ex ante question whether opportunistic behaviour is involved, contracts are sometimes not even established (Van Meijel, 2002)

- Informational asymmetry. Informational asymmetry results in opportunistic behaviour. In situations such as these, information is unevenly distributed. This introduces the risk that some economic players may use their informational advantage to gain an economic advantage in executing transactions (Douma & Schreuder, 1998).

4. RESEARCH RESULTS

Wheat prices in East European countries correlate poorly with global wheat prices, and USA prices are not reflected on the Ukrainian wheat market. In July 2003 the decreasing USA wheat prices did not influence the price situation in the Ukraine where prices remained high. The Ukrainian wheat import tariffs create a buffer between the price level of traditional export countries and domestic prices in the Ukraine.

The decrease in wheat prices during November 2002 in the USA did also not influence prices on the Ukrainian wheat market. The vertical axis in Figure 2 represents the weekly price of wheat (US\$ per ton), and the horizontal axis the time period ranging from 4 January 2002 to 27 December 2002. The top graph represents the wheat futures price of the Chicago Board of Trade, while the bottom one represents the Ukraine's Free on Board wheat prices.

Due to lower wheat production in the traditional wheat export countries, international wheat prices increased during 2002. In the same year, the Ukraine experienced excellent growing conditions. This enabled the country to export wheat at competitive prices to the world market, irrespective of the dismal state of the infrastructure that has occasionally been considered as one of the most important obstacles to recovery and growth.

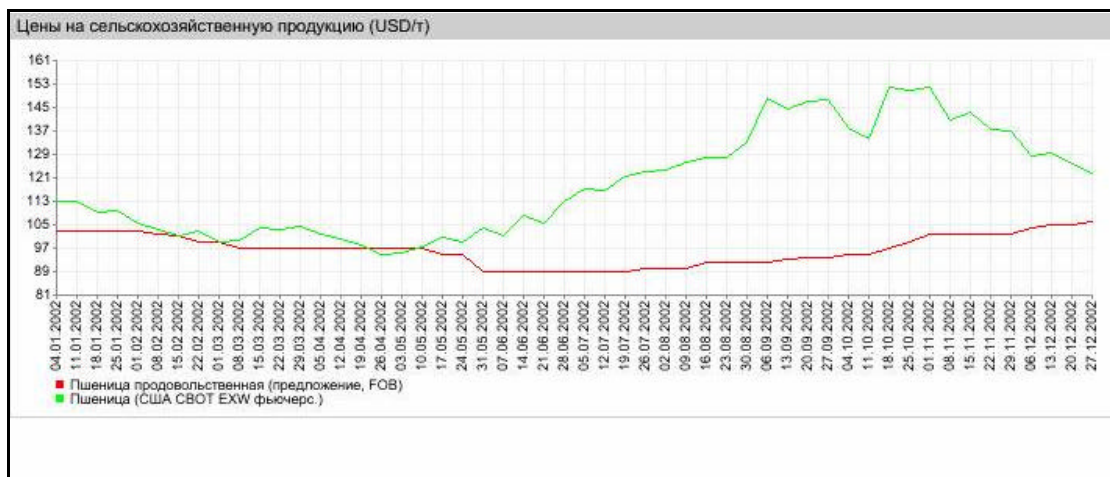


Figure 2: The Chicago Board of Trade wheat futures price and the Ukrainian FOB-price for 2002 (AIC-Infom, 2003).

Although most of the transitional countries have by now overcome the crises of the early 1990s and embarked on a path of economic growth, the role of infrastructure policy in the transition process is still the subject of debate on economic theory and policy making (Sugolov, Dodnov & Von Hirschhausen, 2003: 2). Utilising available production inputs, the transitional countries

produced 60% of the total output in 1993, while this figure grew to 73% in 2000. This level of technical efficiency was estimated relative to the most efficient transitional country. From 1993 to 2000, efficiency has even declined in the case of Russia and the Ukraine (Sugolov *et al*, 2003:15).

The agricultural output per worker decreased (Table 1).

Table 1: Agricultural output per agricultural worker (in comp. prices 1996)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Ukr. Gvrn.	7059	6887	6089	5777	4744	4923	4368	4107	4342

Between 1990 and 2000 labour productivity in terms of winter grain production decreased by 63,4 percent, while the decrease in terms of summer grain production reached 49,1 percent (Estimates of the Institute of Agrarian Economy, Kiev, Ukraine).

The economies of Ukrainian agricultural enterprises may, however, benefit in future from institutional reforms pertaining to property rights. In October 2001 the Ukrainian Parliament ratified the Land Code. In terms of this code, it will be possible to buy or sell land as from January 1, 2005. Until 2010, the size of a land parcel that can be privately owned will be limited to 100 hectares (Land Code of Ukraine, 2001).

It is also expected that future production increases will be ascribable to the utilisation of advanced technology and fertilizers, rather than to an increase in cultivated wheat fields. In the Ukraine the percentage of arable land in terms of total land resources is one of the highest in Europe with 65 hectares of arable land per 100 persons. In 2001, wheat's share of the total area cultivated for agricultural crops was 25,5 percent in comparison to 23,4% in 1990. For the period 1990 to 2001, the total area of agricultural crops decreased by 13,9% from 32,4 million hectares to 27,9 million hectares, with the area under wheat decreasing by 6,6 percent from 7,6 to 7,1 million hectares. Although the resources to increase the planting of wheat are available, they are not extensive.

Despite the constraints imposed by the institutional environment, the wheat industry still has important comparative cost advantages. In the Ukraine wheat production costs averaged 262 Ukrainian Grivna or US\$52.48 per ton in 2001. In the Moorreesburg region in South Africa production costs averaged US\$96,91 per ton. The comparative cost structures for the production of wheat in the Kharkiv region (Ukraine) and the Moorreesburg region (South Africa) are reflected in Table 2.

The wheat price situation in the Ukraine is not stable. The main factors and characteristics that define price dynamics are as follows:

- The absence of institutional arrangements such as price stabilisation programmes and agricultural market institutions.

The high price variability experienced by the Ukrainian wheat market can be ascribed to the former. In 1998 the highest wheat price level of transaction exceeded the lowest price level by 1,8 times. During 1999 this increased to 2,24 times, and in 2002 to 4,3 times. Prices not only differ between regions and seasons, but also between various buyers and sellers.

Rather than selling their wheat to the Board of Trade, producers usually deal directly with traders. By way of example: Two million tons of grain were harvested in the Vinnitca region during 2002. Only two thousand tons of grain (0,1%) were sold through the Board of Trade, irrespective of prices being 30 percent higher. According to a previous investigation into agricultural marketing channels, only three enterprises out of a potential 45 sold their product at the Board of Trade.

Table 2: The comparative production cost structure of agricultural wheat enterprises during 2001 in the Kharkiv region, Ukraine, and the Moorreesburg region, South Africa.

Cost items	Kharkiv ¹ , Ukraine		Moorreesburg ² , South Africa	
	US\$/ton ³	%	US\$/ton ⁴	%
Labour with social payments	12.08	23.05	6.46	6.67
Seed	9.20	17.50	10.13	10.46
Fertilizer	3.80	7.30	25.15	25.95
Plant protection	3.30	6.20	12.95	13.36
Fuel and energy	14.60	27.80	8.82	9.10
Depreciation	3.20	6.10	21.90	22.60
Other	6.30	12.05	11.50	11.86
Total	52.48	100.00	96.91	100.00

Sources: Kharkiv State Technical University, Ukraine, and MKB⁵ Agricultural Management Services, South Africa

Wheat exports were activated at domestic prices of 350 to 380 Ukrainian Grivna (US\$65 to US\$71) per ton. This domestic price level gave traders a competitive price advantage in the world market. When the domestic wheat price increases to US\$120 per ton, import activities are activated. The Ukraine mainly imports hard wheat types and seed. The price of imported wheat is usually higher than the export price. An evaluation by experts from AIC-Inform reveals that the average import parity price of

¹ Calculations are based on the statistical statements of agricultural enterprises in the region
Source: Kharkiv Technical University, Ukraine

² Calculations are based on the statistical statements of agricultural enterprises in the region
Source: MKB Agricultural Management Services, South Africa.

³ 2.65 ton/ha

⁴ 2.41 ton/ha

⁵ Moorreesburg Koringboere Beperk

wheat ranges between US\$123.10 per ton and US\$139.50 per ton. The price level reflects the domestic price and product situation, as well as the situation in the world market.

- The seasonality of the wheat trade.

Usually less than 10 percent of the wheat crop is sold in the first half of the calendar year with the bulk of the yield being sold during the second half of the year. The harvesting period is from July to October. Since agricultural enterprises do not have large storage facilities, grain supplies increase sharply during this period. The wheat price reflects this situation. Prices are usually higher in April and May and lower during August, September and October. Figure 2 proves this statement. In November 2001 wheat prices (ex warehouse) attained only 50 percent of the prices offered during May of the same year. Of the total volume, 93 percent of the grain was sold from July to December 2001. In February to March 2003, wheat prices increased significantly and reached US\$130 per ton. This price level was double the price received by agricultural producers in September 2002.

- In the Ukraine, export prices are between 10 to 20 percent higher than domestic prices.

By way of illustration: The average export price of wheat was US\$82 per ton in 2001. During the same period the domestic price was US\$75 per ton. The Institute of Agricultural Economics ascribed this phenomenon to the differences in the quality of wheat. The quality of wheat required for export is higher than the quality of wheat for the domestic trade. Wheat for export purposes is subjected to a certification and standardisation process. According to the Law of Ukraine (2002), grain may be exported by export contract which should be accompanied by certificates of grain quality. Certification is handled by the Departments of State Inspection of Quality and Certification of Agricultural Products, as well as accredited research laboratories. Foreign buyers often ask for a certificate of quality from independent evaluators such as SGS.

The difference in price can be ascribed mainly to the present structure of the Ukrainian agricultural market, its infrastructure, and the first phase of the opening up of the Ukrainian market by foreign importers. Despite the problems with product sales (82,2 percent of the heads of agricultural enterprises which were investigated noted that they had problems with product sales in 2002), producers prefer to deal through the traditional channels. Agricultural market institutions, such as the Board of Trade and trade houses, do not play a significant role in the trade channels of agricultural products. The introduction of marketing institutions has yet not been efficient. Until now, the principles of optimal transaction under market economy conditions have not taken root and are not yet entrenched in the behavior of agricultural producers. Foreign importers deal directly with Ukrainian traders, although they usually do not contact agricultural producers directly. During 2002, only one agricultural

enterprise out of the 45 investigated, exported products on its own. The agreed export price goes to the exporters, and producers usually do not benefit from higher export prices. The difference between the export and domestic price is regarded as the trader's margin. Traders have to cover their costs including storage at the elevator, transportation, certification, custom payments, and port expenses.

- The export prices for wheat in other countries are usually higher than that of the Ukraine. For example: Poland's export prices never dropped below US\$120 per ton. An explanation might be that the Ukrainian standard grading system is not recognised in terms of the standard systems employed by other countries and is also not adjusted to suit these systems. As a result, Ukrainian exporters have to export at discounted prices.

The institutional arrangements in South Africa are based on the price and standard grading system for wheat in the USA. The level of protection is based on the world reference price (US Nr2 HRW fob (ordinary) Gulf). Several reasons can be cited as to why the import tariff of wheat is based on USA wheat prices, including:

- The USA is an important traditional exporter of wheat.
- World wheat prices, such as prices in Australia and the Argentine, are strongly influenced by the Kansas City Board of Trade, Chicago Board of Trade, or Minneapolis Board of Trade.
- The wheat quality in South Africa is comparable to the quality of United States Hard Red Winter Nr 2 wheat.
- The USA has an internationally recognised wheat quality standard for wheat quality grades.
- The price reporting system in the USA is timely and reliable.

The difference between the world reference price and the three-week moving average of the same price, determines the adjustment to the level of the import tariff. When this deviation amounts to more than US\$10 per ton for three consecutive weeks, a new tariff can be calculated and a new world reference price will be set. In principle, when USA wheat prices increase, the import tariff decreases until nil; and when USA wheat prices decrease, the import tariff increases.

It may be short sighted to assume that the current institutional arrangement (import tariff system) will be effective under every international wheat market condition in future.

5. DISCUSSION

The global wheat trade amounts to between 110 and 125 million tons per year. The share of Ukrainian wheat exports was approximately 5 percent of total world wheat exports in the 2001/02-marketing year, and 6,5 percent in the 2002/03-marketing year. A share of 6,5 percent is not sufficient to influence the world wheat market, but may be enough to have a tangible

influence on certain wheat importing countries. If the Ukrainian growth in wheat exports continue, the influence on the world market will be far more significant.

The development of East European countries from centralised economies to market economies may have a significant influence on the future of world grain markets. It is of importance to South Africa and East European countries to evaluate the effect potential future developments will have on their respective economies and trade policies. The Ukraine is known to be one of the lowest cost producers of wheat worldwide, a fact that is not limited to grain only, but may include flour as well.

South Africa's institutional arrangements with reference to the wheat trade offer export opportunities to East European countries within a specific world wheat trade situation (Table 3).

Against the background of the wheat price of the USA as leading traditional export country, and the wheat market situations of non-traditional export countries in Eastern Europe, the efficiency of the South African wheat trade policy in terms of the different scenarios in Table 3 are analysed.

Table 3: Efficiency of South African wheat trade policy in terms of different world wheat price scenarios

Scenario	USA Hard Red Winter Nr 2 wheat price level	South African trade policy; import tariff level	Wheat Market situation in East European countries	Efficiency of South African trade policy
1	Higher	Lower	Surplus	Ineffective
2	Higher	Lower	Shortage	Not necessary
3	Lower	Higher	Surplus	Effective
4	Lower	Higher	Shortage	Not necessary

Scenario 1: Higher wheat price (United States of America) versus wheat surplus (Ukraine)

Higher wheat prices in the USA result in a lower import tariff in Southern African countries. When the market situation in East European countries results in a wheat surplus, the Southern African trade policy seems to be ineffective. Supported by the comparative advantage of the Ukraine, wheat is imported by Southern African countries at a lower import tariff.

Scenario 2: Higher wheat price (United States of America) versus wheat shortage (Ukraine)

Higher wheat prices in the USA result in a lower import tariff in Southern African countries. When the market situation in East European countries results in a wheat shortage, the Southern African trade policy seems to be unnecessary. Southern African countries have to import wheat from traditional wheat exporting countries with a minimal import tariff, but at the

world wheat price levels of traditional export countries with significant higher production costs.

Scenario 3: Lower wheat prices (United States of America) versus wheat surplus (Ukraine)

Lower wheat prices in the USA result in a higher import tariff in Southern African countries. When the market situation in East European countries result in a wheat surplus, the Southern African trade policy seems to be effective. Southern African countries may import wheat from the low-cost producing countries, but have to take the import tariff into account. The import tariff policy and export prices from traditional wheat export countries are derived from wheat markets in the USA. Wheat can be imported by Southern African countries from East European countries, but with an import tariff calculated according to the world wheat price levels of traditional export countries with significant higher production costs.

Scenario 4: Lower wheat prices (United States of America) versus wheat shortage (Ukraine)

Lower wheat prices in the USA result in a higher import tariff in Southern African countries. When the market situation in East European countries results in a wheat shortage, the Southern African trade policy seems to be unnecessary to protect the latter countries against East European wheat imports. East European countries have to import wheat from the traditional wheat export countries at world price levels dictated by United States grain market prices.

6. CONCLUSION

Ukrainian wheat prices do not necessarily correlate with the world wheat prices of traditional wheat export countries. When a specific world wheat market situation prevails, such as high world wheat prices and an exportable surplus of wheat in Eastern Europe countries, the Southern Africa institutional arrangements with regard to wheat imports seem to be ineffective. Under these circumstances the opportunity exists to import wheat at lower import tariff levels from East European countries.

Improvements in the institutional marketing environment of the Ukraine create opportunities for economic growth and export to wheat importing countries with comparative disadvantages in respect of physical resources. However, with the improvement of the institutional marketing environment, especially information flow in the supply chain, East European countries' export prices, such as the Ukraine, may begin to increasingly follow the world wheat market prices in the long term.

It is, nevertheless, of importance for countries in Eastern Europe (Ukraine) as well as Southern Africa (South Africa) to evaluate the ability of future institutional arrangements to meet changes in the institutional environments with a view to optimise economic development.

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