

Food security, wheat production and policy in South Africa: Reflections on food sustainability and challenges for a market economy

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The traditional concept of security has broadened over the past decades. Food security in South Africa is an imperative for human and non-human survival. In the contemporary political economy, there is a real nexus between globalisation, exploitation, the state, scarcity of resources, the market, peoples' need to feel secure, notions of state responsibility and food production. Political economy and human security in theoretical debates and face-to-face politics are intrinsically linked. The notion of a 'secure community' changed. Food security and the right to quality living became a social imperative. Understanding current agricultural economics requires the ability to link security and access to food for all. In this case study, wheat production in South Africa is addressed against the interface of the global and the local including South Africa's transition to a democratic and constitutional state with a Bill of Rights. The current security approach represents a more comprehensive understanding of what security is meant to be and include, amongst others, housing security, medical security, service delivery and food security, as set out in the Millennium Development Goals and the subsequent Sustainable Development Goals. The issue of food security is addressed here with particular reference to wheat production, related current government policies and the market economy. The authors chose to limit their socio-economic focus to a specific sector of the agricultural market, namely wheat, rather than discuss food security in South Africa in general. Wheat was chosen as a unit of analysis because as a crop, wheat used in bread is one of the staples for the majority of South Africans and given the current negative economic developments, wheat as a staple is likely to remain integral, if not increasing its status of dependability.

Introduction

The facts of wealth and income are not important for themselves. They are important as determinants of inequalities with respect to things people will give much or indeed almost anything to have. Some of these are shelter, security in one's place of living, home, land, nourishment, food. (Honderich 1980:ix)

At no time in human history, was there a non-existence of – if not the painful nexus between – exploitation, the 'state', scarcity of resources, the 'market', peoples' need to feel secure and food production and (socio-) economic policies. Political economy and human security in theoretical debates and face-to-face politics are intrinsically linked. Over the past decades, the notion of a *secure community* changed. Reflect, for example, on the Millennium Development Goals (MDGs) and its refinement into Sustainable Development Goals (SDGs) (2015). In the literature on national security, the concept of a secure country – indeed a secure community – has changed over the years. In the past, it was accepted and expected of sovereign countries to defend their citizens against outside aggression as well as protect them from internal disturbances, where such actions threatened the citizenry or the state as an embodiment of the citizenry within its geographical space. These requirements created a need for a viable defence force to be used for external protection, and to maintain a capacity to deploy these security forces in a secondary role assuming that food was secure to a large extent. Human security became an integral concept in contemporary security thinking. In current political and socio-economic debates, there is far more to the understanding of security. In some ways, the *new security thinking* divorced the military element and morphed into the concept of security for human beings on a far more holistic level both inside and outside national borders.

In time the concept *national security* (national as defined within the geographical boundaries of a demarcated state) progressed from securing the citizens of a country against external aggression and internal violence as a form of *collective good* to the security of both individual and

community (or individual-in-community and community of individuals) well-being or welfare. The latter is a much more comprehensive understanding of what security is meant to be and include, amongst others, housing security, medical security and food security.¹ In this context, security is comprehensively understood and holistically envisioned. Food security is also seen as one of the fundamental objectives of the MDGs. The MDGs were refined into the SDGs in 2015. The SDGs were to end hunger, achieve food security, improve nutrition and promote sustainable agriculture.

In the case of South Africa, this new security approach is implied in the constitution (Act 108 of 1996) and the Bill of Rights and echoed by the first Defence Review and the White Paper on Defence (full report published as *Defence in a Democracy* 1998). Food security and nutrition also form part and parcel of the South African National Development Plan (NDP). In this contribution, we as authors chose to look at human security and its applicability to one unit of study, namely South Africa and one case of food production, being wheat, as related to human security and current economic developments. The main question is how does one, given current circumstances, within a context of a market economy, achieve and maintain the needed levels of food security while maintaining efficiency in the production of wheat in the long term? Alternatively, are there changes needed around the current market approach to sustain and enhance wheat production (and hence food security) in South Africa?

The global and the local: A background

The global and the local are deeply entwined, also in South Africa. During the decline of the Cold War, the political-security discourse changed from a divided world (East and West or Communist and Capitalist) to a short period of perceived multipolarity. The global tension between large state actors declined and the demise of hegemony allowed space for the rise of fragmented communities and intra-state conflicts. Much more than in the past, human suffering and poverty (read: food insecurity) became part of a seemingly endless scenario of violence within states, whether through the outcomes of neo-imperialism, impositions by uni-polarised states, civil discontent, ethnic or identity conflicts, warlordism, resource-driven conflicts or syndicate crime coupled with organised violence. The current manifestations of conflict include the deep fragmentation of communities, the spread of trans-border and violent sectarian conflicts that arise after the toppling of the regimes of 'non-pliant' states (in the eyes of the USA, the UK and France and their pragmatic followers) such as in Iraq and Libya. Simultaneously, one of the outcomes of globalisation is the deepening of the rich-poor divide and with it a lack of resources for numerous communities to feed themselves.

1. Shrikant Paranjpe (2013:5) remarks that core values around security do not only include territorial integrity, autonomy and security of a state but 'also the welfare of the people'.

As far back as the early 1990s, the sociologist Anthony Giddens foresaw globalisation as a growing phenomenon. The purported positive outcomes thereof such as globalisation or so-called liberal capitalism as an ideology were upheld as a glib mantra for progress, profit and development. But such progress is double-edged. Globalisation from inception increasingly spawned underdevelopment, political alienation, socio-economic tensions, fragmentation and violent conflicts (Giddens 2001:51ff, 69ff). The development of underdevelopment became a reality with peripheral states having less capacity to maintain or enhance their levels of development, while the 'core states' in the global north remained powerful both economically and politically. Poverty and hunger remained as characteristics unique to 'lesser' and 'poorly' developed countries. Such conflicts amongst others revealed around scarce resources such as water and food (including arable land as a resource) which are contested not only between countries but also within countries and communities. One example of globalisation causing violent tensions is the extraction of oil for profit that destroyed and still is destroying valuable fertile agricultural land in West Africa. An example of the link between conflict, displacement, attempted resettlement, the negative effect on forest ecologies and agriculture in Sierra Leone is well described by Munro and Van der Horst (2015:119ff). Currently, some security analysts are arguing that water as a resource will become the next point of international conflict (needless to mention that food security will disappear where water is no longer accessible).

South Africa as an independent country was born out of the conflict surrounding scarce resources (Liebenberg 1990). South Africa's case is deeply intertwined with development politics. This we have to consider against the background of developing countries or non-developing and peripheral states (the so-called developing states in the first-world jargon) that through a historic process of evolving private enterprise coupled with industrialism and the growth of core states being in a semi-permanent dependency compared to highly industrialised states. Globalisation from its earliest times, stemming from the birth of the slave trade coupled with industrial growth, state-building in the West and the competition for colonies (scarce resources) and subsequent empire-building left a legacy of poverty on the globe. Within the colonial, then apartheid state, a richer and relatively well-off white community evolved with, in contrast, poverty and lack of access to productive land for the larger part of the community (black South Africans). The social theorist Neville Alexander spoke about *racial capitalism* at the time, while other radical theorists referred to the apartheid system as *colonialism of a special type* (Liebenberg 1990). South Africa is but a microcosm of the world. This legacy includes absolute poverty, relative poverty, food scarcity and hunger. Worldwide statistics on poverty and lack of agricultural production is staggering:

One billion people are stuck at the bottom (of the world economy). The twenty-first-century world of material comfort, global travel, and economic interdependence will become

increasingly vulnerable ... and it matters now. As the bottom billion diverges from an increasingly sophisticated world economy, integration will become harder, not easier. (Collier 2008:178)

Caught up in all this is the vision that a better and more secure world can be constructed. The MDGs and SDGs reflect this commitment. However, achieving the MDGs or SDGs offers no easy challenge (UN 2013; UNDP 2012).

There are those such as Jeffrey Sachs (2005) who assert:

This is about ending poverty in our time. It is not a forecast. I am not predicting that it will happen, only explain [*that it*] can happen. Currently, eight million people around the world die each year because they are too poor to stay alive. Our generation can choose to end that extreme poverty by the year 2025. (p. 5)

Sachs wrote these words 11 years ago. That means that if taken seriously, and all things are equal, that we (the world and its leaders) have lost 10 years, yet by assumption, we can eradicate dire poverty by around 2035.

The Club of Rome pointed out the dire challenges around food production for a future world in the 1970s.² These to be reckoned aside from natural and man-made disasters such as oil spills, red dust from iron ore plants, droughts, earth warming, destruction of green forests, pollution, acid water and nuclear incidents.

South Africa is a case in point. The drought that started in 2014–2015 already accounts for masses of losses because of under-production. As Shingirai Nangombe explains: the 'drying up' phenomenon in southern Africa especially in South Africa and Zimbabwe:

will have impacts on other sectors such as the economy ... (and in the absence) of 'a single and well-focused strategy to fight and adapt to the changing conditions in the global climate situation (more problems will arise)'. (Karombo 2015:16)

One example of such climatic change is the drought in South Africa. In 2013–2014, South Africa produced 14.2 million tons of maize. During 2014–2015, the production dropped to 9.9 million tons. The lower production figures may amount to an R9.2 billion knock, in turn, leading to higher prices and job losses. Grain South African economist Wandile Sihlobo suggests that it may get worse before the turn for the better (Bisseker 2015:18). Drought could cost South Africa billions in crop imports (Karombo 2015). Dry weather puts Zimbabwe, South Africa and others at risk.³

As far back as 1980, Honderich (1980) observed:

There are also yet the more terrible differences between the economically developed and economically less-developed societies. The per capita gross national product of a large number

2. For background on theoretical debates, that is, dependency theory, goals and goal critique, economic means and social ends, 'natural law' and exploitation, see interpretations of Robert Heilbroner (1969), Huberman (1963), Hoogvelt (1997), Martinussen (1999), Mohamed (2013) and Ngepah and Mhlaba (2013).

3. Southern African economies at risk amid climate shift. *Business Report*, 15 November, p. 4.

of countries in recent years was \$200 or less. The figure for many developed countries was over \$1000, with the United States being over \$2300. ... It has been generally accepted that since 1965, and indeed before then, economic inequalities between these parts of the world have been increasing rather than decreasing. (pp. 194–195; see again Hoogvelt 1997)

Despite some high growth rates in Africa, this situation has barely improved (Mayor & Bindé 2001):

The world has seen the spectacular rise in poverty since the 1980s. We are witnessing (increasing) worldwide inequalities, accompanied in most societies by an increase in the number of individuals living in absolute poverty with the regions affected the most Latin America, southern Asia and sub-Saharan Africa. ... Despite positive progress in some areas, as reported in the 1997 Human Development Report, statistics at the turn of the century pointed towards 266 m people out of 590 m living below the poverty line in sub-Saharan Africa. Over three billion people worldwide live in poverty and 1.5 billion lack access to clean water. (p. 57–58)

These global tendencies seem to be reflected within countries as well, where the gap between rich and poor is widening. South Africa is no exception; neither are the South African political leadership and financial elite. Michael Todaro (2000 11ff) quite correctly argues that a new look – and resultant creative action – will mean to take note of how the other three-quarters live, to relentlessly and critically re-evaluate our current values that have led to global exploitation and to realise the limitations of traditional economic measures and act upon this decisively. And it is here that food security becomes of great relevance.

The notion of food security has gained prominence and is entrenched in the 'new security' debate or discourse. South Africa, following the general pathway of global liberal capitalism, is in a similar situation. Development challenges, including chronic poverty and food insecurity, await many South Africans unless the economy in general, and the agricultural economy of the country in particular, is not managed with acumen and prudence (Masote 2012:4; The Presidency 2011, 2013; compare also DBSA 2005, 2012). While some debate remains around it, a recent analysis of the South African Statistical Services suggests that one out of two South Africans goes hungry every day.

The South African wheat market

Needless to say, one dimension of security – or insecurity, more precisely – is poverty. Poverty is a global concern as much as it should be a concern in South Africa. Especially, sub-Saharan Africa, Latin America, South Asia and the Caribbean face the danger of chronic poverty; this, in part, is closely linked to food shortages or inability to access food as a scarce resource (Kumar et al. 2009:288). Again, South Africa finds itself in this broad realm (on poverty in South Africa, see Pillay, Hagg & Nyamnjoh 2013:27–29, 141ff, 446ff, 458ffm, 581ff, 674ff):

This decline in wheat production poses a threat to national food security in South Africa. South Africa has the potential to

produce substantially more wheat, provided it is more profitable to do so. The importance of wheat [*the second biggest staple food*] in South Africa necessitates a policy framework taking our dependency on imports into consideration. (Fourie 2013:65)

The above remark of Fourie stems from before the 2015–2016 droughts in South Africa. Keep in mind that the 2016 budget speech came against the background of disenchanted investors and economic growth precariously around 1%. Added to this, ‘poverty levels are high and income remains unevenly distributed’ (Roux 2016:1). By 2017, the situation hardly changed.

In economic literature, it is accepted that prices on agricultural markets are notoriously unstable because of supply inconsistencies. For food security reasons, governments worldwide protect their markets by subsidising the domestic producer and stabilising the market price. This also applies to wheat production. Countries mostly keep domestic wheat production competitive internationally by subsidising the production costs of domestic farmers.

Governments further keep domestic wheat producers internationally competitive by increasing the price of imported wheat (tax-imported wheat). In terms of price, such action keeps the domestic producers competitive. The higher wheat price is thus paid by the domestic consumer. The income from such a tariff goes to the government. The responsibility of governments to feed their citizens has always been an accepted reason for governments to regulate agricultural markets.

Deregulation has caused a decline in the profitability of wheat farming in South Africa because of uncertain international prices. In most wheat-producing countries, farmers are subsidised to assure a certain profit level to farmers which will enable them to plan and plant for the following season. This also ensures food security. In South Africa, farmers are currently, in contrast with the past, not subsidised. This article argues that the South African Government should stabilise wheat prices and equalise the playing field through subsidies or tariff protection by taking a long-term view of wheat prices and the protection other governments are providing to their wheat producers. This should ensure sustainable long-term wheat production in South Africa as well as retain the efficient producers of wheat.

Dating to early periods, South Africa was no exception. Since the very early years, the wheat markets in the value chain in South Africa have been regulated by the government. All market transactions such as wheat sales, pricing, distribution, storage and bread and flour production were controlled by the now terminated Wheat Board. The Wheat Board was established in 1935 in terms of the *Wheat Industry Control Act of 1935* (Howcroft 1991:1ff). The Wheat Board purchased the wheat from farmers; the farmers were obliged to sell their wheat to the Wheat Board for which they received a fixed producer price (in practice, thus a form of price control – or in Afrikaans, *prysbeheer*). The delivery price was usually set at

the beginning of the season, namely February or March of every year. A supplementary payment (*agterskot*) was made to producers when the actual size of the crop was known and after the sale of any surplus wheat produced. From the 1988–1989 season onwards, the board applied the principle that producers were liable for the financing of any surplus stock arising from a given crop.

The Wheat Board was also responsible for fixing the selling price of wheat. Changes in the wheat price by the Wheat Board needed the permission of the Minister of Agriculture (De Kock 1991:14). Regulation extended to the international market as well, with quantitative controls administered by the Wheat Board (Edwards 1997:13).

The Wheat Board distributed wheat purchased from farmers mainly through its agents, the agriculture cooperatives, to millers, cereal producers, animal food producers and other relevant buyers. The Board exercised a distribution policy with the object of minimising rail costs to millers (De Kock 1991:14). The quantity and quality of wheat produced per production area were also taken into account. In the 1939–1940 production season, the Wheat Board paid producers a subsidy for their wheat because of sharp cost increases as a result of the Second World War. In 1941/1942, a subsidy was also paid to millers and bakers. The subsidy to producers was continued until the 1956–1957 season when it was replaced by a subsidy for wheat flour. From May 1977, a subsidy was paid on flour used for the baking of bread only. This subsidy was distributed in two ways: on bread sold by bakeries and on storage compensation and handling commission to agents of the Wheat Board. From 1985, the subsidy amount was substantially reduced on a yearly basis and by March 1991, the subsidy was no longer paid.

Food security, government and the policy realm

The Directorate Food Security within the Department of Agriculture, Forestry and Fisheries acknowledges that food security has three dimensions. Firstly, a country must have sufficient quantities of food available on a consistent basis at both national as well as household level. Secondly, a country must have the ability to acquire sufficient food for its nation and households on a sustainable basis (import). Thirdly, food should be used appropriately based on a thorough knowledge of nutrition and care (Du Toit 2011:2). South Africa is largely perceived to be a food secure nation, but that cannot be said of households in rural areas where food security is widely lacking (Du Toit 2011:4; also compare Haldewang 2014; Pillay & Southall 2014; Sithole 2014).⁴

Under the African National Congress (ANC) government, the wheat market was deregulated on 01 November 1997. Under the new government that advocated the Reconstruction and Development Plan (RDP) that was pivoted on the premise of redistribution first and then growth, the RDP was

4. See Illustration – Poverty in the appendix.

soon jettisoned for a macroeconomic plan that embraced the free market. The Marketing of Agriculture Products Bill of 1996 replaced the *Marketing Act* 59 of 1968. Since 1997 wheat has been freely traded in South Africa. Producers can sell their produce to anybody in a free market environment without any government interference (Van Rooyen 2000:9).

However, the government on occasion has intervened in the market by using tariff measures to protect domestic producers. For example, import duties on wheat came into effect on 14 April 1999. Import duties were introduced at R181/ton. The tariff on wheat increased to R269 per ton on 11 June 1999. The consumer bore the full economic burden of these tariffs (Van Rooyen 2000:9). Greater risks and lower profit margins are also a reality of deregulated markets. Producers have to contend with the possibility of worldwide under or overproduction of wheat.

The move from the RDP approach (that implicitly required forms of state intervention) towards GEAR, a macroeconomic program, implied the acceptance of a liberal free market economy in contrast to the past. With it came some of the drawbacks previously outlined around, for example, the issue of subsidisation. Rethinking subsidisation and a resultant change in the policy approach should ensure sustainable production of wheat in the long run as well as contribute to the efficiency of wheat production.

Profitability and structural changes to the wheat market

When almost all government interventions into the wheat market were lifted in 1997 and the market was left to the dictates of market forces, the profitability of wheat production declined sharply in all wheat-producing areas in South Africa.

In the western Free State, the profit rate declined from 36.6% in the average sale price of wheat for the period 1971–1997 to 17.7% on the average sale price of wheat for the period 1998–2010 (Table 1). In the eastern Free State, the profit rate declined from 35.1% to 13.3% for the same periods and in the Swartland within the Western Cape Province, the decline was from 30.4% to 13.3%. This decline was in spite of the average yield per hectare for the same period increasing from 1.1 per hectare to 2.5 per hectare for the Swartland, 1.6 per hectare to 2.5 per hectare for the eastern Free State and 1.2 per hectare to 2.2 per hectare for the western Free State (Table 1). The only area where profits on average increased marginally was the southern Cape with profits increasing from 10.3% in the average sales price to 11.5%. Average yield per hectare increased from 2 per hectare to 2.6 per hectare.

Left to market forces, wheat prices became more unstable after 1997 and in the north-west Free State the producers experienced 3 unprofitable seasons out of 10 (Appendix 1). The eastern Free State, Swartland and southern Cape experienced 5 out of 13 unprofitable seasons, drastically increasing the risk of wheat production compared to the

years of regulation where no losses were experienced except for the 1997 season.

As a result of wheat price fluctuations and declining profitability, the area under wheat production in South Africa shrank sharply after 1997 (Table 2). The average land area that was used for wheat production before the market was deregulated was 1.4 million hectares. After deregulation, the average size declined to 761 000 hectares. The land area under production declined by 45.6%, with only 54.4% of the original land still in use.

Before the market was deregulated, the average output per hectare produced was 1.6 tons. After deregulation, the average output per hectare increased to 2.6 tons (calculated with the aid of Table 2). Before 1997, South Africa, on average, produced 2.2 million tons of wheat per year. After 1997, the average production declined to 1.9 million tons. Notwithstanding a growing domestic demand, total output declined by 11% over a period of 15 years. Domestic demand grew by 2.5% per year before deregulation and by 0.7% thereafter. Before deregulation, 178 000 tons of wheat per year were imported. This represented 19.9% of the total domestic demand. After deregulation, imports, on average, increased to 937 000 tons per year, which is nearly a third of the total domestic demand, therefore sharply increasing our dependency on foreign imports. To what extent the insecurity is caused by the land reform debate is not addressed here and no study was conducted on this as far as we could discern.

From Appendix 2, which deals with wheat production costs, it is also noted that although average variable cost as a percentage of total wheat cost increased from 72.4% in 2000 to 84.4% in 2009, labour as a variable cost declined from 9.3% of total variable cost on average in 2000 to 6.2% in 2009. There was therefore a sharp decline in labour's share in the production of wheat in South Africa for the years 2000–2009. Wheat production is getting more capital intensive in South Africa and adding to South Africa's high unemployment rate.

TABLE 1: Profitability of the wheat market in South Africa (Own calculations from Appendix 1).

Region/year	Average cost	Average profit	Average price	Average yield	% Profit
Southern Cape					
1991–1997	638.00	73.60	711.60	2	10.3
1998–2010	1242.00	161.37	1403.37	2.6	11.5
1991–2010	1031.00	130.65	1161.65	2.4	11.3
Swartland					
1971–1997	457.00	199.62	656.62	1.1	30.4
1998–2010	1348.00	76.19	1424.19	2.5	5.4
1971–2010	818.90	155.71	974.61	2.0	16.0
Eastern Free State					
1971–1997	406.30	219.76	626.06	1.6	35.1
1998–2010	1231.20	188.43	1419.63	2.5	13.3
1971–2010	776.10	205.70	981.80	2.0	21.0
Western Free State					
1971–1997	387.37	223.65	611.02	1.2	36.6
2001–2010	1548.34	332.29	1880.63	2.2	17.7
1971–2010	871.11	268.92	1140.03	1.6	23.6

TABLE 2: Structural changes to the wheat market for the years 1985/1986 to 2011/2012.

Years	Hectares ('000)	Production ('000) tons	Imports/Surplus ('000) tons	Yield per hectare	Total domestic demand	Imports as % of total domestic demand
1985/86	1411.0	1580.0	-621	1.1	2201	28
1986/87	1331.0	2235.0	106	1.7	2341	surplus
1987/88	1729.0	3030.0	651	1.8	3681	surplus
1988/89	1985.0	3484.0	1139	1.8	4623	surplus
1989/90	1830.0	1961.0	-342	1.1	2303	14.8
1990/91	1550.6	1702.4	-508	1.1	2211	23.0
1991/92	1434.0	2133.0	-58	1.5	2191	2.7
1992/93	747.3	1316.1	-862	1.8	2178	40.0
1993/94	1064.8	1975.3	-346	1.9	2321	15.0
1994/95	1039.5	1832.2	-580	1.8	2412	24.0
1995/96	1363.2	1968.5	-539	1.5	2508	21.5
1996/97	1293.8	2700.0	-	2.1	3155	14.4
1997/98	1382.3	2500.5	-469	1.8	2970	15.8
1998/99	745.0	1687.5	-484	2.3	2172	22.3
1999/2000	718.0	1770.0	-624	2.5	2394	26.1
2000/01	934.0	2348.6	-308	2.5	2657	11.6
2001/02	973.5	2450.0	-407	2.5	2857	14.3
2002/03	941.1	2427.0	-747	2.5	3174	23.5
2003/04	748.0	1540.0	-1042	2.6	2582	40.4
2004/05	830.0	1680.0	-1227	2.1	2907	42.2
2005/06	805.0	1905.0	-1055	2.0	2960	36.0
2006/07	764.8	2105.0	-777	2.4	2882	27.0
2007/08	632.0	1905.0	-1396	2.8	3301	42.3
2008/09	748.0	2130.0	-1192	3.0	3322	36.0
2009/10	642.5	1958.0	-1285	2.9	3243	40.0
2010/11	558.1	1430.0	-1645	3.1	3075	54.0
2011/12	604.7	1841.6	-1400	3.1	3242	43.0

Source: Grain SA 2000–2010; Howcroft 1991:10; van Rooyen 2000:8–12.

The international wheat market

The international wheat market is a protected one. In the USA, Argentina, Australia and elsewhere, wheat production has in one way or another been subsidised by their governments:

On the global front, the distortional impact of agricultural subsidies on the global supply of wheat has a depressing effect on wheat prices, adversely affecting the competitive position of domestic wheat producers. (International Trade Administration Commission of South Africa 2013:13)

A comparison of international wheat production costs (subsidised) with that of domestic producers in 2011 is set out in Table 3. Only South Africa's irrigated wheat lands are reasonably competitive internationally. We could therefore argue that South Africa has a comparative advantage over some countries in this regard. On the other hand, the dry lands are not competitive at all. According to the International Trade Administration Commission of South Africa (2013:13), South African wheat farmers are burdened by higher cost structures than their international competitors because of high fertiliser costs, soil conditions and frequently unpredictable rainfall patterns including relatively frequent droughts.

By the deregulation of the South African wheat market in 1997, the majority of South African wheat producers were put at a distinct disadvantage *vis-à-vis* their international competitors as their international competitors' prices were and are still being subsidised by their governments.

TABLE 3: International wheat production cost for the year 2011.

Country	Argentina	USA	Germany	Australia	Canada	RSA (dry land)	RSA (irrigation)
Yield (T/Ha)	4.17	3.7	7.62	2.54	3.14	2.3	8.37
Cost per ton (\$)	150	172	227	204	182	347	194

Source: International Trade Administration Commission of South Africa 2013.

The domestic producers have asked for tariff protection should the free market international delivery price not allow for reasonable domestic profits. Over the years, tariffs were amended so as to ensure reasonable returns on investments in domestic wheat production. The tariff is calculated as the difference between the domestic reference prices of wheat to the 3-week moving average of US No. 2 Hard Red wheat prices (International Trade Administration Commission of South Africa 2013:7). This was clearly not enough as 45% of the local wheat producers (mostly dry land producers) disappeared by diversifying into the production of alternative crops or some other farming activity, in some cases even complementing farming activities with other incomes.

From the above analysis, it is clear that the remaining farmers producing wheat in South Africa are the more productive ones. In his book *The Changing Face of National Security: A Conceptual Analysis*, Robert Mandel (1994) argues convincingly that:

While growth in truly global business certainly can increase efficiency and universal access to high quality and low-cost goods and services, this trend simultaneously (1) reduces the abilities of nations to direct their own economies (and to provide

for needs from within) and (2) and increases the disparities between those who are successfully integrated into the global economic system and those who are not. (p. 73)

Mandel further argues that trade-offs exist between national economic self-sufficiency and control that makes the country vulnerable to internal shortfalls and international economic efficiency that again makes a country vulnerable to external disruptions. The economic exchange strategy therefore lies between economic nationalism and free-market exchange (Mandel 1994:63).

Jennifer Clapp of the Quaker United Nation's Office argues that international trade based on comparative advantage is flawed because of all the unrealistic assumptions made in support of the theory that calculating the true production cost differentials between countries is problematic and that the comparative material gains from trade are uncertain (Clapp 2014:24). Therefore, welfare losses because of domestic protection could easily be overstated.

Clapp (2014) argues that:

countries that have become reliant on food imports over the past 30 years, which include most of the world's LDCs are now deeply vulnerable to global price swings. Ensuring stability of excess in this context is difficult for most of the world's poorest countries, yet policies to insulate themselves from the instability of world markets are increasingly necessary for a global economy where food prices are high and volatile. (p. 24)

In an article 'Food security and economic growth: An Asian perspective', Timmer (2004:1) argues that keeping the domestic price of rice stable *vis-à-vis* a very volatile international price can be an important economic strategy (Timmer 2004:6). It is argued that Asian countries had increased consumer welfare and enhanced food security through the increased production (creating a surplus) and consumption of rice (Timmer 2004:7). In Indonesia, for instance, the domestic price of rice was engineered to stabilised within a range of the long-run international price. He states '*pro-poor economic growth and stable rice prices were the recipe for food security in Asia*' (Timmer 2004:7). Shrikant Paranjpe in his analysis on Indian national security alludes to the emphasis on human and food security in India (Paranjpe 2013).

Since deregulation in South Africa domestic producers have made use of short-term forward contracts to negotiate a secure delivery price for wheat. Such hedging mechanisms are criticised by the Marketing Directorate of the Department of Agriculture, Forestry and Fisheries (2012:26) as being too slow in reducing price risks for wheat farmers and are perceived to be one of the derived weaknesses of the free market system.

The authors of this article are of the opinion that in the case of wheat production in South Africa, the argument should be for stabilising domestic prices by taking a long-term view of international price trends. Short-term adjustments should be

brought in line with this. By taking a long-run view on wheat prices, production of wheat could be encouraged. Most of the wheat produced in South Africa is bread wheat and is used for human consumption (Fourie 2013:5).

Domestic issues regarding the wheat value chain should also be settled so as to transfer maximum benefits (price wise and quality wise) to the consumer. In South Africa, the wheat value chain is beleaguered with problems. There were accusations of bread price fixing as well as price fixing of wheat flour by amongst others wheat millers Pioneer Foods, Foodcorp, Godrich Milling, Premier Foods and Tiger Brands, who controlled 90% of the local wheat flour market in 2010. The final outcome was that fines were exacted by the Tribunal of the Competition Commission against these companies for their anti-competitive behaviour (Webb 2010).

Accusations are also made that some domestic wheat buyers buy lower quality wheat abroad, mix it with higher quality domestically produced wheat and the mixture is then sold as if locally produced (Fourie 2013:43–45). If true, this effectively decreases the demand for high-quality domestically produced wheat, increases the sales waiting period for high-quality domestic wheat and makes the storage of domestic wheat a cost-adding challenge for producers.

It is interesting to note that when the International Trade Administration Commission of South Africa (ITAC) argued for an increase in the domestic dollar-based reference price for wheat from US\$215 per ton to US\$294 per ton so as to increase the profitability of domestic wheat production and therefore stimulate domestic produce, the National Chamber of Milling, a representative of wheat millers, objected to the increase on the grounds that wheat products (mainly bread) would become less affordable to consumers. This argument was rejected by the ITAC Commission Annual Report (2013:12-13, 15–16) because of the small share of value added by the domestic producers compared to the final value of wheat products such as bread.

Taking all these arguments into consideration, the impression of a disturbing dysfunctional domestic wheat market is created. Firstly, domestic producers are 'unfairly' competing with subsidised international wheat producers. Secondly, short-term wheat delivery prices are unstable and the time lapse to secure government's approval for corrective steps to stabilise the short-term wheat price causes undue delays and losses. Finally, the potential for the predatory pricing of wheat in the wheat value chain in South Africa cannot be ignored. This is counter efficient *vis-à-vis* production and food security in South Africa – and in times of drought and the relative threat of increased inflation, this does not augur well for the small farmer nor for the consumer caught up in poverty or low household income.

Conclusion

The authors chose to limit their socio-economic focus to a specific part of the agricultural market, namely wheat, rather

than discuss food security in South Africa in broad terms. Wheat was chosen as a unit of analysis because as a crop, wheat is used to make bread which is one of the staples for the majority of South Africans.

Food security, just as any other security dimension, deserves constant attention. In terms of price fluctuations and agricultural ups and downs, South Africa is not unique. In terms of the small margin between self-sustainability and export potential (and on the downside, a shortfall in wheat production, our case under study), the South African situation is in need of serious reflection – including policy planning, formulation and implementation.⁵

Agricultural prices, including wheat prices, are notoriously unstable because of the ever-present possibility of an under or oversupply, causing sharp increases or decreases in market prices despite forwarding contracts relieving some of the price uncertainties. Uncertain prices, in turn, lead to more unstable production levels. It is for this reason that governments worldwide regulate agricultural markets by mainly subsidising them so as to assure farmers of a reasonable rate of return on their investments, and at the end of the value chain, ensure an affordable product for the buyer or user. This can be done by stabilising the short-term domestic price of wheat around long-term international price trends.

This article argues for efficiency in production as well as self-sustainability in wheat production in South Africa. The road to take therefore seems to be to protect the domestic producers of wheat by stabilising the short-term domestic price thereof. It is needless to say that such changes beg for reflection on and revision of current policies.

Although food is mostly always available and can be imported as needed in South Africa, it must be paid for in foreign currency earned through domestic economic toil. Between doing nothing or a wait and see approach little will change and stark challenges remain. Recommendation: one way of confronting the current challenges is to reflect, re-think, correct or if need be re-design current policies. As authors, we argue that our research findings point strongly to a choice for the latter approach.

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⁵The importance of the role of government policy (or policies) in economic growth, inequality and poverty in South Africa cannot be over-emphasised. Consider, for example, that in 2009, 49% of South Africans lived below the expenditure poverty line (Ngepah & Mhlaba 2013:72). Consult again the table in Appendix 1.

Competing interests

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

Authors' contributions

F.d.W. came up with the idea and the need for dedicated work in the field. Both authors worked together in terms of their complementary skills such as agricultural economics and policy studies.

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Appendix starts on the next page →

APPENDIX 1: Profitability of wheat production in South Africa.

Southern Cape				
Year	Cost/ton	Profit/ton	Price/ton	Yield/ton
1991	508		364.74	1.39
1992	457	260.68	717.68	2.22
1993	601	165.89	766.89	2.30
1994	603	194.77	797.17	2.40
1995	660	192.08	852.08	2.42
1996	722	58.39	780.39	1.53
1997	915	-223.33	691.67	2.01
1998	713	420.95	1133.95	2.00
1999	770	95.18	865.18	1.8
2000	937	9.19	946.19	2.3
2001	1013.79	123.85	1137.64	2.40
2002	977.47	242.69	1220.16	3.11
2003	886.93	397.76	1284.69	3.21
2004	1470.62	-318.62	1152.00	1.89
2005	1189.56	-112.45	1077.11	2.31
2006	989.52	324.48	1314.00	3.10
2007	1143.69	1185.37	2329.06	3.37
2008	2243.35	-149.90	2093.45	2.27
2009	1634.84	-58.36	1576.48	3.23
2010	2176.91	-62.32	2114.59	2.33
Average	1114.84	177.25	1529.91	2.99

Swartland				
Year	Cost/ton	Profit/ton	Price/ton	Yield/ton
1971–81	350.00	294.41	644.76	1.43
1987–89	312.69	172.00	400.00	1.96
1993	646.38	101.62	748.00	2.13
1994	736.92	64.08	801.00	2.07
1995	723.49	47.51	771.00	2.23
1996	626.60	220.40	847.00	3.04
1997	1161.78	-195.78	966.00	1.67
1998	827.17	77.83	905.00	2.01
1999	611.57	393.43	1005.00	2.81
2000	884.49	194.51	1079.00	2.30
2001	959.96	320.21	1280.17	2.79
2002	1088.01	-98.72	989.29	2.36
2003	2244.99	-946.17	1298.82	1.06
2004	1764.84	-729.70	1035.14	1.53
2005	1082.03	-5.11	1082.03	2.48
2006	935.02	379.89	1314.91	3.16
2007	1379.28	1115.72	2495.00	3.02
2008	1675.23	414.77	2090.00	3.07
2009	2003.70	-400.55	2003.70	2.64
2010	2065.71	274.29	2340.00	2.60
Average	1455.78	32.46	1592.90	2.47

Eastern Free State				
Year	Cost/ton	Prof/ton	Price/ton	Yield/ton
1971–81	419.26	217.04	636.30	1.35
1987–89	273.91	113.59	387.50	1.84
1996	599	264.00	863.00	1.7
1997	468	524.00	991.00	2.9
1998	717	121.00	838.00	2.2
1999	679	143.00	822.00	2.1
2000	922	-37.00	880.00	1.4
2001	973.82	344.18	1318.00	2.80
2002	977.47	242.69	3794.70	3.11
2003	886.93	397.76	1284.69	3.21
2004	1470.62	-318.62	1152.00	1.89
2005	1189.56	-112.45	1077.11	2.31
2006	989.52	324.48	1314.00	3.10
2007	1143.69	1185.37	2329.06	3.37
2008	2243.35	-149.90	2093.45	2.27
2009	1634.84	-58.36	1576.48	3.23
2010	2177.61	367.39	2545.00	1.90
Average	1278.94	222.25	1848.45	2.72

North-west Free State				
Year	Cost/ton	Prof/ton	Price/ton	Yield/ton
1971–81	414.29	194.64	608.93	1.12
1987–89	286.67	110.00	396.67	1.50
2001	869.10	246.29	1115.39	2.48
2002	1055.41	454.59	1510.00	2.39
2003	1224.39	145.57	1369.96	2.19
2004	1315.08	-71.67	1243.41	2.13
2005	1679.72	-442.10	1237.62	1.75
2006	971.00	807.07	1778.07	3.26
2007	1771.32	1527.23	3298.55	2.52
2008	2281.55	530.75	2812.30	1.80
2009	1937.56	-58.54	1879.02	1.74
2010	2378.25	183.74	2561.99	1.51
Average	1458.24	332.29	1880.63	2.18

Source: De Kock 1991:Table 6.8; and Grain SA 2000–2010.

APPENDIX 2: Composition of wheat production cost per hectare in rands (ZAR).

	Swartland	North-western Free State	Eastern Free State	Southern Cape
Year (2000) Cost/hectare				
Labour cost	128.73	147.26	171.58	
Total variable cost (VC)	1656.89	1456.22	1703.93	
Labour as a % of VC	7.769375	10.11248	10.06966	
Total cost (TC)	2311.44	1995.25	2347.3	
Labour as % of TC	5.569256	7.380529	7.309675	
Variable cost as % of TC	71.68215	72.98434	72.59106	
Year (2005) cost/hectare				
Labour	172.36	177.97	255	138.14
Total variable cost (VC)	2004.72	2511.23	2403.38	2195.66
Labour as a % of VC	8.597709	7.086965	10.61006	6.291502
Total cost (TC)	2698.29	2937.66	2868.88	2741.92
Labour as % of TC	6.387749	6.058223	8.888486	5.038076
Variable cost as % of TC	74.29594	85.48402	83.77416	80.07746
Year (2009) cost/hectare				
Labour cost	245.8	161.12	229	307.55
Total variable cost (VC)	4299.83	2913.38	3622.6	4378.26
Labour as a % of VC	5.716505	5.530346	6.321427	7.02448
Total cost (TC)	5289.77	3371.35	4160.91	5280.53
Labour as % of TC	4.646705	4.779094	5.503604	5.824226
Variable cost as % of TC	81.28576	86.41583	87.06269	82.91327

Source: Grain SA 2000–2010.

POVERTY – ILLUSTRATION: South Africa: Number and proportion of children (0–17 years) living in income poverty^a by province, 2003 and 2011.

Province	2003		2011	
	Number	%	Number	%
Eastern Cape	2 688 000	84.2	1 993 000	74.2
Free State	843 000	78.2	625 000	58.9
Gauteng	1 350 000	51.7	1 139 000	34.1
KwaZulu-Natal	3 004 000	78.5	2 828 000	67.1
Limpopo	2 346 000	88.1	1 706 000	76.1
Mpumalanga	1 028 000	77.9	846 000	57.4
North West	1 123 000	76.1	804 000	62.7
Northern Cape	245 000	72.5	279 000	64.2
Western Cape	696 000	45.6	578 000	31.8
South Africa	13 185 000	73.1	10 796 000	58.2

Source: Hall 2013 in Berry et al. 2013:90–94.

^aHouseholds with monthly per capita income less than R604 in 2011. In these cases, food security becomes of extreme importance and any large-scale fluctuations in price will increase pressure on poor households and the children in such households.