SADRN

SOUTHERN AFRICAN DEVELOPMENT RESEARCH NETWORK

POLICY BRIEF 2

The impact of biofuels on food prices in the Southern African Customs Union

INTRODUCTION

The quest for new sources of energy away from traditional petroleum products has in recent times led to the development and use of biological material (biomass). As the name suggests, biofuels are developed from organic materials. Thus an increase in the price of oil has also increased demand for biofuels, resulting in a high correlation between agricultural commodities* prices, particularly maize, and energy prices.

While escalating petroleum prices are one reason for the quest for other sources of energy, this is not the only factor. The search for alternative sources of energy was underscored by environmental concerns and energy security concerns in the US and European Union countries about their reliance on oil from a few countries.

The use of food products to generate fuel has raised concerns that this will raise prices of essential food items for poor households – and experts agree that biofuel production has affected the cost of food. Estimates range from a conservative estimate of 2%-3% by the US Department of Agriculture to 70%-75% in a study done by Mitchell (2008)**. Has this increased production of biofuels resulted in a shortage of food supplies at the household level?

Has that shortage – perceived or real — resulted in a permanent increase in prices thus threatening food security for poor households? Assuming that increased biofuels production threatens poor households' food supplies, what policy choices are available to governments in the Southern African Customs Union (SACU)?

* The agricultural commodities used in the production of biofuels include miscanthus, switchgrass, hemp, corn, poplar, willow, sorghum and sugarcane

** Mitchell, D. (2008) *A note on rising food prices.* Policy Research Working Paper 4682, Development Prospects Group, World Bank.

This brief explores the impact of increased biofuels production on maize prices, how the rise in maize prices affected low-income groups in SACU, and whether and when exportable maize surpluses are likely in South Africa.

RESEARCH FINDINGS

Maize prices

Maize pricing in South Africa is based on import/export parity and/or autarky while whole wheat prices, of which South Africa is a net importer, based only on the import parity price. It is worth noting that without government subsidies private production of biofuels is currently not a viable concern.

The world price of maize soared by 105% from January 2006 to December 2008, while in the South African market, which also serves as a proxy for SACU, the increase was 75%, from R946/Mt to R1 652/Mt. In the same period the price of crude oil increased from US$66/barrel to US$141/barrel.

How the rise in maize prices affected low-income groups in SACU

Maize is a staple food for more than 60% of households in the region. High prices therefore threaten food security. With the decline in producer prices, evidence suggests that it took longer for the maize price to decline. It is generally acknowledged

The information in this brief is extracted from a report prepared under the SADRN programme*: Analysing the impact of biofuels on rising food prices in SACU countries,* by Thomas Kunke. Available on the TIPS/SADRN website www.tips.org.za/programme/sadrn

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that there is a four-month transmission mechanism between changes in the producer price of maize and the retail price. The reduction in the price of maize at the retail point took longer than the four months even though the producer price was declining.

Generally the food basket is a good measure of household consumption patterns. It also provides information on how price changes affect affect households. In January 2006 the food basket was priced at R206.96 and by December it was up by 14.3%. In January to December of 2007 and 2008 the basket price was up 9.4% and 28.1%, respectively. The latter was almost four times higher than the annual average rate of inflation of 7.1%.

In parts of the SACU region, between January 2006 and December 2008 maize prices in Botswana, Namibia and South Africa respectively increased by 170%, 43% and 86% which made it difficult for low-income households to absorb considering that wages increase settlement averaged somewhere between 8% and 12%.

Predicting exportable maize surpluses in South Africa

An increase in the price of oil results in a substitution effect with an increase in demand for biofuels. Maize output for example increases with higher energy prices as maize is also used in the production of ethanol. To predict exportable maize surpluses three scenarios were developed.

Scenario 1 (Crude oil price below US$80/ barrel): Under this scenario government would lobby for the increased production of biofuels blend resulting in higher volumes of ethanol and biodiesel. Maize output would increase along with the increased maize demand. Maize exports would also increase.

Scenario 2 (Crude oil prices above US$80/ barrel): At $150/barrel the price of agricultural commodities is expected to increase with the maize price reaching US$305/Mt. At this price level government would be expected to adopt a cautious approach to biofuel policies and start pushing for higher blend ratios. Since the price of maize follows energy prices exports would be expected to slow – even as production would have increased due to higher prices. Most of the increased maize output would be absorbed by increased biofuels production and exports would be limited.

Scenario 3 (Crude oil price below US$50): This scenario rests on the assumption that OECD (Organisation for Economic Co-operation and Development) economies do not sufficiently recover from the 2008/2009 global recession while economic growth in BRIC (Brazil, Russia, India and China) is stable at 5-6% down from the 9-10% averages. Slower global economic growth results in lower demand for crude oil. Consequently both the oil and maize prices decline. With slower economic growth government finance would be under pressure, hence no funds would be available to finance further biofuel production. Lower maize prices would increase exports to the SACU region.

RECOMMENDATIONS

The analysis suggests that governments should implement policies to cushion poor households from the adverse effect of maize price increases. Two types of policy responses are in order:

- As a net food exporter, South Africa, which is a major source of maize supplies in the region, needs to encourage maize production not only at commercial level but also for subsistence purposes. Programmes such as the Agricultural Starter-Packs in South Africa, whereby government provides poor households with agricultural implements, should be encouraged. This initiative has proved successful in community-based co-operatives. In countries where there are no such programmes, South Africa's model could be adopted. Knowledge-sharing among SACU countries should be encouraged.
- While deregulation of the maize market is likely to hurt farmers, who are used to relatively high prices, it will introduce competition in the sector and thus lower prices to the benefit of poor households. It is worth noting that a thorough cost-benefit analysis on the effects of deregulation of the sector needs to be conducted.

The Southern African Development Research Network (SADRN) was launched in 2007 as a broad-based policy and research network. It aims to increase the supply of policy-relevant research in the SADC region and strengthen evidence-based policy-making. The project is funded by the International Development Research Centre (IDRC)

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SADRN focuses on three themes: industrial policy, services sector development at the regional level and trade policy and its linkages to pro-poor growth. The Botswana Institute for Development and Policy Analysis is the host of the trade and pro-poor growth theme working group, Trade and Industrial Policy Strategies hosts the industrial policy theme and the University of Mauritius hosts the services sector

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