

Ensuring small-scale farmers benefit from high food prices

The implications of smallholder heterogeneity in market participation

Messages

-  Closing the gap between actual and potential yields in developing countries is critical for meeting global food needs and containing food price increases.
-  The technical potential for increased production is greatest in regions where small-scale farms seem relatively unresponsive to higher food prices.
-  Efforts to raise productivity and promote a significant supply response will have limited success if smallholder linkages to markets are not strengthened.
-  Policy support to induce smallholder supply responsiveness needs to better recognize their heterogeneity and the constraints they face in generating marketable surpluses.

Introduction

It is often presumed that higher global food prices should induce agricultural producers to increase their production for sale, and in doing so, contribute to increased national and global food production. In reality, however, supply responsiveness, particularly of small-scale agricultural producers in developing countries, is conditioned by many other factors that differentiate the incentives and disincentives they face, and the ability of different smallholders within and across developing countries to respond to price changes. Improved understanding of the supply responsiveness of small-scale producers is critical in developing a more nuanced and proactive role for governments in supporting small-scale agriculture.¹

Global food needs

The *OECD-FAO Agricultural Outlook 2012–2021* argued that with food production growth in OECD countries slowing down, developing country regions, particularly those currently facing a significant productivity gap, will need to step up production to meet increased food needs in the future. The report suggests that future growth in production is primarily expected in Latin America and the Caribbean and in sub-Saharan Africa. The assessment is based on the fact that, since 2000, production in OECD countries has grown more slowly than in other developing country regions, where, with the exception of East Asia (11%) and South-East Asia (32%), the yield gap² exceeds 50%, and is particularly high in sub-Saharan Africa (76%) and in Central America and the Caribbean (65%).

The figure below presents the results of a scenario in which a 20% reduction in yield gaps in developing countries is modelled.

¹ P. Arias, D. Hallam, E. Krivonos and J. Morrison: *Smallholder integration in changing food markets*. FAO, Rome.

<http://www.fao.org/economic/est/issues/smallholders/en/>

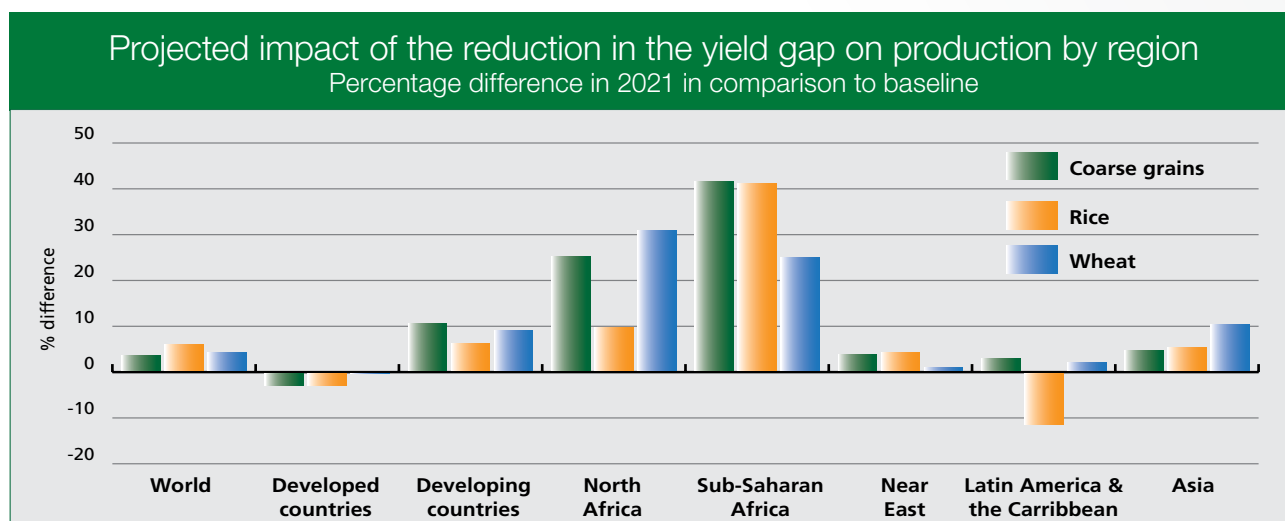
² Economically attainable yield/actual yield in 2005.

The percentage difference in production of the main cereal crops is compared with the baseline projection of production levels for 2021. At the global level, production is higher by between 3.4% (coarse grains) and 5.7% (wheat). Production in developing countries is estimated to be up to 10% higher, with disproportionate increases in sub-Saharan Africa as a result of significantly larger yields. Lower prices, due to increased production, would cause substitution of the production of other commodities and reduction in the production of cereals *vis-à-vis* the baseline projection levels.

Hence, higher global prices, better agronomic practices, and an improved commercial, technical and regulatory environment to encourage agricultural innovation, should lower the yield gap and increase aggregate production, reducing pressures on global food prices. In determining the extent to which developing country regions can contribute to increased food production in the future, there is a need to look more closely at the assumptions relating to the supply responsiveness of producers.

Heterogeneity of smallholder agriculture

Smallholder agriculture is practised by very heterogeneous producers, with differences – among other characteristics – in the resources and technologies they have access to and are able to use effectively; the factors determining their production and consumption decisions, such as household dependency ratios and access to off-farm employment; the production and market-related risks that they face; and the markets in which they are able to sell. Depending on their characteristics and the context in which they operate, different smallholder households will make different decisions when faced with similar incentives.



Source: Based on data from Table 2.6 in *OECD-FAO Agricultural Outlook 2012–2021*, OECD, Paris, and FAO, Rome.

Smallholder supply response to higher food prices

The factors influencing smallholders' propensity to increase production for sale in markets can be categorized at three levels:³

- The smallholder household's access to assets and the productivity of those assets, including natural resources, labour and capital, vis-à-vis their subsistence needs will determine both their ability and their willingness to increase food crop production for sale in markets.
- The connectivity of smallholders to different markets in terms of remoteness, defined broadly to include geographical proximity, knowledge asymmetries, power relationships, and the costs of commerce.
- The functionality of the markets in which they participate. Prices in many local food markets are generally characterized by high inter-seasonal volatility due to the low volumes transacted and their limited integration with regional or international markets. Volatility can affect the level and riskiness of returns to producers. Where markets are not well integrated, returns to increased output can diminish quickly as prices plummet, significantly affecting incentives for market participation and, consequently, the adoption of productivity-enhancing technology.

These factors will play out differently for each staple-producing household. Faced with similar market incentives, some smallholders will intensify production on existing plots by adopting new technologies or practices, while others will

³ C. Barrett. 2010. Smallholder market participation: concepts and evidence from Eastern and Southern Africa. In A. Sarris and J. Morrison, eds. *Food Security in Africa: market and trade policy for staples foods in Eastern and Southern Africa*. Cheltenham, UK, and Northampton, USA, FAO and Edward Elgar.

Box 1

SMALLHOLDER SECTOR AGRICULTURE RESPONDS TO HIGH PRICES

Recent maize harvests in Zambia have been well above average levels. This has coincided with Food Reserve Agency interventions to purchase maize at prices significantly higher than market prices and an expansion of the Farmer Input Support Programme. Yet, only 36% of smallholders were expected to sell any maize in 2010/11, of whom 26% were net sellers, and only 3.3% accounted for half of all maize sales in the country. For the third group of producers, the policy has rewarded efforts to increase production to reap gains from higher prices, but for the other groups, particularly net buyers, the implications are less clear.

Source: C. Nkonde, N.M. Mason, N.J. Sitko and T.S. Jayne. 2011. *Who gained and who lost from Zambia's 2010 maize marketing policies?* FRSP Working Paper No. 49. Lusaka, Zambia.

Box 2

DIFFERENTIAL RESPONSES ACROSS SMALLHOLDER HOUSEHOLDS

Research in Malawi suggests that some categories of small-scale producers reduced levels of staple food production as prices increased. Resource-poor producers who were unable to produce sufficient food to meet household needs, and hence reliant on purchases from markets in pre-harvest periods, were forced to reduce the labour for their own production in order to generate sufficient cash income to purchase food at higher prices. This resulted in a negative supply response for these households and a more muted aggregate supply response for the country as a whole.

Source: A. Dorward, S. Fan, J. Kydd, H. Lofgren, J. Morrison, C. Poulton, N. Rao, L. Smith, H. Tchale, S. Thorat, I. Urey and P. Wobst. 2004. *Institutions and economic policies for pro-poor agricultural growth*. DSGD Discussion Paper No. 15. Washington, IFPRI, and London, Imperial College.

increase the amount of land under the crop in question. However, other smallholders will be constrained from benefiting from improved opportunities due to several principal factors, including their remoteness from, and lack of participation in, markets.

In illustrating the diversity of responses, the following boxes draw on recent analyses of the supply responsiveness of smallholder-dominated sectors in sub-Saharan Africa. Box 1 provides evidence that, although aggregate supply responses to improved prices have been observed at the country level, often only a relatively small proportion of smallholders account for the bulk of the increase in production.

Box 2 suggests that some, particularly poorer, smallholder producers actually decreased production on their own farms in response to a food price increase as a result of the complex resource allocation decisions that they had to make, muting the aggregate supply response for the country as a whole.

Box 3 shows that production and consumption decisions at the household level cannot be separated, and consequently constrain the adoption of technologies needed to significantly increase food crop production.

Implications for policy support

As a result of the interplay of many factors, smallholder participation in markets – both as sellers and buyers of food, and hence their ability to benefit from increased food prices – is characterized by constrained choice. Smallholders are likely to increase their engagement in markets as sellers of food when

well-functioning markets give them appropriate incentives; they have access to assets and the ability to use them productively to produce surpluses for the market; and efficient infrastructure allows them to transport their produce to market at reasonable cost. However, if one condition is missing, they cannot or will not be willing to participate to the same extent.

Because smallholder households differ significantly in how they participate in markets and in the extent to which these markets are integrated with other domestic, regional and international markets, the design of policy interventions aimed at encouraging increased smallholder production for sale in markets needs to take better account of this heterogeneity.

Global-level analyses cannot be expected to model the responsiveness of a very heterogeneous group of producers within and across countries in different regions. However, there may be traction in determining the relative levels of responsiveness across countries characterized by different agrarian structures (particularly differing extents of subsistence agriculture), different levels of market connectivity, and with different degrees of price transmission from global to local food markets, with a view to identifying the critical constraints that prevent certain categories of smallholder producers from benefiting from higher food prices.

Higher prices may translate into better incentives for those producers who are already active as net food sellers and who have the ability to respond. For these producers, policy support may be required, primarily in the form of improved access to risk management instruments and/or improved post-harvest and market infrastructure. For smallholders without the same level of participation in well-functioning markets, access to policy support may need to be targeted at specific constraints relevant to different categories of households, which may include improving the functionality of input and output markets, or strengthening the ability of producers to engage, individually or collectively, in these markets.

Box 3

FOOD SECURITY VS MARKET REQUIREMENTS

Increasing production of food for sale in markets also means meeting market requirements. Cassava is extensively grown in many parts of sub-Saharan Africa, but primarily for subsistence purposes. This has constrained the adoption of improved varieties, often with yields two to three times greater than traditional varieties, deemed necessary to achieve levels and consistency required for more commercially oriented production, but that do not have the same taste or storage characteristics. Strategies aimed at developing food staples markets therefore need to consider the propensity of smallholder producers to generate marketable surpluses of crops essentially grown for food security purposes.

Source: N. Poole, M. Chitundu, R. Msoni and I. Tembo. 2010. Constraints to smallholder participation in cassava value chain development in Zambia. FAO AAACP Paper No. 15. Rome, FAO/PAM.

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