Regional Network of Agricultural Policy Research Institutes

1st Annual Agricultural Outlook: 2014-2023

Anticipating and responding to the region's policy challenges in the decade ahead

The Regional Network of Agricultural Policy Research Institutes (ReNAPRI) is a regionally coordinated group of national agricultural policy research institutes duly established and operating in the Eastern and Southern Africa (ESA) region member states[1]. The vision of ReNAPRI is to support national agricultural policy research institutes in Africa to be centers of excellence that guide and inform national and regional agricultural and food security policy issues. To generate the Outlook, ReNAPRI has partnered with various non-African institutions, which include the Food and Agriculture Organization (FAO) of the United Nations (UN), Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri and Michigan State University (MSU).

The ReNAPRI baseline 2014 presents an outlook of maize production, consumption, prices and trade for select countries in ESA for the period 2014 to 2023. The outlook is based on assumptions about a range of economic, technological, environmental, political, institutional, and social factors. The baseline does NOT constitute a forecast, but rather a benchmark of what COULD happen under a particular set of assumptions. Next to the outlook for maize in Kenya, Tanzania, Malawi, Mozambique, South Africa, Zambia and the Democratic Republic of the Congo (DRC) which relates to typical balance sheet projections (area, production, consumption and trade), the baseline also has a farm-level analysis. *agri benchmark* proto-type farms cross the region are used to measure cost of production and farm-level analysis.

Production costs are the basis of competitiveness. Production cost information can play a valuable role in informing critical agricultural policy issues and guiding policy makers' decisions. However, there is a paucity of consistently collected information on crop production costs in Africa. Cross-country comparisons are inhibited by their sporadic collection, and lack of comparability in methods and timing. In order to overcome these knowledge gaps, ReNAPRI conducted a Cost of the Production study between 2013 and 2014 in Kenya, Tanzania, Malawi, the Democratic Republic of the Congo, Zambia, Mozambique and South Africa. The scope of the study involves two complimentary approaches; 1. the *agri benchmark* approach, which utilized a consistent methodology for measuring costs of production for vastly different maize production systems in the region; and 2. a survey-based approach, which complemented the *agri benchmark* approach by constructing estimates of maize production costs and marketing margins for specific regions and production systems using detailed farm survey data. The report presents ReNAPRI's first findings on the cost of maize production based on the *agri benchmark* approach, which is then compared to estimates derived from the survey-based approach. The objective of the *agri benchmark* initiative is

[1] Participating Institutes:
Institute of Social and Economic Research (IRES), University of Kinshasa, Democratic Republic of Congo;
Tegemeo Institute of Agricultural Policy and Development, Egerton University, Kenya;
Centre for Agriculture Research and Development (CARD), Bunda College, Malawi;
Research Center for Agricultural and Food Policies and Programmes (CEPPAG), Eduardo Mondlane University, Mozambique;
Bureau for Food and Agricultural Policy (BFAP), Universities of Pretoria and Stellenbosch, South Africa;
Sokoine University of Agriculture (SUA), Tanzania;
Indaba Agriculture Policy Research Institute (IAPRI), Zambia

to create a national and international database on farm level information through collaboration between the public sector, agribusinesses and producer organizations. The link between the local and international network provides the means to benchmark Eastern- and Southern African agriculture with global farming systems. From 2013, the *agri benchmark* methodology was applied within Eastern and Southern Africa through the identification of prototype farms in the key maize producing regions within the ReNAPRI network. Regions are pre-selected based on the prevalence of maize cultivation within countries included in the network. The standard operating procedure (SOP) used to identify proto-type farms, their respective regions, their prevailing production systems, size, management level and labor structure allows for standardized and comparable farm-level datasets across the globe. The proto-type farms presented in the analysis represent the modal production features of specific growing regions selected for the study, however they cannot be considered strictly representative of an entire country. Intra-regional variations in production costs arise due to variations in farm sizes, yield levels, output prices, crop response rates to fertilizer, and other technical parameters. The network includes two farms in each country; representing a small- and large scale proto-type farm representative of modal conditions in two specific maize-producing regions. It should be noted that the first *agri benchmark* proto-type farm findings refer specifically to the 2011/12 season, which implies maize planted in 2011 and then harvested and marketed in 2012. As future annual updates continue for these identified prototype farms, the availability of time-series data will identify variations related to climate and hence provide a more comprehensive picture of what can be expected from these modal farms and their respective regions. Integrating the *agri benchmark* proto-type farm approach and household survey data allows for production cost information and their respective variations to be captured on a more frequent basis.

Main outcomes of the farm-analysis regarding yield levels and regional market price trends are:

Certain proto-type farms performed substantially better in the 2011/12 production season relative to their respective 10 year national averages and in selective cases, to their district median yield levels obtained from household survey results. The second key observation is that the large-scale proto-type farms performed significantly better when compared to the small-scale farms. The latter is due to a combination of factors including; the degree of mechanization, effective- and efficient fertilizer and seed utilization, plant protection and the application of lime in selective cases.

The average market price received by the ReNAPRI *agri benchmark* small-scale proto-type farmers was approximately US$ 257 per ton whereas large-scale producers obtained US$ 297 per ton. The average national maize price recorded for the region was US$ 275 per ton. The highest maize prices obtained in the sample space were the DRC and Mozambique, with average prices of US$ 396 per ton in DRC and US$ 317 per ton in Mozambique. The lowest reported maize prices on the proto-type farms were on the Zambian commercial farm with an average price of US$ 170 per ton and on the Malawian small-scale farm with an average price of US$ 197 per ton. The Agricultural Household Survey conducted in Kenya in 2010 reported an average maize price in the Kitale region of US$ 260 per ton. In the same year, the national median maize price was US$ 267 per ton.

Further results regarding fertilizer, seed, labor and establishment costs are shown in the outline.

For more information about ReNAPRI visit the homepage www.renapri.org