



Central Bank of Kenya

Monetary Policy Committee Agriculture Sector Survey

September 2022



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1. BACKGROUND

The agriculture sector continues to play a critical role in Kenya accounting for 22 percent of Gross Domestic Product (GDP) and 27 percent indirectly through its linkages with other sectors. The sector also employs over 40 percent of the total population and more than 70 percent of the rural populace¹. Given the critical role the sector plays in providing livelihoods and a food basket for the Kenyan economy, it is increasingly important to ensure that high frequency quality data is available to inform the food supply situation in the country, the prevailing prices and the challenges that may affect production in the sector. Towards this end, the Central Bank of Kenya (CBK) introduced the Survey of agriculture sector in July 2022 to complement the existing CEOs and Market Perceptions surveys. This survey is aimed at generating high frequency agriculture sector data to provide additional information to support monetary policy decision process.

The Economic Survey (2022) reported a deceleration in the growth performance of the agriculture sector from 5.2 percent in 2020 to a contraction of 0.1 percent in 2021 on account of unfavorable weather conditions that led to a reduction in both crops and livestock performance. Maize production decreased from 42.1 million bags in 2020 to 36.7 million bags in 2021. A similar trend was reported for beans, coffee, wheat and tea. The reduced production was attributed to rising cost of farm inputs, leaf rust infestation and shift in land use from agriculture to real estate development. In the first quarter of 2022, the sector contracted further by 0.7 percent. Understanding the trends in the prices of agricultural commodities and the sector's output is critical given the significant weight of food in the CPI basket, and important role of the agriculture in the economy. Moreover, given the high reliance on rain-fed farming systems, farmers are increasingly being exposed to dry, more marginal areas aggravating their vulnerability to drought and unpredictable weather patterns due to climate change.

The September 2022 agriculture sector survey therefore aimed at obtaining indicative information on the recent trends in prices and output of agricultural commodities in various markets and farms across the country. The Survey also provides

an indication on the extent of availability/supply of key food commodities in the country.

The main areas of focus for the survey include:

- i. Prices of key agricultural commodities and their expectations
- ii. Agricultural output, acreage, and expectations
- iii. Factors affecting agricultural production
- iv. Proposals to improve agricultural production

The Survey also came at a time when COVID-19 positivity rate is low, the economy fully reopened, uncertainties linked to the pandemic significantly reduced, and the lifted ban on maize imports from Uganda and Tanzania in March 2022. The war in Ukraine conflict impacted negatively on wheat prices globally, but the prices have started to moderate with the recent lifting of the blockade on wheat exports from Ukraine.

2. METHODOLOGICAL FRAMEWORK

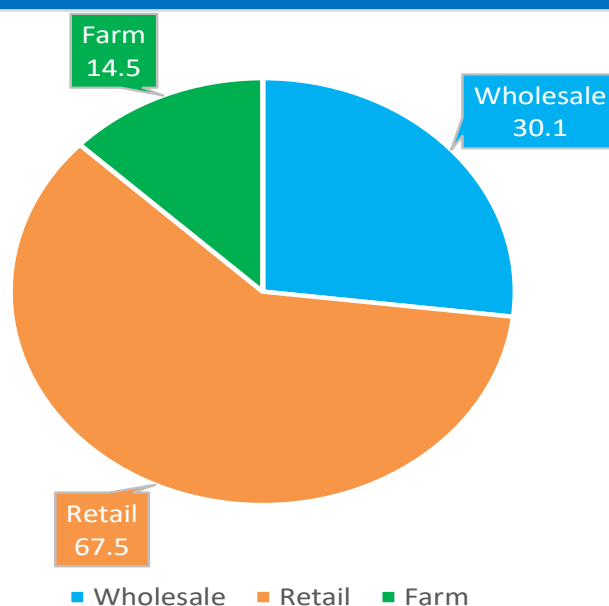
The Survey conducted between September 15 and 16, 2022 drew respondents from wholesale traders, retail markets, and farms in major towns across the country. This included: Nairobi, Nairobi Metropolitan area, Naivasha, Gilgil, Nakuru, Narok, Kisumu, Mombasa, Kisii, Eldoret, Meru and Nyeri.

The scope of this second Survey of agriculture sector was extended to cover 50 commodities including Vegetables (Kales, Cabbages, Spinach), Non-Vegetables (Tomatoes, Onions, Potatoes), Grains (Dry maize, green maize, Beans, Wheat) and Animal products (Beef, Eggs and Milk) up from 10 commodities in July 2022. The coverage and scope are expected to expand in future as more data becomes available.

Although the data was captured digitally using Survey Monkey, Researchers made physical visits to markets and farms where personalized interviews were conducted in major towns. The survey obtained 100 percent response rate as summarized in **Figure 1**. Retail markets accounted for 67.5 percent of the sampled respondents followed by wholesale markets (30.1 percent) while farms took (14.5 percent).

¹<https://www.fao.org/kenya/fao-in-kenya/kenya-at-a-glance/en/#:~:text=Agriculture%20is%20key%20to%20Kenya's,cen%20of%20Kenya's%20rural%20people.>

Figure 1: Response Rate (percent)



3. MAIN HIGHLIGHTS FROM THE SURVEY

The following are the key highlights of the survey are:

- i.) Prices of key agricultural commodities are expected to decline or remain unchanged in October 2022.
- ii.) Wholesale prices of vegetables and maize declined in September with the short rains and harvests, respectively.
- iii.) Most farmers expect the level of output for key food items to increase during the next harvest.
- iv.) Acreage for key food crops in the next harvest is expected to increase.
- v.) Most farmers use fertilizer and wage labor in their activities.
- vi.) Nearly all farmers depend on rain reflecting their vulnerability to climatic conditions.
- vii.) The major factors constraining agricultural production were indicated as transport costs due to the rise in fuel prices, adverse weather conditions, and the cost of inputs such as seeds and fertilizers.
- viii.) Farmers highlighted that the key challenges facing agricultural production include costly and

substandard farm inputs, high transport costs, cartels in the chain of production, infestation by diseases and pests, adverse weather conditions and lack of markets

- ix.) To enhance agriculture sector production, the respondents recommended the need to lower transport costs, provide concessional loans to market traders, reduce the cost of inputs such as fertilizer and seeds, construct more dams to harvest water for irrigation, adopt modern technology in agriculture, reduce tax levies and expand markets for the produced goods

3.1 Prices of Key Agricultural Commodities and their Expectations

The Survey sought to determine the trends of changes in prices of key agricultural commodities between July and September 2022. Mixed trends were observed in the three markets and the results are represented as follows (**Figure 2**).

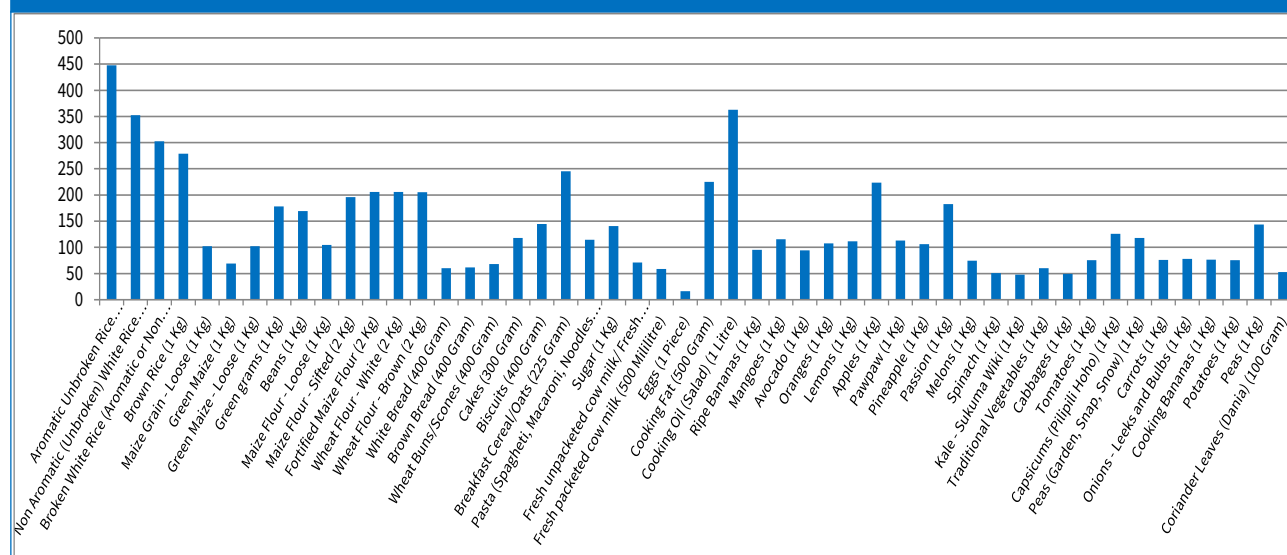
Figure 2: Monthly Changes in Wholesale Prices of Key Food Items (percent)



The analysis of wholesale prices in different regions revealed a decline in the prices of kales, cabbages, spinach, tomatoes, dry maize, green maize, and milk in September 2022 as compared to July and June 2022. This was on account of the improved weather conditions that supported the vegetable season. However, the price of onions, potatoes, beans, wheat, and eggs remained elevated due low production (Figure 2).

Regarding the average prices in retail markets, the survey introduced 50 food items used in the computation of the consumer price index from the consumers food basket (Figure 3). The selected items will be tracked every month beginning September 2022 to inform the direction and magnitude of price movements.

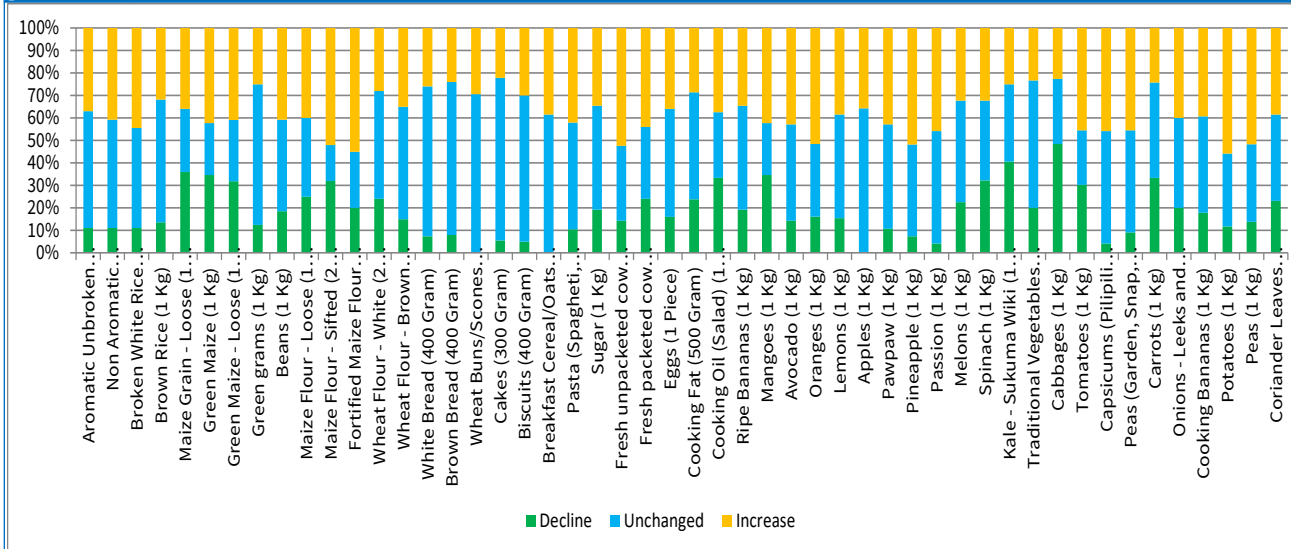
Figure 3: Average Retail Prices of Key Food Items in September 2022 (KSh)



3.2 Expectations of changes in agricultural prices and supplies

The survey also obtained information about market expectations on prices and output provided in **Figures 4 to 6**.

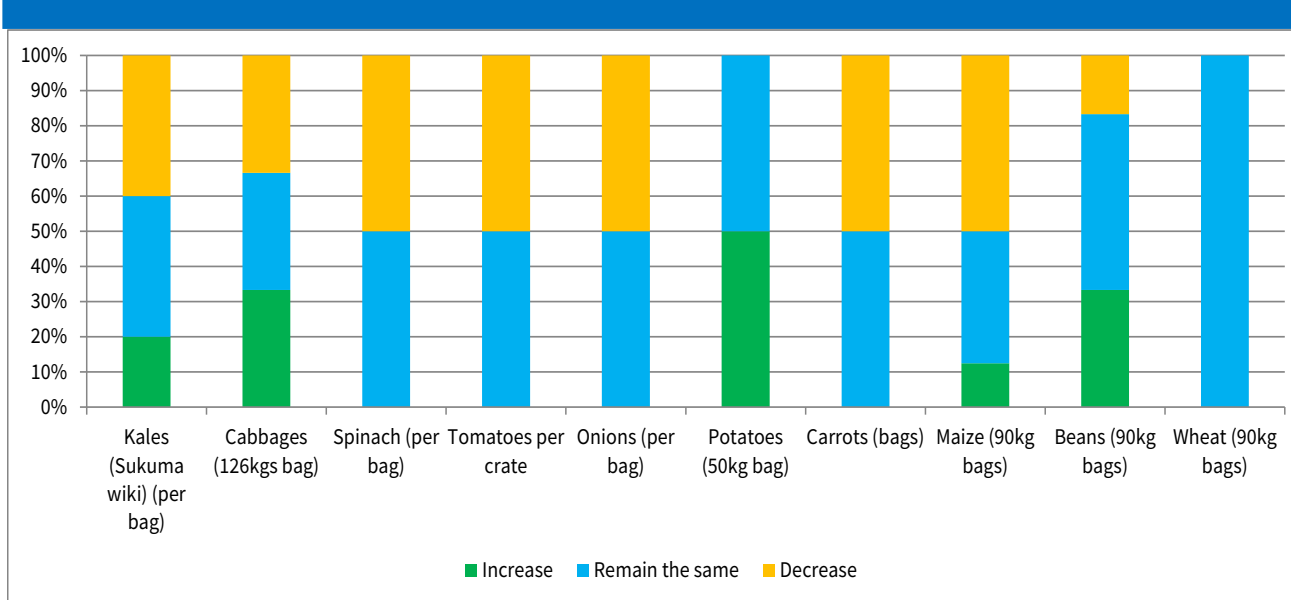
Figure 4: Retail price expectations in October 2022 (proportion of respondents percent)



Most respondents expect retail prices of select food items to remain the same or decline in October 2022 (**Figure 4**). Specifically, 62 percent of the sampled population expect retail prices of agricultural commodities to either decline or remain

unchanged in the next month. However, 38 percent of respondents expect the prices to increase largely reflecting the impact of the recent increase in fuel prices.

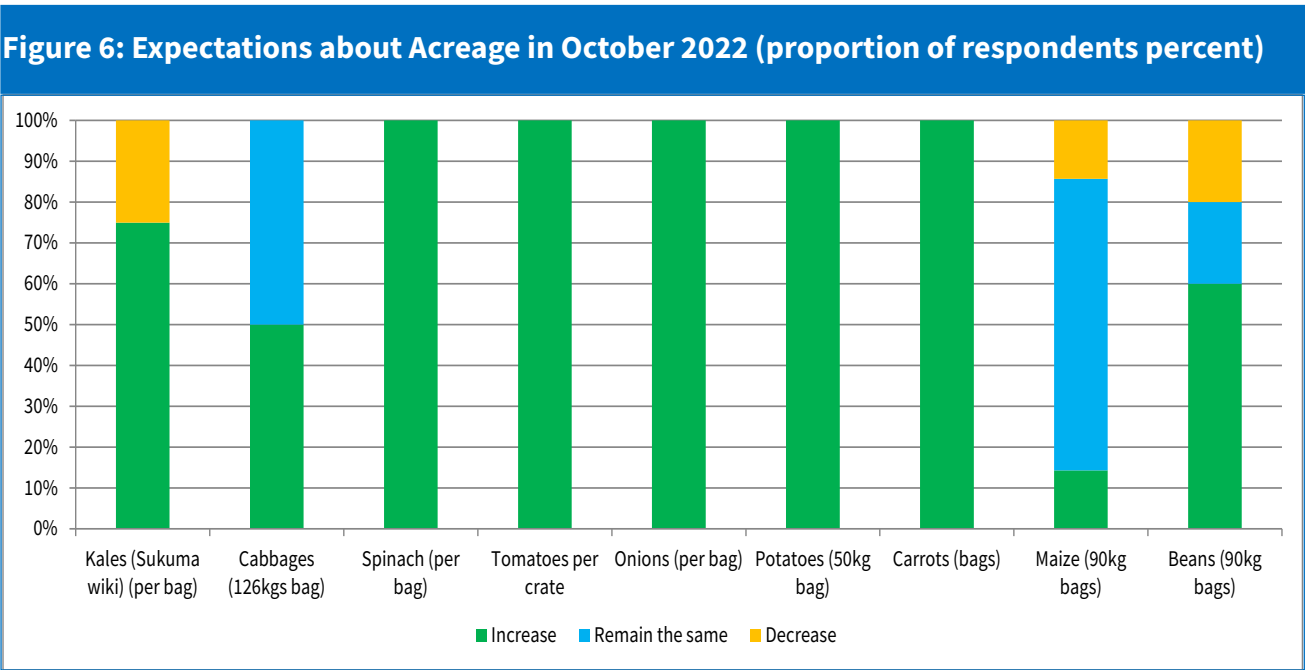
Figure 5: Market Supply Expectations in October 2022 (proportion of respondents percent)



Over 60 percent of the farmers expect the volume of key food items to increase or remain the same during the next harvest following the introduction of low-cost fertilizer in the market and favourable weather conditions (**Figure 5**). Majority of potatoes, kales, cabbages, beans, and wheat farmers expect agricultural output to either increase or remain the same on account of improved weather conditions and increased acreage per food crop. However, the output for spinach, tomatoes, onions, carrots, and maize was expected to either decrease or remain the

same in the next harvest.

Acreage for the next harvest is expected to increase (**Figure 6**). Over 60 percent of the population expect the area dedicated to the production of kales, spinach, tomatoes, onions, potatoes, carrots, and beans to increase the next season. The area dedicated to the production of cabbages and maize will either increase or remain the same on account of improved weather conditions, reduced input prices and expected rains.



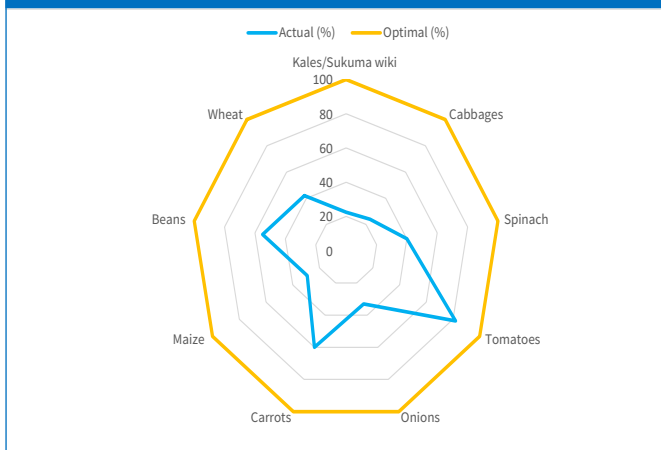
Acreage for the next harvest is expected to increase (**Figure 6**). Over 60 percent of the population expect the area dedicated to the production of kales, spinach, tomatoes, onions, potatoes, carrots, and beans to increase the next season. The area dedicated to the production of cabbages and maize will either increase or remain the same on account of improved weather conditions, reduced input prices and expected rains.

3.3 Productivity in Agricultural Production

To inform the productivity of the agriculture sector in terms of agricultural production, use of yields per acre is often recommended. This helps in establishing the variance between the

actual level of production from its potential. In this survey, the farmer estimation approach was used where farmers were asked about the estimates of the total crop harvested. This value was divided by the size of the land measured in acreage or hectares where the crop was harvested to provide the yields (level of output per unit of land area). Yields for seasonal crops are computed at the end of the cropping season during harvest while for continuous crops, the computation should be done regularly to accommodate both wet and dry seasons from which an average yield per acre can be computed for more accuracy. **Figure 7** presents the average yields per acre for selected food crops in the current planting cycle.

Figure 7: Yields per Acre (%)



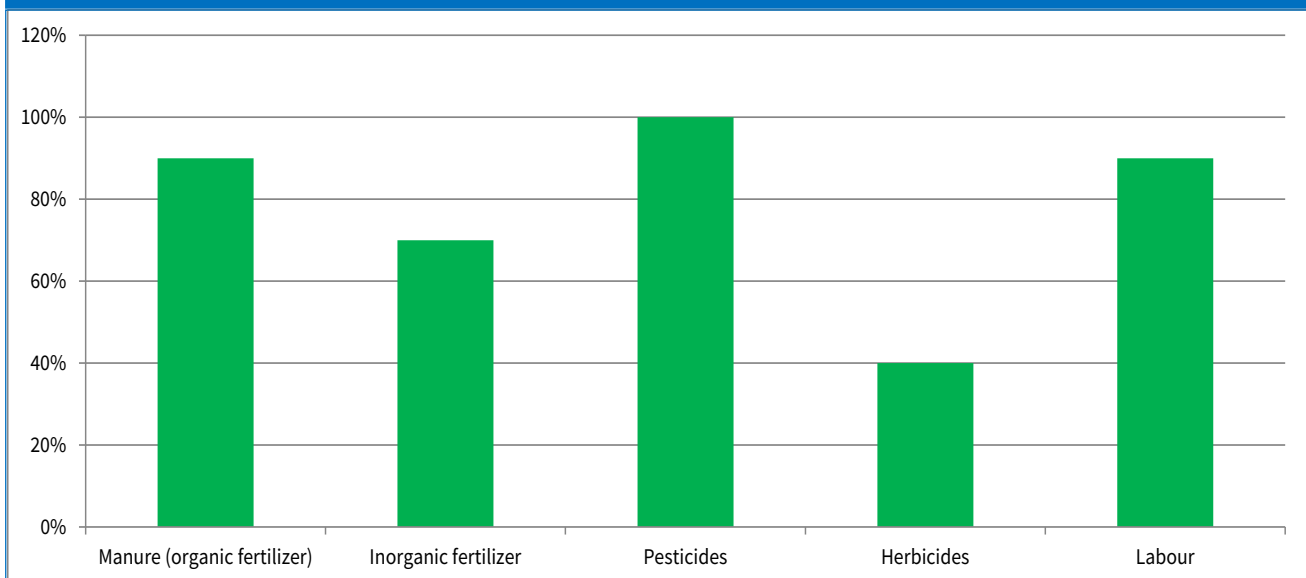
The survey established that yields for all the sampled food crops fell below the potential in September 2022. Tomatoes achieved the highest yields per acre followed by carrots and beans. This indicator will be tracked in subsequent surveys to bring out changes over time. Some of the factors that respondents expect to raise the

yields per acre include improved weather conditions, increased acreage per crop and recent reduction in fertilizer prices.

3.4 Use of Farm inputs in Agricultural Production

Optimal combination of farm inputs in agricultural production is critical in enhancing farm yields especially for the Kenyan economy whose mainstay is agriculture. Use of farm inputs that embody modern technology such as improved seeds, fertilizers, agro-chemicals, farm implements and irrigation for example has potential to increase the level of output and reduce poverty for the masses who rely on agriculture. Unfortunately, access to and utilization of farm inputs is beyond the reach of many farmers due to the associated costs. The Survey established that farmers employed an array of farm inputs ranging from manure, fertilizer, chemicals, equipment, seeds, water among others to raise output **Figure 8**.

Figure 8: Use of Farm Inputs in Production (percent of respondents)



The survey showed that over 90 percent of the farmers use fertilizer and about 80 percent of them utilize waged labor in agricultural activities. Most farmers used a combination of manure, inorganic fertilizer, pesticides, and herbicides to improve the quality of output. The use of herbicides however remains relatively low at 40 percent. Respondents indicated that the uptake of these farm inputs could be revitalized by the introduction of government's agricultural input subsidy schemes such as the recent halving of

fertilizer prices by the Government.

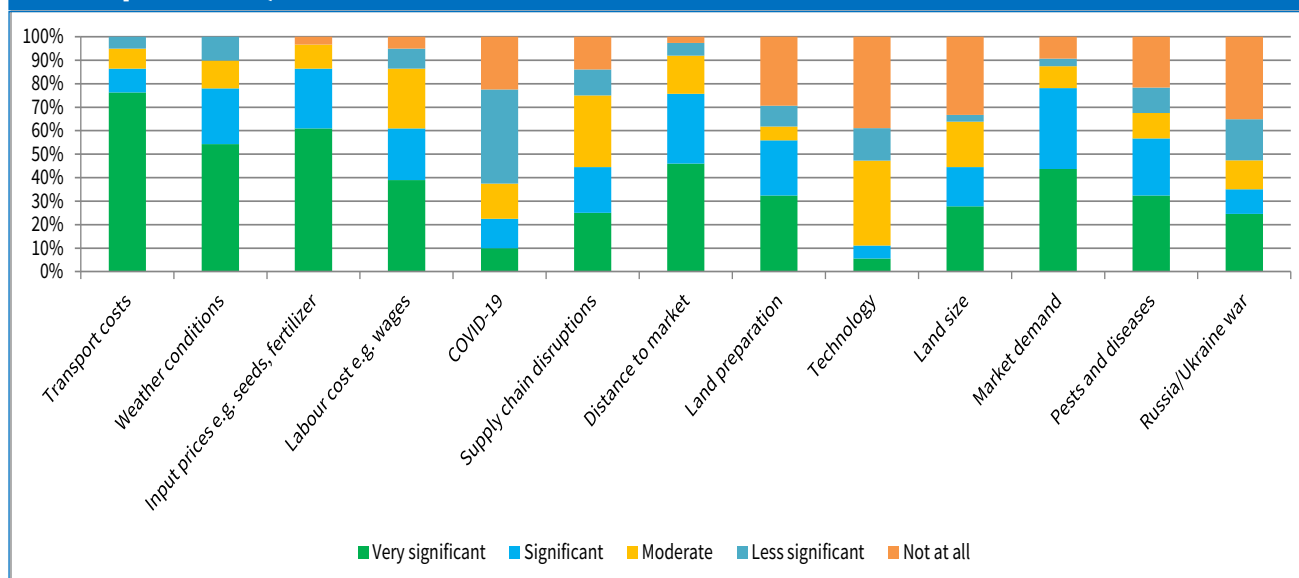
Although the uptake of farm inputs appears to be relatively high in aggregate, it may not be uniform across the country. In addition to the assessment of the farm inputs, the survey asked questions on the main water source. Results indicated that nearly all farmers depended on rain to water their crops reflecting their vulnerabilities to climate change.

3.5 Factors affecting Agricultural Production

Although agriculture remains an ancient practice, several factors including economic, biological, environmental, and technological affect the sector significantly. A good understanding of the dynamics in agriculture sector is critical in unlocking its potential to enhance food security through increased

yields and to stabilize the food prices. Using a five-point Likert scale, the Survey sought answers on the factors that account for the observed changes in the prices and quantities of agricultural commodities (Figure 9).

Figure 9: Factors constraining Agricultural Production – September 2022 (percent of respondents)



The survey findings singled out transport costs, input prices and weather conditions as the main factors constraining agricultural production. Transport costs, input prices and weather conditions accounted for over 40 percent of the factors that significantly affected agricultural production. The results further showed that COVID-19 is not important in explaining agricultural production as the economy is fully operational following the lifting of all restrictions to movement.

Market availability, nearness to markets and labour cost were also found to have significant impact on agricultural production while land size, supply chain disruptions and Ukraine-Russia war had a moderate effect. Technology played a less significant role probably on account of low adoption of technology in farming

4. CHALLENGES FACING THE AGRICULTURE SECTOR

In addition to the factors that constrain agricultural production, the survey sought answers from farmers on the main challenges experienced. The main challenges revolved around the pricing of farm inputs. The farmers responded that costly prices of farm inputs such as inorganic fertilizer, and animal feeds for chicken and cows discourage them from increasing production. The situation is aggravated by the high transport costs due to rising fuel prices and labour during peak seasons. Other key challenges mentioned include:

- Cartels in the chain of production and low customer demand
- Diseases and pests e.g Maize lethal disease (MLD)"
- Adverse weather conditions and low and unpredictable rainfall patterns
- Infiltration/substandard inputs e.g seeds, fertilizers
- Long distance to the markets

5. PROPOSALS TO IMPROVE THE AGRICULTURE SECTOR

The Survey sought responses on the areas where market traders and farmers may want to see improvements to enhance agriculture production. The recent reduction in fertilizer prices is good as it will lead to higher supply and therefore lower prices for the consumers. This government action should be supplemented by the following measures:

i.) Reduction in transport costs which poses risks following the recent increase in fuel prices

- ii.) Concessionary loans to farmers
- iii.) Reduced cost of inputs e.g., fertilizer and seeds
- iv.) Sinking of boreholes and dams for irrigation to counter the adverse weather conditions
- v.) Use of appropriate technology to increase productivity and technical efficiency in production.
- vi.) Reduce tax levies to support farming and market creation

6. CONCLUSION

The CBK conducted the second Survey of the agriculture sector from September 15-16, 2022 to obtain information on the recent trends in prices of agricultural commodities in various markets and farms across the country and the sector's output. The Survey focused on prices of key agricultural commodities, agricultural output, acreage and future expectations, determinants of agricultural production and proposals on how to improve agricultural production. The target respondents included: wholesale traders, retailers, and farmers in major towns.

The collated findings were drawn from 100 respondents covering Nairobi and the neighbouring counties including Kiambu, Kajiado and Machakos, Naivasha area, Nakuru, Narok, Kisumu, Mombasa, Kisii, Eldoret, Meru and Nyeri. The Survey established mixed trends in wholesale, retail and farm prices and output for the selected commodities.

Key findings from the Survey revealed the following:

- i.) The retail prices of agricultural commodities are expected to remain the same, with a bias towards a decline.
- ii.) Most of the farmers expect the supply of potatoes, kales, cabbages, beans and wheat to either increase or remain the same

- iii.) The area allocated towards agricultural production is likely to increase or remain the same the next season.
- iv.) Agriculture production in Kenya is very vulnerable to weather conditions since farmers rely almost entirely on rainfed agriculture
- v.) Transport costs, input prices and weather conditions accounted for over 40 percent of the factors constraining (challenges) agricultural production.

Other challenges cited by farmers include; costly and substandard farm inputs, cartels in the chain of production, pests and diseases infestation and limited markets

To enhance the agriculture sector and improve production, respondents recommended that the government puts in measures aimed at reducing transport costs which poses risks following the recent increase in fuel prices, provision of concessional loans to market traders, a reduction in the cost of inputs such as fertilizer, pesticides and seeds, construction of more dams to harvest water for irrigation, adoption of modern technology in agriculture, reduction of tax levies and expansion of markets for the produced goods. The farmers commended the Government for the recent reduction in fertilizer prices which would boost production leading to lower production costs.



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