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# UKRAINE CRISIS BRIEF SERIES

## The Income and Food Security Effects of Vegetable Oils Market Disruptions

*Ousmane Badiane, Ismael Fofana and Leysa M. Sall*



### 1. Exposure and Vulnerability to Global Vegetable Oils Market Disruptions

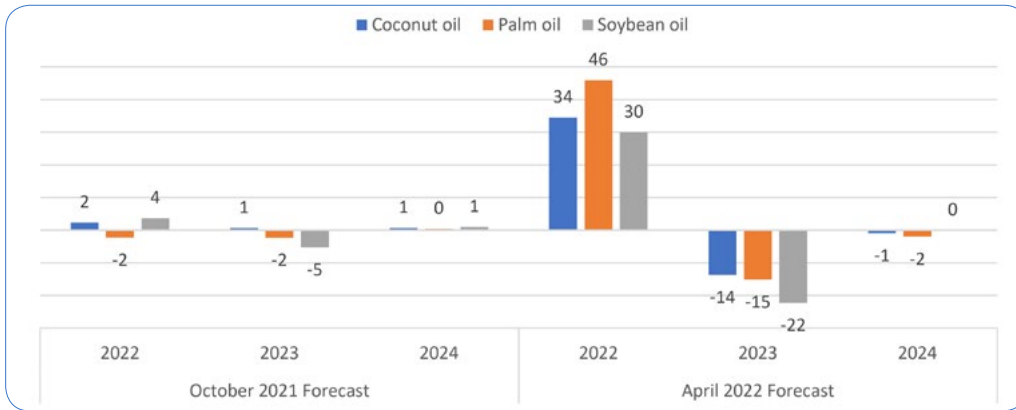
The Russia-Ukraine conflict is a source of both short-term and longer-term market disruption, particularly in trade in grain and oilseed markets. Having stabilized in the aftermath of COVID-19, global oilseed prices rose by 30-50% after the start of the Ukraine war in 2022 (Figure 1).

Monthly estimates of commodity prices by the World Bank show that sunflower oil increased by almost 60% between February and March 2022. Other than soybeans, little reprieve is expected in the near future. Prices of coconut oil, palm oil and soyabean oil are projected to decline by 14-22% in 2023 before stabilizing in 2024.

The dependency of African countries on Russia and Ukraine for these commodities as measured by the share of the two countries in total imports by African countries is much lower than for wheat or fertilizers. It reaches 5% for only one country, Sudan, which imports mainly sunflower oil (Figure 2). However, as many as 40 African countries depend on imports for more than 40% of their domestic vegetable oil needs (Figure 3). The exposure and vulnerability of these countries therefore goes beyond a direct dependency on exports from Ukraine and Russia, particularly because countries exporting vegetable oils to Africa may buy oilseeds from the warring countries.

THE UKRAINE CRISIS  
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**Figure 1. Changes in Global Vegetable Oils prices, (%)\***

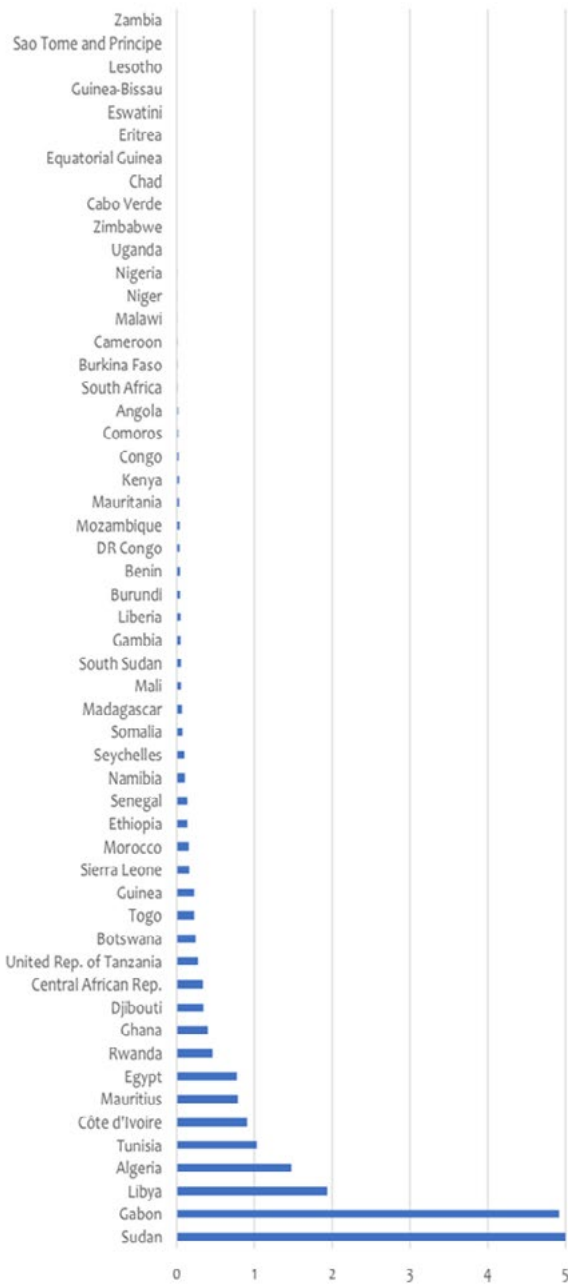


Source: Commodity price database (World Bank, 2022).

\*Difference in prices projected by the World Bank in October 2021 and April 2022.

**Figure 2: Degree of Import Dependency**

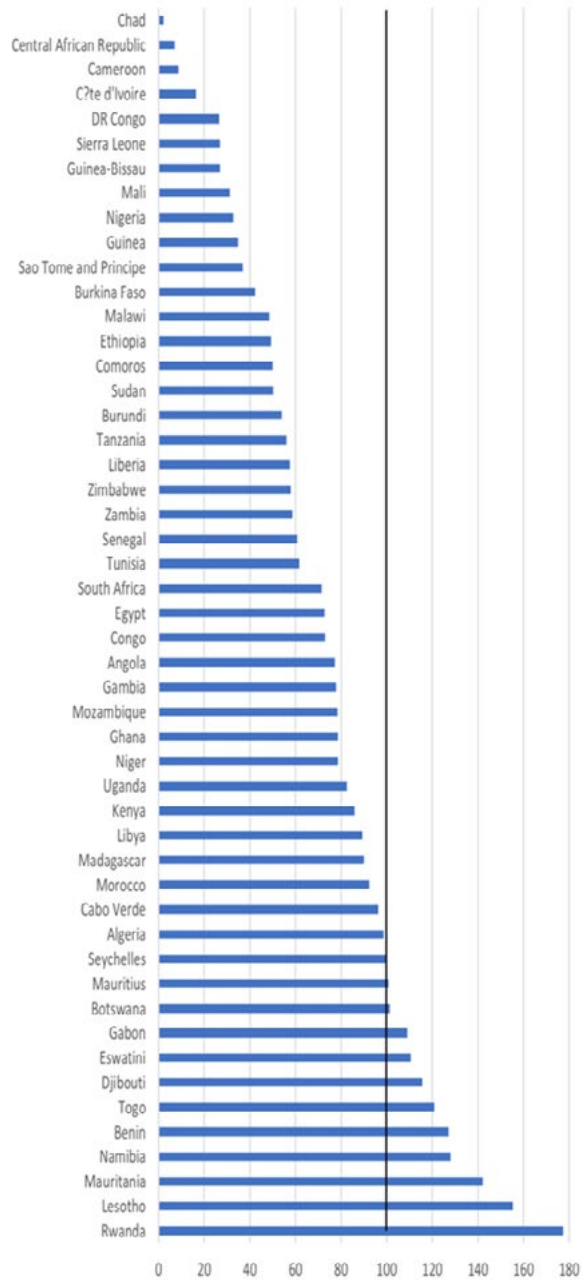
Share of Ukraine and Russia in country imports



Source: AATM database, 2022.

**Figure 3: Import Penetration Rates**

Share of vegetable oils imports in domestic consumption



Source: Constructed using FAO, 2022.



Another major difference between the vegetable oils sector, on the one hand, and the wheat and fertilizer sectors, on the other, is in re-exports and the risk of contagion. In the vegetable oils sector – unlike the wheat and fertilizer sectors – fewer African countries (a mere dozen) have import penetration rates above 100% (Figure 3). Of these, less than a handful have regional re-export volumes that are relatively large. Benin and Togo are the leading re-exporters in West Africa (Table 1). These two countries have a combined market share of about 30% and thus can be major sources of contagion in the region. The other regional re-exporters are Djibouti, Eswatini, Mauritius and Rwanda in Eastern and Southern Africa (Table 2). Their shares in regional exports are around 20%. The combined market of re-exporters in SADC is less than 9%.

## 2. The Effects of Rising Vegetable Oils Prices on Household Incomes

The impact of disruptions in global vegetable oils markets becomes visible through the effects on domestic prices as well as on the production of competing oilseeds. Only four countries from the sample have disaggregated input/output tables allowing isolated modeling of the oilseeds sector: Ghana, Malawi, Mozambique, and Uganda. The impact of disruptions in the oilseeds sector will depend to a great extent on the weight of the sector in a country’s agricultural sector. Of these four countries, the share of the oilseeds sector in total agricultural sector value added is highest in Ghana, where it reaches 3%, followed by Mozambique and Uganda, each with around a 1.5% share.

Gross income effects in Ghana are negative for urban households but positive for rural ones, particularly farm households, which benefit from

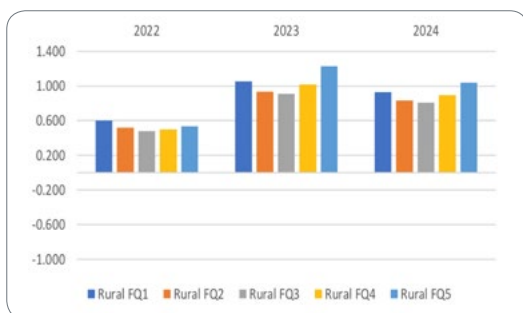
the higher prices. Among the latter households, income gains are higher for the bottom and top quintiles. Income gains among non-farm households in Ghana’s rural areas go primarily to the bottom quintile or poorest 20%. In urban areas, income effects from oilseed sector disruptions are primarily linked to rising prices and the share of oilseeds and vegetable oils in consumption baskets. In Ghana, they are low but negative for the top quintile or richest 20%, particularly in 2023 and 2024.

In all remaining countries in the sample, income effects are generally negligible. In Malawi, this holds for all household groups, urban as well as rural, except for higher income groups among non-farm rural households. And even here, the drop in income is marginal at close to just 1.0% in 2022.

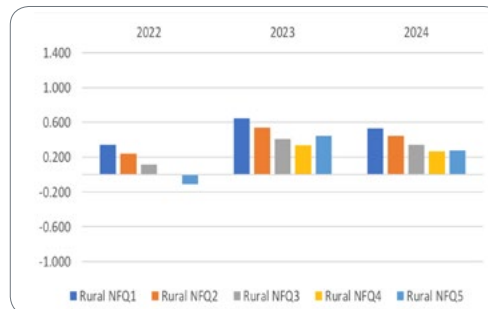
Figures 4: Changes in Gross Income vs Baseline (%)

### Ghana

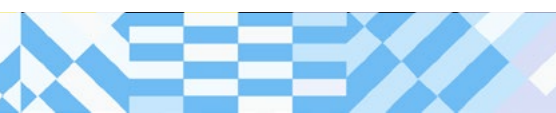
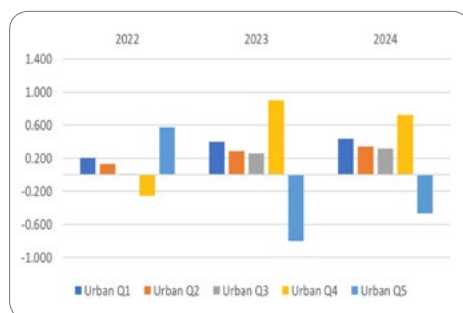
#### Rural Farm Households



#### Rural Non-farm Households

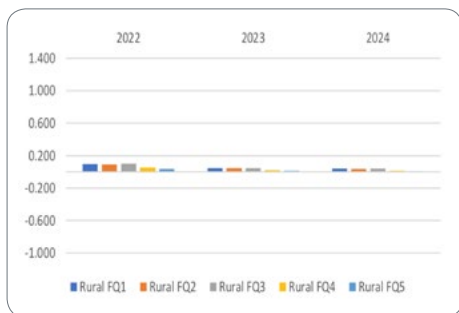


#### Urban Households

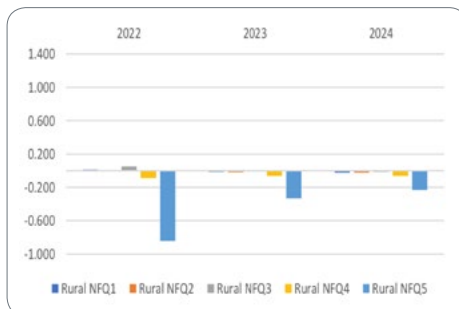


## Malawi

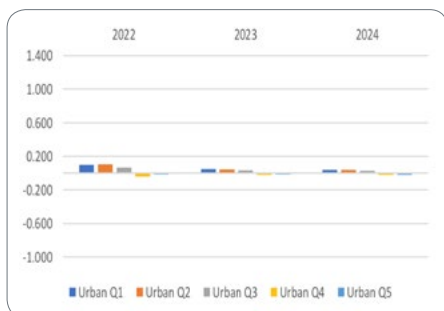
### Rural Farm Households



### Rural Non-farm Households

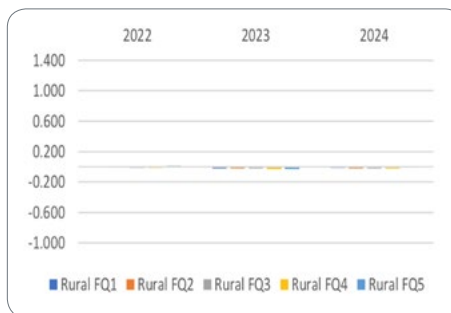


### Urban Households

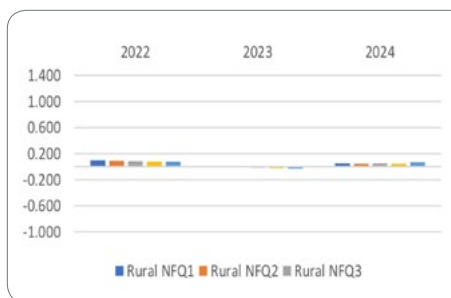


## Mozambique

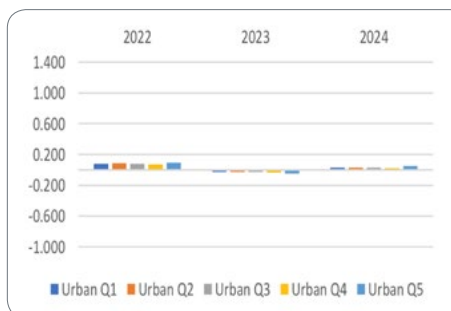
### Rural Farm Households



### Rural Non-farm Households

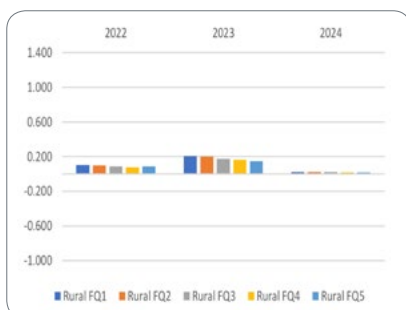


### Urban Households

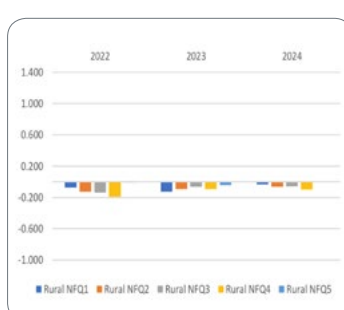


## Uganda

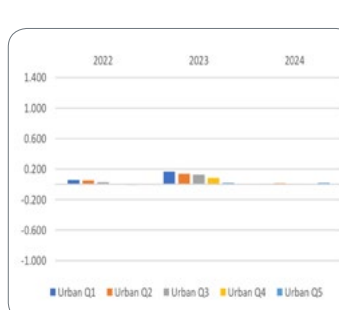
### Rural Farm Households



### Rural Non-farm Households



### Urban Households



Source: Authors' simulation results

No discernible income effects are observed across household groups in Mozambique. The same holds for Uganda, with only a slight income decline among non-farm households through 2024.

In sum, the income effects resulting from the disruption of global vegetable oils markets are noticeable only in Ghana, which has a more sizable oilseeds sector.



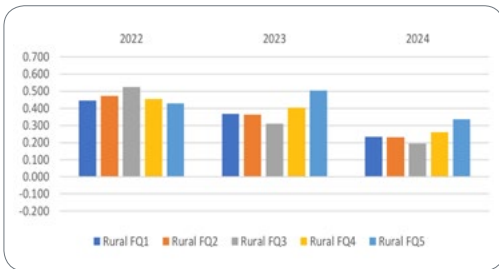
### 3. Global Vegetable Oils Price Increases and Food Inflation

In Ghana, food price inflation pressure is equally high in rural and urban areas but eases faster among urban and non-farm rural households. Price pressures persist into 2024 for rural farm households. In contrast, food price inflation pressures are relatively benign in Malawi and noticeable only in 2022. And even here, the inflation pressure tends to be concentrated among the top two quintiles (top 40%) income groups. Uganda sees relatively low food price inflation attributable to rising global vegetable oils prices, but it tends to be higher among lower income households. The highest food price inflation effects are observed in Mozambique, particularly among higher income households both in urban and rural areas, as well as among farm households and higher income households.

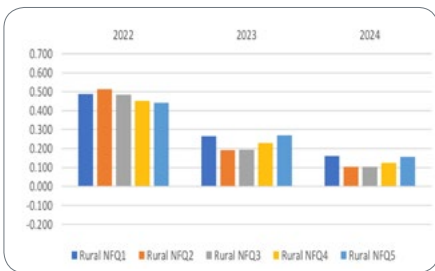
Figures 5: Changes in Food Price Index vs Baseline (%)

#### Ghana

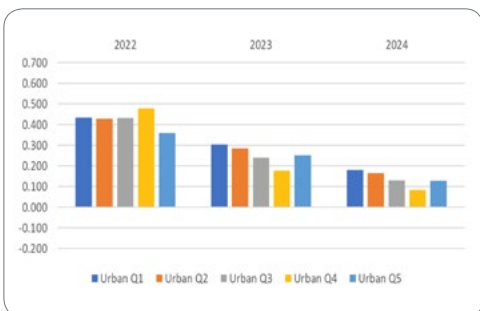
##### Rural Farm Households



##### Rural Non-farm Households

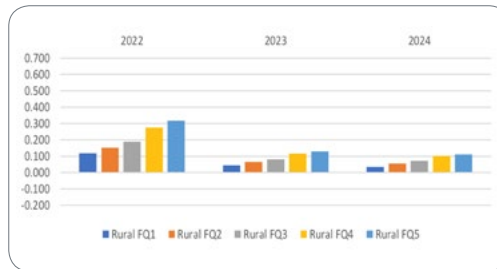


##### Urban Households

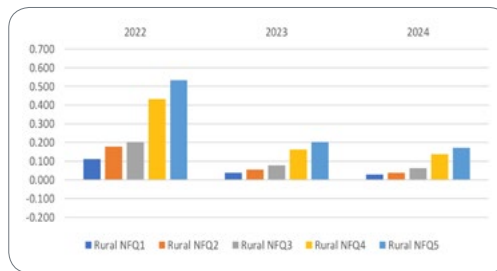


#### Malawi

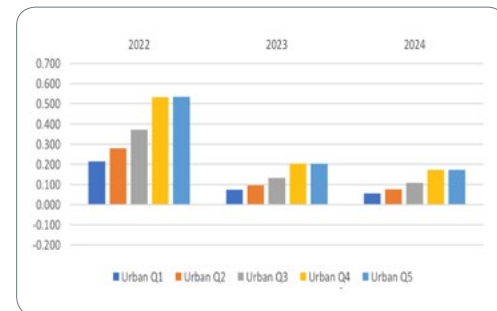
##### Rural Farm Households



##### Rural Non-farm Households



##### Urban Households

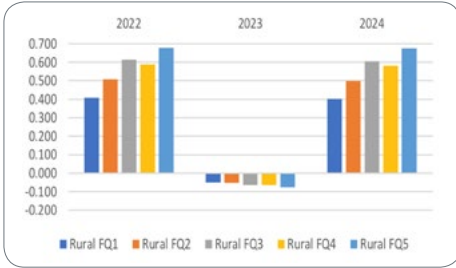




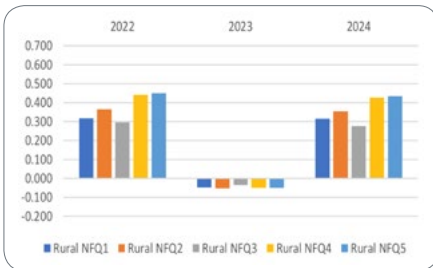
Figures 5: Food Price Index vs Baseline (%), continued)

**Mozambique**

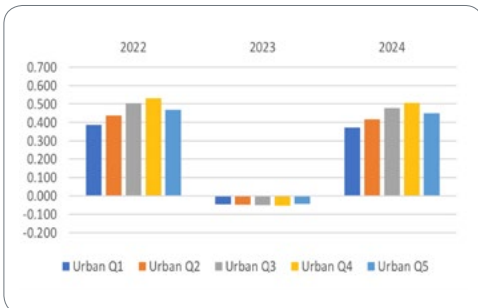
**Rural Farm Households**



**Rural Non-farm Households**



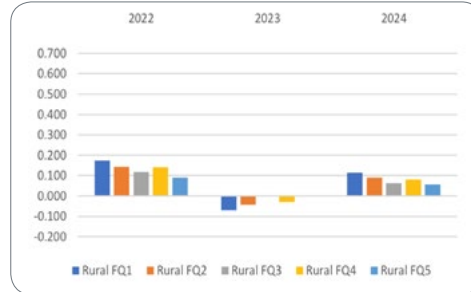
**Urban Households**



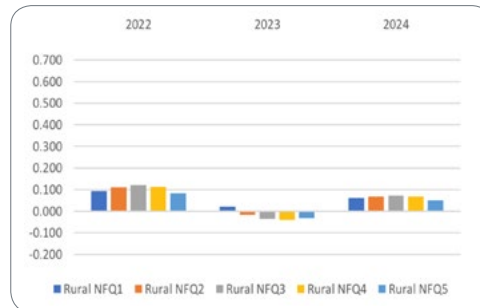
Source: Authors' simulation results

**Uganda**

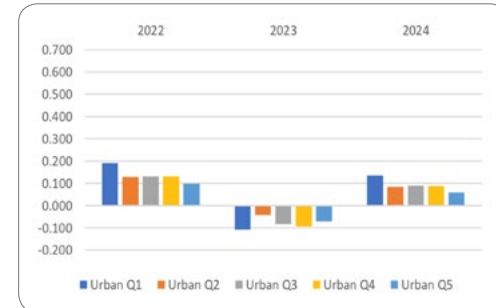
**Rural Farm Households**



**Rural Non-farm Households**



**Urban Households**



**4. The Impact of Rising Vegetable Oils Prices on Food Consumption**

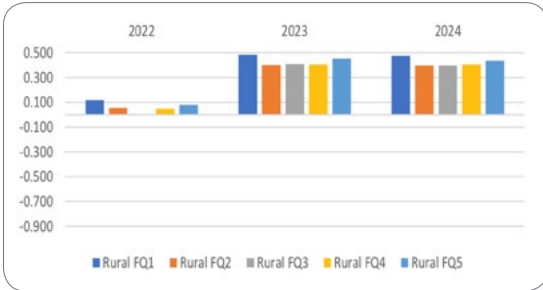
In line with the patterns of income and food inflation effects, the impact of global price increases on food consumption in Ghana is negative for urban and rural non-farm households, turning slightly positive in 2023 and 2024, mainly for the bottom quintiles in this group. In contrast, the negative consumption effects persist for the richest 20% among urban households. For rural farm households, the food consumption effects are minimal in 2022 but will grow stronger and positive in 2023 and 2024.

In Malawi, food consumption effects are noticeable only in 2022 and are foremost among higher income brackets in urban and non-farm rural households. Consumption effects among farm households are minor. Consumption is equally negligible in Uganda, ranging between -0.1 and 0.1% across all household categories and through 2024. In Mozambique, a modest decline is observed, mainly among farm households.

**Figures 6: Changes in Food Consumption vs Baseline (%)**

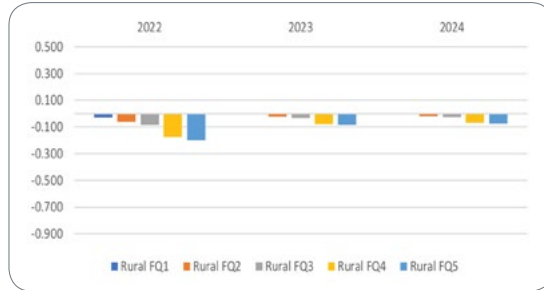
**Ghana**

**Rural Farm Households**

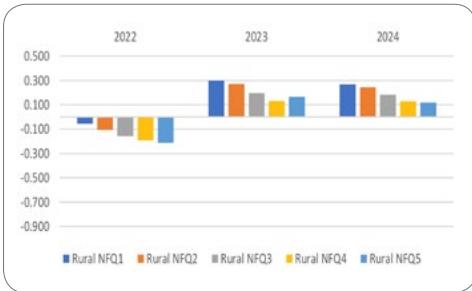


**Malawi**

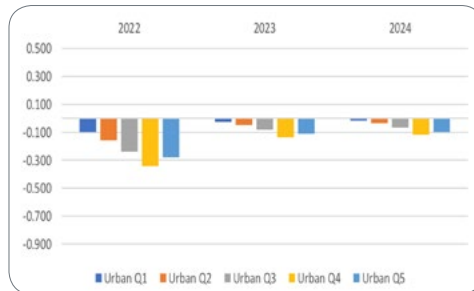
**Rural Farm Households**



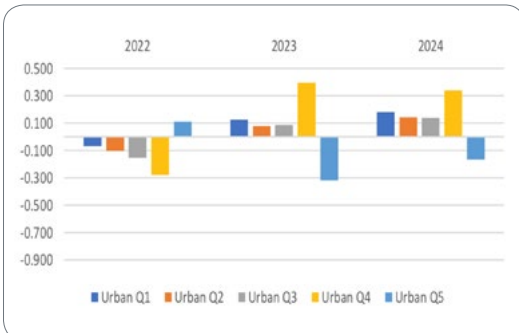
**Rural Non-farm Households**



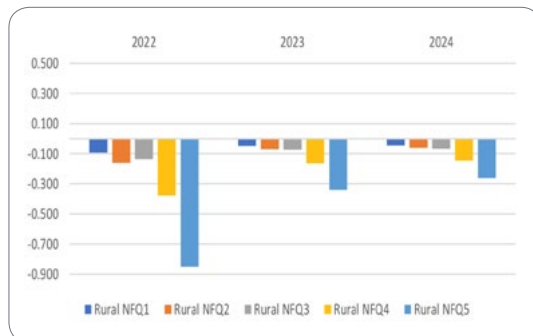
**Rural Non-farm Households**



**Urban Households**



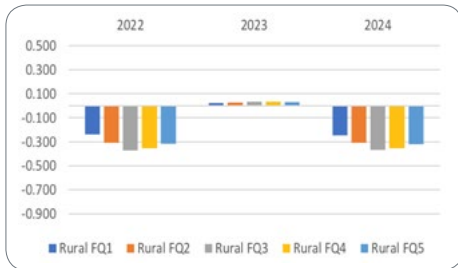
**Urban Households**



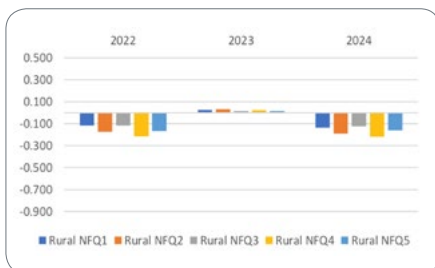
Figures 6: Changes in Food Consumption vs Baseline (% , continued)

### Mozambique

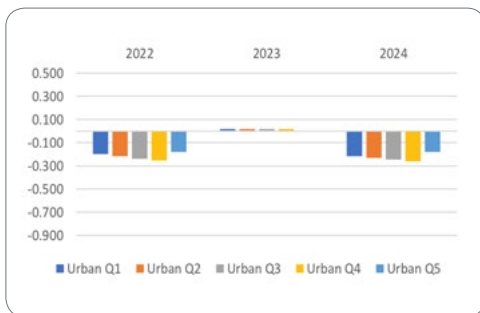
#### Rural Farm Households



#### Rural Non-farm Households

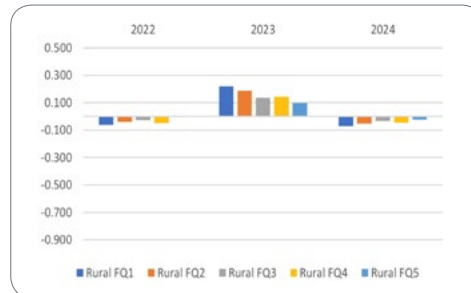


#### Urban Households

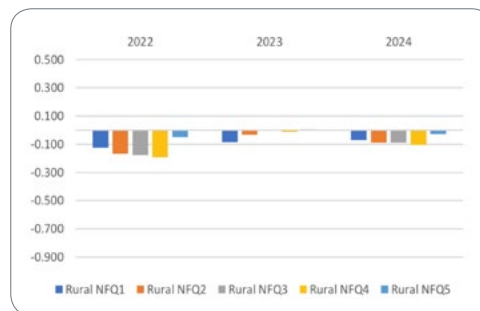


### Uganda

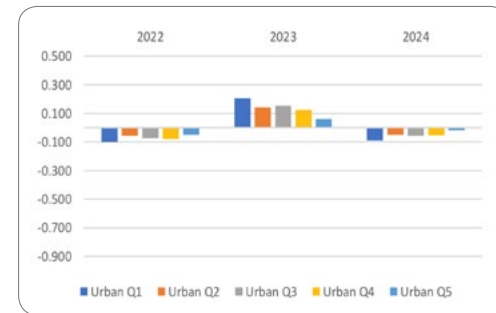
#### Rural Farm Households



#### Rural Non-farm Households



#### Urban Households



## Conclusion

For the four countries covered in this report – Ghana, Malawi, Mozambique, and Uganda – the effects of disruptions in the oilseeds sector are less pervasive than those observed for the wheat or fertilizer sectors. Nevertheless, the impacts could be severe for certain segments of the populations, in particular in Ghana, where the oilseeds sector plays a relatively more significant role in the agricultural sector.



## ANNEXES

**Table 1: Vegetable Oils Regional Exports by ECOWAS Countries (million USD), 2020**

Country	Benin	Burkina Faso	Cabo Verde	Côte d'Ivoire	Gambia	Ghana	Guinea	Guinea-Bissau	Liberia	Mali	Niger	Nigeria	Senegal	Togo	Total ECOWAS	Total Non-ECOWAS	Total Africa
Benin											0.00	5.93	0.02	0.29	6.24	0.13	<b>6.38</b>
Burkina Faso						4.30				2.07	0.03		0.00	4.86	11.25	0.01	<b>11.26</b>
Côte d'Ivoire	0.02	13.16			0.00								4.91		41.30	0.21	<b>41.51</b>
Gambia								0.81					0.03		0.84	0.00	<b>0.84</b>
Ghana	8.90	2.73									9.50		81.73	0.14	103.01	0.29	<b>103.29</b>
Guinea					0.03								0.01		0.03	0.01	<b>0.04</b>
Guinea-Bissau			0.01												0.01		<b>0.01</b>
Liberia					0.01								5.64	1.25	6.89	0.08	<b>6.98</b>
Mali											0.00		0.21		0.21	0.01	<b>0.22</b>
Niger	0.56											7.80			8.36	7.64	<b>16.00</b>
Nigeria	0.10										0.00			0.47	0.58	0.04	<b>0.62</b>
Senegal		0.20	0.00	0.21	0.60	0.01	0.43	0.22	0.04	1.03	0.01	0.04			2.80	0.36	<b>3.16</b>
Sierra Leone	0.09												2.13		2.22		<b>2.22</b>
Togo	25.32	0.02				4.15				1.37	12.45	0.02	20.90		64.23	0.05	<b>64.29</b>
<b>All</b>	<b>35.00</b>	<b>16.11</b>	<b>0.01</b>	<b>0.21</b>	<b>0.64</b>	<b>8.45</b>	<b>0.43</b>	<b>1.03</b>	<b>0.04</b>	<b>4.47</b>	<b>45.22</b>	<b>13.79</b>	<b>115.57</b>	<b>7.01</b>	<b>247.98</b>	<b>8.83</b>	<b>256.81</b>

**Table 2: Vegetable Oils Regional Exports by COMESA Countries (million USD), 2020**

Country	Burundi	Comoros	DR Congo	Djibouti	Egypt	Eritrea	Ethiopia	Kenya	Libya	Madagascar	Malawi	Mauritius	Rwanda	Seychelles
Burundi			0.05											
Comoros										0.31				
Dem. Rep. of the Congo	0.23												0.07	
Djibouti							52.32							
Egypt	0.53		0.39	0.80	9.27	6.46	3.30	7.67	14.73	0.19	8.55	6.76	0.14	
Eswatini														
Ethiopia				0.03										
Kenya	0.73		0.97		0.00		0.34				5.22	0.22	18.24	
Madagascar												0.19		
Malawi														
Mauritius		0.09								0.03				0.00
Rwanda			0.00											
Sudan							1.61							
Tunisia		0.27	0.10		0.96		0.03	0.31		1.21		0.34		4.58
Uganda	1.69		2.55					2.82		0.00				
Zambia			15.62								0.20			
Zimbabwe											0.00			
Zambia			31.95								0.35			
Zimbabwe											0.01			
<b>All</b>	<b>3.18</b>	<b>0.36</b>	<b>51.64</b>	<b>0.83</b>	<b>0.97</b>	<b>9.27</b>	<b>60.76</b>	<b>6.43</b>	<b>7.67</b>	<b>16.28</b>	<b>5.97</b>	<b>9.30</b>	<b>25.07</b>	<b>4.72</b>



**Table 2: Vegetable Oils Regional Exports by COMESA Countries (million USD), 2020 (continued)**

Country	Somalia	Sudan	Tunisia	Uganda	Zambia	Zimbabwe	Total COMESA	Total Non-COMESA	Total Africa
Burundi							0.05	0.02	0.07
Comoros							0.31		0.31
Dem. Rep. of the Congo				0.59			0.89	0.00	0.89
Djibouti							52.32		52.32
Egypt		1.27	0.51	0.53	0.11	0.06	61.28	89.73	151.01
Eswatini								0.05	0.05
Ethiopia	0.31						0.34		0.34
Kenya	0.10	0.09		107.69	5.32	1.81	140.74	17.80	158.54
Madagascar							0.19	0.01	0.20
Malawi								0.06	0.06
Mauritius					8.00	13.23	21.34	5.97	27.32
Rwanda							0.00		0.00
Sudan							1.61		1.61
Tunisia				0.18			7.98	13.11	21.09
Uganda		0.03					7.10	33.12	40.22
Zambia						0.65	16.47	0.13	16.59
Zimbabwe					0.06		0.06	0.45	0.51
Zambia						0.94	33.25	0.00	33.25
Zimbabwe					0.15		0.15	0.06	0.22
<b>All</b>	<b>0.41</b>	<b>1.39</b>	<b>0.51</b>	<b>108.99</b>	<b>13.64</b>	<b>16.69</b>	<b>344.09</b>	<b>160.50</b>	<b>504.59</b>

Source: AATM database, 2022.



**Table 3: Vegetable Oils Regional Exports by COMESA Countries (million USD), 2020**

Country	Angola	Botswana	Comoros	DR Congo	Eswatini	Lesotho	Madagascar	Malawi	Mauritius	Mozambique	Namibia
Angola				0.11							0.01
Botswana											0.04
Comoros							0.31				
DR Congo	0.00										
Eswatini											
Lesotho											
Madagascar									0.19		
Malawi		0.03								0.02	
Mauritius			0.09				0.03			5.97	
Mozambique					0.46		0.03	0.03			
Namibia	0.60	0.04		0.13							
South Africa	0.48	43.09	0.04	1.30	9.70	11.99	0.74	3.12	2.97	15.32	38.67
Tanzania										0.00	
Zambia				15.62				0.20			
Zimbabwe		0.01						0.00		0.04	
<b>All</b>	<b>1.08</b>	<b>43.16</b>	<b>0.13</b>	<b>17.16</b>	<b>10.16</b>	<b>11.99</b>	<b>1.11</b>	<b>3.36</b>	<b>3.17</b>	<b>21.36</b>	<b>38.72</b>



**Table 3:** Vegetable Oils Regional Exports by COMESA Countries (million USD), 2020 (continued)

Country	Seychelles	South Africa	Tanzania	Zambia	Zimbabwe	Total SADC	Total Non-SADC	Total Africa
Angola						0.12	0.02	0.13
Botswana		0.38			0.01	0.43		0.43
Comoros						0.31		0.31
DR Congo						0.00	0.89	0.89
Eswatini		0.05				0.05		0.05
Lesotho		0.15				0.15		0.15
Madagascar		0.01				0.20		0.20
Malawi			0.01			0.06		0.06
Mauritius	0.00			8.00	13.23	27.32		27.32
Mozambique		0.96		0.98	18.20	20.66	0.08	20.74
Namibia		0.37		0.01	0.05	1.20		1.20
South Africa	0.07		0.14	44.92	101.95	274.51	2.28	276.79
Tanzania				0.07	0.00	0.07	0.02	0.10
Zambia		0.13			0.65	16.59		16.59
Zimbabwe		0.39		0.06		0.51		0.51
<b>All</b>	<b>0.08</b>	<b>2.43</b>	<b>0.15</b>	<b>54.03</b>	<b>134.09</b>	<b>342.17</b>	<b>3.29</b>	<b>345.46</b>

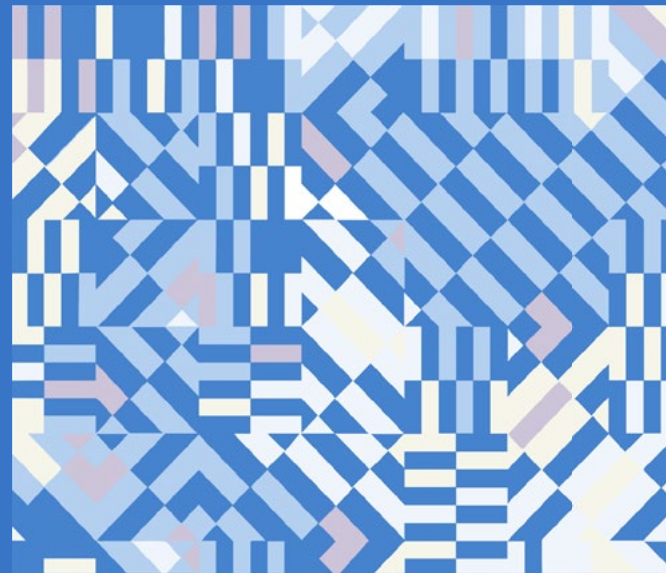
Source: AATM database, 2022.






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-  AKADEMIYA2063 | Kicukiro/Niboye KK 341 St 22 | 1855 Kigali-Rwanda
-  +221 77 761 73 02 | +250 788 315 318
-  [hq-office@akademiya2063.org](mailto:hq-office@akademiya2063.org)
-  [www.akademiya2063.org](http://www.akademiya2063.org)

    @AKADEMIYA2063