

The Russia-Ukraine War and Food Security in Morocco

By Fatima Ezzahra Mengoub, Uri Dadush, Abdelaaziz Ait Ali & Isabelle Tsakok

PB - 34/22

Following on the heels of the COVID-19 pandemic and severe drought in North Africa, the Russian invasion of Ukraine – large exporters of food and, in the case of Russia, energy— may inflict increased hunger on the food insecure in Morocco – despite mitigating measures by the government.

Morocco is so far successfully shielding its large poor and vulnerable population by subsidizing essential commodities. With memories of the violent protests during the 2007/08 food and fuel crisis still fresh, government support is necessary to maintain social stability. Such support measures are costly even in a typical year. In 2022, the legacy of the pandemic, a combination of drought, soaring cereal and oil prices, global inflation, and economic slowdown will test the 'government's ability to keep fiscal deficits within sustainable bounds.

Looking to the longer term, the high costs of government subsidies highlight the need for a sustainable strategy to deal with food security. Morocco's New Development Model (April 2021) promises to progress towards this goal by re-orienting public investment and creating incentives to improve efficiency and resilience in rain-fed agriculture and add value throughout the agri-food sector, not just in irrigated agriculture.

The food and fuel crises triggered by the war raise the stakes for reforming the agri-food system throughout Africa, not only in Morocco. The African Continental Free Trade Agreement (AfCFTA) presents a unique opportunity to develop a vast and reliable regional market including food that is less exposed to the vagaries of the political, security, and economic environment outside the region.

INTRODUCTION

What impact will the Russian-Ukrainian war have on food security in Morocco in the short (2022) and longer terms? This Policy Brief focuses on cereals, as they constitute the main staple of 'Morocco's poor and vulnerable, and because Russia and Ukraine are major wheat exporters.¹ However, in a market system, food security depends critically on the capacity of the poorest to buy food at an affordable price, and this means that the broader macroeconomic and energy market effects of the war does matter for food security. After setting out the overall macroeconomic and trade implications of the war in Section I, Section II analyzes Morocco's short-term food security implications, focusing on its wheat sector; and Section III discusses the longer-term impact on food security and agri-food policy.

SECTION I: FIRST THE COVID-19 PANDEMIC, NOW A WAR

The Russian invasion of Ukraine occurred as the global and Moroccan economies were amid an incomplete and hesitant recovery from the worst effects of the pandemic. And new variants of the virus continue to spread. At the outset of the war, food prices were near records due to the pandemic disruption and climatic conditions in the prior year. Generalized inflation pressures were evident in the United States and Europe, financial centers, and financial markets were already unsettled as major Central Banks prepared to tighten monetary policy. According to IMF forecasts preceding the war, Morocco's per capita income would not recover to the pre-pandemic level until later this year. As a result, the poorest segments of the Moroccan population, where the pandemic hit hardest, remain highly vulnerable to new shocks. The war, and the realization that Morocco's drought would be even worse than expected, led to a significant downgrade in Morocco's forecast in the latest IMF WEO (April 2022). The forecast essentially points to no growth in per capita income this year, a large jump in inflation and increased current account deficits.

Food security depends critically on the ability of the less well-off to afford food. The invasion affects food security across the world and in Morocco in four ways:

1. Disruption of cereals and vegetable oils supplies of which Russia and Ukraine are major producers;
2. Disruption (or the threat of disruption) of energy supply from Russia is causing soaring coal and oil and gas prices, thus increasing the income-poor households must devote to heating, cooking, traveling to work, etc. Although food takes priority over energy and there will be some reduction in expenditure on energy in response to high prices. some energy expenditures are irreducible without causing severe distress; Rising energy costs also raise the price of food directly and indirectly, as they raise the cost of its production and transport and that of fertilizers, whose production is energy-intensive.
3. 'Russia's decision to ban exports of fertilizers as retaliation to western sanctions adds to the pressure;
4. Finally, the uncertainty caused by the war discourages investment, delays economic recovery, and reduces earning prospects.

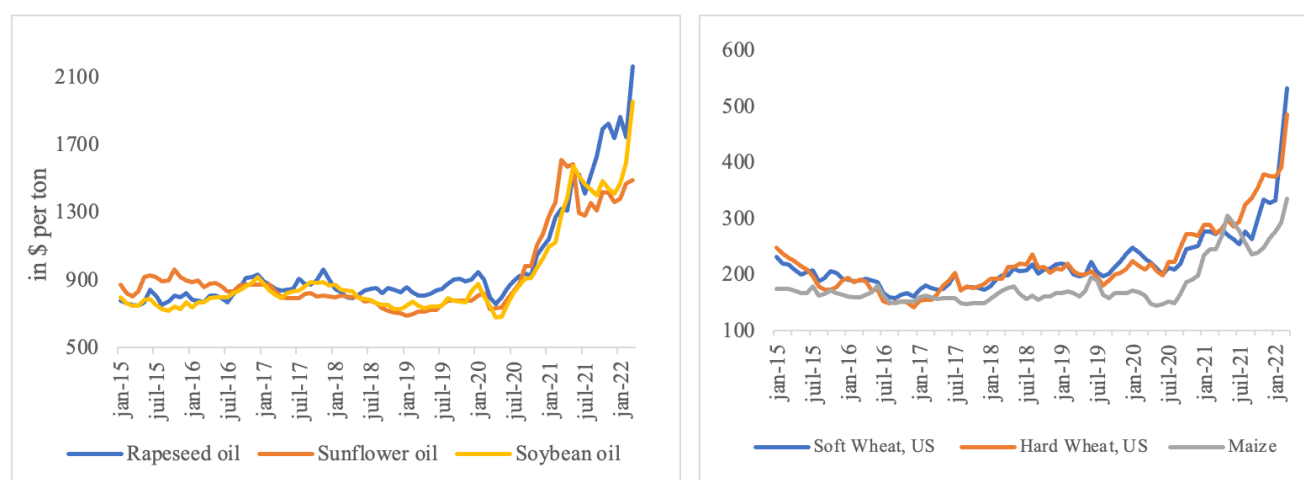
1. Wheat exports from Ukraine and Russia are: $U-16\%+R-18\%=34\%$ of world total for 2021/22 wheat exports. The estimates for Ukraine reflect what USDA has already subtracted: 4 million tons, resulting in Ukraine's export of 20 million tons. (Farm Policy News, March 10, 2022).

The war in Ukraine, which started on February 24, turned out to be a prolonged and tremendously destructive affair that continues to rage without a resolution in sight. It is not the quick blitzkrieg victory by superior Russian armies many military experts had predicted. A long-protracted conflict, its widening and intensification, and even the use of unconventional weapons cannot be ruled out. The invasion's effect on the economy and on food security is worse than had been expected. Western sanctions on Russia are even more severe than had been anticipated, extending to the freezing of Russia's dollar and Euro reserves, banning oil and gas imports by Canada and the United States, and effectively cutting the country off from large parts of the global economy. For the food-insecure, this means even higher food and energy prices, weaker employment prospects, and increased uncertainty for long.

North African countries are among the most exposed to the effects on food prices of the invasion, and even more so to disruptions in supply since they import more than 25% of their cereals from Ukraine and Russia. Morocco imports about half of its cereal consumption in a typical year. However, because of low rainfall in 2021-22, this share is likely to be much higher in 2022. On April 19, the global food price index was 27% higher than the previous year. The price of crude oil (Brent) was 107\$ a barrel, 60% higher than a year prior.² (See Graph 1)

Graph 1.

Selected vegetable oils and cereals monthly prices, 2015-2022



Source: World Bank, 2022

The likelihood is that cereal and vegetable oil prices remain elevated and it is possible that they will go higher still over the next year. Ukraine, where many farm workers have taken arms and whose ports and transport infrastructure are effectively blockaded, produces 3% of the world's corn and 29% of the world's sunflower oil. Ukraine's spring planting season for corn is at risk, which means that shortages could extend well into 2023 even if the war ends soon. The latest market and government forecasts³ for the price of oil in 2022 and 2023 point to high demand, low inventories, and disruption of supply from Russia as various

2. Sourced from the Economist, accessed on 27 March.

3. These include forecasts issued in March by the International Energy Agency, Goldman Sachs and Morgan Stanley.

forms of sanctions take effect. The expectation is that oil prices will remain near the present high levels, with risks going higher still.

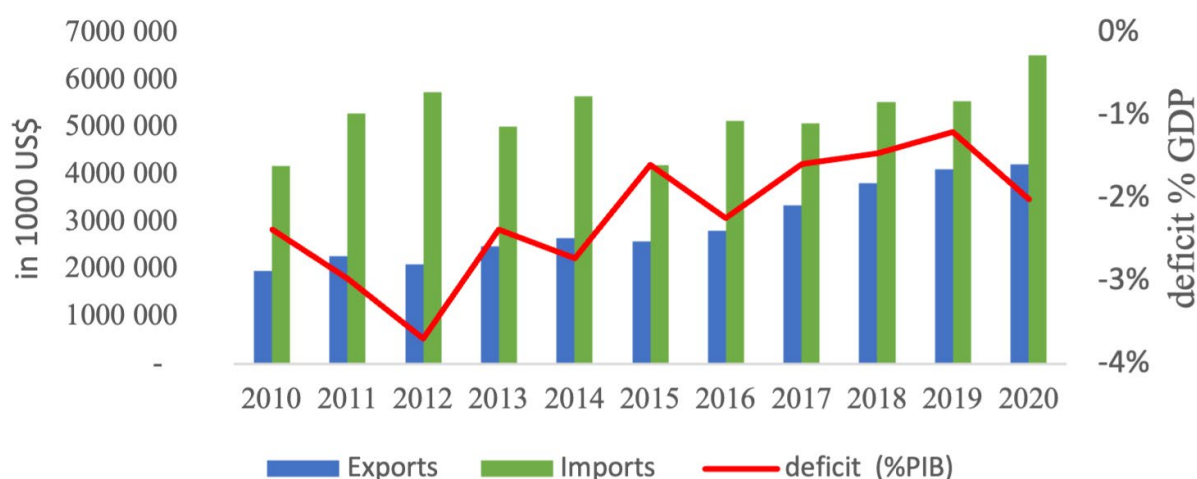
In line with the latest IMF forecast, a rough calculation of the macroeconomic impact of the war suggests that the average income of Moroccans may turn out to be about the same or a little lower in 2022 than in 2021 instead of about 2% higher as forecast by the IMF before the war. The calculation is based on fairly conservative assumptions about the rise of commodity prices in 2022. Slower income growth will be reflected in a deterioration of the income of the poor, the government budget, and the external deficit. The most significant adverse effects of the war on the Moroccan economy will be through higher oil and other energy prices, about 4% of GDP, considering that energy imports represented 6.5% of GDP in 2021, and assuming oil prices will be 60% higher on average in 2022. Slower European and world growth will depress Morocco's exports and overall growth by about 1% of GDP. The macroeconomic impact of higher food prices (assumed to rise by 30%) will be modest, equal to about 0.6% of GDP since food imports only account for 2% of GDP. These adverse effects on Moroccan GDP will be only partly offset by the surge in the international price of fertilizers – of which Morocco is a major exporter – which is assumed to rise by 50%, equivalent to a 3.3% gain in GDP at the current levels of exports.

SECTION II: IMPLICATIONS FOR FOOD SECURITY AND THE GOVERNMENT BUDGET IN 2022⁴

Morocco is especially vulnerable to the shocks resulting from the war because it relies on food imports. In 2020, Morocco imported about US\$ 6.5 billion of agricultural products while its exports averaged US\$ 4.2 billion (See Graph 2)

Graph 2.

Agricultural exports and imports, 2010-2020



Source: FAO, 2022

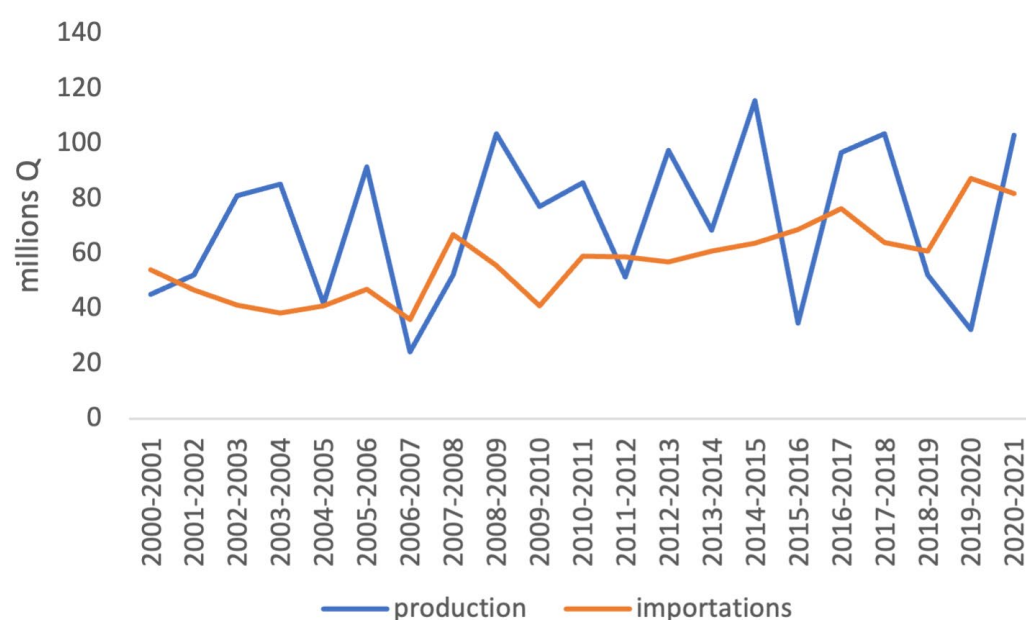
4. Food security has primarily meant adequacy of wheat and other basic food commodities. Although the official goal has been referred to as food sovereignty since the Structural Adjustment Programs of the 1980s, the emphasis has remained on food self-sufficiency; that is by prioritizing trade protection and domestic production of all consumption goods considered "strategic": cereals, sugar, milk, and vegetable oil. See the case of Morocco (p 7-10) in PP 20-33, Nov 2020. "Selective review of food security policy worldwide: What can be learned from international experiences in order to shape food security policy in Africa?" Part II" by Isabelle Tsakok and Fatima Ezzahra Mengoub. As defined by the UN and the World Bank (2008) : "Food sovereignty is defined as the right of peoples and sovereign states to democratically determine their own agricultural and food prices". The concept was started and coined in Latin America by Via Campesina in 1996 at the World Food Summit.

In a typical year, Morocco produces 70 million Q of cereals and imports about 50 million Q. However, in a drought year, such as the 2019-2020 crop year, Morocco imported around 87 million Q of cereals, 37 million Q are soft wheat.⁵ Hit by a severe drought again in 2021-22, cereals production is estimated at only 25 million Q (Bank Al-Maghrib, 2022), requiring at least 87 million Q of imports. This will cost 2.9 billion dirhams at current prices,⁶ i.e. half the value of total agricultural imports.

GOM relies on a diversified set of grain suppliers from four continents as part of its risk management. In the case of wheat, however, nearly half of imports come from Russia and Ukraine: France (33%), Ukraine (32%), Russia (17%), the United States (14%), and other countries (4%) (MEFRA, 2020). Morocco imports only soft wheat from Ukraine and Russia. Domestic production and imports of cereals are both subject to large swings (See Graph 3)

Graph 3.

Evolution of national production and imports of cereals, 2000-2021, in a million quintals



Source: ONICL, 2022

Food subsidies are a key component of the social contract between the GOM and its people. The Compensation Fund (Caisse de Compensation) is the main instrument deployed by the Government of Morocco (GOM) to ensure affordable access to essential commodities.

According to the latest report of the Ministry of Finance on the status of the Compensation Fund,⁷ currently, state regulation and support of soft wheat is handled, through two main mechanisms:

5. Official figures for the current season are not yet available. However, a government spokesman said that the GOM planned to import 8.7 m Q from Ukraine; but received only 5 m Q. It planned to purchase the balance from elsewhere, possibly from India and Australia, usually minor exporters but they have bumper harvests for the 2021-22 season.

6. Estimates take into account current prices (average from January to March) of soft and durum wheat, corn and barley. The structure of cereal imports will remain the same, with soft wheat taking the largest share. The exchange rate used: 1\$= 9.81 MAD (April 2022)

7. Caisse de Compensation is from World War II days.

(i) regulation of local and imported grain prices in order to control the prices of flours and protect national production. It operates through the adjustment of customs duties (which are set at 135% in November 2021-February 2022), import refunds (if any), and support for domestic production through the granting of a premium subsidy for collection and storage; and (ii) Consumption support for a quota of soft wheat flour.

Sugar is another strategic food product subsidized by the GOM because of its importance in the diet of Moroccans; as national per capita, sugar consumption is 85% higher than the world average. The GOM has implemented a flat-rate sugar subsidy mechanism since 1996. Knowing that national production covers only half of domestic consumption, this subsidy has been extended to imported sugar, so this subsidy is 2.661 dh/ton for domestic sugar and 5.335 dh/ton for imported sugar.

Although it is not a food product, cooking gas is also regulated and subsidized, as it is considered an essential commodity and vital for food security. Farmers use subsidized gas extensively to power irrigation.

Table 1.

Government expenditures related to food security as a share of GDP

			2021	2022 ESTIMATIONS ⁸
Price subsidies	Food	Wheat*	0.2%	0.4%
		Sugar	0.3%	0.4%
	Gas	Final use by households - cooking gas-	0.7%	1.2%
		Intermediate use by agriculture –irrigation–	0.4%	0.6%
Total Compensation Fund			1.6%	2.6%
Tax expenditures**	Agriculture/agri-business sectors		0.3%	0.3%
Ad-hoc measure to mitigate drought effects			-	0.8%
Total expenditures			1.9%	3.7%
** VAT, corporate, income taxes, and tariff reductions favoring agri-business				

Source: Authors' calculations

In 2021, the total price subsidies of the three regulated products related to food amounted to 1.6% of GDP (Table 1). Assuming that the increase in soft wheat, sugar, and gas prices is 52%, 17%, and 58%, respectively,⁹ coupled with a depreciation of the dirham against the dollar of 6%, the compensation budget released in 2022 would jump to 2.6% of GDP.

8. Forecasts are based over the price increases and the depreciation of the Dirham against the dollar in the first quarter of 2022.

9. World Bank, Commodity market "Pink Sheet" Database

The agriculture sector is also the fourth largest beneficiary of tax expenditures (tax rebates, etc.) after real estate, social protection, and utilities, amounting to 0.3% of GDP (Table 1). Additionally, 2022 is expected to be one of the driest years in recent decades. The GOM has allocated additional resources to help the rural population cope with the adverse effects of the drought, which amounted to 0.8% of GDP.

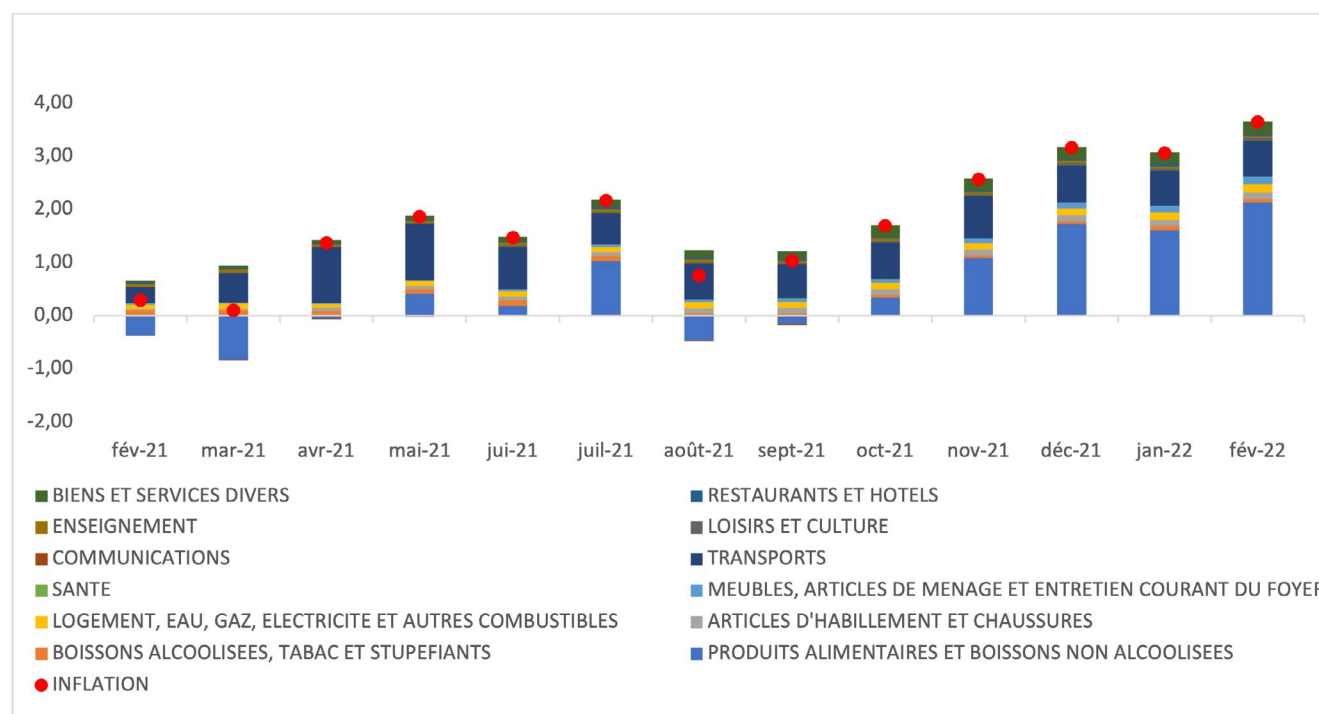
Overall, considering all financial resources released to face climatic shock, combined with the soaring international prices linked to the Russian-Ukrainian conflict and the economic recovery, total subsidies could reach over 3.7% of GDP in 2022.

Even before the war, Morocco's budget deficit for this year was projected at 6.2% of GDP and public debt at 80% of GDP, underscoring the GOM's limited fiscal space in dealing with new shocks.¹⁰ (World Bank, April 2022). The additional costs associated with food security (Table 1) could add almost 2% to the budget deficit in 2022, absent offsetting measures such as tax increases or reductions in current and investment expenditures.

The GOM has already announced that it intends to allocate around 2.8% of GDP to the Compensation Fund this year (in line with the calculations shown in Table 1). However, even this will not be sufficient to offset the impact of general inflation on household purchasing power. In February 2022, inflation reached 3.6%. This inflation was mainly driven by the increase in food prices, which contributed 2.13 points. The second significant contributor to inflation was transport prices, which mainly reflected the increase in diesel prices (See Graph 4).

Graph 4.

Inflation by component in Morocco, monthly contribution, 2021-22



Source: author's calculations

10. The current account deficit is expected to widen to 5.5 % of GDP on account of higher energy and food import bill (World Bank, April 2022)

In addition, with the Russian-Ukrainian crisis, the risk might go beyond price increases and supply disruptions could occur, casting doubt over the government's capacity to ensure smooth provisioning. With this in mind, the GOM imported large quantities of wheat during January and February, increasing the national stock of these cereals.¹¹ (Middle East Online, February 24, 2022).

MILLIONS REMAIN FOOD-INSECURE—THEY LACK GOOD NUTRITION—DESPITE COSTLY FOOD SUBSIDY

Given that poor and vulnerable households¹² spend around 40-50% of their income on soft wheat and other essential consumption items, the GOM's subsidization policy plays a critical role, especially when international prices are high. However, the policy of ensuring an adequate supply of wheat/bread to the poor and vulnerable cannot provide adequate access to nutritional diets, an essential dimension of food security.

Morocco has made significant strides in reducing extreme poverty and chronic hunger. Still, food insecurity (including lack of access to good nutrition) stalks millions more if we include those large groups who lack access to basic social services and adequate shelter. This definition of the poor and vulnerable should be the "subjective" poor, those who consider themselves poor, including many informal wage workers, unemployed youth, and (primarily urban) women.¹³ (WBG, Jan 2019). Thus, the poor and vulnerable may account for some 45% of the total population, or about 17 million people – even though the extreme poor are a small group, 0.8% of the population. (See Table 2)

Table 2:

The poor and vulnerable in Morocco: Different measures (% of total population) *

POVERTY LEVEL/ ECONOMIC INSECURITY	2007/08	2014/15	2018/19
Extreme US\$1.9/day	2.5	0.8	<1.0
Lower middle income US\$ 3.2/day	17.5	7.5	6.4
National poverty line	8.9	4.8 (U:1.6; R:9.5)*	<5.0
Subjective *		45 (U:40; R: 54)	

Source: World Bank Group, Jan 2019; Oomman et al, June 2003

11. There are no official figures on the size of the strategic stock. However, media sources indicate there are stocks for 4.7 months.

12. There is no consensus on how to identify and measure the vulnerable population. One definition (World Bank) is: "...Vulnerable employment refers to the sum of contributing family workers and own-account workers... They are the least likely to have formal work arrangements, are the least likely to have social protection and safety nets to guard against economic shocks, and often are incapable of generating sufficient savings to offset these shocks.

<https://databank.worldbank.org/metadataglossary/world-development-indicators/series/SL.EMP.VULN.ZS#:~:text=They%20are%20the%20least%20likely,Limitations%20and%20exceptions.>

Another source is: "Quantifying vulnerability to poverty: A proposed measure applied to Indonesia", by Lant Pritchett, Asep Suryahadi, Sudarno Sumarto. Policy Research Working Paper, # 2437. Sept. 2000. <https://openknowledge.worldbank.org/bitstream/handle/10986/21355/wps2437.pdf?sequence=1&isAllowed=y>

13. There is a significant disparity between estimates of subjective poverty between urban and rural households. Thus, between 2007-2014, in %: U: 39-40; R: 47-54 (WBG, Jan 2019)

NOTES:

- Total population (rounded millions): 34.2 (2014); 36 (2018); 36.9 (2019)
- Morocco has a large informal sector: 55% of wage workers; high unemployment among youth and women (primarily urban) (2019)
- Some 44% of the middle 40% (3rd and 4th quintiles) consider themselves economically insecure (2019)
- Urban: Rural ratio: 60:40 (2014); 63:37 (2018); 64:36 (2020)
- Gini Index of inequality: (2014)
 - Urban – 0.388
 - Rural – 0.317
- Multidimensional poverty goes beyond deprivations of food quantity and quality (nutrition). It includes a low level of education, limited access to essential services like health care, hygienic conditions and comforts, and poor connectivity, etc. Households living in these conditions “feel” poor.

Chronic malnutrition is associated with numerous health problems, including – paradoxically – obesity and overweight. (See Table 3)

Table 3:

Health problems in Morocco: Selected indicators (% of population afflicted, rounded estimates)

HEALTH BURDEN	ADULT WOMEN	ADULT MEN	INFANTS	CHILDREN UNDER 5
Anemia	30-35	30-33		
Diabetes	16	17		
Overweight	59	50		
Obesity	36	23		
Infant mortality rate (IMR, per 1000)*			18	
Low weight at birth			17	
Stunting *				10-15
Vitamin A deficiency *				15
Overweight *				11

Sources: Global Nutrition Report 2021; World Food Programme – Morocco, June 2019

Notes: *

- IMR is 3.8/1000 for OECD countries; 43/1000 in Africa
- Prevalence of stunting for children under 5 years old: 30% in Africa
- Vitamin A deficiency contributes to blindness, increased morbidity and mortality from common childhood infections, increased risk of respiratory and diarrheal infections, and decreased growth rates, and slow bone development.
- Being overweight makes one more prone to heart disease and diabetes.

Given adequate fiscal resources and delivery mechanisms, the GOM may be able to provide enough food to prevent extreme hardship and maintain social stability. Yet, the challenge of achieving good nutrition for large sections of the Moroccan population remains.

SECTION III: SOME CONSIDERATIONS ABOUT FOOD SECURITY IN THE LONGER-TERM

More than half of Morocco's agricultural imports are cereals, despite being the dominant crops of Moroccan agriculture and being considered "strategic". Cereals occupy more than half of arable land. During the 2020-2021 season, 50% of agricultural land was cultivated by four main cereals, namely durum wheat, soft wheat, corn and barley, i.e., about 4.3 million hectares (ONICL, 2022). If other cereals and fallow land are considered, the share can rise to 71% of total agricultural land (MAPMDREF, 2022).

Despite policies aimed at reducing grain areas and improving their yields, yields are still low. Between 2003 and 2019, cereal yield per hectare increased by 42%, from 12 to 17 Q. Production has increased by 25%, from 64 million Q (between 2003 and 2007) to 80 million Q (between 2015 and 2019). Acreage has been reduced: by 32%, from 5.35 million ha in 2008 to 3.65 million ha in 2019. (Ministry of Agriculture, 2022). Despite significant cereal yield increases, they remain far below the average global cereal yields about 26 Q/ha.

The 2021-22 drought underscores the fundamental constraint of Moroccan agriculture: water scarcity. It is primarily rainfed, with irrigation covering 1.6 million hectares of arable land or less than 20% of the total. (ADA, 2018, Molle, 2017) High value fruits dominate irrigated agriculture High-value fruits and vegetables dominate irrigated agriculture High-value fruits and vegetables dominate irrigated agriculture; sugar and dairy. It contributes to 45% of agricultural value-added in years of average rainfall, and its exports are an essential source of foreign exchange. Thus, 75% of agricultural exports come from irrigated areas. Its contribution to agricultural value-added can reach up to 70% during dry years.

With the objective of food self-sufficiency in this water-scarce agriculture, the entire cereals sector was regulated. The ploughing operation, between 1957 and 1961, promoted mechanization, followed by intensification programs based on the use of selected seeds, fertilizers, and phytosanitary products. Fertilizers are applied to cereals mainly by medium and large farmers on roughly 20% of cereals land. Their use is usually well below recommended levels and varies greatly with rainfall fluctuations and prices. Given that fertilizer use is not critical for cereals cultivation, the rise in global fertilizer prices is not likely to determining effect on short-term production and productivity.

Despite the priority given to the cereal sector and to soft wheat flour, in particular, the GOM still has to shield the poor and vulnerable people from the high prices of wheat and other

basic commodities through subsidies. This subsidization approach is, however, very costly. Moreover, it is neither sufficient nor sustainable to achieve food security which “exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” (FAO 1996) Such sustainable food security must be anchored on stronger productivity and income foundations.

Morocco’s New Developmental Model (NDM, April 2021) of H.M. King Mohammed VI marks a new departure for putting Morocco on such a path. Under the NDM, the priority is placed on increased value addition throughout the agro-industrial value chain, from production to consumption. In previous plans, the priority was to increase the production of cereals and other “strategic” commodities and promote commercial agriculture in preference to family agriculture. This strategy has resulted in disappointing outcomes. Family farming must be more integrated with “efficient, food logistics platform...and downstream agro-industrial value chains” (NDM, 2021) so that family farming becomes more productive, profitable, and resilient.

The NDM aims to promote productivity by incorporating a realistic price of water, the scarcest resource. Measures include a reallocation of public investment in the direction of (i) agricultural research, development, and extension services in more drought-tolerant and climate-resilient rainfed wheat and other crops; (ii) sustainable soil fertility management services; (iii) digital and other technologies for more efficient use of scarce water, whatever the source; and (iv) development of renewable sources of energy to desalinate water; treat/re-use wastewater, to better prepare Morocco for a climate change world.

Ultimately, good results depend on implementation. But the reforms proposed under the NDM are in the right direction.

WIDER CONSIDERATIONS ON FOOD SECURITY IN SUB-SAHARAN AFRICA¹⁴

Like Morocco, SSA must transform its agri-food system to achieve food security. This is urgent: chronic hunger and malnutrition, especially after the COVID-19 pandemic, afflict 21% of the population, with one billion people unable to afford healthy diets.¹⁵ (FAO et al., 2021) Conditions not only make it urgent but an opportune time to do so. Through the AfCFTA, Africa has this historic opportunity to develop its vast, geopolitically reliable regional market. Geopolitically reliable markets have never been so crucial for supply dislocations have multiplied under this multiple crisis—pandemic, war, drought, locusts. Africa should accelerate the Africa-wide infrastructural and institutional investments as well as country-level domestic reforms needed to realize the promise of the AfCFTA.

The list of desirable investments is long and will vary by country. But, access to markets has been repeatedly identified as the essential condition for economic diversification and productivity growth. To realize this growth requires sustained investments, including

14. Like Morocco, the other North African (NA) countries are major grain (mainly wheat) importers. Water scarcity is also a major problem even for Egypt, with its nearly 100 % irrigated agriculture. This crisis should also be a wake-up call for them to rethink their agri-food policy along the lines of Morocco’s NDM to achieve for food security.

15. The number of people who cannot afford healthy diets in other regions are: 1.85 b in Asia; 113 m in LAC; and 17.3 m in North America and Europe; thus, around a total of 3 b people or around 50% of the world population. (FAO et al, 2021)

infrastructure and public services; e.g., in energy; research and extension; irrigation and water management; etc. Structural reforms should also improve smallholders' access to land and water, and guarantee their tenure security for these basic resources. (WBG, Oct 2019)

CONCLUSION

Morocco's case shows that basic food and commodities subsidies play an important stabilizing role during crises, providing food security for large groups. But alone, they are neither sufficient and nor sustainable.

To put food security on a sounder footing in Morocco as in other food-importing African economies, structural reforms and agri-food investments must regain priority. While there is much agreement on these, the implementation challenges are formidable, and financing reforms are problematic in countries burdened with high debt amid shaky prospects for recovery from the pandemic.

BIBLIOGRAPHY

- Ait El Mekki, A. (2006). Les politiques céréalières au Maroc. Les notes d'analyse du CIHEAM. N°7 – Mars 2006.
- Atalayar (2022). "Morocco prepares for a rise in wheat prices due to the war in Ukraine." <https://atalayar.com/en/content/morocco-prepares-rise-wheat-prices-due-war-ukraine>
- Doukkali R., Lejars C. (2015). Energy cost of irrigation policy in Morocco: a social accounting matrix assessment. International Journal of Water Resources Development, 31 (3) : 422-435
- FAO, IFAD, UNICEF, WFP & WHO. (2021). The State of Food Security and Nutrition in the World: Transforming Food Systems for Food Security, Improved Nutrition, and Affordable Healthy Diets for All. <https://www.fao.org/3/cb4474en/cb4474en.pdf>
- Farm Policy News. Illinois. (2022). "Fertilizer Prices Hit New Highs, as Russian Invasion "Exacerbating a Food Shortage". " By Keith Good. <https://farmpolicynews.illinois.edu/2022/03/fertilizer-prices-hit-new-highs-as-russian-invasion-exacerbating-a-food-shortage/>
- Global Nutrition Report (2021). Morocco 2021. The burden of malnutrition at a glance. <https://globalnutritionreport.org/resources/nutrition-profiles/africa/northern-africa/morocco/>
- International Monetary Fund. (2021). IMF Precautionary and Liquidity Line (PLL). <https://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/20/45/Precautionary-and-Liquidity-Line>. <https://www.imf.org/en/News/Articles/2020/04/08/pr20138-morocco-draws-funds-available-under-precautionary-liquidity-line-covid19-pandemic>
- Kingdom of Morocco. (2021). The New Development Model: Releasing energies and regaining trust to accelerate the march of progress and prosperity for all. La Commission Spéciale sur le Modèle de Développement.
- https://www.csmd.ma/documents/CSMD_Report_EN.pdf
- MAPMDREF. (2021), Campagne céréalière 2020-2021 : Une très bonne récolte de 103,2 millions de quintaux. Communiqué de presse. Ministère de l'agriculture, de la pêche maritime, du développement rural et des eaux et forêts. Département de l'agriculture. <https://www.agriculture.gov.ma/fr/communiqu%C3%A9-press/campagne-cerealiere-2020-2021-une-tres-bonne-recolte-de-1032-millions-de-quintaux>
- MAPMDREF. (2022), Filière céréalière. Ministère de l'agriculture, de la pêche maritime, du développement rural et des eaux et forêts. Département de l'agriculture. <https://www.agriculture.gov.ma/fr/filiere/Cerealiere>
- MEFR. (2020), Projet de Loi de Finances pour l'année budgétaire 2020. Rapport sur la compensation. Ministère de l'économie, des finances et de la réforme de l'administration. Royaume du Maroc. <https://www.finances.gov.ma/Publication/db/2020/rapport-compens-plf20-fr.pdf>
- Middle East Online. (2022). "Morocco says Russia-Ukraine crisis will have no impact on its market supply." <https://middle-east-online.com/en/morocco-says-russia-ukraine-crisis-will-have-no-impact-its-market-supply>

-
- Molle, F. (2017), La micro-irrigation et les ressources en eau au Maroc : un coûteux malentendu. Alternatives Rurales (5). https://horizon.documentation.ird.fr/exl-doc/pleins_textes/divers18-07/010072987.pdf
 - Morocco Latest News. (2022). "Importing wheat costs Morocco about 2.6 billion dirhams per month". <https://moroccolatestnews.com/importing-wheat-costs-morocco-about-2-6-billion-dirhams-per-month/>
 - Oomman, Nandini, Lule E, Vazirani D, Chhabra R. (2003). "Morocco: Inequalities in Health, Nutrition, and Population." Health, Nutrition, and Population Discussion Paper. Human Development Network. World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/29577/123758-WP-PUBLIC-MOROCCOP.pdf?sequence=1&isAllowed=y>
 - ONICL. (2022), Base de données, section statistiques. Office National Interprofessionnel des Céréales et des Légumineuses. <https://www.onicl.org.ma/portail/situation-du-march%C3%A9/statistiques>
 - Policy Center for the New South. (2020). Policy Paper PP-20-33. "Selective review of food security policy worldwide: What can be learned from international experiences in order to shape food security policy in Africa?" Part II. by Isabelle Tsakok and Fatima Ezzaha Mengoub. https://www.policycenter.ma/sites/default/files/PP_20-33_Tsakok_Mengoub.pdf
 - Progressive Farmer powered by DTN. (2021). "US Rules on Phosphorus Trade Dispute: Commerce Imports Unfairly Subsidized." By Russ Quinn. <https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/02/11/commerce-department-phosphorus#:~:text=The%20potential%20duties%20come%20after,other%20methods%20in%20those%20countries.>
 - The Western Producer. (2022). "Drought hits large wheat-importing region." By Sean Pratt. <https://www.producer.com/news/drought-hits-large-wheat-importing-region/>
 - United States Department of Agriculture (USDA). (2022). Wheat Outlook: March 2022. Economic Research Service. <https://www.ers.usda.gov/webdocs/outlooks/103490/whs-22c.pdf?v=8722.4>
 - United States Department of Agriculture (USDA). (2022). Grain: World Markets and Trade. <https://apps.fas.usda.gov/psdonline/circulars/grain.pdf>
 - World Bank. (2019). Country Partnership Framework for the Kingdom of Morocco for the period FY 19-24. Report # 131039-MA <https://documents1.worldbank.org/curated/en/101781550869524206/pdf/Program-Documents-Morocco-CPF-P166669-01252019-636865562861022997.pdf>
 - World Bank Group. (2019). Productive diversification of African agriculture and its effects on resilience and nutrition. Christine Heumesser and Holger A. Kray (edi) <https://documents1.worldbank.org/curated/en/942331530525570280/pdf/Productive-Diversification-in-African-Agriculture-and-its-Effects-on-Resilience-and-Nutrition.pdf>
 - World Bank. (2020). "Africa imports billions in food a year. It could be creating local jobs instead" Blog by Luc Christiaensen. <https://blogs.worldbank.org/jobs/africa-imports-billions-food-year-it-could-be-creating-local-jobs-instead>
 - World Bank Group. (2021). Morocco's Jobs Landscape: Identifying constraints to an inclusive labor market. By Gladys Lopez-Acevedo, Gordon Betcherman, Ayache Khellaf, and Vasco Molini. International Development in Focus.

-
- documents1.worldbank.org/curated/en/236951615353771651/pdf/Moroccos-Jobs-Landscape-Identifying-Constraints-to-an-Inclus
 - World Bank. April 14, 2022. Morocco's Economic Update. <https://www.worldbank.org/en/country/morocco/publication/economic-update-april-2022>
 - World Food Programme. (2019). Morocco country strategic plan (2019-2021). <https://docs.wfp.org/api/documents/WFP-0000104706/download/>

About the Authors,

Fatima Ezzahra Mengoub

Fatima Ezzahra Mengoub is an economist at the Policy Center for the New South. She specializes in agricultural economics and works on several issues related to agricultural growth analysis, economic structural change, inter and intra-regional agricultural trade, natural resource management and food security. She has published various articles on the role of agricultural investment, agricultural value chains, productivity and technological change in agriculture and water management. She has also taught macroeconomics and microeconomics at the Hassan II Institute of Agronomy and Veterinary Sciences (IAV) and the School of Governance and Economics (EGE). She holds an engineering degree in agricultural economics from the Hassan II Institute of Agronomy and Veterinary Sciences and is preparing a doctoral thesis on the impact of technological changes induced by irrigation on agricultural growth in Morocco.

Uri Dadush

Uri Dadush is a Senior Fellow at the Policy Center for the New South, previously known as OCP Policy Center in Rabat, Morocco and a non-resident scholar at Bruegel. He is based in Washington, DC, and is Principal of Economic Policy International, LLC, providing consulting services to the World Bank and to other international organizations as well as corporations. He teaches courses on globalization and on international trade policy at the OCP Policy School and at the School of Public Policy at the University of Maryland. He was previously Director of the International Economics Program at Carnegie and, at the World Bank, Director of the International Trade, Economic Policy, and Development Prospects Departments. In the private sector, where he was President of the Economist Intelligence Unit, Group Vice President of Data Resources, Inc., and a consultant with McKinsey and Co.

Abdelaaziz Ait Ali

Abdelaaziz Ait Ali is the Head of Department of Research in Economics who joined Policy Center for the New South after five years' experience at The Central Bank of Morocco. He worked as an economist at the Economics and International Relations Department. He was in charge of analyzing the Real Estate Price Index and was assigned to monitor several assets prices, including stocks markets, for monetary policy and financial stability objectives.

Abdelaaziz is interested also in energy challenges for the global and national economy and long term growth. Abdelaaziz holds a Master degree in econometrics from the University of Hassan II in Casablanca.

Isabelle Tsakok

Isabelle Tsakok is an adjunct professor at SIPA and a Senior Fellow at the Policy Center for the New South, previously known as OCP Policy Center, who focuses on rural development, agricultural economics, policy analysis, food security and poverty reduction. She holds a PhD in Economics. Dr. Tsakok has worked on development issues for over twenty-five years, first as World Bank staff and since retirement as a consultant. She has specialized in policy analysis, program and project formulation and evaluation, research and training activities in agriculture, agro-business, rural development and poverty reduction. She has worked in most regions of the developing world: Africa, Asia - South, Southeast and East, North Africa and the Middle East and Latin America.

About the Policy Center for the New South

The Policy Center for the New South: A public good for strengthening public policy. The Policy Center for the New South (PCNS) is a Moroccan think tank tasked with the mission of contributing to the improvement of international, economic and social public policies that challenge Morocco and Africa as integral parts of the Global South.

The PCNS advocates the concept of an open, responsible and proactive « new South »; a South that defines its own narratives, as well as the mental maps around the Mediterranean and South Atlantic basins, within the framework of an open relationship with the rest of the world. Through its work, the think tank aims to support the development of public policies in Africa and to give experts from the South a voice in the geopolitical developments that concern them. This positioning, based on dialogue and partnerships, consists in cultivating African expertise and excellence, capable of contributing to the diagnosis and solutions to African challenges.

The views expressed in this publication are those of the author.

Policy Center for the New South

Building C, Suncity Complex, Al Bortokal Street Hay Riad 10100 - Rabat

Email : contact@policycenter.ma

Phone : +212 (0) 537 54 04 04 / Fax : +212 (0) 537 71 31 54

Website : www.policycenter.ma

