Syria has traditionally been a major driver of the Syrian economy. The country has maintained wheat self-sufficiency since 1994, though recent droughts have reduced yields significantly. Additionally, the 2013 civil war created disruptions that cut the country’s projected harvest in half, making it the worst harvest in over 30 years and posing a serious threat to the country’s immediate food security. The escalating food crisis can be intractable unless innovative solutions are developed that address current value chain challenges. This research brief discusses the wheat value chain in Syria and points of disruptions in the chain leading to acute food insecurity in the nation.

Keywords
Syria, Wheat, Food Security, Global Value Chains, Conflict, Food Policy
Background

Agriculture and the energy sector are the driving forces of the Syrian economy. Wheat is Syria’s primary agricultural crop, accounting for about 60% of cultivated agriculture land. Wheat production is concentrated in Syria’s northern regions. The country has maintained wheat self-sufficiency since 1994, though recent droughts have reduced yields significantly.

Additionally, the 2013 civil war created disruptions that cut the country’s projected harvest in half, making it the worst harvest in over 30 years and posing a serious threat to the country’s immediate food security.

Syrian farms are small and medium-sized operations; agrarian reforms have prohibited large-scale land ownership. The country exports most of its durum wheat to Algeria and Tunisia, for the production of semolina (50% of Syrian durum export), then to Italy for the production of pasta (around 30% of durum export); the remaining exports (less than 20%) are directed towards neighboring countries and other European countries.

Wheat provides about 40% of Syrian households’ caloric consumption, and is consumed mostly as bread. The government subsidizes wheat production by paying growers premium prices and by setting retail prices below production costs. Food subsidies range from 1-2% of GDP. Oil and food subsidies account for about 20% of public spending -- twice the amount spent on social protection and health programs combined.

Wheat Value Chain in Syria

The Syrian government’s intervention in the Syrian wheat market is strong on both the supply and demand sides. The government subsidizes all inputs, monopolizing most inputs (including seeds and fertilizers), is the sole buyer of wheat, and controls all marketing channels. The wheat chain is primarily organized around the goal of achieving food security. The General Establishment for Cereal Processing and Trade (HOBOOB) is the primary government agent, controlling several institutions that are active in the wheat value chain and setting the national price for wheat. The Syrian Ministry of Economy and Trade finances HOBOOB’s operations.

HOBOOB procures wheat through its 140 collection centers around the country. Larger producers sell their wheat directly to these centers, while the smaller ones sell to wheat aggregators who in turn resell the product to collection centers at the official price. HOBOOB manages the storage of wheat through the General Company for Silos, Feed Mills and Seed Plants. Wheat is stored in concrete and metal silos, as well as in open storage facilities. HOBOOB seeks to maintain stocks of around four million tons, which is in excess of the country’s annual milling capacity. Syria’s storage capacity is the largest among Arab countries, surpassing 10 months’ worth of consumption.

The Syrian government determines export and import volumes based on cereal production and the level of stocks. HOBOOB stopped exporting wheat during the last

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a Agricultural income is a relatively large share of household income in Northern regions.
b These countries are members of the Greater Arab Trade Agreement (GAFTA).
several years, due to lower wheat stocks stemming from drought and poor harvest.\textsuperscript{xvii}

HOBOOB owns the two state-run companies responsible for flour milling and baking – the General Company for Mills (GCM) and the General Company for Baking (GCB).\textsuperscript{xviii} Private millers evolved in the late 1990s as the government started liberalizing its domestic wheat market.\textsuperscript{xix} Nevertheless, the state continues to drive the chain by monopolizing the purchase of wheat, which it sells to the mills exclusively. The government owns 26 mills and contracts 35 private millers.\textsuperscript{xx} The largest share of wheat is sold to GCM, the public company in charge of producing flour at a subsidized price for the General Company for Bakeries (GCB).\textsuperscript{xxi} Private mills that deal with HOBOOB depend on these highly competitive contracts.\textsuperscript{xxii}

All government-milled wheat is converted into standard flour. Wheat bran is sold to the General Establishment for Feed, private feed millers and farmers. Most private flourmills operate in a relatively small market, and produce high quality flour for specialty bread, pastries and pasta markets, and avoid competing in the subsidized standard flour market. They also allegedly purchase wheat illegally from farmers and traders in order to profit from the governmental subsidy scheme.\textsuperscript{xxiii} The wheat used in private mills is usually from the past year’s harvest compared to HOBOOB’s stocked wheat, which can be up to three years old and may need re-cleaning or drying if it is stored incorrectly. The demand from the private milling and pasta industries is marginal and represents only 5% of total HOBOOB deliveries.\textsuperscript{xxiv}

HOBOOB is the exclusive supplier of flour to bakeries making standard bread, which they sell to consumers at the official fixed prices. The organization sells wheat at subsidized prices and delivers it by truck to the bakeries.\textsuperscript{xxv} The government owns 122 bakeries and co-owns 90 others with the private sector.\textsuperscript{xxvi} Bakeries that make high-quality bread buy their flour from private mills. Bread, by law, may be produced from either standard flour or high quality flour, but not from both. Public bakeries only produce standard bread, while private bakeries can produce either standard or high-quality.\textsuperscript{xxvii} Consumers buy flour from public bakeries, HOBOOB’s retail outlets and private food retailers.

\section*{Key Value Chain Challenges}

\subsection*{Environmental stress}

Syria is a semi-arid country that suffers from changing weather patterns, water shortages and drought.\textsuperscript{xxviii} Altered weather conditions such as inconsistent rainfall pose a major challenge that is adversely affecting farmers and gradually leading to desertification. Moreover, changes in temperature and rainfall created a favorable environment for pests, such as the cereal leaf miner pest that recently infested some wheat and barley crops.\textsuperscript{xxix}

Rain is the main water source, amounting to 7 billion m$^3$/year, while groundwater recharge is about 4.2 billion m$^3$/year.\textsuperscript{xxx} There is growing concern about the over-exploitation of groundwater reserves because many farmers, facing low rainfall, are drawing down underground stocks of water. The water table is falling, and water
quality is deteriorating, as indicated by growing concentrations of gypsum. The surface water resources for Syria are estimated at 17.9 billion m³/year, with the Euphrates and its tributary, the Al Khabour, as the two largest rivers.xxxxix, xxxix

Cereal and sheep production are the industries hardest hit by chronic drought. Drought periods usually last close to four and a half years.xxxviii The recent five years of chronic drought in 2007-2012 has contributed to economic, social and political shocks in Syria. These droughts reduced the country’s wheat output, resulting in imports of wheat for the first time in over 10 years; this caused massive migration from rural to urban areas and fostered tensions with the government.xxxiv, xxxv

Food Security Policy
Syria has one of the most highly regulated economies in the MENA. There are a multitude of institutions involved in the formulation and implementation of policy, including the Ministry of Agriculture and Agrarian Reform, the National Agricultural Policy Center, and the Ministry of Economy and Trade. Self-sufficiency and the availability of cheap food are central to the Syrian domestic economic and food security policies. Since the early 1970s the Syrian Government used three main instruments to increase wheat productivity: (i) investments in irrigation; (ii) input subsidies (seed, fuel and fertilizer); and (iii) agricultural research to improve productivity. These interventions complemented each other and boosted wheat production, thus helping to achieve food security goals.xxxvi

Agricultural policies have been slowly evolving along a few distinct trajectories: (a) recognizing the critical role of marketing and processing in the wheat industry; (b) allowing private sector participation; and (c) making more efficient use of scarce natural resource.xxxvii However, these efforts will not substantially alter the strong role of the government in the wheat chain. Table 1 below summarizes Syria’s agricultural and wheat policies.
Table 1: Syrian Wheat and Food Policy

<table>
<thead>
<tr>
<th>Policy</th>
<th>Challenges</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use planning (land size, crop decision, and production quota)</td>
<td>• Disregards farmers’ preferences</td>
<td>• Prepared by the state</td>
</tr>
<tr>
<td></td>
<td>• Disagreement between farmer and government objectives</td>
<td>• Is part of the national economic plan</td>
</tr>
<tr>
<td></td>
<td>• Prepared by the state</td>
<td>• Enforced by state agents</td>
</tr>
<tr>
<td></td>
<td>• Is part of the national economic plan</td>
<td></td>
</tr>
<tr>
<td>State Monopolies (HOBOOB, GCM, GCB)</td>
<td>• Producer prices are higher than consumer prices</td>
<td>• Multiple government institutions set price of wheat</td>
</tr>
<tr>
<td></td>
<td>• Mounting costs on state budget</td>
<td>• State guarantees purchase price</td>
</tr>
<tr>
<td></td>
<td>• Inefficiencies in wheat production</td>
<td></td>
</tr>
<tr>
<td>Consumer Prices</td>
<td>• Unsustainable and burdens public expenditure</td>
<td>• Government subsidizes and fixes the price of flour and bread</td>
</tr>
<tr>
<td>Input Policies (Input subsidies, purchase and regulation of inputs)</td>
<td>• Continued state monopoly</td>
<td>• State monopoly in the production, imports and distribution of seeds and fertilizers</td>
</tr>
<tr>
<td></td>
<td>• Long delays in fertilizer delivery</td>
<td>• The Government created financial schemes for farmers</td>
</tr>
<tr>
<td></td>
<td>• Led to additional costs, estimated at 30% of the farm-gate price</td>
<td>• Limited private sector participation</td>
</tr>
<tr>
<td></td>
<td>• State monopoly in the production, imports and distribution of seeds</td>
<td>• Government rations fertilizer</td>
</tr>
<tr>
<td></td>
<td>and fertilizers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Started to modernize and expand irrigation systems during 10+ years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>period in early 2000s</td>
<td></td>
</tr>
<tr>
<td>Marketing Policies Reforms</td>
<td>• Continued state control, slow agricultural reforms, and limited</td>
<td>• Reduced restrictions on farmers’ grain sales to the state</td>
</tr>
<tr>
<td></td>
<td>agricultural growth</td>
<td>• Allowed conditional participation of the private sector</td>
</tr>
<tr>
<td>Investment in Irrigation</td>
<td>• Water overuse and mismanagement</td>
<td>• Started to modernize and expand irrigation systems</td>
</tr>
<tr>
<td></td>
<td>• Lower water tables</td>
<td>during 10+ years period in early 2000s</td>
</tr>
<tr>
<td></td>
<td>• Negative environmental impact on Euphrates</td>
<td></td>
</tr>
<tr>
<td>Increased imports and reduced taxes on food grains’ imports</td>
<td>• Exposure to volatile global wheat prices</td>
<td>• Increasing storage from 10 to over</td>
</tr>
<tr>
<td></td>
<td>• Exposure to volatile global wheat prices</td>
<td>13 months consumption</td>
</tr>
<tr>
<td></td>
<td>• Increasing storage from 10 to over</td>
<td>• Restricts wheat exports</td>
</tr>
<tr>
<td></td>
<td>13 months consumption</td>
<td></td>
</tr>
</tbody>
</table>

Source: CGGC based on literature review

Conflict

Continued civil unrest, since mid-March 2011, raises urgent concerns over the state of food security in Syria. Table 2 below summarizes the wheat value chain disruptions that have occurred in the wake of the current conflict. Domestic wheat production has dropped to its lowest level in nearly 30 years and only 45% of farmers have been able to fully harvest their cereal crops. Irrigation systems are severely damaged due to the destruction of major irrigation canals and shortages of fuel for powering irrigation pumps. Lack of fuel and electricity cuts have also affected the water supply and contributed to social tensions among the farmers.
In addition, importing wheat became increasingly difficult for the Syrian government as trade sanctions came into effect. In 2012, the government securing offered to pay a premium of about 3%-5% above global prices but traders were largely unwilling to export to the country. International sanctions are constraining the government ability in using international banking systems and the country’s foreign reserve. In 2013, the Syrian government attempted to bypass these problems in procuring wheat from global markets by using middlemen to set up deals and increasing wheat procurement price above international prices.

Higher production costs, increases in fuel prices and difficulty with regard to securing imports have all contributed to an inflation rate of 50%, which has led to a sharp increase in food prices, see Figure 1.

Table 2: Syrian Wheat Value Chain Disruptions

<table>
<thead>
<tr>
<th>Stage in the Value Chain</th>
<th>Value Chain Disruption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat Production</td>
<td>Dropped below average to about 2 million tons in 2013</td>
</tr>
<tr>
<td>Wheat Distribution</td>
<td>Transport of crop to collection centers is risky and expensive. Collection centers are inaccessible with only 40 of 140 centers are operational.</td>
</tr>
<tr>
<td>Wheat Imports</td>
<td>Importing larger volumes of wheat is difficult Economic sanctions worsened Syria’s fiscal standing making it uncompetitive in tendering for grains globally Exporters are discouraged from trading with Syria</td>
</tr>
<tr>
<td>Wheat Storage</td>
<td>2013 post-harvest grain losses are higher than average due to damage to equipment and storage structures Limited access to production and collection centers</td>
</tr>
<tr>
<td>Wheat Milling</td>
<td>Most mills are not operational</td>
</tr>
<tr>
<td>Bread Production</td>
<td>Many bakeries are damaged and operating below capacity due to shortages of fuel, flour and yeast</td>
</tr>
<tr>
<td>Consumption</td>
<td>Shortages of flour and bread and high gasoline prices increased the price of bread from the 0.23 USD (25 SYP) for 1.5kg of subsidized bread to about 1.4 (150 SYP) at the private bakery</td>
</tr>
</tbody>
</table>

Source: CGGC based on literature review

Syria has four yeast factories with only one still operational.
The Syrian government and other armed groups understand that controlling bread, oil and water is key to gaining power in the country. The government is using food power to gain an upper hand in the conflict and discourage civil unrest by bombing bakeries, cutting off access to bread (along with water, electricity and other supplies), and targeting strategic areas such as production and processing regions (see figure 2). Armed groups are also purposefully seeking control over the wheat chains to also garner support. These groups are now controlling the majority of the wheat producing areas, are selling wheat stocks to traders in neighboring countries at inflated prices and use food (including food aid) to ensure local. In many cases, control over the wheat infrastructure forced combatants and the government to work deals to provide flour and/or bread. For example, in 2013, the rebels controlled the wheat producing areas in Idlib while the government...
maintained control over the mills. The two groups agreed that the rebels would send the wheat to the mills and the government would grind it and send the flour back in exchange for a portion of the wheat (Holmes & Dziadosz, 2013).xix There are also many reports that food aid, including the World Food Program and USAID flour to bread program, are further complicating the conflict by creating a cycle of dependency, provide these groups with more power, and are susceptible to high levels of corruption from local distributors.1

Conclusion

Wheat is a critical food staple in Syria and controlling the wheat to bread chain is critical to the political, social and economic stability of the country. The wheat value chain in Syria is highly disrupted and food insecurity in the country is severe. The problem is worsened with the targeting of the wheat chain by the Syrian government and various armed groups that are using food power to control the local population. Chronic environmental stress compounded with the current violence will continue to be a threat to domestic wheat production.

At the same time, food aid is neither sufficient nor able to mitigate the ongoing food crisis in the country while creating dependency on assistance programs. The escalating food insecurity situation can be intractable unless innovative solutions are developed that include: a full assessment of the wheat value chain; identifying priority intervention areas in the chain; addressing some of the structural issues such as improving domestic production; and creating more transparent channels for delivering food assistance in conflict zones.
References


ii Ibid.


vii Ibid.


x Lançon, op. cit.

xi Aw-Hassan, A., et al., op. cit.


xiii Lançon, op. cit.


xvi Lançon, op. cit.

xvii Maldonado, op. cit.


xix Ibid.

xx Goodbody, S., et al., op. cit.

xxi Lançon, op. cit.

xxii Fiorillo, C. and J. Vercueil, op. cit.

xxiii Fiorillo, C. and J. Vercueil, op. cit.

xxiv Lançon, op. cit.

xxv Fiorillo, C. and J. Vercueil, op. cit.

xxvi Goodbody, S., et al., op. cit.

xxvii Fiorillo, C. and J. Vercueil, op. cit.


Improved Crop Germplasm on Poverty Reduction: Methods and Results, Amman, Jordan, International Center for Agricultural Research in the Dry Areas (ICARDA).

xxx FAO and WFP (2012). Joint Rapid Food Security Needs Assessment (JRFSNA). Damascus, Syria and Rome, Italy, UN Food and Agriculture Organization (FAO) and UN World Food Program (WFP).

xxx FAO and WFP, op. cit.

xxxii Fiorillo, C. and J. Vercueil, op. cit.

xxxii FAO and WFP, op. cit.


xxxvi Aw-Hassan, A., et al., op. cit.

xxxvii Fiorillo, C. and J. Vercueil, op. cit.


xxxix Goodbody, S., et al., op. cit.

xl Ibid.

xli Ibid.

xlii CGGC Interview, 2013.


xlvii Ciezadlo, op. cit.


xlix Holmes and Dziadobsz, op. cit.

1 Eng and Martinez, op. cit.