

Wheat-to-Bread Processing Facilities Mapping

STUDY FOR NORTHEAST SYRIA JULY 2021



North East Syria (NES)
FOOD SECURITY AND LIVELIHOODS
Working Group



Introduction

To inform the bread support programs in Northeast Syria (NES), IMMAP, in collaboration with the Food Security and Livelihood (FSL) Cluster and the Bakeries and Bread Coordination Group (BBCG) in NES, conducts a regular mapping and monitoring exercise of the processing facilities in the wheat-flour to bread value chain in NES. This exercise aims to:

- Assess the capacity and functionality of wheat-flour to bread processing facilities in NES.
- Assess the accessibility and affordability of bread in NES.
- Identify existing gaps of bread production in NES to meet the bread needs of the local population.
- Identify the main bread production barriers and needed support to fill the gaps.

In July 2021, IMMAP, in collaboration with 5 NES FSL Cluster (NGO) partners, conducted the third round of the Wheat-flour to bread processing facilities mapping exercise in NES. Twenty-five sub-districts were assessed across four governorates: 11 sub-districts in Al-Hasakeh governorate, 3 in Deir-ez-Zor governorate, 6 sub-districts in Aleppo governorate, and 5 in Ar-Raqqa governorate.

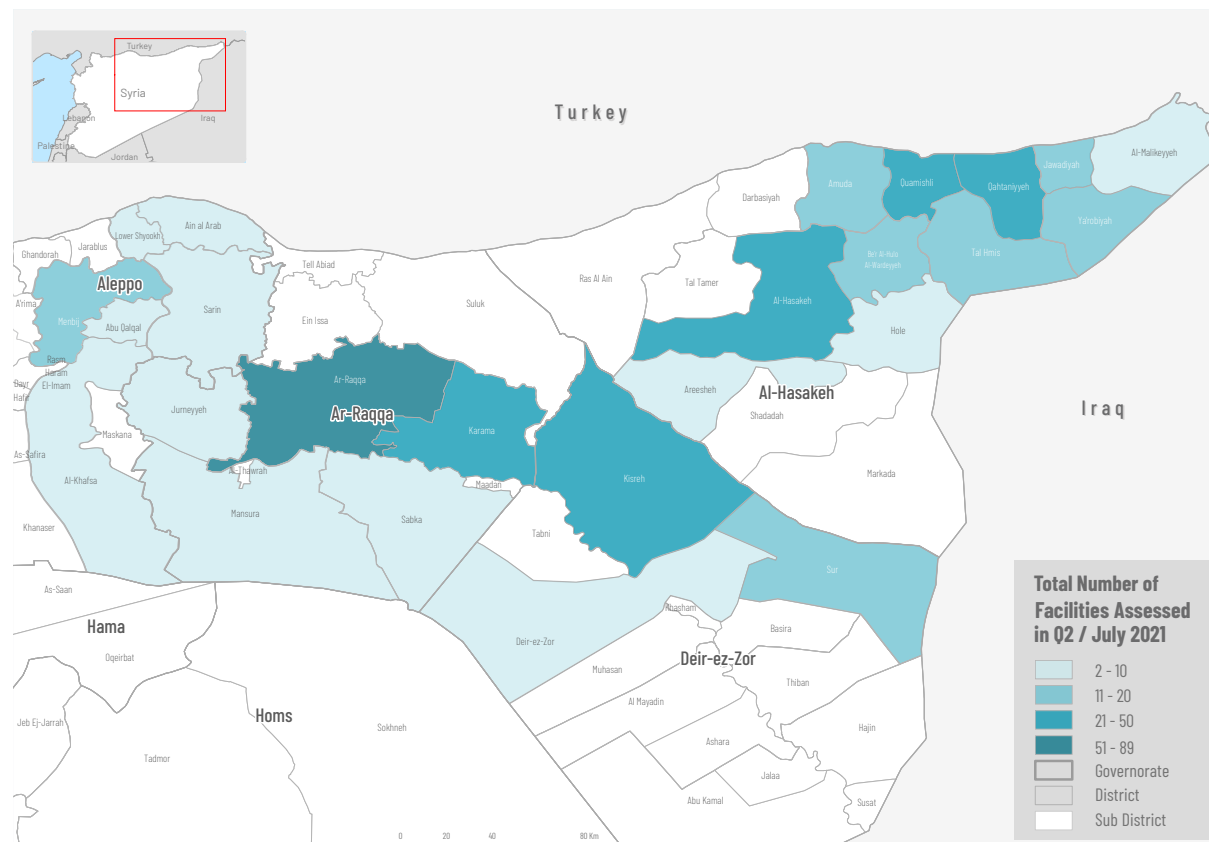
Overall, 404 wheat-flour to bread processing facilities were mapped in NES; out of these 404 facilities, 320 are bakeries, 61 are mills, and 20 are silos.

Below are the preliminary findings and recommendations:

Key Findings

- **Facilities' functionality stood at less than 50% of their full production capacity.**

The reported maximum potential total weekly production capacity of all assessed mills was 78,367 MT of flour; however, the mills' actual recorded total weekly production was 36,782 MT of flour. On average, the mills' functionality stood at 47% across the 47 assessed operational mills across the NES region. As for bakeries, the reported maximum potential total weekly production capacity of all assessed bakeries was 11,872 MT of bread; however, the bakeries' actual recorded total weekly production was 4,854 MT of bread. On average, the functionality of bakery facilities stood at 41% across the 301 assessed operational bakeries across the NES region. This indicated that the operational bakeries in NES were only producing at 41% of their potential/full production capacity during the reporting period. Compared to the previous round, March 2021, there was no major change in the functionality of bakery facilities, as bakeries were producing at 39% of their potential/full production capacity. Nonetheless, on governorate level, Aleppo governorate in this round recorded the highest functionality rate of 78%, while Ar-Raqqa governorate recorded the lowest functionality rate of bakeries at 29%.



Map 1: Assessed Facilities in NES, July 2021

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- **The reported average percentage of produced subsidized bread in NES increased by 8% in July 2021.**

In this round, the average percentage of produced subsidized bread was reported to be around 81% of total production (3949 MT/Week). Compared to the previous round, March 2021, there was a notable increase of 8% in the average percentage of subsidized bread production, as it was 73% (3731 MT/Week) of total production. At the governorate level, the average percentage of total weekly production of subsidized bread in Deir-ez-Zor and Aleppo governorates was as high as 93% (502 MT) and 87% (1514 MT), respectively. Al-Hasakeh governorate had the lowest average percentage of weekly recorded production of subsidized bread (66%) compared to other governorates. However, compared to the previous round, March 2021, Al-Hasakeh governorate witnessed a notable increase in the reported weekly average percentage of produced subsidized bread, which increased from 56% to 66% of the total production.

- **The level and type of bread program support differed across facilities.**

Only 15% (n=7) of assessed mills reported that they are currently receiving support. The Local Self Administration (LSA) solely provided support to the mills, and the main reported types of support were towards the provision of fuel, wheat grain, wages, and rehabilitation. Nevertheless, 46% (n=6) of interviewed silo representatives reported that they are currently receiving aid support. The support to the silos was also solely provided by LSA, and the main reported types of support were towards the provision of wheat grain, wages, rehabilitation, and road access maintenance. On the other hand, the majority of the interviewed bakery representatives, 75% (n= 226), reported that they were receiving support, this denoted an increase in the percentage of supported bakeries compared to March 2021 (67%). This change was mainly driven by the increase in the percentage of supported bakeries in Deir-ez-Zor and Aleppo governorates. Also, it is worth noting that like the previous round (March 2021), Al-Hasakeh governorate had the highest number of unsupported bakeries (n=44).

Nonetheless, most supported bakeries (98%) indicated that they receive support from the LSA. The bakeries' support from the LSA was mainly flour distribution, provision of energy: fuel and electricity, and yeast distribution support. On the other hand, other supported bakeries (4%) reported receiving support from NGOs, and the main reported types of support were towards the provision of flour and yeast, building rehabilitation, and machine maintenance.

- **The majority of assessed facilities indicated their need for maintenance or rehabilitation support.**

When asked about their needs to operate at full functionality, 60% of bakeries (n=180), 74% of mills (n=35), and 100% of silos (n=13) indicated their needs for machine maintenance and/or building rehabilitation support. The total estimated cost of building infrastructure rehabilitation

for all the assessed bakeries was 681,500 USD, the total estimated equipment maintenance cost was 708,400 USD, and the total estimated cost of purchasing new needed equipment was 518,600 USD. On the other hand, the total estimated cost of building infrastructure rehabilitation for all the assessed mills was 106,100 USD, and the total estimated machine rehabilitation cost was 676,300 USD. Nonetheless, the total estimated cost of building infrastructure rehabilitation for all assessed silos was 312,000 USD, and the total estimated cost for machine and equipment maintenance was 586,500 USD.

- **The drought-induced shock of wheat production affected the availability of local wheat grain and locally milled flour.**

Seventy-four bakeries reported low availability of locally milled flour which represented 25% of the assessed bakeries. At governorate level, assessed bakeries in Al-Hasakeh governorate reported the highest level of unavailability of locally milled flour (60% n=63). However, overall, in NES, the main reported reason that limited the availability of local flour throughout the year was the drought-induced wheat output production shock. The low levels of rainfall and water availability in NES negatively affected wheat production, and in turn, this led to a negative supply shock of wheat and flour to the bread program. The shortage of wheat grain supply may have also caused an increase in wheat and flour prices. Nevertheless, bakeries also reported other challenges in getting locally milled flour, such as the decrease in the amount and quality of distributed flour by LSA, and the increased transportation costs.

- **Bakeries' usage of locally milled flour decreased by 7% in July 2021 compared to March 2021.**

Much of the flour used by the bakeries for bread production was locally milled flour 91% (4417 MT/week). There was a notable decrease in locally milled flour usage to produce bread compared to the previous round in March 2021 (98%, 5028 MT/Week). This change was primarily driven by Aleppo and Ar-Raqqa governorates, as there was a notable increase in their dependence on imported flour. In March 2021, bakeries in Aleppo governorate, on average, reported not using any imported flour to produce bread, while in this round, the percentage increased to 13%. Similarly, in Ar-Raqqa governorate, on average, bakeries reported using imported flour 4% to produce bread in the previous round, while in this round, the percentage increased to 13%.

- **Price increase for both imported and locally milled flour.**

Overall, the market price of imported flour in the assessed areas was reported to be higher by 20% than the price of locally milled flour. The reported median price for one MT of imported flour was 390 USD, whereas the median price for one MT of locally milled flour was 325 USD. There was a significant increase in the median price of locally milled flour as it increased by 100 USD (55%) compared to the previous round (March 2021, 210 USD). Also, there was a notable increase in the median

price of imported flour as it increased by 65 USD (20%) compared to the previous round (March 2021, 325 USD).

- **On average, the bread production cost increased by 28% compared to the last round in March 2021.**

The average production cost of one MT of bread in the NES region in July 2021 was reported to be 104 USD. The average total production cost consists of flour, yeast, fuel, labor, bag, and other inputs costs. The average cost of inputs was derived from calculating both subsidized and unsubsidized market prices of bread production inputs. Overall, the average production cost increased compared to the last round in March 2021, where the average cost of producing one MT of bread in the mapped NES region was 81 USD. At governorate level, Ar-Raqqa governorate recorded the highest average bread production cost of 128 USD/MT. Aleppo governorate recorded an average bread production cost of 111 USD/MT. Al-Hasakeh and Deir-ez-Zor governorates recorded the lowest average bread production cost of 83 USD/MT.

- **Overall stability in the levels of bread availability compared to the last round in March 2021.**

In this round, 75% of interviewed bakeries (n=226) reported that bread was available, 21% reported that bread was rarely available, and 4% reported that bread was not available at all. Therefore, there is no notable change in bread availability compared to the last round in March 2021, where 75% of interviewed bakeries reported that bread was available, and 21% reported that bread was rarely available. The bakeries that reported that bread was not available at all (4%, n=16) were in Al-Hasakeh and Deir-ez-Zor governorates, in Be'r Al-Hulo Al-Wardeyyeh, Areesheh, Tal Hmis, Sarin, and Kisreh sub-districts. The most cited reasons for the low availability of bread were:

- The shortage of flour.
- The increase in population due to localized displacement of people and their demand for bread.
- The limited bread production inputs support that does not match the input supply needs.
- **Increase in the subsidized bread prices.**

Compared to March and July 2021, the median selling price of one kg of subsidized bread in NES increased by 96% (from 100 SYP/kg to 196 SYP/kg). The price of subsidized bread varied from one governorate to another. For instance, assessed bakeries in Deir-ez-Zor and Al-Hasakeh governorates recorded the highest median price for subsidized bread (200 SYP/kg). While on the other hand, assessed bakeries in Aleppo governorate recorded the lowest median price for subsidized bread (184 SYP/kg).

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Recommendations

- **Strengthened support for local wheat to flour production.**

During this round, 25% of the assessed bakeries reported low availability of locally milled flour. Also, there was an increase in the median price of locally milled flour as it increased by 100 USD (55%) compared to the previous round (March 2021, 210 USD). Local wheat production is critical for the resilience of the wheat-flour to bread market systems. Therefore, it is recommended to continue and expand the support to local wheat farmers with subsidized farming inputs to sustain the viability of the local wheat to flour supply chain, ensuring locally produced wheat to be processed into local flour to reach the bakeries and end consumers.

- **Consider in-depth selection criteria/targeting of new bakeries for support at the sub-district level.**

For better targeting, it is important to consider indicators at the sub-district level during bread program implementation. The main indicators to consider are the percentage of unsupported bakeries, bakery productivity (total production/capacity), population and PiN bread needs, and availability of regular and subsidized bread. (Refer to "Annex Table 1: NES Bread Needs and Production Gap Analysis" for geographical and population targeting at sub-district level).

- **Replicate and upscale the rehabilitation support to the wheat-flour to bread facilities.**

Replicating and upscaling the rehabilitation of building infrastructure, machine maintenance, and equipment procurement for bakery and mill facilities is recommended, especially in areas with high population density and a shortage of production due to the facilities' limited capacity to produce. (Refer to "Annex Table 1: NES Bread Needs and Production Gap Analysis" for geographical and population targeting at sub-district level). Assessed bakeries reported that their most needed support was building rehabilitation, dough mixing machine maintenance and oven house maintenance. On the other hand, the most cited types of support that the operational mills reported were their needs for machine maintenance and building and structural rehabilitation.

- **Upscale the wheat-flour to bread support in Al-Hasakah governorate.**

Although Al-Hasakeh governorate compared to the previous round witnessed a notable increase in the recorded production of subsidized bread (56% in March 2021 - 66% in July 2021), this round, it had the lowest percentage of recorded production of subsidized bread compared to other governorates. Also, during this round, 50% of the assessed bakeries that did not produce any subsidized bread were in sub-districts in Al-Hasakeh governorate. Unsupported bakeries that sell unsubsidized bread in some areas can directly affect the overall prices of bread in the market and, in turn, make it less affordable. This indicated a need to expand or upscale the support of the bread program in Al-Hasakeh governorate to ensure bread is affordable and accessible at subsidized prices.

- **Strengthen coordination with the Local Authorities.**

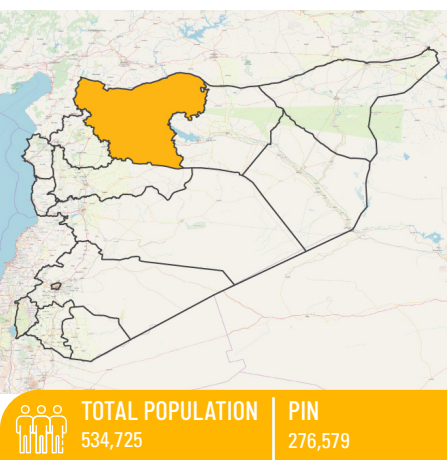
The wheat-flour to bread value chain in NES is relatively centralized and controlled by the Local SANES, who provides input and focuses on ensuring stable bread prices in the market. Therefore, it is recommended for humanitarian partner organizations to coordinate closely with the local authorities to provide better facilitation of flour distribution, and at the same time, fill the gaps that the local authority is unable to cover. This way, access to bread and subsidized bread prices would be more uniformly distributed across the different governorates while avoiding overlaps and covering gaps of the bread program.

- **Further studies and continuous market monitoring.**

The wheat-flour to bread market system is highly unstable and constantly faces changes given the SYP currency inflation, exchange rate volatility, and ongoing conflicts. Therefore, it is recommended to continue collecting data regularly on the bakery, mill, and silo operations. This will ensure that the existing humanitarian partners' interventions and bread program synergies with SANES in the NES region are aligned with the prevailing political and market trends and needs. In line with the wheat, flour, and bread monitoring activities, there are potential upcoming Crop Monitoring and Wheat Value Chain studies. These studies aim to assess the gaps in local wheat production and inform the NES FSL Cluster members' future interventions that aim to support local wheat production to enhance local wheat-flour to bread value chain. In that regard, it is recommended to integrate the wheat value chain studies and the bakery bread facilities mapping study to holistically generate information on the whole wheat-flour to bread value chain that can fully inform the bread program implementation in relation to the supply chain management and the value chain development.

Mapping of Wheat-to-Bread Processing Facilities

Aleppo July 2021



BAKERIES

32

Bakery Status

● Non-operational 0
● Operational 32

Reasons for Non-Operational

N/A

N/A

N/A



Functionality

● Full 22
● Partial 10

Ownership

● Public 8
● Private 20
● Mix 4



CURRENCY USED

USD 0%

TL 0%

SYP 100%



QUALITY CONTROL (LAB TESTING)

3

Bread Production

Type

Subsidized Bread 216
Un-Subsidized Bread 0
Tourist Bread 32

Price (SYP) /KG

111-200

N/A-N/A

1000-1129

Average Bread Package Weight

1,278g

Daily Production 249 MT
Full Daily Capacity 319 MT

Current Productivity

78%

Daily Bread Needs of Total Population 176 MT

Daily Bread Needs of PIN Population 91 MT

PIN who have Access to Subsidized Bread

100%

Bakery Management

Bakery Owner 21
Tenant 1
LSA 0
Private Investor 5

Availability

● Always Available
● Often Available
● Fairly Available
● Rarely Available
● Not Available

Bread



Local Flour



Imported Flour



Yeast



Fuel



Source and Type of Support

Currently Receive Support 69%
Used to Receive Support 0%
Never Received Support 31%

Rehabilitation 7%
Operational Support 9%
Flour 42%
Yeast 42%

NGO 2
LSA 1
1
3
1
17
1
17

Source and Price of Flour

13% Imported Flour
\$/MT 300-400

Local Flour 87%
19-430 \$/MT

Price Trader 0
Mill 4
LSA 214
NGO 0
Other 0



MILLS

6

Mills Status

● Non-operational 0
● Operational 6

Reasons for Non-Operational

N/A

N/A



Functionality

● Full 6
● Partial 0

Reasons for Limited Functionality

N/A

N/A

N/A

Ownership

● Public 3
● Private 3



MILLS SOURCE OF WHEAT

LSA

Milling Capacity

Maximum Capacity 2186 MT
Current Capacity 2,080 MT

Production Functionality 95%

Market Actors Supplied by Mills

Bakeries Supplied 50
Traders Supplied 2



SILOS

2

Silos Status

● Non-operational 0
● Operational 2



● Full 2
● Partial 0

Ownership

● Public 2
● Private 0

Reason for Closure

N/A



SILOS SOURCE OF WHEAT

N/A

Needed Support for Silos

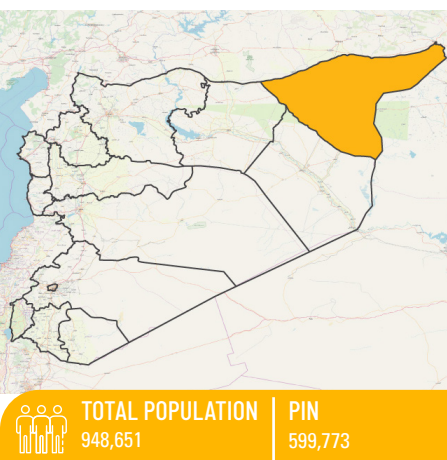
Building Rehabilitation 2
Machine Rehabilitation 2
Estimated Cost of Machines and Rehabilitation \$ 6,000

Silos Capacity

Silos Maximum Storage Capacity 24,000 MT

Mapping of Wheat-to-Bread Processing Facilities

Al-Hasakeh July 2021



BAKERIES 120

Bakery Status

● Non-operational 14
● Operational 106

Reasons for Non-Operational

Needs maintenance

No support/
subsidies

Increasing input prices



Functionality

● Full 36
● Partial 70

Ownership

● Public 10
● Private 110
● Mix 0



CURRENCY USED

USD 0%

TL 0%

SYP 100%

QUALITY CONTROL (LAB TESTING) 37

Bread Production

Type

Subsidized Bread 119
Un-Subsidized Bread 42
Tourist Bread 9

Price (SYP) /KG

100-308
175-200
1231-1500

Daily Production 181 MT
Full Daily Capacity 478 MT

Current Productivity

38%

Daily Bread Needs of Total Population 313 MT

Daily Bread Needs of PIN Population 198 MT

PIN who have Access to Subsidized Bread

68%

Average Bread Package Weight 1,428g

Bakery Management

Bakery Owner 77
Tenant 3
LSA 0
Private Investor 22

Availability

● Always Available
● Often Available
● Fairly Available
● Rarely Available
● Not Available

Bread



Local Flour



Imported Flour



Yeast



Fuel



Source and Type of Support

Currently Receive Support 58%
Used to Receive Support 0%
Never Received Support 42%

Rehabilitation 0%
Operational Support 10%
Flour 79%
Yeast 10%

NGO 0
LSA 0
0
1
1

Source and Price of Flour

5% Imported Flour
\$/MT 270-450

Local Flour 95%
\$/MT 17-400

Price Trader 0
Mill 2
LSA 158
NGO 214
Other 0



MILLS 26

Mills Status

● Non-operational 4
● Operational 22

Reasons for Non-Operational

Increasing input & wheat prices

Needs maintenance



Functionality

● Full 9
● Partial 10

Reasons for Limited Functionality

Shortage wheat

High operational costs (raw material, electricity, workers, etc)

shortages in fuel / electricity

Ownership

● Public 3
● Private 23



MILLS SOURCE OF WHEAT

LSA, Farmers, & Wheat traders

Milling Capacity

Maximum Capacity 2492 MT
Current Capacity 1,889 MT

Production Functionality 76%

Market Actors Supplied by Mills

Bakeries Supplied 73
Traders Supplied 72



SILOS 6

Silos Status

● Non-operational 0
● Operational 6

● Full 5
● Partial 0

Ownership

● Public 6
● Private 0

Reason for Closure

N/A



SILOS SOURCE OF WHEAT

LSA

Needed Support for Silos

Building Rehabilitation 5
Machine Rehabilitation 5

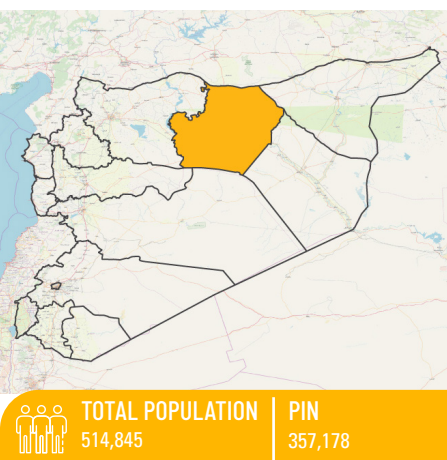
Estimated Cost of Machines and Rehabilitation \$ 215,500

Silos Capacity

Silos Maximum Storage Capacity 355,000 MT

Mapping of Wheat-to-Bread Processing Facilities

Ar-Raqqa July 2021



BAKERIES

119

Bakery Status

● Non-operational 4
● Operational 115

Reasons for Non-Operational

Needs maintenance

Low availability of flour

Increasing input prices



Functionality

● Full 6
● Partial 109



Ownership

● Public 5
● Private 89
● Mix 25



CURRENCY USED

USD 0%

TL 0%

SYP 100%



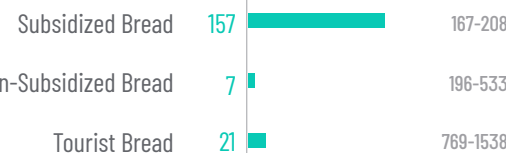
QUALITY CONTROL (LAB TESTING)

87

Bread Production

Type

Price (SYP) /KG



Average Bread Package Weight

1,230g

Daily Production 187 MT

Full Daily Capacity 636 MT

Current Productivity

29%

Daily Bread Needs of Total Population 170 MT

Daily Bread Needs of PIN Population 118 MT

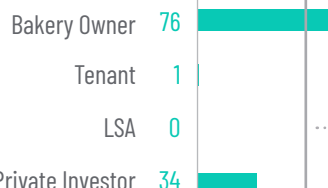
PIN who have Access to Subsidized Bread

100%

Bakery Management

Availability

● Always Available ● Often Available ● Fairly Available
● Rarely Available ● Not Available



Bread



Local Flour



Imported Flour



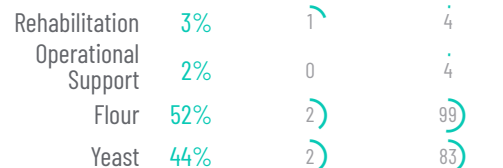
Yeast



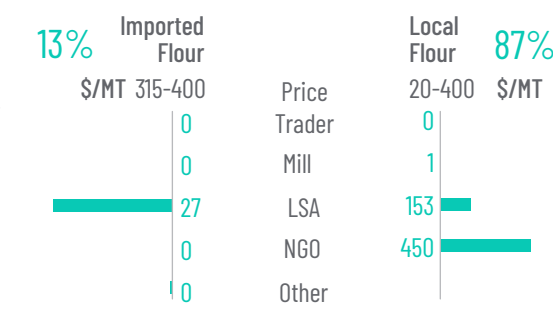
Fuel



Source and Type of Support



Source and Price of Flour



MILLS

10

Mills Status

● Non-operational 4
● Operational 6

Reasons for Non-Operational

Increasing input and wheat prices

No support/subsidies



Functionality

● Full 1
● Partial 5



Reasons for Limited Functionality

High operational costs (raw material, electricity, workers, etc)

Machines are not functional

Shortage wheat

Ownership

● Public 1
● Private 9



MILLS SOURCE OF WHEAT

LSA, Farmers, & Wheat traders

Milling Capacity



Production Functionality 57%

Market Actors Supplied by Mills



SILOS

8

Silos Status

● Non-operational 5
● Operational 3

● Full 5
● Partial 0

● Ownership

● Public 8
● Private 0

Reason for Closure

Bombed and destroyed



SILOS SOURCE OF WHEAT

LSA

Needed Support for Silos

Building Rehabilitation 5

Machine Rehabilitation 5

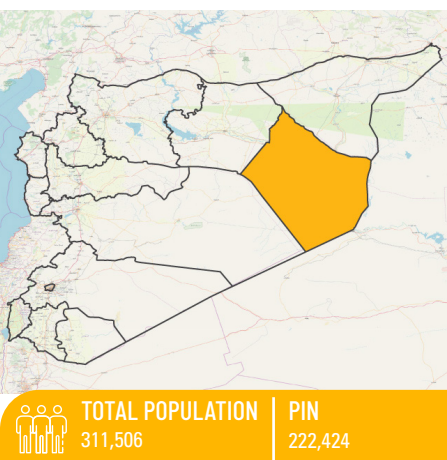
Estimated Cost of Machines and Rehabilitation \$ 335,000

Silos Capacity

Silos Maximum Storage Capacity 60,000 MT

Mapping of Wheat-to-Bread Processing Facilities

Deir-ez-Zor July 2021



BAKERIES

49

Bakery Status

● Non-operational 1
● Operational 48

Reasons for Non-Operational

Needs maintenance

N/A

N/A

Functionality

● Full 35
● Partial 13

Ownership

● Public 3
● Private 43
● Mix 3

CURRENCY USED

USD 0%

TL 0%

SYP 100%

QUALITY CONTROL (LAB TESTING)

0

Bread Production

Type

Subsidized Bread 72 Price (SYP) /KG 63-500
Un-Subsidized Bread 0 N/A-N/A
Tourist Bread 6 1500-1500

Average Bread Package Weight 1,488g

Daily Production 77 MT
Full Daily Capacity 262 MT
Current Productivity 29%

Daily Bread Needs of Total Population 103 MT
Daily Bread Needs of PIN Population 73 MT
PIN who have Access to Subsidized Bread 92%

Bakery Management

Bakery Owner 42
Tenant 0
LSA 0
Private Investor 3

Availability

● Always Available ● Often Available ● Fairly Available
● Rarely Available ● Not Available

Bread



Local Flour



Imported Flour



Yeast



Fuel



Source and Type of Support

Currently Receive Support 81%
Used to Receive Support 2%
Never Received Support 17%

Rehabilitation 0%
Operational Support 0%
Flour 91%
Yeast 9%

Source and Price of Flour

5% Imported Flour \$/MT 380-483
Local Flour 95% 40-400 \$/MT
Price Trader 2
Mill 0
LSA 236
NGO 0
Other 0



MILLS

19

Mills Status

● Non-operational 3
● Operational 16

Reasons for Non-Operational

Shortage of wheat & labor

Increasing fuel and maintenance costs

Functionality

● Full 13
● Partial 3

Ownership

● Public 3
● Private 16

Reasons for Limited Functionality

Shortage wheat

shortages in fuel / electricity

High operational costs (raw material, electricity, workers, etc)



MILLS SOURCE OF WHEAT

LSA, Farmers, & Wheat traders

Milling Capacity

Maximum Capacity 72082 MT
Current Capacity 31,904 MT

Production Functionality 44%

Market Actors Supplied by Mills

Bakeries Supplied 2
Traders Supplied 6



SILOS

4

Silos Status

● Non-operational 1
● Operational 3

● Full 1
● Partial 0

● Ownership
● Public 4
● Private 0

Reason for Closure Bombed and destroyed



SILOS SOURCE OF WHEAT

N/A

Needed Support for Silos

Building Rehabilitation 1
Machine Rehabilitation 1
Estimated Cost of Machines and Rehabilitation \$ 30,000

Silos Capacity

Silos Maximum Storage Capacity 12,000 MT

Annex Table 1: NES Bread Needs and Production Gap Analysis

Sub-District	Total population	PiN	Weekly bread needs of population in MT	Weekly bread needs of PiN in MT	Weekly subsidized bread in MT	Weekly un-subsidized bread in MT	Weekly un-subsidized tourist bread in MT	Weekly NGO-free bread in MT	Weekly other types of bread in MT	Total weekly bread production in MT	Bread availability to the population - % of population bread needs covered by total production	Subsidized bread availability to the population - % of population bread needs covered by subsidized & free bread	Subsidized & free bread availability to PiN - % of PiN bread needs covered by subsidized & free bread	Bread production gap in MT per week	Subsidized & free bread production gap in MT per week for total population	Subsidized & free bread production gap in MT per week for PiN	Number of bakeries	Number of supported bakeries	Number of unsupported bakeries	%Unsupported bakeries	Weekly full bread production capacity in MT	% Current productivity
Abu Qalqal	53,343	28,557	123	66	91	0	0	0	0	91	74%	74%	138%	32	32	-25	3	3	0	0%	217	42%
Ain al Arab	87,129	87,129	201	201	298	0	0	0	0	298	148%	148%	148%	-97	-97	-97	4	3	1	25%	351	85%
Al-Khafsah	76,620	40,226	177	93	84	0	0	0	0	84	47%	47%	90%	93	93	9	2	2	0	0%	98	86%
Lower Shyookh	16,079	16,079	37	37	98	0	0	0	0	98	264%	264%	264%	-61	-61	-61	3	0	3	100%	105	93%
Menbij	259,166	62,200	599	144	548	0	215	0	0	763	127%	92%	382%	-165	50	-405	12	11	1	8%	1,012	75%
Sarin	42,388	42,388	98	98	406	0	0	0	0	406	415%	415%	415%	-308	-308	-308	8	3	5	63%	452	90%
Al-Hasakeh	276,379	222,099	638	513	341	6	9	0	0	356	56%	53%	66%	283	298	173	13	12	1	8%	746	48%
Al-Malikeyyeh	73,129	23,161	169	54	36	0	0	0	0	36	21%	21%	67%	133	133	18	2	1	1	50%	78	46%
Amuda	44,862	11,432	104	26	94	0	40	0	0	134	129%	91%	356%	-30	10	-68	3	1	2	67%	173	77%
Areesheh	44,865	32,303	104	75	43	0	0	0	0	43	41%	41%	58%	61	61	32	2	1	1	50%	88	49%
Be'r Al-Hulo Al-Wardeyyeh	24,130	9,893	56	23	134	0	0	0	0	134	240%	240%	586%	-78	-78	-111	6	6	0	0%	297	45%
Hole	78,431	122,350	181	283	48	0	0	0	0	48	26%	26%	17%	133	133	235	2	0	2	100%	70	69%
Jawadiyah	27,751	9,713	64	22	0	96	0	0	0	96	149%	0%	0%	-31	64	22	11	0	11	100%	260	37%
Qahtaniyyeh	28,624	15,100	66	35	84	0	0	0	0	84	127%	127%	241%	-18	-18	-49	19	14	5	26%	302	28%
Quamishli	251,804	113,873	582	263	77	2	67	0	13	159	27%	13%	29%	422	504	186	24	14	10	42%	756	21%
Tal Hmis	58,251	23,514	135	54	92	0	0	0	0	92	68%	68%	169%	43	43	-38	12	12	0	0%	379	24%
Ya'robiyah	40,426	16,334	93	38	0	83	1	0	0	85	91%	0%	0%	9	93	38	12	1	11	92%	199	43%
Ar-Raqqa	351,837	282,160	813	652	635	48	149	30	0	862	106%	82%	102%	-49	148	-13	75	63	12	16%	2,915	30%
Jurneyyeh	39,955	14,572	92	34	56	0	0	0	0	56	60%	60%	165%	37	37	-22	5	5	0	0%	214	26%
Karama	54,203	33,680	125	78	215	0	0	0	0	215	172%	172%	277%	-90	-90	-138	25	25	0	0%	877	25%
Mansura	43,563	10,383	101	24	94	0	38	0	0	132	131%	94%	393%	-32	6	-70	7	7	0	0%	329	40%
Sabka	25,287	16,384	58	38	24	17	0	0	0	41	71%	42%	64%	17	34	14	3	3	0	0%	119	35%
Deir-ez-Zor	160,286	78,729	370	182	16	0	0	0	0	16	4%	4%	9%	354	354	165	5	0	5	100%	77	21%
Kisreh	110,528	91,046	255	210	387	0	53	0	0	440	172%	152%	184%	-185	-132	-177	32	29	3	9%	1,474	30%
Sur	40,692	52,649	94	122	71	0	14	0	0	85	91%	76%	58%	9	23	51	11	10	1	9%	286	30%