



ACTED staff distributes bread to beneficiaries in Azraq Refugee Camp, ACTED 2016

# Bread Consumption Analysis Report

WFP Food Assistance | EMOP 200433

*Azraq Refugee Camp  
August – November 2016*

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## List of Acronyms

AMEU	Appraisal, Monitoring, and Evaluation Unit
FSL	Food Security and Livelihoods
GFV	General Food Voucher
IBV	Incentive-Based Volunteer
JOD	Jordanian Dinar(s)
NAV	New Arrival Voucher
SWM	Solid Waste Management
UNHCR	United Nations High Commissioner for Refugees
USD	United States Dollar(s)
WFP	World Food Programme

## Background

Since 2011, the crisis in Syria has driven over 655,000 refugees into Jordan, one-fifth of which have settled in formal refugee camps throughout the northern governorates. Azraq Refugee Camp, opened in 2014 to accommodate the ever-rising refugee population in Jordan, ranks as the second-largest of these camps, with a registered population of over 54,000 camp residents.<sup>1</sup> In the absence of a standard market economy and available livelihoods opportunities, camp residents rely largely on the humanitarian assistance provided by a variety of local and international agencies within the camp to meet their basic needs, including regular food assistance.

Since the opening of Azraq Refugee Camp, ACTED has been a key partner with WFP in providing food assistance to the camp population. A central component of this food assistance has been the implementation of daily bread distributions for all camp residents, which ACTED has conducted continuously for the last three years. With WFP, ACTED has cumulatively distributed over 4,000 metric tonnes of bread and currently provides around 8 metric tonnes of bread to an average of 33,600 camp residents daily.<sup>2</sup> The opening of an additional distribution site in Village 5 in September 2016 has ensured that ACTED is able to efficiently give bread to all camp residents, and ACTED has continued to refine its distribution services, including through the increased incorporation of IBV positions for camp residents into the bread distribution process.

However, even as ACTED has strengthened its bread distribution activities in the camp, it has noticed through its SWM activities that a significant portion of the bread distributed is ultimately discarded as waste and collected by ACTED IBVs, wasting WFP and ACTED financial resources, placing undue burden on SWM activities in the camp, and unnecessarily consuming agricultural resources in a region struggling with high water scarcity. In order to mitigate the impact of the discarded bread, ACTED has partnered with a local NGO, the South Azraq Women's Charity, in September 2015 in order to use the bread to benefit the local community. The organisation dries the bread to turn into animal fodder, which they then sell to farmers and livestock owners. They use the resulting income to provide in-kind and cash support to vulnerable Jordanian and Syrian families, including two Syrian families who sort, dry, and re-bag the bread in exchange for 200 JOD a month. Nevertheless, the quantity of bread wasted on a daily basis represents a significant burden for WFP, ACTED SWM activities, and local resources.

As such, ACTED's independent AMEU has conducted a quantitative and qualitative analysis of the bread chain in Azraq Refugee Camp to gain a better understanding of bread consumption and waste among camp residents and to inform the development of strategic responses to bread waste in the camp.

## Methodology

ACTED conducted its study of bread consumption and waste habits in Azraq Refugee Camp based on figures from August through November 2016, for which it has comprehensive qualitative and quantitative data and during which period bread waste remained a pressing concern. Within this study, ACTED will first conduct an initial synthesis and review of internal

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<sup>1</sup> UNHCR, *Syria Regional Refugee Response: Inter-Agency Information Sharing Portal*, 16 February 2017.

<sup>2</sup> As of 31 January 2017, based on ACTED bread distribution figures.

primary data from both its food distribution and solid waste management activities to determine the relationship between the amounts of bread distributed and wasted. ACTED will then supplement this data with figures on bread sold from Sameh Market to understand if there exists a correlation between the amount of additional bread purchased by beneficiaries from the market and the overall amount of bread discarded.<sup>3</sup> The relationship between these three sets of figures will form the framework for ACTED's analysis of bread consumption and waste in Azraq Refugee Camp.

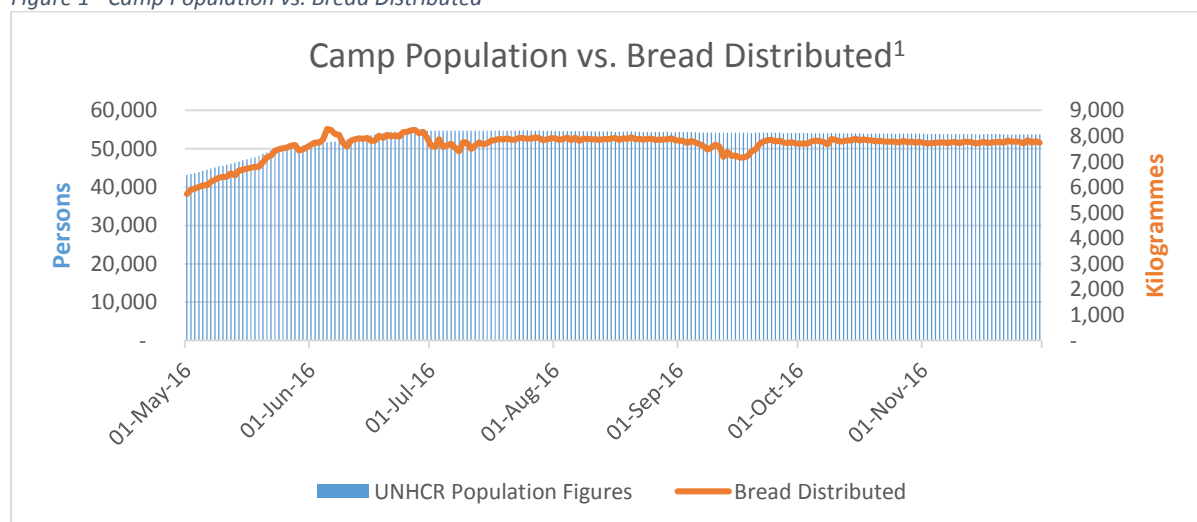
ACTED will then draw on two reports conducted by AMEU in order to inform its analysis. The first of these will be a September 2016 Bread Waste Analysis Report based on the results of 13 interviews with households that were observed with bread waste near their caravans. The second will be the E-Card, Bread, and In-Kind Distribution Monitoring Report from January 2017, which presents the findings of 389 surveys concerning beneficiary attitudes and habits related to the bread-distribution process, including bread quantity and quality. Combined, these two reports will serve as sources of quantitative and qualitative data to expand the relationship between the aforementioned figures and to form the basis for recommendations to address the problem of bread waste in Azraq Refugee Camp.

## Bread Consumption Trends

### Bread Acquisition

Since Azraq Refugee Camp opened in April 2014, ACTED has distributed bread on a daily basis within the WFP-funded food assistance programme. As per WFP requirements, ACTED has been responsible for distributing 0.24 kilogrammes of bread per beneficiary daily for the entire camp population. Since the stabilization of the camp population after the closure of the border on 21 June 2016, the amount of bread distributed has likewise stabilized at an average of 7,752 kilogrammes per day (See *Figure 1*).

*Figure 1 - Camp Population vs. Bread Distributed<sup>4</sup>*



<sup>1</sup>Based on UNHCR population figures for Azraq Camp and ACTED Daily Bread Distribution Reports

<sup>3</sup> Although Tazweed Market in Village 5 also sells bread, it was not opened until November 2016 and thus could not be included in this study.

<sup>4</sup> The spike in bread distributed in late May and early July 2016 can be attributed to the fact that ACTED distributed bread to refugees in the reception and public areas through NRC before they were registered.

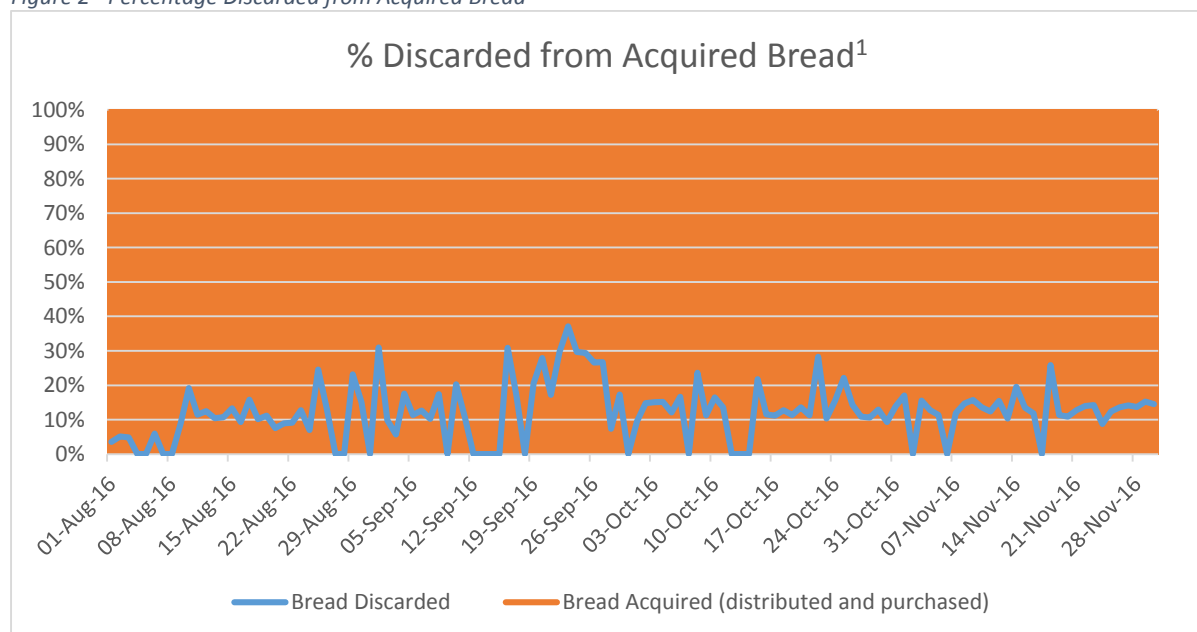


In addition to bread, beneficiaries receive food vouchers through e-cards, NAVs, and GFVs, which can be used to purchase food at the markets in the camp. From August through November 2016, beneficiaries cumulatively purchased 1,941 additional kilograms of bread from Sameh Market, or an average of 432 kilograms per month. Although this figure accounts for only 0.18% of the total bread available to beneficiaries during this period, it does provide an indication that some beneficiaries may not be satisfied with the bread distribution process.

### Bread Waste

At the same time, ACTED continued to collect dry bread waste through its SWM activities during the entirety of the assessment period. On days that dry-bread collection took place, the amount collected ranged from 280 kilograms on 1 August 2016 to 2,910 kilograms on 23 September 2016, with an average of 957 kilograms collected per day throughout the entire period. This figure amounts to 12% of the total bread acquired by beneficiaries through the distributions and Sameh Market, a percentage that is significantly larger than the .18% of additional bread acquired from the market. While this discrepancy does not provide any clear indication of why beneficiaries might discard bread, it does suggest that very little bread waste is the result of beneficiaries purchasing more bread than they can consume from the market.

Figure 2 - Percentage Discarded from Acquired Bread<sup>5</sup>



<sup>1</sup>From ACTED bread distribution and dry bread collection figures.

### Key Issues

The large proportions of discarded bread displayed in *Figure 2* have important implications for programming in Azraq Refugee Camp. First of all, dry bread comprises on average a full metric tonne per day of additional solid waste that ACTED IBVs have to collect and process, increasing the financial burden on donors and the physical labour required by IBVs to maintain the cleanliness of the camp. Secondly, all dry bread wasted represented also represents a waste of the resources that went into the making of the bread, including the

<sup>5</sup> The peak in bread wastage in late September can be attributed to the large amount of food distributed during and immediately after Eid al-Adha, 11-15 September 2016.

agricultural production of flour, water, and packaging and transport costs. The waste of these resources is particularly concerning in the context of water scarcity in the region and the additional negative environmental impact of transporting and packaging this amount of goods on a daily basis. Finally, this amount of bread represents an undue financial burden for WFP, as the cost of the bread discarded per month amounts to approximately 16,630 JOD per month, or 66,519 JOD over the entire assessment period.<sup>6</sup>

Figure 3 - Overview of Bread Consumption Trends in Azraq Camp

OVERVIEW OF BREAD CONSUMPTION TRENDS IN AZRAQ CAMP (AUGUST – NOVEMBER 2016)						
MONTH	Bread Distributions	Sameh Market	Total Bread Acquired	Dry Bread Collected	Percentage Wasted	Estimated Cost Wasted <sup>1</sup>
AUGUST	244,220	483	244,703	21,540	9%	12,278 JOD
SEPTEMBER	227,520	483	228,003	35,560	16%	20,269 JOD
OCTOBER	241,410	483	241,893	30,360	13%	17,305 JOD
NOVEMBER	232,527	483	233,010	29,240	13%	16,667 JOD
AVERAGE	236,469	483	236,902	29,175	12%	16,630 JOD
TOTAL	945,876	1,941	947,608	116,700		66,519 JOD

<sup>1</sup>Based on a minimum price of .57 JOD/kg for bread acquired by ACTED from its bakeries.

Overall, the amount of bread acquired by beneficiaries and subsequently wasted raises a number of important questions to be addressed. An initial conclusion that the bread wasted is the result of beneficiaries purchasing more bread than they can consume from Sameh Market is confounded by the fact that the amount of dry bread collected vastly outweighs the amount of bread purchased from the market, and the vast majority of dry bread collected was actually from distributed bread. On the other hand, a preliminary analysis that beneficiaries discard their bread because they receive too much of it is viable based on these figures, although it would be complicated by the fact that a minority of beneficiaries purchase almost a half of a metric tonne of bread per month from Sameh Market. In order to understand bread consumption trends in Azraq Refugee Camp, then, the attitudes and habits of beneficiaries need to be incorporated into the analysis.

## Beneficiary Practices and Perceptions

### Beneficiary Practices

In September 2016, ACTED AMEU conducted 13 interviews with families in caravans near which leftover bread was collected to gain insight into why beneficiaries discarded bread and how they discarded it. Of the 13 surveyed households, 9 (69%) reported having bread leftovers, 6 (78%) of which reporting consuming 1-3 more loaves of bread than the amount they received from WFP. Those who reported buying bread from Sameh Market claimed they discarded bread as they did not use the whole quantity of bread purchased from Sameh Market, which contains 10-12 loaves rather than the 1-3 needed by beneficiaries. This discrepancy may account for a small portion of the bread wasted each month; however, such a contribution is limited even if these habits can be accurately scaled up to the entire camp population purchasing bread from the market, as the average total amount purchased from Sameh Market each month is only 453 kg, compared to a monthly average of 29,175 kg dry bread collected. Overall, despite its small sample size, these practices align with a broader

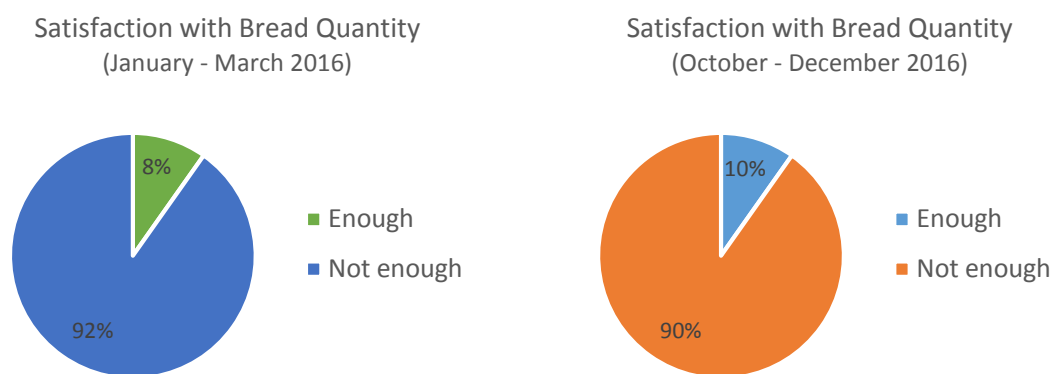
<sup>6</sup> Based on a minimum price of .57 JOD/kg for bread acquired by ACTED from its bakeries.

theme among beneficiary complaints that the amount of bread supplied by WFP is insufficient.

### Beneficiary Perceptions

In January 2017, a more comprehensive survey of beneficiary satisfaction with food distribution activities in Azraq Refugee Camp, which was conducted with a 95% confidence level and 5% margin of error, suggests otherwise. Among 389 surveyed individuals, 30% of whom were women, 90% of respondents reported that the amount of bread provided at the daily bread distribution was insufficient, with only 10% reporting it to be sufficient. These numbers represent a continuation of beneficiary attitudes from January to March 2016, when an ACTED AMEU assessment revealed that 92% of respondents similarly thought that the amount of bread provided was insufficient, as shown in *Figure 3*.

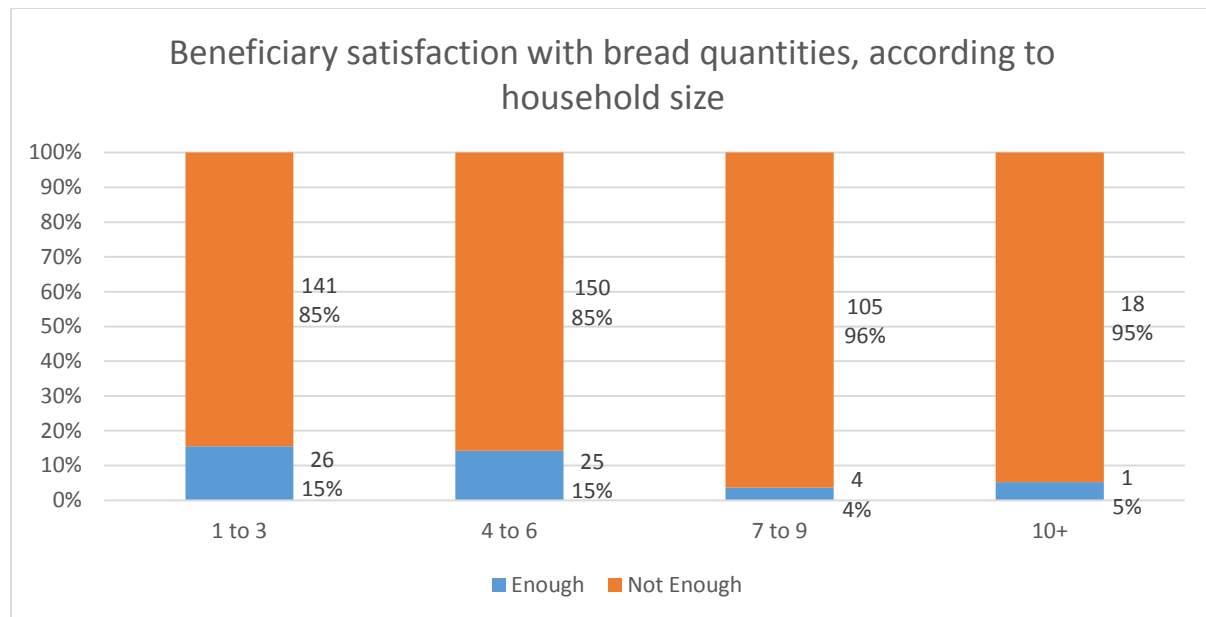
*Figure 4 - Satisfaction with Bread Quantity*



Such high dissatisfaction with the quantity of bread provided indicates that, even though the amount of bread discarded significantly outweighs the amount of bread purchased from Sameh Market, bread quantity in and of itself is not a key factor in the amount of bread wasted. Notably, there was a slight decrease in satisfaction with the quantity of bread among households larger than six individuals; however, as the sample sizes of these groups were also significantly smaller, particularly for families larger than ten individuals, the extent of this discrepancy may also be a result of statistical variance, particularly considering the fact that the amount of bread distributed is a flat-rate of 240 grams per individual.



Figure 5 - Beneficiary Satisfaction with Bread Quantities, According to Household Size



Dissatisfaction with bread quality also emerged as a key beneficiary concern among respondents, with 34% of respondents describing it as either fair or bad, and only 66% describing it as good, in the combined March 2016 and January 2017 assessments. Reasons given for the quality being unsatisfactory included the bread not being fresh, the size of the bread, the bread being too sweet, the bread drying too quickly, and a decrease in the quality of bread when WFP changed bakeries in January 2016. The lack of freshness, which was a key concern among both groups of respondents, has at least two possible causes. First, bread that is not distributed the day it is delivered is dispersed among bread distributed the next day to minimize bread waste, so concerns about freshness may be related to the day-old bread beneficiaries sometimes receive. Another concern is that the bread produced does not meet the tastes of beneficiaries, as anecdotal evidence suggests beneficiaries are used to bread in Syria that is thicker and softer.

## Conclusions and Recommendations

### Conclusions

Bread waste remains a significant problem in Azraq Camp, with 12% of the total bread acquired through distributions and Sameh Market being collected by ACTED's SWM team. Nevertheless, beneficiary practices and perceptions concerning bread in Azraq Camp suggest that this significant bread waste is not merely a result of excessive bread distribution. Nearly half a metric tonne of bread is purchased monthly from Sameh Market and over 90% of beneficiaries claim that the amount of bread distributed is insufficient, indicating that the problem does not lie solely in the quantity of bread provided. One possibility is that beneficiaries throw away bread that they feel is not fresh or otherwise of poor quality, and thus they give their answer concerning the sufficiency of the quantity of bread distributed based on the amount of bread they deem fit for consumption. Another possibility is that beneficiaries simply would like to have more bread in the event of other food shortages, even

if on a daily basis they receive sufficient quantities of bread, and thus respond that the quantity of bread provided is insufficient.

This second possibility brings in the additional dimension of time. Every month, beneficiaries receive food vouchers for use at the markets in Azraq Camp, where they can buy other food items. It is possible that the amount of bread beneficiaries consumed depends on their access to other foods. In other words, if the meals families prepare when they have enough value on their e-cards or food vouchers to purchase other foods are generally served with rice, they may consume less bread while they still have financial access to these foods and then switch to increased bread consumption once that value has been consumed. Alternatively, they may prepare meals that are generally served with bread while they have value on their e-cards or vouchers and then switch to meals generally served with rice when that value is consumed, depending on their habits and the types and costs of these meals. However, if this were the case, there likely would have been a clear trend of high bread wastage in the first half of the month when e-card reload happens, whereas the data suggests the trend is actually unpredictable.

### Recommendations

Based on ACTED's direct experience, participation in community meetings with beneficiaries, observation, qualitative and quantitative data analysis, ACTED recommends the following actions to decrease the amount of leftover stale bread and maximize its use and impact.

#### *General:*

- In general, the results of this analysis highlight the need for further household-level research on beneficiary bread consumption habits, with a focus on time-bound consumption habits, to better understand bread waste in the camp and guide interventions;

#### *Bread quality:*

- Decrease the time span between baking and distribution, possibly having more than 2 bread suppliers to allow each of them to deliver high-quality and freshly baked bread;
- Liaise with bakeries to prepare bread closer to Syrian beneficiaries' taste and preferences;

#### *Bread distribution:*

- Until new small bakeries will be established in the camp, coordinate with supermarkets to ensure they have sufficient quantity of bread and add the correspondent amount on beneficiaries e-voucher to allow them to buy the exact quantity and quality desired;
- Start a mechanism of distributing bread in special colored plastic bags with special color (Ex: green) where the bags are used to dispose of the bread as well, this way we can make sure that the bread is separated from other garbage and facilitate the charity in sorting and processing the bread. This can be easily done using current available project resources and will minimize the burden on SWM;

*Bread utilization and recycling:*

- Roll out an awareness campaign on how to avoid wasting bread including proper storage and recycling for household consumption as well as keep bread separate from the rest of food to allow easier sorting and collection by the CBO;
- Conduct a distribution of metal or plastic boxes at HHs level to store the bread in better conditions and preserve freshness (this could be done as a pilot with a sample of HHs and then if successful rolled out to the rest of the camp);
- ACTED to inform WFP on the quantity of left over stale bread collected by the CBO on a daily basis by including waste management data into the daily bread report;
- ACTED to work with the CBO to ensure refugees living in host communities benefit from the project and to include into reporting also details from the activities conducted by the local CBOs with the leftover stale bread;
- Creation of community based bread focal points, in each block a volunteer will be recruited to become bread focal point, the responsibility of the bread focal point will be to collect the extra bread that is not needed from cases to other cases that have shortage of bread, each focal point will be supervised by 1 or 2 village-level IBVs who will ensure that the redistribution mechanism from one household to the other will function smoothly. This could be implemented as a pilot using existing and available resources of the project and, if successful both economically and operationally, it could be scaled up in the second half of 2017;
- Consider FSL programming incorporating bread waste to boost livelihoods of beneficiaries in Azraq Camp or its surroundings. This may include:
  - Goat milk production and its value chain, using dry bread as fodder (potentially in conjunction with hydroponic fodder)
  - Fish farming projects, using dry bread as food
  - Poultry farming projects, using dry bread as food

## Annex 1: Photo



Discarded bread from Azraq Camp is collected and processed for sale as animal fodder by South Azraq Women's Charity, ACTED 2016



Processed bread is packaged for sale to local farmers, the proceeds of which benefit vulnerable Jordanians and Syrians in the community, ACTED 2016





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