

Formative Research with Regards to the Consumption of Wheat Flour and/or Cereal- Based Products in Khatlon Province, Tajikistan

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Acronyms

FGD	Focus Group Discussion
FTF	Feed the Future
GAIN	Global Alliance for Improved Nutrition
IDI	In-Depth Interview
MHP	Medical Health Professionals
SCI	Short Convenience Interview
SFP	School Feeding Program
USAID	United States Agency for International Development
WFP	World Food Program

Terms and glossary of foods

Fortified flour	Flour enriched with specific nutrients and vitamins
<i>Atola / ordi biryon</i>	Porridge made from fried flour
<i>Chaka</i>	Type of hard, sour yoghurt somewhat similar to sour cream
<i>Chalpak</i>	Fried flat bread
<i>Fatir</i>	Flaky flatbread
<i>Kalama</i>	Thinner flatbread like <i>fatir</i> , eaten with sugar
<i>Kampot</i>	A clear, non-alcoholic juice made by boiling fruit in water
<i>Kandi safed</i>	Sugar cubes
<i>Kulcha</i>	Small leavened round bread
<i>Kurutob</i>	Traditional Tajik dish made from <i>fatir</i> , <i>chaka</i> , and vegetables
<i>Laghman</i>	Soup with long, thick homemade noodles
<i>Mantu</i>	Large Central Asian dumpling
<i>Mastoba</i>	Soup with rice
<i>Nabot</i>	Rock candy
<i>Non</i>	Large flat leavened round bread
<i>Osh</i>	Traditional Central Asian dish of rice, carrots and meat
<i>Pelmeni</i>	Fried or boiled dumplings filled with seasoned meat
<i>Pirozhky</i>	Deep fried dough filled with meat and/or vegetables
<i>Sambusa</i>	Central Asian pastry filled with meat and/or vegetables
<i>Shurpo</i>	Central Asian soup
<i>Tuppa</i>	Strips of dough leftover from making <i>mantu</i> and added to soup

A. Executive Summary

BACKGROUND

In late 2013, the United States Agency for International Development (USAID) Tajikistan approached the Global Alliance for Improved Nutrition (GAIN), a Swiss-based foundation with global expertise in health, nutrition, and fortification, to conduct a formative research project that would provide detailed, up-to-date knowledge and understanding about household nutrition, food fortification, and related health outcomes in the 12 Feed the Future (FTF) districts of Khatlon province as well as to provide recommendations for further action and areas for policy improvement based on these results.

SUMMARY OF FINDINGS

This research provides an overview of the knowledge of nutrition, diet and health issues in the home, and community, and the resulting day to day practices of families and school age children living in Khatlon Province, Tajikistan. The research also looks at the business and policy environment for micronutrient fortification of wheat flour, the main staple food in the Tajik diet, and other staple food vehicles.

Knowledge

There is essentially no knowledge of fortified flour in households in Khatlon provinces. 'Wheat flour' (2nd grade) is used for making standard homemade *non*, and 'white flour' (higher and 1st grade) is bought for baking. Wheat flour is seen as healthier, more filling and a better source of energy; white flour, or rather the products made from it, are more for special occasions or hosting guests.

People generally do not differentiate between different cooking oils aside from linseed oil and animal fat oil, both of which are seen as having specific health benefits. The benefits of iodised salt are well known, and *nabot* is seen as being the healthiest among sugars.

Parents generally stated that their respective local school canteens are of a low standard but, when pressed, few respondents were actually of what foods are on offer at the schools. Parents, however, are well aware that many snack foods are unhealthy but

nonetheless give children spending money to purchase these same foods. Parents buy dairy products, fruits and vegetables for their children when they can afford to do so because of their high nutritional value. Generally FGD participants stated that they would like to buy more fruits and dairy products for their children as well as more, and a wider variety of, meats and chocolates. However, given the broad similarities in what people buy, despite probable income disparities, it is hard to say with confidence that people would spend more money on food if they had the money to do so. The seasonal variation in prices, particularly of fruits and vegetables, helps to maintain a generally conservative fiscal attitude towards food.

Around 2,000 schools representing about 356,000 primary school children in Tajikistan are supported by the World Food Program's (WFP) School Feeding Program (SFP). This amounts to the provision of fortified flour and oil, as well as iodised salt and beans. These foods are supplemented by supplies brought from the home by students. Non-professional chefs work in the school canteens providing free meals to students once per day. Chefs have very little knowledge about the nutritional value of the ingredients they use and no knowledge of fortified flour despite the fact that they use it. Although the chefs interviewed as part of this study did not extoll the virtues of the foods they prepare, they indicated that the foods on offer are of great benefit to the average student.

Medical health professionals (MHPs) indicated that, broadly speaking, the health and nutrition of the people of Khatlon province is good and improving but that people need to eat more vitamins and dairy products while also being more diligent about how they boil water and wash foods. There are many common medical conditions, mostly associated with poor hygiene, but only diarrhoea was seen as being particularly acute amongst children. Generally, MHPs indicated that people's diets are not nutritionally balanced and that patients, particularly the less-educated, struggle to adhere to assigned diets. Children eat too many unwashed foods, ice cream, snack foods and drink too much unboiled water, according to MHPs. Awareness-raising activities are seen as the best way forward as poverty and lack of education remain big obstacles.

Practice

Landowners grow wheat and take it to local mills for processing. People rarely buy unprocessed wheat, but everyone, landowners included, buys industrially-milled white flour for baking; Kazakh white flour is seen as the best. Participants eat more flour-based products in winter and less in summer when fruits and vegetables are plentiful. People bake their own *non* and only purchase *non* for specific occasions or for guests. Women also bake other cereal-based foods regularly.

Participants buy oil, meat, rice, onions, and potatoes year round. Lower expenditure in summer on fruits and vegetables allows for more spending on meats. Dried fruits and preserved vegetables are helpful, particularly when fruit and vegetable prices skyrocket in winter, but they cannot substitute for the huge reduction in the consumption of fresh foods. Cotton oil is the mostly widely used, but all cooking oil, no matter the type, is reused. Iodised salt is universally in use and *kandi safed* is the most popular sugar.

Normally, children eat with the rest of the family in the home and thus have a typical Tajik diet from the time they can eat solid foods. Parents purchase many items specifically for their children including dairy products, fruits and sweets. In schools where the SFP is active, children eat both before and after school because, according to parents, the food is the same every day in the canteen. In schools where the SFP is not active, children do not eat during the day. Generally, all school-age children eat a wide array of snack foods.

Landscape

Generally the products available and their respective costs vary little between the FTF districts within the scope of this study. Interviews suggest that there is something of a disconnect between sellers and the products that they sell. Most of the food items available in bazaars, shops and bakeries are from Tajikistan or are procured locally. Most of the flour in circulation comes from Tajikistan, even if it is made from Kazakh wheat. Generally, Kazakh flour is the more highly regarded. Few respondents were interested in selling other cereal-based products and none were aware of fortified flour.

Local family mills process wheat, brought by farmers, and keep varying quantities of the wheat as payment. The Kolhozobod Mill located in Rumi district (formerly Kolhozobod

district) was previously the largest mill in the country, but it is now operating at reduced capacity and has lost much business to private firms. Generally the flour market is competitive and growing day by day; it is firmly centred on Khujand and revolves around wheat imports from Kazakhstan.

Although not the main focus of this study, research revealed that there are a number of substantial obstacles to flour fortification in Tajikistan, ranging from the lack of awareness of consumers to the capital concerns of businesses and the intransigence and unpredictability of the government.

According to former government representatives, previous legislation on fortification, drafted as part of an Asian Development Bank project between 2002 and 2007, failed to pass because Tajikistan was not ready or capable of ensuring that *all* flour would be fortified as the proposed legislation required. Although the same former representatives indicated that nutritional interventions would be feasible, and legislation possible, a considerable commitment in terms of resources and personnel would be needed along with the meaningful and continual support of the Ministries of Health and Agriculture, and State Agency for Standardisation (TojikStandart), which would be extremely hard to secure let alone maintain.

None of the representatives of either small or large businesses were aware of fortified flour. Business spokespersons indicated that they would adhere to the law if legislation on mandatory flour fortification were to pass. However, given the capital investment that mandatory flour fortification would place on businesses, in an already competitive market, it is not clear if businesses would or could bear the start-up costs.

Generally speaking, those interviewed considered broader economic development leading to a commensurate rise in consumer spending power and an increase in the availability of diverse, nutritionally-balanced, locally-produced foods as the *only* long term solution to broader national health issues.

B. Recommendations

Mandatory flour fortification has not been on the agenda in Tajikistan since 2008, and renewed efforts to push the same or similar legislation would require a significant investment of time, money, expertise and effort. A voluntary fortification program, involving key local producers, would appear more feasible in the short term than mandatory national flour fortification, but would require the deep engagement of flour and cereal-based products producers.

Similarly, awareness needs to be built among consumers. The report found that there is essentially no knowledge of fortified flour amongst consumers but also no serious resistance to the concept either. Tying the promotion of fortified flour to new or existing, and much needed, health and hygiene campaigns may deliver more immediate and sustainable gains. Furthermore, working more closely with consumers, as well as the key producers, would lay a stronger, more sustainable foundation for the introduction of mandatory flour fortification legislation in the future.

Working closely with the WFP to improve its existing School Feeding Program, which is already putting fortified flour on the dinner table across Tajikistan, could prove to be an effective strategy. Helping the to provide more diverse foods in schools or expanding the SFP, to cover more grades, or to expand into kindergartens, orphanages and medical facilities, could prove a very effective nutritional intervention given the existing support for the program as well as WFP's expertise and distribution network.

C. Introduction

I. PROJECT CONTEXT

In support of USAID Tajikistan's focus on Khatlon province for the FTF project, results from this formative research, conducted in April and May 2014 by the research firm "Z-Analytics", lays out an evidence-based understanding of knowledge and practice surrounding nutrition and food fortification in the FTF districts and provides recommendations for future action and areas for related policy improvement.

II. RESEARCH OBJECTIVES

This formative research looks at issues of health, nutrition, food purchasing and consumption and the fortification landscape in Khatlon Province, Tajikistan. It is an attempt to help USAID Tajikistan, as well as the government of Tajikistan and other interested actors, understand the interests, attributes, lived realities, and needs of different segments of the population in this region of the country. Formative research is exploratory in that it precedes program design or implementation. It is a critical step in defining and distinguishing target populations, and it also allows the creation of programs and interventions specific to these individuals' needs. This report highlights the findings from the following interrelated lines of inquiry:

- An assessment of the level of knowledge in the household, regarding diet and nutrition and the benefits of nutrients and food and flour fortification;
- An assessment of the level of knowledge of school canteen workers;
- An assessment of the level of knowledge of medical practitioners and parents concerning diet and nutrition-related conditions;
- A description of the primary foods families, and their school-age children, regularly purchase including a value chain for these products;
- An examination of the source of wheat, wheat flour, and wheat flour based foods available to households in Khatlon;
- An assessment of the current policy landscape surrounding food fortification.

III. METHODOLOGY

Research for this project was carried out by the research firm “Z-Analytics”, a subsidiary of Centre of Sociological Research *Zerkalo*. Based in Dushanbe, Tajikistan, Z-Analytics was chosen because of its significant experience as well as the quality and strength of its written proposal to carry out the field research for this project. Z-Analytics researchers, Darragh Fingleton and Madina Muratova, worked together with GAIN consultant Everett Peachey, a Ph.D. Candidate in Public Policy and Sociology at the University of Michigan, to design appropriate research protocols and instruments that best suited the goals of this project.

This research pertains to the 12 FTF districts: Nosiri Khusrav, Shahrtuz, Qubodion, Jilikul, Qumsangir, Rumi, Khuroson, Yovon, Jomi, Bokhtar, Sarband and Vakhsh. The decision to focus the research on a subset of the 12 FTF districts, principally because of logistics and the need to gain a perspective on the knowledge and practices of people, in terms of health and nutrition, in districts that varied in terms of characteristics that may influence these issues. Two districts, Nosiri Khusrav and Rumi, were chosen because they are districts, which vary in terms of soil quality and availability of water and thus agricultural production as well as in terms of other social and economic indicators. Specifically, Rumi is a district that has better-quality land with higher agricultural output in comparison to Nosiri Khusrav. Focus Group Discussions (FGDs) took place in Nosiri Khusrav and Rumi (see **8** below). Short Convenience Interviews (SCIs) and In-depth Interviews (IDIs) took place in the same or adjacent districts, i.e. Nosiri Khusrav and Shahrtuz, Rumi and Vakhsh (see **3-7** below) Interviews were also carried out in Dushanbe and over the phone, where necessary (see **1-2** below).

All research instruments underwent rigorous development, and pre-testing. All research was conducted in Tajik, Russian or English where appropriate, and copies of the interview and focus group guides can be found in the annexes of this report.

This research relies on qualitative data collected using the following eight instruments:

- 1. In-depth interviews with policy shapers** were conducted with the Country Director of the WFP in Tajikistan and with former high level representatives of the Ministries of Agriculture and Health in order to better understand the policy landscape. Interviews were conducted in Dushanbe. A list of individuals who were interviewed is contained in Annex 1 of this report. (n=3)
- 2. In-depth interviews with flour and cereal-based products distributors** were conducted with representatives of Makolli and Buona, the two largest cereal-based products distributors in Tajikistan, and with a former employee of the Kolhozobod Mill, traditionally the most important mill in Tajikistan. These interviews were carried out in order to better understand the flour and cereal-based products market. Interviews took place in Dushanbe or over the phone. A list of individuals who were interviewed is in Annex 1 of this report. (n=3)
- 3. In-depth interviews with medical health professionals (MHP)** were conducted in Nosiri Khusrav, Shahrtuz, and Rumi in order to gain a professional's perspective on issues of health and diet and the nutrition of patients they treat in their districts generally. These interviews were carried out confidentially. (n=4)
- 4. In-depth interviews with school chefs** were conducted to provide an additional focus on children's nutrition in Khatlon. However, canteens were no longer operating in central Rumi so interviews were only carried out in Nosiri Khusrav. These interviews were carried out confidentially. (n=2)
- 5. Short, convenience interviews (bazaar-based flour sellers)** were designed to gather information about the market from the perspective of the bazaar (5), local shops (6) and bakeries (7). The information gathered was used to help understand the supply chains for wheat flour and cereal-based products in Khatlon as well as to understand mechanisms underlying individuals' purchasing and consumption practices. One SCI was carried out in one bazaar, shop and bakery in Nosiri Khusrav, Shahrtuz, Rumi and Vakhsh respectively.

6. **Short, convenience interviews (local shops)** (see 5 above)
7. **Short, convenience interviews in (local bakeries)** (see 5 above)
8. **Focus group discussions** were designed to gather detailed information about health and nutrition knowledge and practice in households in the FTF districts. Information gathered from FGD offers a realistic perspective on health and nutrition as lived and understood by the population in Nosiri Khusrav and Rumi.

In each of these two districts, four FGDs were conducted with seven to eight individuals. FGDs participants were required to fit very specific criteria (relating to gender, the gender of the respective head of household, ownership of land, and the presence of children under the age of 16) for each of the FGDs (see **TABLE 1** below). By dividing focus groups in this manner, this research was able to explore the interaction of the most important factors as they relate to health and nutrition. In total, sixty two (n=62) individuals participated in FGDs across the two target districts.

TABLE 1: FGD criteria

FGD	Location		Gender		Head of household		Land ownership		Children under 16
	Nosiri Khusrav	Rumi	Male	Female	Male	Female	Land	No land	
1	✓			✓		✓		✓	✓
2	✓		✓		✓		✓		✓
3	✓			✓		✓	✓		✓
4	✓			✓	✓			✓	✓
5		✓		✓		✓		✓	✓
6		✓	✓		✓			✓	✓
7		✓		✓	✓			✓	✓
8		✓		✓	✓		✓		✓

IV. STUDY LIMITATIONS

While this study sheds a great deal of light on household health and nutrition, particularly among disadvantaged and rural populations in the FTF districts, there were a number of limitations to this study. First, because this research project was, by design, focused on specific subgroups of the population, sampling is non-representative. Therefore, findings should not be taken to represent all segments of the population of the 12 FTF districts of Khatlon Province. For example, this project focuses heavily on rural, disadvantaged populations with children, and findings, therefore, cannot be extrapolated to cover urban or peri-urban populations in Khatlon. Next, while this study focuses primarily on the 12 FTF districts of Khatlon province, we must be cautious about extrapolating findings from this project to other non-represented districts. While there are a number of demographic similarities across all districts of Khatlon, each district has unique geographical and demographic attributes. It is for these reasons that the findings from this project should not be taken as representative of the population outside of Khatlon province. Finally, while there were aspects of this formative research study that asked participants to recall data from the past, findings in this report should not be taken as evidence of, or an examination of, longitudinal trends in health, nutrition, food prices, or consumption in the FTF districts or Khatlon province as a whole. For quantitative trends in Tajikistan with regards to wheat flour fortification, please refer to the “Tajikistan Wheat Flour Fortification Assessment, May 2014,” conducted by GAIN with the support of USAID.

D. Knowledge

This section of the research will examine the knowledge and understanding of households, school chefs and local medical health professionals in terms of nutrition.

I. HOUSEHOLD KNOWLEDGE OF FORTIFICATION AND NUTRITION

This sub-section of the paper will look at household knowledge of flour fortification and nutrition generally. This information is based on data collected from eight FGDs conducted in Nosiri Khusrav and Rumi with the participation of 62 individuals.

Fortified Flour

From all 62 FGD participants, only four people had heard of fortified flour and only one had any substantive knowledge of it. Two participants had heard of fortified flour in passing, one from television while another heard that a hospital was distributing flour several years ago that may have been fortified. One woman had read about it, but was sceptical. She stated that *"I read the information leaflet (for the SFP), and they say it is fortified flour, but the flour they use is the same as the flour we buy in the bazaar"*. Only one FGD participant, an engineer who worked in a related sphere, had substantive knowledge about fortified flour. He was the only respondent who could describe how fortified flour is different from other kinds of flour. However, he added that poorly-processed flour can do harm and that local mills would not be able to make fortified flour, but state or other big mills would have the capacity. The same participant stated that *"there is fortified flour (in the bazaar)"*. However, he expressed doubts about its authenticity and imported flour in general, *"now if it's written on a bag from Kolhozobod or Khujand, I might believe it but from Kazakhstan or Kyrgyzstan I don't know"*. When asked whether he would buy this fortified flour, he said that *"honestly, we get the flour from Kazakhstan ... I don't know (if it is fortified) or not but it's delicious"* After further discussion, all of participants in the same FGD, having learned about fortified flour, agreed that they would see no reason not to buy it, however it is clear that the level of awareness is extremely limited.

Flour

In Tajikistan, the old Soviet system is used to distinguish the types or grades of flour. According to this system there is higher, 1st and 2nd grade flour. There is also 3rd grade but this is usually used as animal feed. Generally, people refer to flour from the bazaar as white flour (higher or 1st) and to flour ground in locals mills (often from their own wheat), as wheat flour (2nd grade). However, some people also buy higher quality flour from the village mill as it is cheaper than the bazaar. Other participants said that they buy some flour and mix it with their own as it is cheaper and more long-lasting. According to FGD participants 2nd grade flour is for home use, i.e. day to day *non*. People generally feel that this 2nd (or black grade) is healthier, good for sick people (particularly for diabetics) and provides much more energy than white flour, which participants feel has been processed too much. People buy white flour for baking (*mantu*, *sambusa* etc.) with many commenting that "we can't use our own wheat flour for baking". People also purchase white flour when preparing food for guests or during holidays, as it makes "more beautiful" foods.

In terms of quality, in one FGD, participants noted that Kazakh flour is better albeit it more expensive. This correlates with field observations, which suggest that Kazakh flour enjoys a much higher status. For example, bakeries or restaurants universally state (or claim) that they use Kazakh flour. Although one group of FGD participants were unhappy with flour from the local mill, adding that the "quality of wheat is poor", most FGD participants were seemingly very content with their own wheat, which they all take to the local mills for processing.

As stated previously, participants feel that they need white *non* for guests, when they go visiting and for celebrations. Only two or three participants from all eight FGDs indicated that they buy *non* for everyday use. *Non* for sale in bakeries or the bazaar are made either from the highest grade of 1st grade of flour. Black *non* (from 2nd grade flour) is available but harder to find. One participant noted that they prefer black *non*, "*non made of black flour is better*". In one FGD, a few participants stated that they make *non* from their own flour and sell this *non* in the bazaar. They added that their customers only buy *non* baked from wheat flour. Participants prepare their own cereal-based products for reasons of both cost and taste. Respondents noted that it is "*cheaper to bake ourselves*" but the most important reason was taste. In almost every FGDs, taste was mentioned with comments such as it is "*better to make your own at home, better taste*" common.

Other essentials: oil, salt and sugar

The other ingredients used in cooking and baking included in this study are oil, salt and sugar. Cotton oil is the most common oil for everyday use in most dishes, and particularly for making *osh*. Many male participants stated that the reason they buy cotton oil is that "(my) wife tells me to bring cotton oil". The cost of cotton oil is more favourable for everyday consumption, whereas sunflower oil, despite being favoured for its quality and smell, is only really used for baking due to its high cost. Linseed oil is consumed more in winter as people believe it gives a lot of energy and helps one to warm up. It is also believed to be very useful for pregnant women and sick people, as it strengthens immunity but it is seldom used, and very rarely outside of winter. Animal fat is also seen as being good for health and good for protecting against the cold, however, "*it's not preferable for elders who have high blood pressure*". An absolute majority feels that iodised salt is healthier and helps to prevent goitre, with some respondents saying it also helps to prevent heartburn. One group noted, "*all doctors say that you should use iodised salt*". Participants buy *kandi safed* "*for daily use*" as it is more useful and cheaper than sugar and *nabot* although it is considered to be "*very sweet*". Parents noted that *kandi safed* makes it easier to clean up after kids, as it comes in solid pieces unlike granulated sugar. Granulated sugar is more expensive but is considered to be good for baking and preparing *kampot* and jam. Although *nabot* is the most expensive, it is seen to be good for health, as it has glucose and "*cleans the blood*". It is also considered good for pregnant women and sick people, although some implied that it is exclusively for the sick.

Foods for children

Parents indicated that they purchase specific items for their children: "*you will buy for your kids whatever they require*". Parents believe that children cannot handle heavy foods, and that they need vitamins. Homemade milk/dairy products and eggs are seen as having much nutritional value and being a good source of energy. Parents stated that fruits provide energy, are healthy and a good source of vitamins. Parents also stated that they give fruits and vegetables to their children to strengthen their immunity.

When asked what products they would like to buy and why, participants listed many fruits and said they would buy these products because they have more vitamins and fewer chemicals. However, parents do not purchase these foods because of the cost. One participant stated that: *"I want to buy a lot of stuff for my child... but I can't... the money is not in my hands"*. In one FGD, parents noted an accessibility issue as the nearest bazaar is far away and there is no daily transport that goes there. Other families noted that they are currently saving money in case they need additional supplies or labour during the harvest. Generally, after selling the fruits of the harvest in summer, they try to buy more for their children.

Many parents admitted purchasing foods according to the wants of their children. Numerous parents said that they buy what their children request because otherwise they would cry and complain. In terms of snacks, one parent noted that if you pay more the quality is better but parents were often pessimistic, saying that snacks are *"harmful"* or *"all chemicals"*. One parent also added that expired foods are often on sale in Tajikistan.

Parents were not well informed about the nutritional quality of the food on offer in schools but were nevertheless unimpressed by it, stating *"if it was good they (their children) would eat"*. One parent added that the problem is variety, and even though there are only four ingredients (flour, oil, salt and beans provided by the SFP), chefs could make many things but that the school only gives them permission to make one dish. One participant went so far as to say that she does not let her daughter eat at the school canteen as she does not trust the food on offer there, although she did not elaborate on why. Other parents almost seemed indifferent. One participant said that if a child wants, he/she can eat at the school; if not, they can buy whatever they want in the shops. Other parents admitted that they do not know what is offered at schools and have never checked.

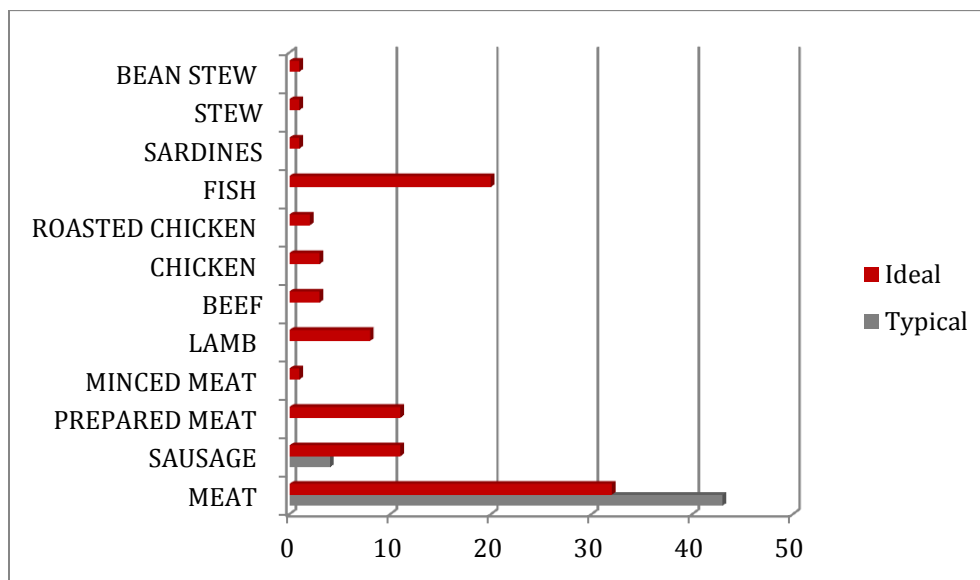
To encourage children to eat at schools, more variety and improved taste is essential, *"even if it's not free, it should be good"*. Thus parents feel that more meats and other ingredients would make a difference, with the introduction of porridge also a common suggestion.

Regular and ideal shopping lists

One component of the FGDs allowed participants to make two hypothetical lists of food, the first list describing the food they would buy normally and a second list describing the food they would buy if there were no financial limitations or availability issues. In all the FGDs, the first list contained the "*things the family needs every day*" with one participant noting that "*if we don't have money, we get credit so we can buy (these items)*".

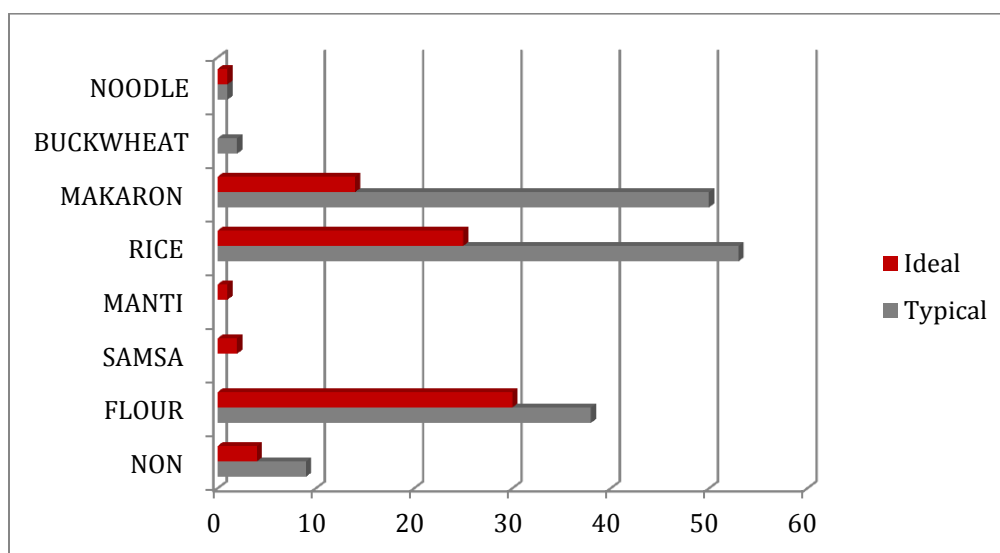
In the second list, many participants listed the same food items that were in the first list, but just in larger quantities, even though there were no monetary or availability issues in this hypothetical list. After this, participants listed the items families "*don't have the means to get*". Parents also indicated that they would spend more money to improve the nutrition of their children, "*if the food is healthy, then it's good for the health of children*". The majority of respondents would also buy greater quantities of meat and more varied types of meats, instead of buying chicken legs and beef (see **TABLE 2** below). Also, participants would buy more fruits, dairy products and chocolates (see **TABLE 4** below).

TABLE 2: Typical and ideal meat consumption



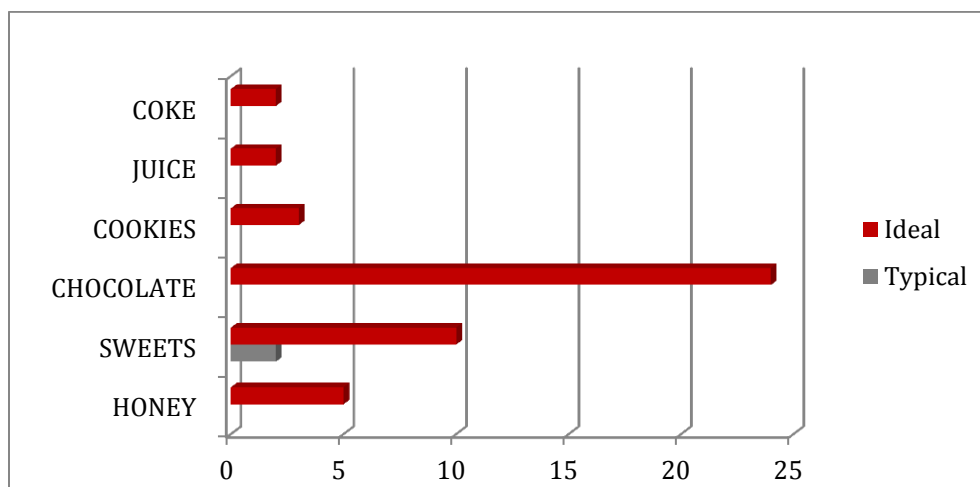
Flour is more or less stable in both lists but generally the consumption of cereals, particularly pasta and rice drops considerably in the ideal lists (see **TABLE 3** below).

TABLE 3: Typical and ideal cereal and cereal-based products consumption



Participants would buy a much wider range of sweets and chocolates if they had no budgetary limit (see **TABLE 4** below).

TABLE 4: Typical and ideal consumption of chocolates



When asked why they would purchase the items in the second list, the most common answer was to have larger quantities, *“I want to have some savings of flour”*. Otherwise participants indicated that they would purchase the foods from the second list because they have more vitamins, have a better taste, are foods for guests, or more infrequently because children like them or because they are healthy. In two FGDs, participants mentioned that products from the second list would basically be for guests *“rice and meat are for guests... basically we buy for guests, and after (guests eat), children eat”*.

From all the items listed, participants consider the more useful foods to be, in descending order, meat, fruits, oil, onions, potatoes, flour, eggs, rice, *kandi safed*, *non*, greens, chocolate, honey, salt, and pasta. Only three participants did not list oil in their first list, and it comes as little surprise that participants emphasised its significance in everyday cooking, "*you can have everything... but if you don't have oil, you can't do anything*". When asked if they were healthy, participants highlighted the importance of the vitamins in those foods and the energy the foods give. All participants agreed that the list of useful / healthier food items is very dependent on the season.

II. SCHOOL CHEF'S KNOWLEDGE OF DIET AND NUTRITION

This sub-section of the paper will look at school chef's knowledge and is based on two interviews conducted in Nosiri Khusrav. In both schools the SFP is active. The SFP which provides roughly 400,000 children, from grades 1-4 in 2,000 schools in 53 districts, every day with fortified flour (acquired from Russia producers as per the terms of the donor agreement with the Russian Federation), oil, salt and beans.

Seventy and 260 students, from grades 1-4, eat at their respective school canteens once per day, between 10:00 and 10:30, if they study in the morning, or between 14:30 and 15:00, if they study in the afternoon. Chefs report that students have 15 minutes to eat. In the smaller school, the canteen alternates between two meals, offering *laghman* one day and *mastoba* the next. In the larger school, only *shurpo* is available. Families provide foodstuffs to the school canteens to supplement the foods offer by the SFP. In both schools the meals are offered free of charge.

There are differing internal arrangements in the two canteens although neither chef has an official written contract. In one school, the chef has no salary but her children study at the school for free. The other chef receives a salary. Both chefs reported that there are sanitary inspections, which seem to be carried out by the Centre for Sanitation and Epidemiology under the Ministry of Health, and that the schools also carry out checks.

Chefs prepare their own cereal-based products, namely *laghman* and *tuppa*. The chefs report using 1st grade flour provided through the SFP. Neither chef knew from where the

flour originates; one chef said it was from Tajikistan, the other Kazakhstan. In reality, the flour is from Russia and is fortified, but neither chef knew anything about fortification. When asked about fortified flour, one chef said "*I haven't seen (it) once*", even though they are (at least in theory) using fortified flour on a daily basis. Both chefs indicated that they use iodised salt from Tajikistan. The chefs also claimed that they are using cotton oil, although one was not certain. In general, the oil provided by the SFP is fortified vegetable oil. Unlike the general practice in Tajikistan, school chefs reported that they do not reuse oil because they receive a new bottle every day.

Both respondents indicated that their respective canteens could be improved. They suggested that widening or changing their menus would help while one chef indicated that more regulations and a fixed salary would also help. Chefs indicated that they did not implement these changes as they had no opportunity to do so and have budgetary limits. The chefs did not say categorically whether or not they think the food, on offer in their respective canteens, is healthy. Instead, one chef said that children do not have breakfast at home so the food is good for them while the other chef stated that "*they study and then they want to eat... its good*". Both school chefs felt that the general health and nutrition of students was good.

III. MHPs' KNOWLEDGE OF NUTRITION AND DIET

This sub-section of the paper will look at MHP's knowledge and is based on four interviews conducted, with one doctor and three nurses, in Nosiri Khusrav, Shahrtuz, and Rumi. MHPs indicated that the health and nutrition in their respective districts was generally good, with improvements in recent year, nothing "*comparing to previous times, health in general is better*". Another MHP drew attention to the link between health and economic circumstances, "(for example) *one person is poor, while the other can afford (more/better food)*". The doctor in Shahrtuz indicated that "*health in our area is better, because the quality of food here is better. We don't have that much complicated diseases*". Respondents in Rumi made similar statements about their district noting that people have fewer medical problems than in other parts of Khatlon, because the air is clean. Nonetheless, they do advise people to consume more vitamins and drink more boiled water.

MHPs indicated that the most common medical conditions were stomach problems, blood pressure and flu. Kidney, gallbladder, and liver problems, as well as asthma and infections, were also mentioned, with only diarrhoea singled out as being common amongst children. Different causes for these medical conditions were listed. For example, MHPs linked stomach and kidney problems to the lack of clean drinking water and proper hygiene stating that there are *“no proper filters for water, which leads to a build-up of salt in the kidneys”*, while stomach problems and diarrhoea occur *“because people do not wash fruits and vegetables before eating”*. Another nurse reiterated the importance of hygiene, *“if people drink water that is not boiled or do not wash fruits properly before eating - it will cause medical problems.”* MHPs also indicated that the day to day use of cotton oil, which *“which does not fit standards”* leads to stomach and gallbladder problems. High blood pressure was linked to stress and anxiety partly arising from bad economic circumstances, *“stress is due to bad living conditions and poverty”*. MHPs agreed that flu is more common in the cold months, whereas chronic diseases and high blood pressure are exacerbated by the variable weather in spring and autumn. Poor nutrition was only identified as the specific cause of two conditions, diarrhoea and anaemia, both of which occur more in spring and summer, *“when it's too hot and there is less willingness to eat properly”*.

MHPs indicated that they inform patients about the causes of their respective conditions. One nurse noted that *“every spring and summer we walk and talk with people about different diseases”*. Generally, MHPs believe that people have some pre-existing knowledge of the more common medical ailments with one nurse adding that *“now the education in schools is improving, and probably children will know better (in the future)”*.

MHPs stated that people mostly refer to doctors when they have health problems, but they expressed concern over the length of time people wait before consulting a professional, *“if a person is educated - they will refer to a doctor immediately, but others won't go to a doctor until it's too late”*.

Generally, MHPs indicated that the diets of their patients are not nutritionally balanced. The doctor discussed assigning special diets as a treatment for certain conditions, *“we advise people to limit flour based products in their diet, to eat less heavy food, to eat less white bread, non, rice etc.”* The doctor added that diet is connected to families' economic

conditions, stating that: *"if a person has money, why shouldn't they (have a good diet)? You can find everything in the bazaar now"*. With that said, one nurse pointed out that money does not equal a more nutritionally-balanced diet, *"some families have resources and therefore eat only fried meat, I tell them not to only cook fried meat... but they don't listen"* she said. When assigning diets, MHPs noted that patient reactions are similar; they adhere to the diet at first but cannot maintain it. *"Patients try to keep the diet, until they see the first sambusa in the bazaar."* In general MHPs indicated that the reaction of patients depends on a lot on education, *"there are people who follow our advice and others who don't. Maybe because of their lack of education, they do not listen"*. When discussing the effect of seasonality on diet, MHPs alluded to the winter summer divide. According to MHPs, people mainly eat *"heavy food"* in winter that is prepared with large amounts of oil, such as *osh*, *kurutob*, and *shurpo*. People also have less, or no, fresh fruits or vegetables in winter and instead rely on their stores of fruits and vegetables from the summer, usually consisting of sealed jars. By way of contrast, the diet in summer is rich in fresh fruits and vegetables. MHPs suggested that better financial circumstances are the starting point for raising the nutritional quality of the everyday diet.

MHPs working with children noted the high rates of diarrhoea and fever in summer and cases of flu in winter. MHPs cited consumption of unwashed fruit and over consumption of fruit and ice cream as the cause of diarrhoea with another nurse noting that they generally have weak immunity. In terms of children's diets, MHPs gave the example of the advice they give to young mothers, *"children from the age of 4-5 months need to eat soup and puree... from the age of 7-8 months mothers can feed their children with meat"*. MHPs also highlighted that they meet with people and discuss nutrition issues, breastfeeding in particular. One nurse noted that children eat too many unhealthy snack foods, *"snacks have a lot of chemicals, which are bad for your health"*. When asked about how to improve children's nutrition, MHPs again emphasised that *"poverty, lack of education"* remain serious obstacles. MHPs suggested that awareness raising activities, where people are informed about what vitamins and foods children need, would be effective. One MHP stated that there is a need *"to conduct more seminars with people, some of them simply don't know what to do."* Another MHP agreed that people need to be better informed, *"they have to use more vegetables, milk, vitamin C, fruits"*.

Specific foods: flour, oil, salt and sugar

MHPs assessments of household flour and flour usage correlate closely with the comments of FGD participants. MHP believe that people are using cotton oil in the home. One MHP stated that people are beginning to use less cotton oil because it is harmful to the body. All MHPs pointed out the risk of cotton oil but emphasised that the key problem is often the quality of the oil itself, "*god knows whether the oil fits standards*", with another MHP adding that "*some put aluminium in the oil in order to change its colour or to make the colour of the oil better*". MHPs agreed that people purchase iodised salt in packs from shops and market, but one MHP mentioned that people still do not pay really attention to this. MHPs indicated that people mostly purchase *kandi safed* for everyday use, granulated sugar for preparing jams for winter, and buy *nabot* in spring as it gives them more energy. In terms of improving the nutritional value of their diet, MHPs suggested that people should buy higher quality products and more dairy products, milk in particular.

IV. SUMMARY

In summary this section has examined the knowledge and understanding of households, school chefs and local MHPs in terms of nutrition.

i - Household knowledge

FGD participants have almost no knowledge of fortified flour. Day to day, families use wheat flour instead of white flour because it is seen as a better source of energy. White flour is used for baking and serves a social function as foods made from white flour are considered more beautiful and enjoy a higher status. Participants did not differentiate between the main types of oil. The benefits of iodised salt are well known and many varieties of sugars are available and used.

Parents buy dairy products, fruits and vegetables for their children because they are a good source of vitamins, have a nutritional value, provide energy, and strengthen immunity. However, many parents cannot afford to buy these goods. Children eat many snacks even though parents are well aware that such foods

are unhealthy. Parents knew little about the foods on offer at schools but feel that canteens need to offer a wider variety of foods as their children do not eat there.

One FGD component allows for a comparison to be drawn between the foods parents buy and would buy, if there were no limitations. These lists show that many parents would merely like to buy larger quantities of the same 'essential' foods. Participants would also like to buy a wider range of meats as well as more fruits, dairy products and chocolates. However, given the homogeneity in spending habits despite income disparities, it is not necessarily the case that people would spend more money on food if they had the money to spend. Participants seem to spend conservatively on food.

ii - School chefs' knowledge

In both schools where interviews were taken, the canteens were running with the support of the SFP and local families. Students eat once per day for free but there is little or no variety. School chefs have very little knowledge about the ingredients they use on a daily basis and knew nothing about fortified flour. Parents believe that more diverse menus would improve the school canteens.

iii - MHPs' knowledge

MHPs stated that health and nutrition is good and improving although they advise people to eat more vitamins and dairy products and drink more boiled water. MHPs listed numerous common medical conditions most caused by a lack of drinking water, poor hygiene practices, the consumption of bad oil and stress. Diarrhoea is very common amongst children because they eat too much unwashed foods, drink unboiled water and eat ice cream. MHPs also expressed concern over children consumption of snackfoods. MHPs feel that people's diets are not nutritionally balanced and although they often assign specific diets, patients struggle to follow them, particularly the less educated. Seasonality affects diet as there is a wild swing in availability and price between summer and winter. Awareness raising activities are seen as the best way forward as poverty and lack of education remain big obstacles.

E. Practice

This section of the research will examine the nutritional practice of households and their school age children. (Note: information on the consumption of industrially-produced vs. locally-milled flour is qualitative only. For quantitative trends on the supply of industrial flour in Tajikistan, please refer to the “Tajikistan Wheat Flour Fortification Assessment, May 2014,” conducted by GAIN with the support of USAID.)

I. HOUSEHOLD CONSUMPTION PRACTICES

This sub-section of the paper will look at household consumption practices.

Wheat

Only two FGD participants who were landowners are not growing wheat, “*if you have from 50 sotik (0.5 hectares) to 1 and a half or 2 hectare, you grow wheat*”. The majority of wheat growers have their wheat milled into flour locally flour or sell it if they have extra. Participants like having their own flour and repeatedly stated that locally milled flour is better. Despite this, local mills do not seem to process flour well enough for its use in baking, “*from wheat, we make non. For baking we use white flour from the bazaar*”. People without land buy flour from local mills or the bazaar. People rarely buy unprocessed wheat as there is more risk (from maggots, etc.) of spoilage; only three FGD participants purchase unprocessed wheat, which they get from the local mills. Unprocessed wheat is available at the bazaar, but fieldwork suggests that business is slow and these vendors focus more on selling unprocessed wheat for animal wheat.

Flour

Although wheat is widely grown, not one participant stated that they do not buy white flour. Participants purchase white flour for baking items such as cakes, *sambusa*, *fatir*, *khalama*, *pirozhki*, cookies, etc. Second sort flour is used for everyday baking and respondents without their own land buy it for home use. Aside from local mills, the majority stated that the flour was from Kazakhstan, Sughd or interestingly Rumi even

though the Kolhozobod mill is now operating at very low capacity and no flour from the mill was seen during fieldwork or mentioned in the lists obtained during SCIs. Generally the Kazakh flour is seen as better quality and is more expensive.

Participants with their own land are, on average, buying one sack of flour per month or less. Participants without land buy more than one sack of flour per month, generally between two and three. They reported that their use of flour is stable throughout the year. In contrast, there is much more seasonal variation in landowners' use of flour. Participants indicated that they buy much more white flour for baking and in general eat a lot more flour based products in winter, "*no fruits in winter, nothing, only non*". In spring landowners also buy flour as the wheat crop is not yet ripe. When their crop is ripe in summer, they purchase considerably less flour and in general eat much less flour-based products due to the abundance of fruits and vegetables and the high temperatures.

Despite all participants purchasing flour in the bazaar, many were sceptical about the quality, "*in the bazaar, everything is mixed, one thing is written on the bag, but in reality the flour (inside) is something less*". Fieldwork supports this as it seems that many firms do not have their own labelled sacks and instead use sacks of other firms (usually foreign brands) with some small (often hard to find) stamp from their own company. It may also be an intentional selling strategy, given the high regard in which Kazakh flour is held, but it is beyond the scope of this study to verify this.

Non

Taking into account that the majority of participants bake their own *non*, it's a little surprise that only two respondents buy *non* on a daily basis. Many respondents also noted that they have a practice of getting *non* from neighbours when they have shortage of it. This usually involves taking two or three *nons* and returning the same amount at a later date. People do purchase *non* during holidays, when they have guests or go visiting, explaining that they need "*white beautiful non*" for guests and special occasions.

Cereal-based foods

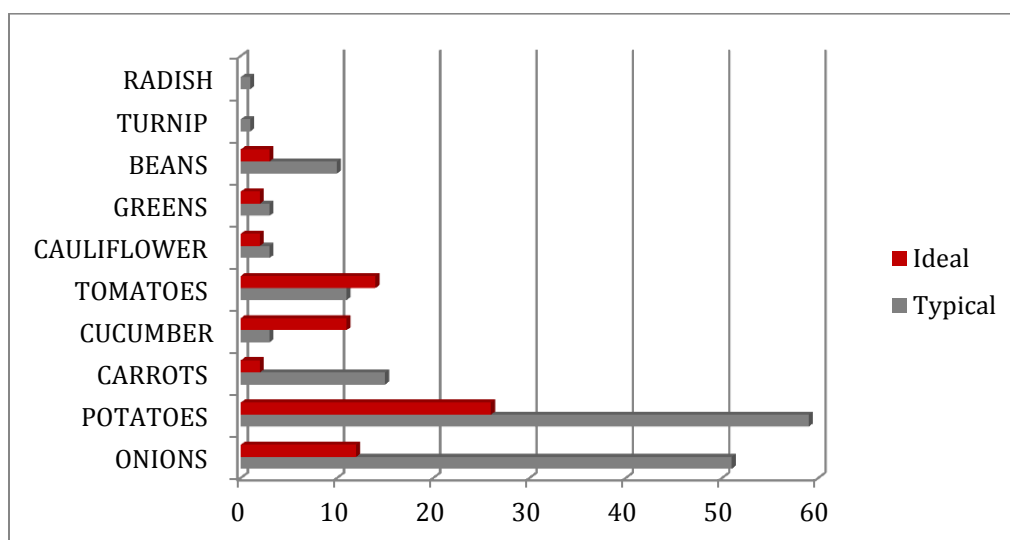
The majority of participants bake their own cereal-based foods at home, with a minority purchasing them. Participants listed a wide range of cereal-based foods, which they prepare at home with men stating that their “*wives bake frequently*”. The most frequently mentioned cereal-based products were *sambusa*, *mantu* and cakes, with pies, *ugro*, *laghman*, *atola*, cookies, pasta, *pelmeni*, *tuppa*, *ugro*, *pirozhki*. *Mantu* and *sambusa* are baked roughly once a week particularly in spring as they are more in demand, especially when prepared with greens. Other cereal-based foods, such as *ugro*, *laghman*, *pelmeni*, *tuppa* and *pirozhki*, are also baked quite frequently, usually around two or three times per month as well as for birthdays and holidays.

Participants generally only buy the cereal-based products they cannot prepare themselves in the home, mainly pasta, or foods for guests. Respondents stated that pasta is made from the highest or 1st grade flour, with brands such as Makfa and Makolli mentioned repeatedly. Makfa is regarded as the best. Only a handful of respondents buy other cereal-based products such as *sambusa* and cakes. When discussing other ingredients they purchase for baking, participants mainly listed essential ingredients, like meat, eggs, oil and salt. Other ingredients, such as vegetables and greens, are only purchased in winter as participants have their home grown foods from spring until late autumn. Participants also seemed to have their own cows, and as a result they rarely purchase any dairy products. In the case where they really need milk, they will simply borrow from their neighbours.

Seasonality of other foods

When asked to name the products, which they buy throughout the year, participants listed oil, meat, rice, onions, and potatoes. The stable consumption of potatoes and onions was also seen during the activity where they were mentioned more than any other vegetables. However, many noted that they only buy the vegetables from this list in winter and spring as they have their own in summer and autumn. In turn, when listing the products that they buy in different seasons, participants clearly distinguished between the harvest season (i.e. spring and summer) and the rest of the year. On the ideal list, perhaps because of the approaching harvest, potatoes and onions were mentioned much less frequently (See **TABLE 5** below).

TABLE 5: Typical and ideal vegetable consumption



Accordingly in summer and autumn participants do not buy fruits and vegetables as they have their own supply of home-grown vegetables (onions, garlic, potatoes, chickpeas, etc.) and fruits (cherries, pomegranates, apricots, apples, etc.). The reduced expenditure on fruits and vegetables allows people to spend more money on meats in summer. In early autumn they dry fruits, prepare jams from fruits and salads from vegetables and preserve them in jars. This helps to offset the absence of fresh home grown foods in winter. However, FGDs participants noted that because of the lack of fresh foods in winter, they have to buy more meat to get energy. Participants without their own land or homemade products, emphasised that they prefer to buy fresh foods from their neighbours because they know these fruits have no chemicals.

Other essentials: oil, salt and sugar

Cotton oil is the mostly widely used oil with sunflower oil the second most popular. The price of sunflower oil, which is mostly imported, is stable year-round. The price of cotton oil, which is mostly local, varies according to circumstances within Tajikistan. Several groups of participants talked about the usefulness of animal fat oil and linseed oil, emphasizing that both types are useful for people who are sick and whose immunity is weak. Animal fat oil and linseed oil are also used more heavily during winter, although many participants (in Rumi) stated that there is no linseed oil available in their district. Several participants mentioned that they just buy cooking oil without considering the type

as often "*the name is written in English or in Arabic*". Generally participants purchase Tajik cooking oil produced in Muminobod, Rumi, Kurghon-teppa, and Shahrtuz. Of the imported cooking oils, vegetable oil from Iran and sunflower oil from Russia are the most popular along with various cooking oils from Saudi Arabia and the Gulf region. In terms of usage habits, participants reuse oil, "*if we throw oil away after one use, what are we going to eat tomorrow?*" According to participants, they reuse oil multiple times and eventually use it one last time to bake *non* or *mantu*. The only exception to this is oil that is used to prepare fish. This is set aside and reused only for cooking more fish. A similar practice is common with oil used to prepare eggs.

Participants buy iodised salt in packets at the bazaar, with respondents indicating that it comes from various places in Khatlon, namely Shurobod, Muminobod, and Kulob, and from Sughd, although in all likelihood the salt is from Hoja Mumin near Vose. In general, two types of salt are available: one for cooking, and another for adding to salads or other prepared foods. Both types are iodised. However, respondents from one group (in Rumi) had doubts, indicating that "*we buy (salt) from the bazaar and don't know for sure whether it is iodised... all of us have goitre*". Respondents shared their memories of a couple of years ago when non-iodised salt was sold from the back of trucks. When asked if these trucks can still be found, respondents in one group emphatically said no, yet in another FGD, a few minutes' walk away, participants said the trucks come often.

The sugar purchasing habits of participants are similar. The majority buy *kandi safed*, with granulated sugar and *nabot* purchased less frequently. *Kandi safed* is used for everyday life, although participants indicated using less in summer because there are fresh fruits readily available. Participants use more *nabot* in the colder months because it gives them more energy and warms the body. In summer, sugar is used to prepare jams for winter, and as a consequence of demand, the price goes up. Participants had no serious comments or complaints about the quality of *kandi safed*, sugar or *nabot*. Generally the quality of *nabot* is seen as being higher, but it is more expensive. Participants buy all the sugars by the kilo in store. As it is not labelled, respondents did not know from where the various sugars originate.

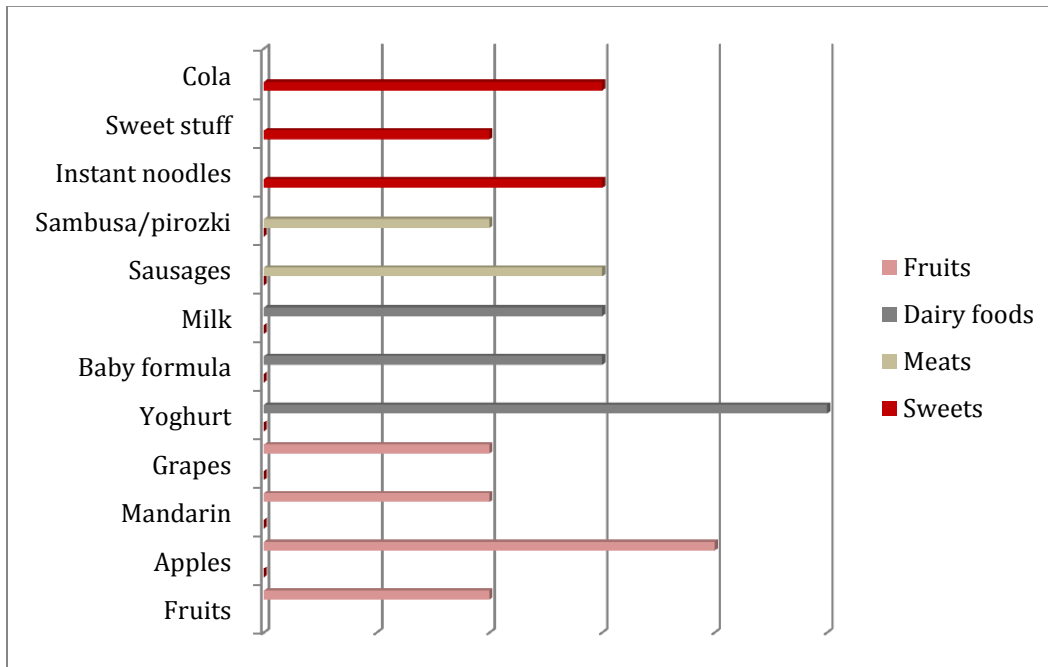
II. SCHOOL AGE CHILDREN’S CONSUMPTION PRACTICES

This sub-section of the paper will look at school age children’s consumption practices. Fifty-eight out of the 62 FGD respondents have school-aged children.

In the home

Children usually eat from the same plate as the rest of the family in the home, and as a result, they have a pretty typical Tajik diet of *osh*, *sambusa*, *shurbo* etc, with a greater emphasis on dairy products and fruits. Participants in three FGDs said that they did not buy specific items for their children stating that "*everyone is equal, no matter two years old or three. We don't have such a budget*". However, generally this was not the norm, and participants in every FGD indicated that they bought specific kinds of foods for their children. (see **TABLE 6** below)

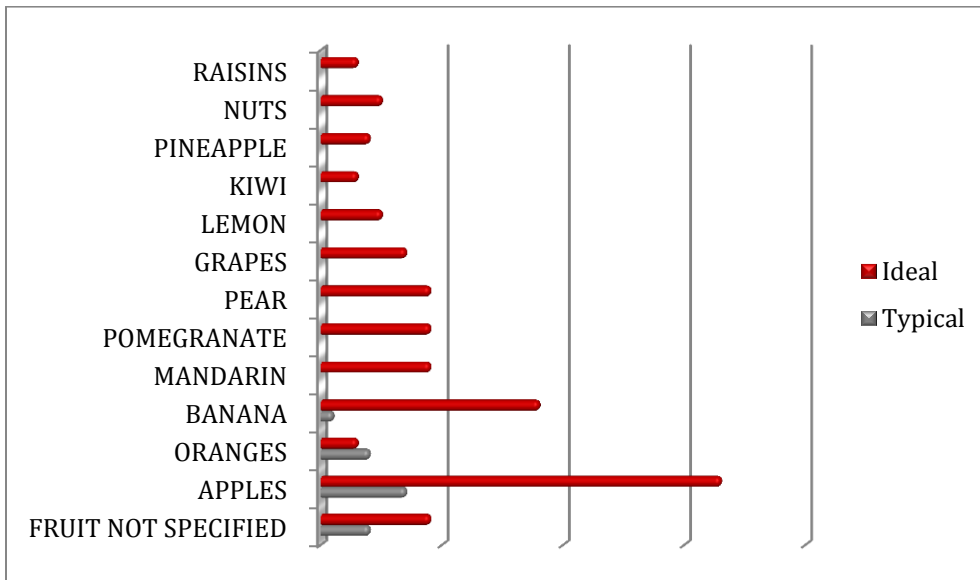
TABLE 6: Specific foods purchased by parents for their children



Generally parents listed a range of items with different kinds of dairy products, fruits and sweets mentioned most frequently. Parents noted that kids do not eat fried meat, so they prepare special dishes with milk at home, particularly in families that have their own cows. Parents also buy “*some products with vitamins, such as apples, mandarins,*

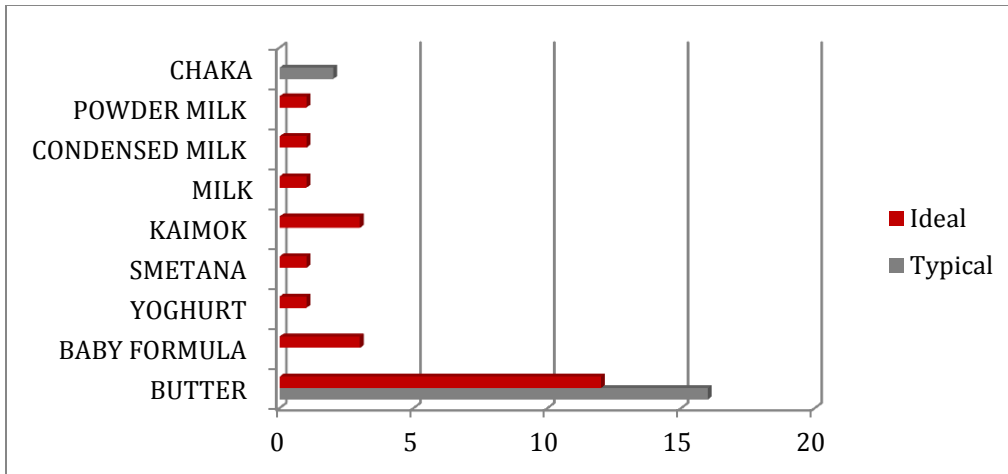
grapes or other fruits" for their children. The majority of parents stated that there are products they would like to buy for their children but which they cannot afford. Fruits were the most frequently mentioned, oranges, bananas and apples in particular (see **TABLE 7** below).

TABLE 7: Typical and ideal fruit consumption



Parents also mentioned that they would buy a wider variety of dairy products, such as butter, rice milk, yoghurts and baby formula, if they had no budgetary limits or availability issues. One parent noted that they would buy the more expensive baby formula, if they had the chance. (see **TABLE 8** below).

TABLE 8: Typical and ideal fruit consumption of dairy products



When asked how frequently they purchase food items for their children, participants referenced financial barriers, suggesting that they buy more food after receiving remittances or when they have more money in general. In one FGD, participants indicated that they buy special foods for guests and that afterwards, their children may eat them. Only in one FGD, did participants claim that they have what they need before later admitting that they would like to buy more snacks and sweet stuff for their children.

In the school

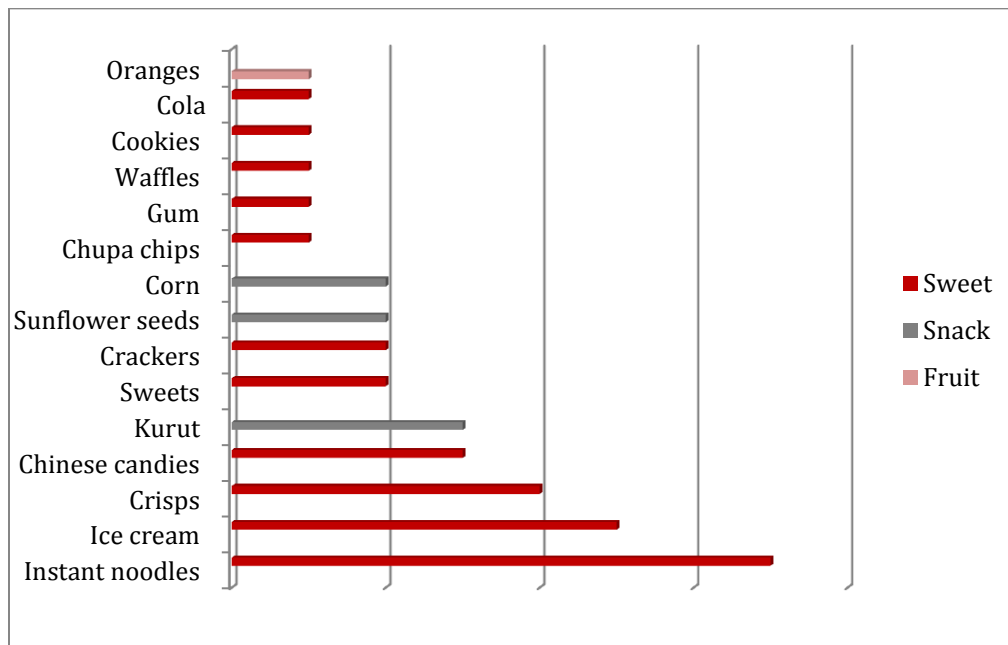
According to parents in Nosiri Khusrav, where school canteens are operating with the support of the SFP, schools are provided with beans, oil and flour by the SFP, and students bring salt, onions, potatoes and other foods from home to augment this. The meals are generally free, but parents in one FGD stated that they were contributing two somoni per month to the schools as part of this program. Troublingly, parents suggested that the canteens only provide one type of food “*beans and something*” and children do not eat this food. No other foods are available at schools aside from *pirozghi*. According to parents, kids eat at home before school so they will be full and take bread in case they get hungry. Parents argued that you need a professional chef as kids do not want to eat the same stuff every day. As children do not like the food prepared at school, they sometimes buy hot dogs, juice, corn, ice cream, *sambusa* or *chalpak* nearby.

In schools where the SFP is not active, children do not seem to eat anything at schools at all, although snacks such as *pirozghi*, *sambusa*, *chalpak* seem to be available nearby. Generally children just “*eat at home and that's all. (They) eat again after classes at*

home". *Pirozhky* and other fried dough cost a small amount, 20 or 30 dirham each. The prices of other foods were not discussed in detail.

Parents in every FGD indicated that their children eat snacks during the day including a wide array of unhealthy snacks, with instant noodles, ice cream, crisps and small Chinese candies the most popular (see **TABLE 9** below).

TABLE 8: School age children’s snack consumption according to parents



Parents are most concerned about the Chinese-made candies. According to participants, they look like, and are labelled as, vitamins. Parents feel that the candies are unhealthy, with one parent going so far as to say that they cause skin problems. Other parents noted that these Chinese candies come in nice boxes with toys inside that are sometimes in the shape of guns. Although they are not healthy at all, kids like to buy them because of the packaging. These statements may reflect more underlying concerns about the quality of Chinese produce. Only in one FGD did parents exclusively say that they personally purchased snacks for their children, with parents in two groups noting that they prepare *kurut* at home for their kids. Usually parents give money to their children and the kids buy the snacks themselves. In some cases parents do both, i.e. buy for their children and give them money to buy on their own. Participants indicated

the children buy snacks from local shops near their homes or schools, or on rare occasions, from the bazaar or school. Parents indicated that children take 1 or 2 somoni to school each day to buy snacks.

III. SUMMARY

This section examined the nutritional practice of households and school age children.

i - Household consumption practises

Landowners grow wheat and have it milled locally into flour, which they prefer to flour from the bazaar. However, locally-milled flour appears to be unsuitable for baking so white flour is bought from the bazaar for baking, despite the fact that they have reservations about the quality of this flour. Respondents indicated that they consume more cereal-based products in winter and less in summer when crops are ripe and temperatures high. People only purchase *non* during holidays, when they have guests or go visiting. Participants bake their own cereal-based foods at home and only buy the foods, which they cannot prepare themselves.

Participants buy oil, meat, rice, onions, and potatoes year round. The purchase of other foods depends on season. Given the variety of their own fresh foods in the harvest season, participants spend less money on fruits and vegetables and can instead use to buy other foods, usually meat. In autumn fruits are dried, jams and *kampots* prepared and vegetables preserved.

Cotton oil is the mostly widely used cooking oil. Many participants stated that animal fat oil and linseed oil are particularly useful for the sick or used more in the cold winter. All cooking oils are reused multiple times. Iodised salt is near universal while, in terms of sugars, *kandi safed* is for everyday use, granulated sugar for baking, and *nabot* for the winter months or for the sick.

ii - School age children's consumption

Children usually eat with the rest of the family and thus have a typical Tajik diet. Parents buy a range of items for their children, including dairy products, fruits and

sweets, and prepare special dishes with milk. Some parents indulge their kids with junk food. Parents would like to buy more for their children, particularly fruits and dairy products, but cannot do so because of the cost.

In schools where the SFP is active, parents argued that their children eat before and after school at home as they do not want to eat the food offered in the school canteen because it is the same every day. As children do not like the food at schools, they buy snacks instead. In schools where the SFP is not active, children's do not seem to eat at all unless they buy snacks. Generally, school-age children eat snacks, including an array of unhealthy snacks, with instant noodles, ice cream, crisps and small Chinese candies the most popular. Parents are most concerned about the quality of the Chinese candies. Usually parents give money to the children, and the kids buy snacks themselves nearby.

F. Business and Policy Landscape

This section of the research will examine the policy landscape of Tajikistan in relation to nutrition and fortification, with a particular focus on flour fortification.

I. ASSESSMENT OF THE BUSINESS LANDSCAPE

This sub-section of the paper will look at the business landscape in Tajikistan from the perspective of both small and large private enterprises. This section will offer an overview of local businesses before turning to the large firms selling flour or cereal-based products. The section will close with a brief look at the value chain for these products.

Local flour sellers

Flour selling points are found in favourable locations, in or near bazaars, and sell a variety of Tajik and imported flours and some other items, principally oil. The stores are busy, and customers ask many questions about the flour on sale, such as the price,

quality, grade, brand, place of production and the quality of *non* that can be made from the flour. Generally prices are not written but seem fixed, although haggling is common. Flour retailers stated they offered similar products of similar quality to other retailers. Most of the flour comes from Tajikistan, principally Sughd, with individual respondents noting flour from Dushanbe or imported flour from Russia. Respondents have been sourcing from either local or national retailers for a number of years. Respondents seemed happy with their range of products and have no interest in selling other cereal-based products.

Flour and oil are the best-selling goods, and seasonality affects sales. Half of the respondents reported that sales are down from last year, a quarter stated that sales were the same and the other quarter that sales were better. Respondents indicated that price, quality, service and cleanliness are important for buyers with price generally the key factor. On average 21.25% of customers buy on credit and sellers believe that they buy and mix flour to save money. None of the respondents were aware of fortified flour.

Local shops

Local shops varied in size and location but were busy, bar one small shop in a more rural area. The main products on offer are flour, oil, water, juice, vodka and eggs. Customers come freely to the busier shops and ask about the price, quality, and country of origin of the products, with one seller noting that “*they ask whether flour is from Kazakhstan, because the quality of Kazakh flour is better*”. Prices are not shown but are fixed. Generally, employees consider their stores to be comparable with others in terms of size and quality of products, although only half think they offer similar products. All of the shops had products from Tajikistan, in equal measure from Sughd, Dushanbe or Khatlon. Some shops also had products from Russia. Respondents were sourcing equally from local and national retailers while half of respondents had found a new supplier recently who better met their needs. There was no real interest in selling other cereal-based products, except for one seller who would like to sell more dumplings and pasta.

Flour, oil, eggs, kefir and vodka are the best-selling products. Seasonality affects sales, with summer the worst season and winter the best because of the large number of

weddings. Half of respondents stated that sales were worse than last year, a quarter that sales were the same and the other quarter that sales were better. Respondents indicated that quality, price, personal taste, availability and cleanliness are important factors for buyers, with no one decisive factor common amongst their answers. On average 31.25% of customers buy on credit with one specifying that the maximum credit offered as 20-25 somoni for one month. Only half of sellers stated that people purchase and mix different kinds of flour. None of the respondents were aware of fortified flour.

Local bakeries

Bakeries are usually in prime locations and busy, with customers asking about the price and quality of *non*, as well as the origin of the flour and when it was prepared. Prices are fixed but not displayed. Most staff indicated that their business is smaller than others but offers similar products of similar quality. Most of the flour used is from Tajikistan, and interestingly, respondents indicated that it is from Khatlon. Only one person stated that the flour is from Sughd and one that it is from Russia. Respondents were sourcing equally from local and national retailers, although half of respondents noted a change in supplier in recent months as they started to buy flour from bazaar because of the lower costs. None of the respondents were interested in selling other cereal-based products.

Half of respondents noted that people monitor prices and that seasonality affects sales. Most respondents indicated that sales are worse than last year. Respondents indicated that price, quality, nutritional value and personal taste are important factors for buyers with quality being the key factor. A high percentage of customers (39%) buy on credit, with one respondent explaining the system and noting that customers take *non* in the morning and pay for it in the evening. Only one seller believes that people purchase and mix different kinds of flour. None of the respondents are aware of fortified flour.

Local mills

One FGD participant whose family own a mill noted that most people bring their wheat to the mill, and that for every 50kg, the mill keeps 8kg as payment. In another FGD, participants stated that the local mill takes 5kg out of 50kg as payment, and in other FGDs numbers as low as two kg per 50kg were mentioned. There seems to be a good deal of variation between villages.

The Kolhozobod mill (Rumi district)

The former employee of the Kolhozobod Mill interviewed stated that the mill used to process about 600 tonnes of wheat per day but now only works at a limited capacity of 100 tonnes per day. The mill produces highest, 1st, 2nd and 3rd sort flour from Kazakh wheat but does not advertise its products as they have stable customers who resell to bazaar-based retailers. The former employee stated that customers buy the flour because of its quality, but that sales this year, and over the 10 last years as a whole, are down, *"you have to look after your factory, after your machines, if you leave the factory for one day without people and work - you will lose it. This mill has to be reconstructed fully."* Nineteen ninety was the last time when new equipment was bought, and he does not think that the mill, given its current status, will change or expand. The current low sales are stable year round but the mill frequently has to deal with supply interruptions.

Makolli

Makolli was established 11 years ago with bread and pasta as the key products. Since its foundation, Makolli has milled Kazakh and Russian wheat, rye and barley from confidential retailers in their own mill. Highest grade flour is used for wafers and 1st and 2nd grade for their other products. Any additional flour is packed and sold as flour. Makolli boasts a wide range of products including 44 varieties of bread *"because, the market asks... people now understand if you eat black bread, you will not get fat"*. However, Makolli's main product is now wafers, although they are working to expand their snack portfolio to include instant noodles, chips, sunflower seeds and dried breads. Makolli promotes its products through television, radio and outdoor advertising with the slogan *"the best quality for you"*. The spokesperson indicated that quality and price are key for customers. The representative would not comment on Makolli's sales this year, but noted that only wafer sales are affected by the season. Supplies are stable.

Buona

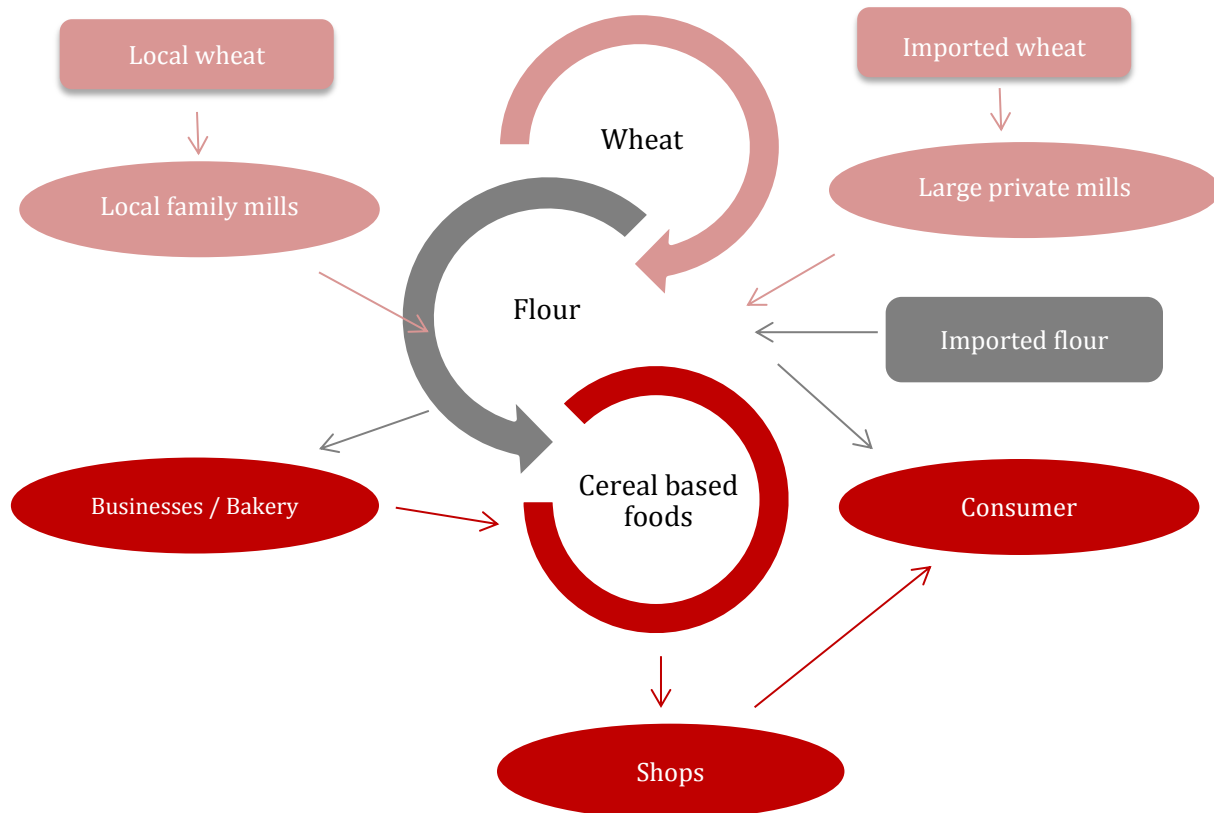
Buona entered the market two years ago, and its main products are pasta and flour. Buona has their own mill and use Kazakh wheat sourced from confidential partners. Buona mills highest, 1st and 2nd sort flour and sell all directly as flour. Highest grade

flour is also used to make their various pastas. Buona have no plans to market new flour-based products but hope to begin promoting their products through television and radio. The spokesperson stated that quality and price are key for customers, adding that the design and attractiveness of their products is also a factor. The representative noted that despite only being in the market for two years, this year has been even better year for sales. Sales and supplies are stable year-round with the spokesperson noting, "if we would have (supply interruptions), we wouldn't be in the market".

Value chain

The information outlined above allows for a rough sketch of the flour and flour-based products market to be made (see **TABLE 11** below).

TABLE 11: Chain of wheat / flour and cereal-based products



This table shows that both local and imported wheat is widely used in households in Tajikistan. Households take their wheat to be milled in small local family mills and augment their supplies with white flour from the bazaar. Large private mills work with

imported wheat, mostly from Kazakhstan, and either sell it directly as flour, to bazaars or businesses who used it in their products, or make their own flour based products.

Business landscape

The former employee of the Kolhozobod Mill suggested that the private firms who import flour from Kazakhstan are the Mill's main competitors. These sentiments were also heard in interviews with the former government representatives who alluded to the reduced capacity of the big state mills and the growth in private business. Business representatives agreed that the market is now much deeper than it was before, and that new businesses are opening all the time and trying to compete. The Makolli spokesperson noted that "*everyday some factories are opening... they are making business (like us)*".

When asked about their competitors, the spokesperson for Makolli was confident that Makolli is differentiated from competitors in the Tajik market because of their broad range of products, "*we are the biggest I think, because many, many competitors are making only pasta, or wafers... but we are making so many products using flour*". The Buona spokesperson admitted that, taking into account their competitors, their business is smaller. Both Makolli and Buona indicated that they were each other's main rivals in terms of pastas. However, Makolli are more confident about their position in the wafer market as the competition is imported and expensive. Similarly they are confident about their position in the bread market due to brand recognition.

II. ASSESSMENT OF THE POLICY LANDSCAPE

This sub-section of the paper will look at the policy landscape with a particular focus on flour fortification. Interviews were conducted with former high level representatives of the Ministry of Agriculture and the Ministry of Health. An interview was also conducted with Nicolas Oberlin, Country Director of the World Food Program.

Both of the former governmental representatives were well aware of fortified flour; the former representative of the MoH in particular could describe in detail the minerals that should be included in the premix. He also mentioned early attempts at fortification in

Tajikistan, namely when UNICEF set up special feeders in mills in Hisor, Shahrinav and Kulob and the problems these mills later ran into. When asked about the current status of fortification, the former representative of the MoA stated broadly that *"it is going to be better; we are working on nutrition as a whole"*. The former representative of the MoH stated that there are feeders, wheat, and producers but no premix. He noted that the lack of experience of producers, as well as those who would likely be tasked with controlling the process from the side of the government, would be a serious obstacle to widespread flour fortification in Tajikistan.

According to the former representative of the MoH, the previous attempt to pass legislation on flour fortification was unsuccessful because *"at that time the country was not ready, because we had to import too much flour and in the project it was written that "all flour would be fortified", that's why they couldn't manage"*. According to this same former representative, *"price was an issue"* in the wake of the high prices of that year, but it was not the decisive factor. He later added that all the project documents (pertaining to the legislation) were either *"deleted or lost"* and if some organisation wanted to start again they would need to do so from scratch. The former representative of the MoA stated that any future flour fortification should be done in accordance with international standards while giving credence to local specificities. He suggested that each region is different in terms of climate and environment and therefore different types of nutrients would need to be added to the premix for distribution in different regions.

The Country Director of the WFP in Tajikistan pointed to food insecurity, malnutrition, both chronic and acute, and poverty as the key challenges. In such circumstances he agreed that fortified flour could be one of the answers, particularly for pregnant mothers and children in the first 1,000 days of life. The WFP Country Director also emphasised the importance of parallel improvements in healthcare practices, public health measures, and public awareness of the benefits of breastfeeding. When asked about a home-fortification program with micronutrient supplements/powder packets, the former representative of the MoA said that such a project would depend on the budget. He stated that the priority is to raise minimum salaries so that people can purchase at least the minimum amount of food per month that each person needs to live healthily. The Country Director of the WFP stated that home-fortification with micronutrient

supplements/powder packets as proven to be effective in the past but that there are issues of sustainability given the likely cost and logistical complexity of such a project.

When asked about the feasibility of any nutritional intervention, the former representative of the MoA stated that any such project would only be feasible if regional circumstances were carefully considered. The former representative of the MoH stated that such interventions are feasible if those responsible are willing to start from the very beginning. He did sound a note of caution: *"(the law) needs a lot of work, effort, people... There are two legislative institutions, the president and the parliament. So for the document to get to parliament - it needs a lot of work. Who will do this?"* In terms of production, he suggested that for fortification to work, a *"couple of families"* would need to gather the financing together in order to buy an appropriate mill, even before they buy the feeder and source premix, which is, in of itself, difficult. Then there is the issue of who would have the expertise and experience to control and monitor the premix, the money, etc.

The former MoA representative suggested that the support of the Ministries of Health and Agriculture, and State Agency for Standardisation would be needed. The former representative of the MoH did not mention specific institutions or organisations, instead preferring to emphasise the necessity of having a big team ready to work on the project. According to the Country Director of the WFP, such a project would be *"no different from any other public health (initiative)... Health centres, the Ministry of Health, it would all ideally have to go through there, they have the reach and the coverage"*.

The government representatives were unsure about the level of awareness of fortified flour nationwide but both indicated that they think customers would be willing to pay more for fortified products, with one of the former representatives going so far as to say that *"money is not an issue anymore, before flour was 80 somoni, now its 150 - and people still buy it"*. Rather more cautiously, the Country Director of the WFP alluded to the need for education and sensitisation, and he suggested that in the short term consumers would probably not be willing to spend more money on fortified products.

None of the business representatives interviewed were aware of fortified flour and were unsure if, in the future, customers would be willing to pay more for fortified products. The Makolli representative indicated that *"maybe, it will replace some kinds of products"*

while the representative of Buona suggested that customers will not pay more as “*they are sensitive in terms of prices*”. Given their lack of familiarity with fortified flour, the representatives of local businesses were unsure as to what barriers there might be to fortification here in Tajikistan. When asked what effect a law on mandatory flour fortification would have on their respective enterprises, respondents of course stated that they would obey the law. However, this is an official answer and does not guarantee that the law would be followed without adequate enforcement. Further, given the level of investment that flour fortification would require, it is possible that businesses would resist the change through unofficial channels.

Generally respondents believe that the flour traders are up to scratch in a competitive market. One issue is the ban on flour exports. The WGP Country Director considers the ban a disincentive for traders He said that “*fortification goes together with this... to liberalise the market might provide more incentives... to invest and expand and develop*”.

III. SUMMARY

In summary this section has examined the business and policy landscape of Tajikistan in relation to nutrition and fortification, with a particular focus on flour fortification.

i - Business perspective and landscape

The range of products available, and their respective costs, varies little between districts within the scope of this study. Sellers in bazaars, shops and bakeries were often unsure about certain aspects of the products that they sell such as the place of origin. Sellers were afraid to discuss purchase and sale prices.

Flour sellers buy their goods from local retailers but rarely gave more details. The bulk of the flour comes from Tajik producers based in Sughd. Flour, pasta, noodles and dumplings are the best-selling cereal-based products in shops and most products are local. Customers prefer Kazakh flour, but fieldwork suggests that much ‘Kazakh’ flour may in fact be Tajik flour from Sughd sold in sacks with the markings of Kazakh firms, intentionally or otherwise. Generally bakeries offer a wide range of *non* baked from 1st sort Tajik flour bought from the bazaar. In

bazaars, shops and bakeries, respondents seemed happy with their range of cereal-based products. None of the respondents were aware of fortified flour

Families bring their wheat to their local mills, who in turn keep a certain quantity as payment. The Kolhozobod Mill is operating at reduced capacity but continues to provide its customers with flour, which they resell in local bazaars. Generally the Mill has lost its business to private firms. Tajik cereal-based product businesses such as Makolli and Buona have their own mills and a wide range of products. They appear to be doing well but they are well aware of the increasing competition in the market. By all accounts the flour market is very active and competitive.

ii - Policy landscape

The former representative of the MoH was very familiar with fortified flour and stated that there are a number of significant obstacles to flour fortification in Tajikistan; principal among them being the lack of experience of all the requisite parties. Previous legislation on flour fortification was not approved because Tajikistan was unable to ensure that *all* of its flour would be fortified. The former MoH representative believes that nutritional interventions are feasible and legislation possible but that they would require a significant commitment and a large team, including experienced personnel, to ensure its success. The support of the Ministries of Health and Agriculture, and State Agency for Standardisation would also be essential. The former MoA representative stated that any fortification or intervention would need to be responsive to local specificities.

The government representatives were unsure about the level of awareness of fortified flour nationwide, and none of the representatives of small or large businesses were aware of fortified flour. If legislation on mandatory flour fortification was passed, businesses spokespersons said that they would follow the law. It is impossible to gauge if or how business might support or oppose fortification legislation if it were passed.

All participants noted the importance of broader economic development and that the only long term solution to the various nutrition issues facing Tajikistan is

increased consumer spending power married to an increased availability of diverse, nutritionally balanced, locally produced foods in the marketplace.

Annexes: In-depth Interviews

World Food Program

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Ministry of Agriculture

Confidential former representative

Ministry of Health

Confidential former representative

Kolhozobod Mill

Confidential former representative

Makolli

Confidential representative

Buona

Confidential representative