

FEED THE FUTURE RWANDA ORORA WIHAZE ACTIVITY

Understanding influences on demand for and consumption
of animal-source foods:

Insights from 8 Rwandan Districts

December 2020

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EXECUTIVE SUMMARY



THE COVID-19 PANDEMIC HAS IMPACTED FOOD CONSUMPTION

- Decreased meal frequency and food diversity
- Loss of income
- Decreased food availability, in part due to travel restrictions
- Increased food prices
- More meals are eaten at home, esp. with children out of school
- Decreased prepared food, in part due to closure of bars/restaurants

24 HOUR DIET RECALLS FOR BREASTFEEDING WOMEN AND CHILDREN 6-23 MONTHS

DIET DIVERSITY

Women, Breastfeeding



■ Did NOT meet MDD-W ■ Met MDD-W

MDD-W ROW = 12%
NAT'L = 28%

Children, 6-23 Months



■ Did NOT meet MDD ■ Met MDD

MDD ROW = 30%
NAT'L = 40%

21 of 51 caregiver – child pairs consumed an ASF: 18 small fish, some milk, 2 meat and 1 egg

MEAL FREQUENCY

Women, Breastfeeding



■ 3x day ■ 2x day ■ 1x day

33% of women = 3 meals

Children, 6-23 Months



■ 3x day ■ 2x day

66% of children = 3 meals

OVERALL DIET PATTERN

ROW **Women's** diets = Women in the poorest wealth quintiles and in Ubedehe I (CFSVA)

Minimal Acceptable Diet (MAD) = 18% ROW **Children**

ASF PRODUCER (USE AND DECISION MAKING)

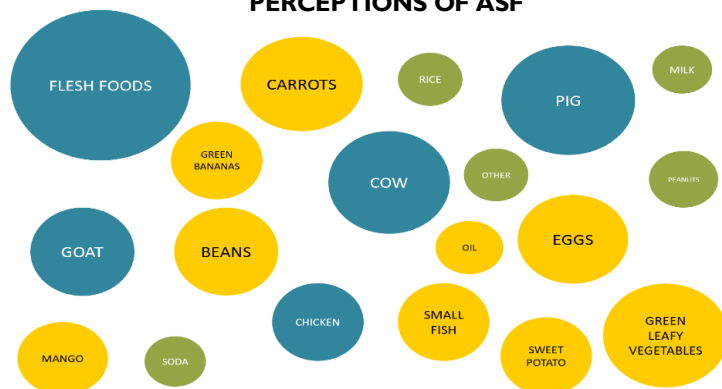
Most producer households sell their animals/ASF products, or use them for manure production. Seldom do household members consume ASF products from the livestock that they rear.

If the animal is owned by someone outside of the household, the animal's owner makes the decision about how the animal is used. If the animal is owned by someone within the household, most decisions are made jointly by the husband and wife or solely by the husband. However, women are allowed to make decisions about specific animals. All women who make decisions alone make them about **chicken use only**.

DECISION



PERCEPTIONS OF ASF

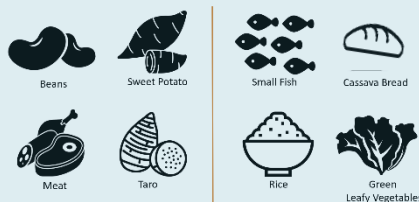


Size of Circle = # times mentioned Blue = Men Yellow = Women Green = No association

Nearly 70% of all respondents mentioned that flesh foods are associated with men compared to 8% of respondents who associated flesh foods with women. Other foods that were highly skewed towards men include the majority of the ASFs - cows, pigs, chicken and goat.

Foods that were highly associated with women include green leafy vegetables, carrots, and beans as the most common. Small fish and eggs are the only ASF associated with women.

PERCEPTIONS OF ASF STRENGTH V. WEAKNESS



Beans, sweet potato, meat and taro are perceived to offer strength. When eaten, one takes on the physical property of the food. Because animals are strong, you eat animals and become strong. Because raw beans, sweet potatoes, and taro are hard, the strength of the food is transferred to the consumer when eaten.

Foods on the right cause lethargy, according to study respondents.

EGG CONSUMPTION

Most respondents mentioned that eggs are very nutritious. Overall, eggs are well liked.

Eggs in Rwanda are expensive, according to respondents. As a result they are typically sold to solve other financial problems.

ASF producers who raised chickens saw value in selling over consuming.



ASF PRODUCTION

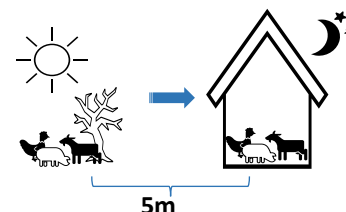


The most commonly reared livestock are cows, chickens, pigs, goats, sheep and rabbit – in order of commonality.



Cows and chicken are the **MOST** common. Respondents tend to have 1-2 cow and up to 13 chickens. Families who raise those other less commonly raised animals – like pigs and goats - usually raise 1-3 of them.

Animals are raised close to the household, typically within 5 meters from the home by day. They are kept in the home at night – especially the smaller animals. Observations and additional inquiries reveal that many of the animal tend to sleep in or very near cooking spaces



ASF PROCUREMENT

Except for milk, respondents tend to purchase ASF anywhere. There are no specific preferences. If the respondent had a neighbor with milk, they purchased there and at a higher frequency.

The key factor in deciding to purchase is simply the availability of money. If money is available, respondents say they will procure.

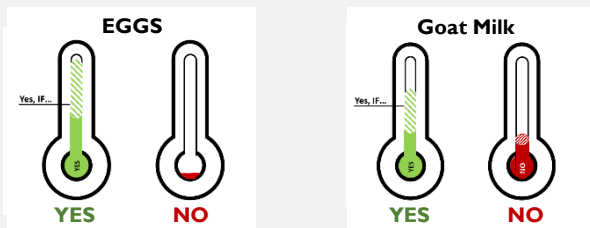


VENDORS



- Commonly sold forms of ASF include pork, beef, sheep, rabbit, goat and chicken. Chicken is not preferred by consumers due to unaffordability and size.
- Vendors sell their ASF products every time they operate, even though most said that there are other nearby vendors who sell the same products.
- Men buy cooked meat and eggs. Women purchase raw meat and small fish.
- Only a few vendors actively promote their products. They do so by calling regular customers, using signs outside of the establishment, hiring a person to announce fresh foods around the village, and sharing different ways to cook the product (e.g. mixing them with vegetables).

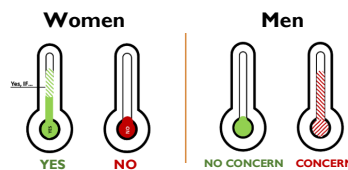
WILLINGNESS TO TRY



Caregivers are overwhelmingly willing to serve, or serve more of a variety of ASFs including meat, organ meats, fish, goat, sour milk, and eggs. While willing, many caregivers cited conditions that would have to be met for them to be able to try. Key among them: affordability. Except for small dried fish, women consider these foods to be beyond their means. Second to affordability is availability of the product even in areas where these foods are produced. For foods such as goat milk and sour milk, some women said they would want to learn about it. Of note: no one questioned the health or nutritional value of the foods, to the contrary, many women cited the nutritional value of the foods, especially for young children.

DECISION MAKING AND WOMEN'S EMPOWERMENT

- 100% of respondents say women *should have* equal rights.
- Respondents mention that men currently control the money and therefore have the right to eat more expensive foods (e.g. meats). However, all partners say that they are willing to share these responsibilities with women.
- 12 of the 31 responses to this explain that women in their household and community already independently make decisions or share decision making responsibilities in the household. However, none of these responses were from partners in the South.
- When asked about men taking more responsibility for procuring meat for the family: Caregivers were agreeable although concerned about stressing the man if he did not have money. Men on the other hand did not like the idea, saying they would worry about disappointing their partner.



RECOMMENDATIONS

- Promote daily consumption of an ASF as part of the family diet and for young children (not at every meal). Also include eating at least 3 times per day.
- Do not treat ASF as one food or as if they are the same. Rather, each food should be named, and the factors associated with its consumption addressed.
- Demand for ASF is high. Create demand only as it is matched with improved access to the food.
- To motivate women to prepare and serve ASFs they must feel enabled—to know HOW. The nutritional value of ASFs is not an important motivation.
- Key social change themes to develop immediately are a) joint decision-making between partners; b) male responsibility for ASF procurement; c) positioning key ASFs as healthy Rwandan foods for all families.
- Develop activities for particular segments of the ROW population. For example: a) producer HH who do not consume self-produced products; b) districts in regions with the highest need (Northern and Southern Province) c) districts where cultural preferences could determine successful ventures.
- Invest in ASF value chains that are best able to address the needs of ROW families: small fish, eggs and milk and perhaps chickens. They are in the woman's domain and most likely to be consumed. For all value chain investments, the largest impact on the ROW population will be through small scale, local enterprises.
- Increase women's control in this sector, by engaging women in production and selling; changing the HH dynamic to inclusive decision-making; shift some responsibility to men; sensitize retailers to women's needs.

ASF PROCUREMENT OBSTACLES

Most respondents mentioned that they encounter obstacles when procuring ASF – the majority are financial. The financial barriers are interrelated and include purchasing power and cost of ASF relative to other foods. All others mentioned obstacles related to the availability of ASF in the respondents' communities. Some ASF is only sold in distant markets, causing respondents to travel outside of their village, and incur added expenses. Other less significant (but important) barriers that need to be addressed in order to increase consumption include the perceived value of ASF, instructions on how to prepare and advice from trusted friends and family. To overcome the obstacles that were mentioned, women proposed three forms of mitigation:

- Animal rearing (some respondents only wish to sell, others would use for consumption)
- Buying cheaper foods that feed the entire family, like beans and potatoes
- Gaining employment



ACRONYMS AND ABBREVIATIONS

ASF	Animal Source Food(s)
CFSVA	Comprehensive Food Security and Vulnerability Analysis
DNA	District Nutrition Advisor
DPM	District Program Manager
MAD	Minimum Acceptable Diet
MDD	Minimum Dietary Diversity
MDD-W	Minimum Dietary Diversity-Women
PWD	People with Disabilities
ROW	Rwanda Orora Wihaze
USAID	United States Agency for International Development

INTRODUCTION

This study was developed to gain insights into the demand for and consumption of animal-source foods (ASFs) in 8 districts of Rwanda; with the purpose of strengthening the market system response to meet consumer need, especially of those vulnerable populations. Study findings provide a view into the perceptions and practices of typical families in the Orora Wihaze program area and complement what is known from other quantitative studies, about the current poor consumption of ASFs. What this study offers beyond others is explanations for why people chose, or do not choose, the foods that they consume with a focus on ASFs. These insights that describe the reasons behind consumption patterns should allow the market system to tailor activities and accelerate progress in enabling Rwandan families to better access and use ASFs so all family members can enjoy the benefits of a healthy diet that includes animal-source foods.

This study was in process for all of 2020. Early in 2020, the study team presented the protocol and all research instruments to the Rwandan National Ethics Committee and received permission to conduct the study in March 2020; however, the field work was delayed in March due to COVID-19 restrictions on travel and congregating. When restrictions were lifted in August the study field teams began the interview process in the districts. As such analysis and reporting was completed through the final quarter of 2020. Under normal circumstances, studies that involve human subject interviews face many contingencies. In this case these were compounded by the uncertainties of COVID. It required tremendous persistence on the part of the entire Orora Wihaze management and study teams to complete this work. We are particularly indebted to the field team, including the ROW District Program Managers and District Nutrition Advisors who did the interviewing and local teachers who served as note-takers, translators and transcribers. This group had to work under difficult and changing circumstances. We would like to offer a special thank you to the coding team who worked tirelessly and meticulously to support the data analysis process. And, our appreciation to the ROW partners who reviewed and gave valuable comments on the report drafts.

The study, of course, would not have value without the openness and thoughtfulness of the families and vendors who generously gave their time and kindly shared their ideas about their current practices and what might be possible under different circumstances. We are grateful and hope that this report accurately reflects their opinions.

BACKGROUND

The Government of Rwanda's development goal to bring Rwanda to middle-income status by 2035 will require an ambitious program of human capital development. Key among the factors to bring about that transformation is a well-nourished population, importantly, optimally nourished young children with improved chances of developing to their full potential. Optimal nutrition comes from the consumption of a healthy diet and the control of disease. While Rwanda is making significant strides in economic development reflected in per capita income growth, the growth in income is not translating to healthier diets and improved nutrition, particularly among women and children in vulnerable families.

CURRENT SITUATION

Rwanda has a poorer food consumption and nutrition situation than many countries in the Region.

In 2017 Rwanda remained above the average for the Region in the percent of the population whose food intake is not sufficient to meet dietary energy requirements (undernourishment) (22.8% compared to 36.8%). The 2018 Comprehensive Food Security and Vulnerability Analysis (CFSVA) in Rwanda shows that the share of the population with acceptable Food Consumption Scores declined from 79% in 2010 to 76% in 2018. This overall picture of food security is reflected in particularly vulnerable populations: In 2018, 17% of young children met the standard for a Minimum Acceptable Diet and 28% of women had a diet that met the Minimum Diet Diversity standard.

The nutritional status of a country's youngest children tends to be a good reflection of how the country is doing overall related to providing an environment where families can enjoy healthy diets and prevent disease. Rwanda has made significant progress in the fighting malnutrition, particularly in controlling malnutrition caused by extreme or sudden food insufficiency (wasting). When chronic undernutrition or stunting that represents a continual lack of optimal nutrient intakes is used as the measure, Rwanda has made progress but that progress is slowing. Between 2010 and 2015, rates of chronic malnutrition among children under 5 years decreased from 44% to 38% but seem to have plateaued. The 2020 Global Nutrition Report reports that 38.3% of children under 5 years of age are still affected, which is higher than the average for the Africa region (29.1%).

WHY THE FOCUS ON ASF

Boosting the consumption of Animal-Source Foods (ASFs) is a critical element to support Rwanda's development goals.

The consumption of animal-source foods plays an important role in a healthy diet, particularly among the segments of population experiencing rapid physical and mental development such as young children and women during pregnancy. ASFs are nutrient dense foods that when consumed in small amounts provide quality protein, vitamins, minerals and amino acids, all nutrients critical for growth and development. Evidence supports that the contribution of ASFs in improving the linear growth of children, a marker not only of physical growth but of general cognitive and social development. A review of data from Demographic and Health Surveys in 49 countries showed that eating more than one type of ASF was associated with a 2.3% reduction in stunting. (Headey et al 2018). Thus, improving the daily consumption of ASFs in families' diets is important to human capital development and Rwanda's vision.

FAO Global Consumption Data places Rwandans as some of the lowest per capita consumers of protein, primarily due to low consumption of ASFs; this is especially true when compared to countries with similar economic profiles. Consumption of ASFs varies widely depending on household income, although overall only

21% of Rwandan households consume heme-rich iron foods (ASFs) even once a week. In households with poor or borderline consumption scores (24% of the population), 3% of families consumed food that is a source of heme iron. In 2018 an analysis of women's diets in the previous 24 hours showed: 17% had consumed a flesh food; 13% milk or a dairy product, and 2% eggs. Children's diets mirror women's diets. There is an important dietary gap that even small amounts of ASFs can fill.

ORORA WIHAZE

The Orora Wihaze Activity provides an opportunity for the Market System to meet consumers' needs to improve ASF consumption.

The Feed the Future Rwanda Orora Wihaze Activity was conceived by USAID with the goal to sustainably increase the availability of, access to, and consumption of ASF. Under the leadership of Land O'Lakes Venture37, Orora Wihaze will focus on its two objectives: 1) strengthen inclusive private-sector led ASF value chains, specifically goats and sheep, fish, pigs and chicken, and 2) increase the demand for and consumption of ASF by women and children. Project activities will be concentrated in Burera, Gakenke, Nyamagabe, Nyamasheke, Rutsiro, Ngororero, Kayonza and Ngoma districts with a focus on households that produce ASF and in consumer households. Orora Wihaze will purposefully engage households led by women, youth and persons with disabilities (PWD).

Orora Wihaze takes a market system development (MSD) approach to achieving its two objectives and its goal. The MSD approach aims to enable micro, small and medium enterprises and other organizations in the market system to strengthen ASF value chains. Integrated into the MSD approach is a focus on achieving specific behavioral outcomes for market actors and consumers. This emphasis on behavior change will support the alignment of the project's two objectives to ensure they are mutually reinforcing and to build market sustainability. Activities will be designed under six broad intervention areas: production, product markets, end market access, financial services, nutrition extension, and women's empowerment.

METHODS

The consumption study was designed following a thorough review of existing literature that is primarily quantitative in nature, describing food consumption and the animal source food market in Rwanda (See Annex I for the bibliography). Therefore, the consumption study used qualitative methods to gain insights into the immediate environment surrounding the consumption of Animal Source Foods (ASF): perceptions of ASFs, decision making related to obtaining, preparing, and consuming foods (during or outside of mealtime) and the determinants/factors that influence behaviors described in the statistics. To gain insight, the following qualitative methods were used with their associated respondent group:

- In-depth interviews/observations with child caregivers in “1,000 Day” households—those who produce at least one ASF for sale and those who are not producing ASF
- In-depth interviews with fathers in the same “1,000 Day” households—those who produce at least one ASF for sale and those who are not producing ASF
- In-depth interviews with older women (grandmothers) in the same “1,000 Day” households—those who produce at least one ASF for sale and those who are not producing ASF
- In-depth interviews/observations with sellers of ASF in local informal and formal markets and specialized shops or food stall

To adequately address the study objectives, Areas of Inquiry (Annex 2) were outlined and explored. Each question used in the data collection tools was intentional and directly aligned with these areas of inquiry.

SAMPLE

As the purpose of this study was to conduct a formative assessment that can be used to generate widespread insights and address gaps in understanding; careful selection of the study sites was critical. The research team conducted a data search and informal key informant interviews to thoroughly understand the socio-economic characteristics of the target population. The review of data from the Rwandan census, Rwanda Demographic Health Survey, and key informant interviews suggests that the populations for which the study targeted are relatively homogenous. Though the preliminary data search suggests that there are many similarities within the target population the research team identified, through the informal key informant interviews, subtle areas of distinction. Preliminary discussion of the site selection revealed the following important characteristics (value chain, socio-cultural attributes, occupation, religion and type of village) to ensure that we would be including key features of Rwanda Orora Wihaze (ROW)—representative of our 8 districts, not necessarily Rwanda’s population more generally.

In order to produce data that was comprehensive and representative of the districts in which ROW operates, the sample was drawn from all four provinces (North, South, East and West) to get a picture of the critical animal value chains and where they predominate. Within each district, villages were selected based on their ability to align with the key characteristics that are outlined in the table below. A full display of the village characteristics is found in Annex 3.

Given the characteristics of the target populations, duration of the study, and overall objectives of the assessment; the research team used two sampling approaches:

- Purposive Sample: The respondents for the in-depth interviews and focus group discussions reflected the key characteristics and distinctions outlined in the table in Annex 3. Within each district, we selected 1–2 villages or sample areas depending on the homogeneity of the district and the overall assessment sample. Basic guidance was that every cluster needs at least two sample points; therefore, if we want to look at perceptions and patterns in Adventist communities, we should have at least 2

sample points. For example, perhaps a community in Burera and one in Rutsiro. If we want to explore patterns in more urban areas, we would sample part of a small town in Nyamagabe and in Kayonza. The same was true for villages where many adults work in mines or tea cooperatives. We sampled non-ASF producing households at varying distances from the local markets that sell ASF.

- **Convenience Sample:** While the initial sample of vendors was identified through the information shared at the household and community level, any other ASF vendors that were interviewed and observed were sampled based on their convenience to the main research sites.

RECRUITMENT

For each selected community, ROW district staff arranged with the community agent or the health facility to get a list of families who have children under the age of two. Working with the community leader, the list was divided by the families who are known to produce ASF and those who do not produce any ASF food.

Using the list(s) and with the help of someone who knows the community district, ROW staff visited the homes of every 2nd or 3rd potential participant. A recruitment form was completed for each person contacted during this process and informed consent was administered for those who agreed.

DATA COLLECTION

Data was collected over 2-3 weeks by District Program Managers (DPMs) and District Nutrition Advisors (DNAs), supported by locally recruited teachers who took notes. DPMs and DNAs underwent two intensive training sessions, one in-person and one virtual with the notetakers. The interviews were conducted in Kinyarwanda and translated to English for data coding and analysis. Finally, all interviews were recorded and validated (by supervisors) against the translated interview transcripts.

ANALYSIS

Data were coded and analyzed using Dedoose Software.

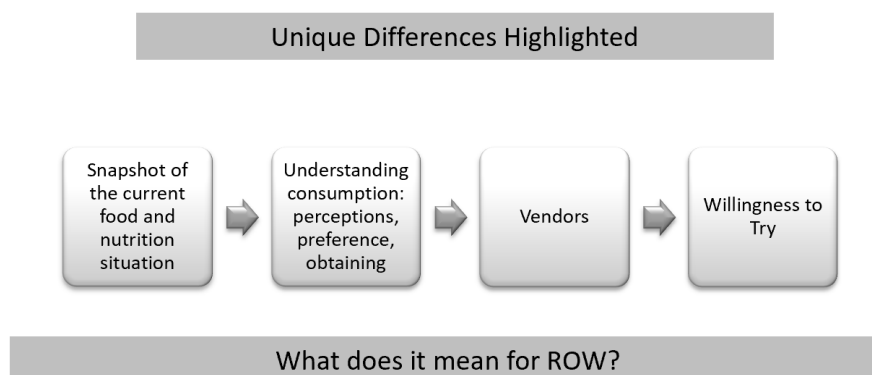
ASF Producer Status				North		South		East			West								
				Burera		Gakenke	Nyamagabe		Ngoma	Kayonza		Nyamashuke		Rutsiro			Ngororero		
		ASF Prod.	Non ASF Prod.	Gashore	Rwinkuba	Musave	Murangara	Biraro	Rwamutabazi	Muganza	Rubirizi	Gahengeri	Buvungira	Mikingo	Kinunu	Kivugiza	Gihari	Nsyabire	Nyanza
Caregiver	64	37	27	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Partner	32	18	14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Older Women	16	14	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vendor	22	---		3		3	2	3	2			3		3			3		

LIMITATIONS

1. COVID- 19: The 2019 SARS-CoV-2 pandemic was initially identified in Rwanda in March 2020, approximately one week prior to the original launch date of the Consumption Study. As a result of the national lockdown, the study was postponed until June 2020. While the researchers were mindful of the shocks and distress that were inevitable during this time, and they were considered during study re-design and data collection, analysis, and interpretation, a few of the circumstances require mention.
 - a. Travel restrictions around the country prohibited the use of many of the interviewers trained prior to the delay, who lived in or around Kigali. Because interviewers could not travel between districts, additional ROW District Nutrition Advisors and District Program Managers were brought on and trained as interviewers. Local teachers, temporarily unemployed because of the pandemic, were trained as notetakers. The training and supervision of this team was done virtually and although thorough and consistent was not standard practice.
 - b. Masks, group gathering limitations and social distancing measures created challenges in the data collection.
 - c. Additional pandemic-influenced delays caused some interviews to be rescheduled, canceled, shortened, etc. As a result, some gaps in the data exist. Triangulation measures were employed to attempt to generalize and synthesize in absence of missing data.
2. Social desirability bias was suspected in some responses from partners, particularly about decision-making and women's empowerment. As such the themes were triangulated through various questions, targeting all study respondents.
3. The pool of older women respondents was limited, and many of the women did not reside within households with children under 2 years of age as originally planned. As a result, selection bias may have contributed to responses that are not generalizable for certain areas of inquiry. Data from these respondents were triangulated and, in some cases, omitted from analysis (e.g household decision-making).

FINDINGS

The findings presented throughout this report represent key distinctions seen between respondent segments defined by geography, ASF producer status, gender, etc. Unless otherwise stated, there are no differences in the results by respondent segmentation. The report is laid out per the schematic below.



SNAPSHOT OF THE CURRENT FOOD AND NUTRITION SITUATION

COVID-19: The COVID-19 Pandemic has Impacted Food Consumption.

NOTE: This study was not designed to rigorously investigate the impact of shocks on food consumption and food systems. However, since data collection took place during a period of lingering restrictions, and because the international community forecasted a resulting deterioration in global food security and nutrition a series of questions were added to understand how the COVID-19 pandemic may have impacted household-level and individual diets and the food environment; and whether such impact must be considered when framing the findings, conclusions, and recommendations from this study.

Almost all respondents said that COVID-19 has impacted their diet, resulting in reduced food consumption. This includes reduced meal frequency (sometimes from two to one meal per day) and reduced food variety.

“[Our] family’s diet has changed. Before the lockdown, we used to go to sell small fish in Ruhengeri or Byangabo markets but we no longer go there. We only sell in nearby small markets and larger markets. The income has decreased. There are some food we no longer buy because of not having enough money by consequence the diet has changed” – Caregiver

Respondents described the following ways COVID-19 has impacted their diets:

- Loss of income, which impacted the ability to purchase food (both quantity and variety)
- Increased food prices and decreased availability of common foods (because of movement/travel restrictions and border closings)
 - For example, Irish potatoes, sweet potatoes, beans, and fish are all noted frequently as foods that are no longer available, though foods from all food groups are cited.
- Increased need to provide additional meals for children and youth during school closures, as school lunch was no longer provided.

Amongst respondents who did not change their diet as a result of the pandemic, there were no notable identifiers to explain why they may not have been impacted.

Though vendors were not questioned specifically about the impact of COVID-19, they mentioned that the availability of foods and the purchase of foods has declined, and that their method of food preparation (e.g. raw vs. cooked) has changed. Many vendors operate as bars or restaurants, which remained closed during the start of the pandemic. This limited the availability of cooked meat (specifically brochettes) and other popular prepared foods.

Daily meal patterns: 24 Hour Diet Recalls ¹for breastfeeding women and children 6-23 months show poor diet diversity & low meal frequency.

Breastfeeding Women

Most women who completed their 24-hour recall did not meet the standard considered the minimum diet diversity for a healthy diet (88%).

To compare with national statistics: 12% of women, all breastfeeding, who reported on their diet met the **Minimum Dietary Diversity** recommendation (MDD-W). [The national MDD-W is 28%, 2018 CFSVA; disaggregated by wealth categorization the study population fell in the poor wealth quintile and within the categorization for people categorized within Ubudehe I [per CFSVA findings].

There are distinctions of note:

- **Northern and Southern Province** have the poorest diet diversity. More than three quarters of women there consume 3 or fewer food groups in a day.
- No woman consumes more than 5 food groups during a day. Of the 6 women consuming 5 food groups half were in **Eastern Province in Ngoma and Gahenge**.

Critical to meeting the MDD-W threshold is the presence of ASFs in the diet. However, ASFs are rare in the women's diets. Of the 51 women who responded, 21 had an ASF as part of her diet. 18 respondents consumed small fish; 5 milk (in porridge); 2 meat (pork & beef); 1 egg, the day prior to the interview.

Producing ASF in the homestead did not influence consumption.

Compounding the poor diet diversity is the low frequency of daily meals. The two-thirds of women eat 1 or 2 meals each day. Alarming, about 10% of women report eating only once in the previous day. Of note: Half of these women only consumed food from one food group, tubers.

There are differences between provinces:

- Only in **Western Province** do half of women have a meal frequency of 3-4 times in a day.
- **Southern Province** has the highest level of women eating only once per day. It is particularly acute in **Buvingiri**.

Looking at women's diets overall, there is no one community or district that stands out as being "above average." Examples of the best meals include:

¹ 24-hour dietary food recalls were conducted close to, but not exactly, according to WHO recommendations (questioning using the list of foods/food groups was truncated). Also, although in some cases amounts of foods consumed were noted they were approximate and there were no weights taken. Therefore, diet diversity may be over-estimated because "credit" was given if a food such as a legume or ASF was found in a sauce.

- green banana, sweet potato, beans, small dried fish and carrot w/other vegetables
- Irish potato, beans, dried fish sauce, green vegetable
- green banana, silver fish, green vegetable (amaranth), peanut sauce

Poor diets however, have clustered in a few spots in each province:

- North: Gashore
- East: Kayonza, especially Muganza and Rubirizi
- West: Rutsiro, especially Gihari
- South: Namagara especially Buvingiri

Children 6-23 Months

As reported by their caregivers, the majority of children less than 2 years of age did not meet the minimum standard for diet diversity for a healthy diet (70%) or for a minimum acceptable diet (82%). Of note is that all children are breastfed, even those who are almost 24-months-old.

To compare to the national averages: 30% of children in the sample met their **Minimum Dietary Diversity** (MDD). Most participant children were in their second year of life. [The national MDD for children 6-23 months old is 40%, although it increases as children get older and is about 44.5% for children in their second year of life (2018 CFSVA).]

21 of 50 children had ASFs in their diet. Small dried or fresh fish were the most common ASF. A few children in **Eastern and Western Province** had milk in their porridge, 2 children had meat (pork and beef) and 3 had egg.

There are distinctions to note in children's diet diversity:

- In **Northern and Southern Province** diversity was the poorest; across these two provinces only one child consumed a diet with 4 food groups.
- **Western Province** had the best food diversity; it was the only province where children consumed foods from more than four food groups in their daily diet. 10 children had 4 or more food groups. These children were from **Kinunu in Rutsiro District**. They are the children who received eggs.

Two-thirds of the participant children met their minimum meal frequency (3 meals/day). Children fared better than their caregivers because, generally, they eat porridge in the morning. While the majority of children ate 3 times a day, only a few had 4 meals, and no one ate more than 4 times.

Combining breastfeeding, with meeting the minimum meal frequency and diet diversity offers an indication of children who are receiving a **Minimum Acceptable Diet** (MAD). Most of these children are not meeting the MAD standard (82%); 18% do meet it. [Nationally about 17% of children 6-23 months meet the MAD standard (2018 CFSVA).]

There are provincial differences:

- No child in **Northern or Southern Province** met the MAD standard.

- Just under a third of children **in Eastern and Western Province** met the MAD standard. The inclusion of ASFs was the element that made the biggest difference, allowing children to reach this threshold.

Examples of the best meals received by these children include:

- Green banana; small dried fish; groundnut sauce/oil; fruit & sorghum drink
- Sweet potato; dried fish; peanut sauce
- Irish potato; beans; small dry fish; green vegetable; oil

Other foods in the diet: The Food Frequency Recall shows that the majority of ASFs are rarely consumed during a year.

Caregivers completed a food frequency recall to complement the 24-hour dietary recall. (Respondents were prompted about specific foods). This recall allows for an assessment of other foods that might be eaten by an individual on a regular basis but may not have been consumed during the previous day. It also offers a glimpse into seasonal foods and foods eaten only occasionally.

There are only a few foods that people mention as “daily or near daily” foods: Green banana, sweet potato, green leafy vegetables and beans.

Foods that can be expected to be in the family diet on a weekly basis include: Cassava, corn flour, vitamin A rich fruit, dried fish, and, for some families, milk.

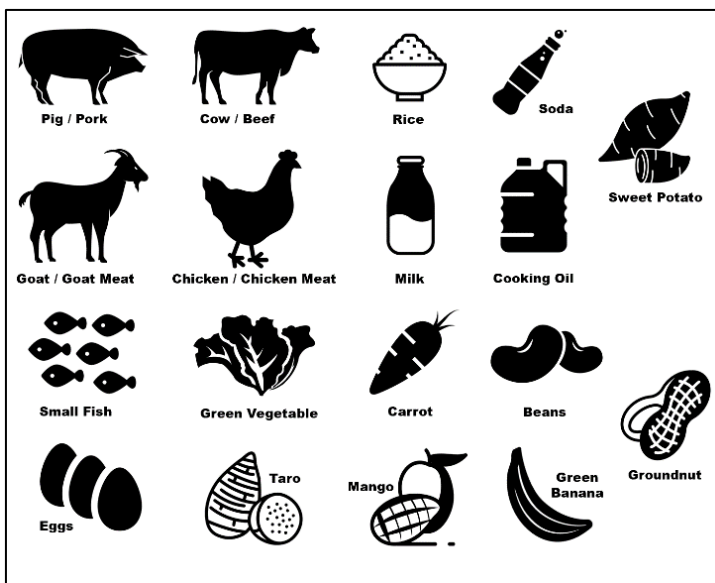
Foods that are consumed several times a month are: Taro/cocoyam; rice, Irish potato, and sweets (although about a third of people say they eat these last three foods rarely).

Foods identified by the majority as eaten rarely, but where at least 25% said they eat them occasionally are: Eggs, fresh fish, sour milk and beef

Foods rarely consumed by almost all families are: Cheese, goat milk, yogurt, goat meat, chicken, pork, and sheep

UNDERSTANDING CONSUMPTION: PERCEPTIONS, PREFERENCE, OBTAINING

Perceptions: Perceptions of ASFs tend to be gendered and tied to a person's identified economic status.

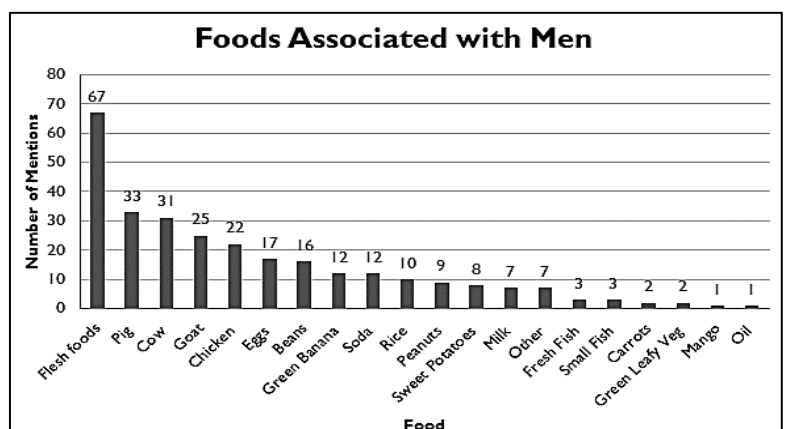


A robust collection of questions was designed to understand underlying, but potentially widespread perceptions, social norms and cultural beliefs about foods. Caregivers, partners and older women were given eighteen cards - each displayed one food item per card. Those food items, depicted on the left, included pork, beef, rice, soda, goat, chicken, milk, cooking oil, sweet potato, small fish, green vegetables, carrot, beans, eggs, taro, mango, green banana and groundnuts. After confirming their knowledge of each food picture, respondents were asked to place the food cards beside either the person (a man or woman) or characteristic (sickness, strength, weakness, etc) that comes to mind when

thinking about each food. This collection of findings highlights general food association by gender and other states of being. They provide an explanation as well as any additional stratification of those findings (by location, respondent type, age, religion, etc) if they were apparent and useful for general understanding and ROW utilization.

Foods Associated with Men

Animal-source foods, except for milk and fish, are overwhelmingly associated with men. Flesh foods, as mentioned throughout this section, capture any mention of a specific meat or a general mention of the word “meat,” but do not include milk, eggs, or fish. Of 101 unique responses, 67 mention that flesh foods are associated with men. The bar graph here shows both the collective mentioning of flesh foods and the specific food - ASF and others - that were associated with men.



- There is no significant variation in this response when looking at the finding by respondent type (caregiver, partners, older women).
- In most villages, most respondents associated ASF/flesh foods with men, **except for Gahengeri, Gashore, Kivugiza and Muganza**. In these villages most respondents did not mention flesh foods as being associated with men.

- In two villages, **Gihari and Mikingo**, all respondents say that meat is associated with men. When controlling for respondents in these two villages, the narrative shows a clear linkage with bars, restaurants and pubs. Four of the six respondents from Gihari mentioned that flesh foods are associated with men because they consume them in these bars, restaurants and pubs. This perception was shared by all three respondent types.

“By considering general understanding I gave pork and fish to men because normally they are the ones who eat it in larger numbers in bars than women. Large numbers of women do not like [to] behave like that in our community. Women are usually busy with home tasks and some of them dislike pork because of its bad acts when it is alive.” – Caregiver Respondent from Gihari

“[I] surrendered the pork meat to the men because it is prepared in the restaurant and the men are supposed to frequently go into the bars and the restaurant. They take pork meat with sweet banana.” – Partner Respondent from Gihari

“We normally share what I cooked here. But I put meat on the men’s side because they usually eat out of the home in bars.” – Older Woman from Gihari

- All other respondents from **Gihari and Mikingo** mention that flesh foods are associated with men for reasons related to money, mobility, and gender roles. This is briefly highlighted below but will be further explored throughout this report:

“It is their responsibility to buy meat, he is the head of the family.” – Caregiver

“[For] eggs it is because they like moving or voyaging. [For] pork meat, the men get considerate payable jobs which incite them to buy it. So women cannot afford them to buy it. We always get less money than the men. [For] goat meat it is expensive no woman can afford it [For] chicken it is also very expensive the reason why no woman can afford to buy it.” – Caregiver

Bars, Men and ASF:

Bars in Rwanda are typically located in trading centers, alongside other vendors and in local markets along main streets to ease accessibility. Most of them are mixed with restaurants (commonly known as “Resto-Bars”). These include men who live nearby or those who or are in that area for a short stay. In bars people usually drink beer and eat roasted meat accompanied by green bananas or potatoes though some bars serve boiled meat as an additional dish.

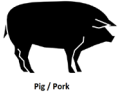
16% of respondents mentioned that men eat ASF at bars. Of the respondents that mention that men eat ASF at bars – they mainly mention pork, goats and eggs as the top sources of ASF. It should be noted that, according to this data, it is culturally taboo for women in our sample to visit bars and therefore are not privy to the meats that are traditionally served there, unless their partners bring them home.

“[That’s] how we have found it in our society, you can’t find a woman in restaurant or bar eating goat or pork. Unless a husband brings it home for cooking”. – Caregiver

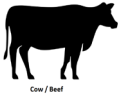
Brochettes (Rwandan kebab) are mentioned frequently throughout the study as food that men eat when they are away from the house, especially at bars and restaurants.

Foods Associated with Men: Pork, Beef, Goat, Chicken

From the aforementioned quotes and bar graph data, it is clear that pork and beef are the meats that are most specifically associated with men. 33 of the 101 respondents specifically associated pork with men, and 31 associated beef with men. When looking at the geographic distribution of responses, there are minimal differences at the district level. Further exploration at the village level shows:



- **None** of the respondents from **Gahengeri (Kayonza)**, **Mikingo (Nyamasheke)** and **Muganza (Kayonza)** associated pork with men.



- **None** of the respondents in **Gahengeri (Kayonza)**, **Gihari (Rutsiro)**, **Kivungiza (Rutsiro)** and **Musave (Gakenke)** associated beef with men.

Though less frequently mentioned than pork and beef, goat and chicken are also associated with men. 25 respondents associate goat meat with men, and 21 respondents associate chicken meat with men. There is also similar geographic variation in responses for these two types of meat, but a few differences are reported:



- **None** of the respondents in **Gahengeri (Kayonza)**, **Mikingo (Nyamasheke)**, **Muganza (Kayonza)** associated goat with men.



- **Rwamutabazi (Ngoma)** is the only village where most of the respondents associate chicken with men. In all other villages, some respondents associate chicken with men, but not *most*.

Eggs were mentioned less frequently than other types of ASF. According to respondents, because men are often in motion, eggs offer a small option that can be eaten while they are in transit and away from home.

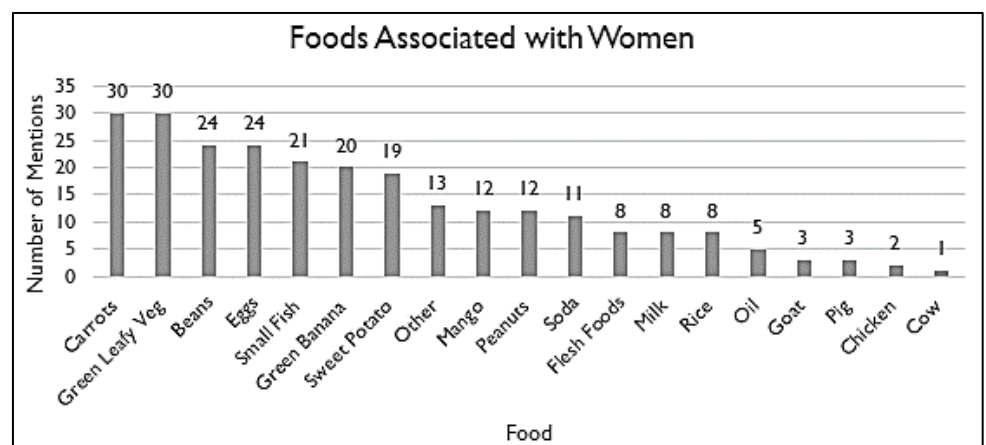
“Foods that are associated for the men are pork (No no no, pork can’t be for women), This is because men have money and access to income generating activities. Women do not have money. If you are given 200Frws how can you dare to buy cow meat? What if a woman has got an income generating activity, what would be the change in the purchased food? A woman with money is a man. She behaves like a man. This is a rural area where gender equality and equity are yet not applicable.” – Caregiver

“Food that is associated with men include pork, chicken meat and milk. Back some years ago, in the culture, they said that milk is reserved for men. Why have we put these foods on men? Men are respected. They are some of the things that you can give him while you can’t consume them. They are superior to women. Men are household leaders.” – Caregiver

Food Associated with Women

In the previous section, the findings show a clear association between flesh foods and men, based on the 67 of 101 respondents who grouped these food cards around men. When collectively examining the cards that were associated with women, only 8 respondents said that flesh foods are associated with women. ASF that are

associated with women are eggs and small fish. Overall, ASF was not associated with women, instead vegetables are linked to women. These food associations will be explored in the coming sections.



There were also several findings about the affordability and availability of the foods associated with women.

“The foods in women column, are associated with women because they like the soft foods and bananas, and women like to buy cheap foods, because don’t want to waste the money of a family, as they are thinking on the development of family than men do.” –Caregiver

Some respondents elected to place foods in the middle – but for a variety of reasons including

- Association with children
- Association with both men and women
- No clear association with anyone.

The most consistent responses reflect that everyone should share all food if it is available.

“In fact, all foods are placed in the middle, because except for some people who have bad attitudes, no one in a family should be eating alone. Both women and men should be sharing everything they have in a home.” –Older woman

“If financial capabilities remain constant, I think all these foods (those in women column, those in men column, and those one I did not classify) can be considered as foods for all of us, women, men and youth. Because, what we don’t eat, is not because we don’t like them, it is because we cannot afford them.” -Partner

Foods Most Associated with Women: Carrots, Green Leafy Vegetables, Beans



“These foods are associated with women simply because a woman can purchase them without asking me.” – Partner



“For women we target the cheapest food because you cannot buy meat or any other expensive food on your own and ignore your family, it is not possible.” – Caregiver



“The foods that help women increase breast milk. Women have to take care of babies, so they purchase what they can feed their children, these are things they can afford.” – Partner

ASF Associated with Women: Eggs, Small Fish and Flesh Foods

53% of respondents from **Nymasheke**, which is bordered by Lake Kivu, associated small fish with women (though only one respondent associated small fish with men in the same district). **Nyamagabe**, which is not bordered by a lake also associated small fish with women. ASF that were associated with women were mentioned because of the women’s role in parenting and pregnancy.



“Eggs and fruits because women take off their children. These foods are associated with women because they need body nutrient due to having little life. When a woman is pregnant needs fruits and eggs.” – Caregiver



“Dried fish (This is the meat for women).” – Caregiver

- In **Rwamutabazi** about half of the respondents said that flesh foods were associated with women.
- No one from Biraro, Buvungira, Gahengeri, Gashore, Gihari, Kivugiza, Mikingo, Musave, Nyanza, Rubirizi associated flesh foods with women. **The 8 responses came from Rwinkuba, Rwamutabazi, Nsyabire, Murangara, Muganza and Kinunu.**

Foods Associated with Physical Strength and Weakness

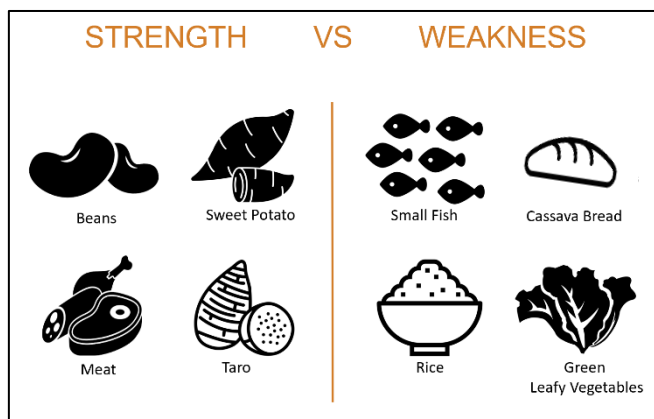
The foods that are associated with giving the body strength are, in order of frequent mention, beans, sweet potatoes, yams and meats. While there are other foods associated with offering strength beans, sweet potatoes, yams and meats are collectively mentioned at a significantly higher frequency. Approximately one third of the respondents mentioned meats as foods that offer strength.

Much of the sample included farmers, whose perception of foods that are good for strengthening the body are those that give farmers enough energy to perform duties without difficulty and keep the body satiated throughout the day.

“Sweet potatoes, taro and beans are associated with giving the body strength because when you eat them you get strength and become satiated so that you can be able to work.”- Caregiver

“Sweet potatoes, coco yams and beans provide energy in our body. When you have eaten them, you may even spend even two days without eating, you really feel strong.” -Caregiver

“Sweet potatoes and beans provide strength in the body because when one has eaten them, he can go in the farm and cultivate courageously.” –Caregiver



Respondents also specifically note that because some foods have a tough or hard texture, they can offer you strength.

“Potatoes and Cocoyam - They are tough and last longer than others in the stomach, the foods that last longer in the stomach can make the body to be stronger, especially during working hours.” -Caregiver

“These foods are hard when you eat them you feel strong. When you consume sweet potatoes [or] beans you feel strong which is different from consuming bananas.” -Partner

Continuing with the idea that you take on the physical properties of the food when you eat it, respondents mention that when you eat an animal that has strength, you also gain that strength.

“Yes, all of these food give body strength, you can consume any animal having strength and you gain that strength, and when you eat beans you can gain strength since you are consuming good and healthy foods.” -Partner

Unlike foods that give strength, respondents demonstrated less consensus about foods that weaken the body. Nearly half of the respondents say that there are no foods that weaken the body. Cassava dough/bread and small fish (cooked in oil or soup) were among the most consistently mentioned foods because they increase lethargy. Rice and green leafy vegetables were also mentioned, but without consistent explanation of how/why they make the body weak.

Exploring Food-Related Cultural Norms through Special Occasions

As a part of the food cards activity, respondents were asked which foods they would expect to eat during a special occasion. Special occasions mentioned included New Year's Day, Christmas and weddings. Typical foods and drinks served during special occasions include rice, green banana, green leafy vegetables, soda and meat. Specifically, almost 90% of respondents who answered this question said that meat was expected to be available during special occasions and approximately one third of those said meat emphasized cow meat. About 50% of respondents in **Burera** and **Nyamagabe** districts mention cow meat.

“I would expect to be served cow meat, cooking oil, carrot, green plantain beans, rice, green leafy vegetables and Fanta because they look like modern food for us (farmers) who live in the countryside.” -Caregiver

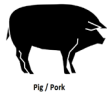
“Beef meat is food that I would expect to be served at a special occasion. Because beef meat is cheaper than poultry meat and goat meat.” -Caregiver

“Yes, there are foods eaten at special occasions such as meat; we rarely eat them because they are expensive. We eat them when celebrating Christmas and New year. Even before, when we were children, our grandfather used to slaughter one of the livestock and tell us to take some to the relatives and neighbors, or invite them to come and share with us on these special days (Christmas and new year). There should be beer as well.” –Older woman



For those respondents who did not expect to have meat during special occasions, eggs, small fish, beans, sweet potatoes and rice were mentioned as common foods. These respondents were dispersed around the country and evenly represented caregivers, partners and older women.

Most Popular Animal Source Foods



Despite the considerably low consumption of ASFs in the study population (as seen in the 24-hr recall and food frequency findings), and its clear association with men, respondents generally like ASFs and would like to consume their favorite types. Pork, beef and small fish are considered the most popular ASFs across the study population. This aligns with the findings from the food card associations where pork and beef were the key ASF associated with men and small fish were associated with women. These ASFs are preferred over others because of their general availability, affordability (especially pork) and taste.

While there is not much variation in popularity by respondent type or ASF producer status, there are distinctions by location.

- 100% of respondents in **Ngororero** say that beef is the most popular type of ASF, but only 29% of respondents mention pork's popularity.

Egg Consumption



Because egg consumption is so low across Rwanda, respondents were asked specifically about their perception of eggs. The perceptions were similar across all respondent identifiers. In general, respondents either expressed that they liked or had no strong aversion to eggs. Eggs are described as having important nutritional value for everyone in the household by most of the respondents - but especially by caregivers. The respondents further highlighted the added nutritional benefits that eggs have on adults, but there is an emphasis on the benefit to children. In some cases respondents even suggest egg consumption is preferable over meat.

“I eat eggs when I am sick only to get vitamins and improve recovery.” -Caregiver

“Yes. It is better to feed the baby eggs than meat, because eggs are the cheapest and better for the child's health than meat.” - Caregiver

“We know that eggs are good for the growth of children. As parents we would like to rear chickens so that we get eggs to feed our children.”-Caregiver

“Eggs are very preferred to help our child in growing healthy. So [there is] no problem with them.” -Partner

Despite the widespread understanding that eggs are nutrient-rich, the dietary recall and food frequency show significantly low consumption of eggs. The food card activity also does not clearly associate eggs with any particular person. Furthermore, when asked about ASF preference and popularity, respondents did not mention eggs. According to the respondents, the infrequent consumption of eggs and its unpopularity in households is a result of price and associated status. Respondents mention that eggs are expensive and associated with improved economic status, as suggested in the excerpts below.

“Eggs are consumed but with bad understanding that are for wealthy people.” -Caregiver

“Most people tend to sell eggs so that they solve other problems.” -Caregiver

“The producers /farmers sell eggs instead of eating some. Our understanding is that eggs are for [money] making not for consumption.” -Caregiver

“People in this area like eggs but the problem is money to buy. You cannot buy eggs. Each is 100rwf while children have no food. I think people do not eat eggs because of poverty, if you have, they can eat.” -Caregiver

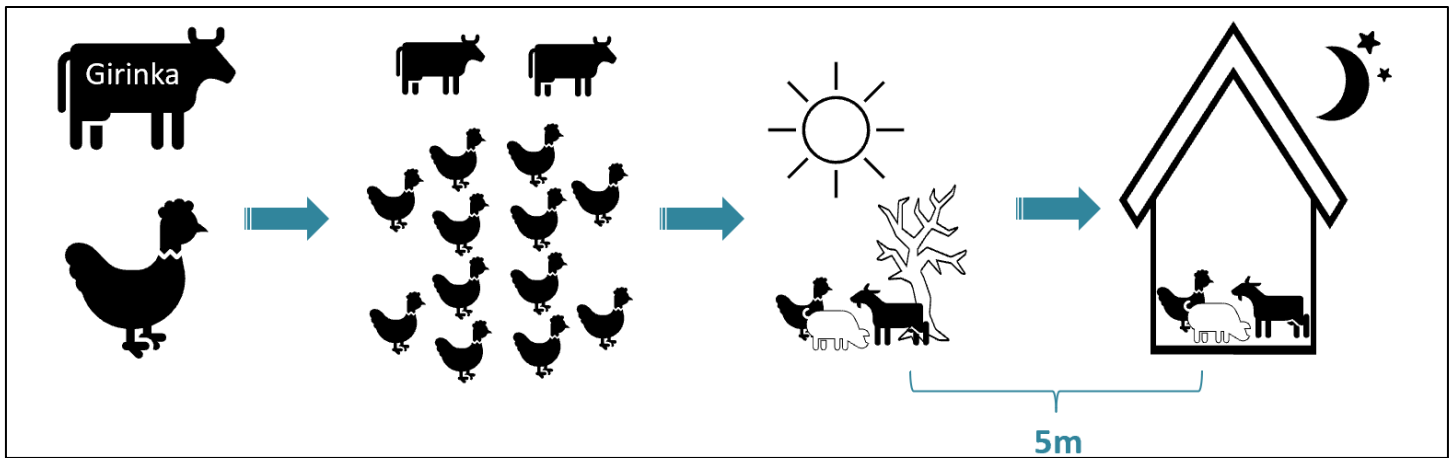
“Eggs are for citizens. For rural we buy dried fish.” -Caregiver

A notable finding is that even though raising chickens would remove the structural barriers of availability and affordability of eggs in the household, having chickens does not increase consumption because the value is seen more in selling the eggs.

Household Production: ASF producers (men and women) sell their animals, or their products, and do not prioritize their own ASFs for household consumption.

ASF Production

Caregivers and respondents shared information about the animals that they raise, detailing who owns them, who makes decisions about them, and how they are utilized. The most commonly raised animals are cows and chickens, followed by pigs, goats, sheep, and rabbits. Several respondents in the North and East note that they are able to raise cows because of Girinka, a government program that seeks to increase access to and consumption of milk by providing low-income households with a cow. Of the respondents who produce ASF, most families own more than one animal. On average, families who own cows own one to two. Families with chickens own as many as thirteen.



Nearly all animals are raised near the house, within the compound or within 5 meters from the home. Mostly chickens, but some goats and pigs, are raised in the household. They are free range during the day and inside during the evening and night to protect from theft. Observations and responses confirmed that many of these animals are kept in or near cooking areas.

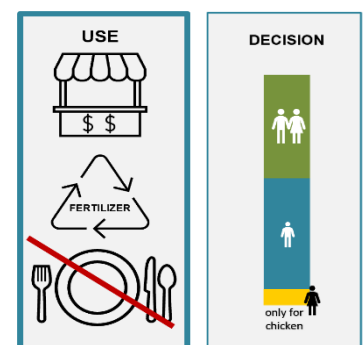
Ownership and Rearing

Overall, there is joint ownership of animals within the households. A few respondents raise animals that are owned by neighbors and relatives. Though ownership is generally shared, mainly caregivers (with some support from children) are responsible for caring for the animals. However, many households mentioned that the whole family shares the responsibility of caring for the animal. In general, the type of animal does not dictate who should care for it.

Selling, Consumption and Decision Making

According to respondents, **most households sell their animals/ ASF products or use them for manure production. Seldom do household members consume ASF products from the livestock that they rear.**

If the animal is owned by someone outside of the household, the animal's owner makes the decision about whether the animal is sold, used as fertilizer or consumed. If the animal is owned by someone within the household, most decisions are mainly made jointly by the husband and wife or solely by the husband. However, women are allowed to make decisions about specific animals. In this study some women alone are allowed to make decisions. All of those women can make decisions about **chickens only**.







Chickens are specifically mentioned for 'solving family problems.' Because live chickens retail at a high price, families tend to sell them when needed.

There is limited mention of consuming the animals that are raised by ASF producers. Although chickens are mentioned as being critical for income generation, they are also the ASF that is consumed most by producers – specifically their eggs.

When animals are eaten at home, they are consumed by everyone in the household. **While this study finds that ASF is generally perceived as a food that is associated with men, when it is available in the household it is eaten by everyone.**

Purchasing: ASFs are overwhelming purchased, but men and women, although men tend to purchase for themselves while away from home and women for family meals

Caregivers and Partners shared details about the ASF procurement process in their household – including their preferred location, the frequency of procurement and the decision-making process for procurement. The chart below outlines the responses.

Value Chain	Procurement Location	Average Procurement Frequency	Decision-Making
	Shops, markets, vendors and neighbors	For those who purchase eggs - about half procure weekly and half procure monthly	Location, Quality, Vendor Trust/Relationship are not factors considered in decision-making. The key factor in decision making is the availability of money to purchase
	Shops, markets, vendors	For those who purchase fish – most purchase weekly	
	More regular procurement happens when the neighbor or they have a cow.	For those who purchase milk - about half procure weekly and half procure monthly	
	Shops, markets, vendors	Of those who purchase meat, over half purchase yearly. Some purchase monthly	

In general, ASF can be purchased from anyone who sells it. There were no dominate procurement locations. However, milk purchase was more frequent if the respondent had a neighbor with a cow.

Eggs and milk are procured weekly – by half of the respondents – and monthly – by half of the respondents. Most families procure small fish weekly. Meats are rarely purchased by respondents – most mention yearly purchases. These procurement findings are consistent with the food frequency recall data.

Procurement specifically for Children under 2 years of age

Caregivers consider children when purchasing ASF. They mention that they purchase small fish, eggs and milk, especially for their young child. Because most families all share the same food, ASF is not purchased *specifically* for the child all the time, however the children are kept in mind when making food choices. Responses are consistent across all descriptors.

Decision-Making and Women's Empowerment

Throughout this study, several questions were asked to better understand women's level of agency and their ability to make decisions about food consumption, especially ASFs, in their household. A set of questions were designed to specifically explore partner perceptions of women's rights and whether partners would be open to making accommodations to support increased agency by the woman if it was necessary. (See also decision-making dynamics under Willingness to Try)

- 100% of respondents answered affirmatively by saying that women *should have* equal rights. According to the respondents empowering women to make decisions helps improve the full household and reduces disagreements in marital partnerships.
- Previous findings demonstrate respondents explicitly mentioning that men currently control the money and therefore have the right to eat more expensive foods (e.g. meats). The responses also say that they play key roles in making decisions about consumption and procurement. However, **all partners say that they are willing to share these responsibilities with women.**
- 12 of the 31 responses to this question explain that women in their household and community already independently make decisions or share decision-making responsibilities in the household. However, none of these responses were from partners in the South.

“The woman is like the engine (the heart) of the family, it is better to give her value if the family needs to develop.”

Though specifically asked, none of the men spoke about accommodations that they might be willing to make in cases where women are not empowered to support decision-making. The men in the study instead spoke about the government's responsibility in supporting this and suggested that women should join empowerment groups to help them use their voice.

Exploring and Overcoming ASF Procurement Obstacles

Caregivers were asked to explain the obstacles (if any) that make it difficult to obtain ASF. The findings did not vary by age of respondent, number of children, age of youngest child or ASF producer status. Most of the respondents mentioned that they encounter obstacles, most of which are financial. The financial barriers are interrelated and include lack of money, lack of employment and cost of ASF compared to other foods.

All other mentioned obstacles relate to the availability of ASF in the respondents' communities. Some ASF is only sold in distant markets, thus respondents explained that they travel outside of their village, which is an added financial burden. Respondents also mentioned that there is a shortage of animals in general.

- Notably, **100% of respondents from Burera** say that they can get all foods that they want from animals.
- Fish was the most desirable but unavailable animal source food. **100% of respondents from Gakenke** said they would like to have fish but cannot get it.

There was a small sample of respondents who reported that they do not face obstacles when obtaining ASF. All but one of those respondents resides in the West, but from different villages.

In the food card findings, respondents suggested that men are associated with meat because they earn and have financial control. However, purchasing power was not mentioned as an obstacle to obtaining ASF by any of the respondents. In addition, no other social or cultural barriers were mentioned as obstacles.

To overcome the obstacles that were mentioned, women proposed three form of mitigation:

- Animal rearing (some respondents only wish to sell, others would use for consumption)
- Buying cheaper foods that feed the entire family like beans and potatoes
- Gaining employment

The study explored additional ways that respondents might overcome food purchase obstacles by asking questions about food exchange and trading in their village. There is significant evidence that food trading and exchanging is not popular in Rwanda. Of the 52 coded responses, 40 say that they do not trade or exchange food. Most simply said that these methods of obtaining food are not common, but those who did elaborate said things like:

“We do not exchange food here in Gakenke. If you don’t have money to buy what you need, you are doomed.”

“No, we don’t, it doesn’t exist. We only provide money for getting food [especially] from animal sources.”

Of the 12 who said that they traded, the 8 who listed a specific food, **ALL said milk.**

Perceptions of how to overcome problems obtaining ASF for family diets

When older women and caregivers were asked what they believed they could do to overcome some of the problems they had mentioned in obtaining more ASF in their family’s diet...

The caregivers were divided about what they thought was needed. There was also some variation based on whether they were in an ASF producing household, and where they lived.

- Half of the caregivers felt they needed to get animals, or the money to procure animals.
“If we have a cow, we can get milk easily. Raising a hen can enable us to eat eggs.”
 - Most of these women were in non-ASF producing households. Three-quarters of non-ASF producing households said they needed animals to boost their consumption of ASF, although several other data points within this study suggest that families who own animals do not eat ASF more often than those who do not own animals.
 - Three-quarters of caregivers in **Southern Province** said that having animals would help solve the problem while only one third of caregivers said this in **Western Province.**
- Some caregivers said that they need more support from partners and other family members to obtain ASFs or to get the money to purchase the foods. Of these caregivers, the majority were in ASF-producing households.
“The idea is to work as team so as to get and find all the basics to satisfy our needs.”
- Some caregivers mentioned that they need to work harder or get a job to be able to serve ASFs. There was no difference between caregivers in producing or non-producing households, but there was a provincial difference. Most of these caregivers were in the **Western or Southern Province.**
“The main advice is to work hard for self-reliance and affordability of buying.”
- A few caregivers and a few older women said that they hoped that prices of ASF would go down and that they would look for cheapest animal source foods: eggs, rabbit and pork (if there was no alternative).
- A few caregivers and half of the older women felt there was nothing that could be done to provide ASF for the family; a few said only God could change things.

- Three caregivers said they would join associations of women to see if there was anything that could be done and to combine their resources. All of these caregivers were in ASF producing households.

Understanding Foods Eaten Outside Household and Option to Bring Foods Home

As animal source foods are expected to be consumed mostly outside of the household, the study explored the frequency at which these foods are consumed outside the house, by whom, and (specifically partners') willingness to bring foods back to the household.

There were mixed responses in terms of whether the majority of the meals are eaten at home or outside of the home. Many partners said that they spend most of their time at/near home, so their meals are taken there. Other partners say they frequently eat foods outside the home, for example, when they are on a journey or at a bar.

"I cannot finish whole the day without consuming sambuusa made with small fish (called Indege in local language) with tea with peanuts. As you see our center has small shops that have tea and different [snacks] it is where we sit with others and we talk while consuming." – Partner

When caregivers describe their experiences with eating outside the home, they specifically mention ceremonies, holidays, or visits to family – all of which happen infrequently. Most say that this happens only a few times in a year and the meals vary.

Nearly half of the partners (caregivers were not asked) stated that they either do not eat food outside of the household or they do not bring any food back home. The reasons for not bringing food back home include lack of money and insufficient amount of remaining food.

"No I don't bring to them because when you are in fete, you are served a quantity that is enough for you [only]." -Partner

"No, I do not take food home for my family, it is very rare. Most of the time I have money to buy only one or two pieces of eggs. That why I do not take any to people at home." -Partner

For those respondents that do bring food home, they bring ASF (pork, fish, egg), avocado, snacks (sambuusa or biscuit) or drinks (juice or tea). These data are illustrative and inconclusive as there were not enough repeat mentions to draw conclusions.

"I cannot bring cooked food at home, and I cannot come empty handed, so I bring biscuit and cake for the children." -Partner

"Yes, sometimes I bring on that sambuusa to my family because I know they like it too" -Partner

"When I get money, I bring an egg or an avocado." -Partner

"I bring home pork meat if I have money because it is my favorite meat." -Partner

"Yes, I sometimes bring meat at home by surprise." -Partner

EXPLORING VENDOR PERCEPTIONS AND BUSINESS

To better understand the role that other market actors have on ASF consumption, the vendors who service the caregivers and partners in this study were interviewed and observed. Many vendors mentioned that they were not operating as normal because of the pandemic. According to vendors, availability of meat and demand from customers has decreased because of national lockdown regulations. This change in operation should be considered throughout this section.

Vendor Business Perceptions: Vendors Sell a variety of ASF and see high demand.

None of the vendors in the study sample sell ASF from their own production. All ASF are purchased from a producer and then sold in their own shops. The commonly sold forms of ASF include pork, beef, sheep, rabbit, goat and chicken.



Chicken was infrequently mentioned. According to vendors, chicken is not preferred by consumers due to unaffordability and size. It is more expensive than other ASF, and its small size lends itself to a low value.

Vendors also sold eggs, milk (including cow's milk, goat's milk, and sour milk) and small fish, though these are not regularly sold.

Most vendors sell a variety of ASF products. Only a few mentioned that they specialize in selling or preparing specific goat meat, cow meat, milk, pork, or small fish.

Vendors operate in a kiosk, in their house, in the open marketplace, and by visiting households in the village. Many of the vendors' operations double as abattoirs and bars. Here, meat is slaughtered and prepared for consumption on-site.

Demand for ASF

The vendors reported that they sell their ASF products every time they operate, even though most said that there are other nearby vendors who sell the same products. Although they tend to sell each time they operate, it is unclear if there are gaps in operation because of food shortages. Some vendors mentioned that procurement of products is inconsistent.

"Sometimes eggs become scarce. I may spend like 2 days without eggs, because here we used to have youth cooperatives that raised chickens, but now they closed their business. We no longer have enough eggs. Before the closure of that youth business for chicken, I used to buy 1000 eggs and sell it in 4 days, because here they consume eggs a lot, but now eggs are expensive (one at 150 rwf) and we take much of our time going to look for eggs in different villages and sometimes you don't get them." - Vendor

"I sell goat meat daily except when I could not find where to buy it. Sometimes, I may pass two or three days without goat meat. A goat may be bought at 30,000rwfr or 40,000rwfr or 50,000rwfr or 70,000rwfr. For cow meat, we work as a cooperative of Rwinkwavu slaughters, so I sell it when it is my turn to sell cow meat, once or twice a month. I buy a cow and it is slaughtered in Rugunga village, some meat is sold in Rugunga and other meat is sold in Kayebe village (this village is a neighboring village of

Rubirizi). Cow meat is available either once a month or twice a month. In a cooperative, a member buys a cow and sells it, but he has to contribute monthly in a cooperative. Only a member of a cooperative can sell cow meat.” -Vendor

About half of the interviewed vendors sell their products in different forms.

- Eggs are sold raw, boiled or as an omelet.
- Milk is sold both fresh and fermented.
- Goat and beef is sold raw or as brochettes.

ASF Purchaser

When vendors were asked about who typically purchases their ASF, they had the following responses:

- Where brochettes are sold, men buy meat. Women only purchase meat if asked by their husband.
- Men buy cooked meat and eggs. Women purchase raw meat and small fish.
- People like to buy boiled eggs because they said eating an egg is like eating a chicken, so if they cannot afford a chicken, they eat egg instead.

Advertising

Most vendors do not promote their commodities through advertisements. For the few that do advertise they use the following tactics:

- Phone regular customers to inform them when fresh meat has arrived
- Position their newest products in the front, as a form of advertisement
- Use signs outside of the establishment that promote different foods
- Hire a person to announce fresh foods around the village
- Encourage purchase by sharing different ways to cook the product (e.g. mixing them with vegetables)

Most Popular ASF

Organ meat, across all vendors in all provinces, was mentioned as most popular.

“The most wanted meat is organ meats (Zingaro) because at about 10:00 AM all Zingaro are all finished. Maybe because are easily prepared and are cheaper than other meat.” - Vendor

“The [favorite] meats are grilled organs meats (Zingaro, heart, liver, etc) compared to other meat. The organ meat is delicious and it is mostly served on prior order. They are quick in cooking and require little time to prepare. If these organ meats are not available they are replaced by muscle meat.” – Vendor

In addition to organ meat, goat meat (specifically meat from the head) and pork (specifically meat from hind limbs) were mentioned as popular foods. Pork is popular because of its affordability. Lastly eggs are mentioned for their popularity.

“People like to buy boiled eggs because people say eating an egg is like eating a chicken, so if they cannot afford a chicken they eat egg instead.” -Vendor

GAUGING CAREGIVERS' WILLINGNESS TO TRY DIFFERENT ANIMAL SOURCE FOODS

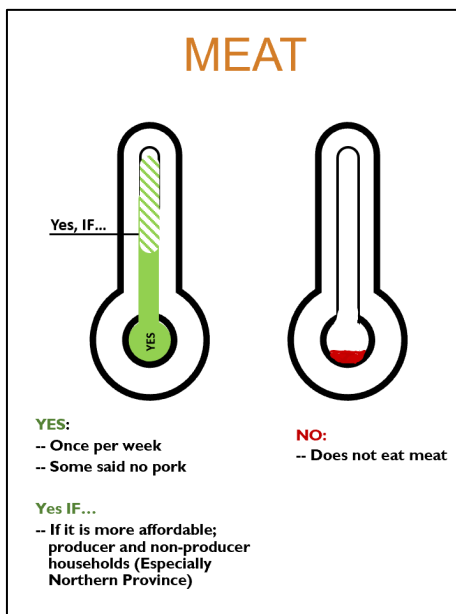
All respondent groups were asked for their viewpoint regarding trying or increasing the amount of specific ASFs or feeding specific ASFs to their children. The questions varied slightly by respondent group.

Opportunities: The majority of caregivers are willing to try to serve, or serve ASFs more frequently, although many have conditionalities.

Meat and Organ Meat

Meat

Caregivers were asked whether they would be willing to try to serve **more meat more frequently** (chicken, beef, goat, or pork) to their family and/or children.



All caregivers, but one from a family that does not eat meat, are willing to try to serve meat. However, opinions about how easy it would be are mixed.

- Citing no reservations, about half of the caregivers are willing to try all types of meat although several specified that they cannot offer meat more than once a week and a few of these caregivers specify that they will not serve pork (especially, **Rutsiro**).
- About half of the caregivers are willing to serve meat but say they do not have money to do so, or to offer meat with any frequency.

“(Laughing), where can I find it? I would try any kind of meat, but I don’t have means.”

“We cannot find the money to buy meat every week, but we wish we would be able to do so, because meat are very good to both children and adult.”

- Money and/or unavailability of meat are constraints for almost all caregivers in the **Northern Region**. In the south and eastern regions, about half of the caregivers say money is a major impediment to being able to serve meat with any frequency.
- Money is cited by more caregivers from non-ASF producing households (half) than from ASF producers (one third) as a reason they have trouble offering meat. Although several caregivers in ASF producing households say their use of meat is restricted to about twice a year when an animal is slaughtered.

Organ Meats

Caregivers were asked about purchasing and serving **organ meats** like liver, and especially to their young children.

Overwhelmingly caregivers are willing to try to obtain and serve organ meats. Although some express constraints, the number is less than for non-organ meat. Many caregivers had never cooked organ meats or given them to their child. Those willing to try say:

“organ meats are even cheaper than other meats”

“they (organ meats) improve (children’s) growth”

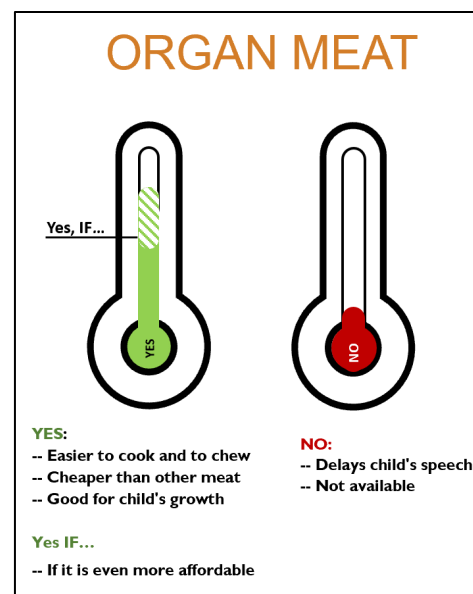
“they (organ meats) are the easiest one’s to cook and consume”

“easy to chew”

- Among those willing to try, but with some reservations, about a third say that they are prevented from putting the idea into practice because they cannot afford these foods.

“I can serve them (organ meats), but I don’t have the money to buy them.”

- Half of those citing financial issues are in **Northern Province**.
- The financial constraint is cited equally by caregivers in ASF-producing and non-producing households.



About one-fifth (20%) of caregivers say they are not inclined to try to serve organ meats, especially giving them to a child.

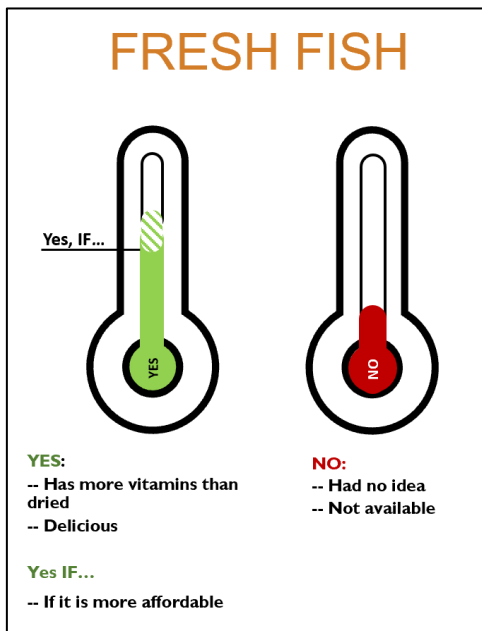
- Most of these caregivers say they would have problems feeding these meats to their child because they have been told that these meats delay children from speaking. These caregivers are mostly from **Eastern Province** and have a child 7- 15 months of age.
- A few caregivers say they cannot try this recommendation because they never find these meats available to buy.
- A few caregivers say that they do not find that these meats “make a tasty sauce.”
- One caregiver says the family does not eat meat, and another says the family does not like organ meats.

Fresh Fish and Dried Fish

Fresh Fish

Caregivers were asked about purchasing and serving **fresh fish**, especially to their young children.

The majority (three-quarters) say that they are willing to serve fresh fish, even to their young children. Among reasons are:



Fresh fish is preferred because:

"in dry fish I thought that all the vitamins goes because of the sun."

"It is delicious"

"It is what we have; we live near the Lake"

- Of those willing to try, some (~20%) say their challenge is either enough money to purchase fresh fish or availability of the fresh fish.
- **Southern and Western Province** has the highest percentages of caregivers already using or willing to try fresh fish with their children because of their proximity to the Lakes. They appear to be using primarily fresh small (silver) fish.
- One caregiver mentions the need for caution of bones when giving fresh fish to children.

About one quarter of the caregivers say that they could not try to serve fresh fish primarily because it is not available where they live and they have no idea about it.

- Two people who live in fishing areas say they prefer dried fish because they do not spoil.

Dried Small Fish or Fish Powder

Caregivers were asked about purchasing and serving **small dried fish or small dried fish powder** to their young child.

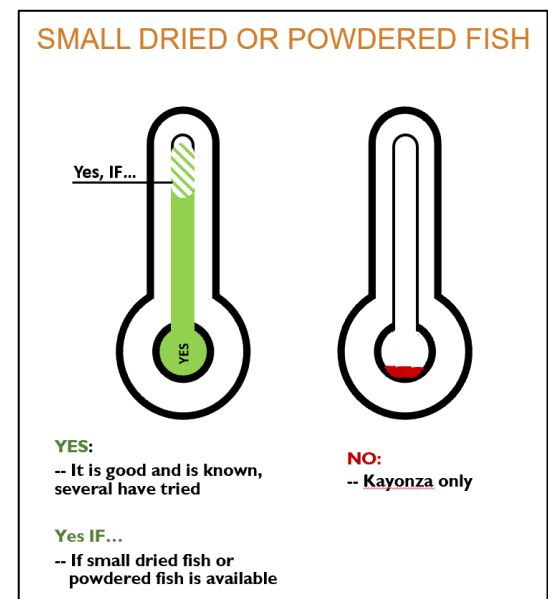
All but two of the caregivers respond yes, they are willing to/want to feed small dried fish or fish powder to their children.

- Three-quarters of the caregivers say they have no reservation or constraint to doing this. One third of these already use dried fish or dried fish powder when they feed their child.

"I used mix to small dry fish with the food as they are, and my children are in good health. "

"Yes, this has been taught by our health community agent since before and we try to do so."

"Yes, because it can help a child to eat all food without separation and selection."



- There are some caregivers in **Northern and Southern Province** who say they want to use small dried fish and powder, but they do not have the financial resources to purchase the fish.

"I would love to use powdered small if I had money."

"I used to add small dry fish to my children food but now I do not have money to buy it."

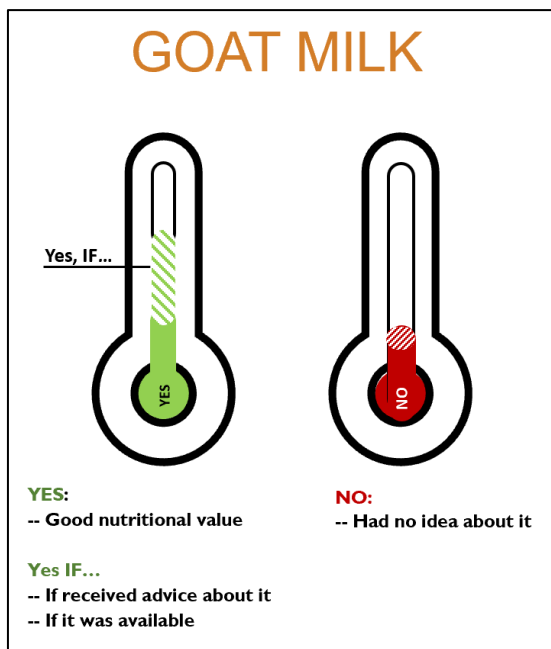
- There are a few caregivers who report that they do not have access to small dried fish in their markets. Most of these caregivers are living in the **Southern Province in Namagabe**.

The two caregivers who are unwilling to try small dried fish with their child are from **Eastern Province; Kayonza**. One woman with a child about a year old says her child is not old enough for the dried fish and the other says her family does not use small dried fish.

Goat Milk and Sour Milk

Goat Milk

Caregivers were asked whether they would be willing to use **goat milk** and to give it to their children.



Opinions are divided among those who are willing, many with conditions, and those who say they cannot offer goat milk.

- Just under two-thirds of caregivers say they are willing to try goat milk. Of these:
 - About half do so without reservation, many citing nutritional benefits of goat milk.
 - "Yes, it is even more nutrient rich than cow milk."*
 - "Yes, because we know that milk is one of medicine to fight stunting."*
 - About half cite availability barriers.
 - "If I could find milk of goat, I can offer it to my children and there is no challenge."*
 - "I have heard from people and radio that goat's milk have protein and help children to grow up well, but in this region are not available."*
- A few people say they would be willing to try if they could receive advice about it.

- Many caregivers (~40%) say they would not offer goat milk to their child because they have never seen it done and they know nothing about it.
 - "I cannot give goats' milk to my child. I don't have information about that milk."*
 - "I don't even know. I cannot give my child before I test it."*
- A minority of caregivers say they would not give goat milk at all because:
 - "the goats' milk is not accepted in our culture."*
 - "I can't offer it to her because people do not consume it."*
- While there are no big differences between provinces in the number of caregivers accepting or saying no to goat's milk, **Eastern Province** has the fewest caregivers accepting goat milk without citing a condition that must be met for them to try. Most of these caregivers cite lack of availability as a major constraint to their trying goat milk with their child.

Because goat milk has been promoted over a long period, **older women** were asked their opinion about goat milk and giving it to children. They are divided in their opinions:

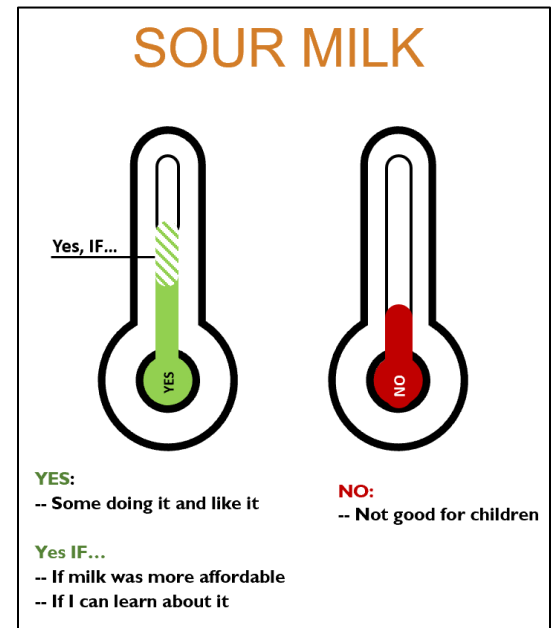
- Just over half agree that it is good; they mentioned past use of goat's milk.
 “Long ago, it was said that goat's milk is good and can heal a child suffering from diseases. If it was recommended for the family, I can do it. Before there was ignorance, but we nowadays know what is important or not, so I can try it since it is very important to my life.”
- Some who are willing to use it said:
 “I can't drink it unless if it is recommended by a doctor but i can give it to the children”.
 “I can take it only because of hunger.”
- The older women who are unwilling to try goat milk are divided between those who do not believe that goats give milk and those who say they know nothing about the practice of drinking the milk.

Sour Milk

Caregivers were asked about serving sour milk to children in their porridge.

The majority (about two-thirds) said they are willing to try sour milk. Of these, the majority has never tried the practice, but are open to trying it. Three caregivers say they currently use sour milk and like it.

- Of those willing to try sour milk for their children, some (20%) said they can only do it if they had the money to buy milk.
- Caregivers in **Southern and Western Province** are more willing to try this practice while caregivers in **Eastern and Northern Province** are more evenly split. Cost of milk seems most prohibitive in **Northern Province**.



The third of caregivers who are unwilling to try the practice said that they don't believe that sour milk is good for children. They don't give the consequences of the practice. One or two caregivers mention that one has to know how to make sour milk properly.

Eggs

Caregivers were asked about purchasing and serving **eggs** (multiple times a week) to their family, especially to their young children.

Almost unanimously, they agree to try to offer eggs more frequently saying that eggs are liked and that they are “nutritious” and a good food for children.

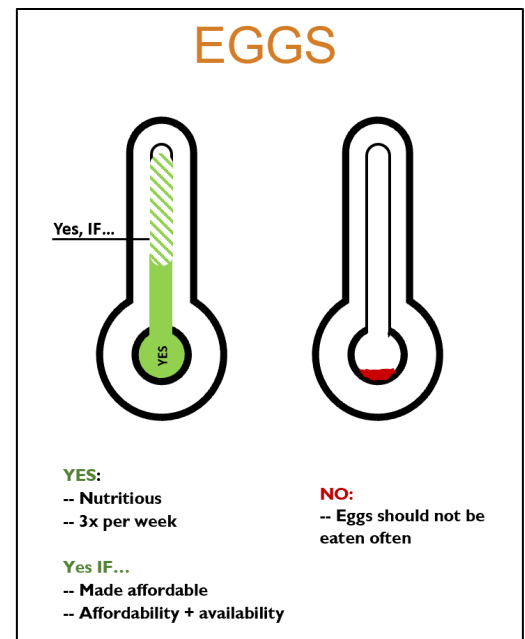
- Some caregivers offer specifics on how often they feel would be feasible for them to feed eggs, especially to their children. The range is 2-4 times/week, with most saying 3 times per week is the most that can be expected.

- Close to half of those agreeing to try offering more eggs to their children cite financial constraints to doing so in practice.

“There is no problem in giving eggs to the children. The only challenges in income shortage.”

- Financial constraints to offering eggs are cited by all but one caregiver in **Southern Province** and by the majority of caregivers in **Northern Province**.
- About one quarter of the caregivers, often those who say they face a financial barrier, say there is also a problem with the availability of eggs and they feel they would need to have a laying hen to be able to offer eggs with any frequency.

The two caregivers who say they would not try to give eggs say the family does not like them and that it is not good to eat eggs more than once a month.



Eggs are often a food that carries deep seated cultural taboos related to who can eat them and the consequences of eating eggs. Therefore **older women** were asked their opinion about eggs and whether they would encourage eggs for children.

Unanimously they agree that eggs are good.

“I think eggs are good foods to be consumed by anyone, anytime. Especially for young children.”

“No problem about eggs. Eggs are good for health and when I find money I try to buy it for my family.”

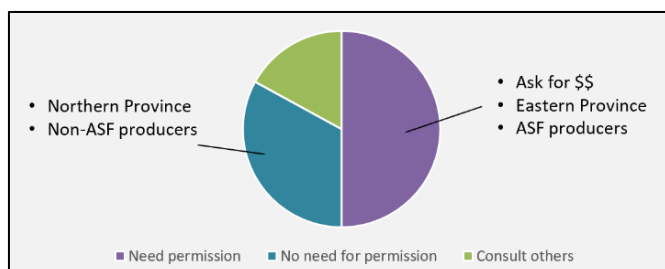
- A few offered that eggs could not be eaten every day, because that wasn't good and a few mentioned that money to obtain eggs is a problem.

Opportunity hurdle: Ability to try new practices, including shifting some purchasing responsibility, is often tied to decision-making dynamics between partners and family economic situation.

The Need for Permission to Purchase ASF, Especially to Try a New Food

Caregivers were asked if they would need to get permission to try new foods and if yes, from whom.

There were a variety of responses in terms of the need for permission and who they would ask:



- Half of the caregivers say they would talk with their husband or partner, it seems, primarily because they would be asking for money. In the decision to try a new food a few caregivers mention their husband but they also mention other family members, including children.

“I would only speak to my husband because he is providing money to buy different food products for the family.”

“Yes, we can discuss with my husband together.”

- Caregivers from households that are ASF producers are twice as likely to mention consulting their husband than caregivers from non-producer households.
- Almost half of the caregivers who mention consulting their husband are from **Eastern Province**.
- About one-third of the caregivers say they would not need to consult anyone; they make decisions by themselves.

“I can ask information or advice to make decision, I can decide on my own.”

- The majority of these caregivers are in non-ASF producing households.
- These caregivers tend to be from **Northern Province**.
- Caregivers mention consulting their mother or an older woman; a community health worker or someone who has already tried it; other women; a neighbor or a trusted friend.

Male partners were asked if they would need permission or need to consult anyone if they were going to buy ASF for the family, and if yes, who.

The majority of partners say they would consult their wife or partner (permission is not mentioned, rather consultation).

- A minority of partners said they would not consult anyone; they make these decisions on their own. All of these men reside in **Eastern Province**. A few respondents said that they primarily make these decisions, but occasionally they consult their wife.
- Two partners in **Southern Province** said they would consult someone outside their family: one a health worker and the other the person who is helping them with chicken raising.

Asking Male Partners to Take More Responsibility for ASF Food Purchases

Caregivers with partners were asked if they would be willing to ask their husbands/partners to take more responsibility for ASF purchases.

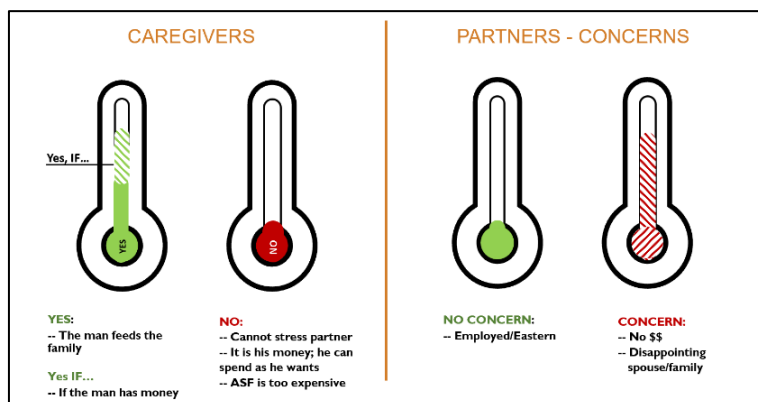
The majority (three-quarters) respond that they would, although some have reservations.

- Slightly more than half of the caregivers are willing to talk with their partners about taking more responsibility with no reservation, either to buy ASFs or to buy more animals.

“Yes, I would, because it is the man that feeds the family.”

“...she would ask her partner to increase the number of goat and chicken reared.”

“Yes I would, and I always ask him to bring something once having money.”



- All of these caregivers are in ASF producing household.
- Just under half of the caregivers who say they would ask their partners say they would do it only when the partner has money.
 - “now my partner doesn’t have enough mean to afford them, if he does, he will not hesitate to buy them.”*
 - “I can tell him, depending on his financial ability.”*
- Many of these caregivers are in **Northern Province**.
- Some of the caregivers (19%) say that they would not ask their partners to take on this responsibility for a variety of reasons.
 - “I cannot stress a husband asking him to buy things he cannot afford”*
 - “No, I can’t ask him that. He cannot accept it.”*
 - “No because he has many responsibilities.”*
 - “It is needed but I cannot ask it because it is expensive.”*
 - “If he get money he can go to the vendor of meat (Mutariyani) and consume himself. Money which has a role for the household is for that of the women.”*
- A few caregivers offer other thoughts about willingness to ask their partner:
 - “But it depends what we’re having home”*
 - “When I have ability to find it myself there is no reason to ask.”*

Partners were asked about their concerns around being asked to obtain ASFs or more ASFs for their families

Overwhelmingly, the men cite the lack of financial resources as a concern. Some mention that they are unemployed and without money for food.

A few of the respondents express worry about disappointing their partner by not having the resources to provide ASF if asked.

- A minority of partners say they had no problem getting ASF or more ASF for their families. Of these, all but one lives in **Eastern Province** and all but one are laborers, not farmers (producers).

CONCLUSIONS AND RECOMMENDATIONS

DEFINING ROW BEHAVIORAL AND SOCIAL CHANGE THEMES

The findings from this study should allow ROW to define the behaviors that are critical for ROW families to achieve the desired project outcome of improved diet diversity for young children and women. All the ROW behaviors cannot be defined at this juncture, but a few critical ones are clearer. Through dialogue, balancing income generation with consumption needs and the feasible partnership opportunities others will be defined in the ROW strategy.

As each ROW intervention area is reviewed in light of these findings it will be critical to start each review by focusing on the key behavior(s), and to add behaviors that enable the primary behaviors that are most proximal to ROW outcomes. For example, National guidelines encourage eating an ASF at every meal (NECDP and Ministry of Health). That seems out of reach of the ROW population, given that many people are eating ASF only occasionally during a week.

- *Recommendation: the ROW behavioral outcomes would be:*
 - *Caregivers include ASF in the family's food each day.*
 - *Caregivers feed children less than 2 years of age an ASF every day.*
 - *Other behaviors will be determined when the activities for ROW production are known.*
- *Recommendation: Improved daily meal frequency cannot be forgotten; thus an additional ROW behavioral outcome would be:*
 - *Caregivers eat three times a day, taking a morning meal with the children.*

Sub-behaviors can be determined when ROW knows more about feasible partnerships.

- *Recommendation: An example of a behavior that would enable this overarching behavior is:*
 - *Men purchase ASFs for the family when they are consuming ASF outside of the home.*
 - *Retailers who provide cooked ASFs to men at bars and restaurants sell a "family package" to men as they pay for their meal. This package is either a cooked brochette or raw meat.*

Each ASF is different in the minds of the ROW population. Some are associated with men, others with women; some with wealthy people, others are clearly for people with less income. Flesh foods are distinct from other ASF products.

- *Recommendation: ROW must be mindful when promoting ASFs not to lump them together and not to show a table or basket full of these products. In fact, the definition of the behaviors and the messaging package should be as specific as possible to the food, and to HOW to use it. Extremely practical advice is required. Caregivers cannot feel overwhelmed. Rather they must feel that the use of specific ASF is within their abilities, i.e. the recommended behavior is doable.*

The study showed that the biggest obstacle to promoting increased consumption is not demand or a desire for ASF. Rather it is the ability of households in the area of ROW operations to access (availability and affordability) ASFs.

- *Recommendation: Therefore, ROW needs to develop activities tied to boosting production (primarily of those foods within the buying power of ROW caregivers) and driving distribution closer to consumers to respond to the consumer need for greater access—lower prices and easier availability of foods (close or within communities that women can purchase). As these activities are developed, the specific behaviors can be defined, the critical pathways developed and demand generation for them can proceed apace. (See value chain recommendations).*

When looking only at demand, the major issue is not that the ROW population does not understand the nutritional value of these foods, in fact, for many foods they articulate the value of these foods for children's growth and, some foods they know are used for children recovering from under-nutrition. Required in this first phase, as activities are developed to address access, is attention to two underlying factors influencing behavior:

Underlying social norms such as:

- a) The poor purchasing and decision-making power that most women feel they have when it comes to buying “expensive” foods which include most ASFs.
- b) The right of men to consume ASFs outside of the home without providing them for the family.
- c) The perception that most ASF are for wealthy people; ASF is a luxury, not a necessity.

- *Recommendation: ASFs must be repositioned as part of a healthy Rwandan diet. A “value” food, especially value for the money when talking specifically about eggs, small fish and milk. Combined with everyday foods like beans and sweet potato they add to a feeling of satisfaction and not only fill the body but build strength.*
- *Recommendation: Offer practical enabling advice and demonstrations of HOW to include ASFs within the family diet. Support caregivers to visualize, plan and the try to add an ASF each day. Provide reinforcement and a way they can see their success (home reminder material). Small actions, such as give a half an egg with a meal, adding milk to porridge, using small fish in a sauce.... add up to a big effect.*

SEGMENTATION OF THE ROW POPULATION

This study showed that while there are many perceptions and practices in common across the ROW population, there are also important differences within the population. These differences must be taken into account in programming. The distinctions include:

The differential impact of COVID-19 restrictions: Many in the ROW population are significantly affected by the COVID-19 restrictions—both consumers and retailers. While this might be a set-back, it could also be an excellent opportunity to engage with entrepreneurs and small businesses eager to support their communities and do something different.

Families who raise animals and have ASFs available without purchase: This is a critical audience for ROW activities and behavior change. While many families raise animals, they do not raise enough or have a focus on animals that produce food like eggs and milk; to allow the family to benefit. The prevailing opinion is that animals are assets, providing income, not food to the family. Of note: it is not clear that raising more animals or having more products will increase consumption without considerable efforts to promote consumption of self-produced foods.

- *Recommendation: Seek channels that reach these producer households: in agriculture extension, at markets or in cooperatives or savings groups.*
- *Recommendation: This will have to be done with specific suggestions by ASF and will need to include men, women and adolescent household members. This targeted promotion effort merits consideration as part of intervention area 4.*

Producer households appeared to have better communication between partners, or at least more of it. However, women in these household tend to be less autonomous perhaps because they are not employed outside of the house.

- *Recommendation: Encouraging intra-family communication, through a recurring concept of “Discuss and Decide Together”. This fits well with the social change themes that can be developed immediately.*
- *Recommendation: Producer households, particularly during the period of scale-up should be supported to localize markets for eggs and milk which currently are bought from neighbors. If local, trusted sources, were developed it could prove profitable, especially for women.*

Geographic variations are important: They are important for both the variety in ASF in the markets and for cultural influences. For example, Gahengeri, Gashore, Kivugiza and Muganza are villages that consistently showed different and sometimes conflicting trends around ASF perceptions, when compared to other villages in their district. For ROW this is a reminder that regardless of the geographic foci of the activity, both subtle and pervasive sociocultural and socioeconomic factors should be considered, as this study shows that they influence attitudes and norms associated with consumption.

Regional differences were also notable. For example, Northern and Southern Province have significantly inadequate diet diversity, where most women consume 3 or fewer food groups in a day and no child met the MAD standard. A few respondents reported that they do not face obstacles when obtaining ASF. Almost all of the respondents resided in the West.

Specific examples include:

Fish are well liked and small fish - fresh or dried- are the most common of the ASF; especially in areas bordering the lakes. Additionally, fish are viewed as a food in women’s domain.

- *Recommendation: Expansion of the fish market, especially dried fish and the development of fish products seems a logical priority for ROW. Promoting increased fish consumption in these areas makes sense. Most ASF promotion currently tends to leave fish out.*

The one place where eggs were in the diet of ROW families was near DRC. It seems that cultural influences from DRC and trading may make this a good area to develop partnerships to improve the local egg market and to promote domestic egg consumption.

In milk producing areas sour, or cultured milk, was a traditional way of preserving the milk. Some people mentioned still providing sour milk. This type of product should be explored and promoted.

VALUE CHAIN

ROW has many ASF value chains to consider as it addresses weaknesses or gaps in the market system. Critical to meeting both ROW objectives will be ROW's ability to tailor value chain investments by ASF type to best match the needs of ROW families for income and improved household diets. For example:

- *Recommendation: Small fish, eggs and milk, even goat milk, and perhaps chicken should receive priority. They are perceived as foods women control and they are the foods most likely to boost ASF consumption. The investment in animals that offer these products is needed.*
- *Recommendation: Referring to these value chains supporting small business ventures to keep the foods in the community rather than being sold to aggregators is needed. Likewise, new food products can stimulate purchase, especially as the producer is local and trusted. The sale of hard-boiled eggs to make transport easier; dried fish powder, prepared snacks with fish powder or egg; goat milk; sour or cultured milk. All of these foods and products can be promoted specifically when they are more available.*

The larger animals (goats, sheep and pigs) are eaten rarely and investing in these markets, unless at a small, localized scale will do little to boost the incomes of many among the ROW population or boost consumption. If investments in goats and pigs (sheep were not mentioned by any study participant) can be kept local, filling the demand of local bars, restaurants and butcher shops that would boost incomes and would allow for a more consistent supply of these foods to the local communities.

Of note is a high demand for organ meats among women. More exploration is called for to determine how this demand can be fulfilled. If organ meats are inexpensive and perhaps less desirable for brochettes, organ meats could be used for the pre-package meat a man could buy from a bar or restaurant for the family.

GENDER INCLUSIVENESS

Important to improving household nutrition is the ability of women to participate in, and to make decisions about the use of household resources and to have income under their control. This does not mean a sole focus on women. Outcomes are better when women and men participate in changing the norm from male dominance over resources to shared decision making.

- *Recommendation: Even as ROW focuses to include women in ASF production and the income generated from that, the key behavior of “discuss and decide together” should be practiced.*

The study reinforced the importance of:

- Investing in value chains that are within the female domain: fish, eggs and milk.
- Developing small businesses that allow women to who are not working away from home to earn income that they control.
- Supporting male responsibility for providing food, especially flesh foods to the family.
- Sensitizing retailers of meat to women shoppers. Developing packaging that meets their needs and building trust in the products being sold by having meat inspected, for example.

ANNEXES

Annex I: Bibliography

	TITLE
1	Comprehensive Food Security & Vulnerability Analysis (CFSVA) Rwanda. December 2018
2	Stunting, food security, markets, and food policy in Rwanda
3	Trends and Inequalities in Young Children in Rwanda – Further Analysis of the 2014-15 Demographic and Health Survey
4	Final Technical Report from Health Bridge to Harvest Plus. Food and Nutrition Survey, Rwanda 2010-2011.
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6	Children's dietary diversity and related factors in Rwanda and Burundi: A multilevel analysis using 2010 Demographic and Health Surveys
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8	Enhancing milk quality and consumption for improved income and nutrition in Rwanda (April 2019).
9	Enhancing milk quality and consumption for improved income and nutrition in Rwanda (Jan 2017-Dec 2019) Project Inception Workshop 2017.
10	Assessing the Market for Rwandan Poultry, Pig and Animal Feed Products. Vanguard.
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12	Modernizing Rwanda's livestock to attract investment and enhance food security
13	Rwanda Dairy Competitiveness Program II (RDCPII) Lessons Learned Brown Bag
14	Proposal for Rwanda Dairy Consumer Market Understanding Usage and Attitudes in Rwanda
15	Fill the nutrient gap Rwanda: Refugee summary report
16	Nourishing a new generation in Rwanda
17	EICV3 Thematic Report Patterns of Consumption
18	Feed the Future Innovation Lab for Livestock Systems Rwanda: Animal Source Foods Production and Marketing Brief May 2016
19	Rwanda Nutrition, Markets, and Gender Analysis. 2015
20	Rwanda Nutrition Profile Country Overview
21	GIKURIRO Program – Baseline Survey Report
22	Iron Beans in Rwanda: Crop Development and Delivery Experience
23	Food Consumption Trends and Drivers
24	Rwanda 2015 Comprehensive Food Security and Vulnerability Analysis
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26	Rwanda Livestock Master Plan
27	Final Report of the Midterm evaluation for the Gikuriro Program. December 2018.
28	Hidden hunger or knowledge hunger? Nutrition knowledge, diet diversity, and micronutrient intake in Rwanda: The case of Vitamin A
29	National Food and Nutrition Policy. January 2014.
30	Comprehensive Africa Agriculture Development Program Nutrition Country Paper – Rwanda Draft. February 2013.
31	Engaging Rwandan Families to Ensure Feasible and Effective IYCF Recommendations: A Report of Their Trails of Improved Feeding Practices. BASICS II, September 2009.

Annex 2: Areas of Inquiry

Areas of Inquiry	
1. <u>Household-level Perceptions of ASF</u>	Normative/non-normative view of flesh foods—goat, sheep, pig and any other animal relevant to the targeted population
	Normative/non-normative view of fish
	Normative/non-normative perception of dairy foods
	Normative/non-normative view of eggs
	Perceptions about ASF procurement (ex. home grown vs. bought; within whose domain)
	Perceptions tied to ASF preparation/storage;
	Perceptions about feeding ASF to children, pregnant women and other vulnerable populations
2. <u>Properties of ASF</u>	ASF comparison to other foods in typical diet.
3. <u>Obtaining ASF</u> <i>Including the exploration of decision-making considerations: who decides; how is the decision made; why and how often are certain decisions taken; what are the trade-offs</i>	Home production of ASF and its consumption
	Purchase of ASF for home consumption
	Purchase and consumption of ASF outside of the home (cooked food)
	Food safety: Storing and Preserving ASF
4. Day-to-day dietary practices and the use of ASF	Family 24-hour Dietary Food Recall; individual recall particularly related to ASF
	ASF food frequency recall
	Family vs individual consumption, particularly the vulnerable (young children; pregnant / post-partum women)
5. Special uses (avoidance) of ASF	Special occasions
	Personal issues

6. What might people be willing to try; to change	Perceived obstacles; perceived motivations within the family; within the community; at the marketplace
	<p>Examples of activities where insights are needed include:</p> <ul style="list-style-type: none"> --potential new or reprised products—esp. dairy --a new processing—fish powder --a new storage or preservation method --a new way to serve the food --different ways to promote

Annex 3: Village Characteristics Table

Province	District	Village	Characteristics
North	Burera (2)	Gashore	<ul style="list-style-type: none"> • Sufficient pop /HH size (915/183) • Religion – Protestant • Female Occupation: Fishing • Male Occupation: Fishing • Rural Community • ASF-Fish, Pigs, Sheep, Poultry
		Rwinkuba	<ul style="list-style-type: none"> • Sufficient pop/HH size (875/175) • Religion – Egise • Female Occupation: Fishing • Male Occupation: Fishing • Rural • ASF- Pigs, Sheep, Poultry
	Gakenke (1)	Musave	<ul style="list-style-type: none"> • 890/178 • Religion: Catholic • Female Occupation: Farmer • Male Occupation: Farmer • Rural • ASF: Pigs, Sheep, Poultry
South	Nyamagabe (3)	Murangara	<ul style="list-style-type: none"> • OK Pop/HH (900/172) • D. Religion: Protestants • Female Occupation: Aggregators/Collectors/Market Vendors • Male Occupations: Casual Worker/Manpower • Semi-urban • ASF: Chicken, Goats, Rabbits
		Biraro	<ul style="list-style-type: none"> • D. Religion: Catholic • Female Occupation: Farmers • Male Occupation: Farming • Rural • ASF: Pigs, Chicken
East	Ngoma (1)	Rwamutabazi	<ul style="list-style-type: none"> • Good sized pop/HH (1230/448) • D. Religion: Catholic • Female Occupation Farmer • Male Occupation: Farmer • Rural • ASF: Cows, Goats, Pigs • If the climate is good, the harvest will be enough. There are cow, goat and pig in some households. There is also poste de santé in the village. Meat of a Cow is available at Market but meat of small livestock can be available at small center in the village
	Kayonza (3)	Muganza	<ul style="list-style-type: none"> • Smaller population/HH (736/135) • D Religion: Methodist • Female Occupation: Farmer • Male Occupation: Mining • Rural • ASF: Chicken, Pigs, Goats • More households have women as head of households. Their prevalent work is working in mining. This village is among the poorest village in Nkondo cell. Some have small livestock, but they are not many. Most of its population don't have land even if they have been living there for a long time. They live in the land of mining and they don't have access on land

		Rubirizi	<ul style="list-style-type: none"> • Pop/HH (892/213) • Religion: Catholic • Female Occupation: Farmer • Male Occupation: Farmer/Mining • Rural • ASF: Goats • Note: Water, school are available for the community. They rely on agriculture and working in mining. The health center is far from the village in 8 Km but they are planning to construct poste de sante in the village.
		Gahengeri	<ul style="list-style-type: none"> • Pop/HH (430/115) • Religion: ADEPR (Muslim 3rd) • Female Occupation: Small business • Male Occupation: Mining • Rural • ASF: Pigs, Goats, Rabbits, Chicken • Food items are very expensive due to bad climate but normally the land is good. Rearing livestock is hard because you should have animal shelter and many people don't have enough land for it.
West	Nyamasheke (2)	Buvugira	<ul style="list-style-type: none"> • Large HH/Pop (1400/239) • Religion: Catholic • Female Occupation: Farmer • Male Occupation: Tea Plantation • Rural • ASF: Small fish, Eggs, Graze Bulls
		Mikingo	<ul style="list-style-type: none"> • Good size pop/HH (1000/200) • Religion: ADEPR • Female Occupation: Coffee/Farmer • Male Occupation: Farmer • Rural • ASF: Pigs, Small Fish, Eggs • Some potters; near Lake Kivu
	Rutsiro (3)	Kinunu	<ul style="list-style-type: none"> • Good Pop/HH Size (963/224) • Religion: Adventist • Female Occupation: Cultivating/Small business (Some small fish) • Male Occupation: Cultivating/Taxi
		Kivugiza	<ul style="list-style-type: none"> • Pop/HH: 1132/254 • Religion: Catholic • Female Occupation: Tea Companies • Male Occupations: Tea • Rural • ASF: Cows, Pigs, Sheep, Goats • Borders the lake. Most of the people in Rutsiro fall in the 1&2 wealth quintiles. In general Rutsiro is lower income as a district.
		Gihari	<ul style="list-style-type: none"> • 1132/244 • Religion: Catholic • Female: Cultivating/Small Business • Male: Cultivating/Mining • Rural • ASF: Cows, Pigs, Goats
	Ngororero (2)	Nsyabire	<ul style="list-style-type: none"> • 1234/264 • ADEPR • Female Occupation: Cultivating/Small Business • Male: Mining/Cultivating • Semi-urban

			<ul style="list-style-type: none"> • ASF: Cows, Goats, Pigs
		Nyanza	<ul style="list-style-type: none"> • 800/204 • Muslim • Female Occupation: Businessman/Government • Male Occupation: Businessman/Government • Semi-Urban • Goats, Poultry