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Rapid Assessment: The impacts of COVID-19 Restrictions on Household Food Security within the Gergera Watershed, Tigray, Ethiopia.

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Introduction

This report presents the results of a rapid assessment of the impacts of COVID-19 restrictions on household food security within the Gergera Watershed located in the Eastern zone of the National Regional State of Tigray, Ethiopia.

The outbreak of COVID-19 from December 2019 has caused a global pandemic. As of 2 October 2020, there has been a recorded 76,098 cases and 1,205 deaths in Ethiopia (Worldometers.info, 2020). Following the first case reported on 13 March, the Ethiopian government closed schools, banned all public gatherings, and recommended social distancing, declaring a state of emergency on 8 April 2020 (Tamru, Hirvonen and Minten, 2020). Prior to the national declaration of state of emergency, the regional government of Tigray announced a regional state of emergency on 26 March 2020. In addition to the federal measures, the Tigray government banned all public transportation and imposed restriction on other vehicle movement between cities and rural areas (Tasfaye, 2020). Both national and regional travel restrictions were lifted on 12 June 2020 (Tadesse, 2020).

While these actions were taken to prevent the spread of COVID-19, there are expected to be impacts on people's livelihoods and food consumption. Developing countries such as Ethiopia not only face a public health emergency, but also a multi-dimensional crisis with long term implications. COVID-19 impacts rural people, who may be particularly vulnerable to its effects, in terms of health, economy, and social consequences. Some of the expected effects of restrictions are disruptions to domestic food supply chains, other shocks affecting food production, loss of income and food security risks.

To identify some of the short-term impacts, this report presents the results of a quantitative rapid assessment of the impact of COVID-19 restrictions on household food security within the Gergera Watershed located in the Eastern zone of the National Regional State of Tigray, Ethiopia. This study was completed in association with the ICRAF¹ and UCC² project 'Developing an Innovation and Learning Platform for Enhanced Economic Opportunities and Resilience in Gergera Watershed: An Action Research Programme'. The aim of the project is to improve food security, economy, and resilience (including climate resilience) for households living in the area through developing innovation and learning platforms, which will facilitate informed policy making and future design and scaling of national programmes.

In collaboration with Mekelle University and ICRAF Ethiopia, the study aims to provide a rapid analysis of the effects of national and regional restrictions on household food consumption habits, access to food, market prices and demand for food, to inform the project and local and regional decision-makers. The primary rationale for the study is to inform the project on how the COVID-19 restrictions have impacted the Gergera

¹ ICRAF – World Agroforestry Centre

² UCC – University College Cork

population's livelihoods and to provide pointers for project activities aimed at securing food production and supply for future activities in a COVID context.

The report outlines people's awareness of COVID-19, current household and food economy, food security, household coping strategies and changes in market prices and demand.

Methodology

This study was conducted using quantitative methods through household surveys, as described below.

Sample Distribution

The study surveyed a total sample of 201 households, selected from a larger panel of 400 households already identified for other survey work being carried out as part of the ICRAF-UCC project. The sample, 201 of a total household population of 1,378, has a confidence level of 95% and a margin of error of 6.4%³. The sample consists of both male and female respondents, living in both male and female headed households. Table 1 displays the distribution of respondents by gender of household head.

The original sample of 400 households was obtained using probability sampling and included stratified random sampling. The households were chosen from the Tabia⁴'s household list: this list was divided between Kushets⁵ and each respondent was then randomly picked from the lists. To obtain the sample for this study 201 households were randomly picked from the original sample list.

Table 1 Sample Distribution

Sample Distribution		
	n	%
Total Sample	201	100
<i>Gender of respondent</i>		
Female	114	56.7
Male	87	43.3
<i>Gender of Household Head</i>		
Female	52	25.9
Male	149	74.1

³ The confidence level of 95% is commonly used to calculate the margin of error for a given sample. It relates to the sample size and the size of the general population of the area. Using a 95% confidence level, a sample size n=201, and the household population of Gergera in 2019 of 1,378 (ICRAF, 2018) the margin of error is calculated at 6.4%.

⁴ A Tabia is an administration division of a village district.

⁵ Kushet is a smaller division of an area in a Tabia.

The sample are residents of Tabia Hayelom and represent households from four surrounding Kushets in the area. Table 2 displays the distribution of the sample by Kushet. The overall household population of each Kushet is Damayno 406, Gergera 241, Geter-Haikmeishal 455 and Degeabur 276.

Table 2 Sample Distribution by Kushet

Sample Distribution by Kushet		
	n	%
<i>Woyna-Dega (Midlands)</i>		
Damayno	61	30.3
Gergera	40	19.9
Geter-Haikmeishal	57	28.4
<i>Dega (Highlands)</i>		
Degeabur	43	21.4

Study Period

The study was conducted during governmental lockdown restrictions in Tigray, during the first week of June 2020. Throughout this report a time frame reference of ‘the past four weeks’ is used, referring to the previous four weeks before the surveys were completed. Throughout the ‘past four weeks’ all restrictions were in place. A four-week recall period was used to measure the impacts of continuous restrictions on household behaviour throughout the lockdown period.

Ethics

All local permissions were granted to allow for data collection and all governmental guidelines were followed throughout the data collection period. Ethical clearance was also obtained from the UCC Social Research Ethics Committee.

COVID-19 Awareness

Awareness of COVID-19 was high within the Gergera Watershed, with 99% of respondents reporting an understanding of the virus. The Ethiopian government focused on public awareness and education in early March (WHO, 2020). There were daily briefings from the health minister and regular public announcements. Part of the media campaign was to use state owned telecoms monopoly Ethio Telecom as a method to spread information. Anyone with access to a mobile phone received information on COVID-19 and preventative measures when placing phone calls (Oqubay, 2020). These measures have had a positive impact on public awareness, reflected by the number of respondents that had access to information which was then disseminated to other community members. Table 3 shows the ranking of reported sources of information about COVID-19.

Table 3 Sources of Information on COVID-19

	Sources of Information	No. Respondents
1 st	Government Announcements	197
2 nd	Word of Mouth	194
3 rd	News	137
4 th	Dial Phone Announcements	111
5 th	Social Media	5

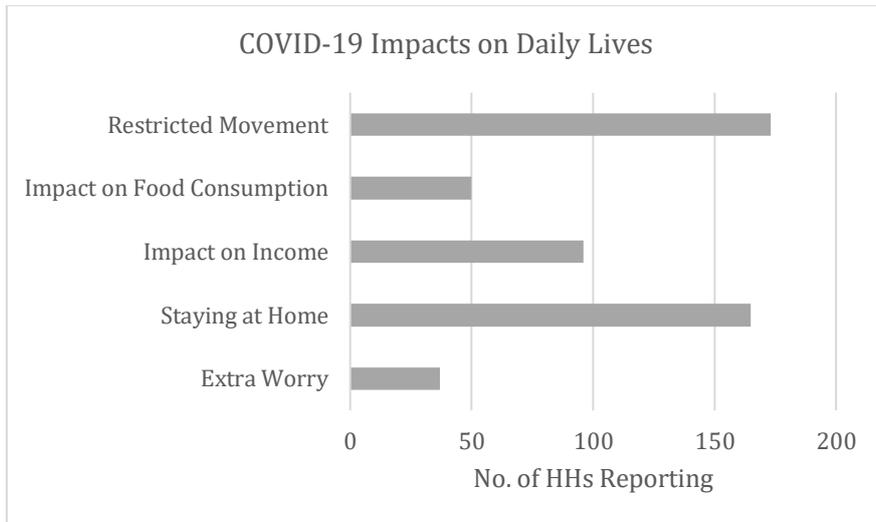
Respondents reported a high level of understanding of preventative measures. Table 4 shows the awareness of government advised precautions.

Table 4 Awareness of Preventative Measures

Preventative Measures	No. of Respondents Aware
Hand Washing	199
Staying at Home	196
Social Distancing	197

When asked about the impact of awareness of COVID-19 during the past four weeks, 92% of respondents reported their awareness had affected their daily lives in some way. 86.1% of respondents reported that restricted movement was the main impact on their daily lives. Figure 1 shows the impacts on daily lives, 47.8% report that COVID-19 and restrictions have impacted the household's income, 24.9% report an impact on household's food consumption.

Figure 1 COVID-19 Impacts on Daily Lives



Household Economy

Agricultural production is the main occupation of residents within the Gergera Watershed, and this is reflected within the sample. The main occupation of the head of households is farming, 97.5% of the total sample. Table 5 shows the breakdown of occupations by household heads.

Table 5 Main Occupation of Household Head

Main Occupation of Household Head		
	n	%
Farmer	196	97.5
Homemaker	2	1
Daily Labourer	1	.5
Trader ⁶	1	.5
Unemployed	1	.5

The main occupation of the household heads is farming, but some households rely on other activities as the primary source of income. Table 6 shows the primary income generating activities. The primary income generating activity of sample households is farming (92%), followed by daily labour (5%); therefore, the majority of the households rely on income from their own agricultural production.

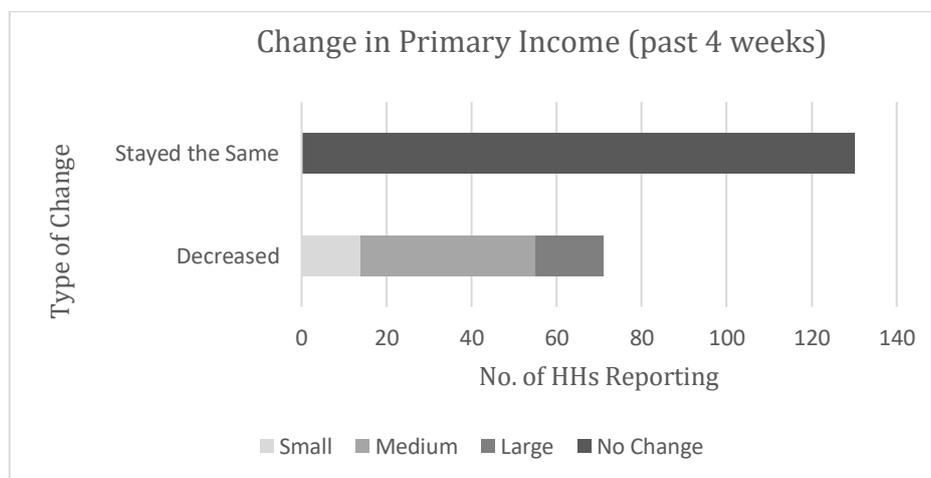
⁶ 'Trader' as an occupation is the buying and selling of goods between markets, this does not include any agricultural production activity.

Table 6 Primary Income Generating Activity

Primary Income Generating Activity		
	n	%
Farming	185	92
Daily Labourer	10	5
Trader	4	2
Government Worker Wages	1	.5
Other	1	.5

Figure 2 shows that during the four weeks prior to data collection, during COVID-19 restrictions, 64.7% of households reported no change in income from the primary income generating activity. Respondents were asked to self-report the severity of change by describing the increase or decrease as small, medium, and large, relative to their usual income. The 71 households reporting a decrease in income described the severity of the decrease as small (19.7%), medium (57.8%) and large (22.5%). None of the households reported an increase in income.

Figure 2 No. of HHs Reporting Change in Primary Income



The nature of decreases in household income can be described through the example of a young woman from the watershed area who told her story of how the travel restrictions affected her and her family personally. She had intended to travel to the local market in Haikmeishal to sell eggs, and use the income received to purchase groceries for her family. On route to the market, she was stopped and informed of the travel restrictions which meant she could not attend the market. In this case the household could not participate in their usual income generating activities and received no income from their produce and had to forego purchasing groceries. The young woman described the event as extremely upsetting and worrisome, and reported that the household had no other avenue to create income until they could access the local market.

Figure 3 displays the severity of the decrease in income by activity. Of the 66 farming households reporting a decrease in income, 21.2% describe the severity as small, 59% medium, and 19.8% large. Within other activities the severity is medium or large. Trading, daily labourer and other (hairdressing) rely on the movement of people, suggesting the restrictions have imposed constraints on these households. This is reflected in Figure 4 which shows the pattern of decrease in working hours. The count of decreased working hours for farming, daily labourers, trading, and other, correlates with the decrease in income related to these activities.

Figure 3 No. of Households Reporting a Decrease in Income by Activity

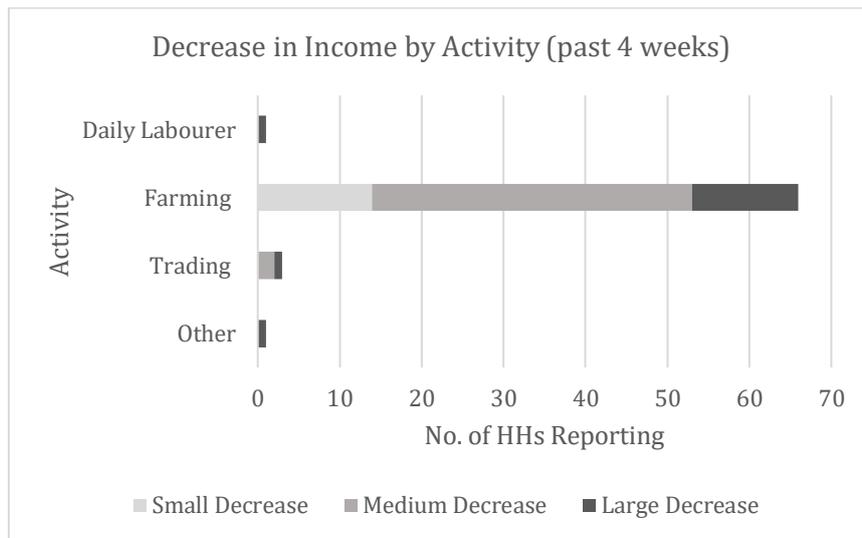
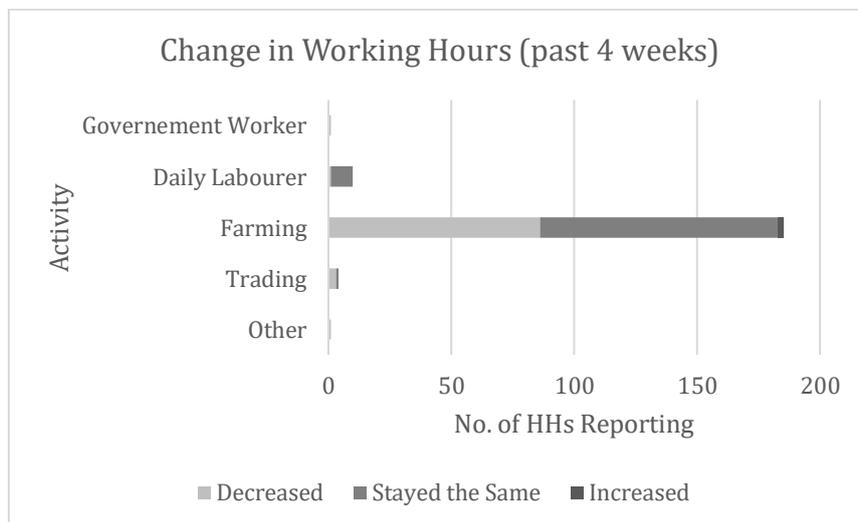


Figure 4 No. of Households Reporting a Change in Work Hours by Activity

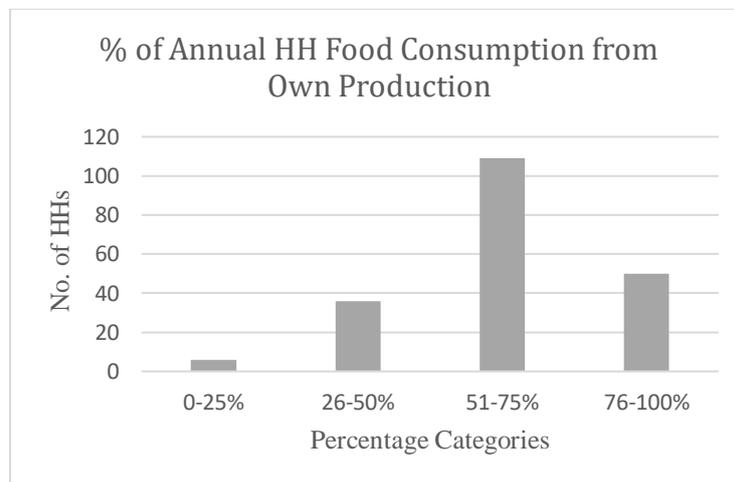


Food Economy

To fully understand household economies particularly in food insecure environments, knowing how households meet their food needs is important. Figure 5 shows the percentage of a household's annual food consumption from own production. 79% of

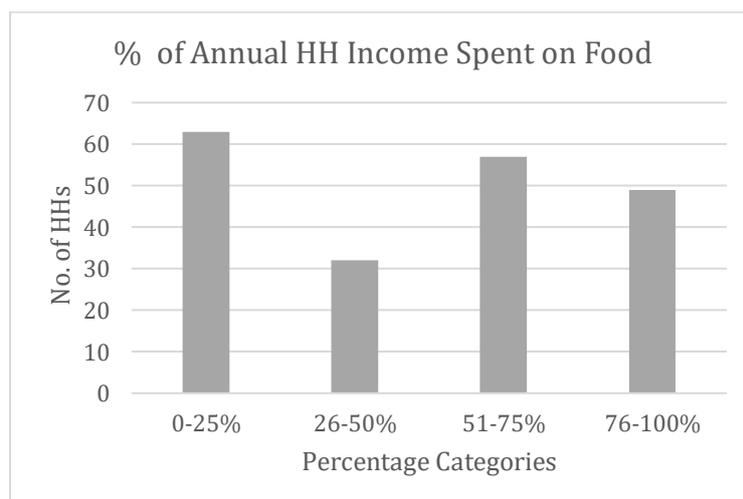
households rely on their own production to satisfy more than half (51-100%) of annual food consumption. When respondents were asked if they were currently worried if they had sufficient food from their own production to meet the immediate food needs of the household, 84.6% reported concern that they currently do not have enough and fear shortages.

Figure 5 Percentage of Annual HH Food Consumption from Own Production



In comparison, Figure 6 shows 52.7% of households spent more than 50% of their annual income on food purchases. Households rely heavily on both their own production and income to meet their food needs, any threats such as limitations due to COVID-19 restrictions can impact a household's ability to meet these needs. Therefore, the reported decreased income and hours of work (see Figures 2 & 4) leave households vulnerable.

Figure 6 Percentage of Annual HH Income Spent on Food



When asked if they were confident that the food they had purchased is sufficient to meet their immediate food needs, 69.2% of respondents reported that they have concerns that the food purchased will not meet household needs and they will be unable to afford to purchase more.

Household Food Security

To rapidly assess the current food security status of households, the Household Hunger Scale (HHS) method was used. The HHS collects data on food quantity and frequency of occurrence of lack of food. It comprises three different questions on household hunger⁷. The computation of the scale results in households being scored from 0-6. The score is then transformed into a Household Hunger Score Category. Table 7 shows the hunger categories.

Table 7 HHS Categorical Indicator

HHS Categorical Indicator	
<i>Household Hunger Scores</i>	<i>Household Hunger Categories</i>
0-1	Little to no hunger in the households
2-3	Moderate hunger in the household
4-6	Severe hunger in the household

Figure 7 displays the results of the HHS, 92% of households fall within the 'Little to no hunger in the household' category, 8% in 'Moderate hunger in the household'. No households were categorised as having severe hunger in the household. The HHS was disaggregated by Kushet to compare differences in HHS results by geographical location. Figure 8 shows that 23.3% of households in Degeabur are categorised as having moderate hunger. As this Kushet is located in the highlands, households have less access to markets to purchase food.

⁷ See Appendix

Figure 7 No. of Households within Household Hunger Scale Categories

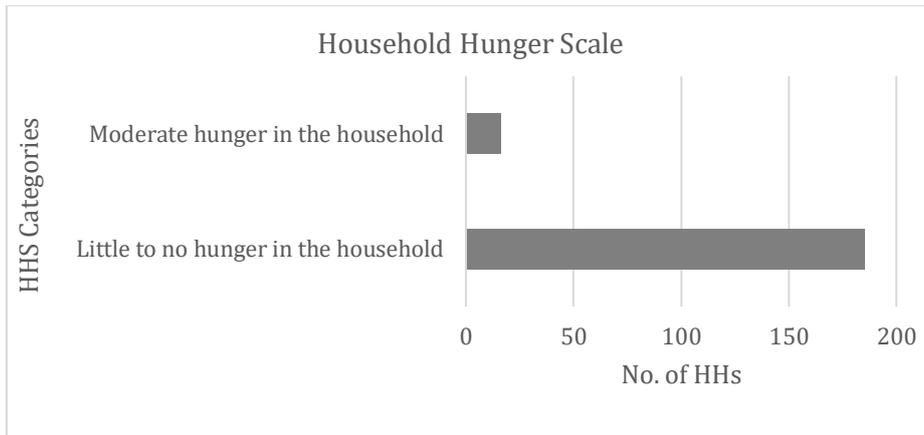
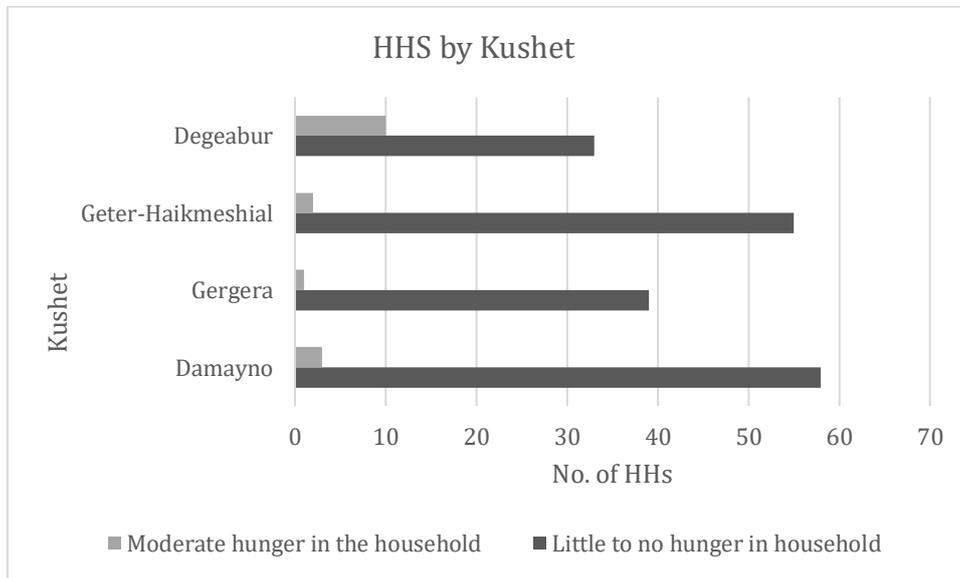
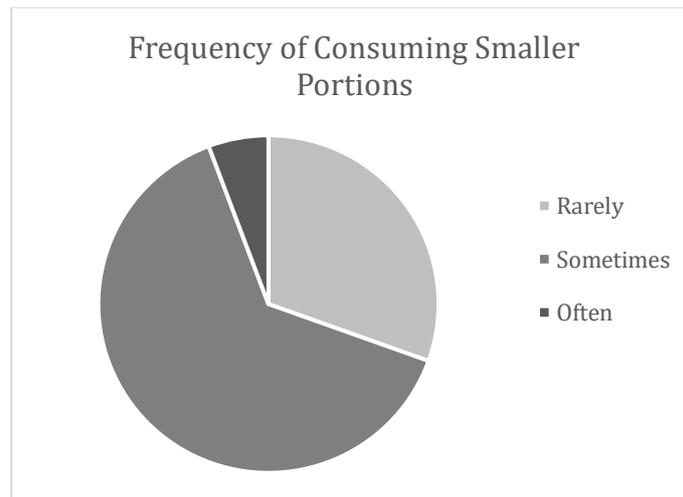


Figure 8 Household Hunger Scale by Kushet



The HHS captures the levels of hunger within a household. With the sudden change in normal activities and income levels due to COVID-19 restrictions, the study analysed current changes in food consumption and purchase habits, to reflect the immediate responses of households. 52.7% of households consumed smaller portions than usual due to lack of food within the past four weeks. Figure 9 displays the frequency of consuming smaller portions; 30% of households who had reduced portions reported to have done so rarely, 64% sometimes and 6% often.

Figure 9 Frequency of Consuming Smaller Portions

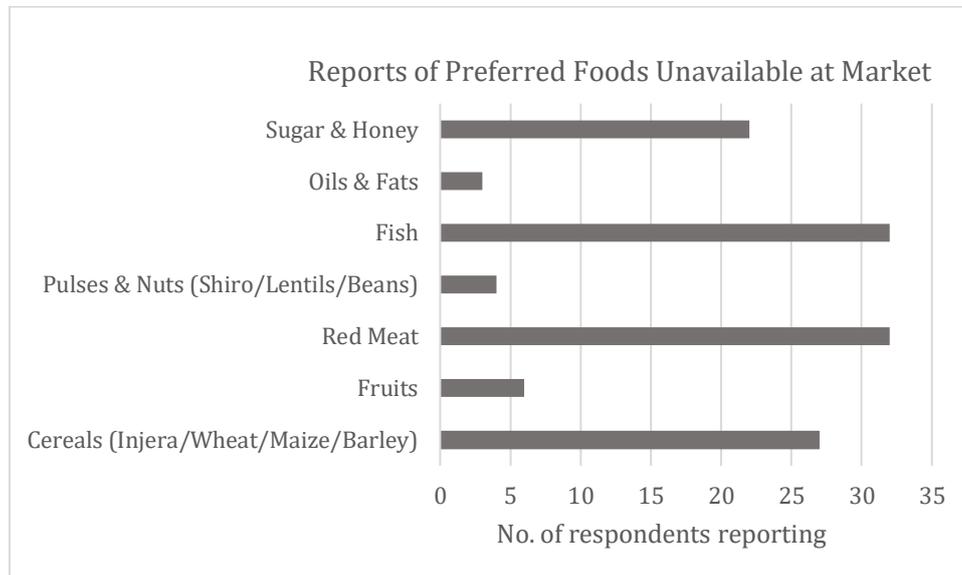


In addition to measuring household hunger and consumption habits, and to better understand the current food security situation, the study collected data on consumption patterns related to availability and price of certain food products and livestock.

Respondents were asked about the impact of the availability of their food purchase choices: 30.3% reported that during the past four weeks a household member had not eaten a preferred food because it was not available at the market. Figure 10 shows that in a total of 126 instances households wished to purchase preferred food, but these were unavailable at the market. Both red meat and fish were unavailable in 33 instances. Any products that are not currently being produced in the Gergera watershed

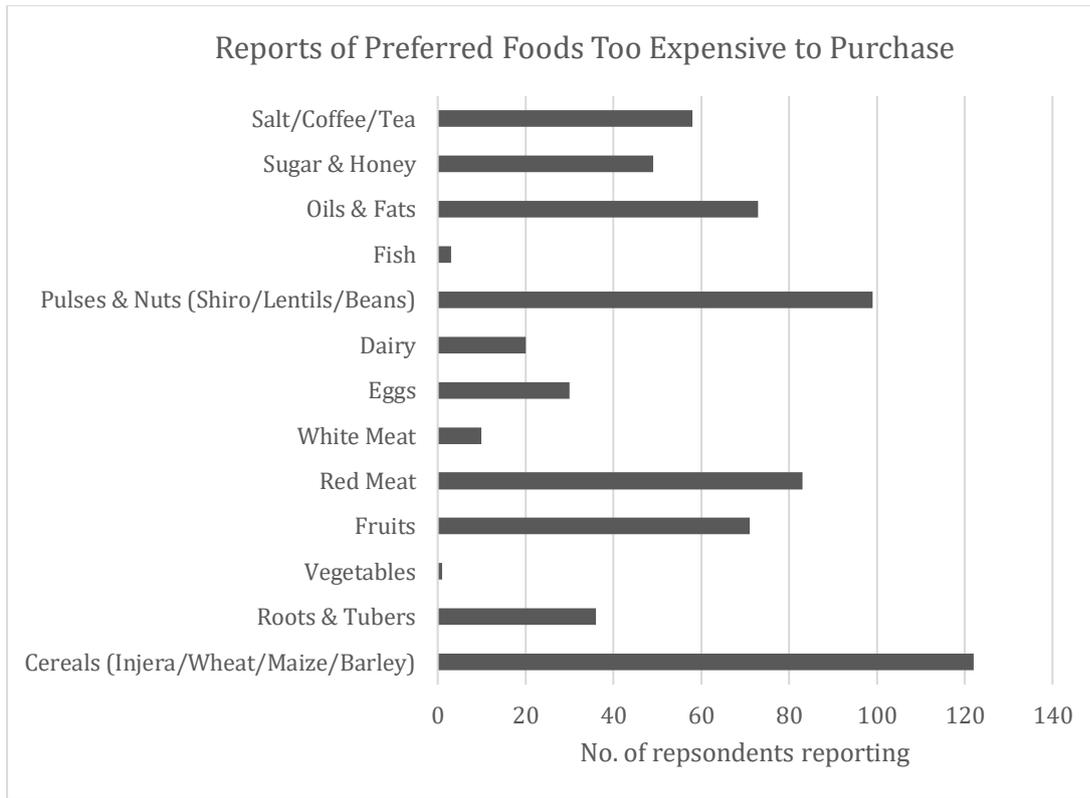
area may not have been transported to local markets, or the consumer was unable to travel to market in the nearest town due to travel restrictions being enforced.

Figure 10 Reports of Preferred Foods Unavailable at Market



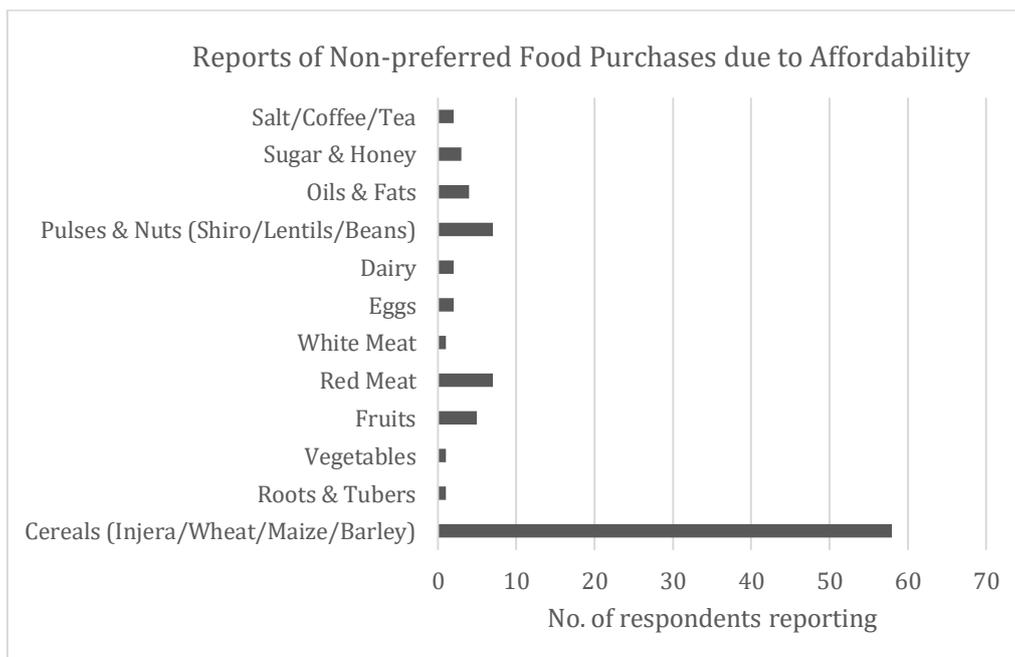
The availability of food products impacted consumption habits; however, households reported the main factor influencing food purchases was price. 68.2% of respondents reported that a household member had not eaten a preferred food during the past four weeks because it was too expensive to purchase at the market. Figure 11 shows the number of instances when preferred foods were foregone by households due to price. Cereals followed by pulses and nuts were the products most reported to be too expensive to purchase. The prices of salt, coffee, and tea may reflect supply issues due to transportation and travel restrictions.

Figure 11 Reports of Preferred Foods Too Expensive to Purchase



Similarly, 28.9% of respondents reported that in the past four weeks a household member had eaten a non-preferred food because it was cheaper and affordable. Figure 12 shows which non-preferred products were purchased because of affordability.

Figure 12 Reports of Non-preferred food purchased due affordability



Increase in prices of commodities, with a decrease in income results in households foregoing preferred foods and purchasing less nutritious foods.

Coping Strategies

To respond to sudden changes, households rely on coping strategies to meet their basic needs. This section outlines the main coping strategies in response to income and labour changes.

In the past four weeks, 24.9% of respondents report that a member of the household received money or food from outside the households. The main sources of the external aid were 98% family and friends and 2% government agency aid. Of the total sample, 84.5% reported having used alternative income sources to supplement their main income during the past four weeks. Table 8 details the sources used to respond to lower income. Households used one or a combination of the activities shown.

Table 8 Alternative Income Sources

Alternative Income Sources	
Sources	No. of households
Used Savings	131
Done Extra Work	31
Sold Assets	46
Borrowed Money	11
Received Remittance	1
Rent out their house	1

Productive Safety Net Programme

The Productive Safety Net Programme (PSNP) is a programme designed to protect vulnerable households by offering employment to supplement income and food. From the total sample 81 households (40.3%) were currently participating in the PSNP. Of these 49.3% reported that the number of hours available, since the beginning of the government enforced lockdown, had decreased, the remaining 50.7% reported it stayed the same. Only two households reported that the amount of income/food received from the PSNP had decreased; the remaining 79 reported no change.

Of the total sample 81 households participating in the PSNP, 76 households fell within the 'Low to no hunger in the household' HHS category. This may suggest that the regular payments from PSNP assisted in keeping household hunger levels low in the previous four weeks.

Markets

The government-imposed travel restrictions were likely to impact access to markets where households sell product and livestock. This section analyses trends in prices and

demand of certain goods in markets over the previous four weeks. Overall, 58.9% (n=119) of the sample households sold produce and livestock at markets for income.

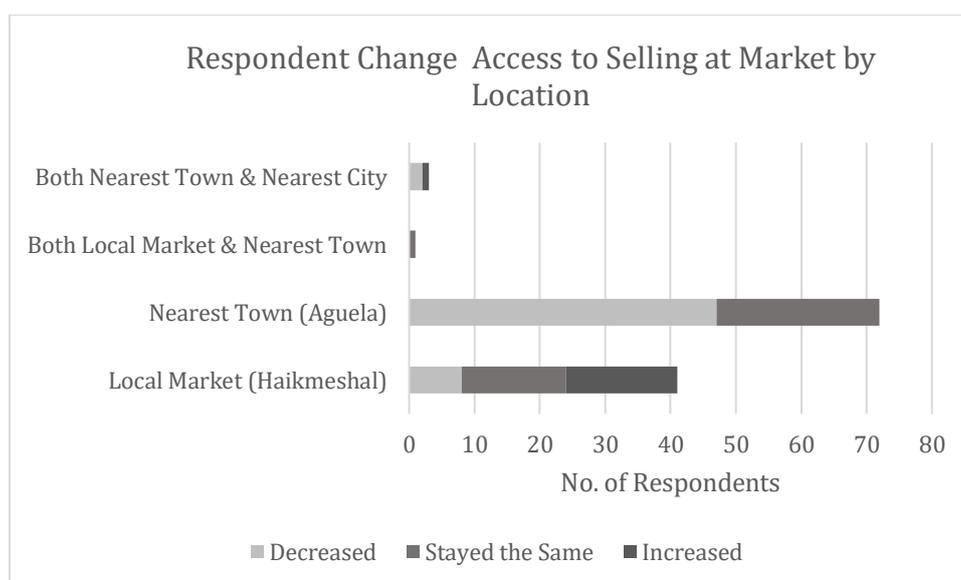
Table 9 shows the location of markets where households sell product and livestock for income.

Table 9 Market Locations

Market	No of Sellers
Local Market (Haikmeshal)	41
Nearest Town (Aguela)	72
Both Local Market & Nearest Town	1
Both Nearest Town & Nearest City	3
Missing	2

Respondents involved in selling goods for income were asked about the change in access to markets over the past four weeks. Figure 13 shows the type of change at each market location. The most notable change is the reported 65.3% decrease in access to selling at the nearest town (Aguela), this is matched with an increase in access to selling at the local market. Over half (58.3%) of sellers reported no change in access. As access to the nearest town had decreased for both sellers and buyers, demand increased within the local market. One respondent reported increased selling in both the nearest town and nearest city

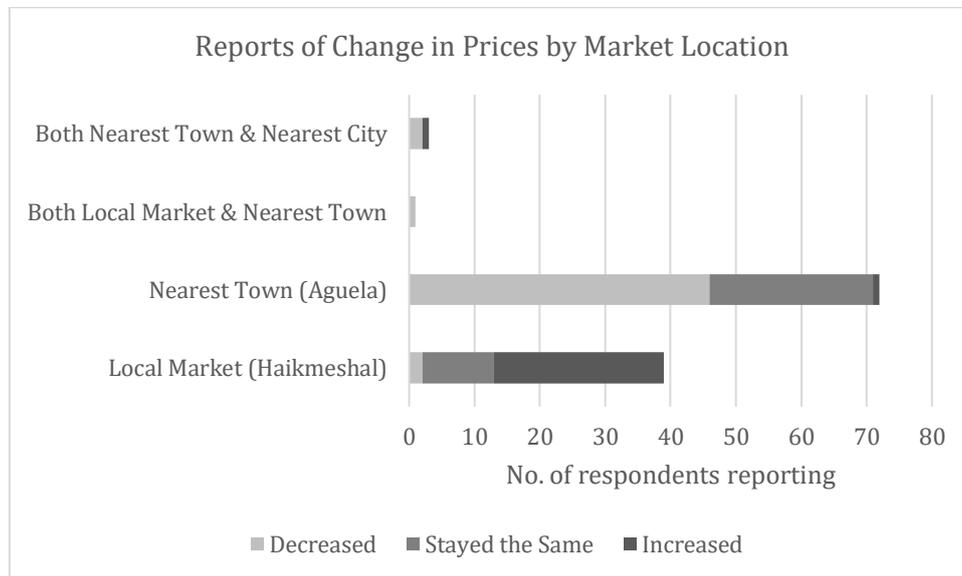
Figure 13 Respondent Change in Access to Selling at Market by Location



Changes in access to markets lead to fluctuations in the price received for produce and livestock commodities. Figure 14 shows the changes in prices received for commodities

by market location. Increased access to selling at the local market correlates with the increase in price received for goods sold at the local market. Of those reporting an increase in price received, 7.41% report the increase as small, 77.8% medium and 14.8% large.

Figure 14 Reports of Change in Prices by Market Location



Figures 15 & 16 show the reported instances of price changes by commodity. Medium livestock refers to goats and sheep, large livestock refers to cows, oxen, and donkeys.

All reported price increases are from households that sell at the local market. Figure 15 shows that the price received for all commodities has increased at the local market. There were only two instances of a decrease reported. Contrastingly, Figure 16 shows that at the nearest town market the price received has decreased for all commodities; there was only one instance where a seller received an increased price.

Figure 15 Reports of Local Market Price Change by Commodity



Figure 16 Reports of Nearest Town Market Price Change by Commodity



Figures 17 & 18 show the perceived change in demand for commodities by market location. The sellers were asked if they had experienced a change in demand for the produce or livestock, they sold in the past four weeks. Sellers at the local market have experienced mostly higher demand for commodities as consumers are restricted from travelling to the nearest town market. Sellers from the nearest town market, however, all reported a decrease in demand. Figure 17 shows that some suppliers to the local market reported an increase in demand, while others reported a decrease, whereas sellers at the nearest town market have only experienced decreases in demand across all commodities, excluding dairy.

Figure 17 Reports of Local Market Demand Changes by Commodity

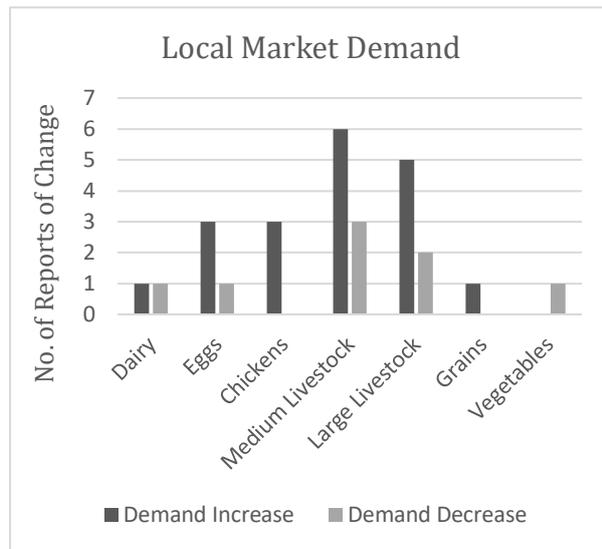


Figure 18 Reports of Nearest Town Market Demand Changes by Commodity

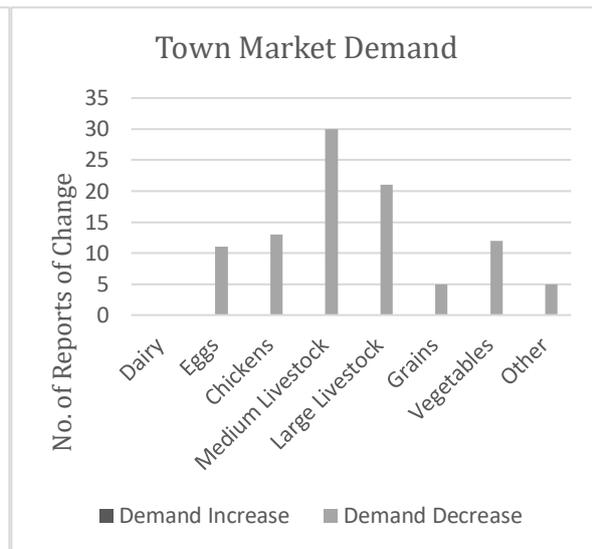
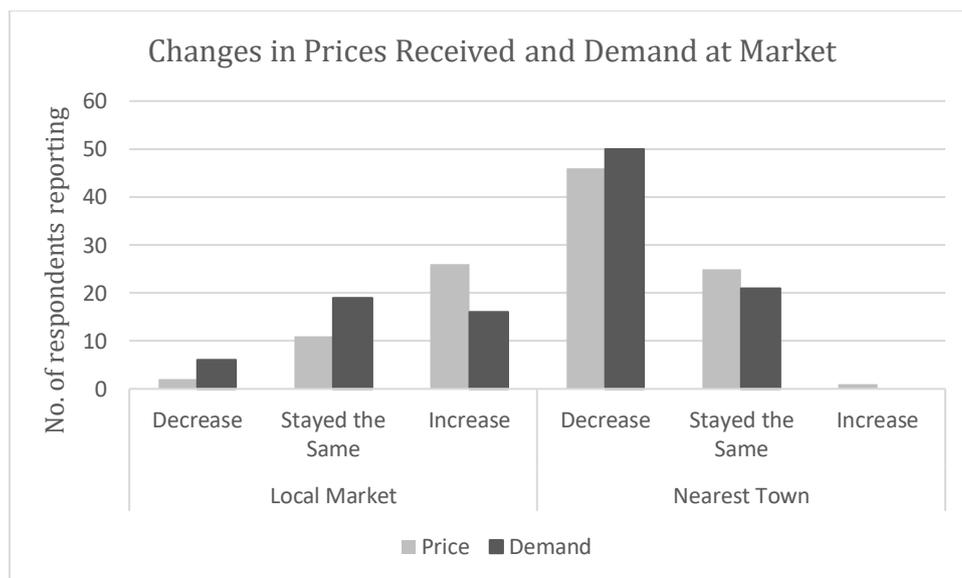


Figure 19 shows a comparison of change in demand and prices by the two market locations. As mentioned above access to selling at the local market increased during the period, this has affected the prices and demand of commodities at the local market, where both prices and demand have increased. Sellers at the local market that reported an increase described the severity of increase as small (1.64%), medium (83.6%) and large (14.75%). Comparatively, access, prices and demand have decreased at the nearest town’s market. It should be noted that 34.5% of the total households reliant on selling product/livestock have reported no change in either access, price, or demand.

Figure 19 No. of Respondents Reporting Change in Prices Received and Demand at Market



Travel restrictions may have limited both sellers’ and consumers’ attendance at the nearest town market in Aguela. The decrease in access to the nearest town market has shifted the demand to local markets, benefiting the sellers as both demand and prices

received are higher over the past four weeks. However, referring to Figure 11, this has had a negative impact on the buyers and consumers at local market level as 68.2% of households reported that some preferred commodities were foregone due to higher prices.

The sample households involved in selling did not include a large number of respondents that rely on selling at the nearest city market. However, according to the Tabia leader, produce that usually was intended for sale in the nearest city Mekelle was sometimes wasted - products such as vegetables and fruits spoiled before access to sale was available. In response to the travel ban the Tabia leader and farmers sent some of their produce to Mekelle by vehicles normally used for public transport, with the cooperation of the drivers/owners. This way of selling was not successful for many farmers as they had no negotiating power with the buyers in Mekelle and often received much lower prices for their produce. In some instances, the farmers did not receive the payment from sales until several weeks after they had sent their produce to market.

The impact of the government-imposed travel restriction reached beyond day-to-day activities. During the Ethiopian Orthodox Easter festival, the tradition of breaking fasting in celebration by consuming sheep or goat products was unattainable for many households due to market distortions. Farmers and herders who usually travel to towns or cities to supply the markets with sheep and goats were unable to do so this year. This led to merchants (middlemen traders) purchasing livestock for reduced prices, as those who could sell had restricted options and low negotiation power. The merchants then sold the produce at much higher prices to consumers, and it was reported that many households could not afford to purchase livestock for meat during the Easter festivities. In this case the merchants gained the most from travel restrictions, as the producers (farmers and herders) received a lower price than expected and the consumers had to pay a much higher price or forego consuming meat.

Conclusions and Recommendations

The COVID-19 pandemic is impacting the livelihoods and food security of households within the Gergera Watershed. The effects have increased household vulnerability and caused uncertainty for many. Restrictions have led to 92% of households reporting that their daily lives have been impacted since the lockdown. Limitations of movement and travel have further isolated the rural community, leading to an increase in households relying on coping strategies to sustain their economic and food needs.

Household and Food Economy

Within the sample households, 35.3% have experienced a reduction in income. As the majority of the households rely on farming as both an income source and food source, any disturbance to farming activities is going to have an effect on their livelihoods. Currently, 84.6% of farmers relying on own production for household food consumption report that they have insufficient production to satisfy the household's immediate food needs and fear shortages in the months ahead. Reduced income will also affect households' ability to purchase food, in a situation where 52.7% of households spend more than half of their annual income on food. Household food security relies heavily on the household's ability to either produce food or purchase food with income generated from agricultural production. The households that do not rely on agriculture for their primary source of income rely on activities such as trading, daily labour and hairdressing which depend in turn on unrestricted movement of people, and these households have felt the impact through decreased working hours and reduced income.

Food Security

The results of the Household Hunger Score are relatively positive, as 92% of households are categorised as 'Little to no hunger in the household', with the remaining 8% falling within the 'Moderate hunger in the household' category. The study included recent changes in consumption and purchase behaviour to reflect the short-term impacts of restrictions. Over half (52.7%) of households consumed smaller portions than usual, due to lack of food within the past four weeks. In addition, the change of consumption patterns, due to availability and price of certain foods, has had a significant impact on household consumption. Availability of certain foods has been reduced, since goods not produced in Gergera could not be transported due to the restrictions on travel between towns and rural areas. For example, 30.3% of households had not eaten a preferred food due to unavailability at the local market. Although availability influenced household consumption, price had the largest impact on eating habits: 68.2% of households did not eat a preferred food due to an increase in price at the local market.

Interestingly, the most popular foods to buy due to lower prices are cereals; the most demanded but least available food was red meat; and the second most popular food type, but unavailable to purchase due to high prices is pulses and nuts. This suggests a shift in the nutritional value of the types of food being consumed. Households may be replacing more nutritious foods like red meat and pulses and nuts for more calorie-dense but less nutritious and cheaper food such as cereals. Cereals were also the largest category which respondents could not purchase because of price, indicating substitution in consumption between cereals towards inferior cereal crops. It should be noted that for a wider understanding of the nutritional status of the households, further research and more detailed nutritional indicators are required.

Coping Strategies

In response to the unanticipated change in daily life, income, and consumption, 84.5% of households report using alternative income sources to supplement their main income as a coping strategy over the previous four weeks. This is of concern as, if there is another shock to livelihoods, coping strategies may not be sufficient to sustain adequate levels of food consumption and income. The PSNP supplements food and income of 81 households: in the previous four weeks 49.3% of households reported a decrease in hours but only 2.5% reported a decrease in earnings. This indicates some adaptability in the operation of the PSNP in response to the challenges of covid-19. The PSNP is crucial to supporting local households and may see an increase in participation in the area.

Market Price and Demand

Households involved in selling products and livestock for income made up 58.9% of the sample of which 60.50% relied on selling at the nearest town market and 34.5% at the local market. The biggest challenge is the restricted access to the nearest town. Many respondents who usually sell at the nearest town market have reported a decrease in price, and consumer demand, across all commodities.

The main changes in market prices and demand can be seen at the local market, where the restrictions have disturbed the normal value chain. Access to the local market has increased relative to normal market patterns, driving up both the prices of and demand for food and goods. At the nearest town market access, prices and demand have all decreased.

Travel restrictions have impacted both sellers and consumers. The decrease in access to the nearest town market has shifted demand towards the local market. An increase in demand for certain commodities at local market has driven the prices up, benefiting local sellers, but negatively affecting local consumers who are already experiencing reductions in their income.

Recommendations

The COVID-19 pandemic has exacerbated the vulnerabilities within current food production and distribution systems. Due to the high reliance of Gergera's population on agricultural production as a means of livelihood, access to farming inputs and to trading opportunities must be secured. In a case of future restrictions, farmers must have pathways to secure access to farming inputs and markets to maximise production to protect against further decreases in income and food security.

The project has the potential to use existing agricultural extension networks to inform the rural population about risks and responses and what assistance is available to mitigate the impacts of COVID-19.

A potential measure to alleviate the impacts of restrictions would include facilitating access to markets to support small-scale farmers selling their products, this would aid trading and reduce the price increases at local market for consumers. There is a need to develop innovative mechanisms, including using digital communications systems, to provide continued access to markets at fair prices. This can be a particular issue for perishable commodities produced in the watershed such as tomatoes and onions.

Furthermore, as households have relied on coping strategies to sustain their livelihoods throughout the restriction period, future shocks caused by another governmental lockdown, climate or environmental shocks may threaten income and food supply. Safety net programmes such as PSNP and governmental assistance, alongside access to reliable credit institutions need to be adaptable and prepared for an increase in demand and support to the local community. The PSNP and similar initiatives need to focus on meeting nutritional needs of the population by ensuring access to a greater diversity of nutrient-rich foods, not just cereals.

The differential impacts of covid-19 and lockdown restrictions, and the ways in which these impacts occur, need to be fully understood to ensure the design of interventions focused on economic inclusion and social protection of all households and to build longer-term resilience.

Bibliography

Oqubay, A., 2020. *Ethiopia'S Unconventional COVID-19 Response*. [online] World Economic Forum. Available at: <<https://www.weforum.org/agenda/2020/06/ethiopia-covid19-response/>> [Accessed 1 August 2020].

Tadesse, A., 2020. Ethiopia Relaxes COVID-19 Restrictions. [online] Anadoula Agency. Available at: <<https://www.aa.com.tr/en/africa/ethiopia-relaxes-covid-19-restrictions/1883289>> [Accessed 27 August 2020].

Tamru, S., Hirvonen, K. and Minten, B., 2020. *Impacts Of The COVID-19 Crisis On Vegetable Value Chains In Ethiopia*. [online] IFPRI.org. Available at: <<https://www.ifpri.org/blog/impacts-covid-19-crisis-vegetable-value-chains-ethiopia>> [Accessed 1 August 2020].

Tasfaye, E., 2020. *Ethiopia'S COVID-19 Quandary - Ethiopia Insight*. [online] Ethiopia Insight. Available at: <<https://www.ethiopia-insight.com/2020/04/01/ethiopias-covid-19-quandary/>> [Accessed 1 August 2020].

WHO, 2020. COVID-19 Response Bulletin Ethiopia. [online] Available at: <https://reliefweb.int/sites/reliefweb.int/files/resources/COVID-19%20RESPONSE%20bulletin%20for%20ETHIOPIA_27MAR2020.pdf> [Accessed 17 September 2020].

Worldometers.info, 2020. *Ethiopia Coronavirus: 28,894 Cases And 509 Deaths - Worldometer*. [online] Worldometers.info. Available at: <<https://www.worldometers.info/coronavirus/country/ethiopia/>> [Accessed 16 August 2020].

Appendix

Table 2. HHS Module

No.	Question	Response Option	Code
Q1	In the past [4 weeks/30 days], was there ever no food to eat of any kind in your house because of lack of resources to get food?	0 = No (Skip to Q2) 1 = Yes	<input type="checkbox"/>
Q1a	How often did this happen in the past [4 weeks/30 days]?	1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times)	<input type="checkbox"/>
Q2	In the past [4 weeks/30 days], did you or any household member go to sleep at night hungry because there was not enough food?	0 = No (Skip to Q3) 1 = Yes	<input type="checkbox"/>
Q2a	How often did this happen in the past [4 weeks/30 days]?	1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times)	<input type="checkbox"/>
Q3	In the past [4 weeks/30 days], did you or any household member go a whole day and night without eating anything at all because there was not enough food?	0 = No (Skip to the next section) 1 = Yes	<input type="checkbox"/>
Q3a	How often did this happen in the past [4 weeks/30 days]?	1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times)	<input type="checkbox"/>

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