Monitoring and Evaluation for the
DFID Somalia 2013-2017 Humanitarian Programme

Impact Evaluation:

Shocks & Hard Knocks:

The Impact of Resilience Programming in Somalia

Final Report
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Dorian LaGuardia

Andrew Pinney

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Figure 1: Map of Somalia showing districts referenced throughout this report

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Abbreviations & Acronyms

BRCiS	Building Resilient Communities in Somalia	**MESH**	DFID M&E for the Somalia Humanitarian Programme Project
Business Case	Somalia Humanitarian Business Case	**MVA**	Multivariate Analysis
CAS	Complex Adaptive Systems	**MYHP**	Multi-year humanitarian programme
CF	Counterfactual community	**NCA**	Nutritional Casual Analysis
CSI	Coping Strategy Index	**NGO**	Non-Governmental Organisation
D&A Report	Data and Analysis Report	**OCHA**	The United Nations Office for the Coordination of Humanitarian Affairs
DAC	Development Co-operation Directorate (OECD)	**OECD**	Organisation for Economic Co-operation and Development
DFID	Department for International Development of the United Kingdom	**Programme**	Somalia Humanitarian Programme 2013 – 2017
Dif-dif	Difference-in-difference	**RCT**	Randomised Control Trials
EQs	Evaluation Questions	**RD**	Regression Discontinuity
Evaluation	The evaluation for humanitarian action and resilience; impact evaluation	**RIMA**	Resilience Index Measurement and Analysis
FANTA	Food and Nutrition Technical Assistance	**SAM**	Severe Acute Malnutrition
FAO	Food and Agriculture Organisation of the United Nations	**SEQAS**	Specialist Evaluation and Quality Assurance Service
FCS	Food Consumption Score	**SGBV**	Sexual Gender Based Violence
FEWS NET	Famine Early Warning System Network	**SQUEAC**	Semi-Quantitative Evaluation of Access and Coverage
FSNAU	Food Security and Nutrition Analysis Unit for Somalia	**SNS**	Strengthening Nutrition Security in South Central Somalia (Nutrition Consortium)
GAM	Global Acute Malnutrition		
GIS	Geographic Information System	**SSD**	Statistics for Sustainable Development
GPS	Global Positioning System	**TPM**	Third Party Monitoring
HDDS	Household Dietary Diversity Score	**UK**	United Kingdom
HH	Household	**UN**	United Nations
IDP	Internally Displaced Person(s)	**UNDP**	United Nations Development Programme
IEG	Independent Evaluation Group (World Bank)	**UNFPA**	United Nations Population Fund
IFRC	International Federation of the Red Cross	**UNICEF**	The United Nations Children's Fund
INGO	International Non-Governmental Organisation	**UNJRS**	United Nations Joint Resilience Strategy
INT	Intervention community	**UNSOM**	United Nations Operation in Somalia
IRF	Internal Risk Facility	**WASH**	Water, Sanitation & Hygiene
IYCF	Infant and Young Child Feeding	**WFP**	United Nations World Food Programme
M&E	Monitoring & Evaluation		

A list of figures, list of tables, and index are included in the *Annexes*.

Executive Summary

This is the final report regarding an impact evaluation (evaluation) of the United Kingdom (UK) Department for International Development's (DFID) Somalia 2013 – 2017 Humanitarian Programme.

Somalia remains one of the poorest, most unstable, food insecure and crisis susceptible countries in the world.[1] The operating context in Somalia has been complicated for over 30 years and, while there are signs of improvement, any assessment must be grounded in the realities of working in one of the most operationally challenging countries in the world. Somalia remains extremely poor, with an annual per capita income of just $435. This is exacerbated by some of the highest malnutrition prevalence rates in the world with an average of 320,000 children malnourished at any one time.[2] An estimated 2.2 million people experience food security crises and emergencies annually and are thus urgently in need of humanitarian assistance to prevent high levels of acute malnutrition. [3] This has led to deadly famines in Somalia, including the 2011 -2012 famine, during which approximately 250,000 people—mostly children--died.

The DFID Somalia Business Case 2013 – 2017 grew out of this context and, particularly, in response to the 2011-2012 famine. This one of the first DFID multi-year humanitarian programmes and set-out to leverage multi-year approaches to address chronic vulnerabilities.[4] In Somalia, DFID set out two complementary objectives. First, provide flexible multi-annual funding for humanitarian programmes specifically targeting the most vulnerable, including children and Internally Displaced Persons (IDPs). Second, identify and target the chronically vulnerable with resilience enhancing activities designed to strengthen livelihoods and restore coping strategies and where possible to assist in the graduation away from humanitarian aid.[5] This thus provided for both early, flexible, emergency response and longer-term resilience to address chronic vulnerabilities.

At the time of the DFID Business case, resilience was particularly promising. **Resilience in humanitarian contexts is defined as households' and communities' capacities to predict, respond, and recover from climate and conflict related crises (shocks) and thus be positioned to reduce chronic vulnerabilities over time.** Recognises the need to have a balanced portfolio approach, DFID invested in two different resilience programmes. The first was led by FAO, UNICEF, and WFP as a 'joint strategy' (United Nations Joint Resilience Strategy; UNJRS) in which the three agencies' approaches were seen as complementary. Building Resilient Communities in Somalia (BRCiS), an NGO consortium, sought to define what communities viewed as necessary to predict, withstand and recover from shocks. This was more elaborate than traditional community participatory approaches in that BRCiS worked with communities to develop interventions across sectors (food security, safety/security, water and sanitation, income, etc.) and then supported the communities as the primary 'implementers' of these 'solutions.' DFID also supported an NGO consortium dedicated to addressing the underlying causes of malnutrition and other more traditional actors (IFRC, OCHA) as part of the broader programme.

Given that multi-year humanitarian programming and resilience programming in complex humanitarian contexts were both relatively new to DFID, DFID agreed that a comprehensive longitudinal study was required to assess the impact of its resilience programming. This led to this impact evaluation.

As described throughout, **this evaluation shows that DFID's multi-year support has been largely successful, especially in its ability to prevent a famine in 2017—a largely unprecedented humanitarian success**. While DFID supported communities certainly suffered during this crisis, food security and coping strategies did not decline to points of widespread malnutrition, largely prevented stress migration, and had other benefits that enabled these communities to recover to pre-crisis levels within 12 months after the height of the crisis.

The evaluation shows that the results are different when comparing UN supported communities with those supported by BRCiS. In the case of UNJRS, the UN agencies provided direct services to communities, largely without community-based approaches that engaged communities throughout a project cycle. This direct service model included a massive injection of multi-purpose cash assistance during the 2017 food security crisis. While there were significant variations in food security indicators over the period of study, this model was largely effective, with a significant recovery from the food security crisis to levels commensurate with those from the first baseline survey of the evaluation.

In the case of BRCiS, there was far less volatility in food security and other outcome-level indicators as compared to UN supported communities. BRCiS communities did suffer during the 2017 food security crisis, with a continuing decline on

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[1] Somalia is ranked 165th out of 170 countries on the Human Development Index and is the 5th poorest country according to the World Bank.

[2] "Business Case: Somalia Humanitarian and Resilience Programme (SHARP)." DFID. Page 2.

[3] Based on Integrated Phase Classification levels 3 & 4.

[4] For a good evaluation of DFID multi-year funding in other country contexts, see: Simon Levin, Lewis Sida, Bill Gray, and Courtenay Cabot Venton. "Multi-year Humanitarian Finding: A thematic Evaluation." ODI; July 2019.

[5] "Somalia Humanitarian Business Case 2013 – 2017." DFID, March 2014. Page 5.

food security, but never to points where malnutrition was widespread. Qualitive evidence suggests that these communities had fewer expectations regarding direct support from the international community, citing a number of ways in which they had improved—on their own--the ways in which they responded to and recovered from shocks. This too stands as a major success and less volatility and community-inspired solutions bode well for this type of programming going forward.

While these results are exceptionally promising, the evaluation also illustrated how much more needs to be known about how people overcome chronic vulnerabilities in highly unstable, poor, and under-developed countries like Somalia. This includes the role of gender and women's empowerment, social connections and social capital exchanges during crisis, socio-behavioural attitudes to crisis and change, and the limited role of asset accumulation in relation to food security and increased resilience. In this sense, the evaluation stands as a first step toward more nuanced and operationally focused issues related to how to provide long-term support to Somalis.

Evaluation Objectives & Purpose

DFID Somalia's multi-year humanitarian programme (MYHP) had three objectives. First, provide flexible multi-annual funding for humanitarian programmes. Second, identify and target the chronically vulnerable with resilience enhancing activities designed to strengthen livelihoods and restore coping strategies and, where possible, to assist in graduation away from humanitarian aid. Third, influence and promote change in the humanitarian system to ensure better coordination, responsiveness, and targeting of aid, and finally, develop new and innovative ways to monitor implementation and build an evidence base to understand and ensure maximum impact for UK Aid.[6] This evaluation focuses on the first two objectives and, by fact of being an impact evaluation, provides a foundation of evidence for future programmes. Given this, the evaluation seeks to answer two primary questions:

- **To what extent does DFID funding improve outcomes for those in need of humanitarian assistance?**
- **Is there evidence of greater resilience of populations experiencing DFID programming?**

The first concerns life-saving activities, like addressing the underlying issues that contribute to severe malnutrition, while the second concerns how the most vulnerable Somalis prepare for, withstand, and recover from climate and conflict-related shocks.[7] Given the 2017 drought and subsequent food security crisis, the MYHP was, unfortunately, put to the test to see how and if communities were better prepared, better able to respond, and better able to recover from such shocks. In fact, these aspects of resilience, given the humanitarian and operational context, have become the primary focus of this report.

Given this focus, the evaluation is intended to provide accountability for DFID supported programmes—are there better humanitarian outcomes and greater resilience. The evaluation, by nature, is also about drawing lessons from this level of accountability, lessons and recommendations about humanitarian action and resilience in Somalia and in other complicated operating environments.

The evaluation is intended to serve DFID in the design of future humanitarian programmes in Somalia and elsewhere as well as DFID supported partners who are design multi-year approaches to chronic vulnerabilities, especially concerning food security crises. It is also expected that the findings, lessons, conclusions, and recommendations may inform the design of both monitoring and impact evaluations, as well as other analysis and research regarding humanitarian action in complex operating environments.

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[6] "Somalia Humanitarian Business Case 2013 – 2017." DFID, March 2014. Page 5.

[7] Our definition of resilience is specific to humanitarian contexts. For an overview of the issues and constraints associated with resilience, see: Simon Levine & Irina Mosel, *Supporting Resilience in Difficult Places*. Overseas Development Institute, April 2014; & Adam Pain & Simon Levine, *A Conceptual Analysis of Livelihoods and Resilience: Addressing the 'Insecurity of Agency'*. Humanitarian Policy Group Working Paper, November 2012. For a more econometric approach, see: Prabhu Pingali, Luca Alinovi and Jacky Sutton, "Food Security in Complex Emergencies: Enhancing Food System Resilience." *Disasters*, Vol. 29, Issue Supplement 1; June 2005. For a review of how resilience is used in various fields, see: Patrick Martin-Breen and J. Marty Anderies, *Resilience: A Literature Review.* The Rockefeller Foundation, September 2011. *A Conceptual Analysis of Livelihoods and Resilience: Addressing the 'Insecurity of Agency'*. Humanitarian Policy Group Working Paper, November 2012.

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Methodology[8]

The evaluation used a quasi-experimental design including multi-variate analysis, complex adaptive systems, and 21 focus group discussions with communities that had shown statistically significant changes in outcome indicators. These were used to assess four outcome indicators:

- Coping strategy index (CSI);[9]
- Food consumption score (FCS);[10]
- Proportion of household expenditures spent on food;
- Subjective wellbeing composite index.

The evaluation also calculated an undefined multivariate outcome index of resilience (Resilience Capacity Index) in an attempt to incorporate a multivariate expression of resilience in a single value index. (See Section 10.3.)

The evaluation included intervention and counterfactual households tracked over four household surveys (based on the World Banks' Living Standard Measurement Survey) over two years. The third of these surveys occurred in January 2017, just as the severe drought and subsequent food security crisis was impacting households across Somalia. This was followed by a fourth and final survey one year later (January 2018). Each household survey included a workshop with DFID and DFID partners to discuss preliminary findings and to draw out performance related issues and themes that could be used to address operational issues in 'real time.'

Households were drawn from all 185 communities in which DFID supported resilience programmes (The United Nations Joint Resilience Strategy (UNJRS) and the non-governmental organisation (NGO) consortium Building Resilient Communities in Somalia (BRCiS)) were active. (See Section 10.10 for a list of all communities and activities.) This included a sample of 2,534 households in the baseline and 1,782 in Round 4. Given a 30% attrition rate, the final sample remained valid. (See Section 10.1 on the final sample and attrition rates.)

Once all four surveys were complete, the evaluation included community-based focus groups and interviews in 21 communities where there was significant change (positive or negative) amongst the four outcome indicators. These community-based focus groups and interviews were designed to surface how communities responded to the 2017 food security crisis. This resulted in a more nuanced understanding of coping strategies and the relationships between communities and international actors.

The methodology needed to be adapted to accommodate changes in intervention and counterfactual households. For instance, a significant proportion of households left their residences, becoming internally displaced persons (IDPs), often living in temporary communities or settings. This led to the addition of another cohort for IDPs.

The survey also exceeded set attrition rates (30%) for urban cohorts, thus limiting the statistical significance of the analysis for this cohort. However, the overall sample did not exceed the 30% attrition rate.

This evaluation also shows there are factors that are leading to similar results within counterfactual communities. These results may be due to indigenous support systems, remittances, or aid 'tipping' points where all vulnerable communities benefit. Unfortunately, the evaluation design did not foresee this, and so existing indicators were not sufficient in analysing these. This is an aspect of the research that needs to be rectified going forward.

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[8] The methodology is based on the original design and SEQAS review. See the "Design" document included as a separate *Annex*. (Section 10.10) The methodology is described further in Section 18. The elements of the statistical methodology are described in the Annexes, Section 10.1.

[9] The CSI measures household food security and the impact of food aid programming in humanitarian emergencies. The CSI measures behaviour: the things that people do when they cannot access enough food.

[10] The Food Consumption Score (FCS) measures the diversity and frequency of food groups consumed over the previous seven days, which is then weighted according to the relative nutritional value of the consumed food groups.

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Primary Findings

One of the most remarkable findings in this evaluation is that there was very little change in food security outcome indicators over three years, despite repeated shocks and the country-wide food security crisis of 2017 that threatened famine. This includes communities across the country, north and south, rural, urban, and those in IDP settlements. This might seem unsettling. One might have expected significant positive change in outcome indicators, and while this would have been preferred, the context was exceptionally difficult for the most vulnerable Somalis. It is remarkable that they were largely able to maintain, over the course of the Programme, the same food security levels.

The evaluation's first household survey was conducted in in January 2016, a time of relative calm, followed by a second survey before the food security crisis (July 2016), then one during the onset of the food security crisis (January 2017), and then one after the crisis had subsided (January 2018). The evaluation followed approximately 1,782 households over a definitive arc of crisis, assessing how they prepared for, withstood, and then recovered from a food security crisis that had the hallmarks of the 2011 famine.[11] The fact that households and communities did not experience escalating malnourishment and reliance on negative coping strategies is remarkable.

While variations indicated in this figure are assessed throughout this Report, the fact that there was so little statistically significant change is an exceptional finding in itself. When compared to the 2011/2012 famine, households had leapt to dangerous levels of food insecurity and malnourishment. In the dry season of 2007/2008 (Dyer) there was a significant increase in Integrated Food Security Phase Classification (IPC), with 43% of the population in phases 3 (crisis) and 4 (emergency). After an initial decrease in these conditions in 2010, they increased to famine levels in 2011 with 54% of the population in IPC phases 3, 4, and 5 (famine). (Figure 2)

Famine is defined as acute malnutrition rates among children exceeding 30% of the population and more than 2 people per 10,000 dying per day due to an inability to access food and other basic necessities. By July 2011, famine was present in Banadir, Bakool, and Lower Shabelle. According to the Food Security and Nutrition Analysis Unit (FSNAU), death rates had reached 4.37/10,000 per day. The mortality rate for children under five was as high as 15/10,000 per day. By August 2011 (Gu), a total of 4 million people were in crisis (IPC phase 3) nationwide. The worst affected areas were in the south where most people lacked food access, with 750,000 experiencing famine.[12]

By the time of DFID Multi-Year Humanitarian Programme (MYHP) in 2013, food security conditions had improved although there were still between 10 – 14% of the population who remained in crisis. (Figure 2)
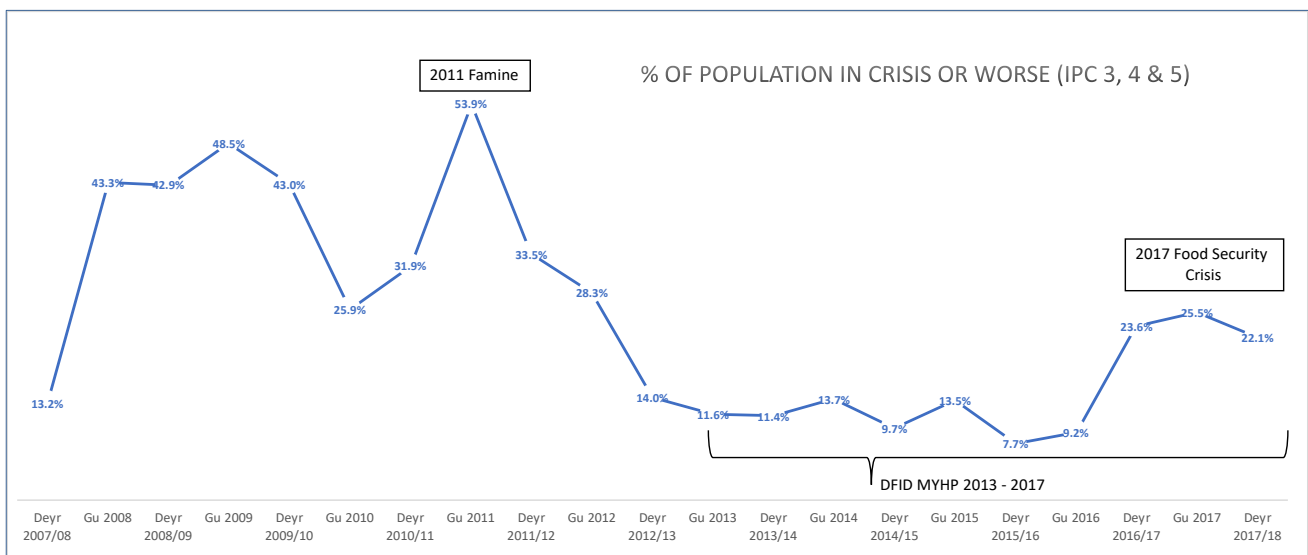
Figure 2: Percentage of population in Somalia in crisis or worse, from 2007 – 2018 showing the 2011 famine, the period of DFID's multi-year humanitarian programme (MYHP), and the 2017 food security crisis

This remained relatively stable until the Deyr season in late 2016. By the time of the 2017 Gu (April – June) over 2.3 million people were in crisis (IPC Phase 3) and 802,000 in emergency (IPC Phase 4), with over 3.1 million people in urgent

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[11] The 1,782 households is the final tally of households surveyed across all four surveys, The survey began with a sample of 2,534 households and yet predicted attrition caused those numbers to drop.

[12] "Nutrition Update." FSNAU Somalia; May – July 2011.

need of assistance.[13] As in 2011, the largest cause for the crisis was drought, which was the result of three consecutive poor rainy seasons (Gu 2016, Deyr 2016, and Gu 2017).

Yet, the population did not continue to decline into crisis. By the time of the 2017 Gu, things had stabilised with approximately 26% of the population in crisis or worse (IPC 3 & 4) as compared with 54% at the time of the 2011 Gu. (Figure 2)

This corresponds with trends from this evaluation's analysis.[14] For the primary outcome indicators, the food consumption score (FCS) and coping strategy index (CSI),[15] trends worsened across all cohorts in rural and urban areas by the time of the 3rd survey (January 2017). Yet, by the time of the 4th survey in January 2018, these households stabilised or 'bounced back' to levels commensurate with those from the time of the baseline.

In the case of FCS, intervention households (DFID supported) were doing better than counterfactual households. This is likely due to the emergency cash programmes that DFID supported during the response.

Each of these trends suggest that something was positively different in 2017 as compared to the 2011/2012. The conditions were worse in the 2010/2011 Deyr (32% of population in IPC 3 & 4) as compared to the 2016/2017 Deyr (24% of population in IPC 3 & 4) and yet conditions never worsened in 2017 as they did in 2011.
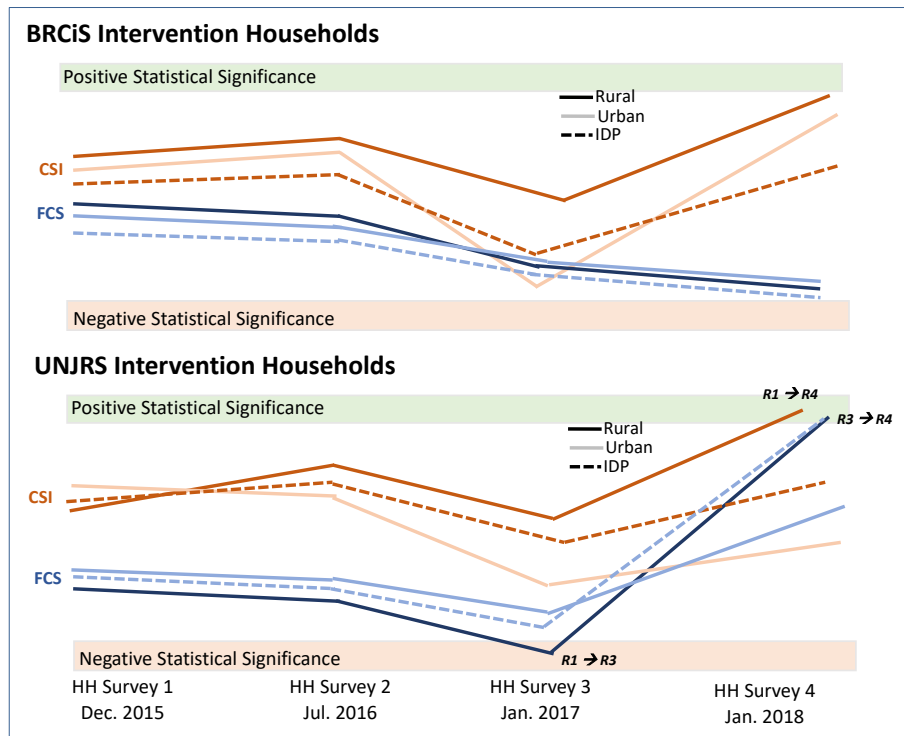
Figure 3: Approximate trends in CSI and FCS across four household surveys

While the 'bounce back' between rounds 3 & 4 can be attributed largely to the emergency response, the fact that households and communities did not crash between rounds 1 and 3 indicate that existing programming was critical for enabling households to "predict and respond" to the shock. It is beyond the analysis of this evaluation to establish whether or not they would have continued to decline without the early 2017 response, or if the timing and scale of the response was the predominate feature in avoiding famine.

The avoidance of famine in 2017 is remarkable. However, how much of this can be attributed to underlying conditions, ongoing support from DFID's MYHP, the massive 2017 response, and indigenous coping systems that remain poorly misunderstood, is difficult to ascertain. Yet, the trends are consistent and highly suggestive of the combination of all of these.

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[13] "Food Security & Nutrition Update." FSNAU Somalia; 28 September 2017.

[14] For analysis across data sets for intervention and counterfactual households, the evaluation used FAO's RIMA II methodology to calculate trends and results. (See Section 10.3.) Given sample size, attrition rates, and other issues, the analysis was able to combine rural and urban households for FCS and yet not for CSI or percentage of expenditures spent on food. Please see the Annexes, Section 10.1, for all statistical analysis across cohorts and strata.

[15] CSI measures reliance on negative coping strategies and so higher numbers indicate worse conditions.

Conclusions

DFID supported programming contributed to households' capacities to predict, withstand, and recover from shocks.
Households across cohorts (rural, urban, and IDP) and DFID supported resilience programmes (UNJRS & BRCiS) show minimal changes in the Coping Strategy Index (CSI) and the Food Consumption Score (FCS) overall. Between the baseline (January 2016) and the second-round survey (August 2016) there was little to no change, followed by a decline by the time of the 3rd survey in January 2017, during the onset of the food security crisis. Reliance on negative coping strategies (CSI) improved by the time of the 4th survey for both BRCiS and UNJRS supported households. (Figure 3)

UNJRS supported households saw a return to baseline levels or better in food consumption (FCS) by the time of the 4th survey, although these were not as positive as those in BRCiS households. BRCiS households showed a slight decline in FCS over the same period although these never fell below the 'poor' nutritional standards threshold and bounced back to levels above the baseline by the time of the fourth survey.

These results are remarkable. The 2017 drought had the environmental hallmarks of the 2011 drought that led to famine across Somalia, with over 260,000 deaths. Such a catastrophe was avoided. As Figure 2 shows, while there was an increase in the number of households that moved into the Integrated Phase Classification (IPC) levels 3, 4, & 5 signalling severe food insecurity, these never reached the levels of 2011 which resulted in famine. While people in Somalia remain vulnerable to shocks, the fact that DFID supported households were able to manage the shocks over the programme period, including the food security crisis in 2017, illustrates a significant degree of resilience.

BRCiS communities exhibit aspects of resilience that may be sustained and developed going forward. In determining attribution between longer-term resilience programming and the direct support provided during the food security crisis, there are indications that BRCiS supported households and communities dealt with shocks differently than those supported by the UNJRS. BRCiS households, with some variations, demonstrate stronger positive changes in CSI, *without* commensurate changes in FCS, as is the case, largely, with UNJRS households. FCS remained steady, never falling into 'poor' nutritional standards whereas UNJRS households did surpass this negative threshold at the time of the third survey (January 2017).

This indicates that BRCiS households reduced negative coping strategies without necessarily improving their overall nutritional intake (never falling to a 'poor' level of nutrition as measured by the FCS). Trends in CSI show that BRCiS households were also able to avoid, overall, most of the negative coping strategies that can lead to increasing levels of vulnerability, like the sale of assets/livestock, removing children from school, stress migration, etc. The trend for self-concept/well-being was also generally positive for BRCiS households. By the time of the 4th survey, when food consumption still remained low, BRCiS households had largely retuned to levels of well-being found at the time of the baseline. As based on the surveys and follow-up community discussions, BRCiS households also expressed greater reliance on immediate family and their communities than did UNJRS communities who expressed a greater reliance on the international community.

This all implies that BRCiS households were resorting to fewer negative coping strategies and felt relatively positive with how they were dealing with the crisis. They also sought and received more support from their families and communities, relying less on the international community. To flip this around, it seems that BRCiS households had more ways to cope—they chose to eat less while not falling to poor levels of nutrition, relied on family and community, and avoided selling assets/livestock, depleting resources, stress migration, or other negative options. They also state that they had less reliance in international actors, at least in comparison with UNJRS supported households. In brief, they had more choices and were relying on each other more than international actors.

The ability to have choices about how to respond to a crisis and the reliance on family and community are aligned with the guiding principles of the BRCiS programme. (See Section 6.1) BRCiS seeks to empower communities to implement activities that they decide are most important for greater resilience. BRCiS goes beyond 'community participation' and actually works with communities to explore what, in their terms, could lead to greater resilience, all while seeking ways for such interventions to become embedded in the communities themselves. While the casual links between this type of programming and the aforementioned results remain somewhat elusive, the correlation, in both real terms and in comparison with UNJRS supported households, is striking.

UNJRS communities show positive results overall and yet this may be due less to resilience programming and more to the scale of direct support. UNJRS, as noted in this and other evaluations, did not implement innovative approaches for resilience but instead moved towards joint programming, with FAO focused on direct livelihood support, UNICEF providing a combination of nutrition, WASH, and protection activities, and WFP providing direct nutritional support. (See Section 5.1) As Figure 3 illustrates, UNJRS households, while experiencing a statistically significant drop in FCS by

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the time of the third survey (January 2017), had bounced back in FCS and CSI by the time of the fourth survey (January 2018).

This 'bounce back' can be largely attributed to direct cash support during the 2017 crisis. In comparison to BRCiS households, UNJRS households increased the percentage of food expenditures between January 2017 January 2018 because of the conditional cash support they received during this time. BRCiS households received *unconditional* cash support during the same time period, yet did not, at least based on trends in FCS, use this solely for food.

Follow-up community interviews in 2018 show that UNJRS supported households had a much greater reliance on and greater expectations for international aid. They state that they not only were highly dependent on cash support during the response but also expressed frustration that international aid had ended, starting that their conditions were worsening without such support. This is borne out in the evaluation's assessment of well-being which was less positive amongst UNJRS households.

While results for DFID supported households are positive, counterfactual households experienced similar results. The analysis presented throughout this evaluation shows that counterfactual households experienced similar results. There are three possible scenarios, or combinations thereof, that may be contributing to this:

1. Informal/indigenous support mechanisms exist, especially in those communities that have been historically underserved by the international community.

2. Social capital networks exist wherein international aid is shared across communities and in ways that exceed 'spill over' parameters.

3. Aid 'tipping points' exist wherein the scale and type of support stabilises economic conditions, like supply chains, thus enabling similar benefits for all communities.

While the reasons for similar trends is probably due to a combination of these issues, this does not indicate a lack of impact from DFID supported programming. Instead, the issue is that informal/indigenous support mechanisms and social capital networks may work just as well as formal support provided by DFID. There are exceptions. BRCiS supported households managed food security significantly better than counterfactual households. UNJRS supported households recovered much better between January 2017 and January 2018 than did counterfactual households. Yet, the trends show that, overall, counterfactual households did just about as well.

The evaluation did not expect that informal/indigenous support mechanisms and social capital networks would have had the level of impact that these trends indicate. In fact, one of the key findings of this evaluation is that *there are many communities in Somalia that lay beyond the international aid system and that have developed systems of support that rival those provided by the international aid system.* There are also strong indications, as based on the research conducted in this evaluation, that these communities have not been served for decades, if not longer. This evaluation found that many of these communities were simply hard to reach, taking a day or longer to reach over treacherous roads for what were rather small communities. They were also, although this is more difficult to surmise, often composed of marginalised clans that are not always privy to the support provided by clans that have stronger links to the international community. All of this can be seen as a consequence of the fractured political dynamics in Somalia where there has been no significant federal/national authority and where alliances at the community level have been forged in isolation. (See Section 1.1 for a description of this history.)

There are surely lessons within these indigenous systems of how support mechanisms work in Somalia and what can be done to create sustainable approaches that address the chronically vulnerable. Unfortunately, this evaluation, because this was such a surprising result, does not provide enough data and analysis to understand these localised systems. This needs to be a fundamental aspect of any future research.

The conditions for the humanitarian-development nexus are not yet mature. The existence of localised support networks and other indigenous systems of support are linked with the absence of local and federal authorities. These developed and are highly diverse primarily because of the lack of a strong federal presence.[16] This lack of government involvement is in contradiction to the Paris Declaration on Aid Effectiveness and the Accra Action Agenda. Yet, Somalia sits somewhere between a system whereby humanitarian aid can make links to government plans and strategies, including how humanitarian aid creates links to longer-term development strategies, and a state that has, as consequence of 20-years of conflict, effectively 'abrogated responsibilities for the safety and welfare of civilians on its territory.'[17]

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[16] There are variations in the strength of federal/national authorities, especially when comparing Puntland and Somaliland with the south. Yet, overall, local authorities and other actors largely exist beyond state strictures.

[17] OECD–DAC; "Revised Humanitarian Assessment Framework for DAC Peer Reviews" DCD/DAC; 2008. Page 48.

Indigenous support networks lie beyond the international aid system and the Federal Government of Somalia. This implies that, while there is a receptive government in Mogadishu and the international community seems prudent in supporting the Federal Government's development, this is unlikely to be enough to create 'safety nets' to address entrenched vulnerabilities amongst many communities. Instead, most of Somalia remains served by local actors.

For humanitarian action, this raises the need for a much better understanding of how reliant some communities are on international aid, the nature of indigenous, localised, support networks, and how these are affected by a massive emergency response like that in 2017. A deeper analysis of these will provide a more nuanced understanding of how to make links to broader safety net initiatives and how to enable communities to break free of entrenched vulnerabilities and to be more prone for sustained development.

Gender and human rights-based approaches are not emphasised enough across DFID supported resilience programming. As noted in a DFID review on the subject: 'While implementing partner activities are gender-balanced, assessment methodologies are often not explicit about how the needs of different gender groups were accounted for. Programmes generally serve a large number of female beneficiaries, either as individuals or as female-headed households. This is a result of vulnerability assessments, through which women and female-headed households have been identified as key vulnerable groups.'[18]

This lack of actual programming approaches for women and female headed households makes any correlation analysis in this evaluation challenging. For instance, this evaluation could assess how or if female headed households fared better in relation to the four key outcome indicators. However, this would not have much bearing on DFID supported activities as DFID partners did not take such variables into account. As recommended, this should be addressed in any future research and be a paramount element in DFID supported programmes.

Finally, *one needs to consider how and if a similar evaluation should be conducted going forward.* The design for this evaluation was based on standard quasi-experimental designs, adapted for the complex humanitarian context in Somalia. While the results are indicative of overall performance, especially as related to standard food security proxy indicators (FCS, CSI), they are less informative regarding how and why different interventions led to these results. Part of this is by design—resilience approaches, made possible through multi-year programming support, included myriad activities that, especially in the case of BRCiS, changed over the course of the programme. This makes attribution between single activities and broader results difficult and probably misguided. It is more useful to assess the combination of interventions, the driving principals and approaches of different programmes, the core competencies and competitive advantages of different organisations/consortiums, and as compared with the type, level, and frequency of different shocks. While this level of analysis was part of the original ambition of this evaluation, it remained elusive given the longitudinal strictures of a quasi-experimental design.

Given this, any future impact evaluation must include indicators that assess resilience more broadly and how combinations of interventions lead to different results. This may necessitate the development of a new proxy indicator for resilience, drawing from the issues associated with how aid enables more positive choices in the face of shocks (as compared with a reliance on negative coping strategies mostly related to food security) and the links between resilience programming and the humanitarian-development nexus. All of this will provide a better view of what combination of interventions lead to more sustained resilience and, thereby, what types of approaches may be scaled up in the future.

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[18] Sagal Ali and Tanja Chopra; "Gender Review: DFID Multi-Year Humanitarian Programme (MYHP) 2013 – 2017." DFID/MESH; March 2016. Page 4.

Recommendations

The following recommendations are abbreviated forms of the recommendations included in Section 9.2. They are included here for ease of reference.

Recommendation	Stakeholder/ Primary Purpose	Priority (high; medium; low)
Recommendation 1: Multi-year programming is important for more innovative approaches and for building resilience. At the same time, not all partners and or activities benefit from multi-year support equally. Those that require innovative approaches that may need to be adapted/refined over time, like BRCiS, benefit from multi-ear programming whereas direct service models, like those largely provided by the UNJRS, could be sustained through short-term funding.	DFID approaches to multi-year support.	High
Recommendation 2: Any future impact assessment should measure total investment to multi-year resilience programming as compared with early response funding . The assumption is that communities that have benefited from longer-term resilience programming would require less early response funding than those without resilience programming. This goes beyond typical value for money calculations and towards how these communities have strengthened their resilience and hence reduced their need on humanitarian assistance.	Important for all research related to resilience and other longer-term humanitarian programming.	Medium
Recommendation 3: Conclusions, lessons & recommendations from this evaluation should be discussed in a final workshop with DFID, DFID partners, and the broader humanitarian community. This evaluation has shown the value of engaging with DFID and implementing partners throughout the evaluation. The 'operationalisation' of these findings of huge importance if the full value of the evaluation is to be achieved. This is especially important in the context of any continuing resilience programming.	DFID sponsored evaluation workshop.	Low
Recommendation 4: Given that both the UN direct service model and the BRCiS community-led approach delivered short term results, DFID needs to continue to have a balanced portfolio approach to the two models. This may include less direct investment in UN 'joint strategies,' that are not significantly different enough to warrant longer-term programming approaches, and more in innovative integrated programming approaches that address not only resilience as associated with food security but also issues related to climate change, increasing urbanisation, and the role of the federal authorities. In essence, the MYHP proves that innovative approaches can yield results and that they are increasingly necessary in a complicated protracted crisis like that in Somalia.	DFID's portfolio approach.	High
Recommendation 5: Given the increasing prevalence of multi-purpose cash assistance, programming needs to assess both the short and longer-term gains associated with this modality. This evaluation shows that cash may be a highly effective way to respond quickly to an emergency, as in the 2017 food security crisis. Yet, the relationship to cash assistance and longer-term programming, especially programming that treats societal and behavioural changes associated with resilience, remains unclear. Research should be undertaken to assess how these short-term interventions affect longer-term outcomes.	DFID supported research approach.	Medium
Recommendation 6: Analysis of resilience needs to move beyond food security proxy indicators. This evaluation relied largely on standard outcome variables related to resilience, e.g. the coping strategy index (CSI) and food consumption score (FCS). While the univariate evaluation includes other indicators, like food expenditure patterns and subjective well-being, taken together they are still not sufficient enough to measure the complexity of resilience. Future research and evaluations need to supplement these with indicators that track the convergence of food security (FCS & CSI) with other coping strategies.	DFID supported research approach.	Medium

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Recommendation 7: **Ensure that programme approaches differentiate between how they support different cohorts, especially those who may face distinct vulnerabilities.** This evaluation was not able to discern the effects on different cohorts within each community because DFID partners made no such differentiation. This implies that DFID partners expected that the same interventions would have the same effects, regardless of the specificities within different households or communities. This is surely not the case, especially when one considers the issues of women's equality, disabilities, marginalised clan identities, and other socio-economic issues that affect Somali communities.	All implementing partners.	High
Recommendation 8: **Increase analysis of the ways in which traditionally underserved communities prepare for, respond to and recover from shocks.** This should be conducted at the micro-level, e.g. select 3 – 5 counterfactual communities that showed positive outcomes form this evaluation and assess how they deal with shocks over time. This should be a panel study, focused on qualitative information, and then lead to both a better understanding of indigenous support systems and how these intersect with international support.	DFID supported research question.	Low
Recommendation 9: **Somalia requires a distinct approach to humanitarian action that includes direct support to actors who can provide both rapid and direct services to communities in need and those that are providing longer-term and more innovative programming for alleviating chronic vulnerabilities.** For the time being, this will need to complement and be coordinated with federal authorities rather than being designed in ways where these authorities could assume the programming in the near future.	General approach to humanitarian programming.	Medium
Recommendation 10: **Commission a report that compares communities who have received international support with those that have not traditionally.** This should include counterfactual communities from this Evaluation that have fared as well as those that have received support. It should have a much larger scope, focusing on regions hardest hit by crisis. This should investigate indigenous/localise support networks, their potential links to intentional aid, and whether there is a 'tipping point' where indigenous systems are not enough to address needs during a severe crisis.	DFID supported research question.	Low
Recommendation 11: **Any programme design must consider how gender contributes to effectiveness and results.** For instance, female headed households may be able to leverage direct cash support toward greater household food security better than male headed households. There may be variations in how livelihood support should address the needs of men and women. Any and all such issues should not only be central to programme designs but also be a prominent feature in any future impact assessment.	All implementing partners.	High

1. Context: A Multi-year Approach to Address Chronic Vulnerabilities

1.1. Somalia

1. The operating context in Somalia has been complicated for over 30 years and, while there are signs of improvement, any assessment must be grounded in the realities of working in one of the most operationally challenging countries in the world. Somalia remains extremely poor, with an annual per capita income of just $435. This is exacerbated by some of the highest malnutrition prevalence rates in the world with an average of 320,000 children malnourished at any one time.[19]

2. This may be attributed, at least in part, to Somalia's fraught history. Mohammed Siad Barre used humanitarian aid as a political tool[20] and, when is regime failed in 1991, there was a famine that killed an estimated 300,000 people. This led to the formation of the United Nations Operation in Somalia (UNOSOM) in July 1992.[21] These forces withdrew in 1995, leaving a fractured set of warlords, village elders, and others who managed to control villages or different swathes of districts. This fractured mix of different 'local authorities' still characterises much of Somalia today.

3. There were efforts by the international community to form a centralised government including the Transitional Federal Government (TFG) in 2004. Yet, the TFG never reached much farther than Mogadishu and, given other weaknesses, the Union of Islamic Courts (UIC) gained control in 2005.[22] This coalition of clans, mostly from rural areas in southern Somalia, did little to facilitate greater humanitarian access.[23] And, they were short lived. Ethiopia invaded Somalia in December 2006 and toppled the IUC, thus destroying any semblance of a centralised government authority. This gave rise to the most radical and vocal of its members, al-Shabaab.[24]

4. By 2010, further political chaos and conflict led to over 3 million affected people in need of humanitarian assistance. The intervening actions and policies of the United States to cut all food aid to Southern Somalia, the forced removal of humanitarian actors like CARE and the World Food Programme (WFP), the confluence of drought and rising prices for food commodities, and the on-going conflict between al-Shabaab, the TFG, and other factions, led the Famine Early Warning System Network (FEWS NET) and the Food Security and Nutrition Analysis Unit for Somalia (FSNAU) to declare a famine in several areas of Southern Somalia in July 2011 .[25] An estimated 260,000 people were killed.[26]

1.2. DFID Business Case & Programme

5. The DFID Somalia Business Case 2013 – 2017 grew out of this context and reflected a convergence of issues related to how humanitarian aid was delivered prior to, during, and after the 2011 – 2012 famine In Somalia. It reflected the UK government's new policies and guidance that called on different operating models for humanitarian assistance. This was encapsulated in the Humanitarian Emergency Response Review (HERR). This staked out seven areas for change in humanitarian response. These include anticipation, resilience, innovation, leadership, accountability, partnership, and the need to maximise limited humanitarian access that exists in many fragile state contexts like Somalia.[27] The HERR goes on to recommend a "Change [in] the funding model to achieve greater

> **Why we need to work differently.**
>
> "Though unreliable, demographic data estimates a caseload of approximately one million chronically vulnerable people in south Somalia . . .the erosion of coping mechanisms over two decades of conflict and climate variation means that these communities are highly susceptible to the most minor shock or change in their situation.
>
> "Short-cycle humanitarian assistance has proved successful in keeping people alive. Yet sustainable human security requires a longer-term humanitarian commitment."
>
> *Somalia Humanitarian Business Case 2013 – 2017. (Paragraphs 28, 29)*

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[19] "Business Case: Somalia Humanitarian and Resilience Programme (SHARP)." DFID. Page 2.

[20] Politics as a factor in humanitarian aid is explored by Terrance Lyons, "Humanitarian Aid and Conflict: From Humanitarian Neutralism to Humanitarian Intervention." In James J. Hentz (Ed.), Routledge Handbook of African Security. Routledge, 2013.

[21] IBID. Page 247.

[22] For a history of how Islamic institutions have gained political power in different contexts, see Ira Lapidus, *A History of Islamic Societies (3rd Edition).* Cambridge University Press, 2014.

[23] This pattern of disenfranchised rural communities taking control when central authorities fall conforms to evolutionary patterns in the modern era. See, Theda Skocpol, *States and Social Revolutions*. Cambridge University Press, 1979.

[24] For a report on the origins of Al Shabaab, see: Rob Wise, "Al Shabaab." AQAM Futures Project Case Study Series; Center for Strategic & International Studies. Case Study No. 2, July 2011.

[25] For a review of the factors that led to the famine, see: Daniel Maxwell and Merry Fitzpatrick, "The 2011 Somalia Famine: Context, Causes, and Complications." Global Food Security, Issue 1, 2012.

[26] For an investigation into the famine, see: Daniel Maxwell, Kirsten Gelsdorf, Nicholas Haan, and David Dawe (Eds.) "The 2011 – 2012 Famine in Somalia." *Global Food Security (Special Edition)*; Volume 1 (1). January 2013.

[27] "Humanitarian Emergency Response Review." Chair: Lord (Paddy) Ashdown; Director: Ross Mountain. DFID, March 2011. This is also cited in the "Somalia Humanitarian Business Case 2013 – 2017" although some of the themes are missing.

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preparedness, pre-crisis arrangements, capacity, performance and coherence by increasing predictable multi-year funding linked to performance of major UN agencies, the Red Cross Movement and NGOs."[28]

6. In response, DFID Somalia's humanitarian programme had four principal objectives. First, provide flexible multi-annual funding for humanitarian programmes specifically targeting the most vulnerable, including children and IDPs. Second, identify and target the chronically vulnerable with resilience enhancing activities designed to strengthen livelihoods and restore coping strategies and where possible to assist in the graduation away from humanitarian aid. Third, influence and promote change in the humanitarian system to ensure better coordination, responsiveness and targeting of aid and finally, developing new and innovative ways to monitor implementation and outcomes, and building an evidence base to understand and ensure maximum impact for UK Aid. [29]

7. These objectives capitalised on the convergence of international policy issues, as articulated in the HERR, and recognised that the chronic vulnerabilities in Somalia and the chance of future food security crises demanded a different approach. DFID chose to focus on 'resilience,' as described below, as the best way to enable people to 'predict, respond, and recover' from climate and conflict related crises (shocks) and thus be positioned to limit such persistent vulnerabilities. This coincided with increasing standard approaches to both resilience programming, like FAO's focus on livelihoods, and the measurement of resilience, e.g. the FAO Resilience Index Measurement and Analysis (RIMA) tool that FAO has used in more than ten countries in the Near east and Sub-Saharan Africa.[30]

8. Given that humanitarian approaches to resilience in 2013 were still relatively nascent, DFID invested in two different approaches. The first was proposed by FAO, UNICEF, and WFP as a 'joint strategy' in which the three agencies' approaches were seen as complementary. This was based on work the three agencies had done together in Gedo in 2012/2013. The NGO Consortium dubbed 'Building Resilient Communities in Somalia' (BRCiS) sought to work with communities and define what they viewed as particularly relevant and necessary to predict, withstand and recover from shocks. This was more elaborate than traditional community participatory approaches in that BRCiS worked with communities to develop a series of interventions across different sectors (food security, safety/security, water and sanitation, income, etc.) that the communities themselves felt would enable them to become more resilient.

1.3.   Resilience

9. Resilience is one of the most challenging programming approaches in humanitarian action. With roots in the sciences of physics and mathematics, 'resilience' describes the capacity of a material or system to return to equilibrium after a displacement.[31] In humanitarian action, resilience has emerged as a way to ensure that people's longer-term needs are incorporated into immediate humanitarian action. It provides both a framework for how people anticipate, withstand, and recover from shocks as well as a way to make programmatic links between recovery, development, and sustainability. While the subject still tends to swirl in academic debates,[32] its principles are critical for ensuring that humanitarian stakeholders are able to spot opportunities for resilience as part of their programming.[33]

> *"The inherent dynamism in resilience presents a quandy for traditional evaluation approaches.* Change is not linear over time and, instead, may be expected to crest and trough according to the frequency and severity of shocks. Households and communities may never escape this cycle, becoming mired in the extremes of these cycles."

10. A review of resilience as a concept across DFID's Humanitarian Programme shows that partners define resilience primarily in terms of individuals', households' and communities' capacities to anticipate, withstand, and recover

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[28] IBID; "Recommendations," page 60.

[29] "Somalia Humanitarian Business Case 2013 – 2017." DFID, March 2014. Page 5.

[30] See: http://www.fao.org/resilience/background/tools/rima/en/

[31] This is the basis for complex adaptive systems, a methodology that has expanded from material sciences and systems theory to look at impact and results in complex operating environments. For a review on how CAS moved from the physical to the social sciences, see: Jason Brown Lee, "Complex Adaptive Systems." CTS Technical Report, March 2007. For a review of how resilience is used and defined in various science, see: Patrick Martin-Breen and J. Marty Anderies, "Resilience: A Literature Review." The Rockefeller Foundation, September 2011.

[32] For a treatise on how debates about resilience are influencing humanitarian action and other sectors, see: A. V. Bahadur, Ibrahim, M. & Tanner, T. "The Resilience Renaissance? Unpacking of Resilience for Tackling Climate Change and Disasters." Strengthening Climate Resilience Discussion; Institute of Development Studies, University of Sussex; 10 August 2012.

[33] See: Simon Levine & Irina Mosel, "Supporting Resilience in Difficult Places." Overseas Development Institute, April 2014; & Adam Pain & Simon Levine, "A conceptual Analysis of Livelihoods and Resilience: Addressing the 'Insecurity of Agency'." Humanitarian Policy Group Working Paper, November 2012. For a more econometric approach, see: Prabhu Pingali, Luca Alinovi and Jacky Sutton, "Food Security in Complex Emergencies: Enhancing Food System Resilience." *Disasters*, Vol. 29, Issue Supplement 1; June 2005.

from both climatic and conflict-based shocks. This is in line with DFID's definition of resilience. DFID has adopted a working definition of resilience that draws on the distinct vulnerabilities that people face during disasters:

> Disaster resilience is the ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses - such as earthquakes, drought or violent conflict - without compromising their long-term prospects.[34]

11. Resilience thus treats how and when people become vulnerable as compared to other programmatic approaches that address precise and discrete needs. Resilience is more holistic and focuses on the myriad of factors that contribute to peoples', households', and communities' capacities to predict, respond, and recover from climate and conflict related shocks. Vulnerabilities change given the context. Threats emerge and then dissipate. Thus, resilience programming seeks to address these dynamics and increase peoples' abilities to become more resilient over time.

12. The inherent dynamism in resilience presents a quandy for traditional evaluation approaches. Change is not linear over time and, instead, may be expected to crest and trough a cording to the frequency and severity of shocks. Households and communities may never escape this cycle, becoming mired in the extremes of these cycles. This is one of the reasons that this Evaluation used four household surveys over a relatively short period of time (2 ½ years) and times to coincide when shocks were most likely to occur (the dry seasons). The evaluation sought variance, deciphering how people's vulnerabilities increased or recovered given any combination of shocks.

13. This was a systemic approach and one that seemed most appropriate for the dynamics associated with resilience. It was also risky. The fact that the evaluation used fairly standard approaches (quasi-experiential design) meant that it might not be able to determine direct attribution between specific DFID supported interventions and changes in vulnerabilities as measured by standard food security outcome proxy indicators.

14. Yet, the severity of the 2017 food security crisis was enough to create a system-wide shock. Households across Somalia and across cohorts (rural, urban and IDP) all faced increased vulnerabilities. The test was the depth of these vulnerabilities for DFID supported households and how quickly and to what extent they recovered.

1.4. Humanitarian Action

15. The DFID Business Case and resulting multi-year programme set out a new way of working that foresaw global trends in humanitarian action including the World Humanitarian Summit/Grand Bargain that includes agreements for multi-year funding with greater transparency, a focus on demonstrable results, and increased engagement of affected populations. The DFID Programme thus leveraged the multi-year approach to include a focus on identifying and rectifying the underlying causes of chronic malnutrition in Somalia, as assessed in this evaluation. It also included the Internal Risk Facility (IRF) that enabled early action/early funding to crises. These and other facts of the DFID Programme moved it away from short-term actions towards a more strategic and proactive approach to humanitarian action.

16. This approach was, unfortunately, tested during the 2017 food security crisis that threatened famine for over 5 million people in Somalia.[35] The 2015 – 2016 El Niño weather pattern worsened the impact of four previous below average rains over two years. This led to a cycle where crops and livestock were decimated followed by rising food prices and food insecurity, and the possibility of widespread stress migration and weakened food supply chains. All of this pointed to the threat of famine, possibly at levels worse than those seen in 2011/2012. By January 2017, there was large-scale crop failure and high levels of livestock deaths that, combined with other factors, were leading to high levels of malnutrition, stress migration, and increasing inter-communal conflict.

Early Response Trigger ("trigger mechanism")

In response to the 2011 famine and an ICAI report, DFID included the development of an Early Response Trigger to prompt the humanitarian community to respond early and effectively to emerging crises rather than having to wait until the full impact of a crisis materialises. The trigger mechanism includes 15 indicators that include food security (rainfall, Normalised Vegetation Index (NDVI), prices of common staples), displacements, disease outbreaks, and trade and labour indicators. These are broken out by district and sub-district.

Internal Risk Facility (IRF)

Along with the trigger mechanism, DFID recognised the need to have funding committed for the early response predicated upon the trigger mechanism. This includes £36 million pounds or 24% of the 4-year Humanitarian Programme.

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[34] "Defining Disaster Resilience: A DFID Approach Paper." DFID, November 2011.

[35] "Somalia Humanitarian Needs Overview." OCHA; October 2016.

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17. DFID supported early warning systems alerted global actors. The UK responded with an early £110 million contribution that was followed by an additional £60 million later in 2017. Other governments followed suit with the total committed reaching over US$1 billion of incoming funding for 2017.[36]

18. DFID promoted a cash-based response, building on longer-term resilience programming that included a variety of direct support to communities.   DFID's response included food or cash to over 2 million people, emergency health services for 1.1 million people, nutritional treatment for over 171,000 starving children, clean water for 1.7 million people, and the vaccination of 12 million livestock.

2.   Purpose, Approach & Communicating the Results

2.1.   Objectives

19. DFID Somalia's multi-year humanitarian programme (MYHP) had four objectives. First, provide flexible multi-annual funding for humanitarian programmes. Second, identify and target the chronically vulnerable with resilience enhancing activities designed to strengthen livelihoods and restore coping strategies and, where possible, to assist in graduation away from humanitarian aid. Third, influence and promote change in the humanitarian system to ensure better coordination, responsiveness, and targeting of aid, and finally, develop new and innovative ways to monitor implementation and build an evidence base to understand and ensure maximum impact for UK Aid.[37] This evaluation focuses on the first two objectives and, by fact of being an impact evaluation, provides a foundation of evidence for future programmes. Given this, the evaluation seeks to answer two primary questions:

- To what extent does DFID funding improve outcomes for those in need of humanitarian assistance?
- Is there evidence of greater resilience of populations experiencing DFID programming?

20. The first concerns life-saving activities, like addressing the underlying issues that contribute to severe malnutrition, while the second concerns how the most vulnerable Somalis prepare for, withstand, and recover from climate and conflict-related shocks.[38] Given the 2017 drought and subsequent food security crisis, the MYHP was, unfortunately, put to the test to see how and if communities were better prepared, better able to respond, and better able to recover from such shocks. In fact, these aspects of resilience, given the humanitarian and operational context, have become the primary focus of this report.

21. Given this focus, the evaluation is intended to provide accountability for DFID supported programmes—are there better humanitarian outcomes and greater resilience. The evaluation, by nature, is also about drawing lessons from this level of accountability, lessons and recommendations about humanitarian action and resilience in Somalia and in other complicated operating environments.

22. Given this, the primary objective is to answer the two questions above using the best and most viable evaluation techniques and standards. This supports DFID's role with partners and provides practical examples of what works and what doesn't, as confirmed by quantitative and qualitative evidence. Additional objectives include:

- Better understand how DFID's four-year approach to humanitarian programming provides for improved humanitarian outcomes and increased resilience.

- Explore whether evidence from the evaluation supports a model for resilience programming in humanitarian contexts that is both scalable and applicable in other protracted humanitarian contexts.

- Establish how DFID programming supports households in their capacities to prepare, withstand and recover from shocks but also whether or not there are indications of increased graduation rates or other potential links to more sustainable programming.

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[36] Financial Tracking Service. (https://fts.unocha.org/appeals/528/flows)

[37] "Somalia Humanitarian Business Case 2013 – 2017." DFID, March 2014. Page 5.

[38] Our definition of resilience is specific to humanitarian contexts. For an overview of the issues and constraints associated with resilience, see: Simon Levine & Irina Mosel, *Supporting Resilience in Difficult Places*. Overseas Development Institute, April 2014; & Adam Pain & Simon Levine, *A Conceptual Analysis of Livelihoods and Resilience: Addressing the 'Insecurity of Agency'.* Humanitarian Policy Group Working Paper, November 2012. For a more econometric approach, see: Prabhu Pingali, Luca Alinovi and Jacky Sutton, "Food Security in Complex Emergencies: Enhancing Food System Resilience." *Disasters*, Vol. 29, Issue Supplement 1; June 2005. For a review of how resilience is used in various fields, see: Patrick Martin-Breen and J. Marty Anderies, *Resilience: A Literature Review.* The Rockefeller Foundation, September 2011. *A Conceptual Analysis of Livelihoods and Resilience: Addressing the 'Insecurity of Agency'.* Humanitarian Policy Group Working Paper, November 2012.

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- Given the relatively unique approach to measuring resilience, to establish a model for measuring resilience in other contexts.

2.2.   Scope

23.   The evaluation covers the period from January 2015 – January 2018, starting approximately 6 months after DFID supported partners had begun delivering services, and continuing one year after the start of the 2017 food security crisis. The evaluation started 6 months after

2.3.   Evaluation Team & Management

24.   The evaluation team was co-led by Messrs. Dorian LaGuardia and Andrew Pinney.

25.   Mr. LaGuardia provides advice for effective performance-based organisational dynamics—enabling people to achieve more than they ever thought possible. With twenty-five years of experience in senior management and consulting roles in the financial, electronics, automotive, technology and public service sectors, he brings a unique perspective as both a "front-line" manager and a theoretician. He has managed engagements with over 20 UN organisations, 30 INGOs, and four donors. He has worked in DRC, Ghana, Nigeria, Kenya, South Sudan, Somalia, Indonesia, and Uruguay, and most countries in the Middle East. This includes several engagements related to the international community's response to the Syria crisis, several evaluations for UNRWA including a longitudinal impact evaluation of an emergency cash-for-work programme, an evaluation of the CHF in South Sudan, a review of DFID Somalia's Internal Risk Facility, and a meta-evaluation of 86 evaluations conducted by SIDA, amongst others. He is also currently assessing DFID partners' M&E systems in Iraq and has provided advice to a similar project with DFID Syria.

26.   Dr. Pinney is a statistician, researcher and development professional with over 30 years of experience. His expertise covers complex multi-stakeholder data collection and analysis projects, technological innovation in survey practice, M&E, impact assessments, poverty and food security analysis, and the design and implementation of multi-topic household surveys in both post-conflict and post-disaster contexts. Dr. Pinney is currently Statistician and Co-Director of Statistics for Sustainable Development (a social enterprise formed from the Statistical Services Centre, University of Reading). Currently resident in Norway, he convenes multi-disciplinary teams across a number of regions, with a strong emphasis on partnership-building, national ownership of processes and capacity-building of national teams. Andrew has worked with international organisations (including UN, IFRC, World Bank, EU, DFID), national statistical offices, research organisations and NGOs, and has strong communication, team-building, project management and capacity-building skills.

27.   All team members and their roles are included in the table below.

Team Member	Role
Dorian LaGuardia	**Team Leader.** Managed project including inception phase, field phases, and analysis and reporting. Provided lead on qualitative analysis and qualitative approaches to household survey and post survey community discussions.
Andrew Pinney	**Team Leader**. Provided lead on statistical methodology, tools, and other methodological issues. Involved in analysis and reporting for each Household Survey and for the final report.
Sebastian Steinmueller	**Analyst:** Provided analysis of all statistical data sets and led on managing data integrity during and after each household survey.
Peter Hailey	**Senior Advisor, partner programme designs and operational issues in Somalia:** Involved in reviewing data and analysis derived from the four Household Surveys and qualitative data sets. Provided expertise on nutrition and SNS results.
Hana Abukar	**Evaluator. I**nvolved in conducting interviews with key informants from projects and documentary analysis in noted subjects.
Enumerators	Household Surveys were enumerated by 20 dedicated enumerators conducting on average 6 household surveys a day, or 120 interviews a day overall.

2.4.   Audience

28.   This evaluation is intended to serve DFID in the design of future humanitarian programmes in Somalia and elsewhere as well as DFID supported partners who are design multi-year approaches to chronic vulnerabilities, especially concerning food security crises. It is also expected that the findings, lessons, conclusions, and

recommendations may inform both monitoring and impact designs as well as other analysis and research of resilience programming and how to assess programming results in complex operating environments.

29. This evaluation will be published externally and will generate learning for a wider group of DFID personnel and external stakeholders.

2.5. Utilisation: Communicating with DFID and DFID Partners Throughout Process

30. The first and third survey analysis were provided in a report and presentation that was shared with DFID and relevant DFID partners. This included workshops where these initial results were presented and discussed. (See *Annex* in Section 10.13.) These discussions informed the analysis overall and led to some additions to the household survey and other considerations in the final analysis.

31. There were also regular interviews with DFID partners, experts, and others in relation to the evaluation's subject. These were often ad-hoc and designed to assess specific issues as they arose.

32. The preliminary data and analysis from these workshops were generally accepted *prima facie*, with some comment about the implications of such findings. This generally included comments about how and if programming should be changed. This was especially the case in the round four and final workshops where the results from the post-2017 food security crisis were discussed. As described in Section 4, these showed positive results for both UNJRS and BRCiS supported communities. In the case of the UNJRS 'direct service' approach (See Section 5), the overall trend was positive but there was a significant drop in food consumption scores at the time of the round 3 survey, with a significant number of households dropping from 'acceptable' or 'borderline' to 'poor' levels of food consumption, as based on standard FCS calculations. Comparatively, BRCiS communities did not experience such a significant drop in FCS, with most changes never exceeding significant change, either positively or negatively. (Section 6)

33. The UN partners initially objected to the interpretation of the UNJRS as a 'direct service' model, claiming that the 'integrated approach' between the three UN agencies constituted a *de facto* resilience approach. The authors countered that not only did joint programming not necessarily equate to a coherent approach to resilience but also noted that, in most instances, the three agencies did not actually work together in the same communities in a majority of cases. More pointedly, the authors pointed out that the data drove the analysis and, given that the methodology and subsequent data was largely accepted as valid, the combination of quantitative data that showed significant changes in FCS and qualitative information that showed how UNJRS served communities described the services as 'direct aid' combined to substantiate this point.

34. The final statistical analysis was presented to representatives from BRCiS and UNJRS for comment and suggestions. This facilitated insight into these results and in the design of the qualitative focus group discussions conducted amongst 21 communities after the fourth survey.

35. The final draft report was shared with DFID and partners. In addition to the workshops described above, this provided DFID and partners opportunity comment on draft findings, conclusions, lessons, and recommendations. The final draft considered and accepted nearly all comments and this final report reflects those comments.

2.6. Communicating Results

36. The primary way the evaluation has communicated results is through workshops with DFGID, DFID partners, and in the final survey workshop, with the broader humanitarian community. In these, preliminary results were presented and the implications of these were discussed. This led to various programming insights that were incorporated into programme designs and other thinking. They were also opportunities for these stakeholders to provide feedback to the evaluation team.

37. With this final report in place, the evaluation team will work with DFID to explore specific actions that can be taken in relation to the evaluation's conclusions and recommendations. This is particularly relevant to the design of any future impact evaluation or similar studies. As noted, several of the conclusions and recommendations are directly related to such research considerations.

38. Beyond this, the report will be made available on the DFID "Development-Tracker" website under the Somalia programme, shared with evaluation and research aggregator, such as OECD and ALNAP, and made otherwise available to broader public audience.

39. The evaluation recommends that a final workshop be conducted with DFID, implementing partners, and the broader humanitarian community to discuss the conclusions, lessons, and recommendations form the evaluation. This will focus on how these may be 'operationalised' and the constraints, dependencies, risks, and opportunities

associated with how they may be addressed. This may result in additional research/evaluation activities, sponsored by DFID or others.

40. It is expected that the results from this evaluation inform any future longitudinal study conducted by DFID for future multi-year programmes.

2.7. Independence

41. Given the nature of an impact evaluation that uses a quasi-experimental design, nearly all of the analysis and subsequent conclusions and recommendations are based on the evidence. This includes the information from the community-based focus group discussions and other auxiliary evidence. This makes issue of independence almost secondary as the analysis is based purely on validated evidence.

42. At the same time, the evaluation was designed to engage DFID and DFID partners throughout, using each survey as an opportunity to have workshop with all stakeholders to discuss preliminary findings and implications. While these proved to be often lively and informative discussions, nothing was raised that might threaten the independence of the data or of the evaluator's capacity to analyse the data. In fact, nearly all stakeholders generally confirmed the results as presented, even when these raised negative performance issues.

43. There were various discussions within the evaluation team, especially between the technical and statistical leads. This often concerned how to treat different aspects of the data and how to approach potential deficiencies in the analysis. None of these were hugely substantive and, given the long-term working relationships amongst the team members, these were always resolved.

44. Nor were there any conflicts of interest or other biases that could influence the results.

3.   Methodology

3.1.   Overview

45.   The evaluation's methodology was designed to measure the impact of resilience programming amongst BRCiS and UNJRS supported households. More direct humanitarian action, including programming to address severe acute malnutrition (SAM) rates and other DFID Programme indicators, are considered as well as how the 2017 food security crisis affected results.

46.   Evaluating resilience in humanitarian contexts requires a particular approach. Resilience is dynamic in that a household's level of resilience can crest and trough according to the nature and severity of climatic and conflict-related shocks. Some communities may withstand similar shocks differently and return to a form of equilibrium more quickly than comparative communities, only to be thoroughly devastated with no chance to return to any semblance of normality with a different type of shock at a different time.

47.   There is also no guarantee that increased resilience will lead to improved conditions overall. Increased resilience should enable households to better prepare, withstand and recover from shocks. In turn, this *could* mean less of a reliance on assistance or at least a change in assistance types toward those associated with longer-term recovery and development. Yet, the primary goal remains that they are simply better able to prepare, withstand, and recover from shocks.

48.   To address this, the evaluation used multiple approaches and analytical tools, including multi-variate analysis and complex adaptive systems, combined with 22 focus group discussions with communities that had shown statistically significant changes in key outcome indicators over the course of four household surveys. This mixed methods approach, combining standard statistical analysis with in-depth qualitative evidence from the affected communities, allowed the evaluation to assess the complexity of resilience and how resilience is exhibited in the face of shocks. This included measuring four outcome indicators:

- Coping strategy index (CSI);[39]
- Food consumption score (FCS);[40]
- Proportion of household expenditures spent on food;
- Subjective wellbeing composite index.

49.   The evaluation also calculated an undefined multivariate outcome index of resilience (Resilience Capacity Index) in an attempt to incorporate a multivariate expression of resilience in a single value index. (See Section 10.3.)

50.   The first two of the four outcome indicators are standard outcome indicators related to food security while the others, especially the subjective well-being composite index, are related to the ways households prepare for, withstand, and recover from shocks—the driving definition of resilience for this evaluation. For a description of these outcome indicators, please refer to the *Annex* "Statistical Methodology" (Section 10.1.2) and to this evaluation's Design Note.[41]

51.   The use of a subjective wellbeing composite index is relatively innovative. While it has been used in other contexts, like Gaza,[42] measuring 'well-being' is complicated. A composite index, with the ability to track changes in a panel of households from baseline to end-line, provides a way to at least measure changes in well-being rather than what an acceptable level of well-being may be. Changes are taken *prima facia* and then assessed for either positive or negative changes from an original baseline. These changes are then correlated with other changes in key indicators. For instance, there is a correlation between positive trends in subjective well-being and food consumption scores amongst BRCiS supported households.

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[39] The CSI is a tool for measuring household food security and the impact of food aid programming in humanitarian emergencies. The CSI measures behaviour: the things that people do when they cannot access enough food. There are a number of fairly regular behavioural responses to food insecurity—or coping strategies—that people use to manage household food shortage. These coping strategies are easy to observe.

[40] The Food Consumption Score (FCS) is an index that was developed by the World Food Programme (WFP) in 1996. The FCS aggregates household-level data on the diversity and frequency of food groups consumed over the previous seven days, which is then weighted according to the relative nutritional value of the consumed food groups. For instance, food groups containing nutritionally-dense foods, such as animal products, are given greater weight than those containing less nutritionally dense foods, such as tubers.

[41] See Dorian LaGuardia & Andrew Pinney; "Evaluating Humanitarian Action and Resilience Design Document." DFID/MESH, 24 July 2015.

[42] See Dorian LaGuardia; "The Emergency Job Creation Programme: Providing Opportunities for People and Business." UNRWA; 16 February 2016. This was an impact evaluation of UNRWA's job creation programme, an evaluation that included concurrent household (8) and business (7) surveys over three years. Subjective well-being related to how employment opportunities enabled people to better enter the job market after the programme. Here too, the subjective wellbeing index showed correlations with other indicators.

52. The methodology also used the Resilience Capacity Index, following guidelines from FAO's RIMA II methodology,[43] to calculate static resilience capacity and dynamic resilience by investigating determinants of recovery of FCS and reduced CSI. The reduced CSI includes a range of negative coping strategies, around reduced food consumption in terms of both quality and quantity, that could be employed every day during a shock. This contrasts with livelihood specific CSIs, which vary across livelihoods and include occasional or one-off coping strategies, e.g. sending household members to eat elsewhere, consume weak unsellable animals, consume seeds for future plantings, etc.

53. The evaluation assessed over 20 different shocks, including conflict, accidents, floods and drought. Statistical analysis of these for the evaluation showed that drought was the most significant variable in relation to the outcome indicators. Given the prevalence of drought, the evaluation designated a primary analytical stratum of households in rural areas that experienced drought.

54. Given this approach, standard OECD DAC evaluation levels have not been used. Instead, the analysis focuses on changes over time amongst intervention and counterfactual households and the qualitative investigations of changes amongst select communities. In this sense, it is all about 'impact' and the lessons one may derive from the level of impact across the cohorts assessed. In fact, this has put the affected communities themselves at the centre of the work—it is changes in their communities that are measured and assessed in this evaluation.[44]

55. At the same time, the evaluation has adhered to all OECD DAC and ALNAP standards and practices throughout. This includes ALNAP's "Evaluation of Humanitarian Action Guide"[45] and OECD common principles.[46] This includes standards for independence and quality assurance, and ensures that evidence supports findings, conclusions and recommendations and that their underlying analysis adheres to best practices and leading research assures independence. [47]

3.2. Intervention and Counterfactual Households

56. The evaluation's household surveys included intervention communities (those directly served by DFID supported resilience partners) and counterfactual communities (those that did not receive support from DFID supported resilience partners).

57. Counterfactual communities were identified as those within a range of 2-10 kilometres (Km) of an intervention community and located in the same food-economy livelihood zone. In some livelihood zones this outer buffer of 10 km had to be extended to 20k because of the scarcity of settlements. (Figure 5).

58. The direct correlation between one intervention and one counterfactual community was not possible given the availability of qualified counterfactuals. This led to a 'clustering' of different intervention and counterfactual communities for analysis. (See Statistical Methodology for a further explanation of clusters and issues related to the selection of intervention and counterfactual communities; Sections 10.1.3 and 10.1.4.1.)

59. While the original selection of counterfactuals included every effort to ensure that these communities were not receiving any formal support at the time of the baseline, over the course of the evaluation many of these

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[43] "Analysing Resilience for Better Targeting and Action: Resilience Index Measurement and Analysis II." FAO 2016; http://www.fao.org/resilience/resources/resources-detail/en/c/416587/. (Accessed 18 February 2019.)

[44] The community engagement literature is expansive. It has also evolved to ensure that humanitarian principles guide community level engagement and that the people in need of humanitarian assistance both become central to project design, leadership, and, eventually, management. For a review of this, see Dayna Brown and Antonio Donini, "Rhetoric or Reality: Putting Affected People at the Centre of Humanitarian Action." ALNAP Study, ALNAP/ODI, 2014.

[45] Margie Buchanan-Smith, John Cosgrave, and Alexander Warner. "Evaluation of Humanitarian Action Guide." ALNAP; 2016.

[46] "Principles for Evaluation of Development Assistance." OECD DAC. Paris 1991. See also: "Quality Standards for Development Evaluation." DAC Guidelines and Reference Series, OECD, 2010.

[47] "Best practice" and "leading research" refer to OECD DAC, UNEG, and the World Bank IEG along with other research. These are cited as appropriate throughout the findings section.

MESH

communities indicated that they did receive some type of formal support, albeit not from DFID supported resilience partners. This led to the designation of four treatment groups:

- Counterfactual households that did not receive formal support;

- Intervention households that did not receive formal support;

- Counterfactual households that received formal support;

- Intervention households that received formal support.

60. These treatment groups are included in all relevant analysis in this report.

3.3. Treatment Groups

61. As described in Section 10.1, the evaluation included four treatment groups that were modelled separately for both BRCiS and UNJRS cohorts:

Figure 4: Rural communities with 2 km (blue-grey) and 10 km (light green) radius buffers overlaid with food economy group livelihood zones.

- Rural and urban communities that experienced drought between Baseline and Round 4;

- Rural communities (irrespective of shocks experienced);

- Urban communities (irrespective of shocks experienced);

- IDP settlements.

3.4. Household Surveys

62. The evaluation used four household surveys (quantitative and perceptual) conducted at the key moments in the year when shocks were likely to occur (mostly the dry seasons). The household survey was based on the United Nations Food and Agriculture Organisation's (FAO) Resilience Index Measurement and Analysis (RIMA II). See the Annex in Section 10.11 for the complete household survey.

3.4.1. Data collection technology

63. Enumeration included enumerators drawn from the regions where the target and control surveys were conducted. The enumerators were fully trained not only on how to administer the survey but also on the ethical issues that may be involved in their work. (See Section 10.10.)

64. The Household Survey was administered using the Ona platform and Open Data Kit (ODK) on smart phones for the enumerators to use in the field. The ODK form allows for complex data to be collected easily, including skip-logic and other embedded functionality that facilitate the ease by which the survey is conducted. This survey has already been designed in ODK and used with the Ona platform in the FAO Index/Dolow Mid-line Survey. The surveys were further tested before the first survey and then reviewed after each data collection period.

65. The use of mobile phones combined with the Ona platform ensures a high degree of quality assurance. The phones have Global Positing System (GPS) that can show enumerator locations within 10 metres. This provides a precise geographic reference for the household where surveys take place. This not only assures that the correct households are interviewed but also ensures the same household is interviewed in subsequent surveys. It also has a time tracker to record how long interviews take, ensuring that adequate time is taken in each interview.

3.4.2. Changes to household survey

66. The household survey was reviewed after each of the first three rounds. This included an assessment of any gaps, inconsistencies, or anomalies in the resulting data and whether these were related to the phrasing, sequencing, or other aspects of the survey design.

67. While there were changes to the phrasing and or sequencing of questions, no substantive changes were made that could have altered the data in ways that would limit survey-to-survey analysis. Some additions were made,

especially concerning Internally Displaced Persons (IDPs), when it emerged that there were increasing numbers of IDPs in intervention and counterfactual communities.

3.4.3.   Ethical data collection

68.   The nature of this evaluation implies inputs and perspectives from people that are experiencing life-threatening conditions and repeated conflict and climate-related shocks. MESH enumerators, who had the primary interactions with the people the Humanitarian Programme served, were selected because of their relevant experience, communication skills, and because they recognise and sympathise with the situation's respondents face. They are also from the regions where they will conduct the surveys and so they will have particular insights into what may be affecting people and communities at any one time. They will also have the cultural knowledge and social skills that will be most appropriate for different communities.

69.   Given this, the enumerators were specifically trained to consider the following ethical issues:

- Special attention to how they enter communities, usually meeting with the village elder first even when pre-arrangements have been made, and then using a "random-walk" selection pattern for households mindful of households that may be resistant a survey of this type. Any hesitancy or resistance within selected households was acknowledged and such households were politely informed about the survey's purpose, the consent of the village elder(s), and any other issue that may be prompting their residence. If households were still resistant, the enumerator moved to the next household.

- Enumerators were specific about the purpose, process/time and expected outcomes of the survey as well as to address any unfounded expectations respondents may have about the survey.

- Enumerators provided formal notices about preserving anonymity and confidentiality, reassuring respondents that there are multiple layers of security associated with the data collected.

- Enumerators showed village elders and members of the household the mobile phone used for data collection so that they were aware of how the technology works and how data is recorded. As possible, enumerators positioned themselves so that the respondents could watch the phone's screen as the enumerator entered information.

- Enumerators were trained to establish a comfortable rapport with household members quickly, giving members of the household ample time to speak about subjects they deemed relevant, ask questions, or raise other concerns before the formal survey started.

- Enumerators were trained to be exceptionally careful not to collude or to agree/disagree with any respondent statements but to establish that they heard and understood any and all such comments.

- Enumerators gave people ample time to respond to questions and provided clarifications as necessary. If respondents became visibly upset with any question, enumerators were trained to give them time to collect themselves and to then ask whether they would like to stop or continue.

- Enumerators were trained so that any sign of duress or discomfort on the part of the respondent is acknowledged and, if necessary, the survey can be delayed until a more appropriate time.

- Enumerators were trained to be conscious of the space where the survey was conducted and to be highly respectful of activities that may be going on during the survey, e.g. children feeding or playing, prayers, cooking, cleaning, etc.

- Given that enumerators worked individually in some cases, they took special care to ensure that the environment was safe for them and the respondents and that respondents were welcome to have others with them as the survey was conducted. In some cases, village elders suggested bringing respondents to a common public space for the interview. This was discouraged as possible as it could corrupt the random selection process and could have had unforeseeable impacts responses.

- Enumerators were trained to be aware of adverse disturbances or threats that could occur during the interview, either in the household itself or in the community. Specific training was provided for this, including in-depth security protocols for non-household threatening events.

- Enumerators were trained how to bring each household interview to a close. This included reiterating the purpose of the survey, when they would return for the next survey, and giving respondents ample time to ask as many questions as they may have about the survey, the process, or anything else.

3.4.4. Enumerator training

70. The enumerators completed a 4-day training that included modules on the DFID progamme, their roles and responsibilities, ethical considerations (as noted above), and how to use mobile-based data collection. The training was 'action-based' in that it included role plays, sample questionnaires, and repeated 'mock' interviews.

71. While attrition amongst enumerators was kept to a minimum, any new enumerator went through a similar training.

3.4.5. Survey schedule and final sample

72. In the original design, this included four surveys covering the two dry seasons (Jilal and Hagaa) from January 2016 - August 2017. However, with the onset of the food security crisis in early 2017, it was agreed with DFID to delay the last survey to January 2018. (Figure 5)

73. This revised survey schedule allowed for the analysis of whether DFID supported households experienced a 'bounce back' after the food security crisis, given a full year from the 3rd survey. However, this left the 2nd survey without a clear comparative. The analysis presented in this report includes changes between the first and second surveys, although these proved to be minimal. Thus, the analysis focuses on the changes between the first, third, and fourth round surveys as well as analysis from the first (baseline) and the fourth (end line) survey. The analysis considers changes between the second and fourth survey although this is less demonstrative of results than the other comparisons.
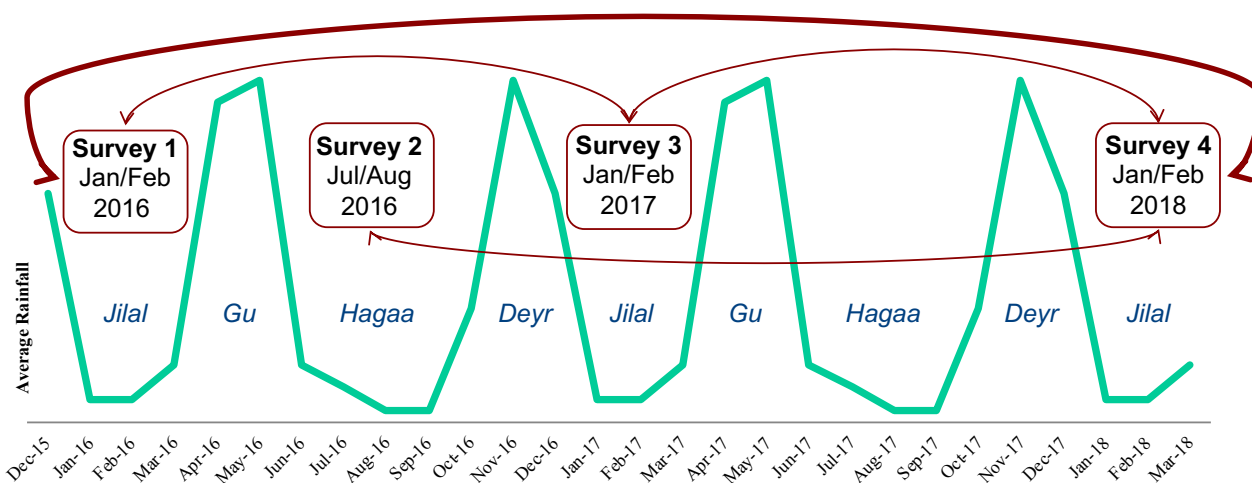
Figure 5: Timing of evaluation's four household surveys, showing analytical links between surveys

74. This sample included surveying 2,534 households in the baseline and 1,782 in Round 4. Unsurprisingly, in a shock prone environment where pastoralism prevails, enumerating all 4 observations with all panel households was challenging.

75. The sampling strategy included a 30% attrition rate. Rural domains experienced around 30% or less attrition. But in both the BRCiS and the UNJRS urban domains, the attrition rate was significantly higher, 35.7% for BRCiS and 41.4% for UNJRS domain. Every attempt was made to avoid this attrition rate, including tracking families/households that had moved from rural setting to IDP settlements (hence the inclusion of IDPs as a distinct cohort). Yet, in urban areas, the transience, especially during the 2017 food security crisis, proved too much for the evaluation's best efforts. This means that the evaluation cannot establish statistical certainty for urban cohorts. Nonetheless, the data and analysis from these cohorts is presented throughout this report.

Table 1: Attrition rates at Baseline and Round 4. Values greater than anticipated 30% attrition rate highlighted red.

BRCiS-UNJRS	Rural-Urban	Int-CF	Baseline	Round 4	Attrition %
BRCiS	Rural	Counterfactual	288	190	34.0%
		Intervention	397	304	23.4%
	Rural Total		**685**	**494**	**27.9%**
	Urban	Counterfactual	88	57	35.2%
		Intervention	192	123	35.9%
	Urban Total		**280**	**180**	**35.7%**
BRCiS Total			**965**	**674**	**30.2%**
UNJRS	Rural	Counterfactual	776	554	28.6%
		Intervention	613	441	28.1%
	Rural Total		**1389**	**995**	**28.4%**
	Urban	Counterfactual	85	50	41.2%
		Intervention	48	28	41.7%
	Urban Total		**133**	**78**	**41.4%**
UNJRS Total			**1522**	**1073**	**29.5%**
Grand Total			**2534**	**1782**	**29.7%**

3.4.6.   Data collection & management

76. All data was collected using Open Data Kit 1 (ODK), an open-source software developed especially for the collection and management of data in complex operating environments. This included all micro-level data associated with the survey, disaggregated to each household response. Data was protected using MESH standard protocols for data security and as aligned with GDPR data security compliance.

3.5.   Statistical Models

77. Statistical analysis used a mixed (=hierarchical) linear regression model with random effects on meso-cluster, community, and household level to account for clustering of outcome, treatment, and independent variables. Estimation of models was calculated using the function lmer in the R-package lme4.[48] This is described in full in Section 10.1.

78. Resilience Index Measurement and Analysis II (RIMA II)[49], a methodology supported by FAO, was also used in this final report to provide a more multivariate description of resilience beyond the univariate proxies of FCS and CSI. This analytical approach employs factor analysis and structural equation modelling which enables a Multiple Indicators Multiple Causes (MIMIC) analysis to be used to estimate the Resilience Capacity Index (RCI). This static direct measure uses a MIMIC statistical model to test a set of resilience components grouped by four resilience pillars as a way of describing multiple resilience outcomes. This is fully described in Figure 58 in Section 10.3- RIMA II Statistical Analysis. While the RCI provides a multivariate description of resilience at one point in time, trends in the RCI are problematic to interpret because the Multiple Indicators Multiple Causes (MIMIC) model is recalculated from each survey round's data. This makes direct comparisons between survey rounds over time difficult to interpret with confidence.

79. To overcome this, the dynamic analysis propose in the FAO RIMA II publication[47] was used. This divided the sample into those households that have recovered or improved on their baseline values FCS and CSI by the Round 4 observation. A probit regression analysis was applied to look at the determinants of recovery using the RIMA pillar components as explanatory variables. And then in a separate probit analysis, both covariate and idiosyncratic shocks were tested to identify the type of shocks most strongly associated with non-recovery in either FCS or CSI.

3.6.   Statistical Analysis Graphs

80. As described in the statistical methodology Annex (Section 10.1), outcome values are not averages from raw data but are instead controlled for baseline-level covariates. This is done to ensure that any changes between the four treatment groups are more likely due to the intervention/household support combination a household received and not, for example, due to differences in baseline-level household characteristics. This is shown in tables throughout this report that show differences between survey rounds. For instance, in the table below the value of 10.37 in row "Change Round 3 to round 4" in the fourth treatment group (Intervention - Household support) means that, on average, the FCS in this group increased by 10.37 between Round 3 and Round 4.

Table 2: Example of statistical analysis table for outcome profiles between survey rounds

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	25.53	28.10	36.59	33.04
Change Baseline to Round 3	-11.60	-16.15	-18.59	-18.29
Change Round 3 to round 4	4.09	7.48	5.78	10.37
Change Baseline to round 4	-7.51	-8.68	-12.81	-7.92

81. Figure 6 provides the same information as Table 2 in graphical form, but for the absolute levels of the modelled outcome variable as opposed to the differences. The figure indicates that there was a marked decrease in the level of the FCS between Baseline and Round 3, followed by an increase to Round 4.

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[48] Fit a linear mixed-effects model (LMM) to data, via REML or maximum likelihood.

[49] Analysing Resilience for Better Targeting and Action: Resilience Index Measurement and Analysis II, FAO 2016, http://www.fao.org/resilience/resources/resources-detail/en/c/416587/ (accessed August 27, 2018).

82. The vertical lines at each survey point show the level of variance in co-variates for each treatment group: the longer the line, the greater the variance. This represents statistically significant change by comparing the position of each line across the three surveys. If there is no overlap, then this represents significant change. For instance, the dark blue line for counterfactual households with support shows statistically significant change between the baseline (bottom of vertical line is art 30) and round 3 (top of vertical line is at 26). For more explanation on these graphs, see Section 10.1.6.
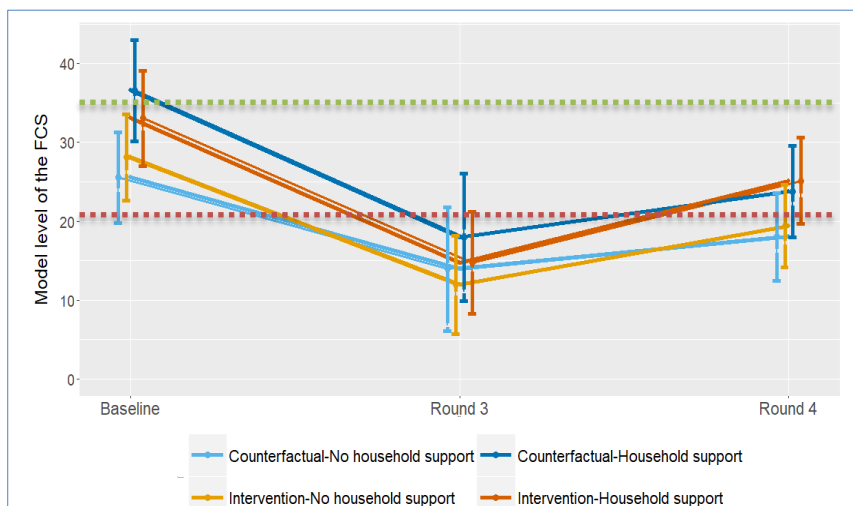
Figure 6: Example of statistical analysis graph analysis of FCS-UNJRS Drought Rural. Red dashed line=boundary between poor (0-21) & borderline (>21 & <35) FCS & green dashed lines =boundary between borderline (>21 & <35) & adequate (>35) FCS.

3.7. Qualitative Analysis

83. The evaluation included focus group discussions and interviews in 21 communities (10 UNJRS; 11 BRCiS) approximately 6-months after the 4th survey and amongst those that showed statistically significant changes in key outcome indicators. These were designed to explore how communities responded to the food security crisis and what they cited as their most common coping strategies and other factors that contributed to their conditions.

84. 25 communities were originally identified. The evaluation then focused on an equal sample between BRCiS and UNJS communities along with security and access considerations. This brought the intended sample to 22. Once field research began, a security issue arose that prevented the evaluation team from accessing one of the UNJRS communities, bringing the sample to 21. While the focus was on communities where there was significant change, either positive or negative, the overall sample also represents 9% of all DFID supported communities.

85. This was not originally part of the design. However, the Monitoring & Evaluation of the Somalia Humanitarian Programme (MESH), under which this evaluation was commissioned, had funds available to conduct this qualitative research. After a proposal and discussion with DFID, DFID agreed for MESH to undertake this study.

Table 3: Number of communities visited 6 months after 4th end-line survey

Community Visits including Focus Group Discussions & Individual Interviews			
BRCiS		**UNJRS**	
Intervention	Counterfactual	Intervention	Counterfactual
8	3	8	2
Total:	11	Total:	10

4.   Overall Findings

87. One of the most remarkable findings in this evaluation is that there was very little change, between intervention and counterfactual households surveyed over three years when analysing the four outcome variables (food consumption scores (FCS); coping strategy index (CSI); percentage of total expenditures spent on food; and, subjective well-being). This includes households across the country, north and south, rural, urban, and those in IDP settlements. It includes households that received support from DFID partners, households in the same communities that did not receive support, counterfactual households that received no support, and those that received support from non-international actors. There are some variations. For instance, the Resilience Capacity Index indicates higher levels of resilience in intervention groups across the evaluation period for BRCiS supported households, but a more variable picture of resilience in UNJRS households. Nonetheless, even these variations are seldom statistically significant.

88. This might seem unsettling. One might have expected significant positive change in these well-being and food security outcome proxy indicators, and while this would have been preferred, the context was exceptionally difficult for the most vulnerable Somalis.

89.   The evaluation's first household survey was conducted in in January 2016, a time of relative calm, followed by a second survey before the food security crisis (July 2016), then one during the onset of the food security crisis (January 2017), and then one after the crisis had subsided (January 2018). The evaluation followed approximately 1,700 households over a definitive arc of crisis, assessing how they prepared for, withstood, and then recovered from a food security crisis that had the hallmarks of the 2011 famine. The fact that households and communities did not experience escalating malnourishment and reliance on negative coping strategies is remarkable.

90. During this time, households did show indications of greater food insecurity and worsening conditions overall and yet these did not fall to such levels as to usher in famine and mass mortality. Even more surprising, they 'bounced back' by the time of the last survey, in January 2018, to levels commensurate with or better than those at the baseline.

91. Figure 7 shows approximate trends for the Coping Strategy Index (CSI) and Food Consumption Scores (FCS) for BRCiS and UNJRS households, split between rural, urban, and IDP households. These are the primary outcome indicators used to assess food security and were primary outcome indicators for this evaluation. This figure shows minimal changes between surveys 1 and 2, followed by a decline by the time of the round 3 survey, followed again by a positive upward trend by the time of round 4, with a notable exception in relation to FCS. Here, BRCiS households exhibited a continuing, albeit not statistically significant, decline across the period while UNJRS households showed an improvement between rounds
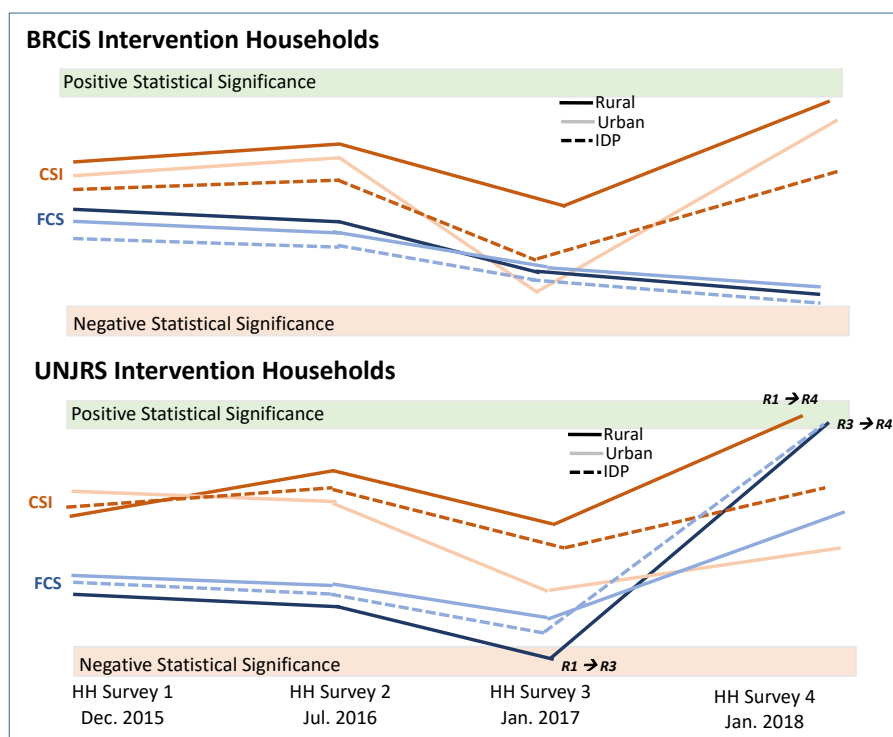
Figure 7: Approximate trends in CSI and FCS across four household surveys

3 & 4, with statistically significant improvements for rural and IDP households after a statistically significant decline in FCS for rural households, falling below acceptable nutrition levels, by the time of the third survey (January 2017).

92. While variations indicated in this figure are assessed throughout this Report, the fact that there was so little statistically significant change is an exceptional finding in itself. When compared to the 2011/2012 famine, households had leapt to dangerous levels of food insecurity and malnourishment. In the dry season of 2007/2008

(Dyer) there was a significant increase in Integrated Food Security Phase Classification (IPC), with 43% of the population in phases 3 (crisis) and 4 (emergency). After an initial decrease in these conditions in 2010, they increased to famine levels in 2011 with 54% of the population in IPC phases 3, 4, and 5 (famine). (Figure 8)

93. Famine is defined as acute malnutrition rates among children exceeding 30% of the population and more than 2 people per 10,000 dying per day due to an inability to access food and other basic necessities. By July 2011, famine was present in Banadir, Bakool, and Lower Shabelle. According to the Food Security and Nutrition Analysis Unit (FSNAU), death rates had reached 4.37/10,000 per day. The mortality rate for children under five was as high as 15/10,000 per day. By August 2011 (Gu), a total of 4 million people were in crisis (phase 3) nationwide. The worst affected areas were in the south where most people lacked food access, with 750,000 experiencing famine.[50]

> *The Cycle of Seasons & Food Security in Somalia*
>
> Rural livelihood systems in Somalia (pastoralism, agro-pastoralism, farming), follow four seasons: dry Jilaal (January-March), and Hagaa (July-September), and rainy Gu (April-June), and Deyr (October-December).
>
> The Gu and Deyr rainy seasons provide pastoralists with water and pasture for livestock production and sustenance, crop production, and income. Pastoralists usually stay in permanent settlements during the rainy seasons and then migrate to rivers and other water points during the dry seasons. Agro-pastoralists and those living in riverine areas tend to be more sedentary. Those living in urban areas heavily on rural areas for food (milk, cereal, fruits and vegetables).
>
> When there are droughts, or successive droughts as during the course of the DFID MYHP, access to food becomes limited for all populations, often leading to negative health and nutrition outcomes in the short term and increased vulnerabilities in the long term.

94. By the time of DFID Multi-Year Humanitarian Programme (MYHP) in 2013, food security conditions had improved although there were still between 10 – 14% of the population who remained in crisis. (Figure 8)
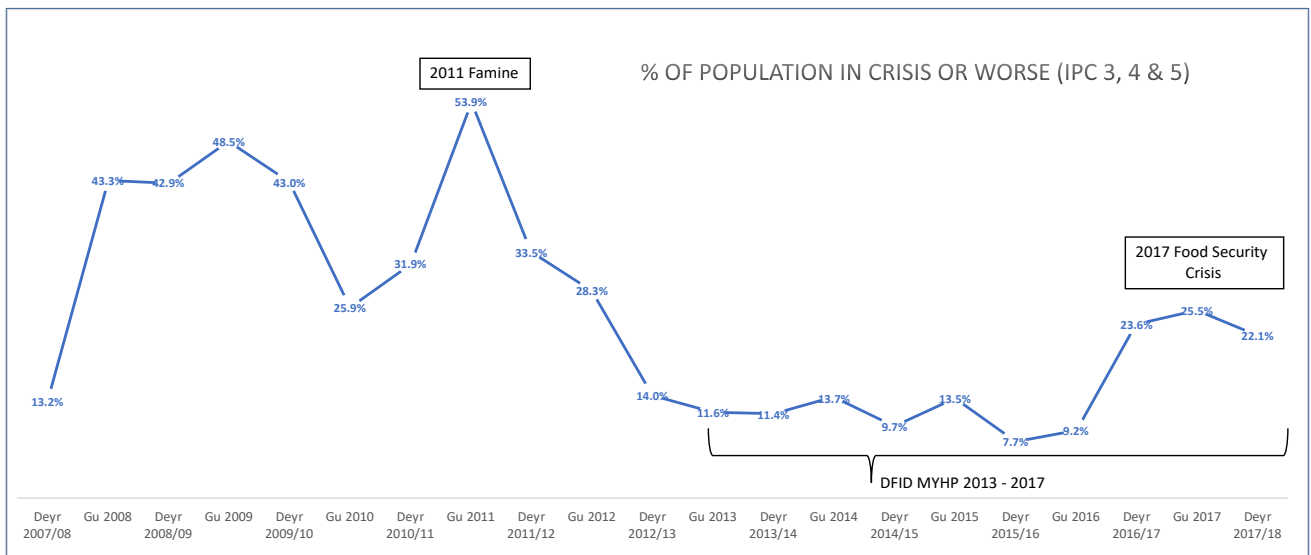
Figure 8: Percentage of population in Somalia in crisis or worse, from 2007 – 2018 showing the 2011 famine, the period of DFID's multi-year humanitarian programme (MYHP), and the 2017 food security crisis

95. This remained relatively stable until the Deyr season in late 2016. By the time of the 2017 Gu (April – June) over 2.3 million people were in crisis (IPC Phase 3) and 802,000 in emergency (IPC Phase 4), with over 3.1 million people in urgent need of assistance.[51] As in 2011, the largest cause for the crisis was drought, which was the result of three consecutive poor rainy seasons (Gu 2016, Deyr 2016, and Gu 2017).

96. Yet, the population did not continue to decline into crisis. By the time of the 2017 Gu, things had stabilised with approximately 26% of the population in crisis or worse (IPC 3 & 4) as compared with 54% at the time of the 2011 Gu. (Figure 8)

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[50] "Nutrition Update." FSNAU Somalia; May – July 2011.

[51] "Food Security & Nutrition Update." FSNAU Somalia; 28 September 2017.

97. This corresponds with trends from this evaluation's analysis.[52] For the primary outcome indicators, the food consumption score (FCS) and coping strategy index (CSI),[53] trends had worsened across all cohorts in rural and urban areas by the time of the 3rd survey (January 2017). Yet, by the time of the 4th survey in January 2018, these households stabilised or 'bounced back' to levels commensurate with those from the time of the baseline. (Figure 9 & Figure 11:)

98. In the case of FCS, intervention households (DFID supported) were doing better than counterfactual households. This is likely due to the emergency cash programmes that DFID supported during the response. This corresponds to changes in the percentage of income used for food, as shown in Figure 10:

99. The same trend can be seen at the district level. As in Figure 12, Global Acute Malnutrition (GAM) rates in Bay increased to 58% of the population in July 2011 whereas they only increased to 20% in the same time for 2017. In 2011, a 'tipping point' was reached where the convergence of food shortages and the lack of international humanitarian action led to a significant increase in malnutrition. In 2017, this was avoided completely. People suffered, as shown in the negative trend lines between survey rounds 2 & 3 and yet they never dipped into unacceptable levels of nutrition. These households were able to recover to levels commensurate with or better than those at the time of the baseline.

100. Each of these trends suggest that something was positively different in 2017 as compared to the 2011/2012. The conditions were worse in the 2010/2011 Deyr (32% of population in IPC 3 & 4) as compared to the 2016/2017 Deyr (24% of population in IPC 3 & 4) and yet conditions never worsened in 2017 as they did in 2011.

101. While the 'bounce back' between rounds 3 & 4 can be attributed largely to the emergency response, the fact that households and communities did not crash between rounds 1 and 3 indicate that existing programming was critical for enabling households to "predict and respond" to the shock. It is beyond the analysis of this evaluation to establish whether or not
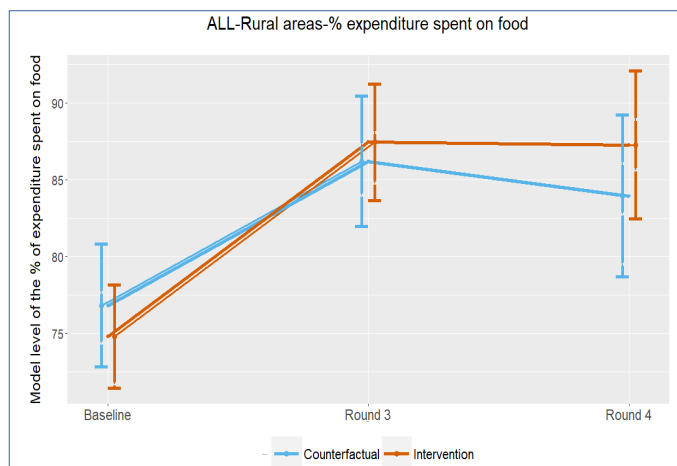
Figure 10: Trends in percentage of expenditures spent on food from baseline (January 2016) to the 3rd survey (January 2017) and to the end line (January 2018).
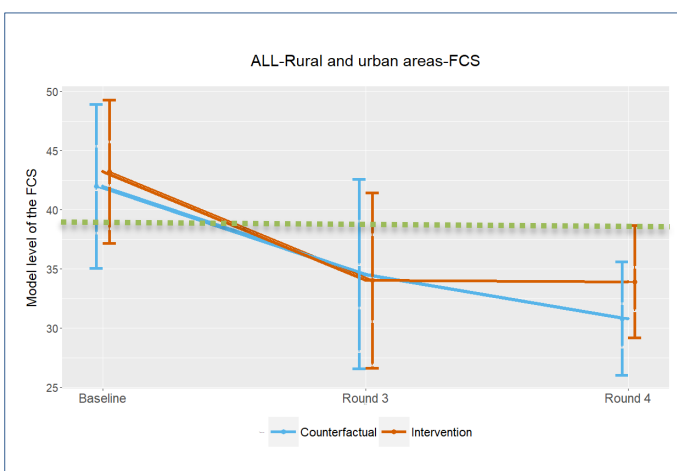
Figure 9: Trends in food consumption (FCS) from baseline (January 2016) to the 3rd survey (January 2017) and to the end line 4th survey (January 2018).
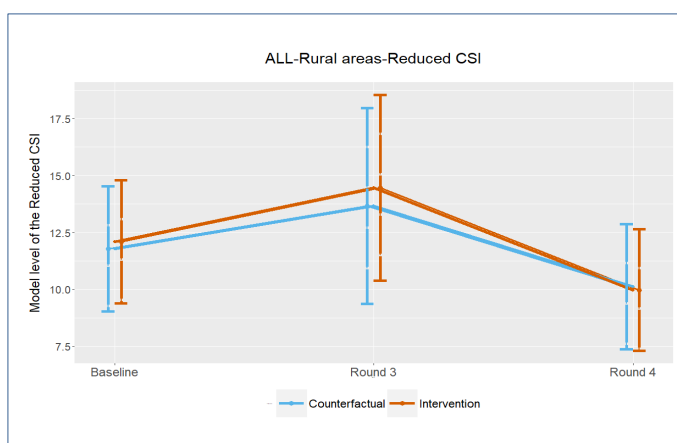
Figure 11: Trends in negative coping strategies (CSI) from baseline (January 2016) to the 3rd survey (January 2017) and to the end line (January 2018).

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[52] For analysis across data sets for intervention and counterfactual households, the evaluation used FAO's RIMA II methodology to calculate trends and results. (See Section 10.3.) Given sample size, attrition rates, and other issues, the analysis was able to combine rural and urban households for FCS and yet not for CSI or percentage of expenditures spent on food. Please see the Annexes, Section 10.1, for all statistical analysis across cohorts and strata.

[53] CSI measures reliance on negative coping strategies and so higher numbers indicate worse conditions.

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they would have continued to decline without the early 2017 response, or if the timing and scale of the response was the predominate feature in avoiding famine. What is certain is that these households exhibited the hallmarks of resilience before the 2017 response.
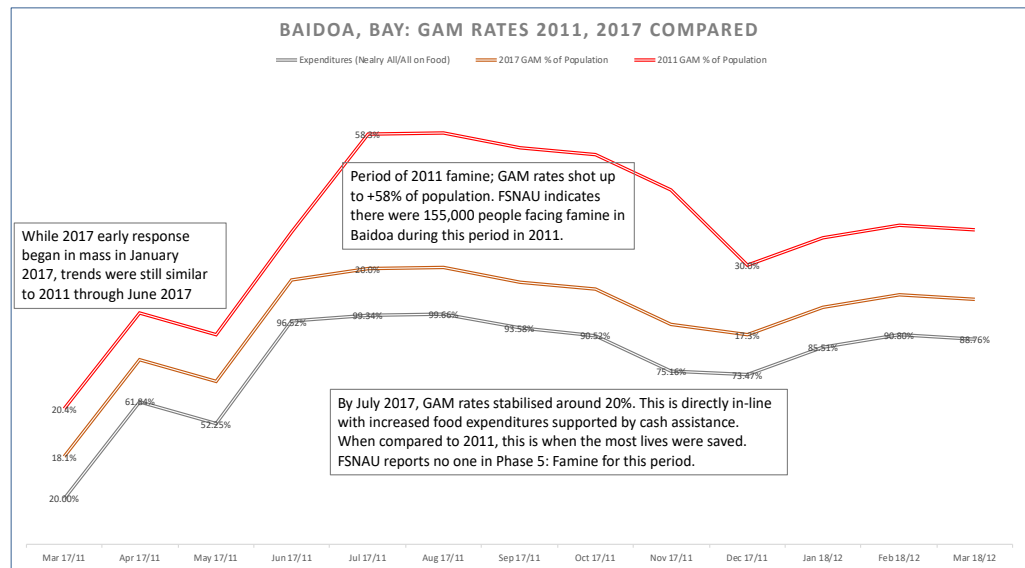

Figure 12: Comparison of global acute malnutrition (GAM) rates in Baidoa, Bay, from 2011 and 2017.

102. The avoidance of famine in 2017 is remarkable. However, how much of this can be attributed to underlying conditions, ongoing support from DFID's MYHP, the massive 2017 response, and indigenous coping systems that remain poorly misunderstood, is difficult to ascertain. Yet, the trends are consistent and highly suggestive of the combination of all of these.

103. This is confirmed through focus group discussions and interviews amongst the communities. The evaluation included focus group discussions and interviews in 21 communities (10 UNJRS; 11 BRCiS) approximately 6-months after the 4th survey and amongst those that showed statistically significant changes in key outcome indicators. These were designed to explore how communities responded to the food security crisis and what they cited as their most common coping strategies amongst other factors that contributed to their conditions. These communities still faced problems and vulnerabilities and yet they were able to cite various strategies that have links to direct support and resilience programming.

104. UNJRS supported communities cite direct cash support (mostly from The UN World Food Programme (WFP)) and loans as the most common strategies, followed by limited income activities and agricultural infrastructure, typically provided by the UN Food & Agriculture Organisation (FAO). Of course, these same communities also cite a range of other strategies, from those that are less positive, like having to move to IDP settlements, to selling assets and livestock. (Table 4)

105. BRCiS supported communities tended to cite the choice, in most cases, to eat less as a way of avoiding other more negative strategies, and the reliance on friends and family. This, while exceptionally difficult to assess, does indicate more possibilities to draw form the community itself than at least those met in UNJRS supported communities. While not wishing to overstate possible linkages between this and BRCiS programming, it is worth noting that the BRCiS programme approach stressed working with the community to identify coping strategies, letting these emerge through interactions with the communities themselves. (See Section 6.1.)

106. The BRCiS domain, both intervention and counterfactual, consistently reported higher average FCS scores across the 3 survey rounds, but also higher (worse) CSI scores than UNJRS cohorts. This highlights the challenges of trying to represent resilience were just a single outcome.

107. The Resilience Capacity Index (RCI) results support the assertion that the BRCiS communities were more resilient with average RCI estimates over the 3 observations being consistently higher than for the UNJRS cohorts. Furthermore, the BRCiS intervention communities were consistently returning higher average RCIs the counterfactual communities (Figure 13, Figure 14 & see Section 10.3 for full analysis).
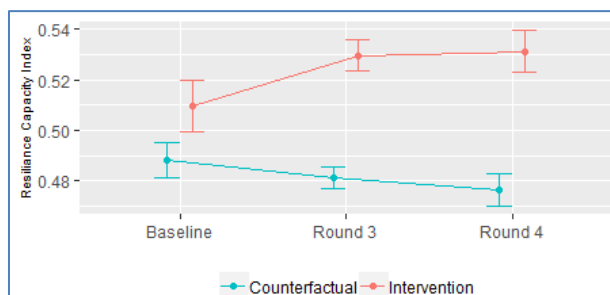
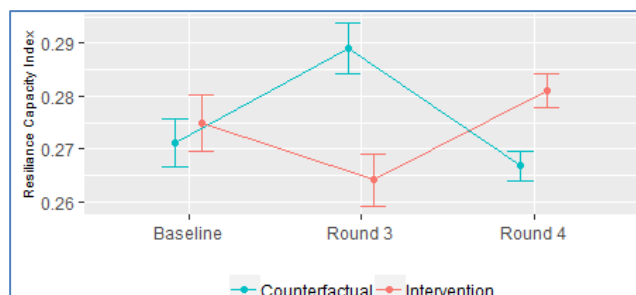Figure 13: RCI values at Baseline, Rounds 3 & 4 for the BRCiS cohorts.

Figure 14: RCI values at Baseline, Rounds 3 & 4 for the UNJRS cohorts.

108. BRCiS supported communities also expressed gratitude to longer-term support, stating that it enabled them to avoid many negative coping strategies even if they were sometimes at a loss as to provide specific examples.

109. This corresponds to the evaluation's assessment of subjective well-being. While lacking statistical significance, all BRCiS cohorts experienced decreasing subjective well-being from baseline to Round 3, followed by a recovery to baseline levels. The intervention cohort showed the greatest increase (10.47% with support; 8.31% without support).

110. Trends in well-being for BRCiS households correspond to those in CSI, where households used, on average, fewer negative coping strategies. (Figure 16)

Table 4: Snapshot of community strategies (focus group discussions; intervention communities)

	BRCiS	UNJRS
Ate less	*****	**
Relied on friends & family	*****	*
Cash support		****
Loans (formal)	***	****
Relied on international aid	***	
Sold Assets	***	**
Income activities /charcoal (M)	*	***
Relied on agricultural infrastructure		***
Relocated (IDP)	*	**
Relocated (Urban)	**	*
Took small jobs in city (F)	**	
Water infrastructure		*
Selling livestock		*
Saving stocks		**

111. This also corresponds with the possibility that deteriorations in FCS were due to the capacity of households to make choices about food consumption rather than becoming victim to changes in the availability and pricing of food that could lead to decreases in FCS. BRCiS FCS averages never fell below the adequate threshold of 35. UNJRS scores were largely in the borderline category at baseline, dipped into poor at round 3, with some but not all cohorts recovering to borderline FCS by round 4.

112. Perceptions in well-being suggest that households felt that they made it through the crisis without exceptionally dire or long-lasting negative health issues related with changes in nutrition. They survived the crisis and felt, overall, about the same regarding their conditions as at the time of the baseline.
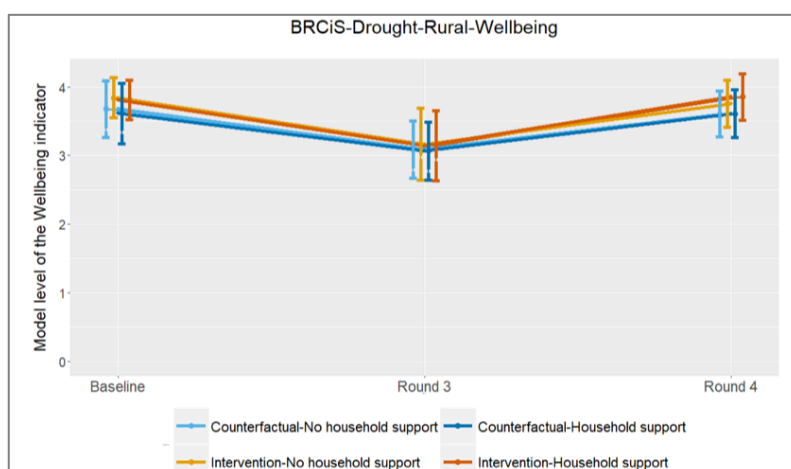

Figure 15: BRCiS rural; changes in subjective well-being from baseline (January 2016) to the 3rd survey (January 2017) and to the end line 4th survey (January 2018).

5. UNJRS Direct Support + Integrated Programming = Better Short-term Outcomes?

5.1. Programme Approach

113. The United Nations Joint Resilience Strategy (UNJRS) formed in the context of the Intergovernmental Authority on Development Drought Disaster Resilience and Sustainability Initiative meant to improve coordination, coherence, and synergies associated with multi-year and multi-sector investments.[54] In response to the 2011/2012 famine in Somalia, WFP and FAO implemented in 2013 the Joint Road Map in East Africa, with joint resilience strategies between FAO, WFP and UNICEF in Somalia, Uganda and Ethiopia. This included four objectives:

- Establish or build on common strategies at country level which ensure complementary approaches, and provide support to enable countries to undertake and engage in resilience programming;

- Improve information, analysis, monitoring and evaluation of risks, vulnerabilities and resilience capacities of at-high risk communities;

- Set up joint advocacy outreach, based on field evidence, to influence governance systems, donor policies, and regional institutions;

- Promote innovation and use of emerging programmes approaches and technologies.[55]

114. As this indicates, there were few considerations of what constituted 'resilience' programming and more of a focus on 'complementary approaches' and the promotion of 'innovation' enabled through multi-year investments. As indicated in an evaluation on the subject, this led to a somewhat disjointed approach, with FAO & WFP working in some areas and UNICEF in others, with different approaches to resilience overall.[56]

115. In the first few years of the MYHP, FAO had the most prominent resilience approach, particularly given its Resilience Index Measurement and Analysis (RIMA). RIMA (and RIMA II) provide an econometric approach to measuring indicators associated with changes in livelihood that illustrate the "role of household resources as determinants of activities and highlights the link among assets, activities and incomes."[57] The focus on household assets and income levels became a prominent feature of how the UNJRS approached the measurement of results.

116. Yet, by the 3rd year of the Programme, FAO, WFP & UNICEF were pursuing widely different resilience approaches. FAO emphasised livelihood support, especially in the areas of agricultural and livestock, including irrigation and other water infrastructure. UNICEF focused on a participatory approach that emphasised water, sanitation, and hygiene (WASH) activities along with the training of different community level service providers, e.g. community health workers. WFP focused on direct nutrition support, firstly through direct food support and then through conditional cash support. Given that they were not always working in the same communities, any results from joint programming, combing these different approaches, as lost.

117. Given this, it is difficult to ascertain a common approach or specific elements of UNJRS programming that reflect the more systemic and complex needs associated with strengthening resilience. Nonetheless, the UNJRS does exhibit compelling results, as shown in the next section.

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[54] See Intergovernmental Authority on Development website: http://resilience.igad.int/

[55] "Joint Statement FAO, WFP and UNICEF on Resilience Collaboration."
(https://reliefweb.int/sites/reliefweb.int/files/resources/Joint%20statement%20final%20_FAO_UNICEF_WFP.pdf)

[56] Dorian LaGuardia, Alex Lawrence-Archer, & Hana Abukar; "A Catalyst for Change and Results? DFID's Approach to the 2013 – 2017 Humanitarian Programme in Somalia." DFID; 26 March 2015.

[57] "RIMA II: Resilience Index Measurement and Analysis – II." Food and Agriculture Organization of the United Nations; 2016. Page 8.

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5.2.   UNJRS Households: Statistical Findings

118. Analysis from the four household surveys indicate similar trends. These show fairly static levels of food consumption (FCS), reliance on negative coping strategies (CSI), food expenditures, and subjective well-being between the baseline and round 2, followed by a negative decline in FCS and CSI by the time of the 3rd survey during the onset of the food security crisis, followed by a positive increase in the same by the time of the 4th survey (January 2018).

119. These trends are similar across cohorts (rural, urban and IDP settlements) and show little variance by district or region. (Please see the *Annex* "Statistical Analysis" Section 10.2. for all figures and graphs.)

120. Rural households affected by drought represent the majority of the sample and so these are presented here as representative of trends across cohorts. Here, CSI patterns remained fairly static between the baseline (December 2015) and Round 2 (July 2016), with intervention households with direct support exhibiting a positive downward trend. This pattern continued through the third survey (January 2017), during the height of the food security crisis. (Figure 18)

121. The trend in relation to FCS is more pronounced. There was a significant negative decline in FCS between the baseline and the third survey. This was followed by a positive increase by round 4 (January 2018). (Figure 19).

122. This trend is more pronounced in urban communities. Figure 17 shows a negative increase in CSI at the time of the round 3 survey, followed by a positive decline by the time of the 4th survey. Here, there is a notable positive improvement in CSI by the 4th survey amongst all households with some form of support.

123. The only cohort that shows a significant positive increase in FCS comparison to others is UNJRS supported households in urban areas. As confirmed through focus group discussions with communities that showed a statistically significant improvement in FCS, this is likely due to the ongoing support of UNJRS programming combined with additional direct support during the food security crisis.

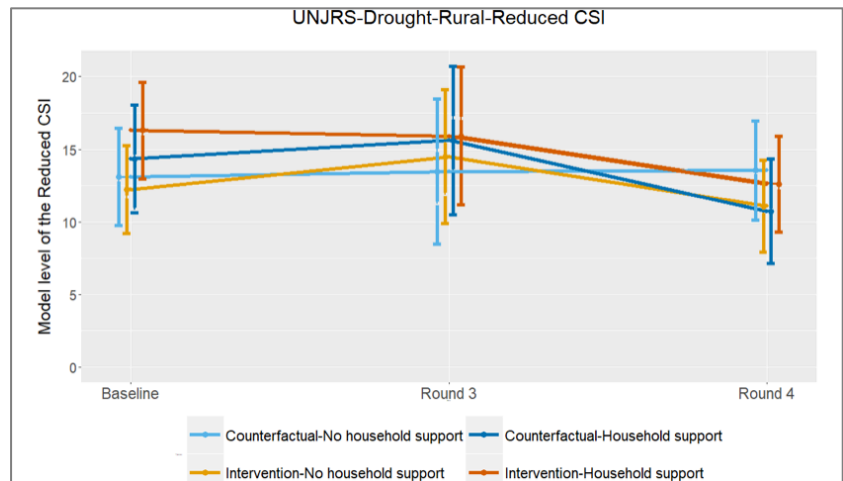124. This is confirmed through an increase in food expenditures across cohorts.

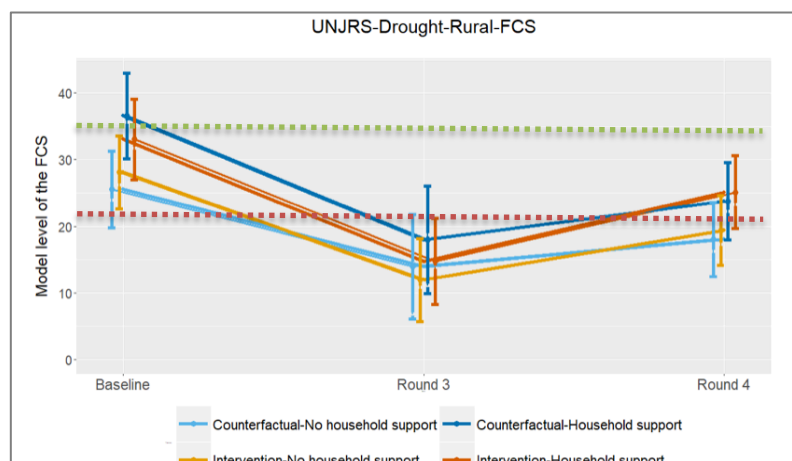*Figure 17: UNJRS CSI Rural: Coping Strategy Index Trends (intervention & counterfactual)*

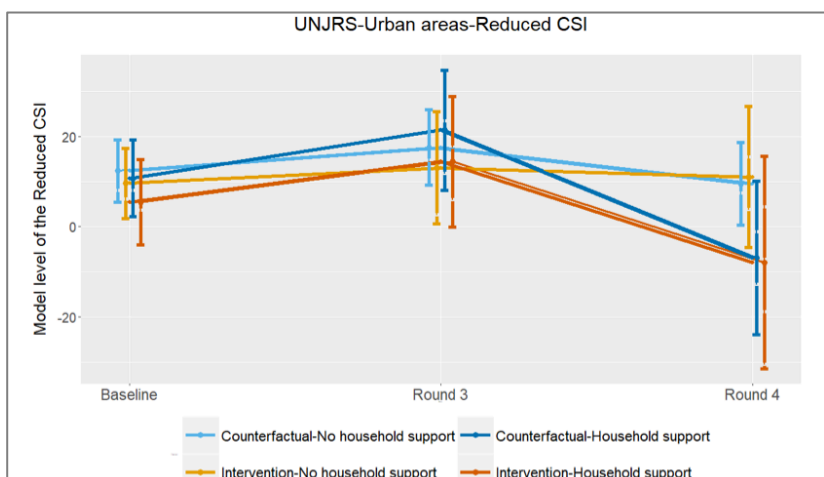*Figure 18: UNJRS FCS Rural: Food Consumption Score Trends (intervention & counterfactual)*

Figure 16: UNJRS CSI Urban: Food Consumption Score Trends (intervention & counterfactual)

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This shows that the percent of total expenditures on food increased significantly by the time of the 3rd survey, maintaining those levels until the 4th survey. This is contrast to BRCiS households that did not show a significant increase in food expenditures for the same time period.

125. In relation to subjective well-being, there was a slight negative decline by the time of the 3rd survey with a return to baseline levels by the 4th. (Figure 22) This indicates minimal changes overall. In comparison with BRCiS households, there was a larger positive increase in subjective well-being by the time of the 4th survey.

Figure 19: UNJRS Urban: Food Consumption Score (FCS) trends (intervention & counterfactual)

126. As each of these and the other graphs included in the statistical analysis show is that, while there are notable trends amongst intervention households, there are minimal differences amongst the four strata, including counterfactual households. There are multiple possible reasons for this, including a 'tipping point' during the food security crisis response that positively impacted all households and the possibility that there are indigenous support mechanisms in communities underserved by the intentional community that achieve similar results.

Figure 20: UNJRS Rural: Percent of total expenditures on food (intervention & counterfactual

127. The RIMA II compresses multiple indicators into a single pillar, and then uses these to estimate the resilience capacity index. See Section 10.3 for full methodological description and details of the variables making up each of the pillars.

128. The pillar contributions to the RCI calculation in Figure 23 indicate that Assets and Social Safety Nets had consistent positive trends

Figure 21: UNJRS Rural: Subjective well-being (intervention & counterfactual)

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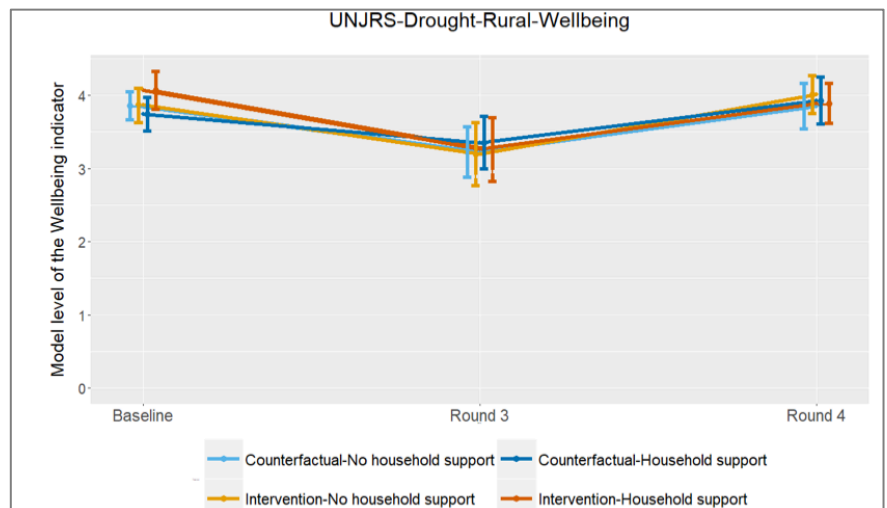across the 3 observations. Assets decreased from baseline to round 4, whereas Social Safety Nets were lower but more consistent.

129. In rounds 3 and 4, receipt of formal transfers was an important positive contribution to the Social Safety Net score. On the other hand, baseline informal transfer values were an important social safety net pillar contribution, but the contribution declined by the time of round 3 and then to almost nothing in round 4.

Figure 22: Contribution (loading) of each of the 4 resilience pillars to the Resilience Capacity Index for the UNJRS cohort

130. The resulting resilience capacity index is calculated for the 3 rounds show wildly varying picture of performance of the intervention and counterfactual cohorts within the UNJRS domain, coupled with the caveats when interpreting changes in RCIs over time, make it hard to draw strong conclusions. The intervention cohort, while started off is not significantly different from the counterfactual at baseline, by round 4's RCI was significantly greater on average. Yet in round 3, the order was reversed.

Figure 23: RCI values at Baseline, Rounds 3 & 4 for the UNJRS cohort.

131. Analysing the determinants of recovery of either FCS or CSI between baseline and round 4, found that found that the determinants of recovery centred around higher income diversity, both agricultural and non-agricultural, adult literacy ratio, non-food expenditure per capita and land area per capita.   This analysis probably results in few, if any, actionable insights for future programs unfortunately. But maybe this suggests that safety nets for the chronically poor, are the most reliable way to ensure some sort of household resilience in the future.
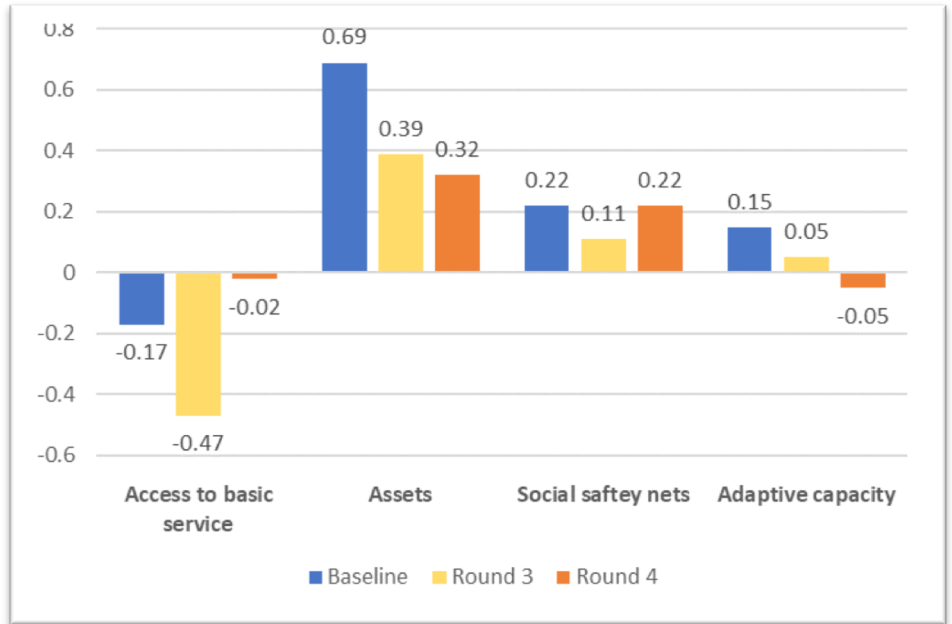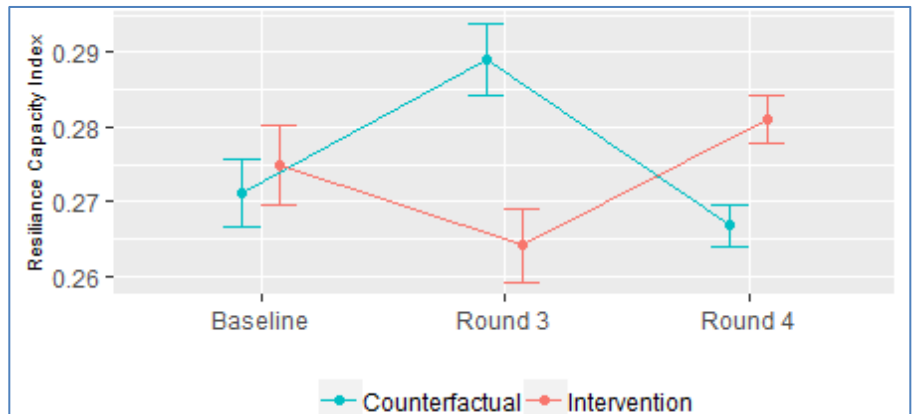
5.3.   UNJRS Community Analysis

132.   As described in Section 3.7, the evaluation included focus group discussions and interviews in 21 communities (10 UNJRS; 11 BRCiS) approximately 6-months after the 4th survey and amongst those that showed statistically significant changes in key outcome indicators. These were designed to explore how communities responded to the food security crisis and what they cited as their most common coping strategies and other factors that led to these results.

133.   These communities continue to face exceptional hardships. MESH worked with these communities with the utmost sensitivity while exploring the issues they deemed most important. While there was exceptional variance, given community location, primary livelihood, and other factors, some trends emerged. These trends were more conclusive than in those from BRCiS communities where the ways in which communities responded were more varied. The text boxes above exemplify these trends.

Dayah, Doolow, Gedo (Case A)

UNJRS supported. Significant improvement in FCS.

Dayah, located 12km south of Doolow city, is made up of mostly pastoralists and farmers. They cite support from COOPI (a UNJRS implementing partner) and direct cash support from WFP.

In Dayah, participants in focus group discussions and researcher observations showed a heavily drought-affected community on the recovery path. The drought negatively impacted both pastoralists and farmers in the village. Farmland became too dry for crops to grow while livestock slowly died or depreciated in value when owners attempted to sell them to cope with the crisis.

Support provided by UNJRS (COOPI) allowed community members to farm more efficiently by increasing access to river water through the construction of water pipelines. Support also included generators to simplify agricultural processes, loans specifically earmarked for agricultural development, and the construction of a crop surplus storage room to ensure availability of food during more difficult times.

Respondents cited a heavy reliance on international organisations. They credited increased food consumption with the aid they received that allowed them to restart their farms, grow enough food to eat, and potentially produce a surplus in preparation for a future crisis.

The major coping mechanism we used during the crisis was relying on the money we received from organisations.

Female Respondent, Dayah

Bali Hagaa, Burco, Togdheer (Case B)

UNJRS supported. Significant improvement in CSI.

Bali Hagaa, located 30km North of Burco city, is made up of mostly pastoralists and farmers. They cite particular support from FAO that provided use of agricultural machinery and support from the Somaliland government.

In Bali Hagaa, community members faced considerable challenges in relation to food security, including the remote nature of the village, frequent flooding, and recurrent drought. Recent flooding destroyed farmland and contributed heavily to livestock death, limiting the community's traditional options for food.

Residents reported a severe drop in morale after facing a crisis for a prolonged period, giving up hope and abandoning most coping efforts.

When asked to describe the reasons for improvements in the coping strategy index between the third and fourth surveys, respondents cited the production of charcoal to generate revenue during the most difficult periods of the crisis. While not extremely lucrative, it allowed community members to return to living life relatively normally.

While community members were able to support themselves during the crisis, the practice of producing charcoal served as a last resort and would be unsustainable in the long term. Respondents continue to face the lasting impacts of the drought and gradual loss in resilience such as the continued loss of livestock and untenable farmlands.

We did not prepare for the crisis and we still can't prepare for future crises. It is beyond our ability and capacity and we are worried that another crisis will happen again. We can't prepare for a future crisis because we haven't fully recovered from previous shocks.

Female Respondent; Bali Hagaa

134. **Case A.** Doolow represents one of the most heavily concentrated area for UNJRS activities. All three agencies worked there before and throughout the MYHP. There, community members regularly cited a reliance on direct aid to respond and recover from shocks. As described in Section 8.1, this matches a pattern across the 11 UNJRS communities where focus group discussions and interviews were conducted.

135. Communities in Doolow and in other rural areas state that agricultural inputs enabled them to maintain harvests/stocks during the food security crisis. This is related primarily to FAO's support that focused on maintaining agricultural infrastructure, infrastructure that served these communities during the food security crisis and that is likely to serve them going forward. For instance, the example above cites community respondents ability to "produce a surplus in preparation for a future crisis."

136. These communities also widely cite direct cash assistance as important for the ways in which they responded to the crisis. Cash assistance was included as part of FAO's resilience programming and yet it increased significantly through WFP's and UNICEF's direct cash assistance during the crisis. Most rural respondents state that they used the cash assistance for food. This corresponds to the trends in food expenditures and in the MESH monitoring of cash support during the 2017 food security crisis. This included a sample of 39,872 people who received cash (9% of total) from WFP (27,653; 10% sample), FAO (3,337; 17% sample) and UNICEF (8,882; 5% sample). This shows that respondents spent approximately 75% of cash aid on food in the early stages of the food security crisis on food, increasing to 87% by November 2017.[58] Of course, this direct cash assistance during the food security crisis was not related to ongoing resilience programming. Nonetheless, it certainly factored into how communities responded to the crisis.

137. **Case B.** Conversely, community level analysis regarding CSI in UNJRS supported communities was less definitive. This corresponds to the weaker trends in community strategies. Even in communities that showed a statistically significant increase in the use of coping strategies, as in Bali Hagaa, these communities struggled to cite ways that they actually coped. The reduced CSI includes a range of negative coping strategies, around reduced food consumption in terms of both quality and quantity that could be employed during a shock. Bali Hagaa represents a community that did not benefit from direct agricultural support from FAO, as did Dayah in Doolow. Community members state that both floods and drought destroyed agricultural livelihoods and forced them to rely on menial labour for cash, e.g. the selling of charcoal. This income diversification in the short term provided a coping strategy, yet the community themselves state that this was not a sustainable solution. As a woman in the community states: "We did not prepare for the crisis and we still can't prepare for future crises. It is beyond our ability and capacity and we are worried that another crisis will happen again. We can't prepare for a future crisis because we haven't fully recovered from previous shocks."

138. This analysis indicates that communities that received direct and mixed assistance, including agricultural inputs and cash, fared better in CSI and FCS. Yet, it is unclear whether this equates with increased resilience. The communities certainly don't express an increased ability to prepare for, respond to and recover from shocks. They also express little 'hope' (subjective well-being) for their future prospects.

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[58] "DFID Supported Cash Response." MESH/DFID; 26 April 2018. Page 10.

Monitoring and Evaluation for the DFID Somalia 2013 – 2017 Humanitarian Programme
Shocks & Hard Knocks: The Impact of Resilience Programming in Somalia

6. BRCiS Support has Increased Resilience and More Work Needs to be Done

6.1. Programme Approach

139. The "Building Resilient Communities in Somalia" is an NGO consortium founded in response to the DFID programme in 2013. It consists Cooperazione e Sviluppo (CESVI), Concern Worldwide (CWW), the Norwegian Refugee Council (NRC), the International Rescue Committee (IRC), and Save the Children International (SCI). It targeted 99 communities across seven regions.

140. While the BRCiS approach to resilience evolved during the DFID programme, it rests on a community-based approach that combines short-term humanitarian activities with community-wide approaches to address chronic vulnerabilities. As described in the BRCiS website:

> Communities are the unit of reference in the BRCiS programme design. The outline of the communities is drawn according on the context and the local dynamics. It can be a stand-alone village, or a cluster of small settlements in a rural area. In a urban context, it can be part of a group of people who have been displaced for some time. It often includes members of both displaced and host communities. Finally, it can be a community defined by a common livelihood, be it fisheries, agro-pastoralism, pastoralism or other. The communities are the first stakeholder of the project. They co-lead the design and the implementation of the activities and the long-term impact of the project is largely dependent on their commitment throughout the programme.[59]

141. Communities were consulted from inception, working with BRCiS to decide on interventions, and participating in the implementation of every facet of the programme. This led to a plethora of different community activities. While BRCiS has become more assertive as it has learned what works, the basic tenant of BRCiS resilience programming remains *emergent,* in the sense that it is up to the communities to figure out what will work, to implement and test, and then for BRCiS to share the knowledge and to scale-up proven approaches in a widening array of communities.

142. This abides by the most practical aspects of system-based approaches. These dictate that a series of small interventions should be made in any 'system,' or community in this case, and that their effects should be analysed to see if they produce desirable results. Those that do should be replicated and brought to scale, always abiding by a process of implementation, investigation, and replication.

143. What is inherently difficult in a systems-based approach is that the actual attribution between different interventions and ensuing results can remain elusive. Why certain activities, or combinations of activities, produce different results in different communities can remain tangled up in a range of intervening variables. Careful analysis shows what works and wards against possible unforeseen consequences. The actors need to then trust in these results, replicating and broadening the intervention combinations as possible.[60]

144. This does seem to be the pattern used by BRCiS. It had a highly articulated monitoring system with regular survey intervals and on-line dashboards for assessing progress. They also regularly met with all implementing partners and the communities to discuss different problems and results, sharing this knowledge across the consortium.

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[59] See: https://www.nrc.no/what-we-do/brcis-consortium---building-resilient-communities-in-somalia/

[60] This system-based evidence approach is common in the medical field and, as in humanitarian action, is being greatly enhanced through the use of large data sets and analysis. For a leading compendium on how this has evolved in medicine, see: "Ross C. Brownson, Elizabeth A. Baker, Anjali D. Deshpande. And Kathleen N. Gillespie, Eds; *Evidence Based Public Health*. Oxford University Press; Third Edition; 2018.

6.2.   BRCiS Statistical Analysis

145. As with UNJRS households, there is a consistent trend in BRCiS households across cohorts (rural, urban & IDP). While there are notable variations between rural, urban, and IDP households, a review of the trends amongst rural households affected by drought exemplifies these broader trends, as the rural cohort represented the vast majority of the sample[61]. (Please see the *Annex* "Statistical Analysis" Section 10.2. for all figures and graphs)

146. For CSI, all four cohorts (intervention/counterfactual/with support/without support) resorted to more negative coping strategies by the time of the round 3 survey (January 2017) followed by a significant improvement by round 4 (January 2018) to the extent that the CSI scores at round 4 were all on average, lower than baseline values, after the worst of the food security crisis had passed. (Figure 25) This is similar to the trend experienced by UNJRS households (Figure 17), except that it was only the directly supported intervention and counterfactual cohorts that reduced their CSI scores at round 4 to those lower than the baseline.

147. While not statistically significant, counterfactual households with some form of formal support seem to have been the least reliant negative coping strategies by the time of the 4th survey.

148. Unlike in UNJRS communities, BRCiS households showed a decline in food consumption across the period. (Figure 26), but across the 3 observations, the FCS value for the BRCiS households remains higher than the UNJRS households (Figure 18), and all but the directly supported intervention households moved from a baseline category of adequate, to around 4 FCS category of borderline. The average for the directly supported intervention households remained just in the adequate FCS category at round 4.

149. This corresponds to trends in percentage of total income spent on food. Figure 27 shows very little change in food expenditures across the period. This is in contrast to UNJRS households that saw both an increase in food consumption
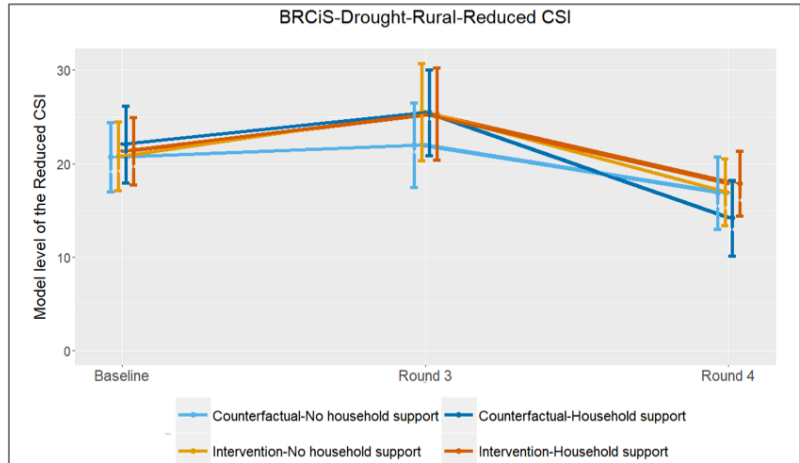

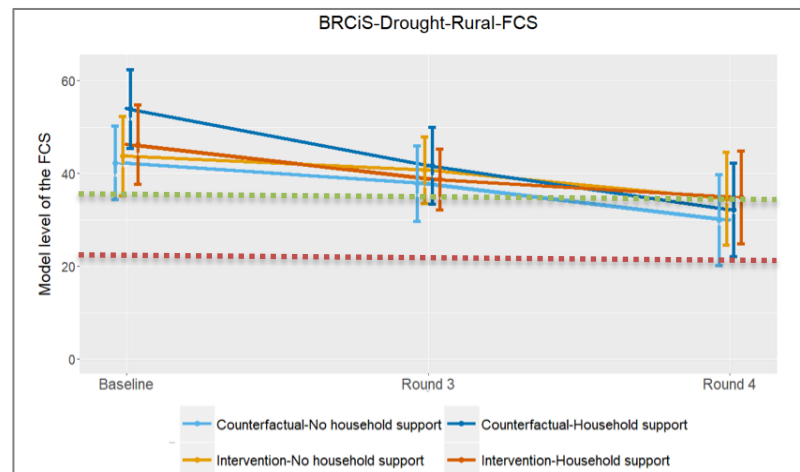*Figure 24: BRCiS CSI Rural: Coping Strategy Index Trends (intervention & counterfactual)*

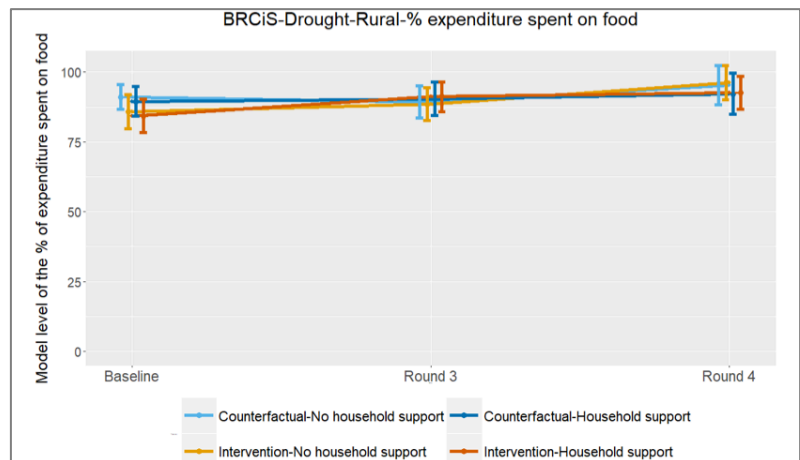*Figure 25: BRCiS FCS Rural: Food Consumption Score Trends (intervention & counterfactual)*

Figure 26: BRCiS Rural: Percent of total expenditures on food (intervention & counterfactual)

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[61] The urban and IDP cohorts emerged and therefore were not a sampling domain in their own right, hence unequal numbers of households from these emergent domains.

and an increase in the percentage of expenditures on food.

150. This presents something of a quandary. If BRCiS households were relying less on negative coping strategies, why did this not correspond to improvements in food consumption? One aspect of this is that BRCiS households had significantly better FCS scores throughout the impact evaluation period than the UNJRS cohorts, and therefore could reduce quantity and quality of food from an adequate level without suffering excessively.

151. The RIMA II compresses multiple indicators into a single pillar and then uses these to estimate the resilience capacity index, which in turn models FCS and CSI, hence the name Multiple Indicators Multiple Causes (MIMIC) Model.

152. The pillar contributions to the RCI calculation in Figure 28 indicate that only the Social Safety Nets pillar had a consistent positive trend across the three surveys. Assets changed from positive to negative between baseline and round 3, and then back to positive by round 4.

153. The Social Safety Net pillar is made up of 3 components: formal transfer (binary), informal transfer (value), and SACCO membership (credit access proxy). The informal transfer value was a significant component of the Social Safety Net pillar in all 3 rounds, with the formal transfer binary becoming important only in rounds 3 & 4. This indicates the importance of formal transfers in ameliorating the impact of the 2017 drought. SACCO membership was not important in any of the rounds.
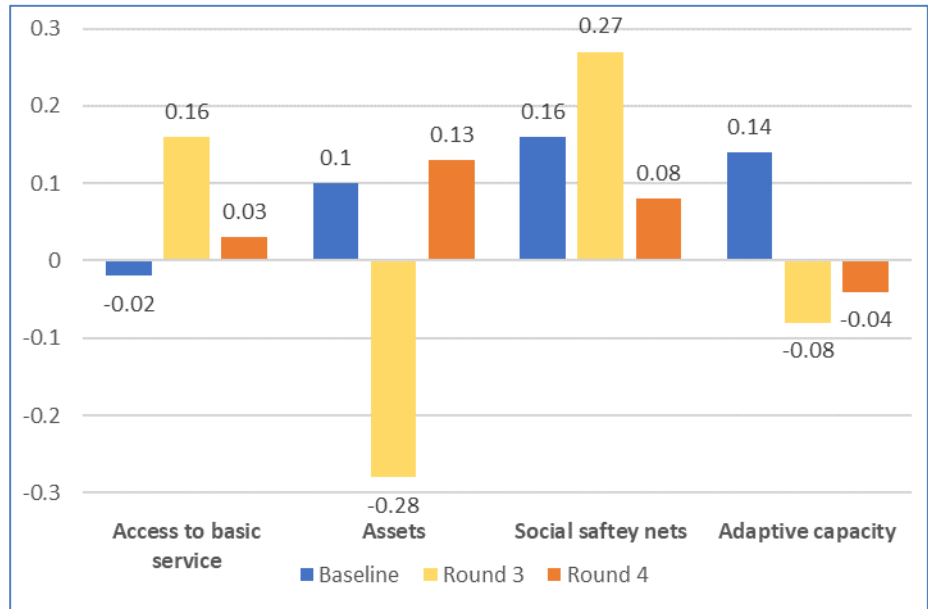

Figure 27: Contribution (loading) of each of the 4 resilience pillars to the Resilience Capacity Index for the BRCiS cohort

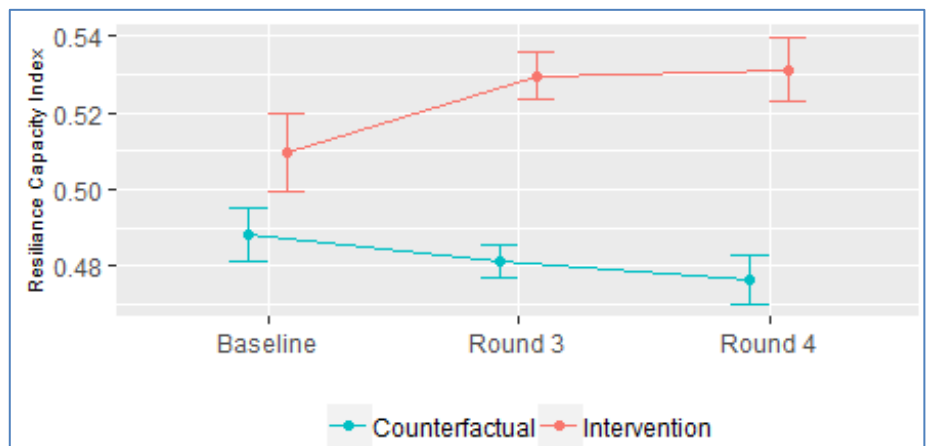Figure 28: RCI values at Baseline, Rounds 3 & 4 for the BRCiS cohort.

154. The resulting 3 RCI estimates over the impact evaluation period indicate a consistently better RCI within intervention households than in counterfactuals. There are significant caveats to drawing conclusions from these trends over time because different models were used for each of the three survey rounds. Within a survey round, a comparison between counterfactual and intervention is more robust as the means are generated from the same model. In each instance, the average RCI for the intervention is significantly higher than the counterfactual, even at baseline. Although it's worth remembering that the baseline enumeration took place after implementing partners had started to deliver their resilience programme activities.

6.3. BRCiS Community Analysis

155. As described in Section 3.7, the evaluation included focus group discussions and interviews in 21 communities (10 UNJRS; 11 BRCiS) approximately 6-months after the 4th survey and amongst those that showed statistically significant changes in key outcome indicators. These were designed to explore how communities responded to the food security crisis and what they cited as their most common coping strategies and other factors that led to these results. These communities continue to face exceptional hardships. MESH worked with these communities with the utmost sensitivity while exploring the issues they deemed most important.

156. Unlike in UNJRS communities visited, BRCiS communities showed exceptional variance in how communities coped with the 2017 food security crisis and their responses in relation to longer-term resilience programming. In urban

Dhariyow, Beletweyne, Hiraan (Case 1)

BRCiS supported. Significant improvement in food consumption (FCS).

Dhariyow is a small farming village of roughly 120 households located 18km north of Beletweyne. The community received support from NRC (a BRCiS partner) and WFP and FAO during the food security emergency response.

The community cited the positive support provided by NRC before, during, and after the 2017 crisis. Community members said that the community consultations were important and that these enabled them to cope and recover from the crisis. They state that they were able to recover more quickly than in previous crises.

In relation to improvements in food consumption, the community cited cash from WFP during the worst periods of flooding and cash transfers and agricultural inputs from FAO following the floods.

Community members cite aid from NRC as enabling them to establish a relative sense of stability. Despite respondents citing insufficient aid provision, researchers observed a community with all of the necessary components to recover and on track to achieve food security again.

> Aid from the local and international organizations affected the wellbeing of the community positively, but it is difficult for us to express how it did exactly.
>
> Male Respondent; Dhariyow

> Aid assistance improved my life and my wellbeing.
>
> Female Respondent; Dhariyow

Garash, Beletweyne, Hiraan (Case 2)

BRCiS supported. Significant deterioration in food consumption (FCS).

Garash is a small farming village of roughly 156 households located 15km north of Beletweyne. Respondents in Garash reported drought as well as heavy flooding, which destroyed farmland, contributed to livestock death, and caused poor sanitation conditions due to water contamination.

The community received support from CESVI (a BRCiS partner) and WFP and FAO during the food security emergency response.

When asked about coping strategies, community members cited eating less food, reliance on family members, and the direct aid from FAO (food aid, fertilizer, and cash) and WFP (food aid). The decision to eat less was seen as a choice, given that there was direct support and the ability to cultivate certain crops given support from FAO.

Community members said that they appreciated the long-standing relationship with NGOs and that these organisations helped them solve community wide problems.

> Although we experienced crop failure we are now cultivating maize and sorghum. There is also aid that we receive from NGOs that is appreciated.
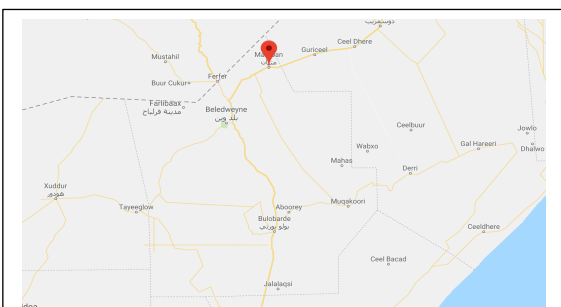>
> Male Respondent; Garash

> Of course, humanitarian aid helped me to cope and manage the crises. At least you get moral support.
>
> Female Respondent; Garash

> Village committees, elders, and women often take part in discussions with international organizations. It is mobilisation and information sharing and not consultations.
>
> Male Respondent; Garash

MESH

Miirqoode, Mataban, Hiraan (Case 3)

BRCiS Supported. Significant deterioration in food expenditures.

Miirqoode is a rural village located west of Mataban district. Residents of Miirqoode represent the Hawadle clan and often experience clan conflict with the Habar-Gidir clan over grazing land disputes. Fighting had occurred for the previous three months with casualties on both sides. Increased rains in 2018 benefited the community's crop yields but food insecurity persisted at the time of the focus group discussions.

When asked about coping strategies and the decrease in food consumption, they state that they benefited from the consistent community support they received (without being able to cite specific organisations) and how this prevented them from having to move to the city or to IDP camps. This allowed them to maintain their crops and thus spend less on food. They also cited other community activities, like womens' groups, that are contributing positively to their situation.

We had enough rainfall and lived prosperously. We have produced a good amount of crops and as result we stopped buying food. We usually eat food from our crop production.

Female Respondent; Miirqoode

We are planning to start a female saving association to overcome droughts and shocks to support our families.

Female Respondent; Miirqoode

contexts, community members cited the lack of jobs as the biggest problem. In rural areas they cited the failure of crops and the need to sell livestock.

157. More communities cited choosing to eat less as a coping strategy (Table 5), corresponding to the decline in FCS. Even here, however, the situation is complicated as these communities also received support from FAO, WFP, and others during the food security crisis.

158. Perhaps more related to the BRCiS programming approach was the prominence of relying on family and friends. (Table 5) This was cited more often than in UNJRS communities and corresponds to BRCiS community-led approaches that emphasise ways that community members could support one another. Unfortunately, this remains largely unconfirmed as communities, understandably, are generally unable to cite specific activities, that improved their resilience.

Table 5: Cited strategies in relation to the 2017 food security crisis amongst BRCiS intervention communities where focus group discussions and interviews were conducted

Ate less	*****
Rely on friends & family	*****
Cash support	
Loans (formal)	***
Rely on international aid	***
Selling Assets	***
Livelihood /charcoal (M)	*
Agro infrastructure	
Relocation (IDP)	*
Relocation (Urban)	**
Small jobs (F)	**
Water infrastructure	
Selling livestock	
Saving stocks	

159. However, two issues do emerge from this analysis. First, cases 1 & 2 show different results in relation to food consumption, with case 1 showing a statistically significant improvement while case 2 shows a deterioration. Both are farming communities near Beletweyne. Both communities cite the longer-term support from BRCiS as important although they struggled to explain precisely how this helped them. Both also received various levels of support from FAO and WFP. The one difference is that in Dhariyow (case 1), community members cite the receipt of cash from both WFP and FAO as important. In Garash (case 2), there were minimal cash transfers from FAO. This is confirmed through MESH analysis of cash support that shows that WFP provided significantly more conditional cash support in Beletweyne than did FAO.[62] This corresponds to findings for UNJRS communities overall where direct cash support tended to improve food consumption.

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[62] The precise figures for this are not available as WFP and FAO lists of cash recipients are not disaggregated to the level of the small communities noted here. However, the difference is huge. WFP provided 275,000 households direct cash support as compared to 21,084 for FAO during the food security crisis. "DFID Supported Cash Response." MESH/DFID; 26 April 2018. Page 6.

160. While difficult to equate with specific outcome indicators, it is also notable that of the 8 communities visited who received direct BRCiS support, five cited the importance of longer-term, community-based support. The exception was in urban settings and one IDP settlement, mostly in and around Mogadishu (Banadir), where people cited a greater variety of hardships and other factors that may have diluted their impressions of BRCiS programming.

161. This is confirmed in one of the BRCiS counterfactual communities visited. (Case 4) In Haad Fuul, community members lamented the lack of water for livestock due to the drought. They also received cash support during 2017. While changes in FCS and CSI were not significant in Haad Fuul, there was a statistically significant decline in subjective well-being. This is seen in the quotes from community members. They are exceptionally stressed and have few positive sentiments regarding international support.

162. These and other cases raise a number of compelling questions:

- While overall evidence shows that resilience programming helped communities avoid the worst aspects of the 2017 shock, what is the longer-term value of BRCiS community engagement? There certainly seems to be significant good will in these communities even if more tangible results are more elusive. Do these conditions prime BRCiS for additional interventions including those that can build on these results and toward a reduction in longer-term vulnerabilities overall?

- Is cash alone, as in Haad Fuul, enough to enable resilience? This case suggests not. Yet, the complications associated with this are immense.

- Given different FCS outcomes in Dhariyow and Garash, a more nuanced approach is required to establish the relationship between food consumption and resilience. This is especially the case given that many communities chose to eat less as a preferred coping strategy.

163. These questions and others will establish exactly how the BRCiS community-centred approach provides not only results in relation to food consumption and a reduced reliance on negative coping strategies but also on how the combination of community-led projects, increases in subjective well-being, and increased capacity to rely on family and community enable greater resilience.

7. Nutrition: Standard Delivery Approach that Failed to Address Underlying Causes

7.1. Programme Approach

164. The DFID programme was designed to address the chronic nutrition needs of the most vulnerable in Somalia and the underlying issues that contribute to these chronic needs. This included support to the Strengthening Nutrition Security in South Central Somalia (SNS) NGO consortium and the World Food programme (WFP). SNS was designed to combine the nutritional experience of multiple NGO partners to develop approaches to nutrition that addressed underlying causes alongside direct nutritional support. WFP relied on standard nutritional support activities, including the provision of therapeutic and supplementary food (RUTF/RUSF). This dual approach was important for providing preventive and curative services associated with humanitarian needs but also for ensuring that longer term strategies, like resilience programming, did not become overwhelmed by increasing nutritional caseloads.

7.2. Results: Targets Were Met and Yet Persistent Vulnerabilities Continue to Exist

165. This evaluation, along with other supporting evidence, suggests that resilience programming continued to deliver results throughout the programme period, including during the 2017 food security crisis. There was a negative trend amongst BRCiS supported households in FCS, suggesting that nutritional intake declined across the period, but this decline in FCS did not decline into the poor FCS category and remained higher than in corresponding UNJRS households. In fact, UNJRS supported households demonstrate a similar downward trend in FCS up to the third household survey, with rebound by the time of the fourth survey. Yet even by the 4th round survey, UNJRS households had not attained the same level of FCS as BRCiS cohorts. This rebound in FCS can be largely attributed to the scale of the emergency response and its focus on agricultural inputs and cash, amongst others. (See Section 131.)

166. Nonetheless, overall targets were met, as indicated in Table 6. From a strict humanitarian action perspective, this aspect of nutrition programming was successful and yet the DFID Programme, especially given multi-year financing, was premised upon the capacity to address chronic vulnerabilities.

167. SNS and WFP produced the 2015 "Nutrition Causal Analysis Study." This study indicates that "as well as insecurity, climatic and seasonal factors and notable poverty amongst some communities, dominant child care practices and select socio-cultural beliefs remain core drivers of malnutrition in south central Somalia."[63] This study led to an increased focus on child care practices and behaviours, thus fostering a 'whole community' approach was more preventative. Yet, there is little evidence that a 'whole community' approach was actually achieved except in a small number of communities.

Table 6: DFID programme nutrition targets and resutls

DFID Programme Nutrition Targets & Results*	Target	Actual
Number of children under 5 and pregnant and lactating women receiving RUTF/RUSF	240,000	361,966 (151%)
Number of children under 5 admitted for severe acute malnutrition (SAM) treatment	60,000	89,008 (148%)
Number of Community Health/Nutrition workers trained	3,000	2,476 (83%)
* From DFID Project Completion Report		

168. DFID supported nutrition partners also faced supply chain problems during the response to the 2017 food security crisis. MESH included visits to over 220 health and nutrition centres during the response. This included weekly reports to UNICEF, SNS, and BRCiS that assessed eight (8) areas: admissions, SAM admissions, outreach, supplies (nutrition), supplies (health), staffing, and the quality of the facility, e.g. availability of water, latrines, cleanliness, and shelter. Site visits include ample photographic evidence of infrastructure and related documentation.

169. For BRCiS, who was providing health services in those communities who had received longer-term resilience programming, an average of 97% of those offering health services experienced no health supply issues, including adequate supply of antibiotics, anthelmintic, vitamin A and vaccines.

170. For SNS (or SNS+ as it was re-named for the food security response), 12.5% of sites visited that treated SAM and MAM cases were out of stock of RUTF and RUSF for greater than 1 week in the month before the assessment. 17% of sites did not have measles vaccines for at least 14 days in the month prior to the assessment. SNS+ sites also experienced staff absenteeism, with 20% of staff absent from over half of the sites visited in the assessment.

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[63] Ahono Busili, Justus Osero Osano, and Floice Adoyo; "Nutrition Causal Analysis Study: South and Central Somalia." SNS Consortium and WFP; November 2015. Page 8.

171. For UNICEF, after an initial problem with stock outages in approximately 30% of sites visited, conditions improved so that 17% of sites treating SAM cases and 42% of sites treating MAM cases were out of stock of RUTF and RUSF for greater than 1 week in the preceding month before the assessment. While this is an improvement, it still falls short of expected performance.

172. Some of the DFID supported partners initially refuted these findings although, after successive monitoring visits where the same patterns persisted, these agencies relented and began to implement changes in their supply chains and internal monitoring systems.

173. While this evaluation does not assess the performance of these actors during the emergency response, it can be assumed that the lack of health and nutrition services negatively impacted families and communities. Nonetheless, a report on the subject states that health and nutrition actors performed relatively well:

> The nutrition sector did succeed in substantially scaling up treatment for both moderate and acute malnutrition. Whilst malnutrition has not been reduced from emergency thresholds nor has it peaked, and mortality has been kept below emergency thresholds. DFID support was seen as crucial by organisations funded to scale up support to a greater number of centres, maintain supply chains and treating greater numbers of children. Whilst focussing on treatment was necessary, given the severity of the situation and high malnutrition levels, more could perhaps have been done to support action on the underlying causes of malnutrition relating to WASH, food security and health and to focus on moderate as well as severe acute malnutrition.[64]

174. Given this finding and others from this evaluation, addressing the underlying causes of malnutrition remains problematic. DFID is addressing this through its Somali Health and Nutrition Programme (SHINE). This focuses on access and quality of health and nutrition activities. It includes innovative approaches to enable vulnerable populations to overcome barriers to access and help them to make healthy choices. It includes strengthening the Somali Health Authorities oversight of service provision and local accountability. It includes innovative features, like Human Centred Design (HCD) approaches, to foster greater use of health services and a private sector component to strengthen supply chains. It includes also other nutrition and health activities, like IYCF, birth spacing, and the training of community health workers.

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[64] Marc DuBois, Paul Harvey and Glyn Taylor. Rapid Real-time Review: DFD Somalia Drought Response." Humanitarian Outcomes & DFID; January 2018. Page 20.

8.   Conclusions

8.1.   Overall impact

175. The success of avoiding a famine in Somalia, especially given the comparison with the 2011/2012 famine that killed an estimated 250,000 people, cannot be over emphasised. Additional analysis is required to sort out which activities were most impactful and yet, as with so much in humanitarian action, it is likely that a combination of factors contributed to this success.

8.2.   Multi-Year Humanitarian Programming Enabled Effective Resilience Programming and Took Steps Towards Addressing Chronic Needs

176. DFID Somalia's first multi-year humanitarian programme (MYHP) had four objectives. First, provide flexible multi-annual funding for humanitarian programmes specifically targeting the most vulnerable. Second, identify and target the chronically vulnerable with resilience enhancing activities designed to strengthen livelihoods and restore coping strategies and where possible to assist in the graduation away from humanitarian aid. Third, influence and promote change in the humanitarian system to ensure better coordination, responsiveness and targeting of aid and finally, developing new and innovative ways to monitor implementation and outcomes, and building an evidence base to understand and ensure maximum impact for UK Aid. [65]

177. This evaluation focuses on the first two objectives. The MYHP did provide flexible funding, both in the ways it supported resilience programming and in how the Infernal Risk facility (IRF) provided funding for action before and during the 2017 food security response. An evaluation of the IRF prior to the food security crisis established that it was an effective mechanism for addressing emerging needs and in ways that preserved the integrity of resilience programming, especially in the case of BRCiS.[66]

178. For BRCiS, this meant that the approach, already innovative at inception, could develop as based on lessons, a comprehensive monitoring architecture, and an increasing ability to make links to longer-term programming. This complicated the ability to assess changes over time, as in this evaluation. The BRCiS programme was not static—it adapted and changed as lessons emerged and needs changed. This seems appropriate even if it complicates the longitudinal measurement of resilience.

179. In this sense, BRCiS fulfilled an essential benefit of the MYHP. It was able to learn and adapt and thus better serve Somali communities. As an evaluation on the subject concludes:

> While programme designs are not much different from what one would expect to see in other annually-funded humanitarian contexts, these may be adapted or proven effective because they are being implemented over multiple years. The increased support of third party monitoring and evaluation, largely accepted by partners as a new way of doing business, will support such programme adaptions and improvements. Thus, the programme is poised to be a catalyst for change and should serve the most vulnerable Somalis while enabling partners to improve how they work.[67]

180. In the case of the UNJRS and other DFID supported actors, like SNS, the benefits of longer-term funding are less clear. This evaluation establishes that UNJRS programming, while emphasising integrated programming and FAO's standard approaches to livelihood support, lacked features that enabled communities to become less reliant on humanitarian support. UNJRS tended to rely on the same programming approaches used in various humanitarian contexts. UNJRS partners exhibit signs of being better equipped to do joint programming and of more directed long-term approaches but this may not be enough to "strengthen livelihoods and restore coping strategies and where possible to assist in the graduation away from humanitarian aid," as stated in DFID's MYHP objectives.

181. Nonetheless, this evaluation demonstrates that the impact of UNJRS programming is positive, especially in relation to CSI and FCS recovery, albeit from much lower levels than experienced in the BRCiS cohorts. Communities cite the implementation of agricultural infrastructure and livestock support as critical for their short to medium term needs.

182. Perhaps this direct type of support is more effective? Unfortunately, this evaluation was not able to answer this conclusively. This does not account for the longer-term impact on communities, impact that centres on how the communities have expanded the choices they have available when facing a crisis and how they rely on their families

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[65] "Somalia Humanitarian Business Case 2013 – 2017." DFID, March 2014. Page 5.

[66] Dorian LaGuardia & Lydia Poole. "DFID's Internal Risk Facility: Changing the Humanitarian Landscape for Protracted Crises?" DFI; 6 April 2016.

[67] Dorian LaGuardia, Alex Lawrence-Archer, & Hana Abukar; "A Catalyst for Change and Results? DFID's Approach to the 2013 – 2017 Humanitarian Programme in Somalia." DFID; 26 March 2015. Page 7.

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and communities in times of crisis. In the absence of a highly functional government, these community-based coping strategies are essential. UNJRS does not seem to have been able to work at that level, instead focusing on a relatively pure 'service' model that simply gives people what they need.

183. Of course, UN agencies in the UNJRS would refute this assertion. They would state that they do engage with the communities, helping them to solve problems while focusing on longer term needs. UNICEF had a community engagement model that trained community members, established committees, and provided longer-term infrastructure that could serve communities over time. In essence, they stepped into the vacuum created by the lack of government services. This is hugely important and yet it isn't necessarily strengthening the community—it is simply filling a gap.

184. This direct service model—and, again, this evaluation recognises that many would contest this description even if, by and large, this is the model employed by the UN and its partners in the case of the MYHP—does have an impact. The issue is whether this is actually the best way to enable households and communities to overcome chronic vulnerabilities and whether, given other models, this is the most cost-effective way to support these communities.

185. In relation to 'overcoming chronic vulnerabilities,' this evaluation presents evidence that yes, if the level and type of support can be sustained, the UNJRS and other DFID supported partners programming does enable people to overcome vulnerabilities. Avoiding a famine in 2017 is the best proof of this. Yet, the costs associated with this are enormous and it remains unclear when, if, and how, the Somalia government will be able to take over such services.

186. Is this direct service approach good value for money? As with other aspects of this evaluation, there were grand ambitions to assess the return on investment (ROI) associated with different programming approaches. The variance of programming, including the emergence of different support at different times and the significant proportion of investments made through the Internal Risk Facility (IRF), made ROI calculations impossible given the resources available for the evaluation.

187. Yet, a basic cost model is available. DFID invested approximately £340 million over 4 years, with 63% of total investment (£214 million) spent through the IRF. (Figure 29)
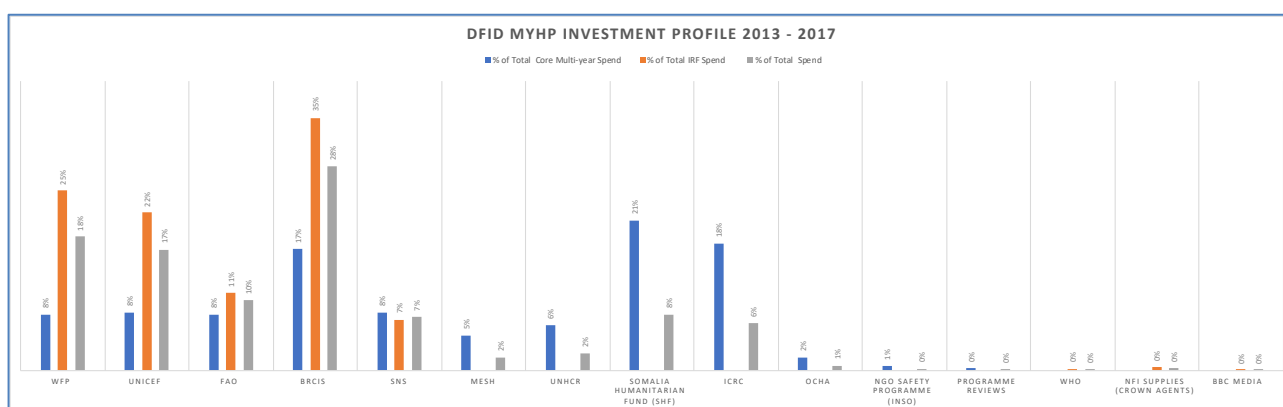

Figure 29: DFID MYHP investment profile, 2013 – 2017

188. The question is whether similar or better results could have been achieved through less investment and less of a reliance on the IRF. As this evaluation demonstrates, there are positive signs that BRCiS programming may have longer-term results than those of UNJRS, given the difference between a community-led approach (BRCiS) and a direct service model (UNJRS). This would imply that BRCiS supported communities would require less early response funding if and when further crises emerge.

189. **Recommendation 1:** Multi-year programming is important for more innovative approaches and should continue to be supported going forward. At the same time, not all partners and or activities benefit from multi-year support equally. Those that require innovative approaches that may need to be adapted/refined over time, like BRCiS, benefit from multi-ear programming whereas direct service models, like those largely provided by the UNJRS, could be sustained through short-term funding . (High priority. DFID approaches to multi-year support.)

190. **Recommendation 2:** Any future impact assessment should measure total investment to multi-year resilience programming   as compared with early response funding, e.g. the IRF. The assumption is that communities that have benefited from longer-term resilience programming, like those served by BRCiS, would require less early response funding than those without resilience programming. This goes beyond typical value for money calculations and towards how these communities have strengthened their resilience and hence reduced their need on

humanitarian assistance. (Medium priority. Important for any and all research related to resilience and other longer-term humanitarian programming approaches.)

191. **Recommendation 3:** Conclusions, lessons & recommendations from this evaluation should be discussed in a final workshop with DFID, DFID partners, and the broader humanitarian community. This evaluation has shown the value of engaging with DFID and implementing partners throughout the evaluation. One of the most frequent comments during these workshops and other meetings concerned the ability to link this analysis to actual changes in operations. The 'operationalisation' of these findings of huge importance if the full value of the evaluation is to be achieved. This is especially important in the context of any continuing resilience programming. (Low priority. DFID evaluation workshop.)

8.3.   Resilience: Direct Support (UNJRS) vs. Community Engagement (BRCiS)

192. *BRCiS communities exhibit compelling aspects of resilience:* In determining attribution between longer-term resilience programming and the direct support provided during the food security crisis, there are indications that BRCiS supported households and communities dealt with shocks, especially the 2017 food security crisis, differently than those supported by the UNJRS. In household surveys, BRCiS households, with some variations, demonstrate stronger positive changes in CSI, *without* commensurate changes in FCS, as is the case, largely, with UNJRS households.

193. This indicates that these BRCiS households reduced the number of negative coping strategies they deployed without necessarily improving their food diversity and overall nutritional intake, although their food diversity remained adequate (FCS >35) for supported intervention households or borderline (FCS ≥21.5 & ≤35) for the other 3 cohorts throughout the entire impact evaluation period, without a single domain returning an average FCS in the poor category (FCS <21.5). What is striking about this is that the trend for self-concept/well-being was generally positive for BRCIS households. By the time of the 4th survey, when food consumption still remained lower than baseline, BRCiS households had largely retuned to levels of well-being found at the time of the baseline. This implies that BRCiS households were resorting to fewer negative coping strategies and felt relatively positive and engaged with how they faced the crisis, despite eating less. To flip this around, it seems that BRCiS households had more choices—more ways to cope. They could avoid selling assets/livestock, depleting resources, stress migration, or other negative options, while choosing to eat less.

194. This is confirmed in qualitative evidence from the communities. BRCiS supported communities, when visited six months after the last formal survey, said that BRCiS support did help and they were generally positive about the long-term nature of this support. They also site an ability to rely on family and the community much more often than respective UNJRS communities visited at the same time.

195. Of course, they still face enormous challenges and the choice to eat less is not something that should not be perceived as desirable choice. Yet, it still represents a choice. When one boils down the essence of resilience, it is about having choices—not being trapped by the misery of no other choice but to leave everything behind and hit the road, with sick children in tow. This ability to strategize, to make choices, explains why households reduced negative coping strategies while eating less—it was a choice. This is supported by the fact that these households exhibited stronger levels of well-being, stronger perceptions of their own capacity to face the crisis. They were stronger because of being able to make choices. They were more resilient.

196. UNJRS communities show better results with respect to CSI, but not with respect to FCS. This may be due less to resilience programming and more to direct support. In comparison to BRCiS households, they showed an increase in percentage of food expenditures across the programme period, with the most significant increases between January 2017 January 2018. This increased level of expenditures on food is telling. BRCiS households did not show increased percentages of expenditures on food, again with some variation. This indicates that the partial recovery in UNJRS FCS was achieved through dedicating more expenditure to food. Both BRCiS and UNJRS communities benefitted from direct cash support during the 2017 food security crisis and yet, evidence suggests that BRCiS communities did not use the cash for more food—otherwise their food consumption scores would have improved as it did in those households supported by the UNJRS. But the BRCiS average FCS scores were never in the poor category, whereas all UNJRS cohorts declined from baseline to a poor category FCS value at round 3 and only the supported intervention and counterfactual households recovered to the extent that their average FCO scores graduated out of the poor into the borderline category.

197. While the results from UNJRS are positive, the partial recovery in FCS can be attributed to direct, traditional humanitarian support rather than longer-term resilience programming. What remains unclear is whether these more positive FCS trends will better enable UNJRS households, as compared to BRCiS, to sustain these results.

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198. There is a striking test case here. Will improved FCS amongst UNJRS households contribute to increasing levels of resilience and/or greater capacity to avoid chronic vulnerabilities? Or, will stronger levels of subjective well-being and a wider breadth of positive coping strategies be more significant towards avoiding chronic vulnerabilities? It presents a form of Gordian knot that one wouldn't wish for anyone. Yet, it surely needs to be assessed going forward.

199. **Recommendation 4:** Given that both the UN direct service model and the BRCiS community-led approach delivered short term results, DFID needs to continue to have a balanced portfolio approach to the two models. This may include less direct investment in UN 'joint strategies,' that are not significantly different enough to warrant longer-term programming approaches, and more in innovative integrated programming approaches that address not only resilience as associated with food security but also issues related to climate change, increasing urbanisation, and the role of the federal authorities. In essence, the MYHP proves that innovative approaches can yield results and that they are increasingly necessary in a complicated protracted crisis like that in Somalia. At the same time, DFID and other intentional donors cannot neglect the need for continued direct services and early and rapid response to emergencies. (High priority. Primarily for DFID's portfolio approach.)

200. **Recommendation 5:** Given the increasing prevalence of multi-purpose cash assistance, programming needs to assess both the short and longer-term gains associated with this modality. This evaluation shows that cash may be a highly effective way to respond quickly to an emergency, as in the 2017 food security crisis. Yet, the relationship to cash assistance and longer-term programming, especially programming that treats societal and behavioural changes associated with resilience, remains unclear. Research should be undertaken to assess how these short-term interventions affect longer-term outcomes. (Medium priority. DFID supported research approach.)

201. **Recommendation 6:** Analysis of resilience needs to move beyond food security proxy indicators. This evaluation relied largely on standard outcome variables related to resilience, e.g. the coping strategy index (CSI) and food consumption score (FCS). While the univariate evaluation includes other indicators, like food expenditure patterns and subjective well-being, taken together they are still not sufficient enough to measure the complexity of resilience. Future research and evaluations need to supplement these with indicators that track the convergence of food security (FCS & CSI) with other coping strategies. Realising this analytical limitation, the RIMA II analytical approach supplemented the univariate analysis of this final endline report. Importantly, this should measure the type the number of possible choices available to households and communities. The ability to choose amongst different strategies while avoiding the worst consequences of shock, like stress migration, is of particular importance. (Medium priority. DFID supported research approach.)

8.4.   Investigating How Traditionally Underserved Communities Cope with Crises

202. While these programming results are positive, the analysis presented throughout this report illustrates a curious convergence between those households served by DFID supported partners (intervention households) and those that were not (counterfactual households). While there are significant variations between rural, urban, and IDP households, and amongst UNJRS and BRCiS households, there are multiple instances where counterfactual households follow the same trends. This is, perhaps unsurprisingly, mostly the case between intervention households and those counterfactual households that received support.

203. As described in the Methodology (Section 18), the evaluation set out to include counterfactuals that were within the same livelihood zones but beyond a 2-10 km buffer from intervention communities so as to avoid possible 'spill over' effects while remaining in the same local agro-ecological environment. Prior to the first survey, MESH also investigated candidate communities to ensure that they were not receiving any formal support.

204. Things change. By the time of the 2nd survey, there were households amongst the counterfactuals who stated that they were receiving direct support, albeit not from 'international organisations'. The number of households that reported having other sources of support increased in each subsequent survey. Unfortunately, the evaluation was not able to capture the precise source of this support. Communities are often unaware as to whether support comes from an internationally supported agency or from a more localised source.

205. Nonetheless, there are enough instances of counterfactuals doing similarly well as to merit further investigation. There are four possible scenarios, or combinations thereof, that may be contributing to these results:

- Informal/indigenous support mechanisms exist, especially in those communities that have been historically underserved by the international community. This seems highly likely as this evaluation discovered that there were many communities, assessed during the design phase, that stated that they had 'never' received support from international organisations. It may be that, given how internationally supported NGOs have developed in Somalia, without much direct oversight or control, they have served communities with whom

they have some alliance or simply because of access issues for different communities. (While anecdotal, the evaluation found that counterfactual communities were often difficult to reach.)

- Dynamics associated with social capital networks where international aid is shared across communities and in ways that exceed 'spill over' parameters. While we separated intervention and counterfactual communities by at least a 2 km spill over buffer, many of these communities, especially in rural settings, are mobile and may travel much farther to partake of different services.

- Potential aid 'tipping points' where the scale and type of support stabilises social-economic conditions, like supply chains, in ways that stave off increasing vulnerabilities. This seems particularly possible during the 2017 emergency response that included a large cash modality. Cash is malleable and can have much broader effects than direct material support.

- Counterfactual households received support from other internationally supported agencies that has a similar impact to that of DFID supported partners. This seems the most unlikely of the scenarios, given this evaluation's diligence in trying to avoid this possibility.

206. While the trends are likely due to a combination of the first three, the first two are particularly important for understanding programme effectiveness.

207. The issue is that, especially when considering the first two factors noted above (informal/indigenous support mechanisms and social capital networks) seem to work just as well as the formal support provided by DFID. There are exceptions. BRCiS supported households managed food security as measured by the food consumption score (FCS) significantly better than linked counterfactual households. UNJRS supported households recovered much more dramatically between January 2017 and January 2018 than counterfactual households, most likely due to the scale of the direct service model provided by the UN agencies. Yet, the trend does show that, overall, counterfactual households also did well.

208. The evaluation did not expect that informal/indigenous support mechanisms and social capital networks would have had the level of impact that these trends indicate. In fact, one of the key findings of this evaluation is that there are many communities in Somalia that lay beyond the international aid system. There are also strong indications, as based on the research conducted in this evaluation, that these communities have not been served for decades, if not longer. This evaluation found that many of these communities were simply hard to reach, taking a day or longer to reach over treacherous roads for what were rather small communities. They were also, although this is more difficult to surmise, often composed of marginalised clans that are not always privy to the support provided by clans that have stronger links to the international community. All of this can be seen as a consequence of the fractured political dynamics in Somalia where there has been no significant federal/national authority and where the alliances at the community level have been forged in isolation. (See Section 1.1 for a description of this history.)

209. **Recommendation 7:** Ensure that programme approaches differentiate between how they support different cohorts, especially those who may face distinct vulnerabilities. This evaluation was not able to discern the effects on different cohorts within each community because DFID partners made no such differentiation. This implies that DFID partners expected that the same interventions would have the same effects, regardless of the specificities within different households or communities. This is surely not the case, especially when one considers the issues of women's equality, disabilities, marginalised clan identities, and other socio-economic issues that affect Somali communities. (High Priority. Programme Design. All implementing partners.)

210. **Recommendation 8:** Increase analysis of the ways in which traditionally underserved communities prepare for, respond to and recover from shocks. This should be conducted at the micro-level, e.g. select 3 – 5 counterfactual communities that showed positive outcomes form this evaluation and assess how they deal with shocks over time. This should be a panel study, focused on qualitative information, and then lead to both a better understanding of indigenous support systems and how these intersect with international support. (Low Priority. DFID supported research question.)

211. The other aspect that has not been fully assessed by this evaluation concerns marginalised clans. There is some evidence that there are clans that have been underserved and that they represent the most vulnerable populations in Somalia. While this may be true, work by MESH and others has shown that clan dynamics and alliances are often in flux during crisis. This is especially the case when populations move because of the crisis, finding themselves in new urban settings and/or in IDP settlements. It is unclear how and if this has affected the results of this evaluation.

8.5.   The Conditions for the Humanitarian-Development Nexus are not yet Mature

212. A distinct lack of government involvement in the Programme is a hallmark of how humanitarian action proceeded from 2013 to late 2017. This is in contradiction to the Paris Declaration on Aid Effectiveness and the Accra Action Agenda. According to the Humanitarian Assessment Framework for DAC peer reviews, humanitarian action is:

> An integral part of the broader development co-operation system, which is driven, inter alia, by the Paris Declaration on Aid Effectiveness and the Accra Action Agenda. Alignment of the assessment framework with these commitments would enable peer review examiners to identify the extent to which coherent linkages have been forged between humanitarian and development components of aid systems.[68]

213. Yet, this same document goes on to state that: 'Inevitably, the association can only be partial. In situations where the State is a party to armed conflict or has otherwise abrogated responsibilities for the safety and welfare of civilians on its territory, full association (particularly with respect to partner government ownership and alignment with national development strategies) would compromise core principles of neutrality, impartiality and independence of humanitarian action.'[69]

214. Somalia continues to sit somewhere between a system whereby humanitarian aid should be making links to government plans and strategies, including how humanitarian aid creates links to longer-term development strategies, and a state that has, as consequence of 20-years of conflict, effectively 'abrogated responsibilities for the safety and welfare of civilians on its territory.'

215. Of course, many humanitarian actors sat with government counterparts, especially those organisations that deliver humanitarian and development programming. Yet, the government was exceptionally weak during this time. The Federal Government of Somalia (FGS) remained relatively ineffective outside of Mogadishu and had its first election since 1984 in October – November 2016, with the presidential elections held in February 2017, at the height of the food security crisis. The new president, Mohamed Abdullahi Mohamed, was elected and quickly acceded to the humanitarian community's plans for the response. Regional governments operate with varying degrees of independence and effectiveness, ranging from the almost fully autonomous Somaliland to areas still dominated by al Shabab. This has led to exceptional variations in how communities/municipalities have stepped into these gaps to provide different forms of highly localised forms of government.[70] As noted in Section 4, these indigenous and community level support networks are most likely responsible for the similar results across outcome indicators for intervention and counterfactual households.

> There are three competing governance structures: the Federal Government, municipal level governance, and communities that receive consistent support from the international community. The Federal Government is the weakest of the lot.

216. In fact, evidence from this evaluation indicates that there is another form of highly localised governance: communities that receive consistent support from the international community. As described in the methodology and throughout the quantitative analysis for this Evaluation, counterfactual communities were identified that did not receive support from international actors and evidence suggests that they had not received such support for some time.

217. This suggests that communities served by the international community through local NGOs and others, have fallen into a pattern of support that serves some communities over others. The reasons for this are likely to include clan affiliations, e.g. local NGOs have developed affiliations that mimic their clan identities/affiliations, access issues associated with some communities, and simple stasis where local NGOs have fallen into entrenched patterns of support, amongst other possible issues.

218. This all implies that, while there is a receptive government in Mogadishu and the international community seems prudent in supporting the Federal Government's development, this is unlikely to be enough to create federally supported 'safety nets' to address entrenched vulnerabilities amongst many communities. Instead, most of Somalia remains served by local actors.

219. For humanitarian action, this raises the need for a much better understanding of how reliant some communities are on international aid, the nature of indigenous, localised support networks, and how these are affected by a

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[68] OECD–DAC; "Revised Humanitarian Assessment Framework for DAC Peer Reviews" DCD/DAC; 2008. Page 48.

[69] Ibid.

[70] For an exploration of the role of municipal governments in Somalia, see: Ken Markhaus; "If Mayors Ruled Somalia: Beyond the State Building Impasse." The Nordic Africa Institute; Policy Note 2, 2014.

massive emergency response like that in 2017. A deeper analysis of these will provide a more nuanced understanding of how to make links to broader safety net initiatives and how to enable communities to break free of entrenched vulnerabilities and be more prone for sustained development. This evaluation indicates that many BRCiS communities already show signs of increased resilience that may make them candidates for such efforts. Still, more needs to be understood to ensure a successful transition from deep vulnerabilities, to crisis, to recovery, to development.

220. **Recommendation 9:** Somalia requires a distinct approach to humanitarian action that includes direct support to actors who can provide both rapid and direct services to communities in need and those that are providing longer-term and more innovative programming for alleviating chronic vulnerabilities. For the time being, this will need to complement and be coordinated with federal authorities rather than being designed in ways where these authorities could assume the programming in the near future. (Medium priority. General approach to humanitarian programming.)

221. **Recommendation 10:** Commission a report that compares communities who have received international support with those that have not traditionally. This should include counterfactual communities from this Evaluation that have fared as well as those that have received support. It should have a much larger scope, focusing on regions hardest hit by crisis. This should investigate indigenous/localise support networks, their potential links to intentional aid, and whether there is a 'tipping point' where indigenous systems are not enough to address needs during a severe crisis. (Low priority. DFID supported research question.)

8.6. Gender Equality, Women's Empowerment & Human Rights Based Approaches Must be Central to Programme Design

222. The other issue central to humanitarian action is the issue of gender and human rights-based approaches. As noted in a DFID review on the subject: 'While implementing partner activities are gender-balanced, assessment methodologies are often not explicit about how the needs of different gender groups were accounted for. Programmes generally serve a large number of female beneficiaries, either as individuals or as female-headed households. This is a result of vulnerability assessments, through which women and female-headed households have been identified as key vulnerable groups.'[71]

223. This lack of actual programming approaches for women and female headed households makes any correlation analysis in this evaluation challenging. For instance, this evaluation could assess how or if female headed households fared better in relation to the four key outcome indicators. However, this would not have much bearing on DFID supported activities as these were not designed to take such variables into account. As recommended in this evaluation, this should be addressed in any future studies and be a paramount element in DFID supported programmes.

224. **Recommendation 11:** Any programme design must consider how gender contributes to effectiveness and results. For instance, female headed households may be able to leverage direct cash support toward greater household food security better than male headed households. There may be variations in how livelihood support should address the needs of men and women. Any and all such issues should not only be central to programme designs but also be a prominent feature in any future impact assessment. (High priority; All implementing partners.)

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[71] Sagal Ali and Tanja Chopra; "Gender Review: DFID Multi-Year Humanitarian Programme (MYHP) 2013 – 2017." DFID/MESH; March 2016. Page 4.

9.   Lessons & Recommendations

9.1.   Lessons

There are a number of lessons from this evaluation that may inform future impact evaluations, multi-year humanitarian funding, resilience programming, and other issues. These are based on the process, analysis, and subjective viewpoints of the evaluation team experts. Other people may reasonably disagree.

9.1.1.   Lessons for multi-year humanitarian funding

Four-year programming is not necessarily enough to enable people to escape chronic vulnerabilities. Nearly all households assessed were simply able to maintain levels of food security and avoid exceptionally negative coping strategies. While this is a significant success and a hallmark of resilience in humanitarian contexts, frequent conflict and climate related shocks prevented people from actually exceeding these levels and graduating toward more sustainable development opportunities. This was also hindered by the absence of mature federal/national safety-nets and other government-led support. (Important for all humanitarian actors engaged in multi-year programming.)

Multi-year funding provided a foundation for resilience programming and other programme innovations. BRCiS enabled households to better prepare for, respond to, and recover from shocks. BRCiS community-based programming was essential for this result and only possible through multi-year humanitarian programming. The SNS nutrition consortium's approach to addressing underlying causes of malnutrition was also enabled through a multiyear approach and now BRCiS is incorporating this research into their approaches to nutrition. (Important for all humanitarian actors engaged in resilience programming.)

UN organisations may not have the structures, systems, and processes necessary for the innovative approaches made possible through multi-year humanitarian funding. As described in this evaluation, the UNJRS did not result in novel resilience programming, let alone consistent integrated programming. By the time of the 2017 food security crisis, any 'resilience' programming by the three agencies was dwarfed by their emergency response programmes that relied on traditional direct-service models. (Important for UN humanitarian actors.)

9.1.2.   Lessons for resilience programming

Resilience is about more than food security. The differences surfaced in qualitative focus groups amongst communities revealed that people used a myriad of coping strategies in relation to climate and conflict related shocks. Some of these are manifestly negative, like unhealthy and dangerous levels of nutrition, stress-migration, or the selling of essential livelihood assets, amongst others. However, sometimes people may choose one 'negative' strategy to avoid other more destructive strategies. For instance, BRCiS communities chose to eat less (without falling into poor levels of nutrition) and to rely on their families and communities rather than to have to leave everything and move to an IDP settlement. Of course, the humanitarian imperative is to prevent people from starving (food security) and yet we can do more than that. Humanitarian action can enable households to be more strategic, to have choices, about how they face crises. This is not only more dignified, it also assumes that affected communities themselves are best placed to determine what to do for the immediate, short, and longer terms. (Important for all humanitarian actors engaged in resilience programming.)

Resilience is dynamic and so requires dynamic programming approaches. While frustrating from an analytical perspective, the fact that there were so many different activities, at different scales and frequencies, across the whole programme period, is correlated to the results. People need different things at different times and according to the severity of the crisis they are experiencing. What's compelling in Somalia is just how varied the different types of support are. There is the myriad of approaches provided by international actors. There are indigenous support activities. There are clan-based social capital exchanges that become dynamic as people move from place to place in search of assistance. There are growing levels of support from local and federal authorities. There are remittances and foreign investments. In Somalia, these all co-exist with little coherence or coordination. While this is highly problematic in most settings, this has worked to the advantage of people in need in Somalia. The problem, or course, is that this is likely to be hugely inefficient and probably stymies efforts to enable the government to assume leadership. (Important for all humanitarian actors engaged in resilience programming.)

9.1.3.   Lessons for impact evaluations in complicated operating contexts

Quasi-experimental designs are not necessarily enough when the interventions are dynamic and diverse and the controls are, to put it simply, uncontrollable. Any design needs to be augmented by iterative qualitative research that then informs subsequent survey instruments, and, possibly, revise/expand the indicators under examination, and then qualitative analysis to expand upon the results from the quantitative data. Designs need to be systemic and emergent, rather than formal and linear. While this evaluation tried to combine both, more of a focus on systemic approaches

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would have likely revealed more about how specific activities in specific contexts contribute to results. (Important for evaluators.)

FCS and CSI and other food security proxy indicators are not enough. FCS and CSI look at different aspects of food security and yet they do not go far enough to understand the number and type of choices that people make in the face of a crisis. Food security, and these proxy indicators, should remain central to any future analysis but they need to be augmented with other indicators/proxies that reveal other aspects of resilience. (Important for actors involved in food security.)

A focus on the micro is probably more valuable than a focus on the macro. This evaluation's design employed standard statistical approaches combined with solid qualitive inquiry, amongst other approaches, to assess broad trends across DFID supported programmes. This resulted in a fair estimation of results for BRCiS and UNJRS, as wholes, and for rural, urban and IDP cohorts. This macro view provides programme accountability but is not sufficient enough to understand what works and what doesn't—the operational issues that lead to these results. Given the complexity of an operating context in Somalia, this requires a much more 'micro-level' view. For instance, with each survey round, the evaluation could identify households/communities where there was positive change and then conduct a deeper level of analysis around the factors that might be contributing to this change, sorting out between *sui generis* factors and factors that could be replicated elsewhere. Consecutive rounds of this micro-level analysis would reveal combinations of activities and actors that consistently deliver results, regardless of the specific operating context, demographics, or shock profile of any community. (Important for evaluators.)

9.2.   Recommendations

The following recommendations are replicated form the conclusion section immediately above. They are included here for ease of reference.

Recommendation	Stakeholder/ Primary Purpose	Priority (high; medium; low)
Recommendation 1: Multi-year programming is important for more innovative approaches and for building resilience. At the same time, not all partners and or activities benefit from multi-year support equally. Those that require innovative approaches that may need to be adapted/refined over time, like BRCiS, benefit from multi-ear programming whereas direct service models, like those largely provided by the UNJRS, could be sustained through short-term funding.	DFID approaches to multi-year support.	High
Recommendation 2: Any future impact assessment should measure total investment to multi-year resilience programming as compared with early response funding, e.g. the IRF. The assumption is that communities that have benefited from longer-term resilience programming, like those served by BRCiS, would require less early response funding than those without resilience programming. This goes beyond typical value for money calculations and towards how these communities have strengthened their resilience and hence reduced their need on humanitarian assistance.	Important for all research related to resilience and other longer-term humanitarian programming approaches.	Medium
Recommendation 3: Conclusions, lessons & recommendations from this evaluation should be discussed in a final workshop with DFID, DFID partners, and the broader humanitarian community. This evaluation has shown the value of engaging with DFID and implementing partners throughout the evaluation. One of the most frequent comments during these workshops and other meetings concerned the ability to link this analysis to actual changes in operations. The 'operationalisation' of these findings of huge importance if the full value of the evaluation is to be achieved. This is especially important in the context of any continuing resilience programming.	DFID sponsored evaluation workshop.	Low
Recommendation 4: Given that both the UN direct service model and the BRCiS community-led approach delivered short term results, DFID needs to continue to have a balanced portfolio approach to the two models. This may include less direct investment in UN 'joint strategies,' that are not significantly different enough to warrant longer-term programming approaches, and more in innovative integrated programming approaches that address not only resilience as associated with food security but also issues related to climate change, increasing urbanisation, and the role of the federal authorities. In essence, the MYHP proves that innovative approaches can yield results and that they are increasingly necessary in a complicated protracted crisis like that in Somalia. At the same time, DFID and other intentional donors cannot neglect the need for continued direct services and early and rapid response to emergencies.	DFID's portfolio approach.	High
Recommendation 5: Given the increasing prevalence of multi-purpose cash assistance, programming needs to assess both the short and longer-term gains associated with this modality. This evaluation shows that cash may be a highly effective way to respond quickly to an emergency, as in the 2017 food security crisis. Yet, the relationship to cash assistance and longer-term programming, especially programming that treats societal and behavioural changes associated with resilience, remains unclear. Research should be undertaken to assess how these short-term interventions affect longer-term outcomes.	DFID supported research approach.	Medium
Recommendation 6: Analysis of resilience needs to move beyond food security proxy indicators. This evaluation relied largely on standard outcome variables related to resilience, e.g. the coping strategy index (CSI) and food consumption score (FCS). While the univariate evaluation includes other indicators, like food expenditure patterns and subjective well-being, taken together they are still not	DFID supported research approach.	Medium

sufficient enough to measure the complexity of resilience. Future research and evaluations need to supplement these with indicators that track the convergence of food security (FCS & CSI) with other coping strategies. Realising this analytical limitation, the RIMA II analytical approach supplemented the univariate analysis of this final endline report. Importantly, this should measure the type the number of possible choices available to households and communities. The ability to choose amongst different strategies while avoiding the worst consequences of shock, like stress migration, is of particular importance.		
Recommendation 7: **Ensure that programme approaches differentiate between how they support different cohorts, especially those who may face distinct vulnerabilities.** This evaluation was not able to discern the effects on different cohorts within each community because DFID partners made no such differentiation. This implies that DFID partners expected that the same interventions would have the same effects, regardless of the specificities within different households or communities. This is surely not the case, especially when one considers the issues of women's equality, disabilities, marginalised clan identities, and other socio-economic issues that affect Somali communities.	All implementing partners.	High
Recommendation 8: **Increase analysis of the ways in which traditionally underserved communities prepare for, respond to and recover from shocks.** This should be conducted at the micro-level, e.g. select 3 – 5 counterfactual communities that showed positive outcomes form this evaluation and assess how they deal with shocks over time. This should be a panel study, focused on qualitative information, and then lead to both a better understanding of indigenous support systems and how these intersect with international support.	DFID supported research question.	Low
Recommendation 9: **Somalia requires a distinct approach to humanitarian action that includes direct support to actors who can provide both rapid and direct services to communities in need and those that are providing longer-term and more innovative programming for alleviating chronic vulnerabilities.** For the time being, this will need to complement and be coordinated with federal authorities rather than being designed in ways where these authorities could assume the programming in the near future.	General approach to humanitarian programming.	Medium
Recommendation 10: **Commission a report that compares communities who have received international support with those that have not traditionally.** This should include counterfactual communities from this Evaluation that have fared as well as those that have received support. It should have a much larger scope, focusing on regions hardest hit by crisis. This should investigate indigenous/localise support networks, their potential links to intentional aid, and whether there is a 'tipping point' where indigenous systems are not enough to address needs during a severe crisis.	DFID supported research question.	Low
Recommendation 11: **Any programme design must consider how gender contributes to effectiveness and results.** For instance, female headed households may be able to leverage direct cash support toward greater household food security better than male headed households. There may be variations in how livelihood support should address the needs of men and women. Any and all such issues should not only be central to programme designs but also be a prominent feature in any future impact assessment.	All implementing partners.	High

10.   Annexes

10.1.   Statistical Methodology

This section describes the statistical methodology used in the analysis of overall programme effects in the UNJRS and BRCiS programmes.

10.1.1. Model choice

Mixed (=hierarchical) linear regression models with random effects on meso-cluster, community, and household level to account for clustering of outcome, treatment, and independent variables.

Analytical Intervals. Time structure of baseline to Round 3 to Round 4 with approximately one-year measurement interval between survey rounds. The Baseline was conducted in early 2016, Round 3 in early 2017 and Round 4 in early 2018. This corresponds to a repeated annual enumeration. The Baseline (before drought onset) – midline (period of drought onset) – end line (recovery period) with respect to the 2017 drought as the major shock affecting households during the life of the impact evaluation. This means that programme and temporal effects can be identified between Baseline and Round 3, between Baseline and round 4, and between Round 3 and Round 4. The last-time contrast between Round 3 and Round 4 is particularly relevant since measures the degree of recovery of households in outcome variables after the 2017 drought.

Round 2 in mid 2016 was not included as a separate point in time as it falls outside the seasonal timing of the other three survey rounds (mid-year as opposed to beginning of the year). This was due to the move of the Round 4 survey to one-year after the January 2017 Round 3 so as to account for potential 'bounce back' from the 2017 food security crisis. Not enumerating at a similar time of the year is likely to introduce significant seasonal bias in a population where most households are dependent upon livestock and/or agriculture. Round 2 data were used as Baseline values for those households that only entered the panel in Round 2, i.e. for which there was no measurement in early 2016.

The analysis of the first three rounds shows that households both in the counterfactual and in intervention households did not change much in outcome indicators between Baseline and Round 2, suggesting that Round 2 measurements are a reasonable proxy for Baseline values. Using these households with the first interview in Round 2 increases sample sizes and the statistical power of the analysis substantially.

The parameter estimates of the interaction between time, i.e. observations across the 3 survey rounds, and programming (intervention/counterfactual households) was used to establish the development of outcome variables between survey rounds and between treatment groups. These estimates are equivalent to gain scores, answering the question "what is the difference-in-difference in outcome variables between survey rounds and treatment groups," but with added flexibility for modelling and with superior methodological properties.

Missing interviews: Among other advantages, the above-mentioned time structure allows for inclusion of households with only one or two interviews. Missing interviews for households that could not be reached cannot be assumed to be missing completely at random (MCAR, dropout ignorable) or missing at random (MAR, dropout controllable through covariates). On the contrary, dropout households are likely to be significantly different in the outcome variables (resilience), since resilience itself can be a contributing factor to the reasons for non-enumeration (especially households moving away due to shocks).

Households without Baseline or Round 2 interviews were excluded from the analysis.

Estimation of models was calculated using the function lmer in the R-package lme4.[72]

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[72] Fit a linear mixed-effects model (LMM) to data, via REML or maximum likelihood.

10.1.2. Outcome variables

The following tables shows the range and standard deviations (SD) used for the four primary outcome indicators:

Reduced Coping Strategy Index (CSI). *Lower* values for higher resilience.	Range: 0-56	SD at baseline: 11.1
Food consumption score (FCS). Higher Values for better food security.	Range 0-112. (WFP assigns household asset scores to FCS profiles: 0-21 Poor 21.5-35 Borderline > 35 Acceptable)	SD at baseline: 25.1
Proportion of household expenditure spent on food. *Lower* values or proxy for higher food security.	Range 0-100 (%)	SD at baseline: 39.2
Wellbeing indicator: Additive numeric score, average of the following four variables (1-5 Likert scales) ▪ Over the last two weeks: I have felt cheerful and in good spirits ▪ Over the last two weeks: I have felt calm and relaxed ▪ Over the last two weeks: I have felt active and vigorous ▪ Over the last two weeks: I woke up feeling fresh and rested	Higher values for higher subjective wellbeing. Range 1-5	SD at baseline: 0.93

Livelihood specific CSIs were not used due to issues with geo-referenced and self-reported livelihood zones (see under "Strata"). Since the livelihood specific CSIs include livelihood-specific coping strategies, but respondents often geographically classified in the wrong livelihood zones in the survey, resulting from outdated livelihood zone maps. Also combining livelihood specific CSIs from different livelihood zones is problematic, as mix of livelihood strategies for a particular livelihood zone will include some that are unique to that zone. This makes combining these livelihood specific CSIs across different livelihoods problematic.

10.1.3. Fixed effects

10.1.3.1. Time and treatment (household outcome profile)

Formally, the treatment effect is measured as the interaction between treatment (intervention/counterfactual) and the time of measurement (baseline, Round 3 and Round 4). For example, the main effect for Round 4 indicates how an average household in the counterfactual group develops in the outcome variable between Baseline and Round 4. The main effect for Round 4 plus the main effect for the intervention group plus the interaction between intervention and Round 4 indicates how a household in the intervention group developed on average. The intervention/counterfactual classification is on community level, meaning that all households in a community belong either to the intervention or counterfactual group.

Additionally, the variable "formal support to household" (in results section: short "HH support") was included as treatment effect, both as main effect and as interaction with intervention/counterfactual status and time. This leads to a three-level interaction between treatment, time, and formal household support.

Formal support is a binary variable indicating whether a household reported having received formal transfers and/or other (non-monetary) support from an NGO or official (governmental) organisation,[73] both in the intervention and the counterfactual group. In the intervention group, it can be assumed to be a good proxy for households that received direct support from BRCiS or UNJRS. It was included to improve the interpretation of the treatment effects, since the above-mentioned community-level intervention/counterfactual classification does not guarantee that households in

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[73] Types of formal support enumerated included Food Aid, Food for Work Project, Cash for Work Project, Faffa, cash distribution, seeds and tools distribution, facilitated credit, free livestock distribution.

the intervention group received direct programming support, nor does it preclude counterfactual households receiving support from international organisations other than BRCiS or UNJRS.

This leads to four different treatment groups:

    A.   Counterfactual households that did not receive formal support;

    B.   Intervention households that did not receive formal support;

    C.   Counterfactual households that received formal support;

    D.   Intervention households that received formal support.

These four treatment groups are used to develop **household level outcome profiles** for each outcome variable, indicating how, on average and while controlling for baseline-level covariates, households developed in the outcome variable, e.g. FCS, for each of these four treatment groups.

Differences-in-differences (dif-dif) between these four groups can be interpreted as answering the following questions:

  (I)   Dif-dif A vs B (unsupported counterfactual vs unsupported intervention): Spill over effects of BRCiS/UNJRS

  (II)   Dif-dif A vs D (supported intervention vs unsupported counterfactual): Does BRCiS/UNJRS have an effect on outcome variables/resilience/food security?

  (III)   Dif-dif C vs D (supported counterfactual vs supported intervention): Is BRCiS/UNJRS more effective than other programmes?

These differences-in-differences were assessed for the change in outcome variables between each of the survey rounds. For example, there are three values for dif-dif (I) in the FCS:

    1.   Between Baseline and Round 3;

    2.   Between Round 3 and Round 4;

    3.   Between Baseline and Round 4.

The difference-in-difference values express how much intervention and counterfactual households differ in their change between two survey rounds. The above evaluation questions therefore refer to the marginal change in resilience/food security between Baseline and subsequent observations.

In the results section, the focus of the formal difference-in-difference tests will be on the Round 3 - Round 4 comparison for three reasons:

- The Round 3 – Round 4 comparison is the best measure to estimate the recovery rate in the different treatment groups after the 2017 drought.

- Seasonal effects are removed in the R3 - R4 comparison (R3 and R4 data collected in early 2017 and 2018, respectively).

- Showing all three differences (Between Baseline and Round 3, between Round 3 and Round 4 and between Baseline and Round 4) would massively inflate the results section.

10.1.3.2. Covariates at baseline

Covariates are included at their Baseline level to control for differences between households at the time of the first measurement. Their Round 3 and 4 covariate levels are deliberately not used, since these values could potentially be confounded by programme effects, e.g. cash for work programmes between Baseline and Round 3 could have an effect on income levels in Round 3, thereby acting as intermediate variables and confounding the treatment effects. The covariates chosen cover:

Household demographics:

- Number of household members;

- Gender of head of household (Male/Female);

- Children under 5 living in household (Yes/No);

- Education of head of household (None/Informal School/Formal School).

Household assets:

- Monthly wage income of all household members combined plus income from crop, livestock and fishing, per person (USD);

- Monthly other income per person, incl. inheritance and gifts, plus monthly informal transfers (USD, includes: Remittances, Zakaat, Cash Loan, Food or grain gift, Grain loan, Seed gift/loan, Free labour, Free use of oxen, plough or animals, Xoolo Goyn, Ciyi, Alabari/Sab, Dhibaad, Kaalo, Irmaansi/Maal, Yarad, Qaaraan, Diiya, Fitra, Other cash);

- Did the household cultivate any land? (Yes/No) [only included in rural strata];

- Did the household have any livestock (Yes/No) [only included in rural strata].

Poverty score: an additive numeric score with values between 0 and 6 composed of the following variables:

- Household uses improved water source? (1 point);

- Toilet facility used by household (1 point for improved, 0.5 for unimproved, 0 for none);

- Household uses improved source of lightening? (1 point);

- Household uses improved energy (cooking) source? (1 point);

- Household has own dwelling? (2 points).

Access score: an additive numeric score with values between 1 and 4. Respective points if household has access to:

- School: 1 point;

- Health facility: 1.5 points;

- Hospital: 1 point;

- Market: 1.5 points;

- Public transportation: 1 point [only included in rural strata].

10.1.4. Random effects

10.1.4.1.   Livelihood cluster

Counterfactual communities were initially identified as those within a range of 2-10 km of an intervention village and located in the same food-economy livelihood zone. (Figure 31) In some livelihood zones this outer buffer of 10 km had to be extended to 20k because of the scarcity of settlements.

The actual identification of the counterfactual communities did not always follow those identified in the GIS Open Street Map, and therefore the definition and scale of the original zones was modified to ensure reasonable balance of intervention and counterfactual villages in each zone. The list of the final livelihood clusters used in the analysis is presented in Table 7 showing how the 159 counterfactual and 158 intervention communities are distributed across the analytical livelihood cluster strata.

The livelihood cluster, therefore, is treated as a random effect. That is to say we are not interested in the effect of each of these livelihood strata, but to remove these livelihood zone effects from the overall variation, so that the treatment effects are more likely to be observed with confidence.

This stratum in the models is allowed to have both a random intercept and random slope for main effects and interaction of treatment and round (baseline, Round 3 or round 4) means that:

- The outcome variables (Reduced CSI, FCS, Percentage of expenditure spent on food, Subjective wellbeing) are assumed to have different levels in each livelihood cluster at Baseline level (random intercept);
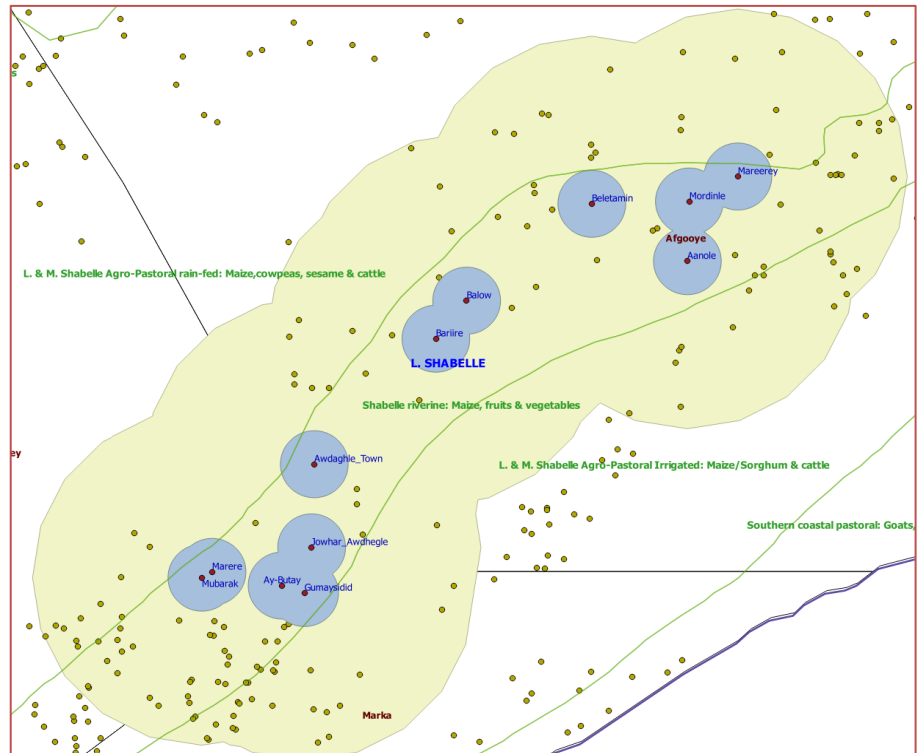

Figure 30: BRCiS rural communities with 2 km (blue-grey) and 10 km (light green) radius buffers overlaid with food economy group livelihood zones. In this zone there were many potential counterfactual villages [khaki dots] within the 2-10 km buffer and the Shabbelle Riverine maize fruits and vegetables food economy livelihood zone.

- The outcome variables develop differently in each livelihood cluster (random slope for round), even when keeping all fixed covariate effects constant;

- There are differences between livelihood clusters that can affect the outcome variables;

- There are differences between clusters in how the treatment acts on outcome variables over time.

The livelihood cluster as a random effect level was removed for some strata with small sample sizes and low cluster size, e.g. UNJRS IDPs. This was done because adding the cluster level leads to numerical problems because of the high number of parameters to estimate as compared to a low sample size. It can be justified since in cases with low sample sizes and consequently low cluster sizes, the random variability in treatment effects on cluster level is negligible compared to residual variability and variability explained by fixed effects. The interpretation of the fixed treatment effects stays the same in these cases.

Table 7: List of intervention and counterfactual communities.

Meso-livelihood cluster	Counter-factual	BRCiS	BRCiS & UNJRS	UNJRS	Intervention Total
Afgooye - 2 communities West of Mogadishu - Urban/Pastoralist	1	1			1
Afgooye/Banadir - SW of Mogadishu - Urban	3	3			3
Baidoa - Middle - AgroPastoralists	3	3			3
Banadir - Mogadishu - Urban	2	2			2
Banadir/Afgooye - Mogadishu - Urban	6	5		1	6
Belet_Weyne - 2 communities SE of Beletweyne town - AgroPastoralists	1	1			1
Belet_Weyne - around Beletweyne town - Riverine	3	2			2
Belet_Weyne - Big cluster NE - Pastoralist	9	8		1	9
Belet_Weyne - E of river - AgroPastoralists	3	4			4
Belet_Weyne - middle along river, N of Beletweyne town - Riverine/AgroPastoralists	3	13			13
Belet_Weyne - NW close to border along river -	3	1		1	2
Bossaso - N coast around Bossaso town - Pastoralist	3			3	3
Burco - Centre E - Pastoralist	4			4	4
Burco - Centre W - AgroPastoralists	2			1	1
Burco - E - Pastoralist	3			3	3
Burco - Megacluster N - AgroPastoralists/Pastoralist	9			7	7
Burco - S - Pastoralist	3			3	3
Burco/Owdweyne - S - Pastoralist	7			3	3
Ceel_Waaq - NW - Pastoralists	11	5			5
Doolow/Belet_Hawa - Megacluster near border along river in SW Doolow and NE Belet_Hawa	23	4	1	18	23
Hargeysa - E - Pastoralist/AgroPastoralists	4			2	2
Hargeysa East	2			2	2
Iskushuban - Coast and Peninsula - Pastoralist	1			1	1
Iskushuban - W - Pastoralist	2			2	2
Kismayo - Kismayo Town and Coast - AgroPastoralists	3	3			3
Luuq/Doolow - Megacluster along river NW and SE of Luuq/Doolow border - Riverine	20	6		19	25
Middle (Hobyo/Cadaado/Gaalkacyo)	16	16			16
Owdweyne - Centre - AgroPastoralists	3			5	5
Owdweyne - Centre - Pastoralist	3			1	1
Qardho - E - Pastoralist	1			1	1
Sheikh - E - Pastoralist/AgroPastoralists	2			2	2
Total	**159**	**77**	**1**	**80**	**158**

10.1.4.2.   Community level

Random intercept and random slope for round (Baseline, Round 3 or Round 4) means that the outcome variable (Reduced CSI, FCS, Percentage of expenditure spent on food, Subjective wellbeing) is assumed to:

a.   Have different levels in each community at Baseline level (random intercept);

b.   Develops differently in each community (random slope for round), even when keeping all fixed covariate effects constant.

10.1.4.3.   Household level

Random intercept means that the outcome variable is assumed to have different Baseline levels for each household, even when keeping all other covariates constant.

This means that we assume that, even though we account for a wide range of covariates such as income, household socio-demographics etc, households have differences in resilience that we cannot fully explain with measured covariates. The random intercept models this source of variation.

A random slope for survey round (i.e. how a household's resilience develops over time) would be ideal, however the high number of parameters needed for the random slope would lead to numerical instability in the model. However, the random slope for round in the community level effects should account for a big part of the non-observed variability already, as we expect households from within the same community to exhibit similar resilience to shocks.

10.1.5. Strata

10.1.5.1.   Livelihood zones

Self-identified livelihood zone was most likely not understood well by survey teams and respondents in the Puntland and Somaliland survey areas and is therefore entirely discarded from the analysis.

Although the self-reported livelihood classification looks considerably more consistent in the Central and South Somalia areas, systematic differences in how this question was asked are likely between survey teams in the different districts, e.g. Central area/Galkacyo-Hobyo: many households declared themselves as "urban" while being situated in rural areas. It is particularly unclear how respondents and enumerators distinguished between riverine, pastoralist and agro-pastoralist areas.

Figure 31: Location of community in rural area in which all respondents over all survey rounds identified their household as "Urban".

The only exception are respondents who identified their household as IDP. This information looks mostly reliable when checking open enumerator comments and satellite images. Households identifying as IDPs were treated as an extra stratum and generally not included in the analysis of all other households, since they can be assumed to be exposed to a particular set of shocks and have livelihood characteristics different from those of other households, e.g. fewer assets, more instable income etc.

The criteria for the geo-referenced livelihood zone classification (QGIS) are unclear. In particular, many areas that appear urban or peri-urban on a satellite map are classified as agro-pastoralist or riverine in shapefiles.

Given these apparent inaccuracies in both the self-reported and geo-referenced livelihood zones, the following simplified livelihood classification was applied to households in the analysis:

Urban: Based on satellite lookup, includes peri-urban areas on the outskirts of larger cities. Urban includes the following urban centres:

- Baidoa
- Entire Banadir region (Mogadishu and surrounding areas)
- Kismayo
- Belet Hawa Town
- Doolow Town
- Luuq Town
- Beledweyne Town
- Galkacyo Town
- Bosaso Town
- Burco

Given this, the classification of a community as urban was based on at least the first two criteria below along with at least one more criterion:

- Satellite image: Households are located in visibly densely and continuously settled area of significant extension (>1km between furthest houses in continuously settled area);
- Lies in town/urban agglomeration of 20,000 inhabitants or more (Wikipedia lookup);
- Urban infrastructure: Airstrip/airport, health centre, bank or guesthouse present;
- Major road going through town.

An example of a community that "just made it" includes Doolow town (about 1km in diameter, health centre and guest house present, major road).

An example of a community that "just didn't make it" includes Elwak town (major road, but very small town, not densely settled, no visible urban infrastructure apart from dwellings).

Rural: Non-urban according to above definition.

IDP: All households having self-reporting as IDP at least once in the survey rounds

A household could change its livelihood status to and from IDP status, but not between Rural and Urban.

10.1.5.2.   *Final analysis strata*

Below is a list of the 4 strata modelled separately for both BRCiS and UNJRS cohorts.

- Rural and urban communities that experienced drought between Baseline and Round 4;
- Rural communities (irrespective of shocks experienced);
- Urban communities (irrespective of shocks experienced);
- IDPs.

10.1.6. Interpretation Example

As resilience is a latent variable (unknown and undefined), the analysis presents 4 outcome indicators thought to proxy elements of resilience. These are widely accepted and provide an opportunity for comparative analysis with the FAO Resilience Index Measurement and Analysis II (RIMA II),[74] amongst other instruments.

The analytical strata listed above and for each of the 4 outcome variables results in 36 individual analytical presentations. This next section explains the structure of the tables and figures presented for each of the 36 analytical strata. This is also the approach taken by the RIMA II Methodology.

10.1.6.1. Descriptive overview of the data set used for the model

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1751	1142	599	564	1725	1119	1212	4056
n households	926	671	448	407	1725	1119	1212	1725
n communities	100	72	86	73	173	173	173	173
n clusters	19	19	18	19	19	19	19	19
Mean outcome var.	36.5	35.0	47.1	45.1	46.3	34.1	32.6	38.8
SD outcome variable	21.2	20.7	24.9	24.0	23.2	21.0	19.6	22.5

Table 8: UNJRS-Drought-Rural-FCS: Descriptive overview of the data set used in the model

The table above provides an overview of the data used to run the model, including the four treatment groups and by the survey rounds (Baseline, Round 3, & Round 4). This is important to review before assessing outcome estimates because the sample was designed to have equal numbers of counterfactual and intervention households in each stratum, but it is only after the panel has been conducted that they were further divided into households receiving direct formal support or not. Therefore, for each of the strata there is no guarantee that there will a good balance between the numbers of households in the counterfactual with and without support versus the intervention with and without direct support.

Unsurprisingly, in a shock prone environment where pastoralism prevails, enumerating all 4 observations with all panel households was challenging. The first four columns of Table 8 present the number of interviews across the 3 enumerations by treatment group, e.g. a total of 1751 interviews were undertaken across the 3 rounds in the counterfactual no support group. Yet this total of 1751 came from 926 households, 1.89 times the number of households. If the counterfactual "no support" cohort had been completely enumerated each round, we would expect the number of interviews to be 3 times the number of households. The last 3 columns (BL, R3 & R4) show the attenuation across rounds. As can be seen, round 4 enumerated a slightly larger number of households than round 3.

The sampling strategy included an inflation factor to accommodate a 30% attrition rate without reducing the minimum number of households required to produce the required precision levels, e.g. 245 independent households per sampling domain.[75] In addition to the 30% attenuation rate, a design effect of two (2) was assumed, which results in inflating the minimum base sample domain size from 245 to 637 households per sampling domain.

The evaluation design anticipated only 4 analytical domains: intervention and counterfactual for both BRCiS and UNJRS. Because of the significant differences between urban, rural, and IDP households, the original analytical domains have been divided into these 3 sub-categories (rural, urban & IDP). This was because it was expected that the the characteristics and the dynamics of resilience are likely to be very different in these 3 different settings. Analysing these 3 subcategories as a single analytical domain would likely obscure any significant effects present only in 1 of the sub-categories.

As Table 11 indicates, large rural domains experienced around 30% or less attrition. But in both the BRCiS and the UNJRS urban domains, the attrition rate was significantly higher, around 50% in both cases.[76]

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[74] Analysing Resilience for Better Targeting and Action: Resilience Index Measurement and Analysis II, FAO 2016, http://www.fao.org/3/a-i5665e.pdf (accessed August 27, 2018).

[75] Evaluating Humanitarian Action and Resilience Inception Phase Report - 9 July 2015; Monitoring and Evaluation for the DFID Somalia 2013-2017 Humanitarian Programme proposed a base sample size of 245 per domain, multiplied by the design effect of 2, with a 30% attenuation rate inflation resulting in 637 minimum households per sampling domain.

[76] During R4 enumeration, new households were recruited in each analytical domain to address both respondent fatigue resulting in refusals along with the re-identification failures. Those recruited in Round 4 are not used in this analysis but can be in further analysis as the rolling in rolling out sample strategy develops.
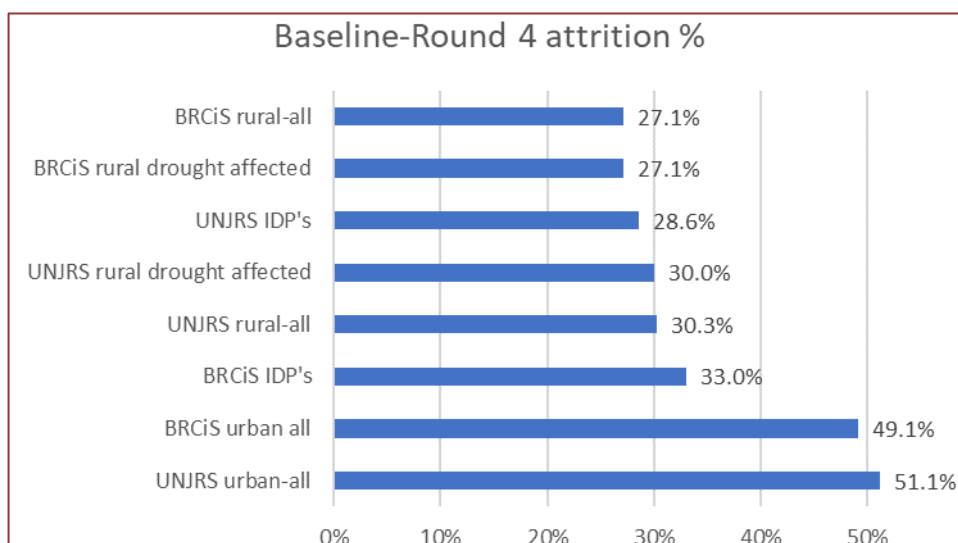
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Figure 32: Baseline-round 4 household attrition rate by analytical strata

The means of the outcome variable by treatment group and enumeration round, FCS in this case, are also presented Table 9. These estimates are purely descriptive (simple arithmetic means) without any modelling. The analysis included the interview and household numbers in each group (*n*) to obtain an overview of the base numbers of the model.

Baseline numbers are particularly low for the "counterfactual households with support." This is due to the selection of counterfactual communities, at the time of the baseline, that were not receiving formal international support. The surveys then asked about different levels and types of support and these increased over the course of the four surveys.

The goal is to assess how the four treatment groups differ in their change in the outcome variable over survey rounds. The last two rows of the table contain the mean and the standard deviation of the outcome variable, here the FCS. Looking at the standard deviation (SD) is a good first to interpret differences in the following model. The outcome profile provides an overview of the change of the outcome variables in each of the treatment groups:

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	25.53	28.10	36.59	33.04
Change Baseline to Round 3	-11.60	-16.15	-18.59	-18.29
Change Round 3 to round 4	4.09	7.48	5.78	10.37
Change Baseline to round 4	-7.51	-8.68	-12.81	-7.92

Table 9: UNJRS-Drought-Rural-FCS: Outcome profile (compare green values for BL-R3 differences to Table 8)

The estimates presented in Table 9 outcome profile are modelled versions of the outcome variable. This means that the values in the outcome profile are not averages from the raw data but are instead controlled for baseline-level covariates. This is done to ensure that any changes between the four treatment groups are more likely due to the intervention/household support combination a household received and not, for example, due to differences in baseline-level household characteristics.

Differences between survey rounds are always expressed as "outcome level in later round *minus* outcome level in earlier round", e.g. Round 4 – Round 3. The value of 10.37 in row "Change Round 3 to round 4" in the fourth treatment group (Intervention - Household support) above means that, on average, the FCS in this group increased by 10.37 between Round 3 and Round 4.

Figure 33 provides the same information as Table 9 in graphical form, but for the absolute levels of the modelled outcome variable as opposed to the differences. Each line represents the development of the outcome variable FCS in one treatment group over time. The figure indicates that there was a marked decrease in the level of the FCS between Baseline and Round 3, followed by an increase to Round 4:
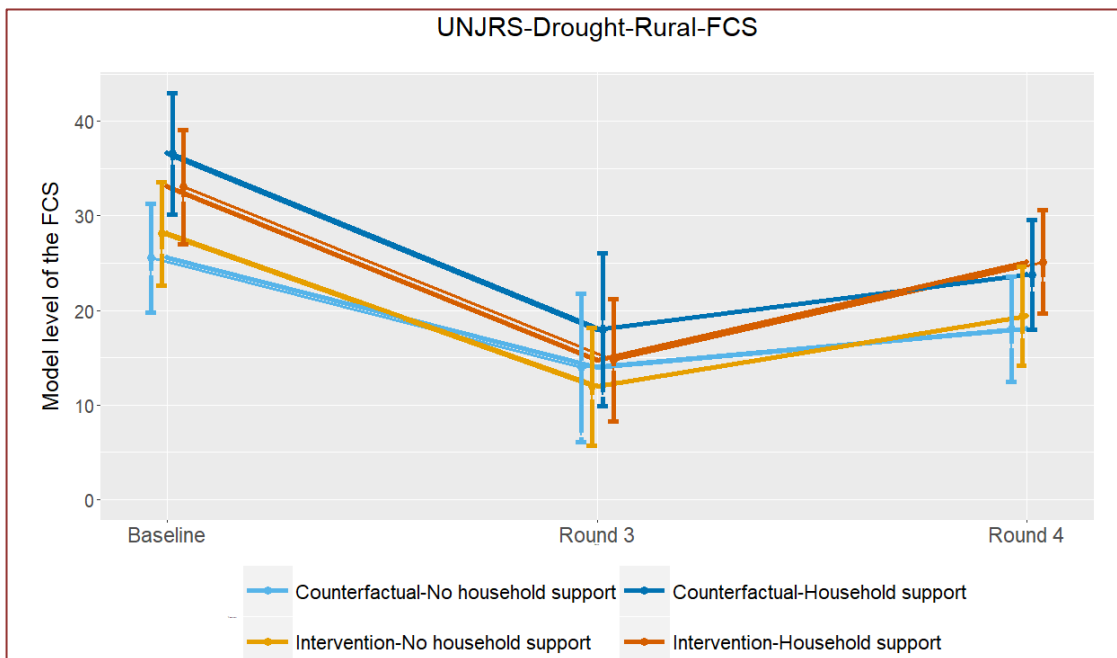
Figure 33: Example of statistical analysis graph

Figure 33 contains a 95% confidence intervals (CIs) for the modelled level of the outcome variable in each treatment group and survey round, providing a straightforward overview of the confidence in the results.

More interesting than the absolute values of the modelled outcome variable or the changes within one of the four groups are the differences in changes between groups. This corresponds to differences in the slope angles of the four lines in Figure 33.

The following "difference-in-difference" contrasts between groups were tested statistically:

- **Spillover effects of BRCiS/UNJRS**: Dif-dif "Change in group Intervention - No household support" minus "Change in group Counterfactual - No household support" (difference in slopes of light blue vs yellow line in Figure 33). This corresponds to **spill-over effects of BRCiS/UNJRS**. How did an average household in an intervention community that did not receive direct household support change in the outcome variable, compared to a household without household support in the counterfactual group? This represents a possible spill-over because all intervention communities had intervention activities, and a household benefiting from these without being directly targeted is deemed gaining positively from the community or other household support.

- **BRCiS/UNJRS had an effect at all (Absolute effect)**: Dif-dif "Change in group Intervention – Received household-level support" minus "Change in group Counterfactual - No household support" (difference in slopes of light blue vs orange line in Figure 33). This corresponds to the question **whether BRCiS/UNJRS had an effect at all (absolute effect)**. How did an average household in an intervention community that received direct household support change in the outcome variable, compared to a household without household support in the counterfactual group?

- **Multi-year programming more effective (Marginal effect)**: Dif-dif "Change in group Intervention – Received household-level support" minus "Change in group Counterfactual - Received household-level support" (difference in slopes of dark blue vs orange line in Figure 33). This corresponds to the question whether **BRCiS/UNJRS is more effective than household-level programming in the counterfactual group (marginal effect)**. How did an average household in an intervention community that received direct household support change in the outcome variable compared to a household with household support in the counterfactual group?

All differences-in-differences are expressed as "Change in outcome variable in intervention group *minus* change in outcome variable in counterfactual group". Column Dif-dif in Table 10 below shows this value, e.g. for contrast (II), the absolute programme effect: Between Round 3 and round 4, the FCS increased by (on modelled average) 10.37 in the intervention group with household support and by 4.09 in the counterfactual group with no household support,

meaning it increased by 6.28 *more* in the intervention group, e.g. intervention group developed better between Round 3 and round 4. Column "Dif-Dif p-value" shows the p-value of the belonging test whether this value of 6.28 is different from zero. The p-value is 0.0505, e.g. higher than the significance level of 0.05, meaning the difference of 6.28 is just not significantly different from 0 -> the test does NOT indicate a statistically significant difference in changes in FCS between the two groups.

When this Dif-Dif p-value is statistically significant there will be asterisks in the final column of Table 10; Dif-Dif Significance. These asterisks indicate the probability of such a difference occurring when there is actually no real difference between the contrasted groups, with the different levels of probability associated with different numbers of asterisks indicated below:

       *   probability < 0.05 & >0.01 (between 5% and 1%)

      **   probability < 0.01 & >0.001 (between 1% and 0.1%)

      ***   probability > 0.001 (less than 0.1%)

The difference-in-difference test for spill over, absolute, and marginal effects between Round 3 and Round 4 are presented in Table 10.

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spill over effect (I)	7.48	4.09	3.39	0.25	
Dif-Dif R4-R3	Absolute effect (II)	10.37	4.09	6.28	0.05	
Dif-Dif R4-R3	Marginal effect (III)	10.37	5.78	4.59	0.18	

Table 10: UNJRS-Drought-Rural-FCS: Difference-in-difference tests R4-R3 (compare green values to Table 9)[77]

It is generally more informative to look at Figure 33 and to interpret the development of the different treatment groups graphically (bearing in mind that these are modelled values, showing actual programme effects), as opposed to focusing on p-values and significance tests. Figure 33 shows that all four groups experienced a distinct drop in food security between Baseline and Round 3, and subsequently a less pronounced increase to Round 4. It is also important to look at the differences-in-difference for all outcome variables (Reduced CSI, FCS, percentage of expenditure spent on food, subjective wellbeing) in a stratum to obtain a picture of the differences between intervention and counterfactual groups in each stratum.

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[77] The last row (marginal effect) is missing for some models where the case number in the counterfactual group with household support was too low to estimate the contrast.

10.1.7. List of Intervention and Counterfactual Communities

Meso-livelihood cluster	Counter-factual	BRCiS	BRCiS & UNJRS	UNJRS	Intervention Total
Afgooye - 2 communities West of Mogadishu - Urban/Pastoralist	1	1			1
Afgooye/Banadir - SW of Mogadishu - Urban	3	3			3
Baidoa - Middle - AgroPastoralists	3	3			3
Banadir - Mogadishu - Urban	2	2			2
Banadir/Afgooye - Mogadishu - Urban	6	5		1	6
Belet_Weyne - 2 communities SE of Beletweyne town - AgroPastoralists	1	1			1
Belet_Weyne - around Beletweyne town - Riverine	3	2			2
Belet_Weyne - Big cluster NE - Pastoralist	9	8		1	9
Belet_Weyne - E of river - AgroPastoralists	3	4			4
Belet_Weyne - middle along river, N of Beletweyne town - Riverine/AgroPastoralists	3	13			13
Belet_Weyne - NW close to border along river -	3	1		1	2
Bossaso - N coast around Bossaso town - Pastoralist	3			3	3
Burco - Centre E - Pastoralist	4			4	4
Burco - Centre W - AgroPastoralists	2			1	1
Burco - E - Pastoralist	3			3	3
Burco - Megacluster N - AgroPastoralists/Pastoralist	9			7	7
Burco - S - Pastoralist	3			3	3
Burco/Owdweyne - S - Pastoralist	7			3	3
Ceel_Waaq - NW - Pastoralists	11	5			5
Doolow/Belet_Hawa - Megacluster near border along river in SW Doolow and NE Belet_Hawa	23	4	1	18	23
Hargeysa - E - Pastoralist/AgroPastoralists	4			2	2
Hargeysa East	2			2	2
Iskushuban - Coast and Peninsula - Pastoralist	1			1	1
Iskushuban - W - Pastoralist	2			2	2
Kismayo - Kismayo Town and Coast - AgroPastoralists	3	3			3
Luuq/Doolow - Megacluster along river NW and SE of Luuq/Doolow border - Riverine	20	6		19	25
Middle (Hobyo/Cadaado/Gaalkacyo)	16	16			16
Owdweyne - Centre - AgroPastoralists	3			5	5
Owdweyne - Centre - Pastoralist	3			1	1
Qardho - E - Pastoralist	1			1	1
Sheikh - E - Pastoralist/AgroPastoralists	2			2	2
Total	159	77	1	80	158

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10.2.   Statistical Analysis—Covariate Analysis across Cohorts

The following sections include the statistical analysis conducted for the four household surveys deployed during the impact evaluation. This includes a graph that depicts changes between the baseline, round 3, and round 4 surveys, and statistical tables showing changes. For more information, see Section 10.1

10.2.1.   BRCiS rural households negatively impacted by drought

10.2.1.1.   Reduced Coping Strategy Index (CSI)

Higher numbers are negative, e.g. households rely on more negative coping strategies.

The four cohorts experienced a similar trend, resorting to more negative coping strategies by the time of the round 3 household survey (January 2017). However, this improved by round 4 (January 2018), after the worst parts of the food security crisis had passed.

While this represents a trend, the changes across the period are not statistically significant. While the standards used, including a p-value of 0.07, are

Figure 34: Outcome Profile (BRCiS Rural/Drought; Reduced CSI)

fairly stringent, a lower p-value or other dilutions would not affect this. Nonetheless, the biggest change is between rounds 3 & 4 for counterfactual households with support (-11.29, Table 13) and directly supported intervention households (-7.44; Table 13)

Analysis: The fact that there were not significant statistical differences across all cohorts demonstrates that these households and, possibly, their corresponding communities, were able to withstand minor shocks and the major 2017 food security crisis without resorting to increasingly negative coping strategies or a collapse in food consumption. This is especially significant when compared to the 2011/2012 famine which had similar conditions. (This finding is borne out across cohorts, including those from UNJRS.)

While confined to CSI, trends suggest that households were able to 'bounce back' to levels commensurate with if not better than those at the baseline, especially for households receiving support. This indicates that there were underlying conditions that enabled households to prepare for, withstand, and recover from shocks (the hallmarks of resilience). It is unclear how much of this trend can be attributed to households' capacities to 'prepare' for the shocks, as compared to their capacities to withstand and recover from the shocks. It is also unclear how much one can attribute existing resilience programming or the 2017 emergency response to households' capacities to recover. It is very possibly a combination of both, especially when combined with the nature of the international community's response in 2017.

This trend indicates that supported counterfactual households experienced the same results as those in intervention households. (Again, this is a recurrent finding across BRCiS and UNJRS cohorts.) This raises a fundamental question about how and why communities not supported by international aid faired just as well as those that did. This could include indigenous support systems, especially in counterfactual households that have not been privy to international support for decades, dynamics within social capital networks where international aid is shared across communities in ways that go beyond notable 'spill over' effects, or 'tipping points' where the type and scale of programming, combined with other socio-economic factors, like the maintenance of markets and logistics networks during the crisis, create a broader effect than that assigned to resilience programming and/or direct support at the community level.

10.2.1.2.   Statistical tables for CSI

Table 11: Descriptive overview of the data set (BRCiS CSI Rural/Drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1432	436	614	701	1287	957	939	3183
n households	772	308	452	384	1287	957	938	1287
n communities	91	52	78	54	145	143	138	145
n clusters	11	10	10	10	11	10	9	11
Mean outcome variable	17.53	17.61	17.70	17.91	17.92	19.85	15.07	17.66
SD outcome variable	11.28	11.88	11.95	10.82	10.61	11.33	11.99	11.40

Table 12: Outcome profile as differences between survey rounds (BRCiS CSI Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	20.70	20.79	22.05	21.30
Change Baseline to Round 3	1.28	4.73	3.40	4.00
Change Round 3 to round 4	-5.12	-8.59	-11.29	-7.44
Change Baseline to round 4	-3.85	-3.87	-7.89	-3.45

Table 13: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS CSI Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-8.59	-5.12	-3.47	0.12	
Dif-Dif R4-R3	Absolute effect (II)	-7.44	-5.12	-2.32	0.25	
Dif-Dif R4-R3	Marginal effect (III)	-7.44	-11.29	3.85	0.07	

Table 14: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS CSI Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	4.73	1.28	3.45	0.08	
Dif-Dif R3-BL	Absolute effect (II)	4	1.28	2.72	0.12	
Dif-Dif R3-BL	Marginal effect (III)	4	3.40	0.59	0.76	

Table 15: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS CSI Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-3.87	-3.85	-0.02	0.99	
Dif-Dif R4-BL	Absolute effect (II)	-3.45	-3.85	0.40	0.82	
Dif-Dif R4-BL	Marginal effect (III)	-3.45	-7.89	4.44	0.03	YES

10.2.1.3. Food Consumption Score (FCS)

While trends for CSI in rural households experiencing drought suggest a positive trend, FCS indicates that households experienced a deterioration in dietary diversity and/or the need to borrow food from other family members or the community over the observation period.

This decline was greatest among counterfactual households receiving support (-21.78; Table 17), and least among intervention households not receiving direct support (-9.15; Table 17). All cohorts declined from a baseline adequate FCS profile (>35) to a borderline FCS profile (21.5 – 35). None of the differences between rounds 3 & 4 were statistically significant.
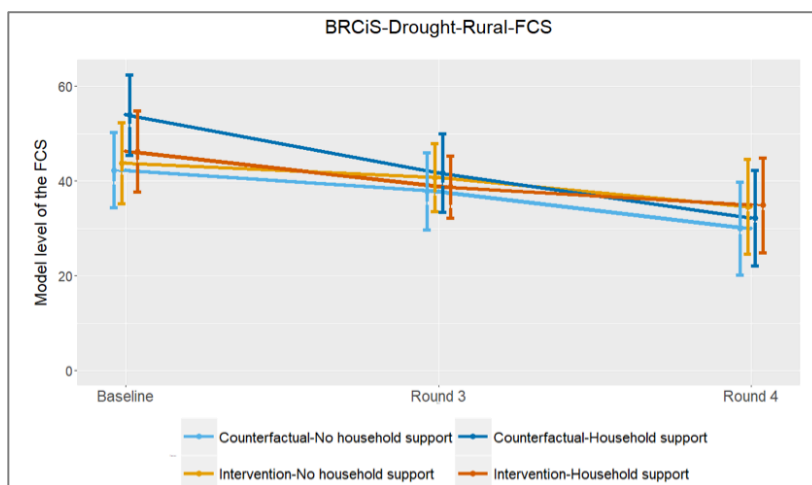
Figure 35: FCS for BRCiS households in rural areas affected by drought.

Analysis: It is unsurprising that FCS declined during the food security crisis given the reduced number of food commodities and their increasing prices. What is less clear is whether households also chose to change the type and amounts of food they ate as a way of responding to the food security crisis. The fact that most households did not fall below the 'borderline' FCS profile suggests that households, whether consciously or because of availability/prices, managed to avoid major health risks associated with decreases in nutritional intake.

10.2.1.4. Statistical tables for Food Consumption Score (FCS)

Table 16: Descriptive overview of the data set used (BRCiS FCS Rural affected by drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1436	440	619	701	1287	957	952	3196
n households	772	309	453	384	1287	957	950	1287
n communities	91	52	78	54	145	143	142	145
n clusters	11	10	10	10	11	10	10	11
Mean outcome variable	45.28	49.21	52.43	52.25	56.38	47.85	39.29	48.73
SD outcome variable	20.41	21.01	24.52	22.82	21.21	19.77	21.73	22.11

Table 17: Outcome profile as differences between survey rounds (BRCiS FCS Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	42.28	43.74	53.96	46.27
Change Baseline to Round 3	-4.45	-2.99	-12.28	-7.52
Change Round 3 to round 4	-7.88	-6.16	-9.50	-3.88
Change Baseline to round 4	-12.34	-9.15	-21.78	-11.40

Table 18: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS FCS Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-6.16	-7.88	1.72	0.66	
Dif-Dif R4-R3	Absolute effect (II)	-3.88	-7.88	4.00	0.27	
Dif-Dif R4-R3	Marginal effect (III)	-3.88	-9.50	5.62	0.14	

Table 19: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS FCS Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-2.99	-4.45	1.46	0.66	
Dif-Dif R3-BL	Absolute effect (II)	-7.52	-4.45	-3.07	0.29	
Dif-Dif R3-BL	Marginal effect (III)	-7.52	-12.28	4.76	0.15	

Table 20: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS FCS Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-9.15	-12.34	3.18	0.39	
Dif-Dif R4-BL	Absolute effect (II)	-11.40	-12.34	0.93	0.79	
Dif-Dif R4-BL	Marginal effect (III)	-11.40	-21.78	10.38	0.01	YES

10.2.1.5. Percentage of expenditures spent on food

While lacking statistical significance, all cohorts experienced an increase in the percentage of expenditures spent on food. Intervention cohorts showed the greatest increase (10.47% with support; 8.31% without direct support).

Analysis: Households were not spending much more or less on food before or during the food security crisis although their food consumption overall deteriorated. If households spent more on food, with a deterioration of FCS below acceptable levels, this would signal a lack of household choices for how to respond to the crisis.
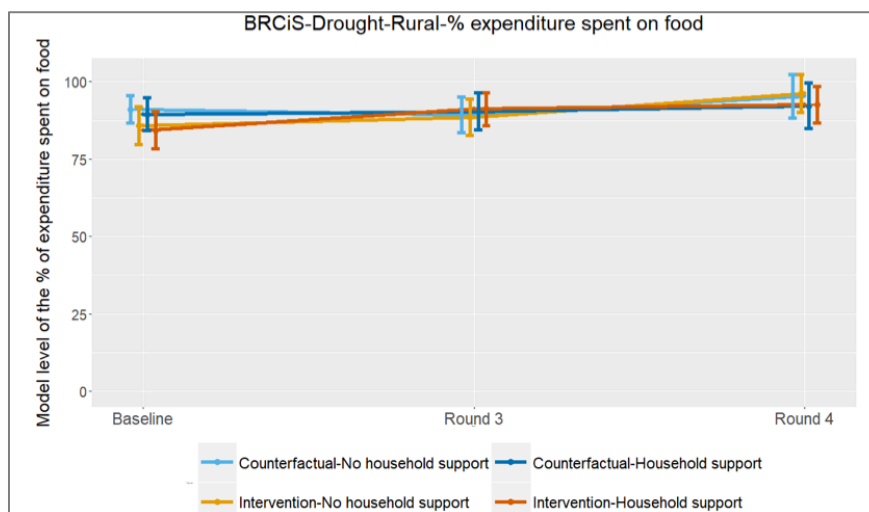
Figure 36: Expenditure % spent on food for BRCiS households in rural areas affected by drought.

10.2.1.6. Statistical tables for percentage of expenditures spent on food

Table 21: Descriptive overview of the data set used (BRCiS Food Rural/Drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1432	436	613	701	1287	956	939	3182
n households	772	308	451	384	1287	956	938	1287
n communities	91	52	78	54	145	143	138	145
n clusters	11	10	10	10	11	10	9	11
Mean outcome variable	83.98	82.16	81.09	80.02	81.05	81.68	84.64	82.30
SD outcome variable	17.67	18.28	17.80	17.49	17.32	15.50	20.28	17.81

Table 22: Outcome profile as differences between survey rounds (BRCiS Food Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	91.15	85.89	89.51	84.31
Change Baseline to Round 3	-1.86	2.57	0.96	6.86
Change Round 3 to round 4	5.98	7.91	1.81	1.45
Change Baseline to round 4	4.11	10.47	2.77	8.31

Table 23: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Food Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	7.91	5.98	1.93	0.64	
Dif-Dif R4-R3	Absolute effect (II)	1.45	5.98	-4.52	0.26	
Dif-Dif R4-R3	Marginal effect (III)	1.45	1.81	-0.36	0.93	

Table 24: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Food Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	2.57	-1.86	4.43	0.16	
Dif-Dif R3-BL	Absolute effect (II)	6.86	-1.86	8.72	0	YES
Dif-Dif R3-BL	Marginal effect (III)	6.86	0.96	5.89	0.06	

Table 25: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Food Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	10.47	4.11	6.36	0.15	
Dif-Dif R4-BL	Absolute effect (II)	8.31	4.11	4.20	0.32	
Dif-Dif R4-BL	Marginal effect (III)	8.31	2.77	5.54	0.23	

10.2.1.7.   Subjective well-being

While lacking statistical significance, all cohorts experienced decreasing subjective well-being from baseline to Round 3, followed by a recovery to baseline levels. The intervention cohort showed the greatest increase (10.47% with support; 8.31% without support).

Analysis: Trends in well-being correspond to those in CSI, where households used, on average, fewer negative coping strategies. This also corresponds with the possibility that deteriorations in FCS were limited by the capacity of households to make choices about food consumption patterns rather

Figure 37: Subjective well-being for BRCiS households in rural areas affected by drought.

than becoming victim to changes in availability and price that could lead to decreases in FCS below 'borderline' conditions. Perceptions in well-being suggest that households felt that they made it through the crisis without exceptionally dire or long-lasting negative health issues related with changes in nutrition. They survived the crisis and felt, overall, about the same about their conditions as at the time of the baseline.

10.2.1.8.   Statistical tables for percentage of subjective well-being

Table 26: Descriptive overview of the data set used (BRCiS Well-being Rural/Drought)

Variable	CF No	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1436	440	619	701	1287	957	952	3196
n households	772	309	453	384	1287	957	950	1287
n communities	91	52	78	54	145	143	142	145
n clusters	11	10	10	10	11	10	10	11
Mean outcome variable	3.26	3.44	3.21	3.26	3.53	2.87	3.33	3.27
SD outcome variable	0.98	0.93	0.84	0.89	0.87	0.91	0.90	0.93

Table 27: Outcome profile as differences between survey rounds (BRCiS Well-being Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	3.68	3.84	3.61	3.81
Change Baseline to Round	-0.59	-0.68	-0.55	-0.67
Change Round 3 to round	0.52	0.59	0.54	0.71
Change Baseline to round	-0.07	-0.09	-0.01	0.04

Table 28: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Well-being Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.59	0.52	0.07	0.75	
Dif-Dif R4-R3	Absolute effect (II)	0.71	0.52	0.19	0.37	
Dif-Dif R4-R3	Marginal effect (III)	0.71	0.54	0.17	0.43	

Table 29: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Well-being Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.68	-0.59	-0.08	0.72	
Dif-Dif R3-BL	Absolute effect (II)	-0.67	-0.59	-0.07	0.74	
Dif-Dif R3-BL	Marginal effect (III)	-0.67	-0.55	-0.12	0.61	

Table 30: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Well-being Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-0.09	-0.07	-0.02	0.95	
Dif-Dif R4-BL	Absolute effect (II)	0.04	-0.07	0.12	0.65	
Dif-Dif R4-BL	Marginal effect (III)	0.04	-0.01	0.05	0.86	

MESH

10.2.2.   All BRCiS rural households

As demonstrated in the graphs and tables included in the Annexes, households in rural areas that indicate that they were not negatively affected by drought do not differ significantly from those that did.

As with rural households negatively affected by drought, other rural households with direct support in both intervention and counterfactual communities experienced the largest level of recovery in CSI between R3 and R4. There were no significant differences in percentage of expenditures on food or subjective well-being.

Analysis: The lack of significant difference between rural households who experienced negative effects of drought from those that indicate that they did not, suggests that changes go beyond individual households to community level conditions. This pattern is exactly the same for UNJRS rural households. This supports the conclusion that resilience lies at the community level where social-capital exchanges and other factors combine to ensure that all community members rise or fall together, especially if they avoid such a deterioration in conditions as to set-off a 'tipping point' where inter- and intra-community conflict and stress migration lead to an acceleration in negative effects.

10.2.2.1.   Statistical tables for all rural households (CSI)

Table 31: Descriptive overview of the data set used (BRCiS CSI Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1446	436	614	701	1295	957	945	3197
n households	780	308	452	384	1295	957	944	1295
n communities	92	52	78	54	146	143	139	146
n clusters	11	10	10	10	11	10	9	11
Mean outcome variable	17.49	17.61	17.70	17.91	17.89	19.85	15.05	17.64
SD outcome variable	11.26	11.88	11.95	10.82	10.59	11.33	11.97	11.38

Table 32: Outcome profile as differences between survey rounds (BRCiS CSI Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	20.60	20.71	21.97	21.21
Change Baseline to Round 3	1.33	4.68	3.44	3.97
Change Round 3 to round 4	-5.08	-8.47	-11.26	-7.33
Change Baseline to round 4	-3.75	-3.79	-7.82	-3.35

Table 33: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS CSI Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-8.47	-5.08	-3.39	0.13	
Dif-Dif R4-R3	Absolute effect (II)	-7.33	-5.08	-2.24	0.27	
Dif-Dif R4-R3	Marginal effect (III)	-7.33	-11.26	3.93	0.07	

Table 34: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS CSI Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	4.68	1.33	3.34	0.09	
Dif-Dif R3-BL	Absolute effect (II)	3.97	1.33	2.64	0.12	
Dif-Dif R3-BL	Marginal effect (III)	3.97	3.44	0.53	0.78	

Table 35: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS CSI Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-3.79	-3.75	-0.04	0.98	
Dif-Dif R4-BL	Absolute effect (II)	-3.35	-3.75	0.40	0.83	
Dif-Dif R4-BL	Marginal effect (III)	-3.35	-7.82	4.47	0.04	YES

MESH

10.2.2.2.   Statistical tables for all rural households (FCS)

Table 36: Descriptive overview of the data set used (BRCiS FCS Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1450.0	440	619	701	1295	957	958	3210
n households	780.0	309	453	384	1295	957	956	1295
n communities	92.0	52	78	54	146	143	143	146
n clusters	11.0	10	10	10	11	10	10	11
Mean outcome variable	45.2	49.21	52.43	52.25	56.23	47.85	39.32	48.68
SD outcome variable	20.4	21.01	24.52	22.82	21.24	19.77	21.75	22.11

Table 37: Outcome profile as differences between survey rounds (BRCiS FCS Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	42.21	43.77	53.88	46.30
Change Baseline to Round 3	-4.41	-3.02	-12.22	-7.54
Change Round 3 to round 4	-7.82	-6.19	-9.47	-3.90
Change Baseline to round 4	-12.23	-9.21	-21.69	-11.44

Table 38: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS FCS Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-6.19	-7.82	1.63	0.67	
Dif-Dif R4-R3	Absolute effect (II)	-3.90	-7.82	3.91	0.27	
Dif-Dif R4-R3	Marginal effect (III)	-3.90	-9.47	5.57	0.14	

Table 39: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS FCS Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-3.02	-4.41	1.39	0.68	
Dif-Dif R3-BL	Absolute effect (II)	-7.54	-4.41	-3.13	0.28	
Dif-Dif R3-BL	Marginal effect (III)	-7.54	-12.22	4.68	0.15	

Table 40: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS FCS Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-9.21	-12.23	3.02	0.41	
Dif-Dif R4-BL	Absolute effect (II)	-11.44	-12.23	0.79	0.82	
Dif-Dif R4-BL	Marginal effect (III)	-11.44	-21.69	10.25	0.01	YES

10.2.2.3.   Statistical tables for all rural households (% of expenditures on food)

Table 41: Descriptive overview of the data set used (BRCiS Food Expenditures Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1446	436	613	701	1295	956	945	3196
n households	780	308	451	384	1295	956	944	1295
n communities	92	52	78	54	146	143	139	146
n clusters	11	10	10	10	11	10	9	11
Mean outcome variable	84.05	82.16	81.09	80.02	81.10	81.68	84.73	82.34
SD outcome variable	17.61	18.28	17.80	17.49	17.28	15.50	20.24	17.79

Table 42: Outcome profile as differences between survey rounds (BRCiS Food Expenditures Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	91.13	85.84	89.49	84.24
Change Baseline to Round 3	-1.86	2.57	0.95	6.87
Change Round 3 to round 4	6.06	7.90	1.84	1.44
Change Baseline to round 4	4.20	10.46	2.79	8.31

Table 43: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Food Expenditures Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	7.90	6.06	1.83	0.66	
Dif-Dif R4-R3	Absolute effect (II)	1.44	6.06	-4.63	0.24	
Dif-Dif R4-R3	Marginal effect (III)	1.44	1.84	-0.40	0.92	

Table 44: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Food Expenditures Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	2.57	-1.86	4.43	0.15	
Dif-Dif R3-BL	Absolute effect (II)	6.87	-1.86	8.74	0	YES
Dif-Dif R3-BL	Marginal effect (III)	6.87	0.95	5.92	0.06	

Table 45: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Food Expenditures Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	10.46	4.20	6.26	0.15	
Dif-Dif R4-BL	Absolute effect (II)	8.31	4.20	4.11	0.33	
Dif-Dif R4-BL	Marginal effect (III)	8.31	2.79	5.52	0.23	

10.2.2.4.   Statistical tables for all rural households (subjective well-being)

Table 46: Descriptive overview of the data set used (BRCiS Well-being Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1450	440	619	701	1295	957	958	3210
n households	780	309	453	384	1295	957	956	1295
n communities	92	52	78	54	146	143	143	146
n clusters	11	10	10	10	11	10	10	11
Mean outcome variable	3.26	3.44	3.21	3.26	3.53	2.87	3.33	3.27
SD outcome variable	0.98	0.93	0.84	0.89	0.87	0.91	0.90	0.93

Table 47: Outcome profile as differences between survey rounds (BRCiS Well-being Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	3.67	3.84	3.61	3.81
Change Baseline to Round 3	-0.59	-0.68	-0.54	-0.67
Change Round 3 to round 4	0.54	0.59	0.55	0.71
Change Baseline to round 4	-0.06	-0.09	0.01	0.05

Table 48: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Well-being Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.59	0.54	0.06	0.79	
Dif-Dif R4-R3	Absolute effect (II)	0.71	0.54	0.18	0.39	
Dif-Dif R4-R3	Marginal effect (III)	0.71	0.55	0.16	0.44	

Table 49: Difference-in-difference test for spill over, absolute and marginal effects between Baseline and Round 3 (BRCiS Well-being Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.68	-0.59	-0.09	0.71	
Dif-Dif R3-BL	Absolute effect (II)	-0.67	-0.59	-0.08	0.73	
Dif-Dif R3-BL	Marginal effect (III)	-0.67	-0.54	-0.12	0.59	

Table 50: Difference-in-difference test for spill over, absolute and marginal effects between Baseline and round 4 (BRCiS Well-being Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-0.09	-0.06	-0.03	0.90	
Dif-Dif R4-BL	Absolute effect (II)	0.05	-0.06	0.10	0.70	
Dif-Dif R4-BL	Marginal effect (III)	0.05	0.01	0.04	0.89	

MESH

10.2.3. Urban households

In the BRCiS urban cohort, unlike BRCiS rural, differences between drought affected households and all households is greater, as less than half of the urban communities were classified as drought affected. Also, the interpretation of urban households that are drought affected is more ambiguous than in a rural pastoral/agro-pastoral setting. The urban cohort is smaller than the rural, and when further divided between drought and non-drought affected, the resulting sample of drought affected urban communities becomes very small. The resulting wide confidence intervals for these cohorts precluded any meaningful interpretation due to very small sample sizes. Therefore, for the BRCiS and UNJRS urban domains, there is no differentiation between those who state that they were negatively affected by drought and those who state they were not.

Table 51: BRCiS-Urban-Reduced CSI: Descriptive overview of the data set used in the model

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	215	203	17	98	221	174	138	533
n households	96	113	16	68	221	174	138	221
n communities	15	19	8	15	34	32	29	34
n clusters	6	8	5	8	8	7	8	8

10.2.3.1.   Reduced Coping Strategy Index (CSI)

Higher numbers are negative, e.g. households rely on more negative coping strategies.

At the time of the baseline, counterfactual households had more negative CSI levels than those of intervention communities. As noted in the evaluation's design document, the baseline was conducted after 11-months of DFID supported programming. It is thus possible that intervention communities had already benefitted from this support. More negative CSI levels for counterfactual households continued across surveys with a convergence by round 4. Between

Figure 38: CSI for BRCiS households in urban areas.

rounds 3 & 4, all cohorts experienced positive decreases in CSI. While Figure 39 suggests considerable variance between cohorts, there was no statistically significant difference except between the baseline and round 3. There, supported intervention households experienced a negative increase of 10.7 (7.37 p value of 0.08) as compared with 2.9 for unsupported counterfactual households.

Analysis: It is possible that the support provided by BRCiS by the time of the baseline had already achieved benefits beyond those available to counterfactual communities. If this is true, it may have contributed to a more positive trend across the period of analysis although there is a seeming convergence by the time of the round 4 survey. This convergence could be due to a combination of indigenous support systems, dynamics within social capital networks where international aid is shared across communities in ways that go beyond 'spill over' effects or 'tipping points' where the type and scale of programming create a broader effect than that assigned to direct support.

The negative increase in CSI for supported counterfactual households between the baseline and round 3, especially as compared with counterfactual households, represents an anomaly.

10.2.3.2.   Statistical tables for urban households (CSI)

Table 52: Descriptive overview of the data set used (BRCiS CSI Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	16.60	10.44	17.76	16.98	13.81	18.72	9.74	14.36
SD outcome variable	11.08	10.99	10.19	11.96	10.83	11.87	10.38	11.57

Table 53: Outcome profile as differences between survey rounds (BRCiS CSI Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	19.61	13.71	20.41	12.89
Change Baseline to Round 3	2.90	4.69	8.47	10.27
Change Round 3 to round 4	-10.42	-6.01	-17.50	-13.09
Change Baseline to round 4	-7.53	-1.32	-9.03	-2.82

Table 54: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS CSI Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-15.46	-22.7	7.24	0.73	
Dif-Dif R4-R3	Absolute effect (II)	-5.91	-22.7	16.79	0.43	

Table 55: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS CSI Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	4.69	2.9	1.80	0.63	
Dif-Dif R3-BL	Absolute effect (II)	10.27	2.9	7.37	0.08	

Table 56: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS CSI Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-1.32	-7.53	6.21	0.36	
Dif-Dif R4-BL	Absolute effect (II)	-2.82	-7.53	4.71	0.50	

10.2.3.3. Food Consumption Score (FCS)

Both intervention cohorts had lower FCS than counterfactual cohorts at baseline and experienced no significant decline in FCS until after Round 3. The decline in the FCS score from round 3 to round 4 was greatest for both counterfactual groups. By the time of round 4, intervention households with support had been reversed in comparison with the other cohorts, suggesting the greatest positive improvements. Nonetheless, there was no statistically significant difference between surveys and cohorts throughout. As illustrated in Figure 40, variance in confidence intervals expanded in round 4 as due to small sample sizes, indicating less possibility for statistical significance.
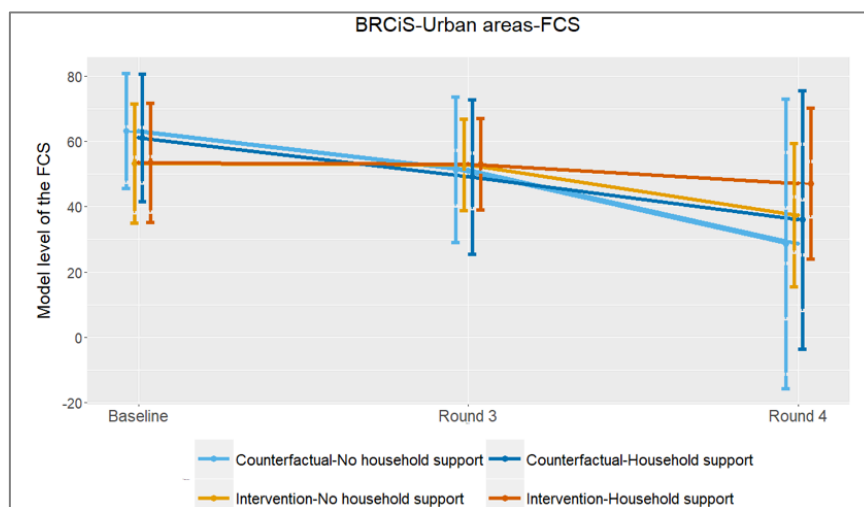
Figure 39: FCS for BRCiS households in urban areas.

Analysis: As with BRCiS supported households in rural settings, there is a pattern of improved CSI with worsening levels of FCS. Unlike rural households, most urban households did not fall below the 'borderline' FCS profile, suggesting that households, whether consciously or because of availability/prices, managed to avoid major health risks associated with decreases in nutritional intake.

10.2.3.4. Statistical tables for urban households (FCS)

Table 57: Descriptive overview of the data set used (BRCiS FCS Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	73.28	61.11	71.03	69.22	77.12	75	43.91	67.83
SD outcome variable	31.17	27.83	25.30	22.96	25.38	21.21	29	28.81

Table 58: Outcome profile as differences between survey rounds (BRCiS FCS Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	63.26	53.17	61.08	53.39
Change Baseline to Round 3	-11.93	-0.37	-11.99	-0.43
Change Round 3 to round 4	-22.70	-15.46	-13.15	-5.91
Change Baseline to round 4	-34.63	-15.83	-25.14	-6.33

Table 59: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS FCS Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-15.46	-22.7	7.24	0.73	
Dif-Dif R4-R3	Absolute effect (II)	-5.91	-22.7	16.79	0.43	

Table 60: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS FCS Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.37	-11.93	11.56	0.22	
Dif-Dif R3-BL	Absolute effect (II)	-0.43	-11.93	11.50	0.21	

Table 61: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS FCS Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL						
Dif-Dif R4-BL	Absolute effect (II)	-6.33	-34.63	28.29	0.18	

10.2.3.5. Percentage of expenditures spent on food

At the baseline, intervention households with direct support were spending the smallest percentage of expenditure on food (72.8%) whereas counterfactual households receiving support spent the most (81.6%). During the observation period, all cohorts experienced increases in the percentage of expenditures on food. This was higher in unsupported households (both intervention and counterfactual) which increased by 10.4 percentage points whereas supported households (again both intervention and counterfactual) increased by around just 2 percentage points.
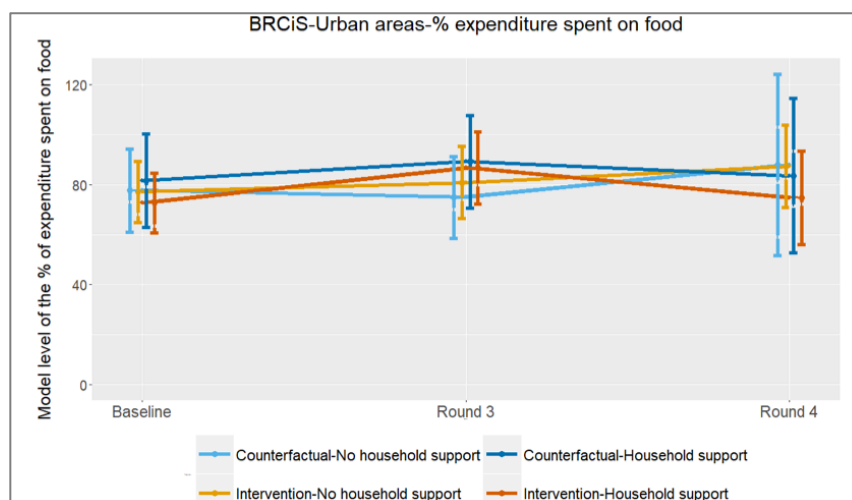
Figure 40: % of expenditure spent on food for BRCiS households in urban areas.

While the spill-over effect and the absolute difference between surveys is not statistically significant; there was a 25% difference between supported intervention households and unsupported counterfactual groups between rounds 3 and 4. Conversely, between the baseline and round 3, supported intervention households increased expenditure on food by 14% while unsupported counterfactual households decreased food expenditures by 2.6%.

Analysis: There is greater variance in food expenditure patterns amongst urban households than in in rural communities, although there was not statistically significant change in either case. This static portrait of food expenditure patterns further supports the possibility that households chose to change the type and amounts of food they ate as a way of responding to the food security crisis. This ability to choose, rather than having a decreasing number of choices with increased health risks, may also explain the variation in expenditure patterns between surveys and cohorts.

10.2.3.6. Statistical tables for urban households (% of expenditures on food)

Table 62: Descriptive overview of the data set used (BRCiS Food Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	69.61	80.57	76.06	70.61	70.11	73.06	82.09	74.18
SD outcome variable	22.87	20.37	16.36	20.30	19.04	20.68	25.32	21.86

Table 63: Outcome profile as differences between survey rounds (BRCiS Food Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	77.66	77.10	81.63	72.79
Change Baseline to Round 3	-2.66	3.71	7.63	14.01
Change Round 3 to round 4	13.10	6.69	-5.62	-12.02
Change Baseline to round 4	10.43	10.40	2.02	1.98

Table 64: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Food Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	6.69	13.1	-6.41	0.71	
Dif-Dif R4-R3	Absolute effect (II)	-12.02	13.1	-25.12	0.19	

Table 65: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Food Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	3.71	-2.66	6.37	0.42	
Dif-Dif R3-BL	Absolute effect (II)	14.01	-2.66	16.67	0.07	

Table 66: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Food Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	10.40	10.43	-0.04	1.0	
Dif-Dif R4-BL	Absolute effect (II)	1.98	10.43	-8.45	0.6	

10.2.3.7. Subjective well-being

Unlike in BRCiS related rural settings where subjective well-being deteriorated between the baseline and rounds 3 and then returned to baseline levels by round 4, intervention households experienced a deterioration between the baseline and round 3 that remained at similar levels by the time of round 4. Directly supported households, both intervention and counterfactual, exhibited greater round 3 to round 4 improvements although this was not statistically significant.

Analysis: While in rural areas where there were correlations between CSI and FCS patterns with food

Figure 41: Subjective wellbeing for BRCiS households in urban areas.

expenditure and subject well-being, these do not exist with urban households. While very difficult to assess, one may assume that both food prices/availability and emotional stress is more dynamic in urban settings: there are simply a greater range of factors related to these that can impact households in urban settings. Nonetheless, this verges on conjecture and so this may be a worthy area for further analysis going forward.

10.2.3.8. Statistical tables for urban households (Subjective well-being)

Table 67: Descriptive overview of the data set used (BRCiS Well-being Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	2.96	3.22	3.01	3.49	3.49	2.95	2.88	3.16
SD outcome variable	1.08	1.10	0.97	0.94	1.06	1	1.06	1.08

Table 68: Outcome profile as differences between survey rounds (BRCiS Well-being Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	2.66	3.37	2.55	3.56
Change Baseline to Round 3	0.29	-0.50	0.10	-0.69
Change Round 3 to round 4	0.05	-0.06	0.31	0.20
Change Baseline to round 4	0.33	-0.56	0.40	-0.49

Table 69: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Well-being Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-0.06	0.05	-0.11	0.85	
Dif-Dif R4-R3	Absolute effect (II)	0.20	0.05	0.15	0.81	

Table 70: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Well-being Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.50	0.29	-0.79	0.14	
Dif-Dif R3-BL	Absolute effect (II)	-0.69	0.29	-0.98	0.09	

Table 71: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Well-being Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-0.56	0.33	-0.90	0.19	
Dif-Dif R4-BL	Absolute effect (II)	-0.49	0.33	-0.83	0.23	

10.2.4. BRCiS IDPs

The BRCiS IDP stratum includes a better distribution of respondents among the 4 treatment groups than for BRCiS urban. Therefore, difference-in-difference calculations include the marginal category (supported intervention - supported counterfactual) that was not presented for the BRCiS urban stratum.

Table 72: BRCiS-IDPs-Reduced CSI: Descriptive overview of the data set used in the model

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	132	133	39	131	176	141	118	435
n households	68	80	28	85	176	141	118	176
n communities	18	23	12	23	45	41	37	45
n clusters	9	11	7	11	12	12	12	12

10.2.4.1. Reduced Coping Strategy Index (CSI)

Higher numbers are negative, e.g. households rely on more negative coping strategies.

All cohorts, except unsupported counterfactuals, experienced a negative increase in CSI from baseline to round 3, followed by a reduction to levels commensurate with or better than at the time of the baseline. There was no significant difference overall between the baseline and round 4 for all cohorts.

The negative increase in CSI for supported counterfactual households between the baseline and round 3 is also notable and

Figure 42: CSI for BRCiS households in IDP settlements

led, when comparing the two counterfactual cohorts, to a near significant difference between them when comparing differences between round 3 and round 4.

The positive reduction in CSI between rounds 3 & 4 was greatest in supported counterfactual households (20.5) followed by supported intervention households (17.0). Despite this, differences between rounds 3 & 4 were not statistically significant.

Analysis: While there are some anomalies in this analysis, it follows the trend amongst rural and urban households that saw negative increases in CSI at the time of the round 3 survey followed by a positive reduction to levels commensurate with the baseline by the time of the round 4 survey.

Statistical analysis for IDP CSI presents more anomalies than those amongst rural and urban households. In fact, variations and anomalies increased for each. In relation to BRCiS urban cohorts, this may be due to increased dynamics in food prices/availability and overall stress levels associated with living in IDP settlements. It is not possible to effectively analyse this as part of this evaluation, but it does signal an area for increased scrutiny going forward.

10.2.4.2.   Statistical tables for IDPs (CSI)

Table 73: Descriptive overview of the data set used (BRCiS CSI IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	20.52	15.78	22.82	17.53	19.58	21.57	12.75	18.37
SD outcome variable	13.59	12.86	14.15	9.25	11.14	12.01	13.01	12.44

Table 74: Outcome profile as differences between survey rounds (BRCiS CSI IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	25.39	16.31	19.24	17.99
Change Baseline to Round 3	-2.33	5.03	14.83	7.29
Change Round 3 to round 4	-12.38	-7.78	-20.53	-16.99
Change Baseline to round 4	-14.71	-2.75	-5.70	-9.69

Table 75: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS CSI IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-7.78	-12.38	4.60	0.54	
Dif-Dif R4-R3	Absolute effect (II)	-16.99	-12.38	-4.60	0.56	
Dif-Dif R4-R3	Marginal effect (III)	-16.99	-20.53	3.54	0.65	

Table 76: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS CSI IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	5.03	-2.33	7.36	0.21	
Dif-Dif R3-BL	Absolute effect (II)	7.29	-2.33	9.62	0.07	
Dif-Dif R3-BL	Marginal effect (III)	7.29	14.83	-7.54	0.16	

Table 77: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS CSI IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-2.75	-14.71	11.97	0.08	
Dif-Dif R4-BL	Absolute effect (II)	-9.69	-14.71	5.02	0.45	
Dif-Dif R4-BL	Marginal effect (III)	-9.69	-5.70	-4	0.57	

MESH

10.2.4.3. Food Consumption Score (FCS)

All cohorts showed very little change between baseline and round 3 with some negative decreases between rounds 3 & 4. None of these were statistically significant.

There was an absolute effect difference between the baseline and round 4 worth noting. Unsupported counterfactual households experienced a decline in FCS of 10.7 points as compared by 31.6 points for supported intervention households. While this is concerning, it is still not statistically significant with a p value of 0.16.
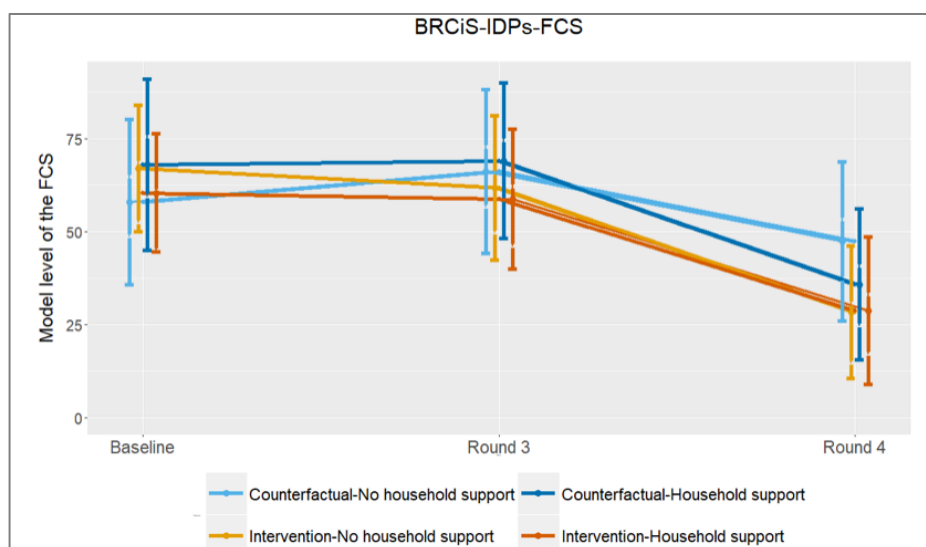
Figure 43: FCS for BRCiS households in IDP settlements

Analysis: As with CSI, the trends are similar to rural and urban households although the figures and subsequent analysis present less significance and more anomalies. Thus, one cannot site any significant changes across the period of analysis.

10.2.4.4. Statistical tables for IDPs (FCS)

Table 78: Descriptive overview of the data set used (BRCiS FCS IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	58.65	51.77	54.54	58.73	65.94	62.59	34.04	56.20
SD outcome variable	27.79	28.65	27.38	27.22	24.78	24.95	23.32	27.93

Table 79: Outcome profile as differences between survey rounds (BRCiS FCS IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	57.97	66.95	68.02	60.38
Change Baseline to Round 3	8.23	-5.21	1.02	-1.65
Change Round 3 to round 4	-18.93	-33.37	-33.24	-29.93
Change Baseline to round 4	-10.70	-38.58	-32.22	-31.57

Table 80: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS FCS IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-33.37	-18.93	-14.44	0.37	
Dif-Dif R4-R3	(II)	-29.93	-18.93	-10.99	0.49	
Dif-Dif R4-R3	Marginal effect (III)	-29.93	-33.24	3.32	0.82	

Table 81: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS FCS IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-5.21	8.23	-13.44	0.31	
Dif-Dif R3-BL	Absolute effect (II)	-1.65	8.23	-9.88	0.40	
Dif-Dif R3-BL	Marginal effect (III)	-1.65	1.02	-2.67	0.82	

Table 82: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS FCS IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-38.58	-10.70	-27.89	0.07	
Dif-Dif R4-BL	Absolute effect (II)	-31.57	-10.70	-20.88	0.16	
Dif-Dif R4-BL	Marginal effect (III)	-31.57	-32.22	0.65	0.96	

10.2.4.5. Percentage of expenditures spent on food

Most cohorts experienced an increase in the percentage of expenditures spent on food except for counterfactual households with support that experienced a 6.7% decline. Conversely, counterfactual households without support experienced a 9.7% increase. Neither of these are statistically significant. Amongst intervention households, there is a slight increase across the period.

Analysis: As in the other areas, the overall trend is the same as with rural and urban households although there is no significant change across the period.
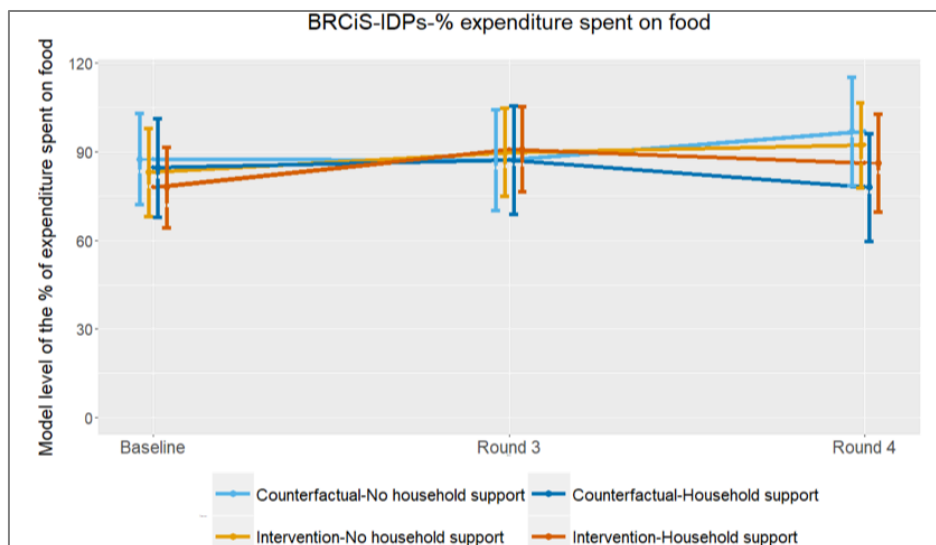
Figure 44: % of expenditures spent on food for BRCiS households in IDP settlements

10.2.4.6. Statistical tables for IDPs (% of Expenditures on Food)

Table 83: Descriptive overview of the data set used (BRCiS Food IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	82.36	81.08	78.63	73.80	75	80.24	83.67	79.04
SD outcome variable	20.08	19.44	20.30	22.01	22.22	16.74	21.84	20.76

Table 84: Outcome profile as differences between survey rounds (BRCiS Food IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	87.60	83.07	84.62	77.97
Change Baseline to Round 3	-0.36	6.77	2.64	12.93
Change Round 3 to round 4	9.72	2.37	-9.34	-4.65
Change Baseline to round 4	9.36	9.14	-6.69	8.28

Table 85: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Food IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	2.37	9.72	-7.35	0.59	
Dif-Dif R4-R3	Absolute effect (II)	-4.65	9.72	-14.37	0.29	
Dif-Dif R4-R3	Marginal effect (III)	-4.65	-9.34	4.69	0.72	

Table 86: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Food IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	6.77	-0.36	7.14	0.56	
Dif-Dif R3-BL	Absolute effect (II)	12.93	-0.36	13.29	0.25	
Dif-Dif R3-BL	Marginal effect (III)	12.93	2.64	10.28	0.38	

Table 87: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Food IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	9.14	9.36	-0.22	0.99	
Dif-Dif R4-BL	Absolute effect (II)	8.28	9.36	-1.08	0.92	
Dif-Dif R4-BL	Marginal effect (III)	8.28	-6.69	14.97	0.22	

10.2.4.7. Subjective well-being

As illustrated in Figure 46, there is considerable variance between cohorts across the period of analysis.

The biggest difference was amongst counterfactual households with support that experienced a 1.65-point decline between the baseline and round 3. The marginal effects between intervention and counterfactual households with support were statistically significant (p values 0.03 & 0.04), indicating that supported counterfactual households' subjective well-being deteriorated significantly

Figure 45: Subjective wellbeing for BRCiS households in IDP settlements

over the observation period with only marginal recovery after round 3.

Analysis: Unlike in other areas, variations here do not suggest any notable trend. It is also unclear what could have contributed to the significant decline in subjective well-being amongst counterfactual households with support as compared to the other cohorts. While one might be prone to draw some conclusions in comparing this to the seemingly positive increase amongst intervention households with support, the possible variables associated with well-being in IDP settlements and the lack of statistical certainty ward against this.

10.2.4.8. Statistical tables for IDPs (Subjective Well Being)

Table 88: Descriptive overview of the data set used (BRCiS Well-being IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	3.14	2.81	3.02	3.11	3.13	2.86	3.04	3.02
SD outcome variable	1.10	1.11	1.08	0.84	0.90	1.03	1.21	1.04

Table 89: Outcome profile as differences between survey rounds (BRCiS Well-being IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	3.36	3.02	3.52	2.97
Change Baseline to Round 3	-0.42	0.19	-1.65	-0.27
Change Round 3 to round 4	-0.03	-0.18	0.44	0.58
Change Baseline to round 4	-0.44	0.01	-1.21	0.31

Table 90: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (BRCiS Well-being IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-0.18	-0.03	-0.15	0.81	
Dif-Dif R4-R3	Absolute effect (II)	0.58	-0.03	0.60	0.34	
Dif-Dif R4-R3	Marginal effect (III)	0.58	0.44	0.14	0.82	

Table 91: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (BRCiS Well-being IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	0.19	-0.42	0.61	0.30	
Dif-Dif R3-BL	Absolute effect (II)	-0.27	-0.42	0.15	0.78	
Dif-Dif R3-BL	Marginal effect (III)	-0.27	-1.65	1.39	0.03	YES

Table 92: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (BRCiS Well-being IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	0.01	-0.44	0.46	0.51	
Dif-Dif R4-BL	Absolute effect (II)	0.31	-0.44	0.76	0.30	
Dif-Dif R4-BL	Marginal effect (III)	0.31	-1.21	1.52	0.04	YES

10.2.5. UNJRS rural households negatively impacted by drought

This cohort has a larger sample size in the urban and IDP cohorts and closer to the 637 households per analytical domain. This results in lower variation coefficients (standard deviation/mean) and narrower confidence interval bars.

Table 93: UNJRS-Drought-Rural-Reduced CSI: Descriptive overview of the data set used in the model

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1751	1142	594	564	1725	1119	1207	4051
n households	926	671	447	407	1725	1119	1207	1725
n communities	100	72	86	73	173	173	172	173
n clusters	19	19	18	19	19	19	19	19

10.2.5.1.   Reduced Coping Strategy Index (CSI)

Higher numbers are negative, e.g. households rely on more negative coping strategies.

All cohorts experienced a negative increase in CSI between the baseline and round 3, except intervention households with support. Intervention households with support experienced the largest deterioration in CSI between the baseline and round 3. Between rounds 3 & 4, all cohorts experienced a positive decrease in CSI except counterfactual households without support.
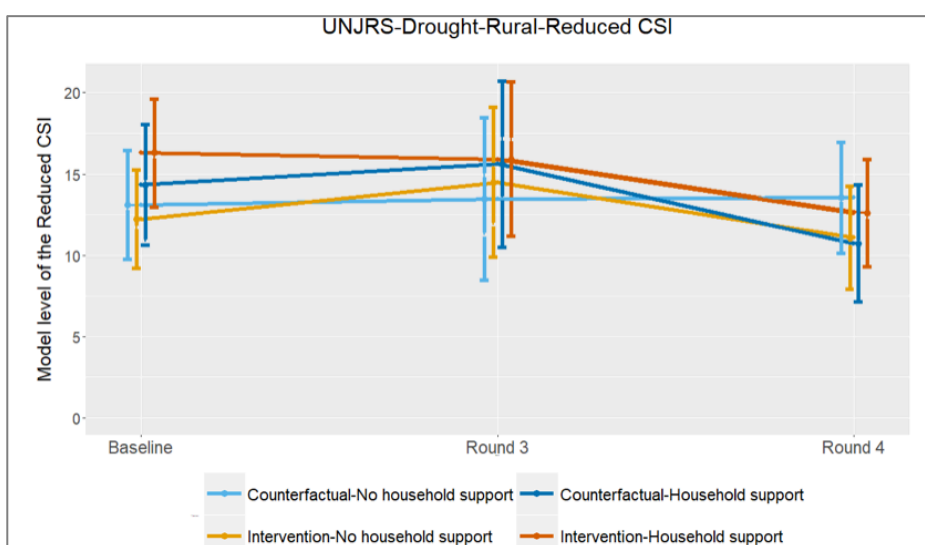
Figure 46: CSI for UNJRS rural communities experiencing drought

Between the baseline and round 4, the absolute effect was statistically significant (P=0.02) with more positive changes amongst intervention households with support as compared with counterfactual households without support.

Analysis: While less pronounced overall, the general trend of a negative increase in CSI from baseline to round 3 follows that of other cohorts from UNJRS and BRCiS. However, the fact that there is a statistically significant positive decrease in CSI amongst intervention households with support between baseline and round 4 signals a significant success.

10.2.5.2.   *Statistical tables for UNJRS rural households negatively impacted by drought (CSI)*

Table 94: Descriptive overview of the data set used (UNJRS CSI Rural/Drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	14.24	12.43	15.19	15.73	13.82	15.97	12.68	14.08
SD outcome variable	12.57	10.63	12.41	10.96	11.72	12.15	11.57	11.86

Table 95: Outcome profile as differences between survey rounds (UNJRS CSI Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	13.10	12.23	14.34	16.30
Change Baseline to Round 3	0.37	2.27	1.26	-0.38
Change Round 3 to round 4	0.08	-3.41	-4.87	-3.31
Change Baseline to round 4	0.44	-1.14	-3.60	-3.70

Table 96: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS CSI Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-3.41	0.08	-3.48	0.19	
Dif-Dif R4-R3	Absolute effect (II)	-3.31	0.08	-3.39	0.22	
Dif-Dif R4-R3	Marginal effect (III)	-3.31	-4.87	1.55	0.58	

Table 97: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS CSI Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	2.27	0.37	1.90	0.35	
Dif-Dif R3-BL	Absolute effect (II)	-0.38	0.37	-0.75	0.73	
Dif-Dif R3-BL	Marginal effect (III)	-0.38	1.26	-1.65	0.49	

Table 98: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS CSI Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-1.14	0.44	-1.59	0.28	
Dif-Dif R4-BL	Absolute effect (II)	-3.70	0.44	-4.14	0.02	YES
Dif-Dif R4-BL	Marginal effect (III)	-3.70	-3.60	-0.10	0.96	

10.2.5.3.   Food Consumption Score (FCS)

All cohorts showed decreases in FCS between baseline-round 3, as with nearly all cohorts and as a direct consequence of the food security crisis.   And, similar to other cohorts, there was a subsequent improvement between rounds 3 & 4.

Unlike in other UNJRS and BRCiS cohorts, this was the only case where groups fell to unacceptable/poor levels of food consumption. In fact, the difference (absolute effect) between intervention households with support compared to counterfactuals with no support

Figure 47: FCS for UNJRS rural communities experiencing drought

was statistically significant (p=0.02), reflecting a significant drop between the baseline and round 3. Differences in other cohorts between the baseline and round 3 were not statistically significant.

The difference (absolute effect) between intervention households with support (10.4-point improvement) as compared to counterfactual households without support (4.1 improvement) was significant from round 3 to 4, with a value of 0.05, resulting from the 6.3-point marginal improvement in FCS amongst intervention households.

Analysis: All cohorts, including intervention households, fell between the baseline and round 3 to unacceptable or poor food consumption levels as based on FCS standards, unlike in BRCiS where comparable households never fell to such levels. This is relevant to resilience programming that seeks to enable households to predict/prepare for, withstand, and recover from shocks. This is an indication that UNJRS households were not as resilient, comparatively, and that they lacked enough resilience to prevent a slide into dangerous food consumption patterns.

At the same time, these same households exhibited a statistically significant improvement between rounds 3 & 4, with intervention households with support improving by a 6.3-point margin in comparison with counterfactual households without support. This significant decrease in FCS, followed by a significant improvement after the food security crisis, signals changes that may have less to do with resilience programming than with the scope and targeting of support by UN partners during the food security crisis.

10.2.5.4.   Statistical tables for UNJRS rural households negatively impacted by drought (FCS)

Table 99: Descriptive overview of the data set used (UNJRS FCS Rural/Drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	36.46	35.03	47.13	45.06	46.27	34.14	32.57	38.83
SD outcome variable	21.16	20.74	24.90	23.95	23.24	21.03	19.58	22.53

Table 100: Outcome profile as differences between survey rounds (UNJRS FCS Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	25.53	28.10	36.59	33.04
Change Baseline to Round 3	-11.60	-16.15	-18.59	-18.29
Change Round 3 to round 4	4.09	7.48	5.78	10.37
Change Baseline to round 4	-7.51	-8.68	-12.81	-7.92

Table 101: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS FCS Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	7.48	4.09	3.39	0.25	
Dif-Dif R4-R3	Absolute effect (II)	10.37	4.09	6.28	0.05	YES
Dif-Dif R4-R3	Marginal effect (III)	10.37	5.78	4.59	0.18	

Table 102: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS FCS Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-16.15	-11.60	-4.56	0.07	
Dif-Dif R3-BL	Absolute effect (II)	-18.29	-11.60	-6.70	0.02	YES
Dif-Dif R3-BL	Marginal effect (III)	-18.29	-18.59	0.30	0.93	

Table 103: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS FCS Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-8.68	-7.51	-1.17	0.68	
Dif-Dif R4-BL	Absolute effect (II)	-7.92	-7.51	-0.41	0.89	
Dif-Dif R4-BL	Marginal effect (III)	-7.92	-12.81	4.89	0.17	

10.2.5.5.   Percentage of expenditures spent on food

As with all other cohorts, there is a clear trend of increased percentage of expenditures spent on food, especially between the baseline and round 3, as the food security crisis neared its apex, with limited changes between rounds 3 & 4. Unlike with related BRCiS cohorts, the changes between the baseline and round 3 are statistically significant. Intervention households with direct support experienced the greatest increase (19.6%; absolute effect).

Conversely, there were greater declines between rounds 3 & 4

Figure 48: % of expenditures spent on food for UNJRS rural communities experiencing drought

amongst counterfactual cohorts, with a significant marginal effect (p=0.04) and a large but not significant absolute effect (p=0.11).

Both marginal and absolute differences from the baseline to round 4 were statistically significant, with counterfactual cohorts (p=0.00) spending less of percentage of expenditures on food than intervention cohorts (p=0.02).

Analysis: The statistical significance of these findings provides a clear indication that UNJRS intervention households spent a larger percentage of income on food. Given that both intervention and counterfactual households were privy to the same overall market forces, this implies there was something inherent in UNJRS support that contributed to these larger expenditure rates. There are indications that UNJRS supported households in rural areas did not benefit as much from resilience programming when compared to similar BRCiS cohorts, with UNJRS households falling to dangerous food consumption levels. This same section suggests that these same communities improved significantly between rounds 3 &4 and yet this too was unlikely due to resilience programme but instead to the timing and scope of support from the UN agencies during the food security crisis.

If this is true, then changes in food expenditures may also be related to the unintended consequences of UN support during the food security crisis. For instance, could it be that UN supported households that received cash support—nearly all of the same households in this survey—were beholden to higher market prices given merchants' knowledge of the direct cash support to these households? This is borne out by data and analysis from the MESH monitoring of DFID supported cash programming.

Could it be that intervention communities, especially given that they have a higher concentration of international support, are charged higher prices overall and/or that those counterfactual communities with less international support have indigenous systems that ward against inflated prices within some limits? While this evaluation cannot be provide definitive conclusions on these points, they warrant more inquiry going forward.

10.2.5.6.   *Statistical tables for UNJRS rural households negatively impacted by drought (% of expenditures on food)*

Table 104: Descriptive overview of the data set used (UNJRS Food Rural/Drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	81.02	81.84	80.17	80.16	74.51	85.56	86.81	81
SD outcome variable	22.44	20.99	20.96	18.76	23.12	16.88	19.44	21.34

Table 105: Outcome profile as differences between survey rounds (UNJRS Food Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	72.81	73.52	69.40	65.56
Change Baseline to Round 3	12.66	13.74	17.85	19.58
Change Round 3 to round 4	-4.73	-2.02	-6.87	0.67
Change Baseline to round 4	7.93	11.72	10.99	20.24

Table 106: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Food Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-2.02	-4.73	2.71	0.38	
Dif-Dif R4-R3	Absolute effect (II)	0.67	-4.73	5.39	0.11	
Dif-Dif R4-R3	Marginal effect (III)	0.67	-6.87	7.53	0.04	YES

Table 107: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Food Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	13.74	12.66	1.08	0.64	
Dif-Dif R3-BL	Absolute effect (II)	19.58	12.66	6.92	0.02	YES
Dif-Dif R3-BL	Marginal effect (III)	19.58	17.85	1.72	0.60	

Table 108: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Food Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	11.72	7.93	3.79	0.21	
Dif-Dif R4-BL	Absolute effect (II)	20.24	7.93	12.31	0	YES
Dif-Dif R4-BL	Marginal effect (III)	20.24	10.99	9.25	0.02	YES

10.2.5.7.   Subjective well-being

UNJRS cohorts in this area follow similar trends to those in BRCiS rural cohorts, with a decline in subjective well-being between the baseline and round 3 and then a returned to or exceeded baseline levels by round 4, with the exception of intervention communities with support, which did not quite recover baseline subjective well-being levels.

Figure 49: Subjective wellbeing for UNJRS rural communities experiencing drought

The marginal effect difference was significant (p=0.01), reflecting a greater decline in subjective well-being in intervention communities with support as compared to counterfactual communities with support.

The marginal effect between baseline and round 4 was almost statistically significant (p=0.06), indicating a decline for intervention households with support as compared to an improvement for counterfactual households with support.

Analysis: The correlation between subjective well-being and positive declines in negative coping strategies is more significant amongst UNJRS rural households than in the corresponding BRCiS cohort. In UNJRS, the changes are statistically significant although the trends indicate greater gains for counterfactual households with support. Nevertheless, this supports the correlation between decreases in negative coping strategies and subjective well-being. As elsewhere, this suggests that these households benefited from more choices, an *increase* in *positive* coping strategies, perhaps. The difference between BRCiS and UNJRS, in this context, is that with BRCiS the ability to reduce negative coping strategies seems to have direct correlation with resilience programming where the same is not true of UNJRS where, perhaps, direct cash support during the food security crisis may have been a more potent factor.

10.2.5.8.   Statistical tables for UNJRS rural households negatively impacted by drought (subjective well-being)

Table 109: Descriptive overview of the data set used (UNJRS Well-being Rural/Drought)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	3.58	3.53	3.5	3.50	3.82	2.96	3.69	3.54
SD outcome variable	0.99	1.14	0.9	1.09	0.90	1.15	0.88	1.03

Table 110: Outcome profile as differences between survey rounds (UNJRS Well-being Rural/Drought)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	3.86	3.86	3.74	4.07
Change Baseline to Round 3	-0.63	-0.67	-0.39	-0.81
Change Round 3 to round 4	0.63	0.81	0.57	0.63
Change Baseline to round 4	0	0.15	0.18	-0.18

Table 111: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Well-being Rural/Drought)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.81	0.63	0.19	0.34	
Dif-Dif R4-R3	Absolute effect (II)	0.63	0.63	0.01	0.98	
Dif-Dif R4-R3	Marginal effect (III)	0.63	0.57	0.06	0.79	

Table 112: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Well-being Rural/Drought)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.67	-0.63	-0.04	0.76	
Dif-Dif R3-BL	Absolute effect (II)	-0.81	-0.63	-0.18	0.20	
Dif-Dif R3-BL	Marginal effect (III)	-0.81	-0.39	-0.42	0.01	YES

Table 113: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Well-being Rural/Drought)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	0.15	0	0.15	0.36	
Dif-Dif R4-BL	Absolute effect (II)	-0.18	0	-0.18	0.32	
Dif-Dif R4-BL	Marginal effect (III)	-0.18	0.18	-0.36	0.06	

10.2.6. All UNJRS rural households

As with BRCiS rural communities, this cohort includes all rural households (excluding IDP's) regardless of whether they are drought affected or not. Compared to the number of households in the rural drought affected UNJRS cohort, removing the drought affected households constrained only increases the number of observations across all rounds by 31 from an additional 19 households. This is not enough to change any of the conclusions already made for the rural drought affected. But the numbers and data are presented here should and all rural reporting domain be required

Table 114: UNJRS-Drought-Rural-Reduced CSI: Descriptive overview of the data set used in the model

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	1751	1165	594	572	1743	1124	1215	4082
n households	926	687	447	413	1743	1124	1215	1743
n communities	100	73	86	74	174	174	173	174
n clusters	19	19	18	19	19	19	19	19

10.2.6.1. Statistical tables for all rural households (CSI)

Table 115: Descriptive overview of the data set used (UNJRS CSI Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	14.24	12.29	15.19	15.80	13.75	15.94	12.70	14.04
SD outcome variable	12.57	10.58	12.41	10.93	11.69	12.14	11.58	11.85

Table 116: Outcome profile as differences between survey rounds (UNJRS CSI Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	13.11	12.21	14.36	16.40
Change Baseline to Round 3	0.39	2.30	1.28	-0.45
Change Round 3 to round 4	0.14	-3.51	-4.80	-3
Change Baseline to round 4	0.53	-1.21	-3.52	-3.45

Table 117: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS CSI Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-3.51	0.14	-3.65	0.16	
Dif-Dif R4-R3	Absolute effect (II)	-3	0.14	-3.13	0.24	
Dif-Dif R4-R3	Marginal effect (III)	-3	-4.80	1.81	0.51	

Table 118: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS CSI Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	2.30	0.39	1.92	0.35	
Dif-Dif R3-BL	Absolute effect (II)	-0.45	0.39	-0.84	0.70	
Dif-Dif R3-BL	Marginal effect (III)	-0.45	1.28	-1.73	0.47	

Table 119: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS CSI Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-1.21	0.53	-1.73	0.23	
Dif-Dif R4-BL	Absolute effect (II)	-3.45	0.53	-3.98	0.02	YES
Dif-Dif R4-BL	Marginal effect (III)	-3.45	-3.52	0.07	0.97	

10.2.6.2.   Statistical tables for all rural households (FCS)

Table 120: Descriptive overview of the data set used (UNJRS FCS Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	36.46	35.16	47.13	45.11	46.24	34.22	32.60	38.86
SD outcome variable	21.16	20.76	24.90	23.88	23.20	21.09	19.56	22.51

Table 121: Outcome profile as differences between survey rounds (UNJRS FCS Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	25.55	28.01	36.57	33.26
Change Baseline to Round 3	-11.54	-15.38	-18.48	-17.93
Change Round 3 to round 4	4.04	6.63	5.73	9.99
Change Baseline to round 4	-7.50	-8.74	-12.75	-7.93

Table 122: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS FCS Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	6.63	4.04	2.59	0.38	
Dif-Dif R4-R3	Absolute effect (II)	9.99	4.04	5.95	0.06	
Dif-Dif R4-R3	Marginal effect (III)	9.99	5.73	4.27	0.22	

Table 123: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS FCS Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-15.38	-11.54	-3.84	0.13	
Dif-Dif R3-BL	Absolute effect (II)	-17.93	-11.54	-6.39	0.03	YES
Dif-Dif R3-BL	Marginal effect (III)	-17.93	-18.48	0.55	0.87	

Table 124: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS FCS Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-8.74	-7.50	-1.25	0.66	
Dif-Dif R4-BL	Absolute effect (II)	-7.93	-7.50	-0.44	0.89	
Dif-Dif R4-BL	Marginal effect (III)	-7.93	-12.75	4.82	0.17	

10.2.6.3. Statistical tables for all rural households (% of expenditures on food)

Table 125: Descriptive overview of the data set used (UNJRS Food Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	81.02	81.59	80.17	79.93	74.43	85.60	86.58	80.90
SD outcome variable	22.44	21.10	20.96	18.87	23.13	16.85	19.58	21.37

Table 126: Outcome profile as differences between survey rounds (UNJRS Food Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	72.84	73.30	69.43	65.59
Change Baseline to Round 3	12.68	14.31	17.75	19.71
Change Round 3 to round 4	-4.80	-2.72	-6.81	0.26
Change Baseline to round 4	7.88	11.59	10.94	19.96

Table 127: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Food Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-2.72	-4.80	2.08	0.50	
Dif-Dif R4-R3	Absolute effect (II)	0.26	-4.80	5.06	0.14	
Dif-Dif R4-R3	Marginal effect (III)	0.26	-6.81	7.06	0.06	

Table 128: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Food Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	14.31	12.68	1.63	0.50	
Dif-Dif R3-BL	Absolute effect (II)	19.71	12.68	7.02	0.02	YES
Dif-Dif R3-BL	Marginal effect (III)	19.71	17.75	1.96	0.56	

Table 129: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Food Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	11.59	7.88	3.71	0.22	
Dif-Dif R4-BL	Absolute effect (II)	19.96	7.88	12.08	0	YES
Dif-Dif R4-BL	Marginal effect (III)	19.96	10.94	9.02	0.02	YES

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10.2.6.4.   Statistical tables for all rural households (subjective well-being)

Table 130: Descriptive overview of the data set used (UNJRS Well-being Rural)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	3.58	3.53	3.5	3.51	3.82	2.96	3.69	3.54
SD outcome variable	0.99	1.13	0.9	1.09	0.89	1.15	0.88	1.03

Table 131: Outcome profile as differences between survey rounds (UNJRS Well-being Rural)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	3.86	3.86	3.74	4.06
Change Baseline to Round 3	-0.63	-0.65	-0.39	-0.79
Change Round 3 to round 4	0.62	0.79	0.57	0.63
Change Baseline to round 4	0	0.15	0.18	-0.16

Table 132: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Well-being Rural)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.79	0.62	0.17	0.38	
Dif-Dif R4-R3	Absolute effect (II)	0.63	0.62	0.01	0.98	
Dif-Dif R4-R3	Marginal effect (III)	0.63	0.57	0.06	0.79	

Table 133: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Well-being Rural)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.65	-0.63	-0.02	0.87	
Dif-Dif R3-BL	Absolute effect (II)	-0.79	-0.63	-0.16	0.27	
Dif-Dif R3-BL	Marginal effect (III)	-0.79	-0.39	-0.40	0.02	YES

Table 134: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Well-being Rural)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	0.15	0	0.15	0.35	
Dif-Dif R4-BL	Absolute effect (II)	-0.16	0	-0.15	0.38	
Dif-Dif R4-BL	Marginal effect (III)	-0.16	0.18	-0.34	0.08	

10.2.7. UNJRS urban households

The household surveys and covariate analysis resulted in a low number of represented UNJRS urban households, particularly for intervention households with support (9 households) and counterfactual households with support (9 households). This implies a weak evidence base for identifying trends across the observation period. Unsurprisingly, standard deviations are large resulting in large confidence intervals. The difference-in-difference for intervention households with support and counterfactual households with support (marginal effect) is not presented given insufficient number of households.

Table 135: UNJRS-Urban-Reduced CSI: Descriptive overview of the data set used in the model

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	139	32	9	9	88	58	43	189
n households	67	19	9	9	88	58	43	88
n communities	10	5	4	3	16	13	10	16
n clusters								

10.2.7.1. Reduced Coping Strategy Index (CSI)

Higher numbers are negative, e.g. households rely on more negative coping strategies.

All cohorts saw a negative increase in CSI from the baseline to round 3, although these changes were not statistically significant. From round 3 to 4, there was a large positive decrease in CSI for both supported cohorts with smaller deceases for unsupported cohorts. As noted above, the small sample size prevents the large decreases from being statistically significant.
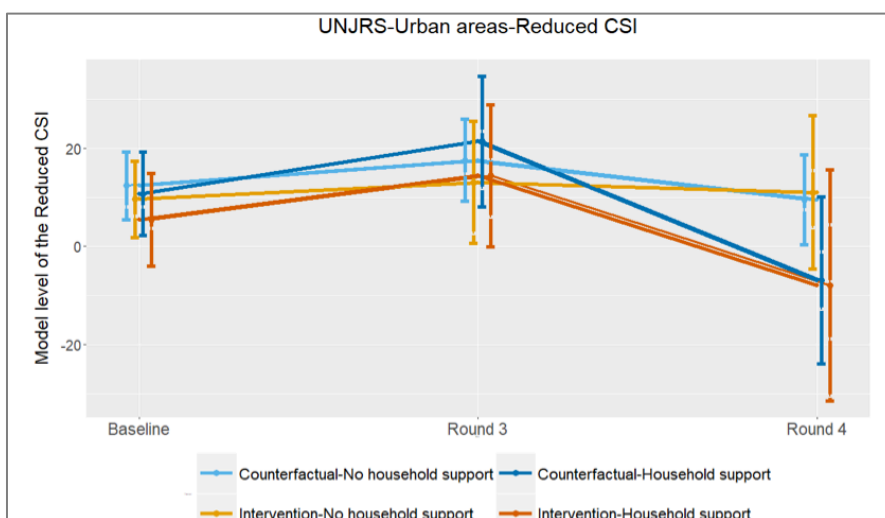
Figure 50: CSI for UNJRS urban households

Analysis: This follows the trend of all other cohorts, with a negative increase from the baseline to round 3 and then a return to baseline or better levels by the time of round 4. As with UNJRS rural households, the reduced number of coping strategies is significant especially when compared with positive increases in FCS. It should be noted that positive decreases in CSI amongst UNJRS rural households between rounds 3 & 4 were statistically significant. Given the trend here for urban households, one may expect that a larger sample size could have resulted in similar statistical significance.

10.2.7.2.   Statistical tables for urban households (CSI)

Table 136: Descriptive overview of the data set used (UNJRS CSI Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	11.91	9.41	11.44	11.22	9.43	15.93	9.44	11.43
SD outcome variable	9.69	6.48	3.84	9.40	7.16	9.11	10.18	9

Table 137: Outcome profile as differences between survey rounds (UNJRS CSI Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	12.35	9.58	10.73	5.46
Change Baseline to Round 3	5.19	3.49	10.64	8.93
Change Round 3 to round 4	-8.02	-2.06	-28.31	-22.35
Change Baseline to round 4	-2.83	1.42	-17.67	-13.42

Table 138: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS CSI Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-2.06	-8.02	5.96	0.61	
Dif-Dif R4-R3	Absolute effect (II)	-22.35	-8.02	-14.33	0.34	

Table 139: Difference-in-difference test for spill over, absolute and marginal effects between Baseline and Round 3 (UNJRS CSI Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	3.49	5.19	-1.71	0.75	
Dif-Dif R3-BL	Absolute effect (II)	8.93	5.19	3.74	0.57	

Table 140: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS CSI Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	1.42	-2.83	4.25	0.64	
Dif-Dif R4-BL	Absolute effect (II)	-13.42	-2.83	-10.59	0.40	

10.2.7.3. Food Consumption Score (FCS)

Intervention cohorts exhibit minimal changes between baseline and round 3 while counterfactual cohorts show slight declines. Between rounds 3 & 4, intervention households exhibit significant positive increases in FCS, exceeding baseline levels while counterfactual households declined. Despite small samples, the differences between rounds 3 & 4 had a surprisingly high *p* value (P=0.1) due to the 68-point differential between intervention
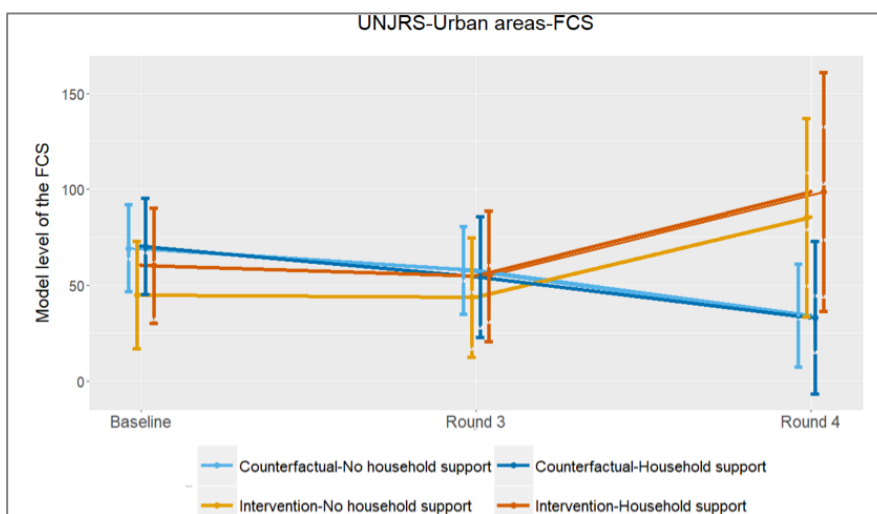
Figure 51: FCS for UNJRS urban households

households with support and counterfactual households with no support. The differences between the baseline to round 4 spill over and absolute effects were significant (p = 0.03 & 0.05 respectively). The differences between baseline and spill over and absolute effects were not significant (p = 0.31 & 0.63 respectively).

Analysis: Similarly to UNJRS rural households, and unlike BRCiS cohorts, there is a significant improvement in FCS between rounds 3 and 4. This may have a correlation to the significant positive decreases in CSI for UNJRS intervention households. As in relation to UNJRS rural households, there were less improvements between the baseline and round 3 in comparison to BRCiS households signalling, along with other evidence, differences between BRCiS programme-wide resilience programming and the more direct UNJRS humanitarian support, especially when combined with the direct support provided during the 2017 food security crisis. This suggests that direct humanitarian support is critical and more effective during a significant food security crisis. This is supported by the fact that BRCiS cohorts exhibited significant positive changes in CSI, in most cases, without a corresponding positive increase in FCS.

10.2.7.4. Statistical tables for urban households (FCS)

Table 141: Descriptive overview of the data set used (UNJRS FCS Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	66.47	71.16	81.33	73.94	76.20	73.79	44.86	68.33
SD outcome variable	30.76	27.15	23.82	25.16	25.08	23.75	33.73	29.67

Table 142: Outcome profile as differences between survey rounds (UNJRS FCS Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	69.39	44.90	70.29	60.23
Change Baseline to Round 3	-11.59	-1.16	-15.96	-5.53
Change Round 3 to round 4	-23.63	41.55	-21.11	44.07
Change Baseline to round 4	-35.22	40.39	-37.07	38.54

Table 143: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS FCS Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	41.55	-23.63	65.17	0.08	
Dif-Dif R4-R3	Absolute effect (II)	44.07	-23.63	67.69	0.10	

Table 144: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS FCS Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-1.16	-11.59	10.43	0.31	
Dif-Dif R3-BL	Absolute effect (II)	-5.53	-11.59	6.06	0.63	

Table 145: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS FCS Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	40.39	-35.22	75.61	0.03	YES
Dif-Dif R4-BL	Absolute effect (II)	38.54	-35.22	73.76	0.05	YES

10.2.7.5. Percentage of expenditures spent on food

While there have been some variations, including UNJRS rural counterfactual households that saw a decline in percentage of expenditures spent on food between rounds 3 & 4, UNJRS urban households follow the general pattern of increasing percentages of expenditures spent on food across the observation period. None of these differences, however, are statistically significant.

Analysis: While not significant here, this does suggest a similar pattern to UNJRS intervention rural households that saw an increase in expenditures on

Figure 52: % of expenditures on food for UNJRS urban households

food. This corresponds to the same patterns in FCS in rural and urban households that saw improvements here. Thus, this suggests a strong correlation between these increasing expenditures on food and FCS. Given that similar patterns are not present for BRCiS households, this further supports programming difference, mainly, longer-term resilience programming (BRCiS) and compared with more direct assistance (UNJRS).

10.2.7.6. Statistical tables for urban households (% of expenditures on food)

Table 146: Descriptive overview of the data set used (UNJRS Food Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	67.24	68.47	70.06	70.16	63.93	66.61	76.98	67.72
SD outcome variable	23.69	20.98	15.73	16.77	19.42	21.15	27.66	22.53

Table 147: Outcome profile as differences between survey rounds (UNJRS Food Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	73.44	79.94	70.96	85.72
Change Baseline to Round 3	3.07	7.43	9.56	13.92
Change Round 3 to round 4	6.87	16.75	20.33	30.22
Change Baseline to round 4	9.93	24.18	29.90	44.15

Table 148: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Food Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	16.75	6.87	9.89	0.65	
Dif-Dif R4-R3	Absolute effect (II)	30.22	6.87	23.36	0.49	

Table 149: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Food Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	7.43	3.07	4.36	0.68	
Dif-Dif R3-BL	Absolute effect (II)	13.92	3.07	10.86	0.45	

Table 150: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Food Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	24.18	9.93	14.25	0.52	
Dif-Dif R4-BL	Absolute effect (II)	44.15	9.93	34.21	0.30	

10.2.7.7. Subjective well-being

All cohorts experienced a decline in subjective well-being between baseline and Round 3, followed by a recovery by round 4 that exceeded baseline levels. The confidence intervals are extremely wide, resulting in none of the differences showing statistical significance.

Analysis: In comparison to UNJRS intervention rural households and, more remotely, BRCiS intervention households, there is less of a definitive trend in an up-turn in well-being between rounds 3 & 4. This is hampered by the smaller sample sizes here and may also be due to the different factors households face in urban contexts.
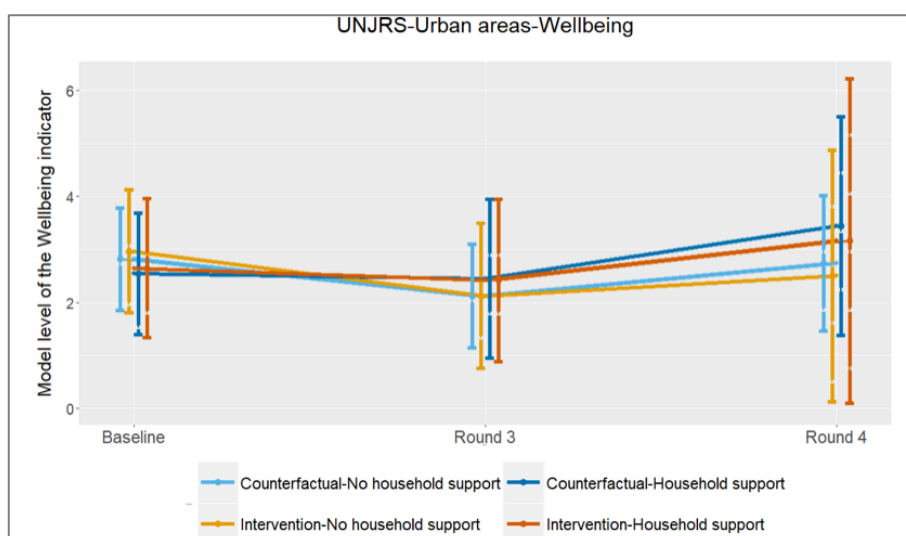
Figure 53: Subjective wellbeing for UNJRS urban households

10.2.7.8. Statistical tables for urban households (subjective well-being)

Table 151: Descriptive overview of the data set used (UNJRS Well-being Urban)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	3	2.85	2.97	2.72	3.27	2.46	2.99	2.96
SD outcome variable	1.16	0.89	1.18	0.76	1.01	0.99	1.18	1.10

Table 152: Outcome profile as differences between survey rounds (UNJRS Well-being Urban)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	2.82	2.96	2.54	2.65
Change Baseline to Round 3	-0.71	-0.84	-0.09	-0.23
Change Round 3 to round 4	0.62	0.38	0.99	0.74
Change Baseline to round 4	-0.08	-0.47	0.90	0.51

Table 153: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Well-being Urban)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.38	0.62	-0.25	0.80	
Dif-Dif R4-R3	Absolute effect (II)	0.74	0.62	0.12	0.93	

Table 154: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Well-being Urban)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.84	-0.71	-0.14	0.80	
Dif-Dif R3-BL	Absolute effect (II)	-0.23	-0.71	0.48	0.49	

Table 155: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Well-being Urban)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-0.47	-0.08	-0.38	0.76	
Dif-Dif R4-BL	Absolute effect (II)	0.51	-0.08	0.60	0.71	

MESH

10.2.8. UNJRS IDPs

As with the urban cohort, IDP analysis suffers from a small sample of households generally and, in particular, for both supported cohorts. The differences (marginal effect) between intervention and counterfactual households with support is not considered as there are so few households in this contrast.

Table 156: Descriptive overview of the data set used in the model (UNJRS CSI IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
n interviews	86	80	12	40	91	62	65	218
n households	39	40	10	27	91	62	65	91
n communities	8	6	6	6	16	15	15	16

10.2.8.1. Reduced Coping Strategy Index (CSI)

Higher numbers are negative, e.g. households rely on more negative coping strategies.

There was a significant negative increase in the CSI for intervention households with support between the baseline and round 3, as compared with counterfactual households with no support. None of the differences between surveys and cohorts were even close to being statistically significant.

Analysis: Given the small sample sizes, one may expect that there results here would be inconclusive. The fact that there is a significant negative
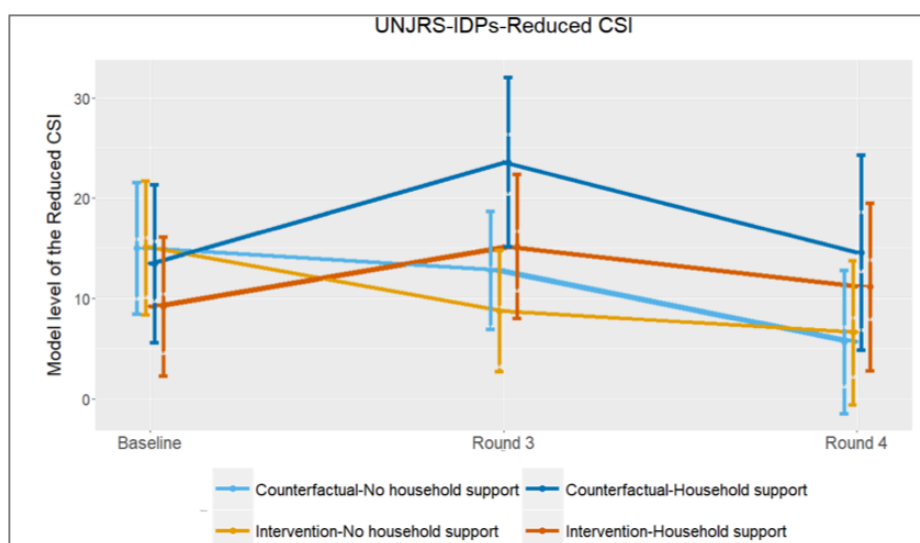
Figure 54: CSI for UNJRS households in IDP settlements

increase for intervention households with support between the baseline and round 3 indicates the increasing needs of this cohort as the food security crisis came to fruition. IDPs became a highly dynamic cohort during the crisis and thus a reliance on more negative coping strategies makes some sense. What is less clear is why counterfactual households with support would resort to the highest number of negative coping strategies.

10.2.8.2. Statistical tables for IDP households (CSI)

Table 157: Descriptive overview of the data set used (UNJRS CSI IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	14.28	11.49	20.17	11.65	14.54	12.94	11.23	13.10
SD outcome variable	9.64	7.90	13.31	6.12	9.15	7.85	9.31	8.92

Table 158: Outcome profile as differences between survey rounds (UNJRS CSI IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	14.99	15.06	13.48	9.20
Change Baseline to Round 3	-2.16	-6.29	10.12	5.99
Change Round 3 to round 4	-7.18	-2.18	-9.02	-4.02
Change Baseline to round 4	-9.34	-8.47	1.10	1.97

Table 159: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS CSI IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	-2.18	-7.18	5	0.42	
Dif-Dif R4-R3	Absolute effect (II)	-4.02	-7.18	3.16	0.64	

Table 160: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS CSI IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-6.29	-2.16	-4.13	0.20	
Dif-Dif R3-BL	Absolute effect (II)	5.99	-2.16	8.15	0.05	

Table 161: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS CSI IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-8.47	-9.34	0.87	0.89	
Dif-Dif R4-BL	Absolute effect (II)	1.97	-9.34	11.31	0.12	

10.2.8.3. Food Consumption Score (FCS)

The differences between the baseline and round 4 for intervention households with support and counterfactuals without support (absolute effect) is statistically significant (p=0.03), because intervention households with support increased their average FCS score by 17.3 points between Round 3 and Round 4, while counterfactuals without support decreased by 26.8 points. The difference (absolute effect) between the baseline and round 4 was also significant (p=0.02), with intervention household with support increasing by 11.8 FCS points, while counterfactuals without support decreased by 33.2.
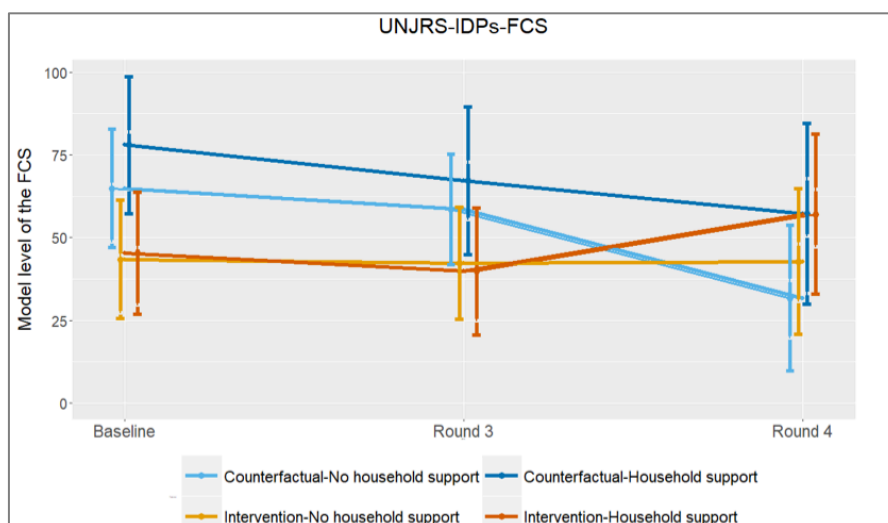
Figure 55: FCS for UNJRS households in IDP settlements

Analysis: While the counterfactuals had higher FCS scores at baseline, intervention households with support exhibit a remarkable positive increase in FCS between rounds 3 & 4. While this follows a trend amongst UNJRS households, especially as correlated with CSI, one may expect less of a significant change in IDP settlements where there are more volatile factors effecting food security.

10.2.8.4. Statistical tables for IDP households (FCS)

Table 162: Descriptive overview of the data set used (UNJRS FCS IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	52.66	45.07	68.12	44.51	52.11	48.73	45.68	49.23
SD outcome variable	26.72	20.41	19.07	21.10	24.05	21.18	25.47	23.76

Table 163: Outcome profile as differences between survey rounds (UNJRS FCS IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	64.87	43.39	77.98	45.29
Change Baseline to Round 3	-6.36	-1.13	-10.71	-5.48
Change Round 3 to round 4	-26.83	0.50	-10.04	17.29
Change Baseline to round 4	-33.20	-0.63	-20.75	11.81

Table 164: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS FCS IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.50	-26.83	27.34	0.12	
Dif-Dif R4-R3	Absolute effect (II)	17.29	-26.83	44.12	0.03	YES

Table 165: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS FCS IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-1.13	-6.36	5.23	0.49	
Dif-Dif R3-BL	Absolute effect (II)	-5.48	-6.36	0.88	0.93	

Table 166: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS FCS IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	-0.63	-33.2	32.56	0.07	
Dif-Dif R4-BL	Absolute effect (II)	11.81	-33.2	45.01	0.02	YES

10.2.8.5. Percentage of expenditures spent on food

While Figure 57 indicates a slight incline, all cohorts had a monotonic increase in percent expenditure on food across the observation period. None of the differences were statistically significant.

Analysis: This neutral trend in food expenditures for UNJRS IDPs follows the same trend for BRCiS IDPs. This may imply, surprisingly, more stable market access/pricing combined with consistent levels of support (even when effected by diversion) or other factors worth additional inquiry. This can be contrasted with that of UJRS rural households where there was a significant increase in percentage of expenditures spent on food.
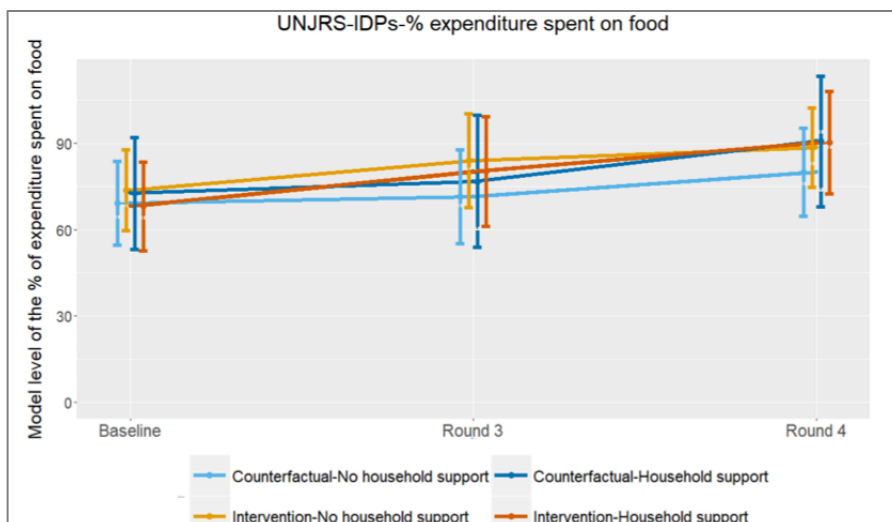
Figure 56: % of expenditures on food for UNJRS households in IDP settlements

10.2.8.6. Statistical tables for IDP households (% of expenditures on food)

Table 167: Descriptive overview of the data set used (UNJRS Food IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	76.08	83.49	79.24	79.62	72.92	80.77	87.81	79.62
SD outcome variable	21.20	19.01	16.09	19.47	20.57	19.31	16.49	19.99

Table 168: Outcome profile as differences between survey rounds (UNJRS Food IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	69.05	73.64	72.54	68.08
Change Baseline to Round 3	2.35	10.28	4.19	12.12
Change Round 3 to round 4	8.55	4.63	13.91	9.99
Change Baseline to round 4	10.90	14.91	18.10	22.11

Table 169: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Food IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	4.63	8.55	-3.92	0.65	
Dif-Dif R4-R3	Absolute effect (II)	9.99	8.55	1.44	0.90	

Table 170: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Food IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	10.28	2.35	7.94	0.39	
Dif-Dif R3-BL	Absolute effect (II)	12.12	2.35	9.77	0.40	

Table 171: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Food IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	14.91	10.9	4.02	0.58	
Dif-Dif R4-BL	Absolute effect (II)	22.11	10.9	11.22	0.26	

10.2.8.7.   Subjective well-being

Both counterfactual cohorts experienced a decline in well-being from baseline to Round 3, followed by a mixed recovery between rounds 3 & 4. This difference (absolute effect) was statistically significant between the baseline and round 4 (p=1.10). None of the other differences were statistically significant.

Analysis: The contrast between statistically significant positive increases in well-being for counterfactuals as compared to less significant but still positive increases for interventions is striking. While very difficult to
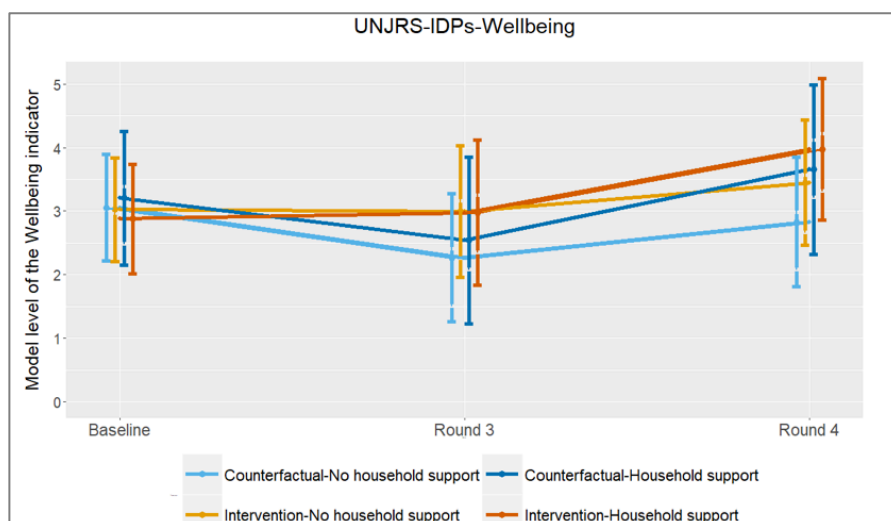
Figure 57: Subjective wellbeing for UNJRS households in IDP settlements

assess, a broader trend suggests correlations between well-being, CSI (increased choices in the face of crisis), and, possibly, longer-term resilience programming. This potential trend is not apparent amongst any of the IDCP cohorts although this is the only time where there has been a statistically significant improvement amongst counterfactuals.

10.2.8.8.   Statistical tables for IDP households (subjective well-being)

Table 172: Descriptive overview of the data set used (UNJRS Well-being IDPs)

Variable	CF No support	Int No support	CF HH support	Int HH support	BL	R3	R4	Total
Mean outcome variable	3.08	3.56	3.35	3.27	3.21	3.06	3.68	3.31
SD outcome variable	1.10	1.20	1.27	1.06	0.99	1.40	1.01	1.15

Table 173: Outcome profile as differences between survey rounds (UNJRS Well-being IDPs)

Round	Counterfactual - No household support	Intervention - No household support	Counterfactual - Household support	Intervention - Household support
Baseline level	3.05	3.02	3.21	2.88
Change Baseline to Round 3	-0.79	-0.03	-0.66	0.10
Change Round 3 to round 4	0.56	0.45	1.11	1
Change Baseline to round 4	-0.22	0.43	0.45	1.10

Table 174: Difference-in-difference test for spill-over, absolute and marginal effects between Round 3 and round 4 (UNJRS Well-being IDPs)

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Spillover effect (I)	0.45	0.56	-0.11	0.80	
Dif-Dif R4-R3	Absolute effect (II)	1	0.56	0.44	0.46	

Table 175: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and Round 3 (UNJRS Well-being IDPs)

Contrast	Hypothesis	Dif R3-BL Int	Dif R3-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R3-BL	Spillover effect (I)	-0.03	-0.79	0.76	0.20	
Dif-Dif R3-BL	Absolute effect (II)	0.10	-0.79	0.88	0.21	

Table 176: Difference-in-difference test for spill-over, absolute and marginal effects between Baseline and round 4 (UNJRS Well-being IDPs)

Contrast	Hypothesis	Dif R4-BL Int	Dif R4-BL CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-BL	Spillover effect (I)	0.43	-0.22	0.65	0.19	
Dif-Dif R4-BL	Absolute effect (II)	1.10	-0.22	1.32	0.03	YES

10.3.   RIMA II Statistical Analysis

Intuitively, resilience means something to most of us, but hitherto has defied a universal definition. This is primarily due to the fact that resilience is dynamic, fluctuating according to a myriad of internal and external factors. In humanitarian action, the promotion of resilience is a way to enable people, households, and communities to escape chronic vulnerabilities. This is one reasons that this evaluation has deployed a combination of tools, from four primary proxy outcome indicators (FCS, CSI, percentage of expenditures on food, and subjective well-being), in-depth community led discussions about how the communities themselves describe how they prepared for, withstood, and recovered from shocks, and, as described in this section, FAO's econometric approach to resilience.

FAO in their 2016 publication on Resilience for Better Targeting and Action[78] offered two approaches to resilience measurement, a direct measure at one point in time (static), and an indirect measure that can look at change over time (dynamic). We include both as part of this evaluation's analysis. The first, includes static analysis the second, in the following section, provides dynamic analysis.

Given that the evaluation used the same survey as used for RIMA, with some additions, to a large extent the same variables were used for this static RIMA analysis, using factor analysis and structural equation modelling which enables a Multiple Indicators Multiple Causes (MIMIC) analysis to be used to estimate the Resilience Capacity Index (RCI). This static direct measure uses a MIMIC statistical model to test a set of resilience components grouped by four resilience pillars as a way of describing multiple resilience outcomes, as described in Figure 58.
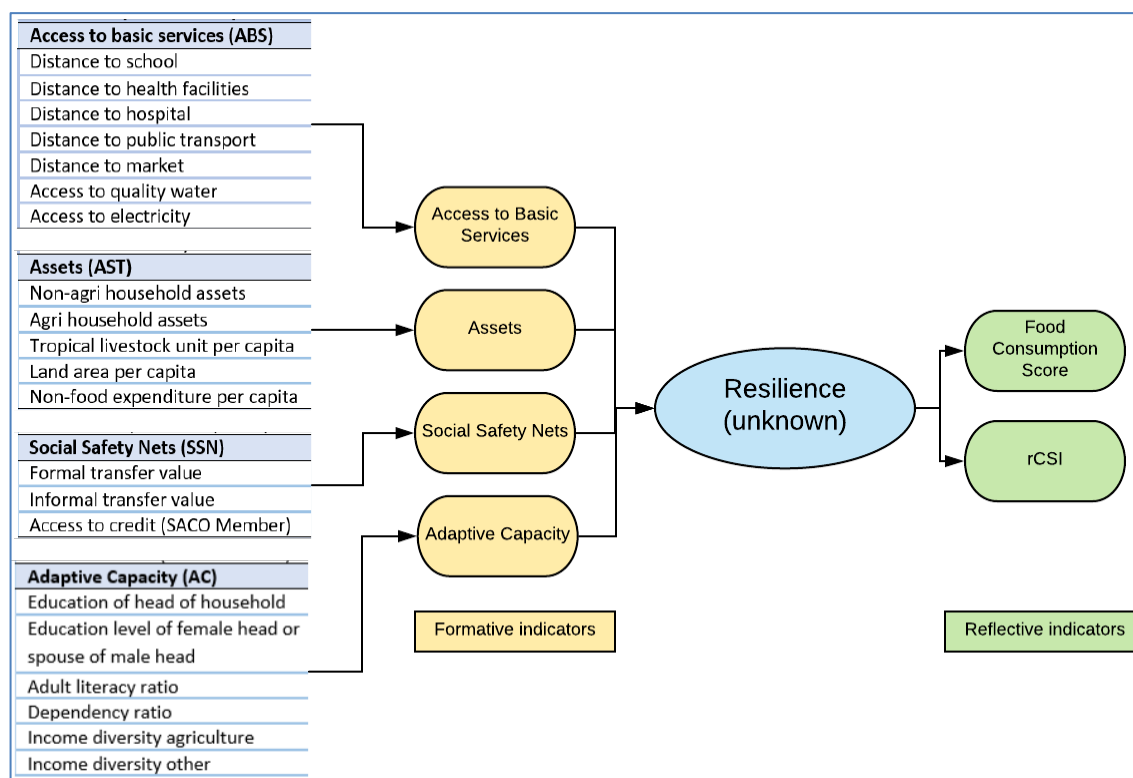
Figure 58: Resilience path diagram

The RIMA II methodology improved on the multi-tiered factor analysis in RIMA I to estimate a latent Resilience Capacity Index (RCI) by using structural equation modelling to include both multiple indicators and multiple causes as described in Figure 58. Also, RIMA-I included food expenditure and shocks in the Income and Food Access pillar but were removed from pillar variables in RIMA II analytical framework, so that the shocks could be treated as exogenous variables in the resilience analysis.

The evaluation baseline data was used to calculate the variables populating the four resilience pillars following the guidelines provided in the RIMA II technical document[1]. The four resilience pillars are:

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[78] Analysing Resilience for Better Targeting and Action: Resilience Index Measurement and Analysis II, FAO 2016, http://www.fao.org/resilience/resources/resources-detail/en/c/416587/ (accessed August 27, 2018).

- Access to Basic Services (ABS);

- Assets (AST);

- Social Safety Nets (SSN);

- Adaptive Capacity (AC) of the Resilience Capacity Index (RCI).

The variables used to infer the four pillars were chosen based on the information available in the dataset and guided by the RIMA II suggestions. As not all surveys contain the same questions and resulting indicators, the RIMA II methodology is seen as a set of guidelines on the range of variables to populate each of these resilience pillars. The details of the calculation of the individual variables or combined factors are presented Figure 58 for each of the four resilience pillars are described in Annex 10.1.

Particular additions for this static RIMA analysis included highest female educational attainment, and tropical livestock units per capita instead of total. Scaling tropical livestock units by the number of household members was inspired by analysis in an ILRI assessing income and asset poverty among pastoralists in Northern Kenya,[79] that found that the tropical livestock index per capita was found to be a more informative measure of asset poverty in a pastoral setting.

As the pillar components in the pillars themselves are arbitrary structures within the direct static RIMA analysis, a case could be made for re-validating the pillars and the pillar components with qualitative work with communities in the areas observed in the impact evaluation panel. This can be seen as analogous to developing the components of a livelihood based coping strategy index,[80] or the development of a Household Economy Analysis (HEA).[81] This has not been undertaken, as time and resources were not available, hence adapting the RIMA II analysis guidelines.

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[79] Samuel Mburu, Alfonso Sousa-Poza, Steffen Otterbach & Andrew Mude; "Income and Asset Poverty among Pastoralists in Northern Kenya, The Journal of Development Studies." DOI; 2016. (10.1080/00220388.2016.1219346)

[80] Dan Maxwell, Ben Watkins, Robin Wheeler and Greg Collins; "The Coping Strategies Index: A tool for rapidly measuring food security and the impact of food aid programmes in emergencies." FAO International Workshop on "Food Security in Complex Emergencies: building policy frameworks to address longer-term programming challenges" Tivoli, 23-25 September 2003.

[81] http://foodeconomy.com/household-economy-analysis-services/

10.3.1.1. RIMA II Statistical Analysis (BRCiS)

The Resilience Capacity Index (RCI) was calculated separately for the BRCiS and UNJRS domains and separately for 3 rounds (Baseline, Round 3 & Round 4). The loadings (contribution) of the different variables used to compress the information in these multiple variables into a single pillar value are shown for the BRCiS analysis in Table 177. Remembering that these pillars pillar components are nested within the 4 resilience pillars, it's important to view the individual pillar component loadings in combination with the contribution of that pillar to the RCI calculated for each of the survey rounds. The resilience pillar loadings are presented in Figure 59.

Resilience pillars	Pillar components	BRCiS Basline	BRCiS Round 3	BRCiS Round 4	Change BL-Round 4
Access to basic services (ABS)	Distance to school (inverse)	-0.03	0.73	0.3	0.33
	Distance to health facilities (inverse)	0.7	0	1.01	0.31
	Distance to hospital (inverse)	1.02	-0.01	0.59	-0.43
	Distance to public transport (inverse)	0.01	0.69	0.01	0
	Distance to market (inverse)	0.03	0.67	0.06	0.03
	Access to quality water (0/1)	-0.05	0	-0.13	-0.08
	Access to electricity (0/1)	0.01	0.01	0.29	0.28
Assets (AST)	Non-agri household assets	0.56	-0.01	0.48	-0.08
	Agri household assets	0.05	-0.21	-0.03	-0.08
	Tropical livestock units per capita	0.35	-0.01	-0.05	-0.4
	Land area per capita	0.02	0.49	0.12	0.1
	Non-food expenditure per capita	0.28	-0.09	0.26	-0.02
Social Safety Nets (SSN)	Formal transfer binary	0.02	0.48	0.44	0.42
	Informal transfer value	0.49	0.47	0.5	0.01
	Sacco membership (Credit access)	0.18	0.01	0	-0.18
Adaptive Capacity (AC)	Education of household head	0.25	-0.19	0.03	-0.22
	Highest female education	-0.06	0.01	0.13	0.19
	Adult literacy ratio	1	0	0.08	-0.92
	Dependency ratio	-0.08	0.13	-0.04	0.04
	Income diversity agriculture	0.01	1	1.02	1.01
	Income diversity other	0.05	0.1	-0.1	-0.15

Table 177: Factor analysis loadings for the 4 resilience pillars for BRCiS cohort at Baseline, Round 3 & Round 4.
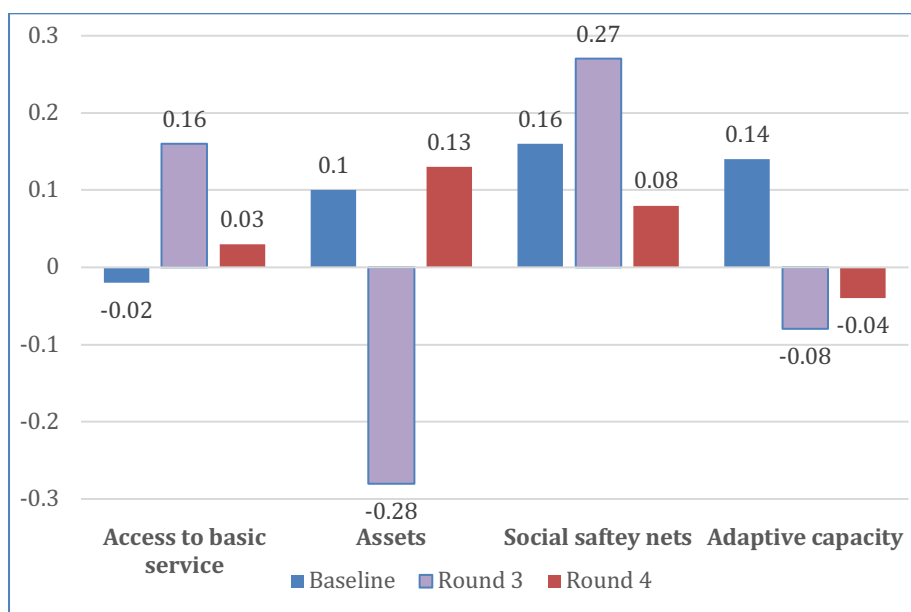
Figure 59: Contribution (loading) of each of the 4 resilience pillars to the Resilience Capacity Index for the BRCiS cohort

Before discussing the results for the BRCiS domain, it must be stressed that each time the RCI is recalculated, the factor analysis creates a new combination of the pillar components, which in themselves creating new combination of the

resilience pillars to produce the RCI estimate which is modelled to explain the variation in FCS and CSI. To paraphrase, everything moves relative to everything else in a Multiple Indicators Multiple Causes model each time it is computed with new observations.

Therefore, comparisons between Baseline, Round 3 & Round 4 should be taken as only indicative of changes in the importance of pillar components and pillars. Changes between one observation and another have a weaker basis for confident statements about relative importance, yet the importance and change of pillar components and pillars themselves are indicative of changing resilience capacities over time.

From Figure 59 it can be seen that the social safety net pillar is the only pillar of the RCI that is consistently positive across all 3 rounds. At baseline, informal transfer was the most important component followed by SACCO membership (Table 177). Formal transfers do not make a significant contribution to the social safety net pillar at baseline. This changes in subsequent observations, with formal transfers assuming equal loadings with informal transfers in both Round 3 & Round 4. Similarly, SACCO becomes unimportant in these 2 latter rounds. So while informal transfers remain an important determinant of the resilience capacity index, once the drought response has started in Round 3 & Round 4, the formal transfer value in the preceding 12 months becomes equally important to contributing to the Safety Net Pillar and thereby the Resilience Capacity Index.

Within the Assets Pillar at baseline both non-agricultural household assets and tropical livestock units per capita contributed to the Assets Pillar value. Yet at Round 3 this change completely with land area important in determining the Assets pillar, but this was a round where the Asset Pillar loading was -0.23 (Figure 59). In Round 4 once again, non-agricultural household assets were important, and the Asset pillar was once again was a positive influence on the RCI (0.13, Figure 59).

Within the Adaptive Capacity pillar, during the period of drought stress, (Rounds 3 & 4) the Adaptive Capacity pillar was heavily influenced by agricultural income diversity, which is not the case at Baseline. This suggests that having greater agricultural income diversity provided greater resilience through the drought period (Table 177).

Remembering that this is a Multiple Indicators Multiple Causes model, the RCI is also influenced by the variation in FCS and CSI. Figure 60 indicates the loadings of the RCI contribution to explaining FCS and CSI. And it shows that the RCI has a greater loading for FCS than CSI, suggesting that it reflects more of the variation in FCS than CSI.
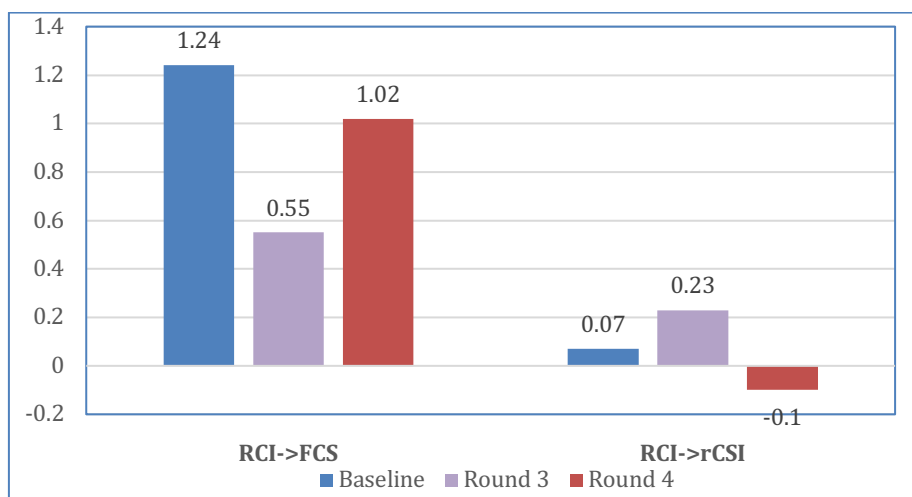
Figure 60: Pillar loadings of the RCI to FCS and CSI for BRCiS cohort.

The values of the resilience capacity index (RCI) are presented in Figure 61. The same Multiple Indicators Multiple Causes model is used for both intervention and cohort for each round, and then the average values for the intervention and counterfactual cohort were calculated to produce the average RCI and associated 95% confidence intervals in Figure 61.
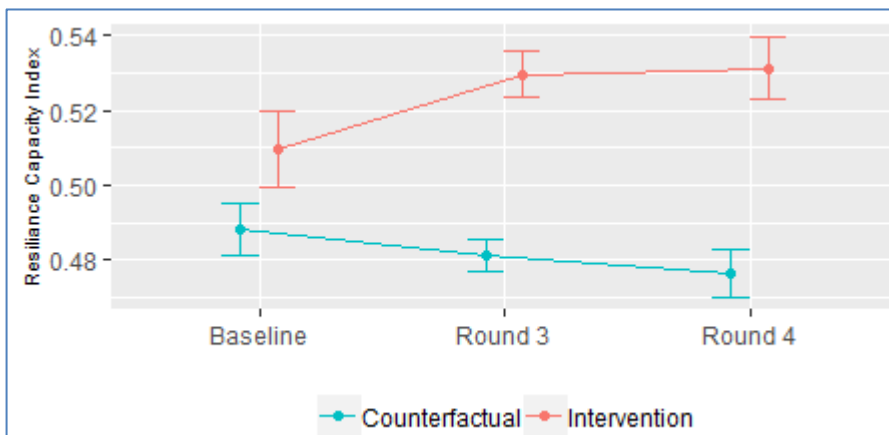
Figure 61: RCI values at Baseline, Rounds 3 & 4 for the BRCiS cohort.

The RCI estimates over the impact evaluation period indicate a consistently better RCI within the intervention households in the counterfactual. But, there are significant caveats to drawing robust conclusions from these RCI trends across time, because different models of being used for each of the 3 survey rounds. Yet within a survey round, a comparison between counterfactual and intervention is more robust as the means are generated from the same model. And in each instance, the average RCI for the intervention is significantly higher than the counterfactual, even at baseline. Although it is worth remembering that the baseline enumeration took place after implementing partners had started to deliver resilience programme activities.

10.3.1.2. RIMA II Statistical Analysis (UNJRS)

The loadings (contribution) of the different variables used to compress the information in these multiple variables into a single pillar value are shown for the UNJRS analysis in Table 177. The resilience pillar loadings are presented in Figure 59.

Resilience pillars	Pillar components	UNJRS Basline	UNJRS Round 3	UNJRS Round 4	Change BL-Round 4	
Access to basic services (ABS)	Distance to school (inverse)	-0.07	0.13	0.08		0.15
	Distance to health facilities (inverse)	0.28	-0.02	0.78	⬆	0.5
	Distance to hospital (inverse)	0.75	0.75	1.01	⬆	0.26
	Distance to public transport (inverse)	0.62	0.97	-0.01	⬇	-0.63
	Distance to market (inverse)	0	0.98	0.06		0.06
	Access to quality water (0/1)	0.22	0.07	-0.28	⬇	-0.5
	Access to electricity (0/1)	0.22	0.01	-0.11	⬇	-0.33
Assets (AST)	Non-agri household assets	0.54	0.32	0.39		-0.15
	Agri household assets	0.14	-0.28	0.04		-0.1
	Tropical livestock units per capita	0.03	0.55	-0.06		-0.09
	Land area per capita	0.05	-0.05	0.11		0.06
	Non-food expenditure per capita	0.37	-0.04	0.45		0.08
Social Safety Nets (SSN)	Formal transfer binary	0	0.35	0.41	⬆	0.41
	Informal transfer value	0.61	0.29	-0.02	⬇	-0.63
	Sacco membership (Credit access)	-0.1	0.04	0.47	⬆	0.57
Adaptive Capacity (AC)	Education of household head	0.3	0.17	0.26		-0.04
	Highest female education	0.03	0.04	0.05		0.02
	Adult literacy ratio	1	1	1		0
	Dependency ratio	-0.01	-0.08	0.05		0.06
	Income diversity agriculture	0.06	0.01	-0.03		-0.09
	Income diversity other	0.18	-0.03	-0.07	⬇	-0.25

Table 178: Factor analysis loadings for the 4 resilience pillars for UNJRS cohort at Baseline, Round 3 & Round 4.
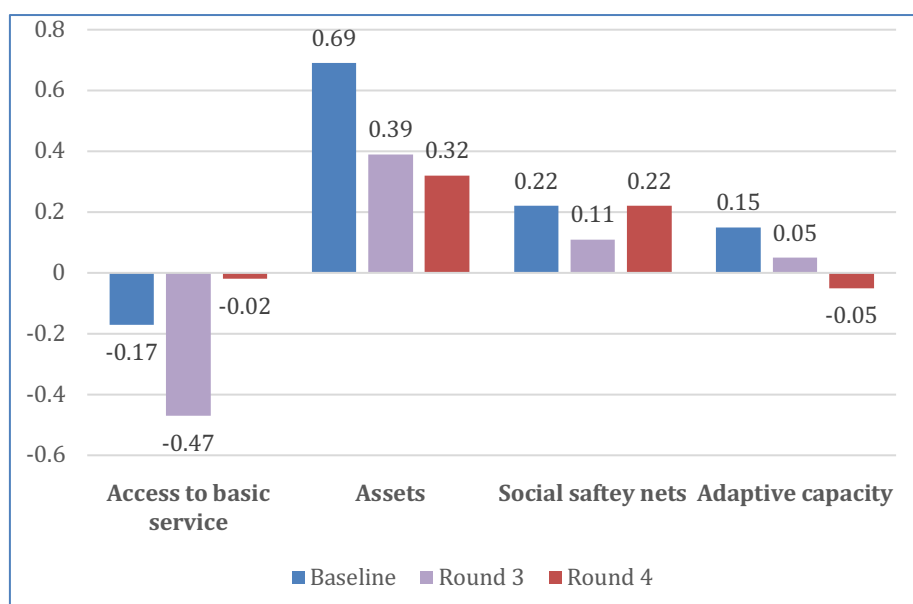
Figure 62: Contribution (loading) of each of the 4 resilience pillars to the Resilience Capacity Index for the UNJRS cohort

Again, it is important to reiterate that each time the RCI is recalculated, the factor analysis creates a new combination of the pillar components, which in themselves creating new combination of the resilience pillars to produce the RCI estimate which is modelled to explain the variation in FCS and CSI. Therefore, comparisons between Baseline, Round 3 & Round 4 should be taken as only indicative of changes in the importance of pillar components and pillars.

The pillar contributions to the RCI calculation in Figure 62 indicate that the Assets and Social Safety Nets pillars had consistent positive loadings across the 3 observations. The Assets loadings decreased from baseline through to Round 4, whereas the Social Safety Net loadings were lower but more consistent.

Within the pillar loadings, the pillar components within the Social Safety Net pillar again showed a similar pattern to BRCiS in that the formal transfer value was not important at baseline, but played an increasingly large contribution to the Social Safety Net pillar in Rounds 3 and 4. The UNJRS data departs from BRCiS in the pillar loading of the informal transfer value, which was consistently large in the BRCiS cohort, but decreases from the baseline value where it dominates the pillar loadings, to Round 4 where it is hardly making a contribution. SACCO membership (a proxy for credit access) became increasingly important over the observations and dominated the Round 4 Social Safety Net pillar loadings. This contrast up with the BRCiS domain where SACCO membership did not contribute significantly to the Social Safety Net pillar.

Within the Asset pillar, non-agricultural household assets was a consistent contributor to the Asset pillar value, but in only in Round 3 did the tropical livestock units per capita pillar make a significant contribution.
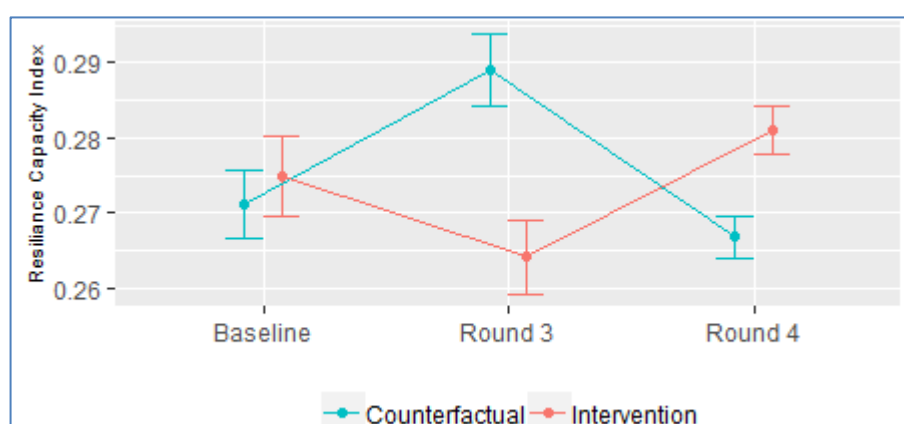
Figure 63: RCI values at Baseline, Rounds 3 & 4 for the UNJRS cohort.

The average values and associated 95% confidence intervals of the Resilience Capacity Index (RCI) for the UNJRS cohort are presented in Figure 63. Overall the resilience scores are lower for both cohorts across all 3 observations than in the BRCiS domain (Figure 61 & Figure 63). There is no significant difference between the counterfactual and intervention at baseline, Round 3 sees an improvement in Resilience Capacity Index amongst the counterfactual households only to decline in Rround 4, resulting in a net decline in RCI over the observation period. Whereas the intervention cohort experienced a decline in Rounds 3 but recovered and surpassed the baseline value at Round 4, although not significantly so.

10.3.1.3.   Static RIMA Summary

The Resilience Capacity Index calculation using the Multiple Indicator Multiple Causes (MIMIC) models utilises 21 variables or indices on household and household member characteristics, and in the non-agricultural asset index 18 items are used in the factor analysis.

10.3.1.4.   Caveats to interpreting RCI changes

The variables contributing to the various pillars in the RCI calculation can be thought of as somewhat analogous to covariates in the traditional regression analysis. In an impact evaluation, often covariates are used to account for differences in household characteristics at baseline, but then held constant when analysing changes in outcome indicators across the impact evaluation period. The RIMA analysis above has not done that. The pillar component variables have been recalculated at Round 4 to generate a new RCI based upon Round 4 values of the pillar components. We can expect that some of the variables in Table 177 are exogenous (not affected by the humanitarian interventions) to the interventions, i.e. distance to school and other basic services, whereas formal transfer value and other possibly other productive assets such as tropical livestock units, land area or agricultural assets may be endogenous, i.e. they are affected by the implementing partner's humanitarian interventions.

Therefore, when comparing the differences between the baseline and Round 4 RCI values is confounded by these changes in pillar component values. The differences between the intervention and counterfactual within either the rural or urban cohorts are valid, because they are based upon the same estimated RCI.

The formal transfer binary value contributed significantly to the Social Safety Net pillar after the baseline in both BRCiS & UNJRS domains. The informal transfer value contributed significantly to the same pillar in all 3 rounds for the BRCiS cohort, but only in the first 2 rounds in the UNJRS cohort. There was only weak evidence that SACCO membership was a significant contributor to the Social Safety Net. In summary this provides empirical evidence that both formal and informal transfers were important for mitigating the worst impacts of the 2017 drought.

10.4. Dynamic Analysis (Multiple Indicators Multiple Causes)

As repeatedly stressed in the RCI static analysis narrative, trends over time in the RCI are problematic because a new Multiple Indicators Multiple Causes (MIMIC) model is recalculated from each survey round's data. This makes direct comparisons over time difficult to interpret with confidence.

Another approach at analysing resilience with panel data, is to follow the dynamic analysis recommendation in the FAO RIMA II publication.[82] That is to divide the sample into those households that have recovered or improved on their baseline values FCS and CSI by the Round 4 observation. When the sample population is divided into these 2 cohorts, of recovered and not recovered groups for FCS and CSI by BRCiS and UNJRS domains and cohorts, the prevalence of households that have recovered their baseline FCS score by Round 4 was much lower than the prevalence of households that have recovered their CSI over the same period (Table 179).

Domain	Cohort	FCS			rCSI		
		Not-recovered	Recovered	% Recovered	Not-recovered	Recovered	% Recovered
BRCiS	Intervention	310	124	28.6%	161	270	62.6%
BRCiS	CF	474	152	24.3%	222	396	64.1%
UNJRS	Intervention	315	154	32.8%	173	346	66.7%
UNJRS	CF	443	161	26.7%	254	346	57.7%

Table 179: Frequencies and prevalence of households that had recovered or not recovered their baseline FCS or CSI scores by domain

This is another data visualisation of the bulk of the sample (as the rural cohort dominates the overall sample) already presented earlier in the report, (Figures 12, 13, 19 & 20). They are presented again in in the figure below for comparison with the prevalence of FCS and RCI recovery in Figure 64.
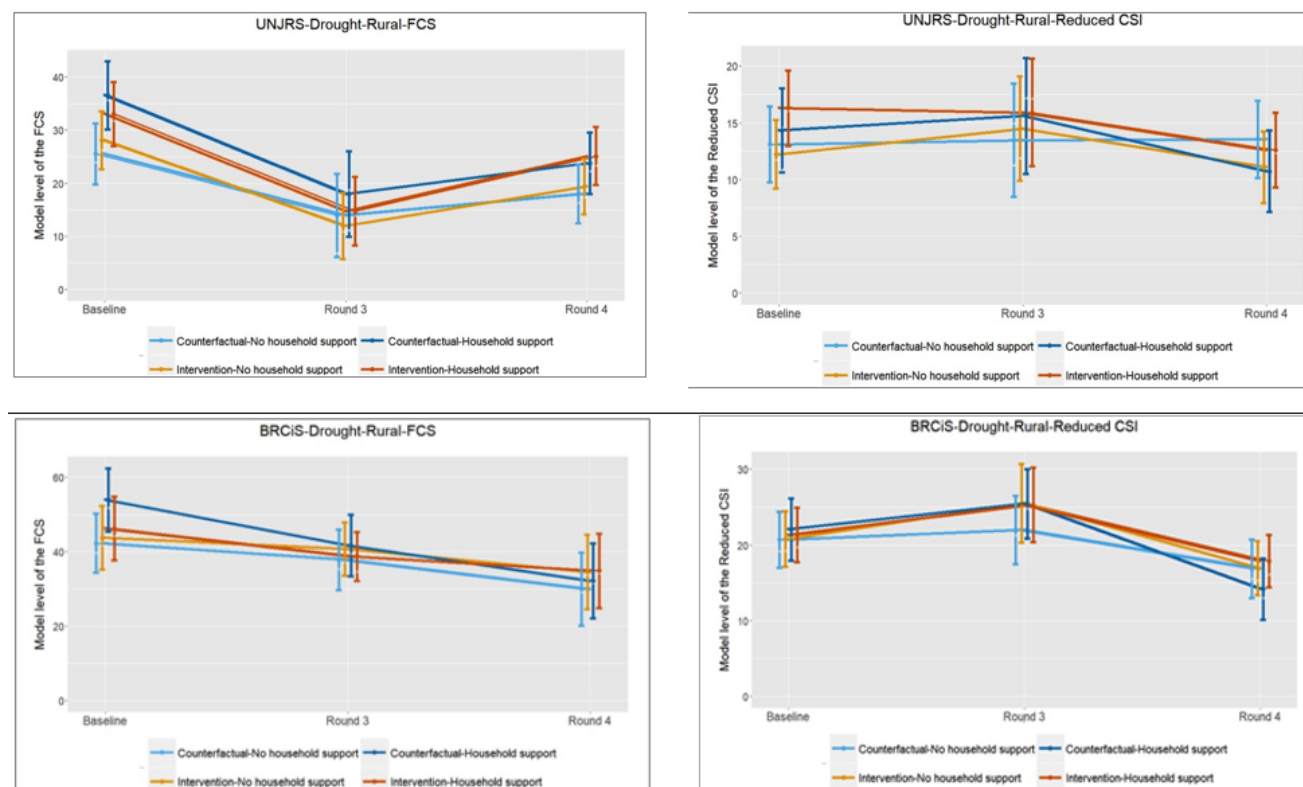
Figure 64 BRCiS/UNJRS SES & CSI Rural trends (intervention & counterfactual)

Even though BRCiS FCS scores show no sign of recovering across the 3 observations, for all observations the average FCS score for all BRCiS cohorts were greater than all the UNJRS cohorts, that do show signs of recovery between Round 3

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[82] Analysing Resilience for Better Targeting and Action: Resilience Index Measurement and Analysis II, FAO 2016, http://www.fao.org/resilience/resources/resources-detail/en/c/416587/ (accessed August 27, 2018).

and Round 4. In both the BRCiS and the UNJRS cohorts, CSI scores at Round 4 were approximately the same or even less than the Baseline values. And for CSI outcome, the relative rank of BRCiS /UNJRS is reversed, with UNJRS exhibiting lower (better) CSI scores throughout the impact evaluation, compared to the BRCiS cohorts.

Once the BRCiS and UNJRS cohorts have been divided into recovered and not recovered groups with respect to FCS and CSI, probit regression analysis can be applied to look at the determinants of recovery using the RIMA pillar components as explanatory variables. And then in a separate subsequent probit analysis, look at both covariate and idiosyncratic shocks that are most strongly associated with non-recovery in either FCS or CSI.   For the continuous variables, the baseline-round 4 change was scaled to a proportion of the baseline value. Binary variables were left on transformed. The inverse distance values remained as Round 4, as small changes from respondent recall not reflecting actual change created unwanted noise in the model.

10.4.1. Dynamic Analysis: Multiple Indicators Multiple Causes (UNJRS)

10.4.1.1.   RIMA pillar determinants

Table 180 presents the results of the probit analysis using the RIMA pillar variable for the UNJRS domain. Those explanatory variables that have a significance of ≤ probability of 0.05 (1/20 probability that this did not occur because of unusual value when there was no explanatory power) are highlighted in pink, whereas those with ≤ probability of 0.10 & >0.05 are highlighted in amber. Included in the explanatory variables are the binary for an intervention household. As can be seen from Table 180, this is significant for CSI in the UNJRS cohorts. This is another visualisation of the top right graph in Figure 64, where visually the counterfactual households with no support shown no change in CSI. For FCS, the intervention/counterfactual cohort binary was not significant, but increased land area per capita, expenditure on non-food and prevalence of formal transfer, increased other income diversity and adult literacy ratio change were significantly associated with increased likelihood of FCS recovery.

UNJRS FCS & rCSI **Explanatory variables- Change R1-R4**	**FCS Estimate**		**Pr(>|z|)**	**rCSI Estimate**		**Pr(>|z|)**
(Intercept)		-0.734	0.0000		0.102	0.207405
Distance to school (inverse)		-0.223	0.3569		0.361	0.1236
Distance to health facilities (invers		0.077	0.8051		-0.382	0.2150
Distance to hospital (inverse)		0.713	0.0256		-0.138	0.6596
Distance to public transport (invers		-0.414	0.2336		-0.367	0.2826
Distance to market (inverse)		0.294	0.3859		0.328	0.3262
Access to quality water (0/1)		-0.064	0.5804		0.053	0.6287
Access to electricity (0/1)		0.037	0.9108		0.327	0.3336
Non-agri household assets		-0.039	0.0125		-0.003	0.2543
Agri household assets		-0.062	0.0331		-0.051	0.0943
Tropical livestock unit per capita		0.012	0.2485		-0.015	0.1762
Land area per capita		0.141	0.0010		-0.103	0.0050
Non-food expenditure per capita		0.116	0.0149		0.042	0.3549
Formal transfer - (0/1)		0.206	0.0470		0.033	0.7257
SaccoMembership.change		-0.133	0.3772		-0.330	0.0213
Informal transfer value		0.001	0.2701		-0.001	0.3166
Education of head of household he		0.003	0.8443		0.019	0.1560
Highest female educational level		-0.005	0.7520		0.014	0.3797
Adult literacy ratio		0.225	0.0325		-0.030	0.7606
Dependency ratio (inverse)		-0.376	0.0604		0.215	0.2647
Income diversity agriculture		0.157	0.0579		-0.078	0.3143
Income diversity other		0.351	0.0012		0.085	0.3755
int_countfactual binary		0.085	0.3712		0.243	0.0060

Table 180 Determinants of recovery in FCS and CSI for UNJRS domain

10.4.1.2.   Shock determinants

The probit analysis was repeated, this time the explanatory variables were shocks, either covariate or idiosyncratic. And the binary for recovery is reversed so that the estimates are those contributing to non-recovery or vulnerability. In this way we can see which shocks are having a biggest inconsistent impact on household resilience, as measured by non-recovery of baseline FCS or CSI.

UNJRS FCS & rCSI					
Explanatory variables- Change R1-R4	**FCS Estimate**	**Pr(>|z|)**	**rCSI Estimate**		**Pr(>|z|)**
Drought/water shortage	-0.626	0.0001	0.281		0.0347
Crop disease, failure or losses	0.389	0.0005	0.242		0.0180
Unusual livestock death	-0.041	0.6759	0.258		0.0060
Business failure	-0.176	0.2815	0.374		0.0248
Job loss or salary	-0.201	0.1627	0.165		0.2455
High food prices	-0.482	0.0000	0.306		0.0006
Inability to pay loan	0.227	0.0169	0.123		0.1695
Accident or illness	0.003	0.9898	0.099		0.6119
Death of main earner	-0.147	0.5939	0.041		0.8762
Loss of land	3.926	0.9692	0.299		0.7378
Experience clashes	0.739	0.2278	0.325		0.4745
Experienced displacement	0.327	0.2498	0.106		0.6788
Communal or political conflict	-0.200	0.5692	0.331		0.3240
int_countfactual binary	-0.103	0.2519	0.185		0.0304

Table 181 Shock determinants of non-recovery in FCS and CSI for UNJRS domain

For the FCS shock non-recovery model, those shocks with positive estimates that significantly contributed to the likelihood of non-recovery included inability to pay a loan and crop disease, failure or loss (Table 181). The negative significance of experiencing drought could be interpreted as those not experiencing drought were more recover their baseline FCS score at Round 4.

On the other hand, CSI non-recovery was significantly associated with unusual livestock death, drought and high food prices. There is also some evidence from the intervention-counterfactual binary, that been part of the intervention cohort reduced the probability of that household experiencing not recovering or improving on their baseline CSI.

10.4.2. Dynamic Analysis: Multiple Indicators Multiple Causes (BRCiS)

10.4.2.1. RIMA pillar determinants

Table 182 presents the results of the probit analysis using the RIMA pillar variable for the BRCiS domain. There is only weak evidence (prob 0.0813) that the intervention cohort was more likely to recover their baseline FCS score, and no evidence that there was any difference in the CSI performance between intervention and counterfactual. The other significant predictors of recovery included land area per capita non-food expenditure per capita and adult literacy ratio.

There is only one significant determinant of CSI recovery, and this was the change in dependency ratio (inverse). A negative change represents a reduction in the number of dependent household members and can be seen as a coping strategy in itself. But this particular coping strategies not included in the reduced CSI coping strategy array, but is included in some of the Somalia livelihood zone specific coping strategies. Hence it could represent family sending away dependent members, resulting in them having to resort to fewer and less often of the following are CSI coping strategies:

1. Eating less-preferred foods

2. Borrowing food/money from friends and relatives

3. Limiting portions at mealtime

4. Limiting adult intake

5. Reducing the number of meals per day

BRCiS FCS & rCSI

Explanatory variables- Change R1-R4	FCS Estimate	Pr(>|z|)	rCSI Estimate	Std. Error	z value	Pr(>|z|)
Distance to school (inverse)	0.025	0.9451	0.652	0.365	-1.78	0.0743
Distance to health facilities (inverse)	0.033	0.9377	-0.385	0.432	0.89	0.3732
Distance to hospital (inverse)	-0.330	0.4348	-0.117	0.412	0.28	0.7766
Distance to public transport (inverse)	-0.265	0.2314	-0.128	0.204	0.63	0.5292
Distance to market (inverse)	0.923	0.0042	0.59	0.339	-1.74	0.0822
Access to quality water (0/1)	0.080	0.5369	0.079	0.120	-0.66	0.5101
Access to electricity (0/1)	0.440	0.6149	-4.384	103.840	0.04	0.9663
Non-agri household assets	-0.002	0.7856	-0.007	0.006	1.27	0.2030
Agri household assets	0.058	0.2565	0.013	0.050	-0.27	0.7903
Tropical livestock unit per capita	0.003	0.3086	-0.003	0.003	0.97	0.3316
Land area per capita	0.256	0.0000	-0.006	0.040	0.14	0.8853
Non-food expenditure per capita	0.081	0.0338	0.093	0.050	-1.86	0.0634
Formal transfer - (0/1)	0.177	0.1172	0.018	0.104	-0.17	0.8641
SaccoMembership.change	-0.398	0.0825	-0.097	0.211	0.46	0.6438
Informal transfer value	0.002	0.0787	-0.002	0.001	1.65	0.0986
Education of head of household head	0.021	0.2826	0.009	0.018	-0.53	0.5982
Highest female educational level	0.019	0.3656	0.009	0.019	-0.47	0.6418
Adult literacy ratio	0.245	0.0401	0.036	0.111	-0.33	0.7429
Dependency ratio (inverse)	-0.101	0.6377	-0.729	0.208	3.50	0.0005
Income diversity agriculture	0.120	0.1568	0.065	0.079	-0.83	0.4082
Income diversity other	0.021	0.8785	-0.132	0.127	1.04	0.2996
int_countfactual binary	0.199	0.0813	-0.029	0.107	0.27	0.7874

Table 182 Determinants of recovery in FCS and CSI for BRCiS domain

10.4.2.2. Shock determinants

BRCiS FCS & rCSI

Explanatory variables- Change R1-R4	FCS Estimate	Pr(>|z|)	rCSI Estimate	Pr(>|z|)
Drought/water shortage	-0.051	0.6914	0.206	0.1092
Crop disease, failure or losses	0.286	0.0298	0.020	0.8631
Unusual livestock death	0.166	0.1337	0.268	0.0106
Business failure	0.557	0.0342	0.070	0.7274
Job loss or salary	0.101	0.6953	0.105	0.6408
High food prices	-0.064	0.5887	0.289	0.0074
Inability to pay loan	0.231	0.0325	-0.038	0.7138
Accident or illness	0.306	0.0692	0.233	0.1056
Death of main earner	0.497	0.2279	-0.624	0.0754
Loss of land	3.923	0.9697	0.259	0.7719
Experience clashes	0.306	0.6090	0.171	0.7143
Experienced displacement	-0.022	0.9514	-0.250	0.4375
Communal or political conflict	0.494	0.4031	1.156	0.0196
int_countfactual binary	-0.164	0.0947	0.075	0.4293

Table 183 Shock determinants of non-recovery in FCS and CSI for BRCiS domain

For the BRCiS FCS shock non-recovery model, those shocks with positive estimates that significantly contributed to the likelihood of non-recovery included inability to pay a loan, crop disease, failure or loss and business failure (Table 183). Whereas failure to recover CSI was significantly associated with high food prices, unusual livestock death and communal or political conflict.

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10.4.2.3.   Summary of determinants of FCS & CSI

While the determinants analysis highlights several expected explanatory variables, many of them suggest that resilience is enhanced by having fewer dependent household members, larger land area and more diversified income sources, among others. And of course, not having been exposed to significant shocks helps enhance resilience (as measured by recovery of baseline FCS & CSI). This analysis probably lends itself to few if any actionable insights for future programs unfortunately.

Maybe this suggests that safety nets for the chronically poor, are the most reliable way to ensure some sort of household resilience in the future. For example, the Hunger Safety Net Program in Northern Kenya identified the poorest 100,000 households out of a total universe of 360,000 households in the 4 poorest pastoral dominated northern counties and provides them with a monthly unconditional cash stipend. Those households just above the 100,000 cut-off were included times of drought and other covariate shocks. Therefore, maybe the IRA funded humanitarian largely cash-based response could evolve into a social safety net programme for the poorest households. One of the challenges in implementing such a program with confidence in Somalia would be the lack of a national income and expenditure household survey on which to base the proxy well-being models on.

10.5.   Timing of Formal Transfers in Intervention Households

In the analysis hitherto, there has been a separation of households that received direct formal assistance from those didn't receive it in both the intervention and counterfactual cohorts. Panel respondents were also whether the formal assistance received when it was most needed or not?   With follow-up questions on whether it was too early or too late.

An analysis of the FCS in CSI trends for 2 intervention cohorts, those that received formal assistance and said it came when needed most, and those that received formal assistance and said it did not come when most needed.

The analysis of the timing of formal transfers differs from the preceding main analysis in the following aspects:

1. The analysis of the timing of formal transfers compares **only households *within* the intervention group** of communities that said they received direct BRCiS/UNJRS support. It includes both rural and urban households. Because of the relatively small numbers in these 2 cohorts, BRCiS and UNJRS domains were analysed together.
2. The counterfactual group and those in the intervention group who did not receive household-level formal support are not used in this analysis. Since the underlying evaluation question is "Does the timing of UNJRS/BRCiS-support make a difference in outcome variables?"
3. Households that received support when not when most needed are the comparison group - referred to as Counterfactual in the graphs and tables, whereas those claiming to have received formal assistance when they most needed are referred to as Intervention in the graphs and tables.
4. Because of the small numbers of households receiving formal transfer in the 2 categories of when needed and not when needed, the BRCiS & UNJRS domains were combined to ensure that the sample size was still sufficient for a meaningful analysis.

The treatment variable:

The treatment variable in this analysis splits households who have received at least one formal transfer in the previous 12 months into two treatment groups:

1. Households in the intervention group that received formal transfers, but said they did not receive them when they most needed them during the previous 12 months observation period (named COUNTERFACTUAL throughout this report)
2. Households in the intervention group that say they received formal transfers when they most needed them during the previous 12 months observation period (named INTERVENTION throughout this report)

These are used to develop **household level outcome profiles** for each outcome variable, indicating how, on average and while controlling for baseline-level covariates, households developed in the outcome variables(i.e. FCS & CSI) for each of these two treatment groups.

Reference period for defining whether the formal transfer came when most needed or not.

An interview consists of one household in one survey round. This means that households can change the groups with each observation. Therefore, households can move between the following groups:

1. Received formal transfer when needed in previous 12 months
2. Received formal transfer not when needed in previous 12 months
3. Did not receive any formal transfer in previous 12 months

To clarify, a household can have received formal transfers when they most needed them in the baseline interview, but not any of the 2 subsequent observations.

The question on the receipt of formal transfers within the previous 12 months included the following categories:

1. Food Aid	2. Seeds and Tools
3. Food for Work Project	4. Credit
5. Cash for Work Project	6. Livestock
7. Faffa	8. Other
9. Unconditional Cash	

10.5.1.   Timing of Formal Transfers (Reduced CSI)

The descriptive overview of the data set in Table 184 indicates all of the households that were used across the analysis for the Counterfactual (received formal assistant but not at when most needed) and Intervention (received formal assistant when most needed) groups. Given that a household can toggle between these groups or drop out of them completely, double counting of households across these 2 columns is possible. The same applies for the columns BL, Round 3 & Round 4. For example, in the 2nd row, the values for BL, Round 3 & Round 4 sum to 713 households, but the number of unique households that (not double counted) that ever contributed to the analysis is just 581 (in the final column).

Variable	Counterfactual	Intervention	BL	R3	R4	Total
n interviews	273	440	329	173	211	713
n households	259	374	329	173	211	581
n communities	104	117	102	64	71	137
n clusters	27	25	24	20	22	30
Mean outcome variable	15.76	15.54	15.74	18.73	12.90	15.63
SD outcome variable	10.64	9.25	9.07	12.79	6.91	9.80

Table 184: All areas - Reduced CSI: Descriptive overview of the data set used in the model

Outcome profile as differences between survey rounds:

Round	Counterfactual	Intervention
Baseline level	11.34	11.21
Change baseline to round 3	1.01	6.32
Change round 3 to round 4	-1.73	-8.36
Change baseline to round 4	-0.72	-2.04

Table 185: All Areas-Reduced CSI: Outcome profile

Household-level average estimates of the outcome variable for households with different treatment profiles while keeping all covariates constant:
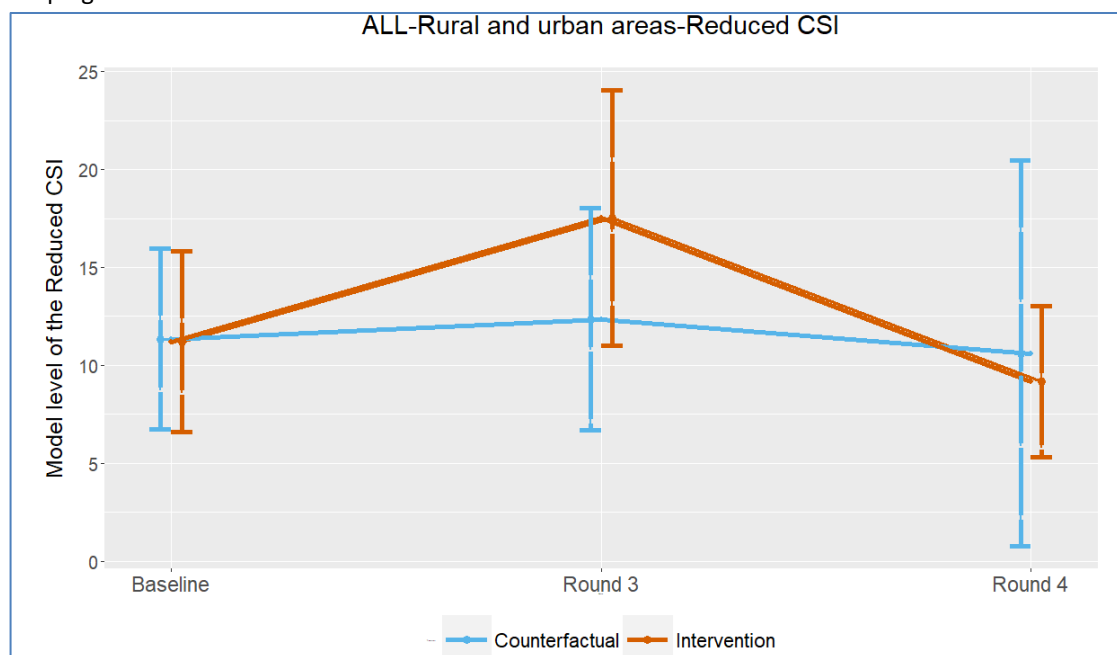
Figure 65: All Areas-Reduced CSI: Outcome profile

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Treatment effect	-8.36	-1.73	-6.62	0.24	

Dif-Dif R3-BL	Treatment effect	6.32	1.01	5.31	0.13	
Dif-Dif R4-BL	Treatment effect	-2.04	-0.72	-1.32	0.78	

Table 186: All areas-Reduced CSI: Difference-in-difference tests R4-R3, R3-BL & R4-BL

10.5.1.1. Summary of timing of formal assistance on CSI

The greatest difference between these 2 groups was at round 3, and even then, the CSI value was not significantly different (prob = 0.13, Table 186). Remembering that a higher RCA score indicates greater use of the 5 coping strategies contributing to the CSI index, there is no evidence at all that receiving formal assistance at the time when most needed results in any reduction in the CSI value.

10.5.2. Timing of Formal Transfers (FCS)

Household-level average development of the outcome variable FCS for households indicating whether the formal assistance they received was when they most needed it or not while keeping all covariates constant is presented in Figure 66 with the corresponding difference in difference calculation presented in Table 187.

Contrast	Hypothesis	Dif R4-R3 Int	Dif R4-R3 CF	Dif-Dif Int-CF	Dif-Dif p-value	Dif-Dif Significance
Dif-Dif R4-R3	Treatment effect	-10.82	9.38	-20.21	0.11	
Dif-Dif R3-BL	Treatment effect	-8.58	-10.76	2.17	0.75	
Dif-Dif R4-BL	Treatment effect	-19.41	-1.37	-18.04	0.13	

Table 187: All areas-FCS: Difference-in-difference tests R4-R3, R3-BL & R4-BL
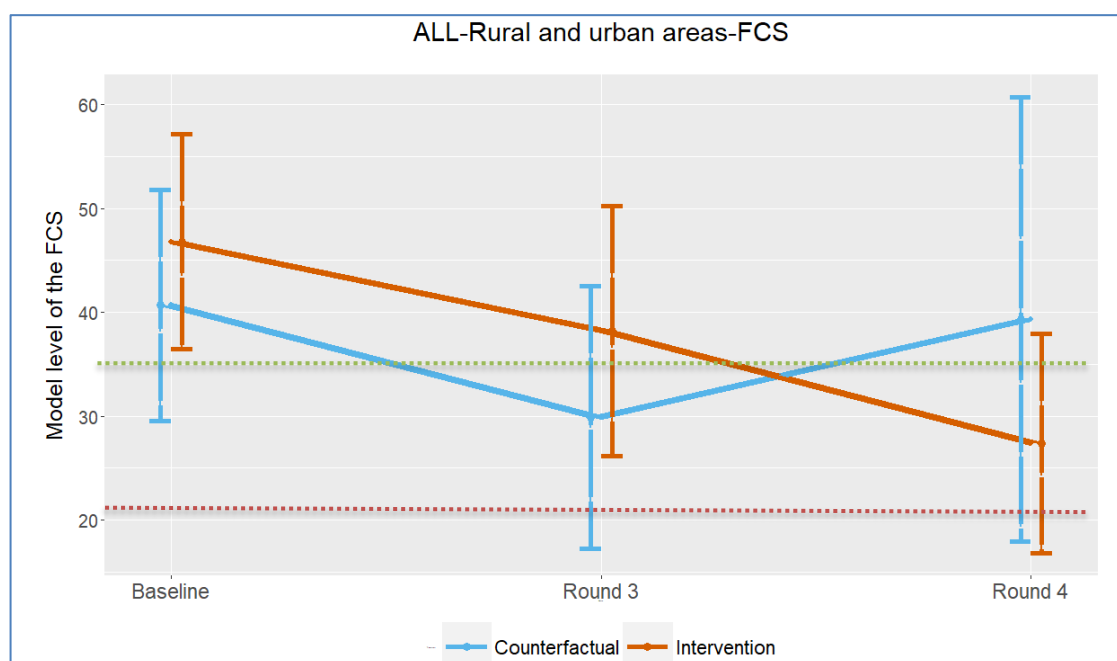
Figure 66: All areas-FCS: Outcome profile

10.5.2.1. Summary of timing of formal assistance on FCS

Once again there is mixed nonsignificant evidence that providing households formal assistance when they most needed resulted in a higher FCS score compared to those households also receiving formal assistance at a time when they claim it was not most needed. At round 3, households receiving formal system with most needed recorded on average higher FCS, but not significantly so, but this order is reversed by Round 4.

10.5.3. Percentage of expenditure spent on food and subjective well-being

Household-level average development of the percent expenditure on food for households with different treatment profiles while keeping all covariates constant is presented in Figure 67 & Figure 68.
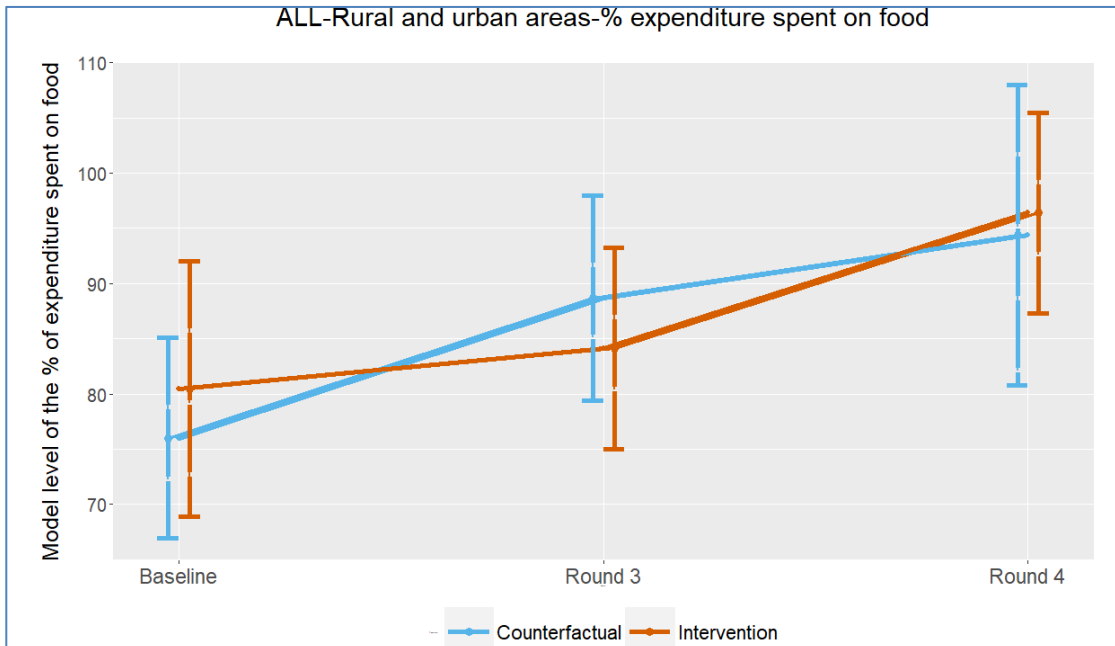
Figure 67: All areas-Percentage of expenditure spent on food: Outcome profile
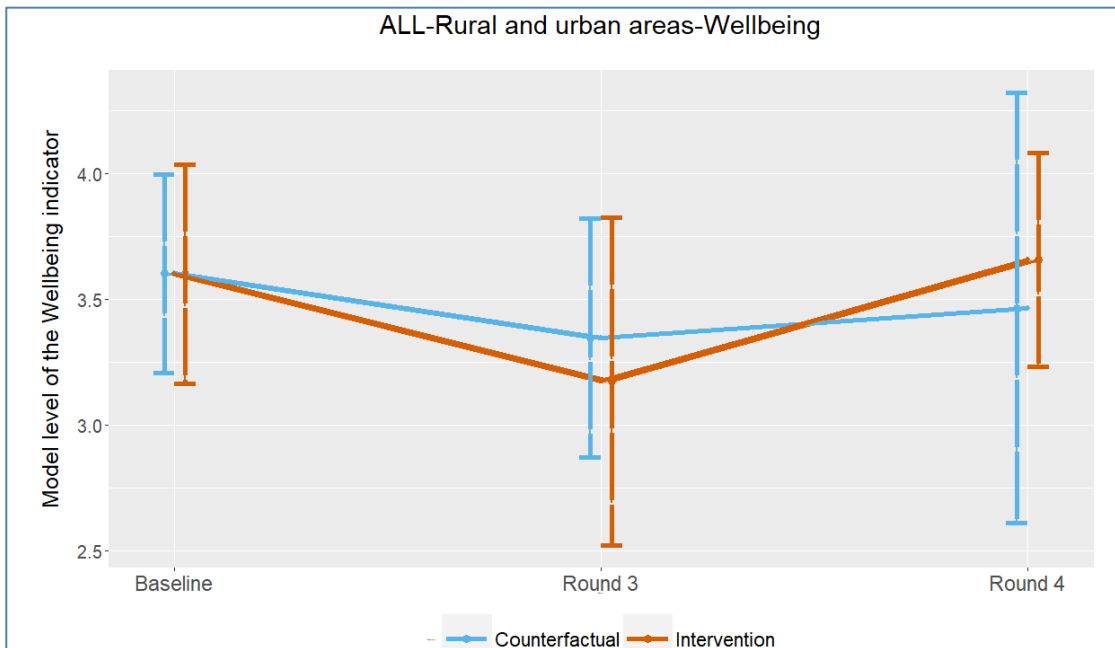
Figure 68: All areas-Subjective wellbeing: Outcome profile

As seen in both Figure 67 & Figure 68, there is no evidence that there is a significant improvement in the outcome indicators of % expenditure on food and subjective well-being for those that indicated that they receive their formal assistance when most needed when compared to those that also received formal assistance but not when most needed. This is further underlined by the fact that none of the difference in difference analysis yielded a significant treatment effect in any of the 3 comparisons (BL-R3, BL-R4 & R3-R4).

10.5.4. Summary of timing of formal assistance

Visually and statistically there was even less difference between the 3 observations of the 2 outcomes, % expenditure on food and subjective well-being when comparing households receiving formal assistance when most needed with those that received it when not most needed.

Based upon the way this question was enumerated in the survey instrument, there is no evidence that improving the timing of formal assistance results in any consistent better performance compared to those households received formal assistance with not most needed. Perhaps the question when most needed was vague and when respondents indicated it was not when most needed, it might not necessarily have always been later than ideal.

10.6.   Covariate & RIMA Pillar Definitions

The RIMA II analysis uses a set of variables to both generate the resilience capacity index and to use as covariates in the dynamic regression analysis. These variables are allocated to 1 of 4 resilience pillars:

- Access to Basic Services (ABS);
- Assets (AST);
- Social Safety Nets (SSN);
- Adaptive Capacity (AC) of the Resilience Capacity Index (RCI).

As not all surveys contain the same questions and resulting indicators, the RIMA II methodology contains guidelines on what variables to populate each of these resilience pillars with. The details of the calculation of the individual variables or combined factors are presented below for each of the 4 resilience pillars.

10.6.1.   Access to Basic Services (ABS)

Proximity to services (The inverse of the time taken to walk one way to the following basic services):

- School;
- Health facilities;
- Hospital;
- Public transport;
- Market.

The inverse of the time in minutes to walk to each of these facilities+1 (the "+1" is to avoid infinite values when the distance is zero) and was used to avoid undue influence from large outlier values. Rather than remove or impute values for these outliers, taking the inverse prevented these few extreme values from being the major determinant of the factor analysis results.

10.6.2.   Electricity & water access

Two binary variables were created to indicate whether the household access to electricity or water:

1. Has access to quality water = 1 if primary water source = Household connection, Standpipe (Kiosk/Public tap/Taps connected to a storage tank), Protected swallow well (covered with hand pump/motorized pump) or bottled water

2. Has access to electricity = 1 if the household had any payment for electricity in the monthly expenditure aggregate.

10.6.3. Agricultural and non-agricultural assets

Two household asset variables (agricultural and non-agricultural) were constructed from factor analysis of the following binary agricultural and non-agricultural asset ownership (own / does not own), with the contribution of each of the individual household asset to the household asset index using factor analysis for each of the 3 observations for both the BRCiS and UNJRS cohorts.

Household assets components	BRCIS			UNJRS		
	Baseline	Round 3	Round 4	Baseline	Round 3	Round 4
Non-agricultural assets						
Motor vehicle	0.02	-0.03	0.05	-0.02	0.09	0.08
Motor cycle	-0.04	0	0.11	-	-	0.01
Bicycle	-0.02	0.03	-0.06	-0.02	-	-0.03
Television	-0.01	0.1	0	0.01	0.08	0.01
Radio	0.21	0.14	-0.15	0.39	0.13	-0.15
Mobile phone	0.12	0.81	0.47	0.36	0.47	0.47
Bed	0.7	-0.2	-0.09	0.84	0.12	0.06
Blanket	0.44	0.73	0.04	-0.13	0.57	0.41
Mattress	0.67	0.09	0.11	0.69	0.3	0.44
Mosquito net	0.33	0.18	0.34	0.51	0.66	0.43
Cooking pots	0.16	0.09	0.59	0.59	0.69	0.79
Grinding stone	-0.06	-0.08	0.14	0.04	-0.03	0.04
Water jug	0.34	0.22	0.15	0.04	0.12	0.27
Table	0.52	0.33	0	0.32	-0.04	-0.03
Lamp	0.51	0.02	-0.13	0.37	0.14	-0.13
Chairs	0.38	0.01	0.37	-0.03	-0.08	0.13
Jerry can	-0.09	-0.03	0.68	0.43	0.66	0.65
Jewellery	0.07	-	-	-0.04	0.18	0.16
Agricultural assets						
Carts	0.32	-0.11	-0.1	0.41	-0.1	1
Tractor	0.32	0.11	0.1	0.41	0.1	-

In urban stratum, the agricultural assets factor is just the variable "own carts", as nobody owns a tractor.

10.6.4. Tropical livestock units per capita

The total of Tropical Livestock Units (TLUs) was calculated using the following conversion factors:

Species	TLU conversion factor
Camels	1.00
Cattle	0.70
Sheep	0.10
Goats	0.10
Horses	0.80
Mules	0.70
Asses	0.50
Pigs	0.20

MESH

Chickens	0.01

Total number of TLU's per household was divided by the number of people (regardless of age) living in the house.

10.6.5. Land area per capita cultivated

An estimation of the land area per capita cultivated by each household, in meters, as the sum of all the cultivated areas, using the conversion rates given by people in the country:

Area unit	Conversion in square metre
Jibaal	607
Tacab	2023
Hectare	10000

Some area conversion rates were missing, because local area unit was not a no Somali unit of area. The associated area is arbitrary set to zero. As the variable was an open numeric, there were inevitably some extremely large values recorded. Therefore, the land area continuous variable was categorized into these following land cultivation classes, chosen arbitrary to get a relatively equal frequency balance between the following categories<100, 100-1000, 1000-5000, 5000-20000, >20000 metre squared.

10.6.6. Non-food expenditure per week and per capita

An estimate of weekly non-food expenditure aggregate was constructed from 6 weekly non-food items and 13 monthly non-food items and divided by the number of household members.

10.6.7. Social Safety Nets (SSN)

10.6.7.1. Total amount of formal transfers received in preceding 12 months

An aggregate of the total amount of formal transfers in the 12 months preceding the baseline was created from:

1. Food aid;
2. Food for work;
3. Cash for work;
4. Faffa: nutritionally fortified supplemental foods including fortified milk powders, enriched flour additives, fortified baby flood, and fortified flours and barley mixes;
5. Free cash (unconditional);
6. Seed & tools;
7. Credit provision;
8. Livestock distribution;
9. Other formal transfers.

Because of concerns about social desirability bias in responding to this question, in the models, a binary was substituted for the reported amount indicating that the household had received some formal transfers in the preceding 12 months.

10.6.8. Total amount of informal transfers received in preceding 12 months

An aggregate of the total amount of informal transfers in the 12 months preceding the baseline was created from the value of assistance received from the following:

Informal transfer category	Definition
Cash Loan	
Food or grain gift	
Grain loan	

Informal transfer category	Definition
Seed gift/loan	
Free labour	
Free use of oxen, plough or animals	
Zakaat	Contribution paid once a year by those households that can afford it within the community. It is paid to the vulnerable households in the community. Households are deemed eligible to pay if they have saved up money for a year, have gold or livestock. Can be paid in any month.
Xoolo Goyn	Livestock given to an injured party
RemittancesZakaatDhibaadCash LoanKaaloFood or grain giftIrmaansi/MaalGrain loanYaradSeed gift/loanQaaraanFree labourDiiyaFree use of oxen, plough or animalsFitraXoolo GoynOther cash gift (e,g, Sadaqa)CiyiRemittancesZakaat	Contribution paid once a year by an individual who has a specific amount of money. It is paid to certain people i.e. needy, poor, orphans, debtors etc.
Alabari/Sab	Benefiting from livestock slaughtered for certain social function
Dhibaad	The gift given to a wife when she visits her family home.
Kaalo	Help/support especially the help received by a man when he is getting married.
Irmaansi/Maal	When a household has no livestock and another household gives them livestock for the purpose of getting the milk out of it and then you return it to the owner.
Yarad	Dowry
Qaaraan	Community-based contributions to an individual or household to help them with a particular project, e.g. education health marriage.
Diiya	Blood money - paid to the affected party by an individual all the clan, mostly the clan.
Fitra	Paid to the people who are needy, after each Ramadan. Compulsory for everybody who has fasted and can afford. It has a specific amount.
Other cash gift (e.g. Sadaqa)	Sadaqa, informal gift to anybody, it has no specific amount.

10.6.8.1. Access to credit

Access to credit can be proxied by whether the household was or not a member of Savings and Credit Cooperative Organisation or Society (SACCO).

10.6.9.   Adaptive Capacity

10.6.9.1.   Education level of the head of household

This was defined as the highest grade reached by the head of household, assuming the head of household is well identified. Sometimes several persons are coded as head of household. In that case, first person registered in the household roster was used to represent the educational level of the head of household.

This is defined as the highest educational attainment of any female in the household. The value zero was used for any household where there were no females, or only females with no education.

10.6.9.2.   Ratio of the number of literate adults

Ratio of the number of literate adults (who can read and write) to the total number of adults (age>18), and 0 when no adult in the household

10.6.9.3.   Dependency ratio

In order to avoid having infinite values, the dependent denominator was defined as the total number of members in the household, while the usual number of household members aged less than 15 or 65 and above as the numerator.

10.6.9.4.   Agricultural income diversity measures

A cumulative index of the number of agricultural activities practised by the household in the preceding 12 months (livestock, crop cultivation, fishing).

1.   Livestock = 1 if household has >0 tropical livestock units

2.   Crop cultivation = 1 if any household members have cultivated land for income in the previous 12 months

3.   Fishing = 1 if any household members fish and had an income of greater than 0 in the previous 12 months

10.6.9.5.   Non-agricultural income diversity

A cumulative index of the number of non-agricultural activities generating income over the 12 months reference period from the following non-agricultural income generating categories:

Petty trader	Taxi/transportation	Home Brewery
Butchery	Restaurant/Café/Teahouse	Charcoal
Bottle Shop/Grocery	Electronics/phone repair	Khat seller
Clothing/Shoe Store	Agricultural inputs and tools rental	Livestock trader
Hardware Store	Seamstress/tailor/clothes repair	Produce sellers
Ag inputs Store	Hairdresser/Barber	Fish traders
Selling Airtime	Making Bricks	Pharmacist
Mill	Construction	Veterinary pharmacists inputs
Mechanic/tire repair	Carpenter	Middle men
Traditional healer	Crafts(basket making, reed mat making etc.)	Other traders

MESH

10.7. Programmatic & Corporate Definitions of Resilience

While this report focuses on the DFID definition of resilience that focuses on the capacity of households to predict, withstand, and recover from shocks, it is worth comparing the different programmatic and corporate definitions of resilience amongst relevant DFID partners.

Org/ Consortium	Resilience (Programme Level)	Resilience (Corporate Level)
BRCiS	Includes conceptual and programmatic level definitions. At conceptual level it includes a set of characteristics related to coping mechanisms. At a programmatic level, it includes linking both rehabilitation and development and an integrated approach to food security, WASH, livelihoods, and shelter. (Proposal)	N/A
UNJSR	Resilience is the ability to withstand threats or to adapt to new strategies in the face of shocks and crises, in ways that preserve the integrity of individuals, households and communities (while not deepening their vulnerability) with a focus on merging humanitarian and development programming to better address overlapping risks and stresses. (Proposal)	N/A
FAO	Resilience is the ability to anticipate, absorb and recover from external pressures and shocks in ways that preserve the integrity of individuals, households and communities while not deepening vulnerability. This includes both the ability to withstand threats and the ability to adapt if needs be, utilising new options in the face of shocks and crises. When households, communities and networks for goods and services are resilient, there are positive livelihood outcomes: sufficient income, food security, safety, proper nutrition, good health etc., and ecosystems are preserved and protected. (Proposal)	In a food security context, resilience is defined as "the ability of a household to keep with a certain level of well-being (i.e. being food secure) by withstanding shocks and stresses." "Measuring Resilience: A Concept Note on the Resilience Tool." FAO
UNICEF	UNICEF defines resilience as the ability of children, families, communities and systems to withstand, adapt to, and recover from shocks and stresses (e.g. natural disasters, epidemics, socio-economic instability, conflict) in ways that support economic and social development, preserve integrity and do not deepen vulnerability. Programming aims at improving the "ability" mentioned in this definition – with ability covering (a) capacity (knowledge, attitudes, practices) and (b) local community control over and accountability of delivery of social services. (Inception Phase Report)	At a global policy level, UNICEF has defined resilience as "good programming plus three", with the "three" standing for (1) mainstreaming risk-informed programming (2) strengthened humanitarian-development nexus and (3) building of new 'non-traditional' partnerships. (Inception Phase Report)
WFP	Resilience is understood as the ability to anticipate, resist, absorb and recover in a timely and efficient manner from external pressures and shocks in ways that preserve integrity and do not deepen vulnerability, including the ability to withstand threats and to adapt to new options in crises. (Proposal; WFP uses the UNJSR definition.)	Building resilience is about concerted efforts to enhance the capacities, assets and systems of the most vulnerable households, communities and countries to prepare for, withstand and bounce back better from recurrent shocks. "Building Resilience through Asset Creation." WFP, November 2013.

10.8. Qualitative Analysis: Communities

The following communities showed statistically significant change (positive or negative) in the evaluation's four key outcome indicators.

These were used as the basis for qualitative analysis that included visits to the communities where focus group discussions and interviews were conducted.

District & Community	Reduced CSI	FCS	Food expenditure	Subjective wellbeing	INT or CF	Partner
Banadir						
Hamarweine Wajeer; Buur Karoole	Deterioration	No change	No change	No change	INT	BRCiS
Hawlwadag; Saqawudin Sayidka	No change	No change	No change	Deterioration	INT	BRCiS
Hamarweine; Kacaan	Deterioration	Improvement	No change	No change	CF	UNJRS
Bay						
Baidoa; Berdaale	No change	No change	Improvement	No change	INT	BRCiS
Baidoa; Misgaale	No change	Deterioration	No change	No change	CF	BRCiS
Gedo						
Belet Hawa; Malmaley	No change	No change	No change	Deterioration	CF	BRCiS
Belet Hawa; Garowo	No change	No change	Improvement	No change	CF	UNJRS
Doolow; Dayah	No change	Improvement	No change	No change	INT	UNJRS
Doolow; Kabxan	No change	No change	Deterioration	No change	INT	UNJRS
Doolow; Korey	Improvement	No change	No change	No change	INT	UNJRS
Doolow; Qoyta	No change	No change	No change	Improvement	INT	UNJRS
Doolow; Saadhuumaay	No change	No change	Deterioration	No change	INT	UNJRS
Doolow; Dhuuma; Dhuumaay	No change	Improvement	No change	Deterioration	INT	UNJRS
Hiran						
Belet Weyne; Dhariyow	No change	Improvement	No change	No change	INT	BRCiS
Belet Weyne; Garash	Deterioration	Deterioration	No change	No change	INT	BRCiS
Belet Weyne; Beslawe	No change	Deterioration	No change	No change	INT	BRCiS
Belet Weyne; Leebow	Deterioration	No change	Deterioration	No change	CF	BRCiS
Mataban; Miirqoode	No change	No change	Deterioration	No change	INT	BRCiS
Mataban; Harqboobe	Deterioration	Deterioration	No change	No change	INT	BRCiS
Togdheer						
Burco; Balihagaa	Improvement	No change	No change	No change	INT	UNJRS
Burco; Cali Ciise	No change	No change	Improvement	No change	CF	UNJRS
Burco; Dawada Nagaagir	Deterioration	No change	No change	No change	INT	UNJRS

10.9. List of Communities Visited as part of Qualitative Analysis

10.9.1. Demographics

Regions	# of Respondents	Gender		Average Age	% Unemployed	% with no Education
		Male	Female			
Banadir	60	30	30	44	30%	38%
Bay	40	20	20	40	10%	65%
Gedo	139	70	69	40	8%	69%
Hiraan	120	60	60	40	1%	48%
Togdheer	60	30	30	45	70%	68%
Totals:	419	210	209	41	18%	58%

10.9.2. Community member lists

Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Banadir	Hamarweine	Wajeer Buur Karoole	40	Female	Manual Labour	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	66	Female	Housewife	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	42	Female	Manual Labor	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	70	Female	Manual Labor	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	60	Female	Taxi Driver	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	55	Female	Manual Labor	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	62	Female	Tailor	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	70	Female	Small Business	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	52	Female	Small Business	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	45	Female	Unemployed	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	60	Male	Elder	Secondary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	50	Male	Unemployed	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	38	Male	Mechanic	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	54	Male	Mechanic	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	22	Male	Manual Labor	None	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	62	Male	Manual Labor	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	65	Male	Small Business	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	42	Male	Manual Labor	Primary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	20	Male	Taxi Driver	Secondary	Intervention	BRCiS
Banadir	Hamarweine	Wajeer Buur Karoole	33	Male	Manual Labor	Primary	Intervention	BRCiS
Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Banadir	Hawlwadag	Saqawudin Sayidka	40	Female	Unemployed	Primary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	40	Female	Unemployed	Secondary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	52	Female	Small Business	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	43	Female	Unemployed	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	45	Female	Small Business	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	43	Female	Mechanic	Primary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	52	Female	Manual Labor	Primary	Intervention	BRCiS

Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Banadir	Hawlwadag	Saqawudin Sayidka	55	Female	Unemployed	Secondary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	45	Female	Unemployed	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	50	Female	Manual Labor	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	23	Male	Unemployed	Secondary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	28	Male	Manual Labor	Secondary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	46	Male	Unemployed	University	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	38	Male	Unemployed	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	42	Male	Manual Labor	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	56	Male	Teacher	Secondary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	25	Male	Taxi Driver	Primary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	52	Male	Mechanic	None	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	48	Male	Unemployed	Secondary	Intervention	BRCiS
Banadir	Hawlwadag	Saqawudin Sayidka	34	Male	Unemployed	None	Intervention	BRCiS
Region	**District**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Banadir	Hamarweine	Kacaan	40	Female	Unemployed	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	45	Female	Teacher	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	45	Female	Manual Labor	None	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	22	Female	District Volunteer	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	26	Female	Unemployed	None	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	70	Female	Midwife	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	27	Female	Small Business	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	65	Female	Small Business	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	20	Female	Unemployed	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	26	Female	Unemployed	None	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	52	Male	Tailor	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	55	Male	Fisherman	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	43	Male	Small Business	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	40	Male	Tailor	Primary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	70	Male	Unemployed	None	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	34	Male	Unemployed	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	20	Male	Student	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	22	Male	Student	University	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	20	Male	Student	Secondary	Counterfactual	UNJRS
Banadir	Hamarweine	Kacaan	32	Male	Fisherman	Primary	Counterfactual	UNJRS
Region	**District**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Bay	Baidoa	Berdaale	30	Female	Housewife	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	24	Female	Domestic Service	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	65	Female	Unemployed	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	25	Female	Housewife	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	35	Female	Domestic Service	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	28	Female	Domestic Service	None	Intervention	BRCiS

Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Bay	Baidoa	Berdaale	37	Female	Unemployed	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	25	Female	Unemployed	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	22	Female	Housewife	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	27	Female	Housewife	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	60	Male	Small Business	Quranic	Intervention	BRCiS
Bay	Baidoa	Berdaale	43	Male	Unemployed	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	58	Male	Singer	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	32	Male	Singer	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	25	Male	Singer	Primary	Intervention	BRCiS
Bay	Baidoa	Berdaale	52	Male	Farmer	Quranic	Intervention	BRCiS
Bay	Baidoa	Berdaale	61	Male	Singer	Quranic	Intervention	BRCiS
Bay	Baidoa	Berdaale	25	Male	Singer	Quranic	Intervention	BRCiS
Bay	Baidoa	Berdaale	34	Male	Tailor	None	Intervention	BRCiS
Bay	Baidoa	Berdaale	55	Male	Farmer	Quranic	Intervention	BRCiS
Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Bay	Baidoa	Misgale	55	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	38	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	37	Male	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	65	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	60	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	55	Male	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	47	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	48	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	42	Male	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	35	Male	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	19	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	65	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	34	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	39	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	42	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	40	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	20	Female	Farmer	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	39	Female	Farmer	Quranic	Counterfactual	BRCiS
Bay	Baidoa	Misgale	25	Female	Housewife	None	Counterfactual	BRCiS
Bay	Baidoa	Misgale	40	Female	Farmer	None	Counterfactual	BRCiS
Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Gedo	Dollow	Kabxan	47	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Kabxan	38	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	50	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	55	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Kabxan	45	Female	Housewife	Primary/ Quranic	Intervention	UNJRS

Region	District	Community	Age	Gender	Occupation	Education	INT or CF	Partner
Gedo	Dollow	Kabxan	30	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Kabxan	44	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	40	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	22	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	50	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	50	Male	Unemployed	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	82	Male	Unemployed	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	85	Male	Unemployed	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	73	Male	Unemployed	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	28	Male	Pastoralist	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	64	Male	Village Chairman	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	80	Male	Unemployed	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	47	Male	Teacher	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	59	Male	Unemployed	Quranic	Intervention	UNJRS
Gedo	Dollow	Kabxan	63	Male	Unemployed	Quranic	Intervention	UNJRS
Region	**District**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Gedo	Dollow	Korey	33	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	42	Female	Housewife	Midwifery	Intervention	UNJRS
Gedo	Dollow	Korey	38	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	32	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	45	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	23	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	40	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	22	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	23	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	39	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Korey	68	Male	Selling Charcoal	Quranic	Intervention	UNJRS
Gedo	Dollow	Korey	60	Male	Selling Charcoal	Quranic	Intervention	UNJRS
Gedo	Dollow	Korey	46	Male	Farmer	None	Intervention	UNJRS
Gedo	Dollow	Korey	68	Male	Farmer	Quranic	Intervention	UNJRS
Gedo	Dollow	Korey	40	Male	Selling Charcoal	Quranic	Intervention	UNJRS
Gedo	Dollow	Korey	80	Male	Unemployed	None	Intervention	UNJRS
Gedo	Dollow	Korey	62	Male	Selling Charcoal	Quranic	Intervention	UNJRS
Gedo	Dollow	Korey	43	Male	Teacher	Intermediate	Intervention	UNJRS
Gedo	Dollow	Korey	36	Male	Medical Assistant	Intermediate	Intervention	UNJRS
Gedo	Dollow	Korey	50	Male	Farmer	None	Intervention	UNJRS
Region	**District**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Gedo	Dollow	Qoyta	40	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	45	Female	Agropastoralist	None	Intervention	UNJRS
UKedo	Dollow	Qoyta	30	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	19	Female	Agropastoralist	None	Intervention	UNJRS

Gedo	Dollow	Qoyta	29	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	40	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	21	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	40	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	25	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	40	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	20	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	30	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	28	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	35	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	29	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	34	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	42	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	37	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	40	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Qoyta	35	Male	Agropastoralist	None	Intervention	UNJRS
Region	**District**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Gedo	Dollow	Saadhumaay	25	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	32	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	25	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	28	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	36	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	37	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	27	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	24	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	19	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	50	Female	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	31	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	34	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	64	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	30	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	42	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	79	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	37	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	63	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	57	Male	Agropastoralist	None	Intervention	UNJRS
Gedo	Dollow	Saadhumaay	32	Male	Agropastoralist	None	Intervention	UNJRS
Region	**District**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Gedo	Dollow	Dayah	26	Male	farmer	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	45	Male	Agropastoralist	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	40	Male	farmer	Primary	Intervention	UNJRS
Gedo	Dollow	Dayah	32	Male	farmer	Quranic	Intervention	UNJRS

Gedo	Dollow	Dayah	34	Male	Teacher	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	50	Male	Farmer	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	48	Male	farmer	Intermediate	Intervention	UNJRS
Gedo	Dollow	Dayah	38	Male	Teacher	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	31	Male	Farmer	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	27	Male	Farmer	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	45	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Dayah	28	Female	Small Business	None	Intervention	UNJRS
Gedo	Dollow	Dayah	33	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Dayah	55	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Dayah	30	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	25	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	21	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Dayah	20	Female	Housewife	None	Intervention	UNJRS
Gedo	Dollow	Dayah	30	Female	Housewife	Quranic	Intervention	UNJRS
Gedo	Dollow	Dayah	30	Female	Housewife	None	Intervention	UNJRS
Region	**Community**	**Community**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Gedo	Dollow	Dhuumadhumay	42	Male	farmer	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	45	Male	farmer	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	40	Male	Pastoralist	Primary	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	48	Male	Pastoralist	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	48	Male	Pastoralist	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	37	Male	Pastoralist	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	17	Male	farmer	Primary	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	33	Male	farmer	Primary	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	40	Male	farmer	Primary	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	28	Male	farmer	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	37	Female	Domestic Service	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	54	Female	Small Business	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	59	Female	Pastoralist	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	39	Female	Small Business	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	28	Female	Domestic Service	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	25	Female	Domestic Service	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	45	Female	Domestic Service	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	38	Female	Domestic Service	None	Intervention	UNJRS
Gedo	Dollow	Dhuumadhumay	43	Female	farmer	None	Intervention	UNJRS
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Gedo	Dollow	Haad Fuul	78	Male	Pastoralist	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	52	Male	Pastoralist	Primary	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	63	Male	Unemployed	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	27	Male	Manual Labor	None	Counterfactual	BRCiS

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Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Gedo	Dollow	Haad Fuul	25	Male	farmer	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	43	Male	Pastoralist	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	27	Male	Pastoralist	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	23	Male	farmer	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	58	Male	Pastoralist	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	50	Male	farmer	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	45	Female	Unemployed	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	39	Female	Domestic Service	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	17	Female	Unemployed	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	50	Female	Manual Labor	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	55	Female	farmer	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	16	Female	Domestic Service	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	26	Female	Domestic Service	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	18	Female	Domestic Service	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	20	Female	Domestic Service	None	Counterfactual	BRCiS
Gedo	Dollow	Haad Fuul	19	Female	Domestic Service	None	Counterfactual	BRCiS
Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Hiraan	Mataban	Harqboobe	77	Male	Unemployed	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	67	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe		Male	Agropastoralist	Quranic		
Hiraan	Mataban	Harqboobe	80	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	26	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	40	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	40	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	30	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	25	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	34	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	40	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	35	Female	Housewife	Quranic	Intervention	BRCiS
Hiraan	Mataban	Harqboobe	32	Female	Housewife	Quranic	Intervention	BRCiS
Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Hiraan	Beledweyne	Dhariyow	52	Male	Farmer & Teacher	Secondary	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	35	Male	Farmer	None	Intervention	BRCiS

Hiraan	Beledweyne	Dhariyow	32	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	58	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	36	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	29	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	30	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	27	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	52	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	30	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	35	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	40	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	42	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	81	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	40	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	31	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	52	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	34	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow	29	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Dhariyow		Female	Farmer	None		
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Hiraan	Beledweyne	Beslawe	27	Male	Farmer	Primary	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	31	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	23	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	45	Male	Farmer and Village Chairman	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	80	Male	Elder	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	36	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	50	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	40	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	66	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe		Male	Farmer	None		
Hiraan	Beledweyne	Beslawe	39	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	40	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	32	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	30	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	35	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	26	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	27	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	25	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	38	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Beslawe	30	Female	Farmer	None	Intervention	BRCiS
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Hiraan	Beledweyne	Garash	60	Male	Farmer	None	Intervention	BRCiS

Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Hiraan	Beledweyne	Garash	57	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	40	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	36	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	27	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	31	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	26	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	40	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	38	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	42	Male	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	24	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	36	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	28	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	22	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	50	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	48	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	40	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	29	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	39	Female	Farmer	None	Intervention	BRCiS
Hiraan	Beledweyne	Garash	59	Female	Farmer	None	Intervention	BRCiS
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Hiraan	Beledweyne	Leebow	35	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	45	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	24	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	34	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	30	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	40	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	45	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	36	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	29	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	24	Female	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	45	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	36	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	60	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	49	Male	farmer	Secondary	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	40	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	33	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	65	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	48	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	30	Male	farmer	Quranic	Counterfactual	BRCiS
Hiraan	Beledweyne	Leebow	70	Male	farmer	Quranic	Counterfactual	BRCiS
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Hiraan	Mataban	Miirqoode	60	Male	Agropastoralist	Quranic	Intervention	BRCiS

Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Hiraan	Mataban	Miirqoode	61	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	31	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	48	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	54	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	34	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	50	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	35	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	22	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	58	Male	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	40	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	60	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	39	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	70	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	29	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	40	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	17	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	50	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	17	Female	Agropastoralist	Quranic	Intervention	BRCiS
Hiraan	Mataban	Miirqoode	18	Female	Agropastoralist	Quranic	Intervention	BRCiS
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**
Togdheer	Burco	Dawada Nagaagir	80	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	66	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	50	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	50	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	70	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	60	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	28	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	30	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	43	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	27	Male	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	40	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	35	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	46	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	60	Female	Unemployed	Some Primary	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	50	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	67	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	50	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	70	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	45	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Dawada Nagaagir	29	Female	Unemployed	None	Intervention	UNJRS
Region	**District**	**Village**	**Age**	**Gender**	**Occupation**	**Education**	**INT or CF**	**Partner**

Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Togdheer	Burco	Bali Hagaa	40	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	40	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	35	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	50	Female	Small Business	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	60	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	50	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	46	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	28	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	70	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	39	Female	Unemployed	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	48	Male	Farmer	Quranic	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	30	Male	Farmer	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	60	Male	Pastoralist	Quranic	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	32	Male	Farmer	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	35	Male	Selling Charcoal	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	30	Male	Selling Charcoal	Quranic	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	38	Male	Small Business	None	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	36	Male	Farmer	Quranic	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	30	Male	Farmer	Quranic	Intervention	UNJRS
Togdheer	Burco	Bali Hagaa	27	Male	Unemployed	Quranic	Intervention	UNJRS
Region	District	Village	Age	Gender	Occupation	Education	INT or CF	Partner
Togdheer	Burco	Cali Ciise	39	Male	Small Business	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	50	Male	Unemployed	Quranic	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	45	Male	Teacher	Secondary	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	29	Male	Small Business	Quranic	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	75	Male	Unemployed	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	30	Male	Unemployed	Secondary	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	47	Male	Unemployed	Secondary	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	34	Male	Unemployed	Secondary	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	36	Male	Water Catchment	Quranic	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	31	Male	Unemployed	Quranic	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	60	Female	Unemployed	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	40	Female	Unemployed	Quranic	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	40	Female	Small Business	Primary	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	30	Female	Vegetable Seller	Quranic	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	70	Female	Unemployed	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	67	Female	Unemployed	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	45	Female	Domestic Service	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	32	Female	Small Business	None	Counterfactual	UNJRS
Togdheer	Shurco	Cali Ciise	30	Female	Unemployed	None	Counterfactual	UNJRS
Togdheer	Burco	Cali Ciise	33	Female	Unemployed	Quranic	Counterfactual	UNJRS

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10.10.   Design Report & SEQAS Response

Separate Annexes.

10.11.   Household Survey

Separate Annex.

10.12.   Qualitative Survey Report

Separate Annex.

10.13.   Household Survey Reports & Presentations (Survey 1 & 3)

Separate Annexes.

10.14. Bibliography

The Evaluation included a review of all available project documentation. Unless cited in the main body of the report, these materials are not included here. Please refer to the "Impact Evaluation Design Report" for a list of all programme documentation reviewed as part of this Evaluation.

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