



**NIGER**



# Preliminary Resilience Evidence from Niger

## Acknowledgements:

Cover photo: WFP/Evelyn Fey

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## Acronyms

<b>AGRHYMET</b>	Centre Regional de Formation et d'Application en Agrométéorologie et Hydrologie
<b>AIMS</b>	Asset Impact Monitoring from Space
<b>BMZ</b>	Bundesministerium Für Wirtschaftliche Zusammenarbeit (German Federal Ministry for Economic Development Cooperation)
<b>CARI</b>	Consolidated Approach for Reporting Indicators of Food Security
<b>CHIRPS</b>	Climate Hazards Group Infrared Precipitation with Station Data
<b>CNEDD</b>	National Council of the Environment for Sustainable Development
<b>DIME</b>	Development Impact Evaluation unit (World Bank)
<b>DNPGCA</b>	National Food Crisis Prevention and Management Facility
<b>EVI</b>	Enhanced Vegetation Index
<b>EX-ACT</b>	EX-Ante Carbon-balance Tool
<b>FARN</b>	Foyer d'Apprentissage et de Réhabilitation Nutritionnelle
<b>FCS</b>	Food Consumption Score
<b>FES</b>	Food Expenditure Share
<b>FFA</b>	Food Assistance for Assets
<b>FGD</b>	Focus Group Discussion
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>ICA</b>	Integrated Context Analysis
<b>IFPRI</b>	International Food Policy Research Institute
<b>IPC</b>	Integrated Food Security Phase Classification
<b>KII</b>	Key Informant Interview
<b>MAH/GC</b>	Ministry of Humanitarian Action and Crisis Management
<b>MDD</b>	Minimum Dietary Diversity
<b>MUAC</b>	Mid-Upper Arm Circumference
<b>NASA</b>	National Aeronautics and Space Administration
<b>NDVI</b>	Normalized Difference Vegetation Index
<b>NGO</b>	Non-governmental organization
<b>PDM</b>	Post Distribution Monitoring
<b>PROR-L</b>	Asset Creation, Livelihoods and Resilience Unit
<b>RAM-M</b>	Research, Assessment and Monitoring Division – Monitoring Unit
<b>RISE II</b>	Resilience in the Sahel Enhanced II
<b>RMME</b>	Resilience Monitoring, Measurement and Evidence generation
<b>SAMS</b>	Smallholder Agriculture Market Support
<b>UN</b>	United Nations
<b>USAID</b>	United States Agency for International Development
<b>WFP</b>	World Food Programme

## Introduction

Resilience is a prominent part of the World Food Programme's (WFP's) Changing Lives agenda with this area shaping and implementing elements of the humanitarian-development-peace nexus. Evidence on resilience programming – as credible, verifiable data, generated by a reliable monitoring and research process – aims to show how people, institutions or systems are more resilient in the face of a shock or stressor. To support this necessary work, WFP's Research, Assessment and Monitoring Division – Monitoring Unit (RAM-M) in collaboration with the Asset Creation, Livelihoods and Resilience Unit (PROR-L) and regional bureaux developed a Resilience Monitoring, Measurement and Evidence generation (RMME) approach to better understand WFP's contribution to building resilience in target populations. The RMME approach includes six interlinked, iterative steps to measure changes in resilience:

1. Describe the resilience context
2. Develop a resilience Theory of Change to reflect a programme design
3. Develop evidence and learning questions
4. Select indicators and tools
5. Design and carry out data analysis
6. Generate evidence-based insights and actions

Steps 5 and 6 are the particular focus of this case study, which builds on the resilience measurement work done by WFP in Niger over the past four years. It is a practical example of how resilience evidence can be generated in the particularly dynamic context of Niger where the food security environment and security situation has degraded significantly since the start of the Integrated Resilience Programme in 2014, and the line between resilience and emergency programmes is increasingly blurred. The report seeks to identify preliminary evidence on resilience programming collected from an effective – *and realistic* – monitoring system at country level produced primarily from WFP's routine monitoring data and Corporate Results Framework. This report starts by presenting the country context and programme framework for the integrated resilience approach in Niger, followed by the sources of outcome data and evidence available for each programme area. It concludes with a summary of the findings and the success factors and lessons learned by WFP Niger.

## Country context

Niger is a land-locked country in the Sahel region with one of the lowest Human Development Index (HDI) rankings in the world: 189 out of 191 countries.<sup>1</sup> Its population of 25.9 million people is growing at 4 percent a year – one of the highest rates in the world: every year, the population grows by about 1 million people. On average, during their lifetimes, women in Niger have 6.2 children.

In a country where 80 percent of the population lives in rural areas and depends on natural resources, agriculture and livestock for their livelihoods, some of the key factors of chronic food insecurity are the lack of access to arable land, land degradation and insufficient access to water and renewable and affordable energy. Climate change is further compounding this, with the country suffering from increasingly irregular rainfall, rising temperatures, desertification, and more frequent climate shocks – including the devastating 2021 drought. Other factors such as

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<sup>1</sup> United Nations Development Programme (UNDP). 2022. [Human Development Report 2021/2022](#).



rapid demographic growth<sup>2</sup> and large family sizes, lack of education and entrenched gender inequality are also major contributing factors to chronic food insecurity.

According to the 2022 SMART survey, 47 percent of children under 5 years of age in Niger are chronically malnourished, which places the country in an emergency according to the World Health Organization (WHO) classification. More than 12 percent are acutely malnourished (above the 10 percent alert threshold set by the WHO), placing the country in an alert situation. Diets are poor, less diversified and mostly composed of millet and sorghum, the country's staple crops. As a result, only 6.7 percent of children aged 6–23 months have a minimum acceptable diet, while only 37 percent of women of childbearing age (15–49 years) have a minimum of acceptable dietary diversity. In this context, 55.5 percent of children 6–59 months of age, and more than half of pregnant women aged 15–49 years are anaemic.

The spill-over of conflicts in neighbouring countries – in particular, Nigeria, Burkina Faso and Mali – has a direct impact on food insecurity and nutrition as the security situation deteriorates within Niger and displacement increases. As of December 2022, there were more than 255,000 refugees in Niger, as well as 377,000 Nigeriens who were internally displaced because of insecurity and armed conflict in border regions.

**The preliminary evidence shared in this report is focused on the effects of the 2021 drought and price crisis, which led to the worst food crisis in Niger in the past 20 years.**

The crisis was characterized by record high cereal (1.4-million-ton decrease compared to 2020) and fodder deficits (17% decrease compared to the five-year average, and a 43% decrease compared to 2020). As a result of production deficits in Niger and surrounding countries, unprecedented price hikes accompanied the drought. The impact of COVID-19 as well as the global food crisis and fuel price increases experienced in 2022. Per capita cereal production in 2021 was the lowest in 20 years, and the price of millet (the staple food in Niger) was 30% higher than the five-year seasonal average in January 2022. The Integrated Food Security Phase Classification (IPC) analysis (known as *Cadre Harmonisé* in West Africa) conducted in March 2022 found that 4.4 million people in Niger were acutely food insecure (phases 3 and 4 of the IPC) during the 2022 lean season – in large part because of the low harvest in 2021 – a 91% increase compared to the previous year, and by far the highest number recorded since the start of the IPC in Niger in 2012.

## Programme framework

Within this complicated context, WFP is part of the solution, investing in natural resources and ecosystems, strengthening livelihoods and systems, nutrition and education interventions, and working with partners to implement operational coalitions for resilience. Grounded in the government's 3N initiative (Nigeriens Nourishing Nigeriens), WFP began rolling out an Integrated Resilience Programme with partners in 2014, targeting 400,000 people in 600 villages. With ongoing improvements, by 2022, WFP reached 1.8 million people in 2,000 villages, and the programme targeted the most food insecure and shock-prone areas, including: Food Assistance for Assets (FFA), Nutrition, Smallholder Agriculture Market Support (SAMS), School Feeding, Lean Season Support, and capacity strengthening at all levels. This intervention package was

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<sup>2</sup> The World Bank. 2022. [Population Growth \(annual %\) Niger](#).

implemented within village clusters<sup>3</sup> through community-based participatory planning, over a period of around five years.

These activities seek to foster partnerships across civil society, local government, non-governmental organizations (NGOs) and other United Nations agencies to collectively achieve and sustain multi-dimensional, large-scale impacts. For example, complementary efforts are ongoing with Rome-based agencies (Food and Agriculture Organization of the United Nations and International Fund for Agricultural Development), United Nations Children’s Fund – on livelihoods, agriculture and land rehabilitation, nutrition, education and water, sanitation and hygiene (WASH) – United Nations Population Fund (on girls’ access to education), United States Agency for International Development (USAID)-supported Resilience in the Sahel Enhanced (RISE) II partners and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/PRO-RES project (on WASH, income-generating activities, local early warning systems, social cohesion).

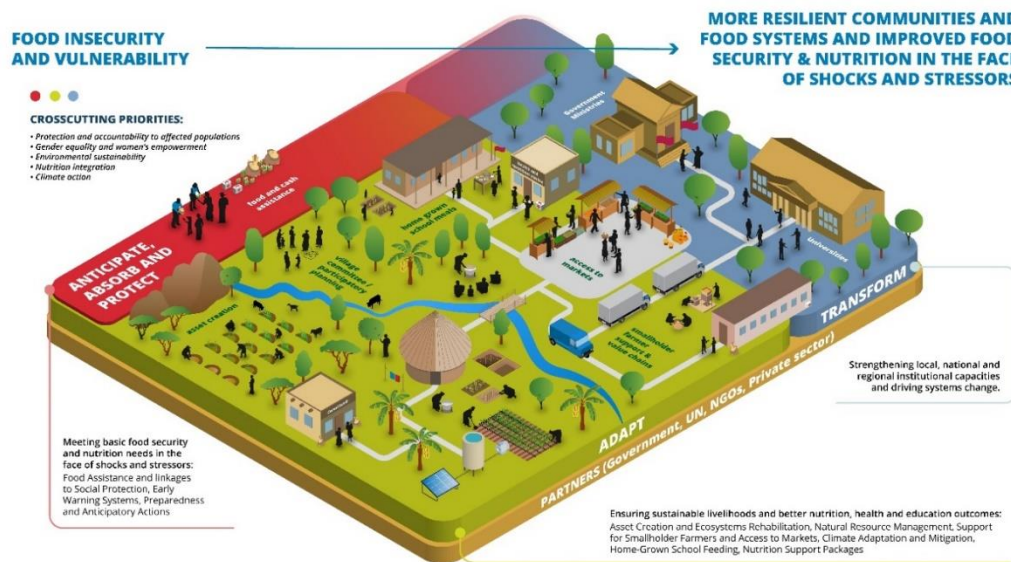


Figure 1: Programme framework for integrated resilience in Niger

One of the key components of the resilience approach is a *progression strategy*, which seeks a gradual handover to government and communities. The aim is to progressively phase out the programme, by shifting from the provision of food assistance to technical assistance as communities become more self-reliant, and moving towards a complete handover to other partners able to bring these communities to a level of sustainable development. The phase out in some sites also allows WFP to start supporting other food-insecure communities. WFP Niger is still learning how best to implement this progression strategy, in terms of timeline, implementation arrangements with local government technical services and communities, monitoring, and so on – especially as local capacities vary greatly from one region to another, and from one site to another.

**Food Assistance for Assets (FFA).** This activity is the entry point for the Integrated Resilience Programme. FFA aims to build resilience through land rehabilitation and natural resource

<sup>3</sup> WFP’s entry point for resilience programmes is FFA: given the nature of these interventions, geographic targeting is done through the watershed approach to identify intervention sites, which consist of village clusters sharing common water resources. Depending on the region, a site can include two to eight villages.

management activities that improve water conservation and the ecosystem, and enhance agricultural or pastoral production in previously degraded lands. Typical assets include half-moon ditches and zai pits (planting basins), stone bunds, dune fixations and grazing areas, market gardening (including irrigation via boreholes and solar water pumps). These activities aim to support socio-economic development by: reducing hardship (e.g., time needed to fetch water and firewood); increasing production and incomes; promoting social cohesion by reducing conflict over natural resources; and offering new economic opportunities, especially for women and youth. The food or cash-based transfers provide an incentive to undertake these activities, allowing beneficiaries to address their short-term food insecurity while they build or rehabilitate assets that will enhance their long-term resilience.

**Nutrition.** WFP Niger addresses acute malnutrition by implementing a comprehensive and integrated package of nutrition prevention and treatment of moderate acute malnutrition. This includes providing food supplements to children, pregnant women and caregivers, as well as making nutrition-sensitive approaches more mainstream across the integrated resilience package. The programme also fosters behaviour change by integrating community-based nutrition activities and awareness-raising activities on key family practices, gender and nutrition.

WFP boosted food supply and demand by enhancing capacity strengthening and sustainability of community-based nutrition learning and rehabilitation centres (Foyer d'Apprentissage et de Réhabilitation Nutritionnelle – FARN), and supporting value chains of locally produced fortified food, and nutrition-sensitive food systems.

These interventions include screening and treatment of malnutrition for children aged under 5 years (via provision of specialized nutritious foods in local health centres), sensitization campaigns, community-based peer-support mothers' groups and culinary demonstrations (through FARNs), and preventative targeted supplementary feeding, among other activities.

In addition to being an effective local solution to prevent and treat malnutrition, FARNs are a platform to link with other components of the resilience package, such as FFA and vegetable gardens. Some of the crops or vegetables produced through FFA or market gardening activities are used for culinary demonstrations organized by FARN. FFA or gardening beneficiaries are then able use their own produce to diversify their children's diets, thereby applying FARN's good practices and recipes.

**Smallholder Agricultural Market Support (SAMS).** WFP Niger supports the development of agricultural value chains through a set of complementary activities, such as storage for reduction of post-harvest loss, support for food processing, capacity building, supporting small producers to form farmers' organizations, and market access facilitation. One of the core SAMS activities is the purchase of cereals (millet) and pulses (cowpeas) by WFP for its own food procurement. Between November and February purchases are made from smallholder farmers' organizations with a production surplus. The SAMS approach is a key pillar of the resilience *progression strategy*, as it helps farmers break out of subsistence farming and become economic actors in productive value chains.

**School-based programmes.** WFP implements the school feeding programme to increase access to education and school retention rates by providing nutritious school meals, and take-home rations. Combined with complementary activities, such as school gardens, school herds and the installation of grain mills to reduce the burden of chores on women and girls, school feeding

activities contribute to dietary diversification and is an entry point for gardening, nutrition, and income generation.

These actions also leverage schools as a platform to contribute to food diversification and delivering sensitization on hygiene, family practices, and environmental stewardship. Furthermore, adolescent girls are supported with scholarships/cash transfers to encourage attendance and retention in primary and secondary school and reduce the risk of early marriage. The cash grants are coupled with school- and community-based actions on the prevention of early marriage, on life skills, nutrition and hygiene practices.

**Lean season support.** During the lean season (June to August for agropastoral areas, which corresponds to the rainy season), FFA participants receive unconditional cash/food assistance since it is not possible to carry out FFA works due to the rain and cultivation/growing period. This assistance is critical as it helps households bridge the gap between their last food stocks from the previous harvest, and the next harvest (late September/October) and cultivation of their land.

**Capacity strengthening.** Technical assistance and strengthening the capacity of local actors helps to create a conducive environment for resilience and support investment sustainability. This includes training decentralized government technical services, municipalities, local management committees and partners, support for policies and guidance at national level, or cooperation with local universities. More specifically, WFP Niger focuses on strengthening programme quality and enhancing government ownership of resilience programmes by supporting technical ministries (agriculture, environment, education, health, and so on.) and working with local universities. In 2022, WFP worked with six universities and two research centres to link research to resilience efforts and improve the quality of resilience interventions: 35 students benefited from internships to conduct research on the impact of resilience activities.

The programme also works on enhancing government decentralization and planning, working with the Ministry of Community Development and Decentralization and enhancing the design of the government's social protection system to make it more shock-responsive and nutrition-sensitive, working with the National Food Crisis Prevention and Management System (DNP-GCA) Safety Nets Unit, the World Bank and UNICEF. This work is complemented by strengthening the operationalization of the humanitarian-development-peace nexus approach by: promoting sustainable solutions in conflict-affected areas; working with the Ministry of Humanitarian Action and Crisis Management (MAH/GC) to improve the dissemination of climate information to producers; and working with the General Directorate of Meteorology (DMN) and the National Council of the Environment for Sustainable Development (CNEDD) to develop and implement national policies on climate change.

## **Data sources and methodology**

Given the unique package of activities and the nature of a concept such as resilience, project results come from a variety of verified data sources using unique methodologies. As described in the RMME approach, evidence on resilience work provides greater insights when contextualized around specific shocks and stressors. The outcome data presented here includes data from before and after the **2021 drought**, to provide a dynamic understanding of household resilience against this major shock.

The evidence referenced in this report is drawn from WFP outcome monitoring surveys, independent assessments and data directly drawn from the following sources:



**Household surveys.** The primary source of household level data is surveys conducted by WFP Niger’s Research, Assessment and Monitoring (RAM) unit. These surveys generate a baseline and bi-annual comparisons from a random sample of households enrolled in the Integrated Resilience Programme. This provides data on food security, livelihood and nutrition period to allow comparability across years: at the peak of the lean season (July/August) and during the post-harvest period (November/December). This report presents the results from 2019 to 2022.

To display the effects of resilience-building over time, these survey samples are stratified into two participant cohorts, labelled by project funder and project start date. The **USAID 2014 cohort** is located in villages within Zinder, Maradi, Tahoua, Agadez, Dosso, Tillabéri, and Diffa, and includes a sample of 654 participant households. The German Federal Ministry for Economic Development Cooperation (**BMZ) 2018 cohort** is present in Zinder, Maradi and Tahoua and includes a sample of 598 participant households. These cohorts are not panel samples, meaning that the same households are not followed each year. A panel survey was also conducted in 2020/21 to measure food security (351 households within the USAID 2014 cohort and 578 households within the BMZ 2018 cohort). The results below specify whether the collection was from the panel survey, or the household surveys. Both cohorts are part of the same Integrated Resilience Programme, noting that there was a scale-up of the activities over time. The project started working with the USAID 2014 cohort which formed part of the ongoing programme design of Niger’s integrated resilience approach. Due to this emergent project design, by 2018 when the BMZ cohort entered the programme and until early 2022, both cohorts received the same combination of activities as described in the Programme Framework.

Crucially, implementation includes the whole cohort being targeted at once (i.e. all participants began together) and activities are described in detail below:

USAID 2014	BMZ 2018
Started in 2014 with USAID funding (first WFP Niger resilience cohort)	Started in 2018 with BMZ funding
4,550 beneficiary households	3,980 beneficiary households
Implemented in the regions of Zinder, Maradi, Tahoua, Agadez, Dosso, Tillabéri, and Diffa	Implemented in the regions of Zinder, Maradi and Tahoua
Initially was mostly focused on Food Assistance for Assets (FFA) activities	Received FFA and unconditional lean season assistance until the end of 2022
Package was gradually expanded to include school feeding, nutrition, Smallholder Agriculture and Market Support (SAMS), income-generating activities, and market gardening – i.e., the current integrated package	In 2023, lean season assistance was phased out, but FFA continued
Stopped receiving FFA and unconditional lean season assistance at the end of 2021	From 2024 onwards, will only receive capacity strengthening activities
Since 2022, have only received capacity strengthening support, including support to smallholders on post-harvest techniques, access to markets, sales to WFP, SAMS, and so on	

**Satellite-based analysis.** To provide more insights into the ecological impact of FFA land rehabilitation activities, two assessments were carried out on the project sites using satellite imagery of ground-based data.

This data source allows the impacts of land rehabilitation activities to be quantified and illustrates the evolution of the landscape over time. This report draws evidence from an independent evaluation<sup>4</sup> carried out by NASA in 2021. This evaluation used data sourced from Landsat 7 to quantify vegetation health indexes including the Normalized Difference Vegetation Index (NDVI), Enhanced Vegetation Index (EVI) and Soil Adjusted Vegetation Index (SAVI). These indicators were assessed alongside rainfall data from the Climate Hazards Group Infrared Precipitation with Station Data (CHIRPS) which is a station-corrected satellite product. Temporal analysis from these data sources was conducted in the project sites in southern Niger – Maradi, Tahoua, Tillabéri and Zinder.

Satellite analysis was also implemented using WFP’s global Asset Impact Monitoring from Space (AIMS) service in 2021.<sup>5</sup> This analysis uses remote sensing variables such as the Landscape Contrast Indicator (LCI) to [evaluate the longer-term impact of FFA projects on vegetation and soil conditions](#). Post-intervention landscape analysis was conducted on seven assets where half-moons were constructed in Maradi, Tillabéri and Zinder. These assets were submitted by WFP Niger to the AIMS service and, due to the timescale of the intervention, were sampled to illustrate a range of different asset types, asset age and regions.

**Operational research.** Qualitative approaches and other types of operational research are used to address specific research questions or shed more light on observations from monitoring data. Notably, this report draws on findings from a study conducted in partnership with the International Food Policy Research Institute (IFPRI), which examined the links between resilience interventions and social cohesion through focus group discussions (FGDs), key informant interviews (KIIs) and a mini-survey. In total, the Niger case study relied on 109 Key Informant Interviews (KIIs) and nine FGDs with community-level participants of WFP activities, 21 KIIs with government services, Cooperating Partners and other NGOs working on similar issues in the intervention zones, 16 KIIs with WFP staff, and 176 mini-survey respondents across five regions.

Research conducted with the AGRHYMET Regional Centre assessed the carbon sequestration potential of FFA interventions based on the EX-Ante Carbon-balance Tool (EX-ACT). In total, 48 FFA sites across six different regions were evaluated.

## Evidence and outcome data

As outlined, resilience is the complex interplay of shocks and stressors, resilience capacities, vulnerabilities, coping strategies as well as food security and nutrition at multiple levels. This approach means that there can be varying definitions and multiple angles to appraise resilience ‘evidence’.<sup>6</sup>

For the purposes of this report, ‘evidence’ can be taken as credible, traceable, and verifiable data that shows how people, communities, institutions or systems are more resilient in the face of shocks and/or stressors. As such, evidence on resilience requires observed changes of outcome

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<sup>4</sup> USAID/NASA. 2021. Technical Report: [Assessing the Impact of Agroecological Interventions in Niger through Remotely Sensed Changes in Vegetation](#).

<sup>5</sup> WFP Niger/AIMS. 2023. [‘Half-Moons & Satellites: A Match Made in Space’](#).

<sup>6</sup> A definition of resilience evidence is being developed and is expected to be finalized in 2023 following a consultation with international experts.

data over time: it should describe how people, institutions or systems better manage shocks and stressors to maintain or recover their food security and nutrition, and detail the extent to which these changes follow the programme framework.

This section details these changes following the programme’s conceptual model and intended changes to key areas in the programme framework.

### Vegetative cover and production

A key project evidence area is the land rehabilitation achieved through FFA activities. Between 2014 and 2022, more than **233,000 hectares of degraded land were rehabilitated**. This achievement led to significant changes for Niger’s natural environment and ecosystems. Analysis from the AIMS service illustrated the resilience project’s sustained impact across the half-moon sites built in 2019, as all assets assessed using the LCI were found to have improved vegetation conditions relative to surrounding areas. Notably, despite changing rainfall conditions, there was improved vegetation cover inside project areas compared to the overall landscape and the initial landscape cover before the start of the rehabilitation. As visualized below, project sites in Koonā, Gazaoua and Maradi show that, although rainfall does not increase, vegetation cover increases significantly, with up to near double NDVI values in 2021 compared to pre-intervention values. Similarly, in 2021 rainfall was below the long-term average causing a reduction in the overall landscape’s vegetation conditions, except for sites inside the programme area. When evaluated with the changing conditions over time and the comparisons to non-intervened areas, the project outcome data shows a **verifiable effect on the natural environment**. The outcome data shows a robust and sustained positive response to changing conditions as expected by the project framework. These changes can be taken as evidence of long-term rehabilitation of the ecosystem.

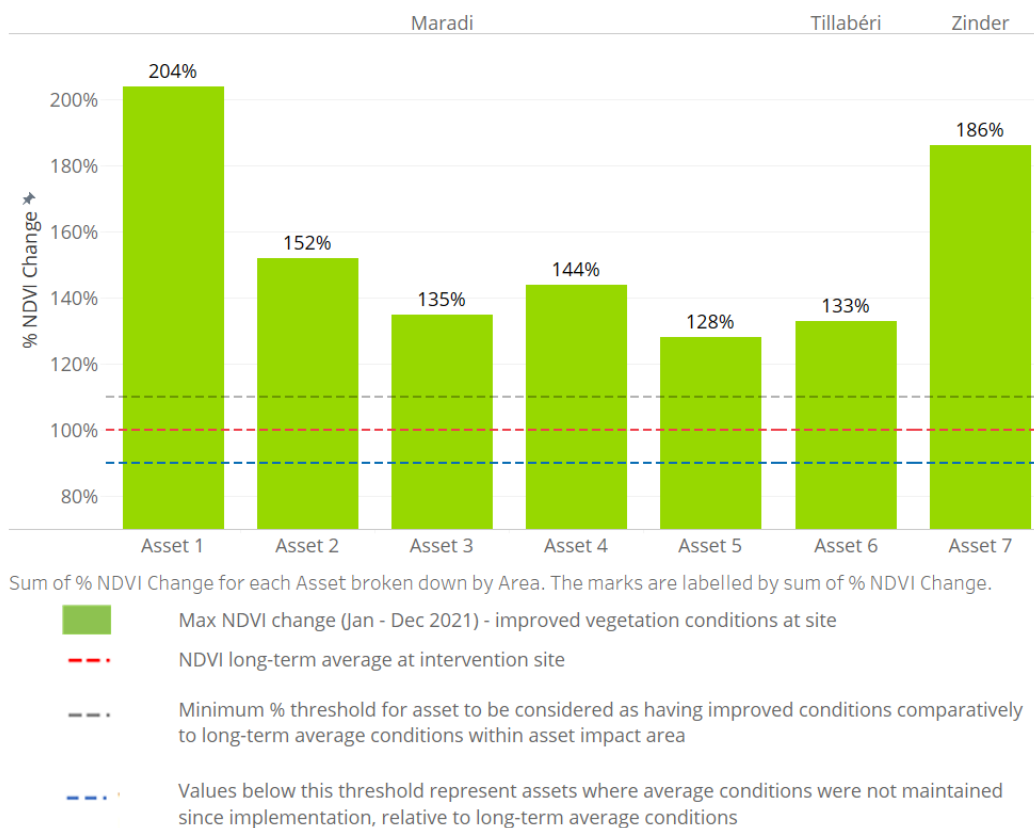


Figure 2: Vegetation change at the intervention site in 2021 compared to pre-intervention conditions | AIMS 2021.

Alongside these results, the satellite-based impact assessment conducted by NASA (supported by USAID) found that WFP's rehabilitation activities significantly contributed to vegetation cover. As seen in Figure 3 above, maximum vegetation cover at the AIMS assessed sites was significantly higher than the threshold for successful improvement of conditions. By comparison, this study shows almost 50 percent increase in cover following the project start in 2014 and the assessment period in 2020. FFA sites had 25 percent higher vegetation compared to control sites, and a positive spill-over effect was observed in adjacent sites as the assets contribute to regenerating the broader watershed. These changes are shown in the pictures below, illustrating the increase in vegetation cover over 93 hectares of land, which were rehabilitated using pastoral half-moons in the Djiratawa commune between 2014 and 2015.

#### Before rehabilitation (2009)

#### After rehabilitation (2019)

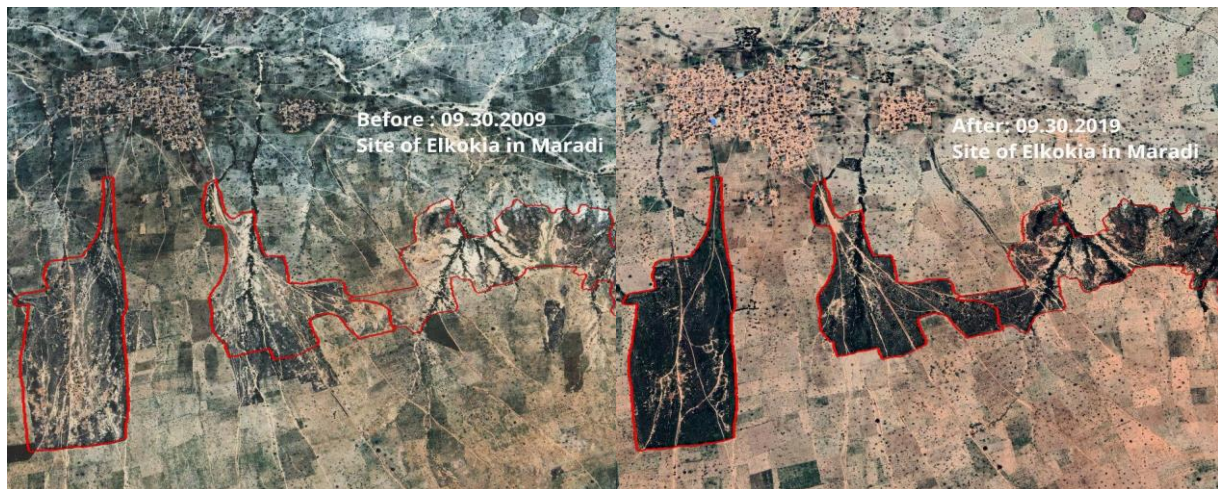


Figure 3: Increasing vegetation cover in the Elkokia site of the Djiratawa commune, Maradi region

Likewise, positive natural environmental impact is seen in an independent study of WFP's FFA programmes by the AGRHYMET Regional Centre which found that, on average, each hectare of rehabilitated land sequestered **6 tons of equivalent CO<sub>2</sub> per year**. The comparison of these high-level targets across different studies with differing methodologies illustrates the ecological change of this work and how it is meaningfully contributing to the restoration of the ecosystem.

FFA work is instrumental in enhancing the management of, and improving access to natural resources to support household livelihoods by increasing production. For the BMZ 2018 cohort, 40 percent of households surveyed in December 2021 stated that the FFA activities had helped them acquire new farmland and 42 percent stated that the activities helped them reclaim farmland they had pledged or leased. More than 80 percent of all resilience households surveyed in December 2021 stated that asset creation activities had simultaneously helped to reduce natural resource conflicts in their community, improve the natural environment, and increase or diversify agricultural production.

These observed changes in outcome data are highest in the initial resilience sites, indicating that the changes supported by the project are long term. For example, 93 percent of households enrolled since 2014 (USAID 2014 cohort) said that FFA assets enabled them to increase or diversify production, compared to 82 percent among households enrolled since 2018 (BMZ 2018 cohort). Given the high reliance on natural resources for livelihoods in Niger, these perceived



improvements in production capacity, coupled with the increasing resilience of the ecosystem, can be seen as **key building blocks in the pathway to building household-level resilience**.

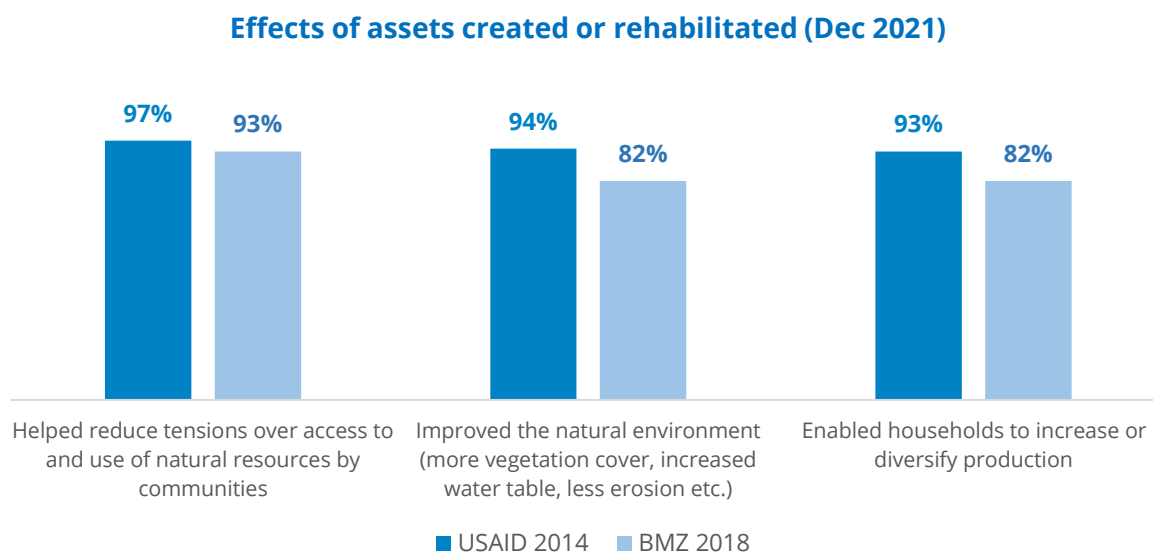


Figure 4: Effects of assets by cohort (December 2021)

### School-related outcomes

Outcome data on the school meals activities in Niger from drought year (2021) showed that parents believed that these meals: relieved children from hunger (95 percent of parents for the USAID 2014 cohort; 79 percent for the BMZ 2018 cohort); acted as an incentive to send children to school (77 percent for both cohorts); and enabled children to better concentrate in class (80 percent for the USAID 2014 cohort; 69 percent for the BMZ 2018 cohort). Removing children from school is a detrimental negative coping strategy used during times of crisis by vulnerable communities. This pattern of data highlights that the Integrated Resilience Programme encourages parents to keep their children in schools, even during a shock event.

Parents' perspectives were supplemented with secondary data on school dropout and attendance rates. When disaggregated, this data shows that, **on average, schools participating in the programme have a 7 percent lower dropout rate**. Further disaggregation by location shows that the largest impacts are observed in regions with high levels of household mobility, with a 27 percent lower dropout rate in schools with meal programmes in Tillabéri (which has higher rates of conflict) and a 19 percent lower dropout rate in Agadez (which is a predominantly pastoralist community).

Comparatively, the lowest changes were seen in regions that are more stable and with sedentary livelihoods, with almost no changes in Dosso and a 2 percent lower dropout rate in Zinder. These initial findings may be taken as evidence for improved school retention once a direct programme contribution can be made through continued collection of time-series data and qualitative methods.

### Dropout rates for the 2020/21 school year

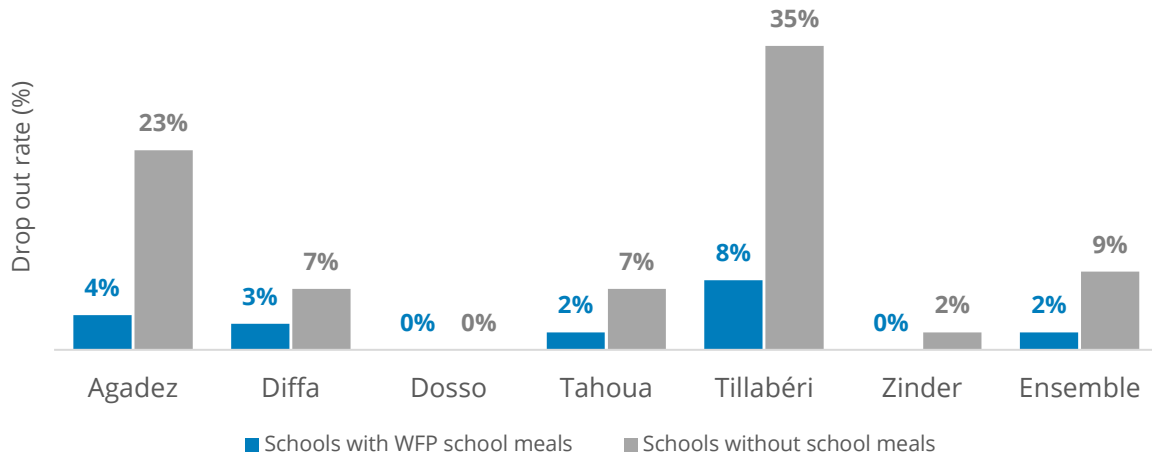


Figure 5: Dropout rates by area for the 2020/21 school year

Results recorded for school grants provided to adolescent girls showed that 89 percent of households receiving the grants stated that they had an impact on their attendance. Across cohorts, the reported impacts improved in 2022, consequent to the drought shock with the most frequently reported observation being motivating girls to stay in school (81 percent for the USAID 2014 cohort; 86 percent for the BMZ 2018 cohort) and motivating parents to send girl pupils to school during the 2021 drought (84 percent for the USAID 2014 cohort; 79 percent for the BMZ 2018 cohort).

### Perceived impact of cash grants for girls

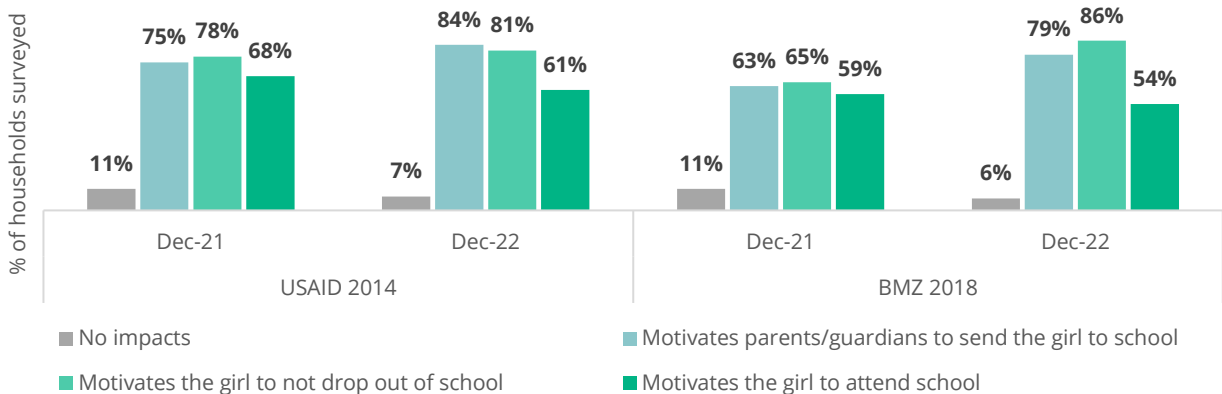


Figure 6: Perceived impact of cash grants for girls by cohort

These perception-based results were corroborated by secondary data sources, specifically attendance and school achievement data. In 2022, WFP conducted a survey of a sample of 133 schools receiving cash grants for girls. The survey results found that, in these schools, the **pass rate (to move into the next grade) was 62 percent for girls receiving grants**, compared to only 42 percent for girls in the same class who did not receive grants. Results also found that the drop-out rate for girls receiving grants was 5 percent, compared to 7 percent for those without grants.

### Pass rate and dropout rate among girls with and without scholarships, in WFP-supported schools (2021/22 school year)

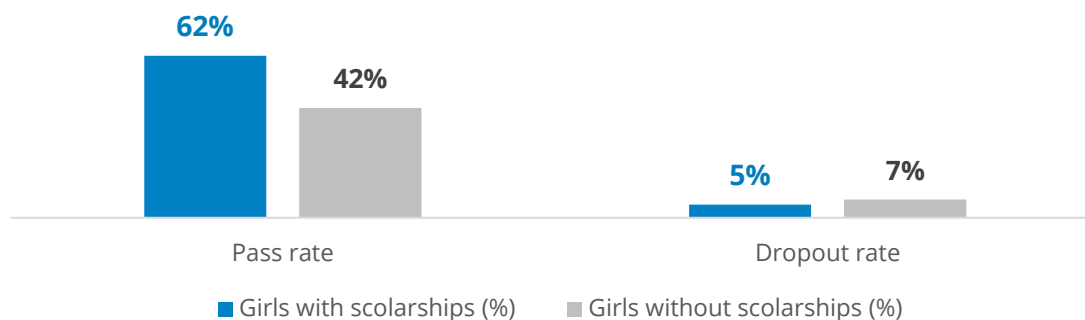


Figure 7: School achievement (pass and dropout rate) by cohort

### Migration

WFP’s Integrated Resilience Programme aims to contribute to reducing distress labour migration. Initial results in 2020 for both the USAID 2014 and BMZ 2018 cohorts found that, on average, 76 percent of participating households reported that the number of their household members who had migrated for work had decreased compared to the previous year.

### How has the number of people who migrate seasonally or permanently changed in the past year, in your household?

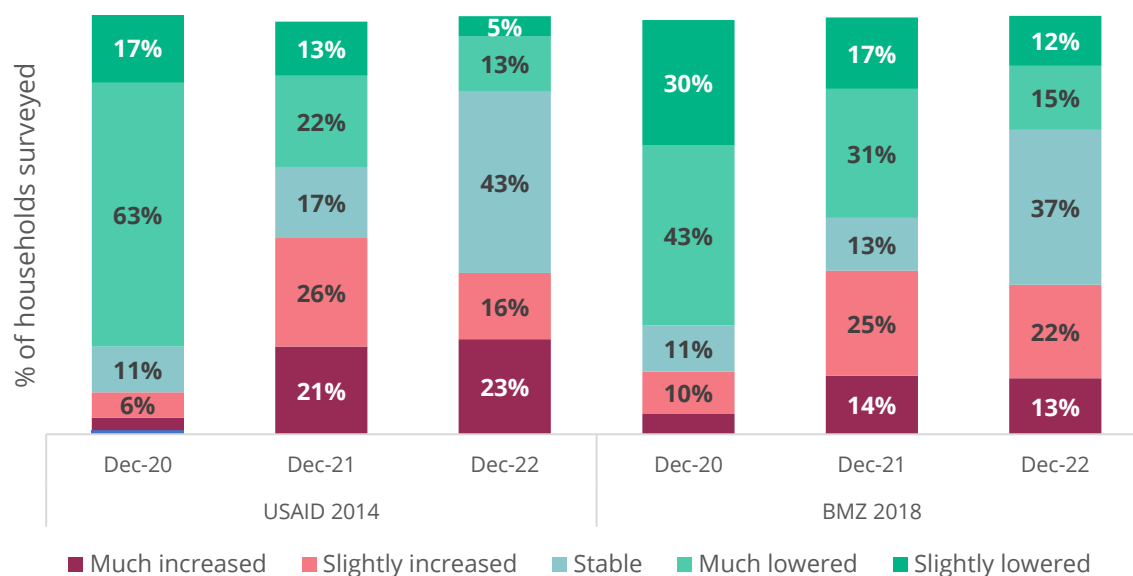


Figure 8: Migration patterns by cohort

However, the share of households that reported an *increase* in migration rose in 2021. This is likely due to the 2021 drought, which forced many households to make up for declines in their household agro-pastoral production by adopting coping strategies related to migration, such as looking for alternative sources of income abroad or in other regions/urban centres. The situation seems to have stabilized in 2022 as the **share of households that reported increased migration declined**, and the share that reported that migration had stabilized increased. These changing migration patterns are triangulated with results on food security indicators (presented in detail

below) which show a slight degradation in 2021 due to the drought and accompanying food crisis, and a bounce back in 2022.

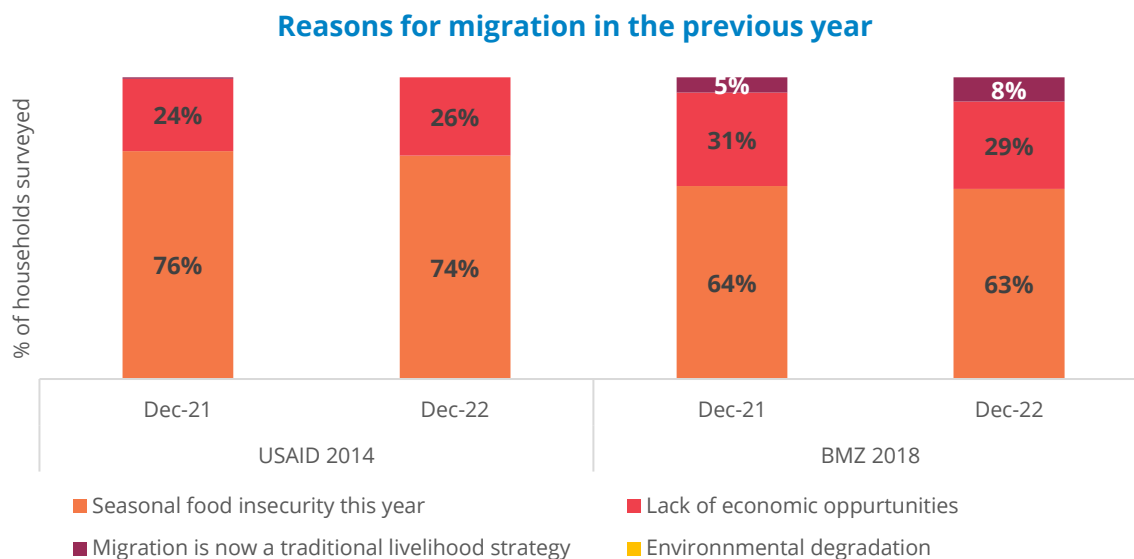


Figure 9: Stated reasons for migration during the previous year by cohort

Further results from outcome data show that participants state that the main cause for decreased migration is cash/food received through FFA activities. Of households in the USAID 2014 cohort, 52 percent also mentioned this reason in 2022, even though this cohort stopped receiving FFA food/cash transfers in 2022. One possible explanation is that, even though households were no longer receiving cash/food transfers from WFP as part of formal FFA works in 2022, they were still **harvesting crops/fodder on the land restored** through FFA in previous years and this was enough to prevent them from migrating.

Among households that said migration had increased, there was notable difference in the reasons for this increase between the USAID 2014 and BMZ 2018 cohorts. In 2021 and 2022, about 75 percent of USAID 2014 participants said that the increase was due to seasonal food insecurity during these specific crisis years – compared to about 63 percent for BMZ 2018 participants. Further qualitative investigation is needed to appreciate the differences in the reasons for year-on-year migration. Possible explanations for this trend could include that USAID 2014 sites were disproportionately hit by the 2021 drought, however, older resilience sites had other economic opportunities established over time compared to the BMZ 2018 participants who actively sought out economic opportunities beyond their sites.

These initial results need to be complemented by more granular analysis (including triangulation with data sources other than participants’ own observations) to better understand the migration trends in resilience as WFP’s activities are phased out. In-depth qualitative research is also needed to uncover community understanding of changes in migration.

### Resilience capacities

To better understand participants’ perception of their resilience, WFP Niger collected outcome data on the Resilience Capacity Score (RCS). This subjective measure asks participants to rate their perception of their household resilience across four different capacities (absorptive, adaptive, anticipatory and transformative) and five livelihood capitals (financial, human/learning,



information/early warning, institutional, and social). Scores from these individual statements are then normalized, and each household is classified into terciles as either having a low, medium or high RCS. First collected in Niger in 2019, the yearly comparison for the RCS shows that the overall share of households with a medium or high RCS increased to 97 percent and 98 percent in 2022 for the USAID 2014 and BMZ 2018 cohorts respectively.

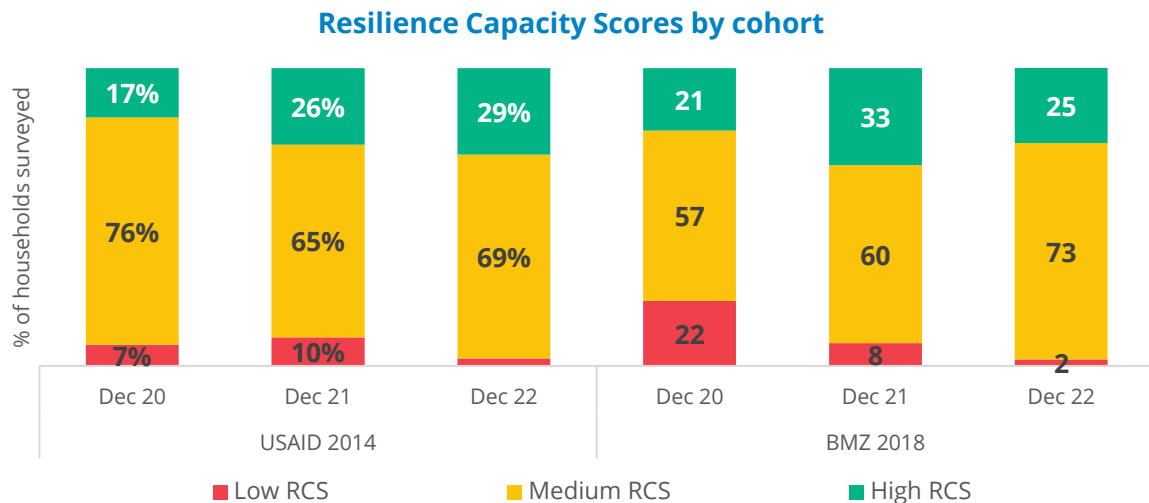


Figure 10: Resilience Capacity Score (RCS) by cohort

Changes in the RCS profile were more pronounced among households headed by women (24 percent decrease in low RCS) than households headed by men (17 percent decrease in low RCS). This change in profile is noteworthy considering that households headed by women had a higher proportion of participants in the 'Low RCS' category in 2020, indicating that **perceptions of household resilience have improved over time – especially for women.**

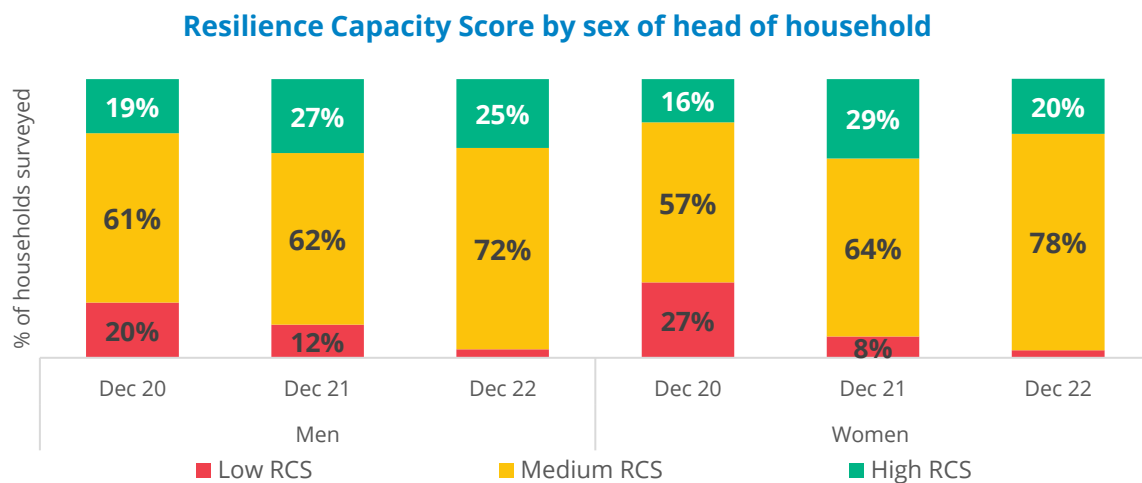


Figure 11: Resilience Capacity Score (RCS) by sex of head of household

As the RCS is a multi-dimensional score, the evolution of the capacities and capitals provide evidence on participants' changing resilience dimensions. Results from the two cohorts show that the highest increases were in political capital and early warning, which may be due to the improved dissemination of climate information supported through the programme's capacity strengthening work. Conversely, transformative, adaptive and absorptive capacities show little changes over time. This pattern of perception outcome data might be a beneficial line of inquiry to understand

how households perceive their own resilience capacities following shock events. Continuing data collection using this indicator may provide more robust conclusions over time and evidence on the specific link between resilience activities and developing these capacities at a household level.

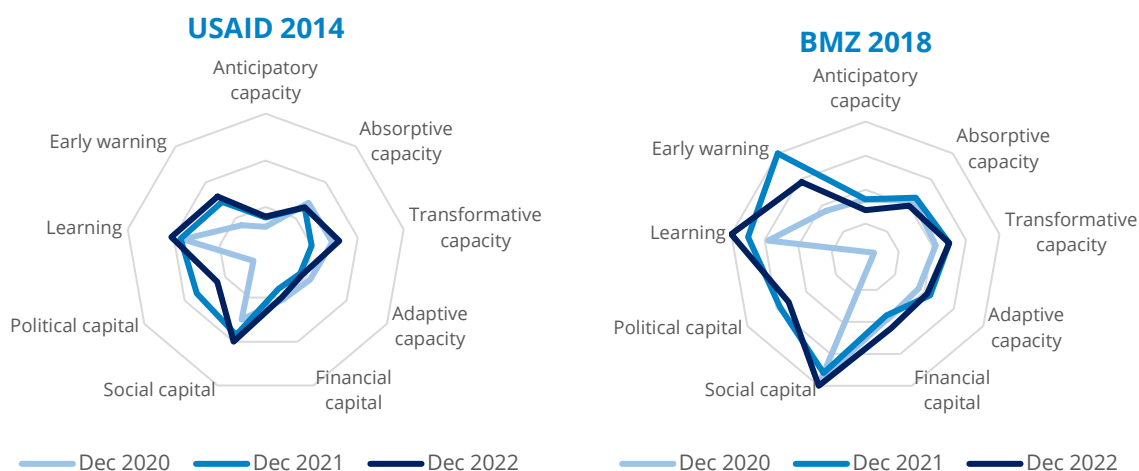


Figure 12: Resilience Capacity Score (RCS) by module

### Social cohesion

While building social cohesion is not the main objective of the Integrated Resilience Programme, conflict can be a leading cause of hunger. Delivery of food assistance can exacerbate or reduce tensions within communities. Perception-based tools were used to measure social cohesion where participants were directly asked if assistance influenced social cohesion within households, within villages and across villages. Participants overwhelmingly reported a positive effect on social cohesion within households (88 percent for the USAID 2014 cohort; 99 percent for the BMZ 2018 cohort). This positive effect was also assessed for social cohesion within their village (76 percent for the USAID 2014 cohort; 92 percent for the BMZ 2018 cohort) and between different villages in the same area (72 percent for the USAID 2014 cohort; 91 percent for the BMZ 2018 cohort). Qualitative assessment of these observations showed that participants positively appraised the programme for reducing tensions related to accessing natural resources and bringing communities together on FFA activities.

Such findings are also corroborated by an in-depth qualitative study conducted by the International Food Policy Research Institute (IFPRI). The study found that WFP resilience activities and their planning processes created opportunities for face-to-face interaction, which helped to reduce stereotypes, suspicion and mistrust and enabled stronger bonds and bridges within and between communities (including between different ethnic and religious, host and displaced communities, etc.) as well as with their leaders (community leaders, traditional chiefs, subnational government services, and so on). Asset creation and livelihood activities enhanced communities' natural resource base and economic opportunities, easing tension between farmers and herders, reducing distress migration, as well as increasing youth involvement in community life and promoting trust between young people and elders. Women also expressed a sense of empowerment and rapprochement with community leaders through increased participation in community planning, decision making and economic life as a result of livelihood and nutrition activities.

## Food security

WFP Niger's Integrated Resilience Programme seeks to protect food consumption levels in times of shock, and to ensure long-term sustained food security, even after food and cash transfers have been phased out. Trend analysis of food security indicators collected through monitoring survey data on the same households provide some **longitudinal evidence** on the effect of resilience programmes on both these aspects.

The 2021 drought and resulting food crisis was an important opportunity to assess how resilience programme beneficiaries fared in times of shock, as **more than half of WFP's resilience sites were located in areas most affected by the drought** – as shown in the figure below.

Among the 2000 villages WFP supported through the integrated resilience approach, 848 were located in areas classified as extremely vulnerable by the government, however, 80% of these villages were not classified as extremely vulnerable and did not require emergency food assistance during the year's lean season.

Results across several food security indicators – Food Consumption Score (FCS), Consolidated Approach for Reporting Indicators of Food Security (CARI), Livelihoods Coping Strategies Index (LCSI) – are consistent and show that food security levels stayed stable or declined slightly in 2021, but then quickly increased in 2022. These results show that **households were able to withstand the 2021 shock and also recover very quickly.**

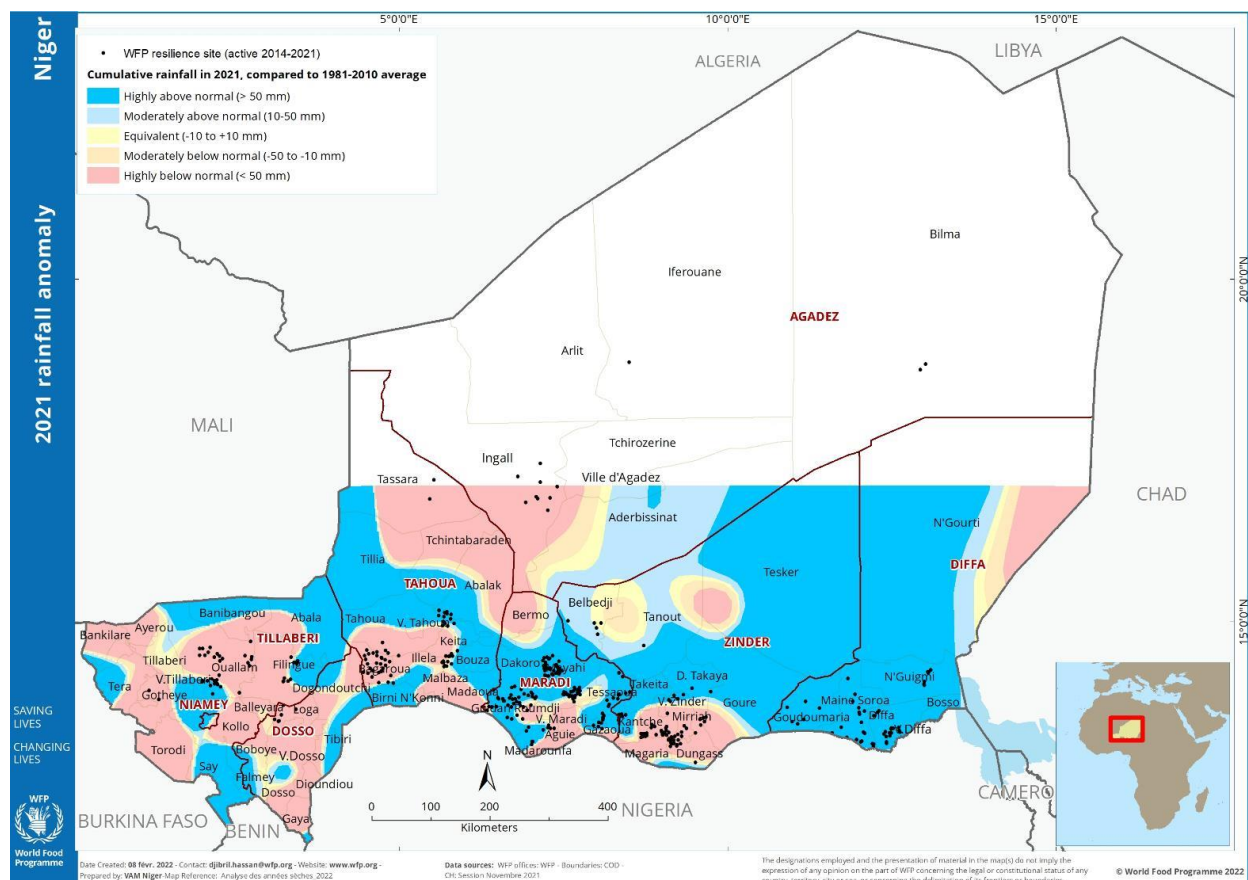


Figure 13: Map of rainfall anomalies in 2021 and location of WFP resilience sites

For example, the Food Consumption Score (FCS) for both the USAID 2014 and BMZ cohorts remained stable between 2020 and 2021 (with around 16 percent of households having poor food consumption), but then started improving again in 2022 (with around 8 percent of households having poor food consumption).

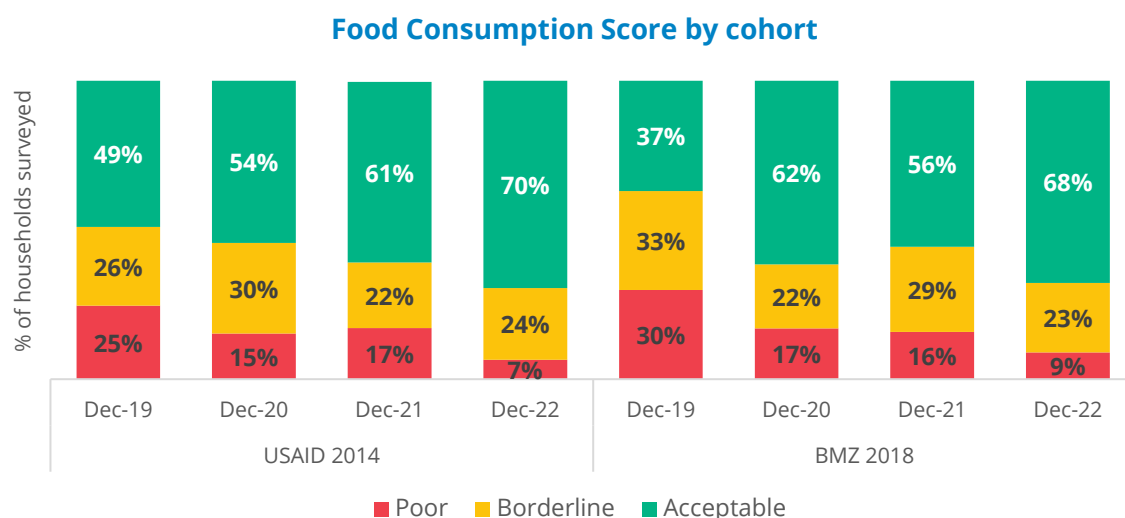


Figure 14: Food Consumption Score (FCS) trends by cohort

The Food Expenditure Share (FES) is a proxy indicator of food insecurity comparing the percentage of household expenditure dedicated to purchasing food. The share of total household expenditure spent on food dropped significantly between 2020 and 2021 for both the USAID 2014 and BMZ 2018 cohorts, a positive sign that households were producing more food, or had increased their overall income and were therefore able to spend more on non-food items such as health or productive investments. However, food expenditure increased significantly in 2021, in tandem with the unprecedented food price crisis – which was further exacerbated in 2022 by the Ukraine crisis. Food expenditure started declining again in December 2022, in line with the price stabilization observed towards the end of 2022. However, food expenditure remains higher than before the 2021 crisis, and is likely to remain so until prices have dropped back to their pre-2021 levels.

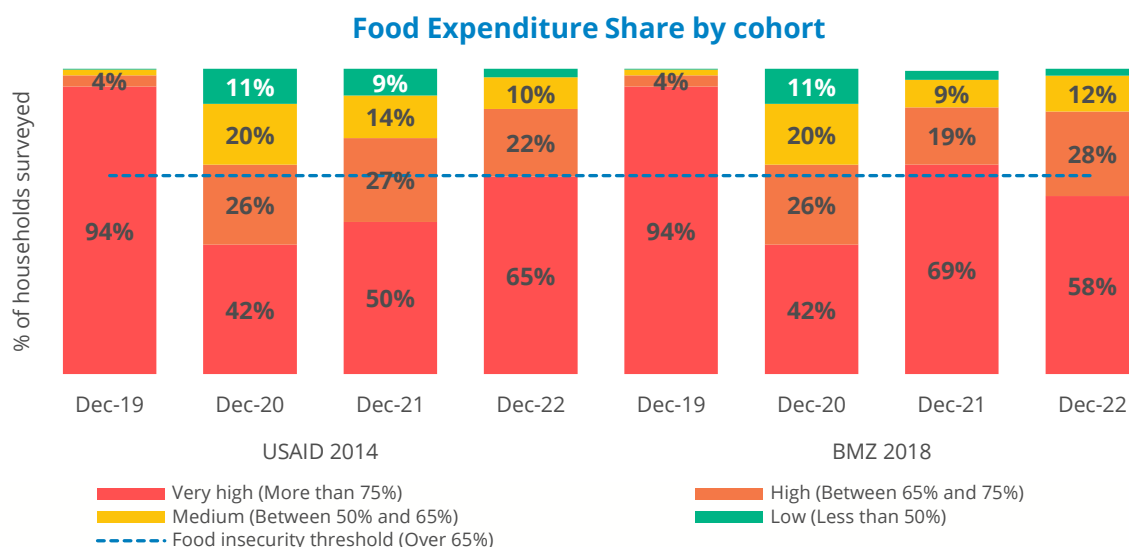


Figure 15: Food Expenditure Share (FES) trends by cohort



The Consolidated Approach for Reporting Indicators of Food Security (CARI) – a composite indicator that combines several other food security indicators to provide an overall classification of household food security levels – shows that **food security levels dropped between 2020 and 2021 but recovered in 2022**.

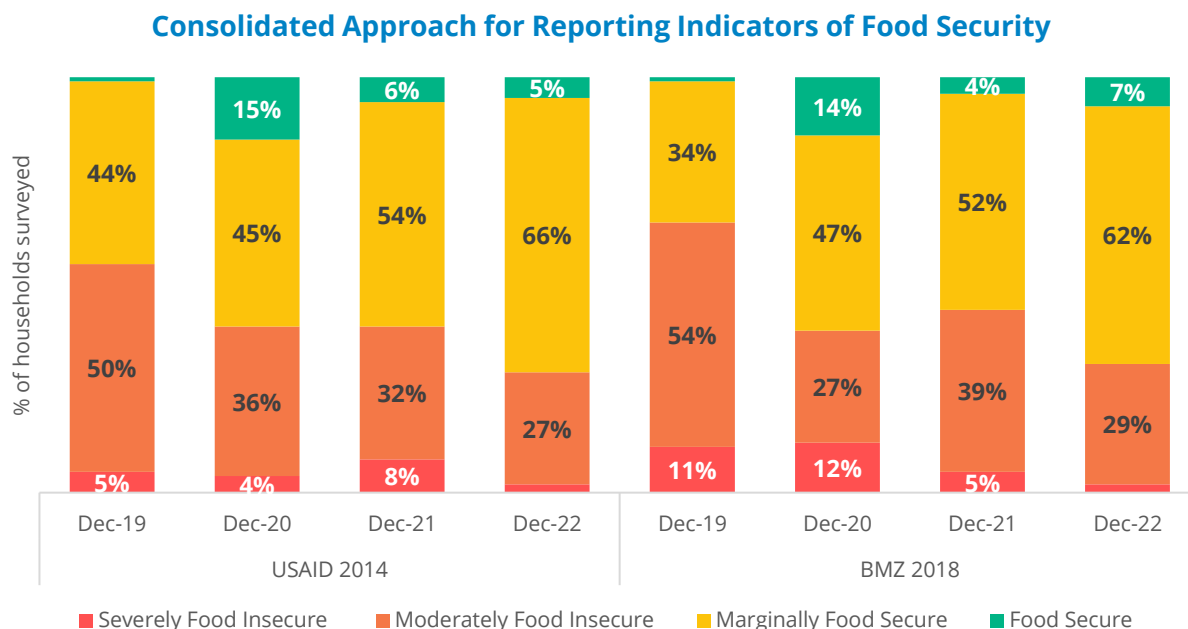


Figure 16: Consolidated Approach for Reporting Indicators of Food Security (CARI) trends by cohort

The Livelihoods Coping Strategies Index (LCSI), which measures households’ asset depletion to cope with food shortages, shows similar trends: negative coping increased in 2021 as households had to sell assets or go into debt to deal with the crisis, but then quickly decreased again in 2022. The *panel survey* conducted on a smaller proportion of participants showed that 24 percent of BMZ 2018 households adopted less severe livelihood coping strategies in 2021, compared to 2020. This discrepancy highlights the utility of conducting panel surveys which allow direct longitudinal monitoring and tracking changes to individual households over time.

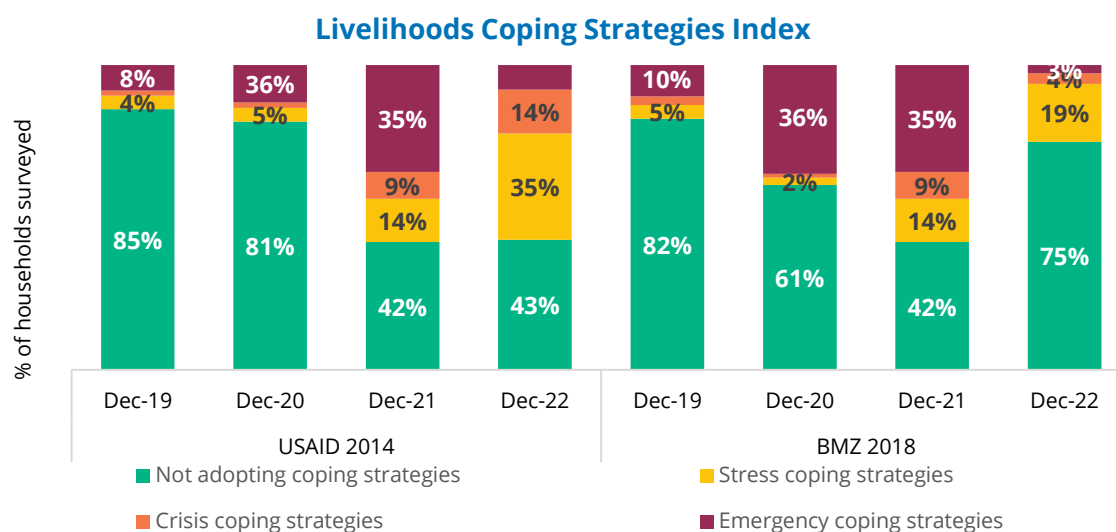


Figure 17: Livelihoods Coping Strategies Index (LCSI) trends by cohort

Looking at the broader context, all WFP resilience participants had similar food security levels compared to the general Nigerien population at the end of 2021.<sup>7</sup> Resilience programme participants are households that were identified during the targeting exercise as particularly vulnerable (i.e., classified as “poor” or “very poor” via the household economy targeting approach), and who live in districts identified as chronically food insecure via WFP’s Integrated Context Analysis (ICA). However, households interviewed in the national survey include all socio-economic categories – including well-off households. These results therefore suggest that **resilience households are faring as well – or even slightly better – than the rest of the population, despite having started out as more vulnerable** before the programme.

### FCS comparison between general population and WFP resilience participants

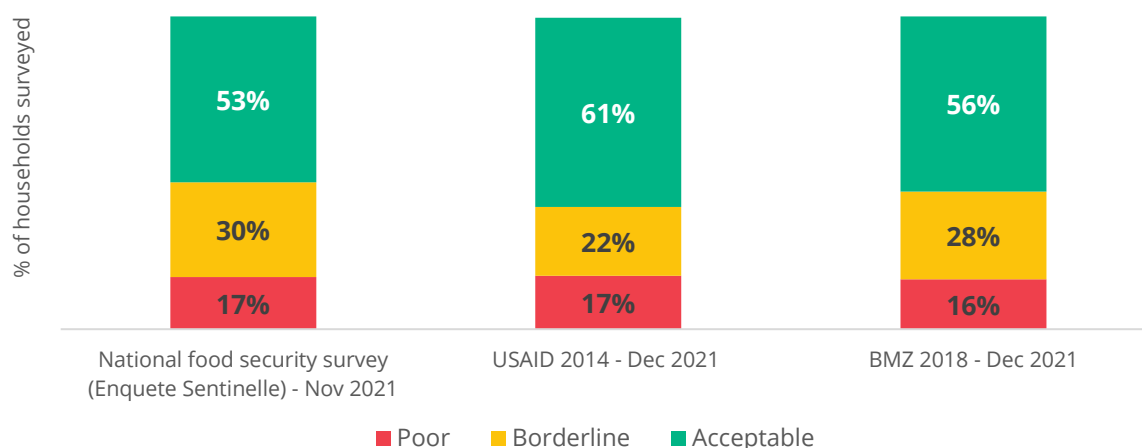


Figure 18: Comparison of Food Consumption Score (FCS) results between WFP resilience participants and the general population, Nov/Dec 2021

2022 was an important milestone for WFP Niger’s resilience programme, as it marked the complete phase out of food/cash transfers for participants in the USAID 2014 cohort. Since January 2022, participants from this cohort have received only training and capacity building for income-generating activities, reducing post-harvest losses, and so on. The 2022 results therefore provide an **important initial indication of the sustained impact of the programme** once direct transfers have stopped.

Data shows that food security levels stayed stable in 2022 after transfers stopped, and actually improved: the share of households with poor food consumption dropped from 17% in 2020 to 16% in 2021 and dropped further to 7% in 2022. The share of households classified as moderately or severely food insecure as per the CARI rose from 40% in 2020 to 44% in 2021 during the shock and dropped to 29% in 2022.

Taken together with the implementation and shock environment, the food security outcome data illustrate that **gains made in improving food security were maintained, even when direct transfers stop, and while households were recovering from a major shock**. These yearly trends suggest that **households recovered from the drought, but also recovered more quickly and effectively**.

<sup>7</sup> FCS for WFP participants were collected through Post Distribution Monitoring (PDM) surveys in December, while FCS for the general population were drawn from the national annual food security assessment conducted in November.

## Nutrition

Nutrition and childcare practices have also improved under the Integrated Resilience Programme. One key achievement is better Minimum Dietary Diversity (MDD-W) among women of reproductive age collected through Post Distribution Monitoring (PDM) surveys. For the BMZ 2018 cohort, results steadily increased from only 23 percent of women having acceptable MDD in 2019, to close to 60 percent in 2022.

### Minimum Dietary Diversity among women of reproductive age by cohort

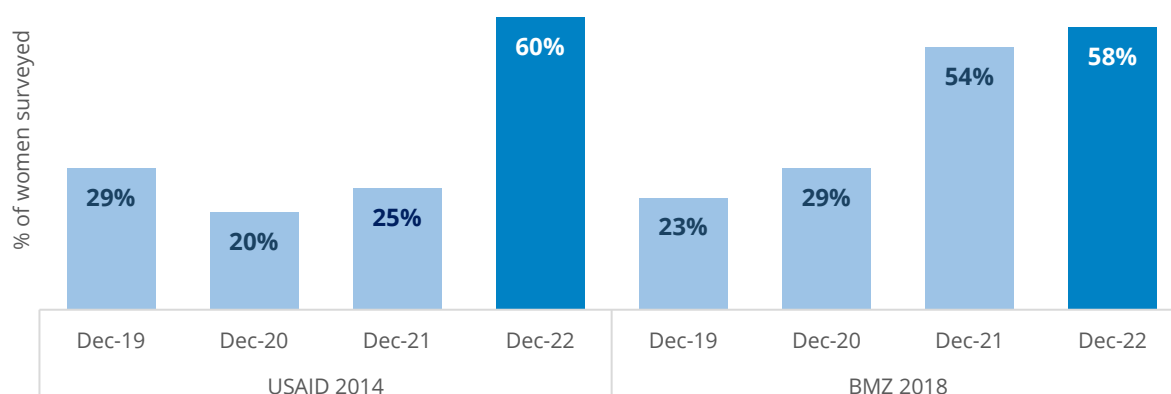


Figure 19: Nutrition outcomes among women of reproductive age

When compared to national data, households participating in the project showed significantly higher levels of exclusive breastfeeding of children under 6 months of age and completing weekly Mid-Upper Arm Circumference (MUAC) malnutrition screenings.

### Infant care practices: resilience households vs. national trends

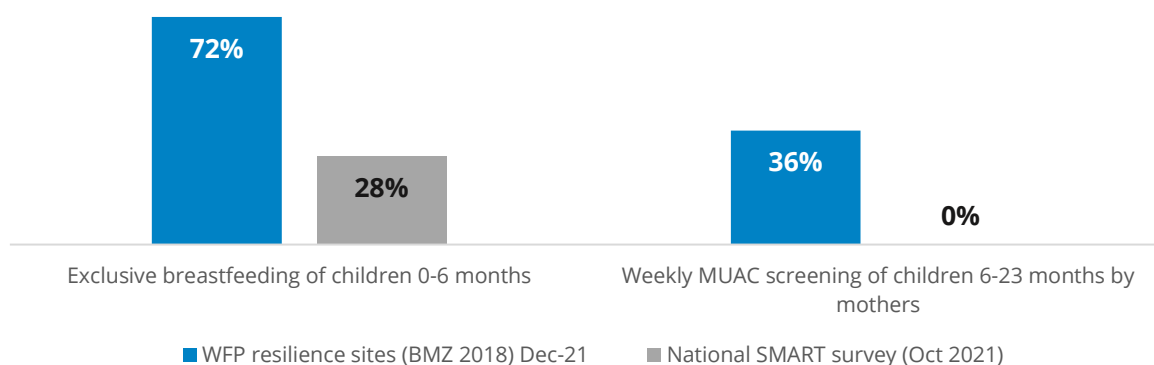


Figure 20: Infant care practices by group

Changing dietary diversity at a household level appears more challenging. Similar patterns were observed across the USAID 2014 and BMZ 2018 cohorts which show that increases between 2019 and 2021 were primarily regarding protein-rich foods, while consumption of iron-rich foods remained low. PDM results showed that nutrition outcome data (as seen in Figure 22) was

slightly better in resilience sites where WFP had set up vegetable gardens than resilience sites without.

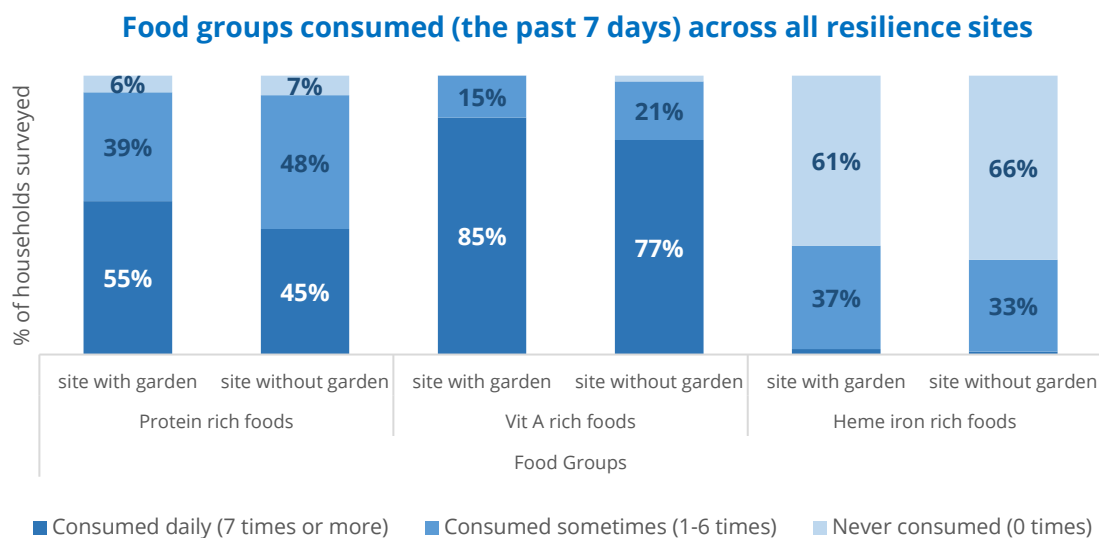


Figure 21: Detailed food group consumption by group

Improvements in sites with vegetable gardens saw a 2 percent increase in the proportion of children aged 6–23 months with a minimum acceptable diet and a 14 percent increase in women of reproductive age with MDD and improved consumption of all food groups. These results were **complemented with focus group discussions** where participants attributed the changes to establishing these gardens which allowed more regular consumption of nutritious foods, such as moringa leaves, squash and tomatoes. Further analysis of variance, complemented with comparison to the general population, could strengthen the evidence on the contributing effect of vegetable gardens to household nutrition.



Figure 22: A vegetable garden site in Tahoua -- WFP/Evelyn Fey

## Summary of findings

It is important to understand how the current evidence base in Niger can be improved. A summary of findings is detailed in the table below:

Findings	Sources of evidence and indicators	Recommendations to improve the evidence
<b>Vegetative production and cover.</b> Rehabilitated land through FFA activities leads to improved vegetation conditions and production across periods of variable rainfall	Supported by satellite imagery (NASA, AIMS – LCI) and complementary studies (Effects of Assets, AGRHYMET Regional Centre)	Analysis of production data at sites selected for satellite imagery may further contribute to understanding the programme’s contribution to the changes.
<b>School-related outcomes.</b> Lower dropout rates during a shock and better educational outcomes for schools participating in the school meals programme	Schools are compared across differing areas including multiple data sources (attendance/dropout/pass rates)	Continued trend analysis, including group comparisons integrated with secondary school/qualitative data, may help explain the contribution of the programme to results.
<b>Migration.</b> Decreased continual adoption of migration as a livelihood strategy in resilience programme sites following a shock	Supported by subjective indicators (migration pattern survey modules)	Increasing the number of time/context comparisons and including secondary sources of migration data. Qualitative data will assist in understanding the complex decision making and seasonality of local migration.
<b>Resilience capacities.</b> Perceptions of resilience and social cohesion improve over time and following a shock	Newly piloted indicator with a yearly comparison using a panel design (RCS, Qualitative)	Analysis of the RCS composite score and individual modules related to the programme implementation may help to further understand changes in resilience capacities and capitals.
<b>Social cohesion.</b> The development of community-level management structures enabled the diverse groups participating in the FFA activities to evolve collective conflict management mechanisms and improve social cohesion even in a shock-prone environment	In-depth qualitative study by IFPRI and perception-based questionnaire	The richness of the qualitative research is essential to provide evidence for this complex outcome. Further inquiry with quantitative methods may help capture broad trends.
<b>Food security.</b> Participants’ food security recovered following the 2021 shock, and recovered faster than previous years	Multiple sets of outcome data and panel surveys showing trends over time analysed before, during and after a notable shock event (FCS, FES, LCSi, CARI)	Continued trend analysis (insight of changing programmatic activities and shocks/stressors) with the potential for panel surveys to better understand changes that can be further supported by qualitative data.
<b>Nutrition.</b> Improved dietary diversity in women of reproductive age, better childcare practices, and initial evidence of improved food group consumption in sites with vegetable gardens	Supported by comparisons to the general population and between communities (MDD-W, MUAC Screening, Qualitative)	Continued trend analysis (especially noting changing activities) and analysis of variance may help show sustained results.



## **Success factors and lessons learned**

### ***Success factors***

#### **Strong programme-RAM synergies support evidence generation and programme learning**

The success of the evidence generation, collection and documentation in Niger is largely due to the strong synergy between Research Assessment and Monitoring (RAM) and Programme teams at country office and regional level, strong technical support from the RAM and Programme teams in the West Africa regional bureau and headquarters and – crucially – the importance given to evidence generation by country office management (including dedicating sufficient staff capacity and funding to data collection and analysis). The regional bureau staff supported a collaborative approach across the Sahel region by forming a joint working group known as ‘RAM-RES’ which facilitated regular dialogue between the programming and monitoring teams working on advancing resilience programming and measurement in the region. The evidence presented here has played a key role in shaping WFP Niger’s new Country Strategic Plan 2024–2028.

#### **Robust data analysis – such as disaggregation by cohort and trend data – supports evidence generation**

The experience in Niger also shows that it is possible to generate sound and easily understandable evidence on household-level resilience outcomes through routine collection of Corporate Results Framework data and other corporate indicators (such as the food consumption score), as long as quality data is collected and analysed consistently over time. A key success factor of the approach in Niger has been designing an evidence-generation approach that captures different aspects of resilience (from the individual to ecosystem levels) combined with various sources of evidence that look at the different ways resilience is built over time.

Following the RMME approach (by calculating averages, disaggregating by sub-groups, assessing variations, examining trends) allows greater utility of these relatively simple indicators to add to the evidence process by accounting for shocks and stressors. Over the past ten years, many resilience measurement indicators and frameworks have been developed, but a common challenge is that they are overly complex to collect, interpret and communicate to decision makers. In Niger, the priority has always been to inform programme design and decision making – hence the use of simpler indicators and tools that are embedded in the country office’s existing monitoring and evaluation system and can realistically be sustained over time (and managed entirely by national staff).

#### **Complement and triangulate routine monitoring data with operational research**

WFP Niger also made use of multiple sources to triangulate findings from the highest level, including innovative technologies such as satellite-based tools to nuanced qualitative findings to combine these datasets into an evidence base. Investing in partnerships with external research organisations, such as AGRHYMET Regional Centre and International Food Policy Research Institute (IFPRI), have provided independent evidence on programme results in specific areas (such as environmental impact and social cohesion) to strengthen the evidence base.

## Challenges

Despite these successes, certain challenges to collecting and documenting evidence remain. These include competing priorities (such as emergency and operational tasks). High turnover in teams at the country level is also a challenge to ensuring that there is consistent application of the evidence-generation approach in the long term. While the RMME approach makes a significant step to generating resilience evidence, direct causality can be hard to establish at a project level with differing levels of data aggregation, cohorts and within a changing context that requires flexible implementation.

## Ways forward

Generating resilience-specific evidence is a key priority for country office Niger, but also for the WFP more generally to fully understand the impact of its Changing Lives agenda.

To promote evidence generation and gain further insights into resilience, WFP Niger plans to:

1. **Continue bi-annual household surveys** (including follow-up panel surveys on participants included in 2020/21 cycles) to allow further detailed trend analysis on the key indicators.
2. **Continue to expand the measurement coverage of high-level environmental impacts** using AIMS satellite-based asset monitoring analysis.
3. Carry out **site-specific analyses and qualitative research to better understand variations in outcomes between different sites** and examine the specific local factors that can drive or undermine programme success (including environmental, socio-cultural, and security factors).
4. Finalize the **external impact evaluation** in collaboration with BMZ on cohorts that entered the programme from 2021. This evaluation is being implemented by the World Bank's Development Impact Evaluation (DIME) unit, with final results expected by 2024.
5. With WFP and UNICEF, conduct a **joint qualitative evaluation** of their joint resilience programme in Diffa with a specific focus on social cohesion. Results are expected in 2024.
6. Continue **strategic research partnerships** with institutions such as IFPRI at country or regional level. At headquarters, such partnerships will begin with TANGO International (Technical Assistance to NGOs) developing a methodology to study and calculate averted humanitarian needs to show the full scope of how WFP's Changing Lives agenda saves lives.

## References and sources

This paper refers to the following documents, which are available for further reading:

- International Food Policy Research Institute (IFPRI). 2023. [Sahel social cohesion research in Burkina Faso and Niger: Working Paper](#).
- Mishra, V. et al. 2023. [‘Assessing impact of agroecological interventions in Niger through remotely sensed changes in vegetation’](#), *Scientific Reports*, 13, 360 (2023).
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- USAID/NASA. 2021. [Technical Report: Assessing the Impact of Agroecological Interventions in Niger through Remotely Sensed Changes in Vegetation](#).
- WFP. 2021. [Resilience Toolkit \(RMME Approach Guidance\)](#)
- WFP Niger/AIMS. 2023. [‘Half-Moons & Satellites: A Match Made in Space’](#).

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