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## **Does Early Cash-Based Interventions in a Food crisis Enhance Resilience? Evidence from Niger**

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# Does Early Cash-Based Interventions in a Food crisis Enhance Resilience? Evidence from Niger

Emmanuel Tumusiime

## Abstract

This study examined how households' responded in the Tillabery region, Niger given early cash transfer intervention and the impact on household food access and ability to cope and recover from a food crisis. Data was also collected from households that did not benefit from the cash transfer program for comparative purposes. Food access indicators are linked to the cash transfer program and structural characteristics of households and the relationships estimated using a propensity weighted econometric model. Results indicate that early cash transfer intervention had a positive impact on staving off short term food deficiency and reducing vulnerability but limited in contributing to longer lasting impact. The results also demonstrate that certain social-structural characteristics of a household, namely, more economically active adults, male head of a household and concerted decision making, are important for improved food access status. Focusing safety net programs based on these household characteristics could benefit efforts to better target those most vulnerable.

**Key words:** *Early cash transfer, Food crisis, Niger, Vulnerability, Resilience*

## Introduction

Food aid, if properly managed, can effectively mitigate the consequences of a food crisis and advance resilience to food insecurity. A central question to the realization of these objectives lies in the timing and modality of delivery (Hoddinott et al. 2008; Barret and Maxwell 2005). In terms of modality of delivery, debates have centered on whether to provide food or cash in emergency relief response; with current trends and debates favoring cash-based interventions in most cases. A common concern with current response approaches is that while they save lives, often do not contribute to reducing vulnerability of the affected communities to future shocks. Given that the triggers of food security crises –droughts and floods, food price spikes, conflicts and uncertainty—are likely to increase under the regime of increased climate change and variability; humanitarian and development practitioners are rethinking programming approaches that enhance the resilience of communities, especially those located in climate sensitive areas with high levels of chronic vulnerability such as the Sahel and the Horn of Africa.

Although cash based programming is now widely accepted and there is a growing trend towards its use to respond to food crises, empirical work to understand how households respond given the cash support and the implication on the household's food security and

resilience to the shock is thin (Devereux et al. 2006; Barrett et al. 2011). Also, development and humanitarian organizations advocate for a timelier cash-support intervention to protect livelihoods and build resilience in advance of crises. For instance, Oxfam and Save the Children conclude in a recent report that the impacts of the 2011 food crisis in the Horn of Africa could have been mitigated had donors and governments acted in advance to enable households reduce their vulnerability (see Oxfam and Save the Children 2012). The report recommends to stakeholders to manage risks not crisis by undertaking humanitarian work on the basis of forecasts and drought cycles.

Much of the debate and discussion on cash-based interventions has focused on the timeliness and cost efficiency of the program (Lentz et al. 2012), impacts on local markets (Lentz et al. 2012), and recipients' satisfaction (Michelson et al. 2012); but relatively less attention has been paid to how households respond given the cash income. How do households expend cash benefits, and how might this response affect households' food security during and after the crisis? Also, how might early timing of cash-based intervention impact on resilience during and after the crisis?

There is a broad public perception that early interventions help vulnerable households to smooth consumption and avoid adopting damaging coping strategies and depleting their assets, thereby allowing households to recover more quickly and effectively from a food crisis. With cash-based interventions, it is often hoped that vulnerable households would expend the cash income on immediate food needs, but also on productive activities that contribute to their long-term food security (Michelson et al. 2012; Devereux et al. 2006). However, empirical evidence of the food security benefits of early interventions in the case of a slow-onset food crisis is limited. This paper is motivated by the need to understand how households respond given early cash support, and the impact of the response on household food security and ability to cope and recover from a food crisis.

The current study is conducted in the context of the 2012 food crisis in the Sahel, utilizing data from Niger's, Tillabery region where Oxfam Great Britain (OGB) implemented an unconditional cash distribution program. The slow-onset of this crisis and concerns over limited donors' response require research to provide evidence whether there is added value of early

interventions in terms of food security and resilience. The findings will not only contribute to the evidence base of early interventions and the effectiveness of cash-based interventions, but also inform relief agencies' humanitarian programming to coordinate short-term early emergency assistance with long-term efforts to build resilience.

## **Background**

Following a poor crop harvest at the end of 2011 in Niger, Mali and Mauritania, famine monitoring technical teams and aid agencies in the Sahel raised alarm that a food security crisis loomed in the region. The Food Crises Prevention Network (FCPN) in the Sahel, for example, warned that the situation would evolve into a full crisis if mitigation measures were not taken.<sup>1</sup> According to the Famine Early Warning System Network (FEWS NET), the food insecurity crisis resulted from a poor harvest in 2011 and persisting high food prices in the region. In Niger, for instance, average prices of cereals in March 2012 were estimated to be 20 to 30 per cent higher than the long-run average of the last five years (FEWS NET, 2012). Poor households were at greater risk due to the combined effects of decreased farm income and increased food expenses.

Within the context of chronic food insecurity in the Sahel region, the 2012 food insecurity situation can be characterised as a short-term peak. Due to recurrent droughts, vulnerable households in the Sahel have lacked ample time to rebuild their food reserves and livestock herds (Gubbel 2011). At the same time, the high level of poverty in rural areas suggests that structural food insecurity exists even in years of good harvest. There is growing recognition that households in the Sahelian need some form of safety net (social protection) to help reduce vulnerability to food insecurity (Devereaux and Cipryk 2009; Gubbel 2011).

Social protection programming has traditionally been features of richer countries to enable poor households maintain a minimum threshold of living. These programs are also become reality in low-and middle-income countries as a measure to prevent vulnerable households from adopting damaging coping strategies and also build human capital to break the intergenerational transfer of poverty (Covarrubias et al. 2012; Handa et al 2012). According to

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<sup>1</sup> See analysis by the FCPN at: <http://www.oecd.org/swac/events/49815812.pdf>.

Holzmann and Grosh (2008), safety nets and social protection policies and programs are risk reducing instruments crucial for equitable growth. In the Sahel, social protection programs have typically been in form of humanitarian aid and food-based safety nets implemented by private voluntary organizations (PVOs) and governments with support from donors (Gubbel 2011). In Niger, the World Bank is funding a six year program which started in 2011.

Cash support is a preferred tool in humanitarian responses on motive that it helps vulnerable households meet their basic needs (e.g. food and health), but can also enable them invest in production activities such as farm inputs, livestock, and education (Michelson et al. 2012; Devereux et al. 2006). Development and aid agencies such as Oxfam consider providing cash support instead of in-kind food aid empowering recipients to decide how to use the cash, especially when markets function. The appeal of cash interventions also stems from the realization that food insecurity is more of the problem of access than food availability, which arguably can be addressed by cash-based interventions. Claims have also been made that cash based interventions and more generally LRP programs help local producers by increasing demand and stimulate production (Lentz et al. 2012).

Concerns about cash-based interventions also abound, but lack widespread evidence. For instance, concerns over the anti-social use of the cash transfer income have been raised, particularly that beneficiaries could misuse the cash transfer income on expenses that do not relate to households' food security and welfare of the children. These concerns have been explored *ex-post* in a limited amount of research in some pilot cash transfer programs but have found little empirical evidence to justify anti-social use of cash transfer income (Devereux et al. 2006; Devereaux and Cipryk 2009). Numerous authors also note that cash-based interventions could destabilize local markets by causing inflation and or increasing variability (Hoddinott et al. 2008; Harou et al. 2012; Lentz et al. 2012), which could ultimately hurt none-beneficiaries. Supply failures, especially in developing countries where markets are inefficient, could also mean that beneficiaries do not find the food. In general, many field studies have argued that the appropriateness of cash-based interventions depend on market functionality and context of need (Barret and Maxwell 2005; Hoddinott et al. 2008; FAO 2011; Harou et al. 2012).

As interest in cash-based interventions grows, discussion among humanitarian organizations has evolved from whether cash interventions are an appropriate tool to when and how donors, governments, and aid agencies can best implement cash transfers. This study contributes to this discussion in the context of the 2012 food crisis in West Africa's Sahel region, with a view to providing evidence on the effectiveness of early cash response in a slow-onset food crisis.

Niger presents a unique opportunity for this analysis: First, it was one of the first countries in the Sahel to implement a pilot cash transfer project. Second, it is a very poor country that has extremely high levels of malnutrition and is frequently in need of food assistance. According to the Food and Agriculture Organization (FAO) analysis, approximately 60 percent of the population in Niger live in poverty, nearly half of all children suffer chronic malnutrition and about 13 percent of the population is chronically food insecure (FAO 2012). By March 2012, the southern parts of Niger had been classified either as food stressed or in a food crisis, according to the FCPN and FEWS NET analysis and classification. Understanding the effectiveness of the early cash transfer in Niger is particularly pertinent for better programming to protect livelihoods by public donors and PVOs.

### **Study area and data collection**

Data was collected from Niger, Tillabery region in Ouallam district. The populations in Ouallam subsist on agro-pastoralism raising a mix of livestock and small scale agriculture. According to field reports, Ouallama district was severely affected by the food crisis of 2010 and was projected by FEWS NET to become food insecure in the first half of 2012, with the food insecurity situation expected to peak in June/July 2012. Oxfam initiated the cash transfer program (CTP) in late November 2011. The CTP was implemented in 11 villages (of Ouallam district) and was sought to provide protection to very vulnerable households in a slow-onset food crisis. Oxfam's CTP provided three unconditional cash distributions, one per month.

Given the timing of distributions, it can be understood to act as an "early intervention" against anticipated food insecurity during the lean<sup>2</sup> season—January-May 2012. Normally, October/November harvest is often considered 'bounty'; households stock food and invest

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<sup>2</sup> According to an Oxfam field office monthly food security assessment, in a normal year, November is immediate post-harvest period.

between November and April in preparation for a lean period after April. Therefore, by supporting people to use this favorable period, the Oxfam CTP fit the calendar of the people's initiatives and strategies.

A baseline survey was conducted in October 2011 to assess vulnerability and identify recipients—households considered to be the most vulnerable<sup>3</sup>. This study uses data collected at the end of February, 2012 from samples of CTP beneficiaries and non beneficiaries. Participants in the cash support program were asked questions pertaining to their household food security and how they had used the money from the CTP. Focus groups discussions were also organized among households to generate perceptions about the qualitative impacts of the early response. A total of 150 CTP recipient households are included in this analysis.

For comparative purposes, data was also collected from 65 households (control group) within the same community where the cash transfer program was implemented. The control group households were not targeted in the CTP because their food security and livelihood conditions were considered relatively better than those of the beneficiaries. The control group households were asked questions pertaining to their food security status. We use this data to test the hypothesis that households that benefited from the early cash transfer program have an increased ability to sustain household food security, and that this ability is also influenced by the household's social and demographic characteristics.

### **Capturing the effect of cash support on food security: theory and methods**

According to FAO, food security has three main components: availability, access and utilization (FAO 2007). Measurement of the utilization component often centers on measures of nutritional status (e.g. anthropometric measurement of children) and existence of adequate health and sanitation (FANTA 2006). Although we do not have data to measure the utilization component, a food crisis due to a production shock in the face of sustained high food prices will affect more particularly the components of availability and access<sup>4</sup>. Also, the operational

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<sup>3</sup> Over a three months period, cash support to households ranged from \$120 - \$345. The amount received depended on a household's physical and human assets. Up to 60 percent of participating households received \$345, and 10 percent received less than \$200.

<sup>4</sup> By definition, food access refer to the household's ability to acquire sufficient quality and quantity of food to meet all household members' nutritional requirements for productive lives, while food availability imply sufficient

context of food security continues to evolve. For purposes of organizing practical responses to food insecurity, international and public actions have often centered on enabling access which implicitly operationalize availability and utilization. This analysis focuses on how the CTP may have affected the recipients' food access component.

To monitor food access, most studies rely on measuring food consumption at the household level and associated coping strategies for dealing with insufficiency (Frankenberger and Coyle 1993; Maxwell 1996; Gonzalez et al. 2008). Coping strategies are direct indicators of food access that show how individuals deal with food insufficiency. Such strategies typically range from less severe immediate changes in food consumption patterns (e.g. reducing consumption, dietary changes) to more severe strategies that may involve selling assets (e.g. livestock and land). The food access indicators used in this analysis are described below and summarized in Table 1.

**Table 1: Summary of food access indicators**

Indicator	Type	Operational definition	Food access
Coping Strategy Composite (CSC)	Composite	The higher the score, the more sever copping strategies applied	Reduced among cash support beneficiaries
Food Consumption Score (FCS)	Composite	The higher the score, the more diverse the diet and more food security at household	Increased among cash support beneficiaries
Taken credit for food	Dummy variable	1=Yes, 0=No credit taken during last month to buy food	Credit taking Reduced

### ***Food access indicators***

The first indicator for food access is food consumption. Conventionally, food consumption is measured by individuals food consumption score (FCS). The score is a weighted sum of the number of food groups consumed in a period of seven days, usually before the survey (Wiesmann et al. 2009). Consumption by an individual (or household) from the food groups is representative of the individual's dietary diversity. This study draws on the work of WFP (2007) that establishes eight food groups (Table 2) and construction of the FCS. Respondent households were asked about their consumption of foods in the different groups during the preceding seven days. Consumption frequencies of food items in each food group yield a food

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quantities of appropriate types of food are consistently available to individuals or are within reasonable proximity to them (FANTA 2006).

group score. The score for each food group was then multiplied by a weight value<sup>5</sup> to create a weighted score for each food group. The FCS was obtained by summing the weighted values across all food groups for a given household.

The FCS was then used for bivariate comparison to establish the prevalence of food insecurity, and as a dependent variable in regression analysis to determine the relative (partial) effect of the cash transfer on recipients FCS. To establish the prevalence of food insecurity among respondents, the distribution of the FCS was assessed against the standard threshold levels according to WFP. Typically, food consumption scores in the range 0-21 indicate the food security status of the household is poor, 21.5-35 indicate limited food consumption (borderline), while scores greater than 35 are acceptable as good food security (WFP 2007).

The second food access indicator is the frequency of food consumption (FFC) by households, which is a proxy for quantity of food consumed. Irrespective of quality, frequency of consumption by a household is an eye-catching indicator of food availability and access. Respondent households were asked: *'How many meals per day did you consume on average the past 7 days? And the children, how many meals per day did they consume on average the past seven days?'* A variable of FFC for a household was constructed by averaging the number of meals consumed by adults and children.

The third indicator captures reliance on credit to buy food. Borrowing money for food can lead to long-term indebtedness, and is an example of how a short-term coping strategy can put a household in a more vulnerable position with regard to longer-term livelihood options. According to the survey, households often borrow money from merchants, parents, and local lenders. Respondents were asked if they owed debt since the cash distribution, and if yes, for what kind of expense they contracted the cash credit. A list of eight options was provided including buying food. A value of 1 is assigned if credit was taken for the purpose of buying food, zero otherwise.

The last indicator captures coping strategy mechanisms employed by households when there is insufficient food. Respondents were asked if they had employed coping strategies from a

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<sup>5</sup> The weights are based on the "nutrient density" of a food group (WFP 2007). See Table 2 for food groups and their respective weight values.

catalogue of coping strategies developed according to Maxwell and Caldwell (2008) – see Table 3. However, the survey did not generate information on the frequency respondents employed individual strategies and the perceived local severity of the coping strategies—these obstructed the construction of a localized coping strategies index, which is a more powerful measure of local severity of food insufficiency. Instead, drawing on Loek and Maxwell (2012), and Maxwell (1996), a coping strategies composite (CSC) score for a household was constructed by assigning a value of one to each coping strategy employed by the household multiplied by the respective weight<sup>6</sup>, and then adding together the weighted individual coping strategy values. We compare CSC scores for households that benefited from the early cash transfer program and those that did not.

**Table 2: Food group classification**

Food group	Type of food listed in survey	Weight
Cereals, root and tubers	Rice, millet, maize, sorghum, Cassava	2
Legumes and Oils	Beans, cowpeas, ground nuts, soy	3
Legumes and leafy	Beans, green vegetables, tomatoes	1
Fruits	Including wild fruits	1
Animal protein	meat, fish, poultry, eggs	4
Dairy products	Fresh milk, curdled milk, yoghurt	4
Sugar	Sugar and sugar products, honey	0.5
Oils and fats	Oils, butter	0.5

**Table 3: Coping strategies and respective weights**

Coping strategies	severity weight
Eat less expensive but less preferred food	1
Borrow food from neighbor/locals	2
Borrow money to buy food	2
Eat seed stock	3
Sell animals	3
Send children to eat from elsewhere	2
Reduce number of meals or quantity	2
Members' migrate for work	2
Pass a day without eating	3
Sell land	4
Total	24

<sup>6</sup> We used the weight for individual coping strategies as established in Maxwell and Caldwell (2008). See Table 3 for coping strategies and respective weights.

## Limitation

To determine the impact of early cash response on household resilience, monitoring (preferably the same households) would be required during the peak of the food crisis so that food access indicators and the resilience of households could be tracked over time. Although efforts were made to conduct a survey in July (considered the peak period) as a follow-up to an earlier survey, it was established that the treatment households and some control households had received more aid (planting materials and food) from other aid agencies in May/June 2012. It was not realistic therefore to attribute food security outcomes in July to the sustainable effect of cash transfer in January. Our analysis is hence limited to the February dataset which is robust enough to draw inferences on households' responses given early cash transfer and potential implication on ability to cope and recover from a food crisis.

## Regression analysis

The effect of the cash support and household's social and demographic characteristics on food access is captured in a regression model where food access indicators are the dependent (outcome) variables. The relationships are examined in the econometric function:

$$Y^* = \beta_0 + \beta_1(\text{Active adults}) + \beta_2(\text{HHMale}) + \beta_3(\text{NMeals}) + \beta_4(\text{CashProg}) + \beta_5(\text{Household size}) + \varepsilon + e \quad (1)$$

where  $Y^*$  is the outcome food access indicator of interest, Active adults is the number of economically active adults in a household, HHmale is a dummy variable for head of household (1=male, 0=female), NMeals is the number of meals eaten by the household in a week preceding the survey, CashProg is a dummy variable indicating whether a household benefited from the cash program or not (1=if benefited from cash support program, zero otherwise),  $\beta_{i=0,\dots,5}$  are mean parameters (coefficients) to estimate,  $\varepsilon$  is a random effects term due to village,  $\varepsilon \sim N(0, \sigma_\varepsilon^2)$  and  $e$  is an error term,  $e \sim N(0, \sigma_e^2)$ . The coefficients  $\beta_1$  to  $\beta_5$  are of interest to examine the direction and association with the food access indicators in Table 1. The continuous outcome food access indicator models are estimated as weighted least square regression models, while binary outcome food access indicator models are estimated as weighted linear probability models using SAS 9.2 software.

The weights were derived from propensity scoring with an inverse propensity score. By weighting with the inverse propensity score, selection bias is reduced and improves the

comparability of households in the cash transfer program and control households. It is necessary to match or weight by propensity scoring because the assignment of households to the cash transfer program (treatment group) and control group was not random, and therefore the estimation of the effect of treatment may be biased. The propensity score weighting method reduces the bias (Austin 2011; Harder et al. 2010). To accomplish this, a propensity score,  $p_i$ , was predicted from the logistic regression model

$$P(\text{CashProg} = 1) = \text{Prob}(\vartheta\mathbf{X} + \epsilon > 0) \quad (2)$$

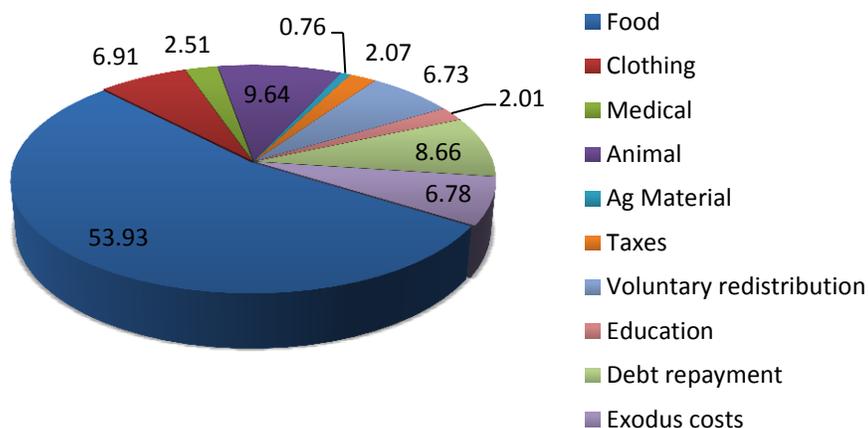
where  $\mathbf{X}$  is a vector of covariates in equation (1) except (*CashProg*). After estimation of  $p_i$ , treatment households receive an inverse probability of treatment weight equal to  $1/p_i$  and control households receive a weight equal to  $1/(1 - p_i)$  (Harder et al. 2010). The inverse probability weights were normalized with the mean weight and used in a regression model along with covariates in equation 1. Results from the estimation are presented in Table 3 and discussed next.

## Results and discussion

### ***Descriptive: How cash transfer income was spent***

Our surveys reveal that on average, a household spent 53.93 percent of the cash transfer income on food—by far the largest single expense (Figure 1). Purchase of animals was the second largest expense, accounting on average for 9.64 percent of the total cash income received. During focus group discussions, many participants revealed that although they have interest to buy livestock, the amount of cash transfer received was not enough. Surveys also revealed that only 0.76 percent was spent on purchasing crop production material. Debt repayment was the third largest expenditure accounting on average for 8.66 percent of the total cash transfer income received by a household. Respondents indicated that cash transfer income allowed them to reimburse debts incurred during the lean season while also enabling them not to incur more debts.

**Figure 1: Average household percentage expenditure of cash transfer income**

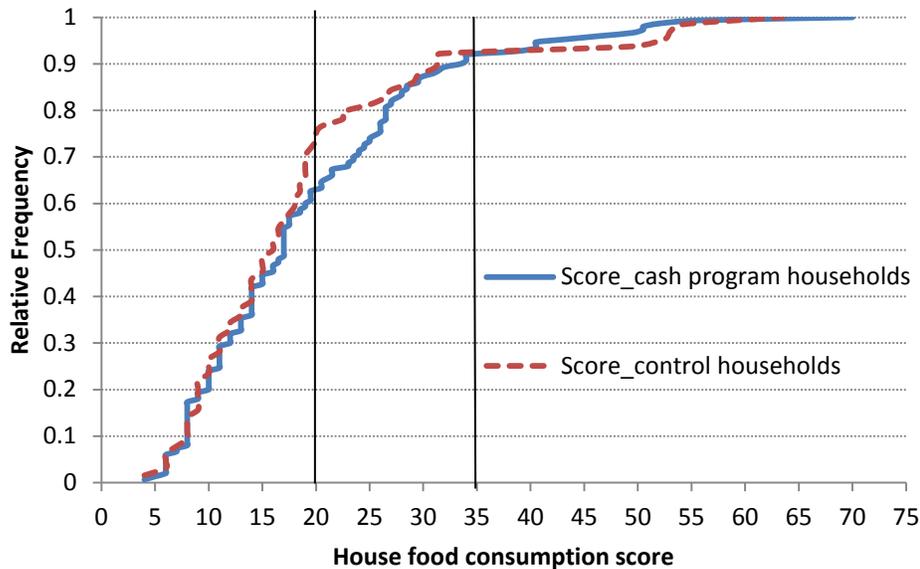


***Descriptive: food access indicators***

Figure 2 compares the empirical distribution of the food consumption score (FCS) for households that benefited from the cash intervention and those that did not. From figure 2, none of the FCS distributions dominate the other everywhere across the range, which suggests that the FCS of control households and that of beneficiary households is about the same. The percentage of control households with poor food consumption according to WFP’s classification is approximate 74 percent, while it is 63 percent for households that benefited from the cash transfer program. While food consumption is relatively better among beneficiary households, figure 2 illustrate that overall food consumption among the sampled households is poor.

The percentage of control households with limited consumption (at the borderline) is approximate 18percent, while it is 29 percent for households that benefited from the cash transfer program (Figure 2). The cash transfer program appears to have contributed to elevating a significant number of beneficiaries to the borderline category from absolute poor food consumption category. The percentage of households with acceptable consumption is approximately the same (8 percent) for households that participated in the cash support program and those that did not. Note also that beyond the borderline, the distribution of FCS of control households appear to dominate that of households that benefitted from the cash transfer program.

**Figure 2: Empirical distribution of Household Food Consumption Scores**



Regarding negative coping strategies, this clearly was being practiced at the minimum by the time the survey was administered in February. According to Table 3, the coping strategy composite (CSC) score ranges from 0 to 24. A score of 24 imply the household practiced at least each of the negative coping strategies listed in Table 3. The higher the score, the more severe the food insecurity status for a household.

Descriptive statistics reveal that the mean coping strategies composite (CSC) score for control households was 2.4 (std=2.4, median=2.0 and maximum=9.0). For cash transfer beneficiary households, the mean CSC score was 1.2 (std =1.7, median=0 and max=7.0). More than half of the (control and treatment) households reported having not practiced any of the coping strategies that were listed. The mean CSC score for beneficiary households is relatively lower than that for control households, suggesting that the cash transfer income could have mitigated the risk of resorting to negative coping strategies among vulnerable households.

### **Results from regression analysis**

Results from the regression models are included in Table 4. The results are used to provide insight on the hypothesis that households that benefited from the early cash transfer program have increased ability to sustain food access, and that food access is also influenced by the household's social and demographic characteristics.

### *Food consumption score (FCS)*

Parameter estimates for the regression of FCS are included in Table 4A. Results indicate the FCS of households that benefited from the cash support and those that did not is not significantly different at conventional confidence level of 95 percent. Away from statistical significance, the positive coefficient suggests that beneficiary households had relatively better FCS than control households. This result is consistent with the observation in Figure 2, and is intuitive since the safety net program targeted the very vulnerable households to bring them at the threshold level of households considered less vulnerable.

The results indicate a significant relationship (at 95 percent confidence level) between head of household and FCS (Table 4A). Male headed households (MHH) were associated with significantly better FCS relative to female headed households (FHH). Perhaps, difficulties of heading a household as a single parent predisposed female headed households to lower food access, hence lower FCS. Further analysis of data for households that received cash support revealed that households where spending decisions were made jointly between husband and wife had significantly better FCS outcomes than households where decisions were made by man or woman alone.<sup>7</sup> This finding demonstrates that concerted decision making in a household is likely to improve the food access status of a household (Handa et al 2012; Devereux et al. 2006). It is therefore critical in the design of safety net programs that minimum information on specific gender constraints and roles in a community is known and recognized.

Having more economically active adults in a household was associated with positive and significant outcome on FCS (Table 4A). Note also from table 4A that the partial effect of active adults in a household on FCS is quite larger. No statistical significance was found between FCS and household size, and the direction of association is negative. This result does not support the hypothesis that larger households are often better positioned to sustain food access during a food crisis because they can more easily diversify income sources (Loek and Maxwell 2012); having more economically active members in a household is important for food access.

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<sup>7</sup> The survey, unfortunately, did not ask control group households about who makes spending decisions at the household level

### *Frequency of food consumption (FFC)*

Parameter estimates reveal that households that benefited from the cash support program had a significantly higher frequency of food consumption than control households (Table 4B). Beneficiary households were on average consuming 0.7 meals higher in a day than control households (Table 4B). That is, in a two day period, beneficiary households consumed at least one more meal than control group households. Male headed households had a significantly higher frequency of food consumption than female headed households. Results also indicate that having more economically active members in a household increases is associated with increased frequency of consumption. But, household size had no significant impact on frequency of food consumption which further indicates household size had no significant effect on food access.

### *Relying on debt to buy food*

Results indicate that the likelihood of taking credit to buy food is significantly lower among cash support beneficiary households than control households (Table 4C). The likelihood of taking credit to buy food was 32.5 percent lower among cash support beneficiary households than control households (Table 4C). These findings support the view that early safety net programs can make a significant contribution to preventing vulnerable households from adopting coping strategies that may negatively strain recovery efforts. According to results, household size significantly increased the likelihood of a household relying on credit to buy food.

### *Coping strategies composite*

Regarding coping strategies, results suggests that households that benefited from the early cash support program were less likely to engaged in negative coping strategies relative to control households (Table 4D). Similarly, households with more economically active members were less likely to engage in negative adaptations strategies. While it is assumed that gender constraints make female headed households susceptible to undertake negative coping strategies, results do not show statistically significant evidence to support the assumption.

## **Conclusions and implications**

This study examined how households' responded in the Tillabery region in rural Niger given the early cash transfer intervention and the impact on household food access and ability to cope and recover from a food crisis.

The indicator variable for cash support consistently showed clear and expected relationships across the food access indicators by positively influencing food access status of households. While the cash support program was insufficient to substantially reduce food insecurity, it appears to have helped alleviate it and reduce vulnerability. The analysis suggests that policy and or programming options geared towards early cash based interventions have great potential to cushion vulnerable households from the crisis and enhance their abilities to cope with the food crisis. However, there is indication from this analysis that the size and scope of the cash transfers are insignificant compared to needs.

The analysis also reveals that certain structural household characteristics influence its food access status. In particular, size of the household does not seem to significantly affect its food access status; while having more economically active members in a household is important for improved food security status of the household. Female headed households appear to be more vulnerable to reduced food access than male headed households, which call for better targeting of female headed households in safety net programs. Results also demonstrate that concerted decision making at the household has a greater potential to improve the food access status of the household. More generally, results suggest that focusing safety net programs based on the household social-demographic characteristics could benefit efforts to better target those most vulnerable.

Given the systemic and structural nature of Sahelian crisis, cash-based interventions (and generally safety-nets) would need to be looked at under the social protection perspective and be made more sustainable through the involvement of government in national social protection policies and programmes to tackle chronic vulnerability to food insecurity.

But, other areas of investments are also crucial such as market infrastructure and supporting own agriculture production must be increased to facilitate diversified and resilient livelihoods. Market infrastructure is needed in rural areas to improve agricultural commodity market functioning to help alleviate short-term supply shortages in rural areas. Policies and

investments promoting household food production would assist in increasing household resilience, particularly in the face of sustained higher food prices and inclement weather patterns. Social safety nets remain to a larger extent quick fixes to reduce severity of the food crisis, while sustainable longer-term solution rests on increasing the quantity and quality of investments in the agricultural sector as well as promoting alternative income sources.

**Table 4: Regression Estimates for Effect of Cash Transfer and Household Characteristics on Food Access Indicators**

Label	Variable	Parameter Estimate	Standard Error	Pr> t
<b><i>Dependent variable: Household food consumption score</i></b>				
A	Intercept	5.660	3.751	0.1327*
	Economically active adults	6.007	3.114	0.0401
	HHMale	3.581	1.766	0.0438
	Household size	-0.027	2.351	0.8573*
	NMeals	5.083	1.243	<.0001
	CashProg	2.761	2.351	0.2417*
<b><i>Dependent variable: Frequency of food consumption</i></b>				
B	Intercept	2.410	0.128	<.0001
	Economically active adults	0.851	0.164	<.0001
	HHMale	0.293	0.097	0.0030
	Household size	-0.003	0.008	0.7551*
	CashProg	0.665	0.124	<0.0001
<b><i>Dependent variable: Reliance on Debt to buy food</i></b>				
C	Intercept	0.849	0.164	<.0001
	Economically active adults	-0.252	0.136	0.0483
	Household size	0.014	0.006	0.0332
	HHMale	-0.016	0.077	0.8301*
	NMeals	-0.136	0.054	0.0132
	CashProg	-0.325	0.103	0.0018
<b><i>Dependent variable: Coping strategies composite score</i></b>				
D	Intercept	2.901	0.651	<0.0001
	Economically active adults	-1.173	0.540	0.0210
	Household size	-0.006	0.026	0.8048*
	HHMale	-0.425	0.305	0.1646*
	NMeals	-0.105	0.216	0.6282*
	CashProg	-1.896	0.408	<.0001

\*Not significant at 95percent confidence level

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