The potential of cash and multi-sector responses in minimising the impact of food access crises and malnutrition

Jenny C. Aker
The Fletcher School of International Affairs, Tufts University
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Concern Worldwide - Niger
How Concern works

HUMANITARIAN IDENTITY

HOW CONCERN UNDERSTANDS EXTREME POVERTY

INNOVATION & LEARNING IN PROGRAMMES

Evidence & Analysis

INFLUENCING DECISION MAKERS AND PRACTITIONERS

IMPACT ON THE LIVES OF THE EXTREMELY POOR
2010 Multi-sector approach to minimise malnutrition resulting from the 2009 harvest collapse in Niger

- **CMAM** – curative care for malnutrition
  - Reduce acute malnutrition and mortality

- **Early recovery**
  - Increase agricultural production in 2010

- **Operational Research**
  - Measure and cost benefit each element – share, learn, improve

- **Increase purchasing power**
  - Increase food access via markets

Increase purchasing power – increase food access via markets
## Scale of the programme Jan-Dec 2010

<table>
<thead>
<tr>
<th></th>
<th>Direct Beneficiaries</th>
<th>indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td>68,680</td>
<td>399,562</td>
</tr>
<tr>
<td>Cash</td>
<td>18,333</td>
<td>128,331</td>
</tr>
<tr>
<td>cash and seed</td>
<td>2,860</td>
<td>20,020</td>
</tr>
<tr>
<td>total</td>
<td>89,873</td>
<td>547,913</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Donor</th>
<th>€</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECHO</td>
<td>1,870,000</td>
<td>46%</td>
</tr>
<tr>
<td>Irish Aid</td>
<td>650,000</td>
<td>16%</td>
</tr>
<tr>
<td>WFP</td>
<td>452,774</td>
<td>11%</td>
</tr>
<tr>
<td>OFDA</td>
<td>690,528</td>
<td>17%</td>
</tr>
<tr>
<td>Concern</td>
<td>428,320</td>
<td>10%</td>
</tr>
<tr>
<td>total</td>
<td>4,091,622</td>
<td></td>
</tr>
</tbody>
</table>
Continued increases in food prices 2010-2011

FPI, Cereals and Oil 2004-2011 (Jan 2011, 2004=100)

Cereal starting point for price increases in 2011 is 137 points higher than in the 2006 start point; it is currently higher than the peak of 2008.
Composition of food basket, Tahoua district (n=367, 2009)

- Millet: 70%
- Sorghum: 7%
- Rice: 4%
- Maize: 0%
- Grain: 11%
- Cow Pea: 3%
- Oil: 3%
- Sugar: 2%
Origin of food basket by value
(n=367, 2009)

- domestic and regional
- world

90%
10%
Figure 1 Percentage of population distributed by total annual revenue per household

% of population by revenue rank

Bars show percents

10%
20%
30%
40%

11% 42% 38% 7% 1% 2%

Per cent

10%
20%
30%
40%

11% 42% 38% 7% 1% 2%

Bars show percents

0-100000
100001-200000
200001-400000
400001-600000
600001-800000
800001-1000000

total_annual_revenue_rank
% of cash income spent on food

Bars show Means

pcnt_cash_income_spent_food

total_annual_revenue_rank

0-100000
100001-200000
200001-400000
400001-600000
600001-800000
800001-1000000

64 58 51 36 27 27
Targeting – not everyone is equally exposed to the same threat.

<table>
<thead>
<tr>
<th>Revenue group</th>
<th>Mean cash income</th>
<th>% of average cash income required under a 25% price increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-100,000</td>
<td>44,000</td>
<td>120</td>
</tr>
<tr>
<td>101-200,000</td>
<td>57,000</td>
<td>92</td>
</tr>
<tr>
<td>200,001-300,000</td>
<td>69,000</td>
<td>76</td>
</tr>
<tr>
<td>300,001-400,000</td>
<td>96,000</td>
<td>55</td>
</tr>
<tr>
<td>400,001-600,000</td>
<td>155,400</td>
<td>34</td>
</tr>
<tr>
<td>600,001-800,000</td>
<td>157,000</td>
<td>34</td>
</tr>
<tr>
<td>800,000-1,000,000</td>
<td>385,000</td>
<td>14</td>
</tr>
</tbody>
</table>

Sensitivity of farmers to changes in global prices in relation to local production and prices, Concern Worldwide 2009, pg 29
How to make targeting accurate, community managed and acceptable? (2010 numbers)

- Total population
- Villages most affected by food scarcity
- Poorest by poverty level
- Poorest families w. children <2 and <5
- In >50% deficit villages this constitutes between 30-40% of population

Of total population:

- 100%
- c.50%
- c.17%
Targeting preventative and recovery support – cash and cash/seed

<table>
<thead>
<tr>
<th>% of cereal deficit in a given village (GoN EWS)</th>
<th>% of extremely vulnerable families to assist at each level of deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 90%</td>
<td>80%</td>
</tr>
<tr>
<td>80%-89%</td>
<td>60%</td>
</tr>
<tr>
<td>70%-79%</td>
<td>40%</td>
</tr>
<tr>
<td>60%-69%</td>
<td>35%</td>
</tr>
<tr>
<td>&lt; 60%</td>
<td>30%</td>
</tr>
</tbody>
</table>
HEA Classification for targeting the poorest households in deficit villages.

<table>
<thead>
<tr>
<th>Household size</th>
<th>Cultivated area (ha)</th>
<th>Livestock holding</th>
<th>No. children &lt;2 ans</th>
<th>No. Children &lt;5 ans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very poor</td>
<td>7</td>
<td>0.8ha</td>
<td>0-1 small ruminant, 2 chickens</td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>7</td>
<td>1.5ha</td>
<td>2 small ruminants and 3 chickens</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>10</td>
<td>4ha</td>
<td>3 cows (1-2 reproductive cows) 11 small ruminants, 9 chickens</td>
<td></td>
</tr>
<tr>
<td>Better off</td>
<td>15</td>
<td>7ha</td>
<td>10 cows (5 reproducing cows). 25 small ruminants, 15 chickens</td>
<td></td>
</tr>
</tbody>
</table>
Community led targeting using HEA

- Better off
- Mid level
- Poor
- Very poor
Caution with the cash! Parity prices Nigeria/Niger

Real Millet Price (CFA/kg)

- Import parity price < domestic price
- Import parity price Jibia (Nigeria)
- Import parity price > domestic price

Dates:
- Oct-00 to Jul-01
- Jan-01 to Apr-01
- Jul-01 to Oct-01
- Jan-02 to Apr-02
- Jul-02 to Oct-02
- Jan-03 to Apr-03
- Jul-03 to Oct-03
- Jan-04 to Apr-04
- Jul-04 to Oct-04
- Jan-05 to Apr-05
- Jul-05
Droughts Produce Predictable Price shocks

Real Millet Price CFA/kg

Drought
Niger

Market Assessment
ID production
ID flow

Operational research

DATA BASE
BENEFICARARY
LISTS
PROGRAM
ALLOCATION

Authorisation
CD level

Mobile phone transfer

SEED + CASH PROGRAM

Authorisation
regional level

Manual cash transfer

ZAIN
ZAP
Managing cash

**Manual**

- Internal rigorous anti-fraud measures on manual cash
- Participants individually coded and printed ID
- Complaints mechanism

**M-transfers**

- Data base obliges three separate
- Password protected beneficiary database on Concern Intranet
- Escalation and remote authorization possible dependent on values
- Free phone complaints number
Cash Transfer can be done securely

<table>
<thead>
<tr>
<th>Month</th>
<th>CFA</th>
<th>CASH MAN</th>
<th>CASH MOBILE</th>
<th>CASH SEED</th>
<th>CASH BF</th>
<th>Total H/hld</th>
<th>Total Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>20,000</td>
<td>6,538</td>
<td>2,390</td>
<td>-</td>
<td>-</td>
<td>8,928</td>
<td>272,611</td>
</tr>
<tr>
<td>June</td>
<td>20,000</td>
<td>6,538</td>
<td>2,390</td>
<td>2,801</td>
<td>-</td>
<td>11,729</td>
<td>358,137</td>
</tr>
<tr>
<td>July</td>
<td>20,000</td>
<td>6,538</td>
<td>2,390</td>
<td>-</td>
<td>-</td>
<td>8,928</td>
<td>272,611</td>
</tr>
<tr>
<td>Aug</td>
<td>25,000</td>
<td>6,538</td>
<td>2,390</td>
<td>-</td>
<td>-</td>
<td>8,928</td>
<td>340,763</td>
</tr>
<tr>
<td>Sept</td>
<td>25,000</td>
<td>6,538</td>
<td>2,390</td>
<td>2,801</td>
<td>-</td>
<td>11,729</td>
<td>447,672</td>
</tr>
<tr>
<td>Oct</td>
<td>15,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,604</td>
<td>151,237</td>
</tr>
<tr>
<td>Nov</td>
<td>15,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,604</td>
<td>151,237</td>
</tr>
<tr>
<td>Dec</td>
<td>15,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,604</td>
<td>151,237</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>2,145,504</strong></td>
</tr>
</tbody>
</table>

70,054 transfers delivered over eight months
€45 lost, a total loss of 0.0021%
€401,000 transferred to 11,900 with a difference of €0.25
Motivation

1. Cash transfers (conditional and unconditional) have been increasingly used as an intervention to respond to emergency and non-emergency situations.

2. Typical cash transfers present logistical, operational and security challenges.

3. Mobile money systems in developing countries provide a new mechanism of providing cash transfers that could reduce costs and insecurity and potentially increase other benefits.

4. Few operational research studies of the impact of cash transfers in emergency situations and little evidence on the impact of mobile money.
Research Questions

1. What is the impact of (conditional) cash transfers on beneficiaries’ well-being, including food security status, coping strategies and nutritional status?

2. How do these impacts differ by the mode of cash distribution, e.g., traditional distribution or via mobile phone? Do m-transfers allow women to have better control over household expenditures and engage in the formal financial sector?

3. What is the relative cost-effectiveness of m-transfers versus cash distributions? Is outreach greater via m-transfers as compared with cash distributions?
Research Approach

- Targeted beneficiaries received one of three interventions:
  - **T1. Cash transfer**: A monthly cash transfer for 5 months in the village or a nearby village
  - **T2. Cash transfer plus phone**: A monthly cash transfer for 5 months in the village or a nearby village, plus a free mobile phone in the third month
  - **T3. Mobile phone cash transfer**: A free mobile phone (and training on how to use it) and a monthly cash transfer via the mobile phone

- Each village was randomly assigned to either T1, T2, T3

- Why? Random assignment ensures that beneficiaries will be the same across different groups if samples are large enough – so any differences that we see will be due to the program, not other factors
Research Approach

We can measure the impact of different interventions, but not the overall impact of the program (i.e., we don’t know what would have happened in the absence of the program).

Having T2 allows us to disentangle the effect of the phone versus the effect of the m-transfer approach.

Impact of the Program:
- **T3-T2**: The additional benefit of getting the transfer via the mobile phone.
- **T2-T1**: The additional benefit of the mobile phone.
- **T1-C**: The impact of the cash transfer (unobserved).
Challenges to Operations Research

- No pure comparison group.
- No data on nutritional status.
- **Smaller sample size than number of intervention villages:** It was necessary to use m-transfers in larger villages so the sample size was reduced to 96 (out of 116)
- **Other interventions:** In m-transfer villages, recipients received solar chargers (an additional benefit); in addition, a package of agricultural inputs were provided to some villages (and not randomly assigned)
- **Timing of “final” survey:** (November-December) Immediately after the intervention, during the harvest, so very short time frame to find impact

This implies that we cannot truly answer research question #1, as we cannot observe what would have happened in the absence of the program -- we can mainly answer questions 2-3.

However, in the future we will attempt to provide evidence of an answer to Question 1.
Baseline survey of over 1,100 beneficiary households in 96 villages in March/April 2010, including village-level data

Follow-up survey of same beneficiary households in December 2010, in addition to a subset of non-beneficiary households

Final survey in April 2011

Price-level data in markets from July – November 2010
Base line >1,100 households in 60 villages

Principal sources of revenue

Effect of shocks and coping strategies

Household goods

Effect of the mobile phone in cash transfer

Food Diversity

Social Capital

Utilisation of the money
Did the randomisation work? Demographics, income, assets.

Randomizing the baseline assured that there were almost no significant differences between the groups, m-cash, cash, cash and seed and placebo.

- Demographics n=1094 (16 categories including age, marital status, education, number children etc)

- Source of income – n=1093 (15 categories including agriculture, livestock, work, migration, mode of remittance etc.

- Assets – type, number n=1093 (12 categories including bike, cart, lamp, plough etc)
Did the randomisation work?
Source of income, shocks and coping strategies

- Agricultural production n = 1094 (29 categories including cash, non-cash crops, inputs, methodologies etc.
- Source of revenue n=1035 (5 principle categories including agriculture, livestock, domestic labour, salaried work, migration etc)
- Shocks and adaptation n=1083 (20 categories including shock types drought, pests, means of communicating the shock. Coping mechanisms including migration, sale of assets, menial cash paid work etc.
- Food security n= 1094 (16 categories, including the number of months in food insecurity, diet diversity
What was the impact of the cash program?

- Was the program cost-effective for Concern and the beneficiaries?
- How did beneficiary households use the transfers (by mode of distribution)?
- What was the impact of the program on:
  - Food security?
  - Coping strategies?
  - Agricultural production and sales?
  - Livestock ownership and sales?
  - Income sources?
  - Assets?
  - Mobile phone usage?
  - Demography?
There is a significant difference between m-transfer and placebo users with regards to the variety of expenditure. This suggests that the means of the transfer may encourage a more varied consumption.
There is a higher degree of decision making in the m-transfer households over placebo and cash.

97% of beneficiaries were involved in deciding how to spend the money and 18% share the transfer.
The diet diversity score is significantly higher in the m-transfer group over placebo.

n=1094
Changes on Income

- Household member migrated
- Percentage of household members who migrated
- Use of Western Union for remittances

- cash
- mobile
- placebo
Significant differences in Agricultural Production

Phone users worked more cash crops than cash beneficiaries in 2010 – something to be followed
Cost Effectiveness Analysis:
Total Cost of Program (Euro)

Overall the m-transfer program was more expensive to deliver – 68,000€ as compared with 53,000€. But mobile phones and solar chargers represent 67 percent of these costs.
The cost per beneficiary was higher in the m-transfer program, but relatively similar when amortizing assets (mobile phones and solar chargers).
Discounting capital costs, the running costs of facilitating food supply via the local market by m-transfer is 13% cheaper per 100kg made available than the manual system.

In Concern’s programme area in 2011, up to 1,000 beneficiaries could be repeat beneficiaries from 2010, structurally vulnerable. The platform for supporting them is however in place with no extra costs.
Beneficiaries in cash/placebo villages had to travel 2 km (one way) to get the transfer, approximately ½ hour. By contrast, m-transfer beneficiaries had to travel less than .5 km (less than 10 minutes) – but depends upon agent availability.
Cost-Effectiveness of M-Transfer versus Cash Distribution: Opportunity Cost (CFA)

Beneficiaries in cash/placebo villages would have lost 200 CFA (€30) per transfer in terms of time – whereas the m-transfer beneficiaries only lost 50 CFA (€07) for each transfer.
The prevalence of acute malnutrition (measured by weight for height) was lower in the cash beneficiaries than in the non-beneficiaries. This was after 5 months in the programme.
### Indicators of underlying causes of undernutrition

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Cash</th>
<th>Seed and cash</th>
<th>Non cash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morbidity past 2 weeks (recall)</td>
<td>71.3%</td>
<td>71.3%</td>
<td>42.3%</td>
</tr>
<tr>
<td>More than 4 meals per day (6-23 months children)</td>
<td>62.1%</td>
<td>56.3%</td>
<td>56.9%</td>
</tr>
<tr>
<td>Diet diversity score ≥ 4 (6-23 months children)</td>
<td>12.6%</td>
<td>67.0%</td>
<td>22.2%</td>
</tr>
</tbody>
</table>

The main underlying causes of malnutrition did not account for the differences in undernutrition between the groups. The ways in which cash could impact on undernutrition still need to be extrapolated and more work is required before the effect of cash can be isolated.
Important **potential** of the nutritional status of the cash beneficiaries and targeting by poverty rankings

**Desired degree of information to improve targeting**

- probable GAM
- probable potential gam
- actual gam with intervention
Conclusions & Recommendations

1. Overall there was a positive trend in the cash villages between the baseline and the December data collect evaluation for most indicators – the final data collect in April will add stronger findings.

2. Beneficiaries in mobile phone villages had higher diet diversity (fats, sugars, condiments), greater involvement in household decision-making, higher degree of migration.

3. M-transfers are a more expensive mechanism at the start with 67% of their costs being the materials.
3. There are enormous economies of scale for beneficiaries in terms of their displacement and opportunity costs, also increases independence and allows for more dignity.

4. Too much cash injected can certainly be a bad thing within supply constrained markets – direct supply of additional food into the markets will still be essential in response to large scale production failures.
5. More research is required to determine what is the best combination of public services, food, medical and cash/social protection interventions to reduce child mortality and malnutrition.

6. The potential of the m-platform is studied for potential as a base for improved preventative action and longer term DRR programming, (linking with Niger’s Filet Sociaux, CaLP etc)

7. Responses should reinforce coping strategies and aim to be less supplement dependent over time.
8. More joined up research required on mixed sector prevention and response strategies to inform vulnerability reduction and response policy. Linking to the Scaling up Malnutrition initiative and the Moderate Malnutrition Study.

Approche multi-sectorielle dans la prevention de la malnutrition

CONTINUUM DES SOINS MERES-ENFANTS (les 1000 premiers jours)

REDUIRE LA MALNUTRITION ET LA MORTALITE

FILETS SOCIAUX (Augmenter le pouvoir d’achat des plus vulnérables)

AUGMENTER ET DIVERSIFIER LA PRODUCTION AGGRICOLE

RECHERCHE OPERATIONNELLE

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