Impacts of food vouchers on local markets

Reflections from CRS’ experience in Niger

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TABLE OF CONTENTS

Introduction ..................................................................................................................... 1

I. Food vouchers in the context of food assistance .................................................... 2

II. Southwestern Niger ................................................................................................. 5

III. Local and Regional Staple Food Markets ............................................................. 5

IV. Project ADVANCE .................................................................................................. 7

V. Impacts on Market .................................................................................................. 10

VI. Lessons Learned .................................................................................................. 14

References .................................................................................................................. 15

Figures

Figure 1: Production and Market Flow Map, Niger millet ................................. 5
Figure 2: Niger Grain Market Structure ................................................................. 6
Figure 3: Wholesale Maize Prices - July to October 2010 ................................. 11
Figure 4: Wholesale Marketing Costs and Margins Prior to the August
           Distribution in Tillaberi Market ................................................................. 12
Figure 5: Wholesale Marketing Costs and Margins Prior to the August
           Distribution in Tillaberi Market ................................................................. 13

Tables

Table 1: Major differences between ADVANCE and VOICE ................................. 15
INTRODUCTION

Food vouchers, as well as Local and Regional Procurement programs (LRPs), are assuming greater importance in Africa and elsewhere as viable alternatives to traditional food aid. LRPs are attractive from several perspectives – timeliness, cost, management, adaptability to local tastes and conditions, empowerment of beneficiaries, etc. But LRPs offer a suite of possibilities, not a one-size-fits-all solution and require choices for each setting according to the objectives and resources. This is apparent in the body of knowledge that has emerged from an array of innovative experiences in food assistance over the past decade.

As a separate phenomenon, a few analytical tools are now available to design interventions for specific conditions (discussed below). The challenge for Catholic Relief Services (CRS) and other organizations involved in food assistance is how to use these tools most effectively in addressing the question of how a given market system can best accommodate the specified level of food assistance during a particular period. A related issue is the capacity and will of governments, donors and agencies themselves to actually go through this process, given the time and resource constraints that normally prevail in emergency situations.

As part of its efforts to address this challenge, CRS commissioned a study of the impacts of food vouchers from the United States Agency for International Development (USAID) on local markets in southwestern Niger. CRS/Niger and local partners implemented Project ADVANCE between August and October 2010. The lessons from this experience were taken into account in the design of food voucher program in 2011 in the same area.

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1 This report is based on a study titled “Impacts of Project ADVANCE on Local Markets” carried out by two consultants for CRS/Niger, Elon Gilbert (elongilbert@me.com) and Saidou Boubacar (Boubacar.Saidou@crs.org), both of whom were involved in the preparation of this note. The authors wish to express their appreciation to Tom Remington, Joanna Upton, Jerry McGahan, Jeannette Allen and staff members of CRS/Niger for their helpful suggestions on this paper.

2 LRPs agency purchases food in an affected country (local) or a third country (regional). Vouchers and cash aren’t LRPs per se, but can be considered ‘extreme forms’ in which recipients purchase food through various mechanisms, including vouchers. (J. Upton, personal communication). Additional general information on food assistance can be found at the TAFAD website.

3 The set of case studies from the World Food Program, “Revolution: From Food Aid to Food Assistance” (Omamo et al, 2010) is one of the more significant recent contributions. General information on food assistance can be found at the TAFAD website http://www.tafad.org/wp-content/uploads/Food-Assistance-Summary_TAFAD_November-20101.pdf

4 ADVANCE stands for Assistance through the Distribution of Vouchers Aiding Nigerien Communities in Emergency. See the project proposal (CRS, 2010) and the Real Time Evaluation report (Dolphin et al, 2010) for a complete description of the project.
This note draws upon the findings of that study which generally confirm the results of earlier work on local and regional staple food markets. In essence, markets are not perfect, but can accommodate food-voucher programs reasonably well where local food shortages and adequate supplies exist. This, however, must be within a region served by established trade networks (Aker 2007, CRS/SIMA, 2010, WFP 2005).

In addition to the introduction, our paper consists of six sections. Section I looks at voucher programs in the context of the changing character of food aid. Sections II and III describe the livelihood systems of South West Niger and the staple food markets serving the area. Section IV provides an overview of Project ADVANCE. Section V summarizes the findings on impacts from the voucher distribution on the structure, demand and performance of local markets. A final section summarizes the major lessons from the ADVANCE experience.

I. FOOD VOUCHERS IN THE CONTEXT OF EVOLUTION AND INNOVATION IN FOOD ASSISTANCE

Food assistance is more complex today than even a decade ago with the untying of food aid and increased usage of vouchers and cash programs, as documented by the World Food Program (WFP) study (Omamo et al, op cit). The proliferation of options now requires more systematic analysis and planning for an appropriate response.

Among the response analysis techniques is the Market Information and Food Insecurity Response Analysis tool (MIFIRA), developed by Barrett et al (2009) and tested by Cornell researchers and others. MIFIRA was explicitly designed to facilitate the selection of an approach that best fits a given situation. Other response frameworks developed provide a different scope and focus.

In contrast to traditional food aid, voucher and cash programs rely largely on local and regional markets and thus require an understanding of how these markets will accommodate a food-assistance program. Simply said, merely dropping food or cash into an emergency situation could have large-scale and rippling effects throughout the market economy and the socio-cultural ties of the people affected. The markets commonly play central roles in the economic life of their respective areas and ideally food assistance programs should strengthen their performance (beyond avoiding harming them). The timeframe for planning is often very tight,

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5 The region or area that is applicable for staple food markets serving SW Niger includes portions of Nigeria, Benin, Burkina Fasso and Ghana. See Bonjean et al (2008).


7 In-kind food can have a similar requirement for understanding markets and production due to potential downward price impacts that can affect poor producers. (J Upton, personal communication)
especially in emergency situations. Initiating the project plan correctly from the onset though is critical for both beneficiaries and the markets, as there is often limited space for making mid-course corrections. As such, ex-ante response analysis assumes special importance while monitoring, evaluations, ex-post impact assessments figure in accountability and refining the methods.

Markets are much more than physical places where transactions take place. They consist of traders, producers, processors and consumers who deal with one another in the process of distributing food and other commodities. Prices are the central mechanisms that guide these activities. Markets are often far from perfect and sometimes struggle, but usually function reasonably well. This is particularly true under normal conditions and less so under extreme conditions (crop failures, bumper harvest, civil unrest, trade barriers, etc.) (Aker, 2007).

Exactly how markets distribute commodities is often poorly understood and appreciated, which in turn contributes to suspicions and negative perceptions. Traders are routinely blamed for high and low prices that consumers or producers question. Frequently, regional governments take action against traders that can be based on misperceptions, often with negative consequences.

Fortunately, a robust body of knowledge exists concerning Nigerien food markets as well as a set of ongoing services that monitor current developments (e.g. Agricultural Market Information Service (SIMA), WFP, FEWSNET and Afrique Verte). These studies and associated databases include valuable information and analyses relating to market structure as well as conduct and performance at the local, national and regional levels.

II. SOUTHWESTERN NIGER

One of the poorest countries in the world, Niger recently receded even more deeply into chronic food insecurity. Portions of the country (notably the Maradi and Zinder areas) routinely produce surpluses except in poor years. Yet areas, including the departments of Tillaberi and Ouallam in southwestern Niger, experience deficits almost yearly, which result in trade flows between these areas (See Figure 1). Depending on the harvest, farmers in southwestern Niger may occasionally export limited quantities of rice and millet during the harvest period when local farmers are inclined to sell to meet immediate cash needs. Some households routinely buy food during the pre-harvest or “soudure” period, often on credit and at higher prices. The income that family members earn through seasonal and longer term migration helps meet the food and other consumption requirements. Thus, food assistance has increasingly developed into an important way for the people to meet their basic food requirements. On balance, Niger is a

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A beneficiary in Guesse market (Ouallam District) leaves with his ration of 100 kg of millet.

Beneficiaries in Guesse market in the Ouallam District wait for donkey carts to transport the millet home.

A beneficiary prepares to take his ration of millet home to his family (Guesse market, Ouallam District).
net importer of food and likely to remain so for the foreseeable future.

III. LOCAL AND REGIONAL STAPLE FOOD MARKETS

The sources of supply for millet, sorghum and cowpeas are the traditional surplus areas of Maradi, Zinder and neighboring areas in Nigeria (see Figure 1).

These commodities flow through intermediary collection markets to Niamey that serves as the center of trade for these commodities. Maize consumed in the area comes from surplus areas in Benin, Nigeria, Ghana and Burkina Faso. Non-local rice largely comes from international markets. Vegetable oil comes from mills located in major urban centers in the region, notably in Ghana and Cote d’Ivoire. Wholesalers from Tillaberi and Ouallam generally obtain supplies from Niamey.
The basic structure of the Niger cereal markets is summarized in Figure 2 and discussed in detail in Aker (2007, pp7-14). The impact assessment focuses on the lower portion of the structure (regional wholesalers to consumers).

![Figure 2: Niger Grain Market Structure](source: Aker, 2007 p11)

The Katako market in Niamey is the hub for the cereals market in the area. In 2010, six large traders had the resources and connections to play a major role in determining prices and, in effect, balancing supply and demand. They extended credit to both buyers and sellers and held large inventories. These larger wholesalers provide the regional market with a degree of liquidity that one could argue is an important part of Katako’s ability to play this role.

The structures of markets in Ouallam and Tillaberi vary to some extent according to the seasons and the success of the local harvest. During the harvest period, women retailers provide the majority of supplies - millet, sorghum, cowpeas and rice - to the markets. These supplies are obtained from local producers, while some farmers bring their supplies directly to the markets to sell. On the other hand, most maize and virtually all vegetable oil comes from outside markets throughout the year.

During much of the rest of the year, and particularly during the pre-harvest period, wholesalers, most of whom are resident in the major towns, largely supply the markets. Virtually all the wholesalers interviewed...
indicated that they obtained their supplies from traders in the Katako market in Niamey. Traders from Ouallam and Tillabéri purchase supplies in Katako, often on credit, which is normally repaid within a few days. The wholesalers arrange for transport from Niamey to the markets in the two departments. They estimate how much they will need on the basis of past sales, adjusting for the season. Unsold supplies are stored in small facilities close to the markets or in the open, covered by tarps. Local wholesalers do not normally carry much inventory, but mostly buy and sell within a few days. There are many semi-wholesalers, who sell in the local markets by the sack and also by retail measures called tias. Some of these sales are geared to consumers, but most go to smaller retailers who then sell to consumers.

All the wholesalers marketing the selected commodities in the project zone are men. The retailers are both men and women. There is some variation in the numbers of retailers during the seasons. For example, more retailers work during the harvest period than during the soudure. During the harvest period, wholesalers may purchase local supplies from retailers and farmers.

IV. PROJECT ADVANCE

In mid 2010, CRS-Niger designed and carried out a food voucher program to assist the most needy one-third of households in the departments of Ouallam and Tillabéri due to the poor harvest in 2009 (CRS, 2010). The ADVANCE project was implemented in collaboration with a local NGO partner Association pour le Bien-être Collective et l’Ecologie (ABC Ecologie) with support from USAID.

MIFIRA was not formally employed in planning efforts for the ADVANCE project, but a study was carried out which concluded that local markets functioned sufficiently well as to give one confidence that they would be able to accommodate a voucher program in the current year (CRS/SIMA, 2010). CRS commissioned SIMA to collect price information and ABC Ecologie to monitor changes in the behavior of markets, traders and consumers, in addition to playing a major role in the implementation of the program. CRS also mounted an internal real time evaluation (RTE) of the project that coincided with the second distribution in September (Dolphin et al, 2010).

The project provided support to 140,758 people located in 278 villages in Ouallam and Tillabéri through the distribution of vouchers that were redeemable for six specified commodities. The six commodities, millet, sorghum, maize, rice, cowpeas and vegetable oil, are staples for rural Nigeriens. Some supplies of all these commodities are produced and either marketed or consumed locally in the ADVANCE project zone, especially during the harvest season.

One-third of the households in each village were determined as the
most needy by the locals who qualified as beneficiaries, based on set criteria, including lack of food availability, lack of economic access to markets, precarious livelihoods, indebtedness, nutrition deficiency, and use of negative or extreme coping mechanisms. The selection process was facilitated ABC Ecologie whose teams surveyed the villages and developed the lists of beneficiaries. Each beneficiary household received a ration card that was used to obtain two vouchers valid for three monthly distributions carried out during August, September and October. The size of the vouchers ranged from CFA 25,000 to 50,000 (for households with more than 14 members), depending on the size of the household. The distributions were originally planned to commence in July and end in September, but were delayed for a range of reasons, including the time needed for preparatory work. Also, the number of distributions was reduced from two per month to one, which was considered administratively less complex and preferred by participating traders.

Prior to the distributions, ABC Ecologie selected local traders to participate in the distributions. Local traders who met the legal requirements and were deemed to best ensure adequate quantities of the designated commodities were selected. Those selected included virtually all the wholesalers trading in the designated commodities who were both resident and operating in the project zone. No retailers were selected, except for wholesalers who also sold in retail quantities. The participating traders were briefed on the distribution procedures and the estimated quantities of food that beneficiaries were likely to purchase with the vouchers.

Following the distribution of vouchers, they were collected from participating traders by ABC and delivered to CRS who issued cheques against the vouchers. Virtually all the vouchers issued were redeemed.

Key features of the ADVANCE project that relate to impacts on markets are as follows:

- Beneficiaries were allowed to use the vouchers to purchase any of the six specified commodities in combinations determined by them (the mix had to include cowpea);
- The vouchers were valid only on the day issued for use in the local market;
- Only wholesalers who carried two or more of the six commodities covered by the vouchers were certified to receive vouchers;
- The distributions were delayed by one month due to a number of factors, including the timing of other food assistance programs and the preparation requirements which resulted in a significant period of overlap with the local harvest;

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9 This requirement most likely did not lead to the exclusion of many wholesalers operating in the area. Although a wholesaler may specialize at a given time in a specific commodity, they will trade in other commodities when given an advantage.
CRS Staff distributes vouchers (Gabou in Tillaberi District).

CRS Staff distributes vouchers (Sarakoira in Tillaberi District).

Distribution form (Guesse in Ouallam District).

CRS Deputy Regional Director, Godlove Ntaw, gives an interview to a local community radio station.

Mr. Ntaw during interview.
- The second distribution in September coincided with Ramadan when there are changes in consumption patterns;
- The final distribution in October was delayed by an additional five days, which pushed it further into the harvest period, particularly in Tillaberi;
- The decision to have one, rather than two distributions per month, concentrated volumes into three intense periods.

V. IMPACTS ON MARKET

During the initial phase of the study, we developed a few hypotheses regarding the impacts of the voucher program on local markets. The impacts study employed interviews, a review of existing documentation and price analysis. This section summarizes the findings in relation to the three central hypotheses.

1. The project zone is connected to and well served by food markets at national and regional levels and able to adjust to fluctuations in supply and demand.

Discussions with traders along with other interviews and studies strongly confirmed this connection. As part of our study, we calculated the correlation coefficients between prices in major markets in the ADVANCE project zone and food sources locations, notably the Katakko market in Niamey. The coefficients were both high and significant, suggesting regular commercial connections between major markets in the project. These results nearly mirror the findings of Aker (2007) for the same market system in an earlier period.

Crop production (harvests) in the vicinity of local markets such as Tillaberi and Oullam affect the supply and demand for food in these markets. Local wholesalers are guided by prevailing prices in the markets in the source areas and adjust their prices and supplies according to the availability of local food. Demand may be more predictable in chronically deficit areas such as the project zone, but is still affected by the timing and magnitude of local harvests. Market traders respond to these fluctuations by becoming net buyers of food during the post harvest periods in good years (when prices are low) and net sellers in most other times (high prices).

The response capacity of markets is related to the presence and practices of the group of large wholesalers based in Niamey who routinely purchase and store large quantities of staple foods during the harvest period. The response to a surge in demand can be expected to be especially prompt where there is an opportunity for traders to increase profits. The volume of the ADVANCE voucher program did not appear to exceed what the market could accommodate without major price consequences at the regional level.
There are two qualifications to our finding that local markets adjust reasonably well to food assistance programs such as ADVANCE.

First, markets seem able to readily adjust to modest increases in demand. There is no evidence that the ADVANCE project had any appreciable impact on the general-pattern product-flows, especially between the production areas and the major wholesale markets located in urban centers and border crossings. However, the markets may face problems accommodating a much greater volume with a severe crop failure.

In 2005/6, there was a confluence of natural, economic and political factors that presented an extreme challenge to markets throughout the region. That experience has been well documented by Aker (2007). Among the many lessons learned is that markets have a limited capacity to adjust to major changes in supply and demand. They excel at spatial arbitrage such as moving supplies quickly from surplus to deficit areas, but the storage function is much less developed and understood. The ability to access more supplies or remove them from the market (temporal arbitrage) requires capital, facilities, and management. All these resources are in short supply and are mainly controlled by a small group of large traders.

Second, while the large urban markets appear well linked and served, this may be less true as one moves towards smaller rural markets. This is illustrated by the variations in prices between Naimey, on the one hand, and Ouallam/Tiliberi on the other, which appear directly related to the distributions in August and September (see Figure 3).

Figure 3

Where volumes are small and irregular, short-run price distortions are more likely to occur in response to imbalances in supply and demand on a particular market day.
2. Local markets are able to accommodate surges in demand in a fashion that enables consumers to acquire adequate supplies of the selected commodities at reasonable prices.

Overall, the findings support this hypothesis. However, there were increases in the margins between Niamey and Tilliberi/Ouallam during the first two distributions in August and September. Reports from traders interviewed suggest that fewer wholesalers were present for the first distribution in August compared to subsequent distributions. The modest number of wholesalers and the surge in demand associated with the distribution of vouchers may have resulted in higher prices and margins\textsuperscript{10}. The analysis of wholesale margins strongly suggests that participating wholesalers realized above-normal profits, because of a combination of higher net-margins and larger volumes, especially during the August distribution (see Figures 4 and 5)\textsuperscript{11}. However, beneficiaries could purchase supplies at wholesale rather than retail prices\textsuperscript{12}. Prices fell back after that distribution, suggesting that the effects were temporary.

During the second distribution in September, the increase in margins appear to be associated with increases in transaction costs, notably transport charges, due to increasing of fuel cost. Conversely, there were more traders and supplies present during the September distribution, perhaps in response to reports of attractive prices and margins in August and to efforts by ABC Ecologie to increase the number of participating traders. Traders interviewed after the event characterized the situation as a bit chaotic (or perhaps more competitive) with a number of non-local traders attempting to participate, without being prequalified.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure4.png}
\caption{Wholesale Marketing Costs and Margins Prior to the August Distribution in Tilliberi Market}
\end{figure}

\textsuperscript{10} Unfortunately data on numbers of traders and volumes were not collected – observations on numbers of traders are based on the recollections of traders themselves as well as SIMA, ABC and CRS staff who were present. 
\textsuperscript{11} The low or even negative (in the case of millet) margins prior to the distribution suggest that the volume of sales from Niamey was low due to (i) the availability of local supplies (new harvest); and (ii) reduced demand in anticipation of the upcoming voucher distribution. Such comparisons are complicated by the fact that traders often buy supplies a day or more before selling. 
\textsuperscript{12} To the detriment of retailers operating in the same markets as discussed below.
The situation seems to have settled down for the third distribution and margins were closer to normal. A significant number of traders participated, but not the same numbers as during the second distribution. Reports suggest that there were few, if any outside traders, perhaps because of a less than friendly reception during the second distribution in September.

The experience of the second distribution illustrates the potential power of voucher distributions to temporarily upset markets, but also the ability of those markets to recover quickly and reestablish relationships.

3. The program has affected the structure and character of demand for the selected commodities without harming consumers, although some retailers may have been hurt during the distributions.

All the voucher purchases of grain involved wholesale quantities (bags). As a result, the numbers of wholesalers increased during the distributions who were mostly local traders. Retail sales and the numbers of retailers declined during the entire period between the first and final distributions. Many of these retailers were women. However, in the absence of information on volumes of sales, the extent of impact is unclear.

The program empowered beneficiaries by enabling them to buy more than they would otherwise and to make more choices on how to allocate their purchases among different commodities. For example, they were able to purchase more rice, which is easier to prepare, particularly in villages that do not have flour mills.

The delay of the voucher program by one month, and particularly the delay of the final distribution in October by an additional five days,

13 The presence of traders from outside the area suggests a degree of open competition in the local markets in contrast to major urban markets such as in Niamey.
resulted in a significant overlap with the arrival of the new harvest on local and regional markets. Whereas this delay pushed the distributions into a period when beneficiaries were harvesting their own crops, the surge in demand associated with the vouchers almost certainly kept prices of millet and sorghum on local markets from falling. That stability benefited local producers selling grain at that time. Consumers paid more, but many poorer consumers were covered by the voucher program.

V. LESSONS LEARNED

Project ADVANCE was CRS/Niger’s first experience with the use of food vouchers, although CRS has had experiences in vouchers in other countries. Inevitably, unanticipated challenges were encountered in implementation. Though it was not feasible to make changes in this short project with three distributions, the real time evaluations, especially the market impact evaluation, enabled CRS to identify and understand the problems and discuss solutions, for future similar projects.

Lessons from ADVANCE highlighted the tradeoffs between efficiency and a range of other considerations including beneficiary empowerment, gender and limiting negative impacts on markets and non beneficiaries generally. These issues were the focus of discussion leading to the design of VOICE, a similar voucher program which was implemented in Niger in 2011. The following table summarizes the major differences between ADVANCE and VOICE. The table also indicates the results of these changes, which should be regarded as preliminary. Both ADVANCE and VOICE illustrate that market systems in Niger can accommodate voucher programs of modest magnitude without major disruptions. A complete analysis of the VOICE experience is now in progress and the learning process continues.

<table>
<thead>
<tr>
<th>Lesson</th>
<th>ADVANCE</th>
<th>VOICE</th>
<th>Results for VOICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of distribution and denominations of vouchers</td>
<td>Once a month</td>
<td>Twice a month</td>
<td>Lower increase in demand and risk of market disruption and high prices</td>
</tr>
<tr>
<td>Number and type of traders</td>
<td>Wholesalers</td>
<td>Wholesalers &amp; Retailers</td>
<td>More involvement of smaller traders especially women – less risk of doing harm</td>
</tr>
<tr>
<td>Commodity Choice</td>
<td>5 commodities</td>
<td>7 commodities (adding garri &amp; sugar)</td>
<td>Recognition &amp; appreciation of diverse food preferences</td>
</tr>
<tr>
<td>Voucher value and denomination</td>
<td>2 vouchers of 12,500 CFA each</td>
<td>8 vouchers of 1000 and 5000 CFA each</td>
<td>Greater flexibility in purchasing a diversity of commodities</td>
</tr>
<tr>
<td>Beneficiary engagement participation</td>
<td>Minimal</td>
<td>Substantial</td>
<td>More savvy customers ensuring fair pricing</td>
</tr>
</tbody>
</table>

Table 1: Major Differences between ADVANCE and VOICE
REFERENCES


