TRADE HUB AND AFRICAN PARTNERS NETWORK

MIS SUPPLY AND DEMAND ANALYSIS

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The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID) or the United States Government.

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ACRONYMS

AAFEX	*Association Afrique Agro Export*
ACA	African Cashew Alliance
ACTE	Africa Competitiveness and Trade Expansion
AcSSA	*Actions pour la Sécurité et la Souveraineté Alimentaires au Niger*
AGRA	Alliance for a Green Revolution in Africa
AMASSA	*Association Malienne pour la Sécurité et la Souveraineté Alimentaires*
ANOPACI	*Association Nationale des Organisations Professionnelles Agricoles de Côte d'Ivoire*
APROSA	*Association pour la Promotion de la Sécurité et de la Souveraineté Alimentaires*
ANPROVBS	*Association Nationale des Professionnels de la Viande et du Bétail du Sénégal*
ATP	Agribusiness and Trade Promotion
BRICS	Brazil, Russia, India, China, and South Africa
CBC	*Conseil Burkinabé des Chargeurs*
CBI	Centre for the Promotion of Imports from developing countries
CIC-B	*Comité Interprofessionnel des Céréales du Burkina Faso*
CILSS	*Comité Permanent Inter-Etats de Lutte Contre la Sécheresse dans le Sahel*
CIRAD	*Centre de Coopération Internationale en Recherche Agronomique pour le Développement*
COFENABVI	*Confédération des Fédérations Nationales de la Filière Bétail/Viande*
CTA	*Centre Technique de Coopération Agricole*
E-ATP	Expanded Agribusiness and Trade Promotion
ECOAGRIS	ECOWAS Integrated Agricultural Information System
ECOWAS	Economic Community of West African States
EU	European Union
EUFF	EU Food Facility Programme
FAO	Food and Agriculture Organization
FCFA	West African franc
FEWS NET	Famine Early Warning Systems Network
FOB	Free-on-board
FTF	Feed the Future
GPRS	General packet radio service
GSA	Global Shea Alliance

ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and communication technology
IFAD	International Fund for Agricultural Development
IFAnet	Information Aid Network
IFDC	International Fertilizer Development Center
ITC	International Trade Center
IVR	Interactive voice response
MIR	Marketing Inputs Regionally
MIS	Market information system
MISTOWA	Market Information Systems and Traders Organizations in West Africa
MOU	Memorandum of understanding
NGO	Nongovernment organization
OPA	*Observatoire des Pratiques Anormales*
PICA	*Points d'Information Commercial Agricole*
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
RESIMAO	*Réseau des Systèmes d'Information de Marché de l'Afrique de l'Ouest*
ROPPA	*Réseau des Organisations Paysannes et de Producteurs de l'Afrique de l'Ouest*
SIAR	*Système d'Information Agricole Régional*
SMS	Short message service
SONAGESS	*Société Nationale de Gestion du Stocks de Sécurité Alimentaire*
SWOT	Strengths, opportunities, weaknesses, and threats
UEMOA	*Union Economique et Monétaire de l'Afrique de l'Ouest*
USAID	United States Agency for International Development
WAGN	West Africa Grain Network

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EXECUTIVE SUMMARY

The agricultural sector in West Africa has a number of sources of market information, but none fully meet the needs of the stakeholders of the Trade Hub and African Partners Network. These stakeholders need accurate, up-to-date, and value chain-specific market information if they are to expand regional trade in key agricultural commodities and increase value-added exports.

This study assessed the supply of market information in West Africa and examined the needs of actors in the Trade Hub's target value chains. It then identified the project's best options for increasing stakeholders' access to the types of market information that would support trade and exports. Taking a broad view of market information systems (MIS), the study looked at prices, offers and demand, trade flows, information on transport, and mobile payments that can be used in transactions. It assessed both regional and national systems, and considered MIS on the supply side and the demand side.

The Trade Hub's MIS activities, which will be based on the results of this study, will build on previous efforts by the United States Agency for International Development (USAID). They will also be consistent with regional frameworks, especially those of the Economic Community of West African States (ECOWAS) and the *Union Economique et Monétaire de l'Afrique de l'Ouest* (UEMOA).

MARKET INFORMATION SUPPLY

The supply of market information for the agricultural sector in West Africa is highly variable. A number of MIS provide data on cereals, including public, private, and association-based sources that deliver national and regional market information for the maize, millet/sorghum, and rice value chains. Livestock information, however, lacks a formal regional system, and market information for cashew, shea, and mangoes is mainly limited to trends mentioned in sporadic market studies or surveys.

Types of MIS. This study looked at the aims of the different types of MIS in West Africa and reviewed the products they offer. The usual classifications of "public" and "private" do not capture the recent evolution of agricultural MIS in the region, so the report proposes a new way to classify these systems: 1) market information service providers, 2) public market information systems, 3) association-based market information systems, and 4) regional analysis information providers. Each has different source of funding, priorities and methods, but all contribute to the agricultural sector's capacity to trade.

Value chain actors also rely heavily on informal information sources. All stakeholders met during this study said they have their own sources, mainly partners in their major markets. A study[1] by the West Africa Grains Network (WAGN), for example, revealed that 42 percent of cereals stakeholders use their own networks as their primary sources of information.

Transport information. In addition to value chain-related information, West Africa needs data on transport conditions so that value chain actors can move their goods freely throughout the region. Although recent years have seen increased efforts to improve trade and transport conditions in West Africa, obstacles persist and unofficial trade still dominates. Evidence of road harassment, road

[1] West Africa Grains Network. "*Etude de faisabilité pour la mise en place d'un dispositif d'information céréalier au profit des membres du réseau ouest africain des céréaliers*." November 2013.

conditions, and trade flows will help facilitate movement of goods and services. A number of data collection efforts are underway in these areas, including those by Borderless Alliance, UEMOA, the *Comité Permanent Inter-Etats de Lutte Contre la Sécheresse dans le Sahel* (CILSS), and the *Conseil Burkinabé des Chargeurs* (CBC) in Burkina Faso.

Mobile money. A lack of ways to transfer money hinders trade in West Africa; rapid development of mobile solutions could help lift this impediment. Linking mobile money solutions to some of the region's MIS could also help track deals, adding to the store of market information in the region.

STAKEHOLDERS' NEEDS

Structured, regular market information is a top priority for all stakeholders, but the types of information they need and the channels required for dissemination differ depending on the value chain and the stakeholder category.

Value chains. Actors in the **grains** value chains need all kinds of information, although the recent WAGN study showed that intelligence about business opportunities is more important to them than market prices. This is because they have their own sources for the latter but not for business opportunities, especially those offered by large institutional buyers. Market information is one of the main tools of the **livestock** business in West African countries. Successful traders are usually those with the largest networks of partners and clients who provide news about prices and business opportunities. Only big traders with export capabilities and funds to support a network of information providers have access to this market intelligence, giving them greater negotiating power than small or medium actors, and creating asymmetrical information flows. Not much evidence exists about the market information needs of **cashew, mango,** and **shea** stakeholders; the African Cashew Alliance (ACA) recently said its top priority was a study of cashew stakeholders' market information needs.

Transport. Truckers and shippers have different primary market information needs. Truckers need to know where to get freight, how to cut out intermediaries between truckers and shippers, and how to learn about regulations and documents required for trucks. Shippers need to know where to get trucks, what the tariffs are on transport, and what documents are required for loads.

MATCHING MARKET INFORMATION DEMAND AND SUPPLY

The supply of market information in West Africa does not adequately meet the needs of agricultural sector stakeholders. Synchronizing supply and demand will involve increasing the supply of market information for target value chains and tailoring it to stakeholders' needs. Blanket approaches are unlikely to work well.

Information on price and product availability does not necessarily lead to completed transactions, due to a lack of the trust needed to enter into business with unknown counterparts. This could be resolved by having strong national and regional associations, trusted by both parties, serve as intermediaries. Likewise, the right technology does not necessary makes a successful MIS, as it represents only around 20 percent of a viable, reliable system. The other 80 percent comes from ensuring the quality and regularity of raw data, processing and disseminating data, building user directories, and securing funding.

Value chains. No existing system covers all the needs of stakeholders in the targeted value chains. Despite the many MIS that collect, process, or disseminate market information at different levels in West Africa, informal information sources remain primary for grain and livestock actors. Their specific

market information needs should be addressed through different MIS models. For **cereals,** some small-scale nongovernmental organizations like *Afrique Verte* are doing remarkable work in promoting regional trade through MIS activities and a *bourse des céréales*. The *Réseau des Systèmes d'Information de Marché de l'Afrique de l'Ouest* (RESIMAO) is sharing experiences among national MIS members of its network. These efforts could be duplicated for a regional **livestock** MIS. The ACA has a well-functioning MIS oriented toward international cashew exports, but it would be more effective if ACA members' information needs were better understood and more cashew actors had access to this information. No formal regional MIS exists for the **mango** and **shea** value chains in West Africa, but the *Association Afrique Agro Export* (AAFEX), which already supports mango exporters, could provide international mango prices.

Transport. A number of innovative ideas are being tested in West Africa for using information communication technology tools for transport data collection and freight-matching between truckers and shippers. These include the Cheetah application for collecting road harassment and road condition data and the CBC web platform for freight-matching.

There is great potential for using mobile money in intra-regional trade of agricultural products, but this application is hampered by a number of constraints. Mobile money companies are confident that the limitations will be lifted in a near future, because of signals they are getting from the UEMOA central bank.

RECOMMENDATIONS

This report's recommendations will help the Trade Hub meet its key export and trade goals by improving value chain stakeholders' access to information and by closing gaps between demand and supply. MIS should be tailored to stakeholders' needs and should be considered in a broad sense, with the understanding that technology is less important than the operation of the system itself. The project should:

1. Support RESIMAO to make its web platform more efficient in disseminating regional market information to key exporters.
2. Issue a competitive grant to select an MIS provider to help WAGN and the *Confédération des Fédérations Nationales de la Filière Bétail/Viande* (COFENABVI) develop their systems.
3. Support *Afrique V*erte in organizing one regional *bourse des céréales* every year and in deploying its web platform in Mali, Niger, and the Republic of Guinea.
4. Provide a platform for national livestock MIS to share experiences and methodologies, helping them becoming more efficient and providing a sustainable regional forum to deliver market information to livestock exporters.
5. Collaborate with regional analysis information providers to help make their information available to major traders and traders' associations.
6. Follow development of the family farm regional observatory and the regional commodity exchange initiatives of the *Réseau des Organisations Paysannes et de Producteurs de l'Afrique de l'Ouest (*ROPPA) and—if results are convincing—support their development.
7. Support the ACA's market information system to:
    - Conduct a study to identify cashew stakeholders' market information needs and propose a strategy for an MIS that would respond to these needs.

- Widen diffusion of market information by providing selected information to cashew stakeholders who are not paying members of the ACA.
- Use mobile technology to disseminate selected market information to more users.

8. Follow emerging opportunities in shea and mango, including partnering with national associations to identify the main exporters and supporting AAFEX to reach mango exporters.
9. Follow the pilot of the Cheetah application along the Bamako–Ouagadougou–Accra corridor and, if results are convincing, support deployment on other corridors.
10. Support the CBC to:
    - Build the capacity of truckers and shippers to use the freight-matching platform.
    - Promote the platform to encourage more truckers and shippers to use it.
    - Organize a regional meeting to present the CBC's experience to other shippers' councils.
11. Work with Borderless to make market information available at its Trade Information Centers.

1. INTRODUCTION

USAID/West Africa's Mission-wide goal is the West-African led advancement of social and economic well-being. This goal is supported by several development objectives, including "broad-based economic growth and resilience advanced through West African partners." The Trade Hub and African Partners' Network Project (the "Trade Hub") will contribute to this development objective by achieving two critical intermediate results:

> 1) Improving the capacity of West Africa's farmers and firms in targeted regional and global value chains.
>
> 2) Improving the business enabling environment by addressing transport constraints and trade barriers affecting the efficiency of the region's corridors and borders.

The Trade Hub will work through regional private sector associations and regional governmental entities to help channel all partners' efforts in a way that will address critical constraints to trade competitiveness, capture opportunities to expand trade, demonstrate West Africa's productive potential to investors, and facilitate greater investment in the region. Its results will include both an increase in 1) regional trade in key agricultural commodities, a critical Feed the Future (FTF) indicator, and in 2) value-added global exports, a targeted indicator for the Africa Competitiveness and Trade Expansion (ACTE) Initiative, which ultimately aims to increase Africa's share of world trade.

The project will build the capacity of several key groups of African partners—regional private sector associations and alliances, the Economic Community of West African States (ECOWAS), the Economic and Monetary Union of West Africa (UEMOA), a multi-donor funded Transport and Facilitation Observatory, and Global Development Alliances with private sector companies. As the Trade Hub works with associations and regional alliances, it will help them serve as leaders in promoting reforms, attracting buyers and investors, and adopting improved practices. Eventually, the Trade Hub's partners will act independently and take on even greater leadership roles.

The Trade Hub's major components are:

- Regional staple foods development (livestock and grains)
- Global value chain development (targeted agro-processing and manufactured consumer goods)
- Finance and investment
- Transport and the trade enabling environment
- Capacity building
- Communications

Administration and management, including grants administration An important part of the Trade Hub's first, five-month FY 2014 work plan is completion of various studies conducted to ensure that the latest developments and studies are considered and that partners' views are considered for activity planning in FY 2015 and beyond. One of these studies is the MIS supply and demand analysis, the subject of this scope of work.

Sub-activity 1.f. ***Cross-Cutting***	**Activity Manager/Other Staff**	**Start and End Dates**	**Activity-Level Outputs**
	MIS Specialist, Value Chain Leader, Trade and Transport Enabling Environment Specialist	September 2014	Study of MIS potential and recommendations completed

2. BACKGROUND

Collecting and disseminating market information to smallholder farmers and traders is very challenging in West Africa. A regional, trade-focused MIS needs to confront a number of difficulties: a lack of confidence in unknown trading partners with whom no personal contact is immediately possible; an inability to communicate by phone or through the Internet due to language barriers or illiteracy; non-use of contracts, quality standards, and payment methods that facilitate long-distance trading; and the somewhat ad-hoc nature of trading. Additionally, some of the regional trade value chains exhibit oligarchy-type tendencies; those in powerful trading positions may not wish to bring the same level of information to all actors. In this challenging context, it is important to understand recent developments and lessons learned, and to consider their relevance for future directions.

2.1 DEVELOPMENTS DURING THE PAST DECADE

During the past decade, private MIS have emerged in West Africa as alternatives to the decades-old public systems that have been considered slow and unable to serve the interests of private sector actors. In general, these private systems—such as Ghana-based Esoko and ImageAD, and Senegal-based Manobi—have been largely donor-funded and have failed to generate the level of expected interest. Neither have they been able to build true revenue-generating structures.

Even five years ago, public and private agricultural MIS were seen as having different purposes, but these distinctions are now fading. Public systems, usually implemented by the Ministry of Agriculture or Trade, were seen as generating data principally for the purposes of monitoring food security and supporting policy analysis and statistics. This view arose primarily because data transmission was slow and therefore not useful to the private sector. The private MIS, on the other hand, by transmitting real-time or almost-real-time data, were seen as capable of serving the private sector's need for data on which to base business decisions.

In recent years there has been great deal of investment in West African public sector market information systems. As a result, they have become stronger and able to provide data more rapidly. For example, from 2009 to 2013 the ECOWAS/UEMOA Marketing Inputs Regionally (MIR) Plus project supported RESIMAO, a public sector MIS network. This led to the development of a modern platform that can handle agro-input and product market information using mobile technology. USAID's previous Agribusiness and Trade Promotion (ATP) and Expanded Agribusiness and Trade Promotion (E-ATP) projects (collectively known as "the ATP Projects"), which were a predecessor to the Trade Hub, also assisted RESIMAO in acquiring mobile phones that can be used by market data collectors to transmit data in real time. ECOWAS has committed to funding RESIMAO through a signed memorandum of understanding (MOU) for the years 2013 to 2017. This agreement will allow RESIMAO to strengthen its organizational structure by recruiting dedicated staff and building capacity.

Over the past decade, value chain organizations have also initiated their own market information systems. These include the *Comité Interprofessionnel des Céréales du Burkina Faso* (CIC-B) in Burkina Faso; the nongovernmental organization (NGO) *Afrique Verte* in Burkina Faso, Mali, and Niger; and the region-wide organizations COFENABVI and ACA. These organizations have had varying degree of success with MIS, but can serve as sustainable anchors for further efforts.

The evolution of MIS in the region during the past decade has been accompanied by a fast penetration by mobile phones into rural areas and by the development of information communication technology (ICT) and mobile applications. This has helped move existing MIS from paper-based systems to those using short message service (SMS) and general packet radio service (GPRS) for data collection and dissemination (known as "second generation" MIS). It has also helped a number of for-profit MIS service providers emerge. They are developing and maintaining platforms and mobile tools that stakeholders can use to develop their own partially customized systems.

2.2 CONSIDERATIONS FOR THE WAY FORWARD

There are a number of factors to consider in mapping the way forward. First, it is clear that MIS will only contribute to increased regional trade if they serve value chain actors' needs. The Trade Hub's expected priority value chains are cereals, livestock, cashew, mangoes, and shea. The project has also selected target corridors: Tema–Ouagadougou, Bamako–Abidjan, Bamako–Dakar, and Ouagadougou–Cotonou through Fada N'Gourma and Parakou. Both the demand for market information and its current supply varies by value chain. Demand for information differs greatly between the value chains that are mainly focused on regional trade and those that primarily seek exports outside of the region. As discussed above, within these value chains, needs also differ by groups of users.

A brief summary of market information supply issues, by value chain, includes the following:

- **Cereals.** There are numerous regional and country-level systems that contain market information on cereals, both from market and food security perspectives. Regional or multi-country systems include RESIMAO, Esoko, ECOWAS' Integrated Agricultural Information System (ECOAGRIS), UEMOA's *Système d'Information Agricole Régional (*SIAR), the Famine Early Warning Systems Network (FEWS NET), the Regional Strategic Analysis and Knowledge Support System (ReSSAKS), CountrySTAT, and *Afrique Verte*. National systems include those established by food security agencies, value chain associations, producer organizations, NGOs, and projects. There is also a CILSS-led trade data collection effort that includes price data from a number of markets in West Africa.
- **Livestock.** There are national MIS with different levels of functionality in the major West African producer countries: Burkina Faso, Mali, and Niger. The ATP Projects' efforts to construct a regional livestock MIS did not bear fruit for various reasons, including difficulties in defining criteria for classifying livestock and difficulties in agreeing on an approach with COFENABVI.
- **Cashew.** The ACA already has an MIS for its members. It includes numerous components, including AfricashewSplits (weekly price and market updates for Africa, India, Brazil, and Vietnam) and Africashew450 (monthly market analysis production). It is expected to soon have AficashewBB, a mobile application for market information data broadcasting.
- **Mangoes.** There is no known MIS in the region. International prices are available from the Geneva-based International Trade Center.

There are also other important considerations as well. Significantly, there is already a great deal of data available that can be transmitted, at times after processing, to value chain actors. Some of that data is outside the MIS community. For example, in the food security community, FEWS NET is pooling basic staple prices in several West African countries (Burkina Faso, Republic of Guinea, Mali, Niger, and Northern Nigeria) and processing them into maps. Although FEWS NET's purpose is to foresee emerging food shortages by identifying high-price areas, similar maps could be used to transmit market

information to traders, for whom high-price areas provide opportunities for business. In addition, in 2013, the ATP Projects transferred regional trade data collection on cereals and livestock to CILSS, which is now producing monthly updates on the value of trade, based on volumes and prices collected at the market level. Integrating this price data, as well as data from other sources, to FEWS NET would increase coverage.

It is also important to consider how MIS will connect with a number of innovations in the agricultural development community. In particular, warehouse receipt system initiatives and commodity exchanges are gaining support in a number of West African countries, through efforts of donors such as the Alliance for a Green Revolution in Africa (AGRA) and the World Bank.

The lack of ways to transfer money among West African countries is a hindrance to trade, although the telecommunications company MTN has recently started money transfer through cell phones between Côte d'Ivoire and Burkina Faso. It will be important to assess how far such efforts have come and how MIS can be effectively linked to them.

3. PURPOSE OF THE STUDY AND METHODOLOGY

This study considered market information services very broadly, looking at market prices, offers and demand, trade flows, information on transport, and mobile payments that can be used in market transactions. It assessed regional and national systems from both the supply side and the demand side.

3.1 PURPOSE OF THE STUDY

This study is part of the startup phase of the Trade Hub, following the value chain selection study, the value chain assessments, and the trade and transport enabling environment policy assessment. The topics of all of those reports must be integrated (including the targeted value chains and corridors) into the selection of MIS partners for the project and the identification of activities to implement.

The purpose of this study is to identify MIS partners for the project and to define a strategy for working with these partners to achieve the project objectives. Market information systems operating in the region are engaged in many activities to serve their users. The Trade Hub may support only the parts of these activities that will directly achieve project objectives.

The Trade Hub's MIS activities—which will be based on the results of this study—will build on previous USAID efforts and will be in line with regional frameworks, especially those of ECOWAS and UEMOA.

3.2 METHODOLOGY

This study assessed the supply of market information in West Africa and examined the needs of actors in the Trade Hub's target value chains. Based on the information collected, the authors then performed analysis to identify the project's best options for making market information available to stakeholders in a way that would support commodities trade (intra-regional trade for maize, millet/sorghum, rice, and livestock and global trade for cashew, shea, and mangoes).

The data and information used in this study were collected through desk research (Internet research, studies, and reports), administration of a qualitative questionnaire, and direct interviews with relevant stakeholders. Data was collected for this study in June and July 2014.

Market information supply in West Africa was assessed though different steps:

- Regional and national market information services operating in West Africa were mapped, as were trade-focused MIS outside of West Africa. The goal was to understand the way these services operate and the value chains concerned. Some successful MIS operating outside the region were also considered, as a way of learning from their experiences. The mapping was done through Internet research, literature reviews, and discussions with relevant value chain stakeholders.
- Existing MIS and MIS service providers were evaluated through a questionnaire (see Annex B) that was developed and sent to all identified MIS operating in the region. The objective was to collect basic information on the structure of the systems (number of markets, number of

enumerators, technologies used, partners, sources of funding, etc.) and the way the systems functions (data transmission, data validation steps, etc.). Although the questionnaires were not completed and sent back by all identified MIS, they were able to provide guideline for the interviews.

- Some of the key identified MIS in the region were interviewed. Field visits took place in Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, and Senegal. Telephone calls, Skype conversations, and email discussion were held with other MIS providers and relevant MIS community professionals, such as the *Centre de Coopération Internationale en Recherche Agronomique pour le Développement* (CIRAD) and the International Fertilizer Development Center (IFDC). These interviews allowed in-depth discussions on the way these systems function and on the challenges and opportunities they face. The project team conducting the field visits tested the tools and features available on the platforms used by the MIS providers. Some of the users of these MIS were also interviewed, to discuss the strengths of the services and the challenges in using them. The project team also met with mobile money companies in Burkina Faso (Airtel), Ghana (MTN), and Mali (Orange). Using the information collected, the project developed individual profile sheets for each of the MIS interviewed.

Stakeholders' needs were assessed using different approaches:

- For the ***cereals value chain***, analysis is based on a 2013 study carried out by WAGN (see footnote 1) with support from the *Centre Technique de Coopération Agricole* (CTA), the *Agence Française de Développement*, and the Farm Foundation (based in France). In this study, WAGN used a questionnaire (see Annex C) to assess the MIS needs of grain sector actors in the eight WAGN member countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Senegal, and Togo). The questionnaire included 14 categories of information. For each question, the person or the organization surveyed gave a score from 1 to 10 representing the importance of the category of information for his business.

  To conduct analysis for this study, the Trade Hub obtained the raw data collected by WAGN through this questionnaire. In addition, the project met with WAGN representatives in the five countries visited during this study. At these meetings, participants discussed some of the results of the WAGN study and reviewed existing sources of information used by market actors, additional types of information needed, and relevant channels for receiving this information.

- For the ***livestock value chain,*** the project gathered data from different reports and from interviews with COFENABVI members and officials in the five countries visited during this study. The team also discussed MIS with market players during livestock market visits in Senegal.

- For ***cashew, shea,*** and ***mangoes***, the project gathered information from the Global Shea Alliance (GSA) and the ACA. The team also interviewed some key stakeholders.

- For the ***transport sector***, the project gathered information from Borderless Alliance and met with CILSS and CBC in Burkina Faso to discuss data collection for the *Observatoire des Pratiques Anormales*(OPA) and the *bourse virtuelle du fret*. The authors of this report also held many discussions with the Trade Hub's Trade and Transport Enabling Environment Team.

Based on the stakeholders' needs assessment, the project analyzed information gathered from existing sources of information and proposed recommendations for the best options to make market information available to actors in the project's target value chain, with the objective of increasing regional trade in key agricultural commodities and increasing value-added global exports.

3.3 DATA LIMITATIONS

Although much information is available on MIS for the grains value chain, it is difficult to find information about MIS related to livestock, cashew, shea, and mangoes. Few studies on value chain market actors needs are available.

4. REGIONAL FRAMEWORK FOR MARKET INFORMATION AND PREVIOUS USAID EFFORTS

In developing recommendations, the authors of this report were careful to consider the successes and challenges of previous efforts. This chapter provides background information about the information system initiatives of key regional institutions (ECOWAS and UEMOA) and discusses USAID's past activities.

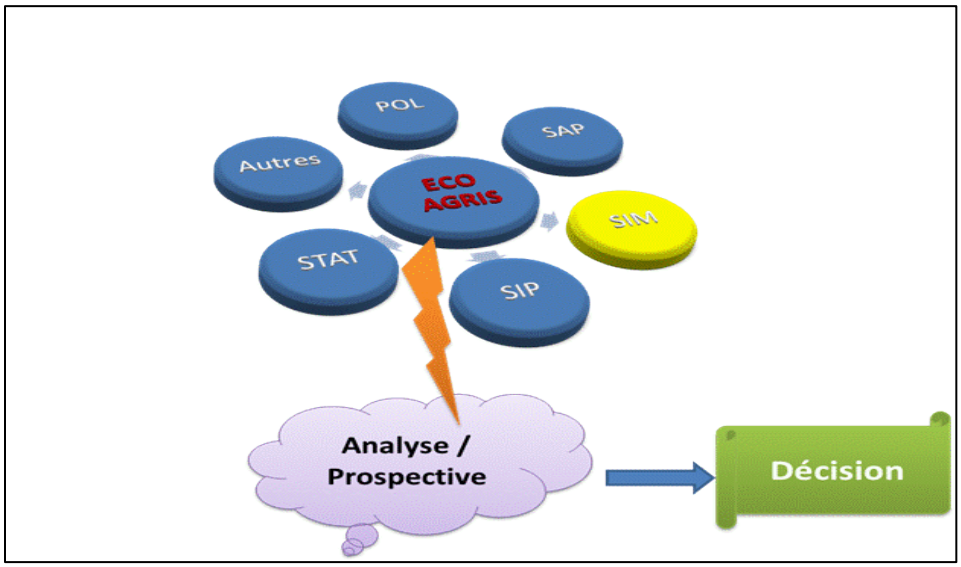
4.1 REGIONAL FRAMEWORK FOR MARKET INFORMATION INITIATIVES

ECOWAS and UEMOA are leading the development of agricultural information systems in West Africa, both in terms of policies and in terms of a framework within which other initiatives can develop their platforms. There are two major regional information system initiatives: the Integrated Agricultural Information System of ECOWAS, known as ECOAGRIS, and UEMOA's *Système d'Information Agricole Régional,* known as SIAR.

4.1.1 ECOAGRIS

ECOWAS's intention is for ECOAGRIS to equip West Africa with a system that will provide sectoral actors with reliable, up-to-date agricultural data and information. Figure 1 below shows how the system is built.

Figure 1: ECOAGRIS Structure



The purpose of ECOAGRIS is to give decision-makers reliable data, information, and well-informed analysis that will enable them to:

- Formulate and monitor policies and strategies for agricultural development
- Manage food security issues in West Africa
- Promote trade in food products

The design process for ECOAGRIS started in 2007, and has gone through several stages. In May 2007 in Ouagadougou, the concept note for its implementation was defined and validated at the regional and national levels. Guidelines were adopted in Cotonou in April 2008, and objectives and results adopted in Dakar in June 2009. A guidance note was validated in Abuja in August 2009, and finally, in October 2010, a meeting was held in Cotonou to formulate the final terms of reference to implement the system.

In response to the food crisis of December 2008, the European Union (EU) initiated the Food Facility Program (EUFF) for a three-year period (2009–2011). As part of this initiative, a Regional Food Facility Program was implemented in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, and Senegal by ECOWAS, the International Fund for Agricultural Development (IFAD), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

ECOWAS selected the United Nations Office for Project Services as the program's implementing agency, tasked with making the ECOAGRIS system operational and establishing a food security component for the information system. An agreement was signed between these two institutions in September 2011 to carry out the following five major activities:

- Implementation of ECOAGRIS and development of the food security component of the system in member countries
- Installation of local networks and their interconnection at the country level and later at the regional level
- Acquisition of computer equipment and software
- Implementation of the communication and visibility plan
- Implementation of a capacity building program

4.1.2 SIAR

UEMOA established SIAR to better monitor its own agricultural policy. The aim for the system is to provide data on major agricultural sectors and agricultural markets. SIAR is organized into four major components:

- Information system to monitor key transportation channels
- Information system on agricultural markets within the common market
- Information system on food security
- Information system for international agricultural negotiations

In 2007, the UEMOA Commission, supported by the United Nations' Food and Agriculture Organization (FAO), conducted a feasibility study for the development of a prototype of SIAR based on

"CountrySTAT," a technology developed by the FAO. The pilot project was conducted in two countries (Togo and Mali) and later extended to all UEMOA member states.

4.2 PREVIOUS USAID PROJECTS EFFORTS IN THE REGION

USAID has supported several public and private sector efforts in the region to build market information systems, both at the national and regional levels, which would benefit agricultural value chain stakeholders. The two primary projects from the past 10 years are described below.

4.2.1 MISTOWA

The regional Market Information Systems and Traders' Organizations (MISTOWA) project was funded by USAID and implemented by IFDC. It was officially launched in March 2005, although activities started in 2004. MISTOWA's objective was to increase regional agricultural trade and food security by improving and linking existing regional efforts to generate, disseminate, and make commercial use of market information.

The program utilized www.tradenet.biz, a web platform developed by BusyLab (a Ghanaia-based company), to offer access to real-time market information on over 300 commodities and from over 500 markets throughout West Africa. The system used both the Internet and SMS services. Tradenet allowed buyers and sellers of agricultural inputs and commodities to upload their offers and contact information, which were then sent to subscribers online and through SMS text messages. Tradenet also aggregated price information collected by government and private market enumerators across the region.

The MISTOWA project promoted the establishment of agricultural trade information points (known as PICA, or *Points d'Information Commercial Agricole*) within agricultural producer and trade organizations to serve as market information collection and dissemination points.

In April 2009, TradeNet was rebranded as Esoko. It switched to a new platform with a broader set of tools. Esoko Networks Ltd. is a Mauritius-based company that owns and operates Esoko, the technology-based market information system platform.

4.2.2 THE ATP PROJECTS

Building on the successes of MISTOWA, USAID's ATP Projects commenced MIS activities in 2008 to provide efficient commercial market information to the maize, livestock, and onion value chains in Burkina Faso, Côte d'Ivoire, Ghana, and Mali. Esoko Networks was selected as an MIS platform provider to distribute prices and market locations, bids and offers, and stakeholder profiles through the Internet and by SMS.

The project also contracted Esoko Networks to help MIS partners in target countries establish enumeration networks and to provide documentation and training in the use of the MIS. ATP funding covered license fees for the Esoko platform, SMS alerts to value chain actors, and technical management support for the MIS partners. The project then separately contracted the *Association pour la Promotion de la Sécurité et de la Souveraineté Alimentaires au Burkina* (APROSSA) in Burkina Faso, the *Association Malienne pour la Sécurité et la Souveraineté Alimentaires* (AMASSA) in Mali, and the *Association Nationale des Organisations Professionnelles Agricoles de Côte d'Ivoire* (ANOPACI) in Côte d'Ivoire as MIS partners. These partners collected and disseminated data from selected markets, promoted the Esoko platform and built the capacity of value chain actors to use it, and supported national and intra-regional trade using data

from the MIS. The project also helped Esoko Ghana, a local franchisee of Esoko Networks, to collect and disseminate market information and train value chain actors to use the platform in Ghana.

In 2009, E-ATP was included in the MIS project, which then also covered the E-ATP value chains: millet/sorghum, rice, and poultry. The expansion resulted in the inclusion of the Information Aid Network (IFAnet) in Nigeria as an MIS partner and additional support for AMASSA and APROSSA.

The ATP Projects' efforts to establish a livestock MIS started by providing an Esoko license to COFENABVI. COFENABVI used the offers module of the Esoko platform to record livestock movements between countries, but because this is not what the module was designed for, it was not effective. The mobile data services operator Manobi was then mandated to provide market information and data collection tools to COFENABVI in Côte d'Ivoire, Burkina Faso, and Mali. This new arrangement, however, did not yield results before the ATP Projects came to an end.

A December 2011 external assessment of ATP's MIS activities recommended that the project:

- Involve regional stakeholder organizations in MIS
- Assist MIS partners to market the platform more strongly outside of Ghana
- Structure support from other parts of the project to complement the MIS
- Develop clear communication and reporting guidelines
- Follow up on bids and offers to confirm transactions
- Pilot the interactive voice response (IVR) system to complement the MIS platform
- Push for public funding of the MIS

Documenting and disseminating information on road harassment was central to the ATP Projects' efforts to reduce transport-related barriers to trade. The projects surveyed the transport of agricultural products traded within the region in sacks (onions, cereals) and in the form of live animals along selected corridors. In 2013 the project transferred its regional trade data collection on cereals and livestock to CILSS, which is now producing monthly updates on the value of trade, based on volumes and prices collected at the market level.

5. MARKET INFORMATION SUPPLY IN WEST AFRICA

This study identified a total of 22 information providers and users at both the national and regional levels (see Annex A).

5.1 CLASSIFICATION OF EXISTING INFORMATION SYSTEMS

While collecting information for this study, it became clear that the usual dichotomy between public and private MIS does not capture the recent evolution of the agricultural market information system sector. For this reason, this study proposes a new classification of market information systems operating in West Africa. This new classification is based on the following criteria:

- *Organization of the system:* value chain, enumerators' sampled, geographic coverage, etc.
- *Activities carried out by the system:* data collection, data analysis and dissemination, development of platform and tools
- *Source of funding:* public funds, donors, subscriptions and membership fees, or licenses
- *Institutional anchorage:* ministries or governments, international organizations, stakeholders' associations, or independent businesses
- *Users of the system:* association members, market actors, food security analysts, policy-makers

Using these criteria, the authors of the study identified the following four categories of market information providers.

5.1.1 MARKET INFORMATION SERVICE PROVIDERS

Esoko, Manobi, ImageAD, Ujuizi Laboratories

Initiated as private businesses, these market information service providers are firms developing and maintaining web platform and tools that can be used by other systems through subscription or licenses. They also offer consultancy services to develop tools for other systems. Esoko and Manobi have established national MIS in their base countries (Ghana and Senegal) to test and showcase their systems and provide feedback for further product development. ImageAD is well-established in Ghana, with enumerators and partners collecting data in the northern part of the country.

Even though these systems are claiming that they are private businesses, most of their revenue is coming from donors, projects, or international organization through grants. Some of them are carrying out projects for donor organizations (for example, ImageAD is implementing a regional project funded by AGRA).

5.1.2 PUBLIC MARKET INFORMATION SYSTEMS

National MIS members of RESIMAO, national livestock market information systems

Initiated by governments to accompany the agricultural sector liberalization seen in most the West African countries in the 1990s, these MIS are now mostly used by governments to monitor food security. Increasingly during this same period, private sector actors are using these data sources as one support to make commercial decisions. These systems' functioning budgets (for salaries, office space, basic equipment, etc.) still come from governments, but their development and modernization are supported by donors or projects. These MIS are the oldest systems operating in the region; some of them have time-series data for more than 20 years of agricultural product prices.

5.1.3 ASSOCIATION-BASED MARKET INFORMATION SYSTEMS

ACA information system, WAGN information system, COVENABVI information system, Afrique Verte*, CBC*

Initiated by value chain actors, these information systems are meant to primarily serve the needs of association members. Some of them—such as ACA, COFENABVI, and CBC—distribute information only to their members. Others—such as WAGN and *Afrique Verte*—make their market information available to the public. Their functioning budgets come from member subscriptions (ACA and WAGN) and donor grants.

5.1.4 REGIONAL ANALYSIS INFORMATION PROVIDERS

ECOAGRIS, SIAR, CILSS, FEWS NET, ReSAKKS, Africafertilizer.org, CountrySTAT

These international organization- or project-supported information systems do not collect market data in the field, but instead are providing value added to these data through regional aggregation, analysis, and reporting. These systems rely on public MIS or association-based MIS for raw market data. They have more technical and financial resources than the other categories, and sometime give technical and financial support to those providing the raw data. The main objectives of these systems are to support analysis of food security and to provide information for policy-makers.

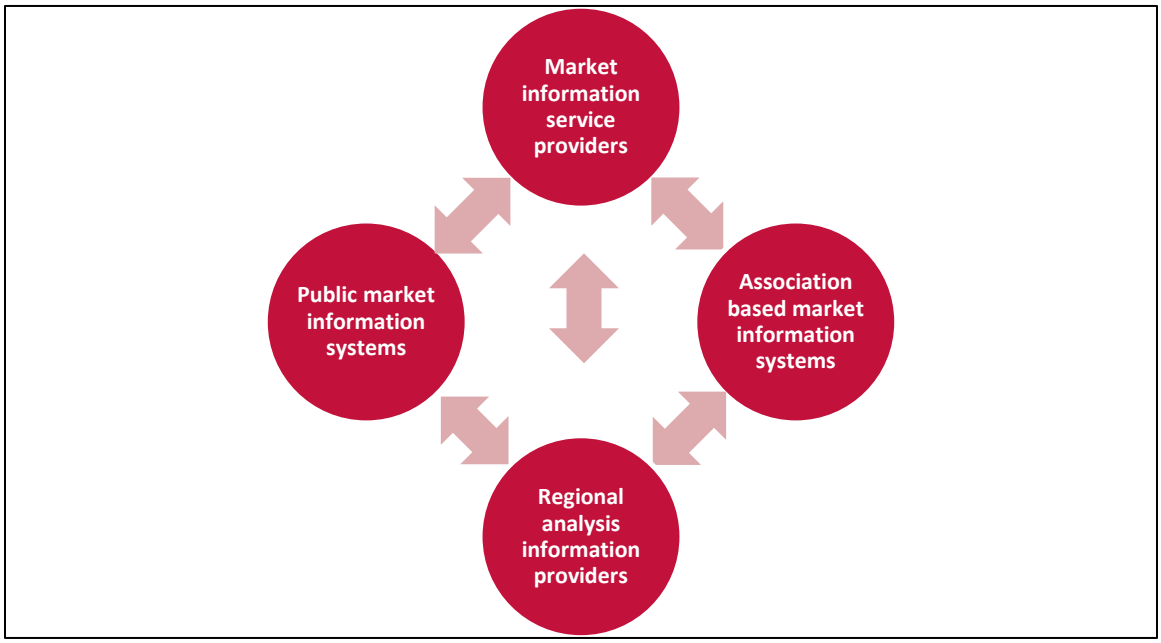
5.1.5 RELATIONSHIPS BETWEEN CATEGORIES OF MIS PROVIDERS

Figure 2 presents the interactions between the different categories of MIS providers identified in this study. In summary:

- *Market information service providers* provide their service to all of the other categories of MIS.
- *Public market information systems* rely on *market information service providers* for development of platforms and tools and to provide raw data to *regional analysis information providers*.
- *Association-based market information systems* rely on *market information service providers* for development of platforms and tools and to provide raw data to *regional analysis information providers.*
- *Regional analysis information providers* rely on all the other categories for raw data and on *market information service providers* for development of their web platforms.

This study identified no relationships between public market information systems and association-based market information systems.

Figure 2: Categories of Market Information Providers and Relationships Between Them



5.2 INFORMAL MARKET INFORMATION SOURCES

All actors met during this study said that they have their own sources of information, primarily through contacts and partners in their main markets of interest. They usually get market information through phone calls. This method helps them collect all needed information, including:

- Product prices that can be discussed with their counterparts
- Availability of products on the market and quality of products
- Availability of means of transportation and costs of transportation
- Other business opportunities in the same market place

During a meeting with the Trade Hub study team, the president of the *Association Nationale des Professionnels de la Viande et du Bétail du Sénégal* (ANPROVBS) in Dakar called one person in the Ouagadougou abattoir market and one person in Niamey to gather information on the livestock markets in these countries. He wanted to show that he has up-to-date and accurate market information when he needs it.

During market visits, the ANPROVBS president meets traders who just arrived from Mali. The first thing he discusses with them is prices and availability of products in the market they are coming from and the markets they visited along the way.

A WAGN study revealed that 42 percent of cereals stakeholders use their own network as their primary source of information. If only traders are considered, the portion who use their own network as a primary source would be higher.

Table 1: Stakeholders' Information Sources

	Producers	Multi-Activity Actors	Traders	Processors	Total
Own network of information	34%	45%	48%	40%	42%
Information provided by association	23%	30%	19%	33%	24%
MIS	21%	17%	23%	13%	20%
TV/radio	19%	5%	6%	13%	10%
Others	3%	3%	4%	0%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Another important source of market information is traders coming from other markets and other countries to sell their products. They arrive with fresh market news and business opportunities from their markets of origin, as well as from markets that they visited during their journeys.

5.3 INFORMATION SYSTEMS SUPPLY FOR THE GRAINS AND LIVESTOCK VALUE CHAINS

The maize, millet/sorghum, and rice value chains have the greatest availability of market information at both the national and regional levels; this information comes from public, private, and association-based sources. There is no regional system providing market information on livestock. The only sources are public national MIS operated by ministries of livestock that collect market data. These systems have different levels of functioning, depending on the country.

5.3.1 GRAINS AND LIVESTOCK VALUE CHAIN ORGANIZATION IN THE REGION

WAGN is the main project partner representing maize, millet/sorghum, and rice value chain actors in the region. WAGN operates in eight countries: Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Senegal, and Togo. However, *Afrique Verte* (an NGO established in Burkina Faso, Mali, Niger, and recently in the Republic of Guinea) was also considered during this study because it is carrying out relevant MIS activities and operating national and regional *bourses de céréales*. *Afrique Verte* was one of the strategic partners of the ATP Projects in implementing its MIS strategy in Burkina Faso and Mali.

ROPPA, which was officially founded in July 2000, gathers organizations from 10 West African countries: Benin, Burkina Faso, Côte d'Ivoire, Gambia, Guinea-Bissau, Mali, Niger, the Republic of Guinea, Senegal, and Togo. ROPPA is developing a regional observatory family farm called and a regional commodity exchange. The bodies could be helpful fora for disseminating market information.

COFENABVI is the main project partner representing livestock value chain actors in the region. COFENABVI, a regional apex livestock organization made up of national livestock organizations, was created in 2004 in Bamako, Mali. The organization is represented in all UEMOA member states. Its headquarters is in Abidjan, Côte d'Ivoire.

5.3.2 MAPPING THE SUPPLY

RESIMAO is considered the umbrella organization for all public MIS in its 10 member states—Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Nigeria, the Republic of Guinea, Senegal, and Togo. The public livestock MIS met (in Burkina Faso, Côte d'Ivoire, Mali, Niger, and Senegal) for this study have also been considered as one even though there is no regional network and they have different levels of development and functioning. *Afrique Verte* is a regional NGO represented in Burkina Faso, Mali, Niger, and the Republic of Guinea. This entity provides an interesting example of a nongovernmental effort to improve the quality of market information to be used for commercial decision-making.

5.3.2.1 Geographic Coverage

Even though some MIS providers claim to cover all ECOWAS countries, it is clear that stakeholders in UEMOA countries, Nigeria, and Ghana have better access to market information on millet/sorghum, rice, and livestock than those in other countries. Very little information is available on MIS operating in Liberia, Sierra Leone, Gambia, and Cape Verde.

Table 2: Geographic Coverage of Market Information Providers

Category of MIS	Geographic Coverage
Market information service providers	These providers are well-established in countries where their head offices are; deployment outside the base country depends on partners, projects, and clients.
Public market information systems	All countries have national MIS with different levels of operation, ranging from simple market statistics to timely market intelligence systems. Ten countries are now member of RESIMAO. All countries also have a national livestock MIS even though the majority encounter functioning challenges.
Association-based market information systems	It depends on the regional coverage of the main association. (WAGN is in eight countries, COFENABVI in eight countries, ACA in 13 countries going beyond West Africa, *Afrique Verte* in four countries.)
Regional analysis information providers	There is no network of data collection in the field. Geographic coverage depends on the MIS that provide raw data.

Public MIS in countries that are members of RESIMAO (10 countries are in this category) have better regional coverage than the other categories of MIS providers. The five ECOWAS countries that are not yet members of RESIMAO also have national MIS. RESIMAO has received a grant from ECOWAS to extend coverage to all ECOWAS countries. It has already identified national MIS in these countries to serve as its representatives. For example, discussions have started with the Ghana Ministry of Food and Agriculture's MIS to join RESIMAO and MOFA has been invited to several RESIMAO's meetings.

The geographic coverage of market information service providers depends on their clients and can change at any time, but they all have very good foundations in the countries where their head offices are located (Ghana for Esoko and ImageAD; Senegal for Manobi). Deployment in other West African countries is based on project support, franchises, or partnerships. Previous experience shows that it is challenging to deploy their services in new countries. Esoko operates Esoko Ghana as its own franchise to showcase the MIS platform, provide feedback for further product development, and enhance its

market enumeration methodology. Manobi has a network of agents in Senegal who register actors in the field, give them information, and assist them in business transactions. These agents are paid on the basis of an agreed-upon percentage of revenue generated. ImageAD is well-established in northern Ghana, where the MFarms platform is used by private and public organizations.

WAGN conducted a 2013 study to develop a market information system in its eight member states with the support of the CTA and the Farm Foundation. If this system is implemented, it will make market information on grains available to WAGN members.

Afrique Verte is implementing a market information system for the cereals value chain across Burkina Faso, Niger, Mali, and the Republic of Guinea with some national and regional activities. The NGO, which assists the entire value chain through activities ranging from extension messages to trade support, is also organizing national and regional *bourses des céréales* to match offers and demands. These *bourses des céréales* bring together buyers and sellers of grain for one-day business meetings, preceded by presentations of market trends from *Afrique Verte*'s MIS and other MIS operating in the region. *Afrique Verte* provides a contract template that can be customized by two parties. It follows up on execution of contracts after the meetings, although not all stakeholders report exact sales figures.

Table 3: Figures on *Afrique Verte's* Regional *Bourses de Céréales*

	Number of Participants	Offers (tons)	Demand (tons)	Number of Contracts Signed	Quantity of Product (tons)
Ouagadougou 2009	180 participants from 7 countries	61,604.41	5,119.10	25	11,467.80
Niamey 2012	N/A	153,607.00	46,130.00	22	2,411.30
Ouagadougou 2102	150 participants from 8 countries	66,468.80	45,434.20	50	20,076.10
Niamey 2013	140 participants from 7 countries	440,979.00	32,291.00	52	26,826.60

Regional analysis information providers rely on existing MIS (mainly RESIMAO members) to get raw data, so their geographic coverage and the value chains they cover are the same as these systems.

5.3.2.2 Value Chains Covered

Table 4: Value Chains Covered by Market Information Providers

Category of Market Information System	Value Chain Coverage
Market information service providers	Depends on partners, projects, and clients.
Public market information systems	Cereals (maize, millet/sorghum, rice) and livestock
Association-based market information systems	Cereals for WAGN, livestock for COFENABVI
Regional analysis information providers	Cereals (maize, millet/sorghum, rice) and livestock

The public livestock MIS in Senegal, Mali, and Burkina Faso are all facing serious challenges in their operations; only Niger's livestock MIS seems to be functioning well. COFENABVI members claim to have private MIS, but it has been difficult to obtain verifiable, measurable information on these systems. COFENABVI itself claims to have an information system covering Benin, Burkina Faso, Côte d'Ivoire, Mali, and Niger, but this system is mainly collecting data on trade flows with the support of CILSS. At the national level, associations are gathering basic data on their members, the number of trucks, and the

number of animals presented on the markets because they collect fees from their members for every animal presented into the market. Some countries' livestock associations, such as ANPROVBS in Senegal, claim to have their own market information systems. ANPROVBS says it has 46 trained and paid enumerators who collect data and make it available to members.

5.3.2.3 Trade Hub Target Corridors

The Trade Hub proposes to work on four corridors: Ouagadougou–Tema, Bamako–Abidjan, Bamako–Dakar, and Ouagadougou–Cotonou through Fada N'Gourma and Parakou. These corridors pass through Benin, Burkina Faso, Ghana, Mali, and Senegal and are well-covered by existing market information systems in all categories.

Table 5: Project Corridors Covered by Market Information Providers

Category of Market Information System	Ouagadougou–Tema	Bamako–Abidjan	Bamako–Dakar	Ouagadougou–Cotonou
Market information service providers	Yes	No	Yes	No
Public market information systems	Yes	Yes	Yes	Yes
Association-based market information systems	Yes	Yes	Yes	Yes
Regional analysis information providers	Yes	Yes	Yes	Yes

5.3.3 LEVEL OF FUNCTIONING OF EXISTING SYSTEMS

Market information service providers and regional analysis information providers have fewer operational challenges, because they have more regular donor funding and internal revenues.

The association-based MIS considered in this study have good levels of operation. *Afrique Verte* has several donors supporting its activities. The WAGN system has not started operating but has received promises of support from the CTA and the Farm Foundation. The president of WAGN is in ongoing discussions with ECOWAS and AGRA about receiving support for its activities.

All the national MIS members of RESIMAO have a minimum level of operations ensured by their governments. The level of operation depends on the level of contribution of the government, the number of partners of the MIS and the institutional anchor. It is important to note that national MIS with independent operations, such as those in Mali and Niger, are more effective than those anchored in a ministry or other national institution. But in all cases, governments are covering at least the salaries of staff and providing office space (such as in Guinea).

Most of the national livestock MIS considered in this study face serious challenges to ensuring their basic mission. In Côte d'Ivoire and Senegal, there has been no data collection for the past five years. The Senegal national livestock MIS received funds from the Word Bank to reactivate its system; a new web platform is already developed and data collection should restart before the end of 2014. The Mali national livestock MIS was considered an example in the region because it had technical and financial support from the University of Texas to help develop a web platform and implement usage of SMS technology for data collection and dissemination. But, since the political crisis in 2012, support from the University of Texas has stopped, and the system has returned to traditional data collection and dissemination tools. The system is now looking for new partners.

Niger's national livestock MIS is the most functional of those reviewed during this study. The system is collecting data on 85 markets using paper forms, *flotte*,[2] and SMS (with a pilot financed by the NGO *Vétérinaires Sans Frontières* in two regions of the country). Information is also available via mobile phone through the Orange network using both text and voice messages. In terms of methodology, this is the only livestock MIS measuring animals with a measuring tape and counting them with an electronic device.

5.3.4 TECHNOLOGY USE

Information systems considered in this study use different levels of technological tools for data collection, processing, and dissemination.

Table 6: Technology Used by Market Information Service Providers

Category of Market Information System	Java and Android Applications	SMS Broadcasting	Market Alerts	Two-way SMS	Stakeholder Profiling	Interactive Website
Market information service providers	Yes	Yes	Yes	Yes	Yes	Yes
Public market information systems	5 countries and the regional RESIMAO platform	5 countries and the regional RESIMAO platform	5 countries and the regional RESIMAO platform	No	No	Regional RESIMAO platform
Association-based market information systems	Pilot for *Afrique Verte*	Pilot for *Afrique Verte*	Pilot for *Afrique Verte*	No	No	Pilot for *Afrique Verte*
Regional analysis information providers	No	No	No	No	No	Very good interactive web platform

Market information service providers are the most advanced in terms of technology used because MIS is their core business. They all have web platforms with advanced technology and a number of mobile applications (Java and Android) used for data collection in the field. They all have tools to network agricultural value chain actors and manage the information flow for this group of actors. Esoko and Manobi have been developing and maintaining their web platforms and mobile application for more than 10 years.

Some basic tools available on market information service provider platforms include:

- Java and Android applications
- SMS broadcasting

[2] The *flotte* is a network service that allows members to pay a monthly fee for unlimited communication with other members of the network.

- Market alerts
- Two-way SMS
- Stakeholder profiling

Market information service providers are providing deployment support and enumerator training. Users have access to their platforms through licenses and subscriptions, franchises, and partnerships and collaboration. Market information service providers are also providing consultation services to help other information systems develop their own platforms and tools.

Regional analysis information providers—including FEWS NET, ReSAKSS, Africafertilizer.org, and CountrySTAT—are using advanced technology mainly for data analysis and information publications, such as interactive websites (maps, graphs, etc.). Public MIS and association-based MIS are less advanced in terms of the technology used, even though modernization is ongoing for these systems. More and more, these MIS are using SMS and Java and Android apps for their data collection and dissemination. Examples include the national MIS of Benin, Burkina Faso, Côte d'Ivoire, Niger, and Togo. In 2013, RESIMAO, with support from ECOWAS and IFDC, developed and launched a new web platform and mobile application (www.resimao.net) for data collection and dissemination using GPRS and SMS. This modern platform can handle agro-input and product market information.

Afrique Verte is testing a new web platform in Burkina Faso that uses SMS for data collection and dissemination. Results are promising. It has negotiated with the three mobile operators in Burkina Faso for a share of the revenues generated by all user SMS requests that made on its platform. This platform will be deployed in the three other countries where *Afrique Verte* is present.

Only the Malian national livestock MIS has implemented an SMS system for data collection and dissemination, but this is on hold due to the end of project support from the University of Texas. The national livestock SMS system used in Niger is still only a pilot in two regions of the country.

5.3.5 TYPE OF INFORMATION PUBLISHED

Different types of information are published from information systems considered in this study, using different channels. Newsletters, bulletins, and basic websites are common to almost all the MIS, but some of them give high-level analyses in their bulletins or provide advanced tools to perform personalized analyses on their websites.

Table 7: Types of Information Published

Category of Market Information System	Price of Product	Matching of Offers and Demand	Quantity and Quality of Product	Extension Messages and Weather	Storage Facilities and Warehouses	Transport Facilities
Market information service providers	Yes	Yes	Yes	Yes	Yes	Yes
Public market information systems	Yes	No	No	No	No	No
Association-based market information systems	Yes	Yes	Yes	No	Yes	No

Regional analysis information providers	Yes	No	Yes	No	Yes	No

MIS service providers have tools on their web platforms to perform basic, common analysis. The usefulness of these tools depends on the data sent to the platforms by their clients. MIS service providers are willing to develop customized data analysis tools for their clients that could also be available to other users.

Public market information systems and association-based market information systems publish basic types of information through newsletters, bulletins, or websites. Some public MIS (as in Benin, Mali, and Niger) are broadcasting market information through rural radios; they all said that national radio and TV are too expensive. Côte d'Ivoire's national MIS previously broadcast market information on national TV, but stopped because it was expensive.

Regional analysis information providers are the most advanced in term of quality and quantity of information published, as well as in the regularity of publication. They all have interactive websites displaying data on maps and graphs, and users can perform some basic analysis on the website. Information coming from different sources can be crossed and mapped. Their newsletters and bulletins contain more information and more analysis and are published on a regular basis.

Table 8: Channels for Information Publication

Category of Market Information System	Raw Data	Newsletters and Bulletins	Basic Website	Advanced Website	Radio
Market information service providers	Yes	Yes	Yes	Yes	No
Public market information systems	Yes	Yes	Yes	No	Yes
Association-based market information systems	Yes	Yes	Yes	Yes	No
Regional analysis information providers	No	Yes	Yes	Yes	No

5.3.6 USERS OF THE INFORMATION

Targets are variable for the different types of information systems identified in this study. Market information service providers have tools to publish all types of information for different targets. Usage depends on the client.

Table 9: Users of Market Information

Category of Market Information System	Stakeholder Association Members	Market Actors	Food Security Analysts	Policy-Makers
Market information service providers	Depends on partners, projects, and clients	Depend on partners, projects, and clients	Depend on partners, projects, and clients	Depend on partners, projects, and clients
Public market information systems	Yes	Yes	Yes	Yes
Association-based market information systems	Yes	Yes	No	No
Regional analysis information providers	Yes	No	Yes	Yes

Public market information systems target all categories of users, but they are more efficient for food security analysts and policy-makers. The time delay between the collection of data and the time it is made available to end-users makes the data obsolete for stakeholder association members and traders. The channels used by public market information systems are not adequate for these two categories of users. They are, however, now moving toward use of new technologies that will help reduce the gap between public market information systems and the other categories.

Association-based MIS mainly target their members. CIC-B in Burkina Faso is using a *flotte* for its members to source market information directly from other market actors. *Afrique Verte* is making its information available to all market actors through the web, SMS, and bulletins.

Regional analysis information providers' main targets are policy-makers and food security analysts. They usually produce high-level analysis that is available on their websites or through newsletters and bulletins.

5.3.7 FUNDING AND SUSTAINABILITY

All categories of information systems receive funds from donors and project grants.

Table 10: Sources of Funding of Market Information Providers

Category of Market Information System	Government Institutions	Paying Clients/Members	Donors and Project Grants
Market information service providers	No	Yes	Yes
Public market information systems	Yes	No	Yes
Association-based market information systems	No	Yes	Yes
Regional analysis information providers	No	No	Yes

The only category of information system receiving funds from governments is public market information systems. Even though these systems all claim that it is not enough for their operations, the government funds generally pay for staff salaries, office space, Internet connectivity, and basic office furniture. The sustainability of public market information systems is assured by having their minimum functioning needs paid by the government. Public market information systems also receive donor support and project grants directly or through RESIMAO. Public market information systems that are members of RESIMAO have all been operating for the past 20 years without interruption, except the national MIS of the Republic of Guinea, which stopped collecting data some years ago.

Market information service providers and regional analysis information providers receive enough regular funds from donors and project grants to ensure a good level of functioning. Association-based market information systems receive funds from membership fees (not only for the MIS but for all the services of the association) as well as from donors and project grants.

Even with this funding over the past 20 years only public MIS were able to ensure regular data collection with minimum functioning.

5.4 INFORMATION SYSTEMS FOR GLOBAL TRADE OF CASHEW, SHEA, AND MANGO

Market information on cashew, shea, and mangoes is difficult to find in the region, apart from sporadic market studies or surveys of these crops. The exception is the ACA, which in 2012 developed its own MIS to serve the needs of its members (described in section 5.4.2.1 below).

5.4.1 CASHEW, SHEA, AND MANGO VALUE CHAIN ORGANIZATION IN THE REGION

West Africa's cashew sector has benefited from a value chain-based approach to development. Many technical assistance programs are being implemented with participation by value chain actors and stakeholders. There is increasing interest in forming actors' associations, and many stakeholders are becoming members of regional organizations such as the ACA. The ACA provides a platform for the cashew sector. It covers all the cashew-producing countries in Africa. Members receive information, assistance, networking, and technical support. ACA is the main Trade Hub project partner for cashew value chain support activities.

The regional market for fresh mangoes for local consumption is estimated to be 40 percent of total production. The remaining 60 percent is for fresh fruit exports and for the growing processing industry. High-grade exportable mangoes from selected plantations go from producers directly to exporters, although some exporters have agents appointed to supply them. The Trade Hub's main target for mango is the international market.

There is no known regional association of mango stakeholders. The key actors/players in the upstream portion of the mango value chain are smallholder farmers and medium and large commercial plantation owners. Many countries have organized subsector associations, but many of them are not sustainable and do not offer any services to members. Nevertheless, they play a lead role in promoting the value chain. AAFEX, which is based in Senegal, is providing support to West African mango exporters and producers. The project will work with AAFEX to promote international mango exports.

About 80 percent of traded shea is exported to Europe, Asia, and the BRICS countries (Brazil, Russia, India, China, and South Africa) as a raw commodity. It is subsequently processed into shea stearin and its byproducts. Only about 20 percent of the harvest is processed in Africa and exported as shea butter. The project's main target for shea is the international market.

For shea, horizontal linkages exist at the primary production level, including groups (usually women's groups) engaged in collection and drying of shea kernel and groups involved in extraction of shea butter for household collection and local, national, or export-oriented marketing of surplus production. Vertical linkages between these entities (and individual collectors and processors) include loose arrangements oriented around local and regional markets, as well as more formal long-term arrangements between producer groups and associations and international market leaders such as the Body Shop (in Ghana) and l'Occitane (in Burkina Faso). Regional support is available through the non-profit Global Shea Alliance, which was established in 2011 and now has 350 members from 25 countries. The GSA's mission is to design, develop, and deliver strategies that drive a competitive and sustainable shea industry worldwide, improving the livelihoods of rural African women and their communities. GSA is the main Trade Hub project partner for shea value chain support activities.

5.4.2 INFORMATION SYSTEMS FOR CASHEW, SHEA, AND MANGO

5.4.2.1 ACA's Market Information System

In 2012, the ACA established an MIS with the objective of improving access to efficient market information and best practices for the cashew industry. Information provided to members includes:

- Market prices
- Policies (trade, investment, regulations)
- Agricultural extension messages
- Trade flows of raw cashew nuts and processed cashew kernels

Data are gathered at 60 data collection points by 30 to 45 enumerators (depending on the season). Ten West African countries are covered by the system: Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea-Bissau, Mali, the Republic of Guinea, Senegal, and Togo.

The ACA produces the following publications:

- Weekly market report (AfricashewSplits)
- SMS price info (AfricashewBits)
- Monthly cashew market report
- Country-specific price data for cashew-producing countries in Africa, India, Brazil, and Vietnam

The ACA's market information system has 50 subscribers to MIS-specific services. Two hundred users are paying membership for general services that include MIS. Users have access to information via SMS, the ACA website, email, or newsletters/bulletins. The ACA is also exploring radio broadcasting of market information on cashew. The main sources of funding are memberships and donor support.

The main challenges facing the ACA's market information system are:

- Undependable market analysts

- Lack of commitment from enumerators to ensure regular and timely information
- Very few incentives for data collectors and analysts
- Staff who are poorly trained on data collection methods and market analysis, including international market dynamics

5.4.2.2 Initiatives for Mango and Shea MIS

There are very few initiatives for mango and shea value chain MIS, although international market analysis and prices are provided by some websites.

The **International Trade Center (ITC)** provides a market intelligence system for tropical and off-season fresh fruits and vegetables. The ITC's mission is to foster sustainable economic development and contribute to achieving the Millennium Development Goals in developing countries and countries with economies in transition through trade and international business development. (See http://www.intracen.org/)

The **Centre for the Promotion of Imports from developing countries (CBI)** supports exports from 48 developing countries in 27 sectors, including fresh fruit and vegetables. CBI, an agency of the Ministry of Foreign Affairs of the Netherlands, was established in 1971 to help producers and exporters get a foothold in the market in the Netherlands, support business, help organizations improve their capabilities, and act as a matchmaker between suppliers and buyers. In 1991, activities were expanded to the EU. (See http://www.cbi.eu)

There are many other websites that provide new services and market information on fresh fruit and vegetables, including:

- FreshInfo (international): http://www.freshinfo.com
- Freshplaza (international): http://www.freshplaza.com
- Eurofruit (international): http://www.fruitnet.com
- CIRAD (France): http://passionfruit.cirad.fr
- Fruchthandel (Germany): http://www.fruchthandel.de
- Horticom (Spain): http://www.horticom.com (partly in English, mostly in Spanish)

5.5 INFORMATION SYSTEMS FOR TRANSPORT

Recent years have seen increased interest in improving trade and transport conditions in West Africa, even though obstacles persist and unofficial trade continues to dominate, especially in staple commodities. This interest was demonstrated in a practical way through data collection efforts designed to facilitate the circulation of information and build evidence on road harassment, road conditions, and trade flows in West Africa. These efforts come from organizations such as Borderless Alliance, UEMOA, and CILSS, as well as through the *Bourse Virtuelle du Fret,* CBC's freight-matching platform in Burkina Faso.

5.5.1 TRANSPORT ORGANIZATION IN THE REGION

Officially launched in May 2012 with support from USAID's West Africa Trade Hub project and its partners, Borderless Alliance is a multilateral partnership of private and public sector stakeholders working to increase trade in West Africa and eliminate barriers to trade. Borderless Alliance brings together stakeholders at all levels in the transport chain to address the primary issues affecting transport, using advocacy, data dissemination, and multilateral discussions.

CILSS has assumed a leadership role in highlighting regional trade flows. It has continued the data collection effort begun by USAID's ATP Projects, and is now publishing regional trade figures monthly, sharing them widely, and highlighting regional trade issues in various fora. CILSS also took over the ATP initiative to collect and publish road harassment data in the staple commodity trade.

CBC is the Burkina Faso shipper's council. It is headquartered in Ouagadougou, with branches in the Abidjan, Accra, Lome, and Cotonou ports. According to the statutes of the institution, the purpose of CBC is to:

- Ensure that Burkina Faso has a steady supply of products, goods, and various commodities in the best conditions with respect to cost, safety and expedition by assisting shippers and coordinating the transport chain
- Contribute within its powers, to the competitiveness of Burkina Faso in terms of export products on the international market
- Protect the interests of its members in the domain of transport of goods by sea, river, road, rail, and air

5.5.2 INFORMATION SYSTEMS FOR TRANSPORT ACTORS

The following providers of information on transport and trade flows were considered in this study.

5.5.2.1 CILSS Trade and Road Harassment Data Collection Efforts

CILSS' continuation of the ATP Projects' trade data and road harassment data collection efforts relies on national and regional partners for cereals and livestock. CILSS collects data on intra-regional trade to provide a more complete and accurate understanding of regional commodities trade and to promote West African regional trade in staple food commodities. Data collected through national apex associations or regional organizations covers ruminant livestock (cattle, sheep, and goats), maize, millet/sorghum, and parboiled rice. Trade data collectors are positioned at exit points (borders) and in strategic markets in the region. The countries covered are Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Nigeria, Senegal, and Togo. Data collection is done on a daily basis in each country and supervised by focal points who aggregate data monthly.

To gather information on road harassment, CILSS has two data collectors called "assistants" in Burkina Faso and Mali who provide questionnaires to truck drivers and collect the completed questionnaires from them. They also conduct supervision missions and sensitization of stakeholders. The data collected is part of the UEMOA's monthly OPA report. CILSS also produces a monthly report on cross-border trade flows in agricultural products in West Africa.

5.5.2.2 CBC's Freight-Matching Platform

The CBC has developed a web-based platform (the *Bourse Virtuelle du Fret*) for truckers to identify shippers and vice versa. This freight-matching platform's objectives are to:

- Reduce trucks' wait time to get loads
- Avoid having trucks return empty after delivering goods
- Eliminate intermediaries between truckers and shippers
- Lower transport costs along corridors

The freight-matching platform also helps promote product commercialization because it gives the volume and value of commodities transported and the location of stock.

To use the platform, truckers and shippers need to be identified and obtain a user name and password. Registration is handled directly on the platform or through CBC focal points in the country. Newly registered truckers and shippers must be validated by the administrator before they can start using the platform. All information sent to the platform has to be validated by the administrator as well. All offers sent to the platform have an expiration date and the actor (truckers and shippers) who published the information must withdraw the offer if it is no longer valid.

CBC was operating the freight-matching exchange through phone, SMS, and physical meetings before developing the web platform. The system is currently being tested with a sample of about 30 truck owners and shippers who were selected based on criteria such as literacy, availability of IT equipment, willingness to participate, etc. They were then trained to use the platform. CBC has focal points in the main towns and loading points that have been trained to collect truckers and shippers' offers and demands and upload them to the platform.

The main constrains facing CBC are:

- Promoting the system so more truckers and shippers will use it
- Building the capacity of truckers and shippers to use the system

5.5.2.3 Cheetah Platform

Cheetah is a food supply chain intelligence solution developed by Ujuizi Laboratories and supported by satellite observation technology and crowd-sourced data. The information captured by the Cheetah app covers a wide range of fields, including interaction with law enforcement officials, location of drivers and their loads, and their navigation patterns.

The Cheetah ICT platform consists of two components:

- The first (Cheetah Food) focuses on food intelligence. It continuously models post-harvest decay in vegetables and fruits during transport and displays this information to users of the app to increase awareness of post-harvest loss.
- The second module (Cheetah Infra) collects road condition data and shares it in real time with fellow travelers.

Ujuizi Laboratories developed a first proof-of-concept of the application in June 2013 to be piloted on the Bamako–Ouagadougou–Accra corridor. In June 2014, Ujuizi presented it to the Trade Hub in Accra,

explaining that money for the pilot has been raised, and project intervention could help expand the application.

5.6 MOBILE MONEY

Lack of ways to transfer money among West African countries is a hindrance to trade in West Africa. Mobile solutions could help; indeed, many mobile operators are now implementing services for payment and money transfer within countries or from one country to another.

Mobile money—also referred to as mobile payment, mobile money transfer, and mobile wallet—generally refers to payment services operated under financial regulations and performed from or via a mobile device. Instead of paying with cash, check, or credit cards, a consumer can use a mobile phone to pay for a wide range of services and for digital or hard goods.

Mobile payment is being adopted all over the world in different ways. In 2008, the combined market for all types of mobile payments was projected to reach more than $600 billion globally by 2013, which would be double the February 2011 figure.

In developing countries, mobile payment solutions have been deployed as a means of extending financial services to the community known as the "unbanked" or "underbanked," which is estimated to be as much as 50 percent of the world's adult population, according to Financial Access' 2009 Report "Half the World is Unbanked." These payment networks are often used for micropayments. The use of mobile payments in developing countries has attracted public and private funding by organizations such as USAID, the Bill & Melinda Gates Foundation, and Mercy Corps.

Proposing adequate payment method of payments could be a service that a MIS could provide to its users, after establishing business linkages. These services can be integrated to a MIS platform. In addition to facilitating payments, mobile money will help secure transactions and track deals between members of an association.

Three main mobile companies operating in West Africa have been considered in this study: Orange S.A., Airtel, and the MTN Group. They all offer the same set of mobile money services to their clients:

- **Money deposit and withdrawal.** Clients can easily deposit and withdraw funds to and from a mobile money account by visiting an accredited shop or an agent.
- **Bill payment.** Clients can pay telecom bills (fixed, Internet, and mobile) in addition to water, electricity, and other bills.
- **Mobile balance recharge.** Clients can directly recharge mobile prepaid credits from their mobile money accounts.
- **Money transfer.** Clients can transfer the desired amount of money to the account of any other user of the same mobile money service or another partner service.
- **Mobile money merchant payment.** Clients can pay for goods at shops that accept mobile money electronically without cash.

5.6.1 ORANGE S.A.

Orange S.A. is a French multinational telecommunications corporation operating through franchises in five West African countries: Côte d'Ivoire, the Republic of Guinea, Mali, Niger, and Senegal. The mobile

money international transfer service is now working in three countries: Côte d'Ivoire, Mali, and Senegal. The Republic of Guinea will be added shortly.

Table 11: Number of Orange S.A. Clients in West Africa (2010)

Country	Number of Customers (in millions)
Côte d'Ivoire	5.5
Mali	4.7
Senegal	5.1

The UEMOA central bank has established a maximum amount for national and international mobile money transfers, as well as for the amount that can be deposited into an individual account.

Table 12: Maximum Daily Amount for Transfers Authorized by Orange S.A.

Country of Mobile Operator	National Transfer (FCFA)	International Transfer (FCFA)
Côte d'Ivoire	550,000	550,000
Mali	1,500,000	1,500,000
Senegal	400,000	400,000

Note that the maximum amount that can be transferred to another country is limited by the maximum amount that can be deposited in an individual account in the receiving country.

5.6.2 AIRTEL

Bharti Airtel Limited, commonly known as Airtel, is an Indian multinational telecommunication services company headquartered in New Delhi. Airtel Africa is a subsidiary of Airtel. It operates in 17 countries across Africa. In West Africa, Airtel is present in five countries: Burkina Faso, Ghana, Niger, Nigeria, and Sierra Leone.

Intra-country transfer is limited to a maximum of 2,000,000 FCFA (in Burkina Faso) and the mobile wallet can contain up to 5,000,000 FCFA. For now, Airtel is handling international money transfers only to Côte d'Ivoire (partnering with MTN), with a daily maximum of 500,000 FCFA.

Airtel is in negotiation with Orange S.A. for inter-network international transfers, which should be effective at the end of August 2014. International money transfers to other Airtel countries should start in September 2014.

Table 13: Number of AIRTEL Clients in West Africa (2010)

Country	Number of Customers (in millions)
Burkina Faso	1.43
Ghana	1.76
Niger	68% of the market
Nigeria	N/A

5.6.3 MTN GROUP

MTN Group is a South Africa-based multinational mobile telecommunications company, operating in many African, European, and Middle Eastern countries. Its head office is in Johannesburg. In West Africa, MTN is active in Benin, Côte d'Ivoire, Ghana, Guinea Bissau, Liberia, Nigeria, and the Republic of Guinea.

MTN Ghana MobileMoney is a cash management service available on the mobile phone or Internet. It is mainly about facilitating money transfer for the Ghanaian market. For now, MTN does not authorize international money transfer. Customers can only receive money from a number of European countries and from Canada through online bank transfer.

An MTN mobile wallet cannot exceed GHC 10,000.00. Also, MTN mobile wallet holders cannot withdraw, transfer, or make any payments that together exceed GHC 10,000.00 per day

MTN is now partnering with some regional banks to allow its customer to transfer money between their mobile money and bank accounts. A pilot has been conducted with Ecobank in Ghana and may be deployed in other countries where MTN and Ecobank are present.

6. STAKEHOLDERS' NEEDS

Structured and regular market information is a top priority for stakeholders, but the types of information and the channels required for dissemination are different depending on the value chain and the type of stakeholders.

6.1 CEREALS VALUE CHAIN

Market actors' needs have been assessed through meetings and discussion with key players, building on WAGN's study for the establishment of its MIS, which provides a lot of information on stakeholder needs. The Trade Hub met with WAGN representatives in countries visited for this study and discussed issues with relevant cereal value chain actors.

WAGN conducted a study (see footnote 1) in November 2013 in its eight member states (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Senegal, and Togo). Stakeholders' needs were assessed using a questionnaire with 14 categories of information. For each question, the person or the organization surveyed gave a score from 1 to 10 that represented the importance of the category of information for his or her business.

A total of 89 completed questionnaires were considered in the WAGN study: 40 from Côte d'Ivoire, 15 each from Burkina Faso and Niger, eight from Benin, six from Senegal, three from Mali, and two from Togo. Thirty-six percent of the sampled members were producers, 29 percent were multi-activity actors, 22 percent were traders, 8 percent were processors, 3 percent were agricultural equipment dealers, and 2% did not specify their activity.

Table 14: Information Needs of Cereals Value Chain Stakeholders

Categories of Information Needed	Average Score from 1 to 10
Demand of big buyers (factories, processors, supermarkets, WFP, armies, etc.)	7.5
Projects and agricultural sector policies (ECOWAS and UEMOA decisions, grants, loans, investment programs, agricultural sector infrastructure, etc.)	7.5
Matching offers and demand (offers, demands, matching of buyers and seller)	7.4
Market information on cereals (detailed market prices, producer prices, free-on-board [FOB] prices, volumes, etc.)	7.4
Trainings (regional trade, marketing, accountability, etc.)	7.3
Quality of products (standards, labels, etc.)	7.0
Loans and bank information (bank loans, warrantage, money transfer, exchange rates)	6.9
Price trends, agriculture production forecasting	6.8
Advice and best practices (extension messages)	6.8
Agricultural inputs and equipment market	6.7
Alerts and market events	6.6
International cereals markets (trade statistics, imports, exports, international markets,	6.6

bulletins, etc.)	
Trade regulations	6.5
Transport information (cost, availability, etc.)	6.2

Source: 2013 WAGN Study

The relatively narrow spread in Table 14 (total average score of 6.9; minimum score of 6.22 out of 10) shows that all categories of information are needed by cereals value chain stakeholders. The table also shows that business opportunities (demands of big buyers and matching offers and demand) are more important for cereals stakeholders than market prices. This may be due to the fact that market actors have their own sources of information for market prices but not for business opportunities, especially from institutional buyers such as governments, armies, or the WFP.

Table 15: Actors' Information Needs by Category

Categories of Information Needed	Producers	Processors	Equipment Dealers	Traders
Market information on cereal	8.2	7.9	4.3	4.8
Agricultural inputs and equipment markets	6.9	5.4	7.7	3.9
Projects and agricultural sector policies	7.5	8.1	4.0	6.5
Demand of big buyers	7.7	6.6	3.7	6.6
Alerts and market events	6.5	7.9	4.3	5.0
Matching offers and demand	8.0	7.9	6.7	4.3
Quality of product	6.6	7.3	9.7	5.7
Price trends, agriculture production forecasting	7.1	6.0	3.7	5.1
Transport information	5.8	8.0	4.3	5.3
Advice	6.1	7.4	7.7	5.9
Trade regulations	6.0	7.1	4.7	5.7
Loans and bank information	6.6	7.1	8.3	6.5
International cereals markets	6.1	6.0	4.3	5.6
Training	7.2	6.9	7.3	6.6

Source: 2013 WAGN Study

Table 15 shows that information priorities differ depending on the category of actors. Traders' priorities are loans and bank information, demands of big buyers, projects and agricultural sector policies, and trainings. This is likely due to the fact that traders already have their own networks for getting market information.

Table 16: Channels of Diffusion of Market Information requested by actors

	Producers	Multi-Activity Actors	Agricultural Equipment Dealers	Traders	Processors	Total
Phone	43%	43%	33%	44%	24%	41%

Email	15%	29%	22%	16%	29%	21%
Website	8%	3%	11%	9%	24%	8%
Bulletins/newsletters	1%	4%	0%	2%	14%	3%
Radio	23%	11%	11%	15%	5%	15%
TV	7%	7%	0%	15%	5%	8%
Other	2%	3%	22%	0%	0%	2%
Total	100%	100%	100%	100%	100%	100%

Cell phones are the main medium of information diffusion requested overall by stakeholders (41 percent), followed by email (21 percent) and radio (15 percent). For traders, phone is the first channel requested (44 percent), followed by email (16 percent), and radio and TV (both at 15 percent).

6.2 LIVESTOCK VALUE CHAIN

There is no study on livestock stakeholders' market information needs in West Africa, but the Trade Hub gathered information through stakeholders' meetings. In addition, in February 2012 the ATP Projects helped COFENABVI organize a meeting on the establishment of an MIS for the livestock value chain. Livestock stakeholders' market information needs were discussed at the meeting. The information needs identified during the COFENABVI meeting included:

- Animals and animal feed prices
- Meat prices
- Offers and demand, stocks available
- Availability of animals in markets/market supply
- Veterinary products' availability and prices
- Trade flows, imports and exports
- Transport regulation

Market information is one of the main tools of the livestock business in West African countries. Successful traders are mostly those with the largest networks of partners and clients who provide information on market prices and business opportunities. For these actors, market information on where and when to buy animals is as important as information on where and when to sell.

Formal, regular market information is livestock traders' top priority. Some livestock national associations (such as ANPROVBS in Senegal) gather and distribute information to their members, but the channels used do not guarantee fair and equal access to all members. Information collected by members of the association is available in the main market, but only traders with direct links to the association have access to this information. These are primarily the larger traders. The original intent was for all members to access information via phone calls or the regional representatives of the association.

Only big traders with export capabilities and funds to support their networks of information providers have access to market information. This creates an imbalance of information and gives them more negotiating power than small and medium-sized actors.

ATP identified Manobi as the technical partner to support COFENABVI's implementation of its MIS. Activities to establish the MIS were planned during the meeting and a convention signed between the COFENABVI president and Manobi's director. Unfortunately, project technical support started only few months before the end of the ATP Projects, so it did not yield further activities because could not continue paying the technical support to MANOBI.

At the February 2012 meeting, stakeholders identified their main channels for information dissemination as SMS, websites, bulletins/newsletters, and COFENABVI's national representatives.

6.3 GLOBAL MARKET VALUE CHAINS

Information is sparse on the market information needs of stakeholders in the cashew, mango, and shea value chains.

- **Cashew.** In completing a questionnaire for this Trade Hub MIS report, the ACA gave top priority to a study of cashew stakeholders' market information needs. Discussions with the ACA's MIS specialist revealed that cashew value chain actors have different needs depending on their roles in the value chain:
    - *Producers* need farm gate prices, FOB prices, standards and quality, and extension messages.
    - *Traders, exporters, and processors* need information on farm gate prices, FOB prices, availability, international prices, import and export quantity, standards and quality, and trade regulations.
- **Mango.** A 2012 ITC study of Ghana's mango value chain identified the lack of market information systems as a major challenge faced by mango exporters.

Since the international market is the main target for shea and mango exporters, their main needs are:

- International market prices
- Preferred varieties and quality specifications
- Regulations for export to the international market
- Contacts of potential buyers in those markets

6.4 TRANSPORT SECTOR

Transport sector actors' market information needs were discussed with key players like CBC in Burkina Faso and Borderless Alliance in Ghana. Their main needs depend on their roles.

- Truckers
    - Where to get freight
    - How to reduce intermediaries between truckers and shippers
    - What regulations and documents are required for trucks
- Shippers
    - Where to get trucks
    - What tariffs are for transport
    - Which documents are required for loads

7. ANALYSIS: MATCHING MARKET INFORMATION DEMAND AND SUPPLY

This section of the report analyzes and discusses the Trade Hub's findings about existing MIS and about stakeholders' needs. Section 7.6 contains a table that presents the region's major MIS suppliers and their strengths, opportunities, weaknesses, and threats (SWOT).

7.1 OVERVIEW

Many information systems are collecting, processing, or disseminating market information in West Africa at different levels of the value chain, from production to commercialization. Most of these systems are focused on the grains value chains and cover UEMOA countries plus Ghana and Nigeria. There is some initiative at the national and regional levels to set up a livestock MIS, but these efforts have proved difficult to sustain after supporting projects end. ACA has set up a functional MIS for cashew value chain stakeholders and members are paying to get the information. For shea and mango stakeholders, only international prices are available, although some sporadic studies give West African market trends.

The majority of existing systems are in the regional analysis information providers category. These systems do not have a data collection network in the field but rely primarily on public market information systems to get raw data. These systems provide legal support (mainly technical support) to those collecting data, as it is clear that the data collection is the most expensive part of the operation of the system. They also provide high-level analysis with good reporting systems by using interactive maps and cross tables on their websites, as well as good printed bulletins and newsletters. This gives more value and visibility to the data collected by public market information systems.

Market information service providers have more stable tools for data collection, processing, and dissemination, which are more or less customizable to fit clients' needs. These companies also provide technical assistance for deployment of their tools and training of technical staff and enumerators. But using them as the entry point to develop an MIS never yielded the expected results.

The problem is not necessarily the technology. Indeed technological gaps of the 2000s between MIS categories—mainly the ability to reduce the time between data collection and delivery to the end-users—are narrowing. Today, these technologies are common and accessible at low cost to all MIS throughout West Africa, and most MIS are developing their web platforms and mobile applications by contracting local, rather than international firms. For instance, RESIMAO contracted a firm based in Benin, *Afrique Verte; Société Nationale de Gestion du Stocks de Sécurité Alimentaire* (SONAGESS) contracted firms based in Burkina Faso; and ACA is working with a Ghanaian firm to develop its web platform and mobile applications.

However, many value chain partners have limited technology skills. Associations are often intermediaries in this process, but they lack enough staff, particularly staff with IT knowledge. ***Solutions proposed***

should appeal to members, and "make sense" for them; low-tech approaches such as posted prices in public markets should be included.

Previous experiences of USAID-funded projects (MISTOWA, ATP Projects) and other efforts have shown that having the right technology does not necessary makes a successful MIS. ***Technology (the platform) should be de-emphasized; instead, the system itself should be emphasized***. Getting the technology (web platform, data collection app, etc.) represents around 20 percent of the effort to build a viable and reliable MIS; the other 80 percent is ensuring the quality and regularity of the raw data collection, validating and processing the data, putting effective dissemination into place, building user directories, and securing funding for the system.

Provision of market information should start from value chain actors' needs and should be tailored to those needs—including types of information, time intervals when needed, and media for transmission. Blanket approaches are not likely to work well.

No existing system covers all the needs of the selected value chain stakeholders. ***Specific market information needs of value chain actors should be addressed through different market information system models.*** With the development of value chain stakeholders' associations, these needs are becoming more and more specific. This can be seen as ACA, COFENABVI, and WAGN all try to set up their own MIS. The main obstacle is these organizations' internal capacity to run a market information system. ACA and COFENABVI have hired dedicated personnel to manage their MIS. The ACA MIS seems to be working well, but COFENABVI's system is only producing information for CILSS trade flow monitoring activities, despite the dedicated person.

ROPPA is developing a family farm regional observatory and a regional commodity exchange to gather and disseminate market information for its members. Although still at the initial stage, these systems are worth following as potential models for making market information available to stakeholders and their associations.

7.2 GRAINS AND LIVESTOCK VALUE CHAINS

Despite the number of information systems, informal sources remain the main sources of information for grain and livestock value chain actors, due to the following factors:

- *Trust* in partners with whom they usually do business: traders usually have long business relationships with people providing market information.
- *Illiteracy* of actors and the oral tradition of trade in West Africa: traders prefer to talk to their business partners rather than read messages.
- *Capacity to negotiate*: in face-to-face interactions, the price is negotiable.
- *Quantity of information*: by talking to their partners, traders can get additional information as needed on the volume of product available, quality, availability of trucks for transportation of product, etc.

However, all traders interviewed during this study are willing to receive information from formal MIS to diversify their sources of supply and find new business opportunities.

Information on prices and availability of product do not necessarily lead to completed transactions: real-time information does not necessarily translate into real-time opportunities, especially with actors from

other countries. A value chain actor needs more than information on price and availability of product to take a decision to enter into business, especially with an actor from another country. ***The MIS supported by the Trade Hub should have an expansive vision of the services it should deliver.***

The lack of trust to enter into business with unknown counterparts can be resolved by strong, well-known national and regional associations that could act as a go-between as the two parties trust in the association they belong to. Concern about not knowing the other party could be minimized if business information were provided by an association that both parties trust.

A standalone MIS would hardly be sustainable in West Africa in the grains and livestock value chains. The value added is low at all links of the chains, making returns on payments negligible. Those making maximum profits in the value chains are the traders, who have their own sources of information. ***MIS should be part of the services provided by the association to which members pay membership fees—or as a public good sustained by government funding***. Market information service providers and regional analysis information providers are all service providers (technical and analytical) for the two other categories.

Currently, COFENABVI's MIS is limited to collection of trade flow data with the support of CILSS, although at the national level, some associations are gathering market information (prices, number of animals presented for sale in the market, etc.). COFENABVI also has a dedicated MIS specialist based in Abidjan at the association's head office. These are all important pieces for building a successful regional livestock MIS.

ECOWAS is helping develop ECOAGRIS, the regional comprehensive agricultural information system, which is specialized by sector. Through this process, ECOWAS has started reinforcing RESIMAO and COFENABVI's institutional reorganization and supporting expansion of their geographic coverage to all ECOWAS countries. Discussions are ongoing with WAGN as well.

Small-scale NGOs like *Afrique Verte* are doing remarkable work to promote trade through MIS activities and through the *bourses des céréales.* These types of market linkage activities with traders' and producers' organizations have an immediate impact on regional trade. However, business relations developed during the *bourses des céréales* continue beyond the meeting, and *Afrique Verte* is not able to track resulting deals. The NGO has developed and pilot-tested a new web platform in Burkina Faso to help automate the MIS and *bourse des céréales* activities.

Afrique Verte's experience using the Esoko platform for market information data collection and dissemination (as brought to the NGO by the ATP Projects) led to the development of its own platform. Members of the NGO found the Esoko platform useful, despite technical problems encountered at the beginning, but the cost of the license was too high for them to continue paying it. They ended up developing their own platform with only the features they needed from the Esoko platform. It is now easy and cheaper for *Afrique Verte* to deploy this platform in the three other countries where it is present.

RESIMAO is the only sustainable MIS in the region that collect process and disseminate market information on agricultural products for more than 20 years for the majority of its members. The tools used, the methodologies, the accuracy of information and the time delay between data collection and dissemination has greatly improved since its creation in 2000. However, the number of stockholders registered on the RESIMAO web platform for receiving market information remains low compare to the potential in the region. RESIMAO is playing an important role in sharing information about successes and difficulties between national MIS members of the network. The result is that almost all the MIS of the

RESIMAO network are at the same level, despite differences in funding, institutional anchorage, and methodologies. A network like RESIMAO for national livestock MIS could help reduce the differences observed between countries.

Regional analysis information providers produce high-level analysis mainly in food security and population vulnerability. Zones identified as at risk of food insecurity are characterized by high commodity prices and low availability of products. *This situation could be seen as an opportunity for traders to move commodity in these zones, with the double benefit of making business profitable and helping resolve the food security problem.* Market data such as prices and volumes may be more accessible and useful to market actors if processed and analyzed before being shared with value chain actors. This may particularly be the case in regional trade.

7.3 GLOBAL MARKET VALUE CHAINS

Cashew. ACA's market information system is functioning well and is oriented toward the international export market. It has 50 paying members, but all the members of the association are potential users because ACA wants to make market information a standard service instead of making members pay additional fees for MIS. The main axis of improvement for the ACA system is to identify the real needs of cashew sector stakeholders, enlarge the scope of stakeholders with access to the information, and improve dissemination methods.

Mango and shea. There is no formal regional MIS for the mango and shea value chains in West Africa. Some international websites provide market intelligence on mango and assist exporters in their activities. Shea market trends can be found in sporadic national and regional studies. AAFEX is already supporting mango exporters and could be a good channel to disseminate international mango prices.

7.4 TRANSPORT SECTOR

Innovative ideas are being tested for using ICT tools to collect transport data and match freight between truckers and shippers in West Africa. Examples include the Cheetah application for road harassment and road condition data collection and the CBC web platform for freight-matching.

- The *Cheetah application* will be pilot-tested by Ujuizi Laboratories on the Bamako–Ouagadougou–Accra corridor over a period of six months. The Trade Hub will review results of this ground test before supporting its deployment on other corridors.
- The *CBC freight-matching platform* is being tested by a small group of truckers and shippers in Burkina Faso and seems to be yielding good results. At this stage, however, it is difficult to measure the impact because the platform is providing information without any follow-up on deals between truckers and shippers.

7.5 MOBILE MONEY

The great potential for using mobile money in intra-regional trade of agricultural products is hampered by a number of constraints, especially the following:

- The number of countries where international transfer is allowed, especially for countries using different currencies, is limited.
- The amount that can be transferred from one mobile wallet account to another and from one country to another is limited.

- the non-possibility of transferring money from one mobile company to another
- There is a maximum amount that can be stored in an individual account.

Mobile money companies are all confident that these limitations will be lifted in the near future, because of signals they are getting from the UEMOA central bank. ***They should also be able to move ahead with transfers to countries using different currencies, such as Ghana and Nigeria.***

In Mali, Orange Money has 1.8 million active mobile money accounts out of 8 million Orange clients, leaving much room for expansion. The country has 8,000 cash points for deposit and withdrawal.

The director of Airtel Money in Burkina Faso said mobile money operators need initiatives such as a project trying to push the usage of mobile money for agricultural products market transaction to help them negotiate with the UEMOA central bank to increase the maximum amount authorized for international transfers. For example, within two years, the maximum amount that can be deposited in an Orange Money account in Mali rose from 200,000 to 400,000 FCFA and is now set at 1,500,000 FCFA.

7.6 MIS SUPPLIERS: SWOT TABLE

Table 17: Market Information Supply SWOT Table

Information Systems	Strengths	Weaknesses and Constraints	Opportunities	Threats
ACA market information system	▪ Responds to ACA members' needs. ▪ Members pay to receive market information. ▪ Uses ACA website for data dissemination. ▪ Good bulletin published. ▪ Mobile application.	▪ Volunteer numerators not motivated. ▪ Turnover of staff. ▪ Few farmers receive market information.	▪ Members willing to pay for market information. ▪ Great potential to increase the number of actors receiving information.	▪ Reliant on donor funding.
Esoko	▪ Web platform and mobile application developed over 10 years. ▪ Many features available on the platform. ▪ Multi-language, multi-currency, several West African countries already set up. ▪ Call center available to support farmers. ▪ Integrates value chain.	▪ Difficulty in customizing the platform and apps. ▪ Deployment outside Ghana appears challenging. ▪ Technical support to users appears challenging.	▪ Good experience. ▪ Good knowledge of the regional environment.	▪ Some organizations not willing to work with Esoko due to past experiences.
Manobi	▪ Web platform and mobile application developed over 10 years. ▪ Many features available on the platform.	▪ Deployment outside Senegal appears challenging. ▪ Technical support is criticized by users.	▪ Good experience.	▪ Not solely focused on market information.
ImageAD	▪ Customable platform and apps. ▪ Good technical support to customers. ▪ Integrates value chain.	▪ Not solely focused on market information.	▪ Innovative features.	
WAGN information system	▪ System not yet developed but many donors already interested. ▪ Experience implementing an MIS by CIC-B in Burkina Faso.	▪ System not yet developed. ▪ No internal personnel to operate the system. ▪ Still searching for partners to support development of the system.	▪ Need grain value chain stakeholders. ▪ Could boost intraregional trade if WAGN gains strength. ▪ In discussions with ECOWAS, AGRA, and other potential donors.	

Information Systems	Strengths	Weaknesses and Constraints	Opportunities	Threats
RESIMAO	▪ Sustainable data collection effort. ▪ Historical data of more than 20 years. ▪ Extended geographic coverage. ▪ Harmonized methodology in all countries. ▪ Good data collection experience. ▪ New platform integrates input and output product prices.	▪ Data not regularly updated on the platform. ▪ Time delay between data collection and dissemination. ▪ Lack of funds for development of innovative activities. ▪ Not always responsive to partner solicitations.	▪ New platform and mobile app can reduce the time delay in data collection. ▪ Support from ECOWAS to cover all 15 countries and strengthen the network. ▪ Hiring of executive secretary with ECOWAS funds.	
National livestock MIS	▪ Some countries' good experiences could be shared or duplicated in others. ▪ All countries' ministries have agents in the field who could be MIS data collectors. ▪ Government needs livestock market information.	▪ Not all governments ensure minimum level of operation, especially for livestock. ▪ Some national systems are completely dependent on donor funds. ▪ Methodology not harmonized.	▪ More donors are interested in getting livestock market information.	
Afrique Verte	▪ Good experience in market data collection. ▪ Implementation of *Bourse de Céréales.* ▪ Close relationships with actors in the field. ▪ Multi-donor support. ▪ Network in four West African countries.	▪ Not monitoring execution of contracts after the *Bourse des Céréales.* ▪ Small-scale dissemination of market information.	▪ New web platform and mobile app for data collection and dissemination. ▪ Contract with mobile phone companies could generate revenue.	▪ Failure to comply with approved contracts after *Bourse des Céréales.*
COFENABVI information system	▪ Association well-established with dedicated staff for MIS. ▪ Already collecting trade flow data with CILSS. ▪ Good level of internal revenue generation.	▪ Some national association members collect market information but there is no centralization at regional level. ▪ No directory of members (even though there are national-level directories).	▪ Support from ECOWAS to cover all 15 countries and strengthen the association.	▪ Willingness to make market information accessible to the public.
SIAR/CountrySTAT	▪ Good platform; support from FAO. ▪ Technical working group established in all countries.	▪ Oriented toward statistics, food security monitoring, and decision-makers.	▪ Support from UEMOA.	▪ Misunderstanding between UEMOA and FAO on the vision.
CILSS/AGRHYMET*	▪ Good analytical capability. ▪ Good relations with MIS providing raw data. ▪ Some technical and financial support to national MIS. ▪ Good advocacy capability.	▪ Oriented toward statistics, food security monitoring, and decision-makers. ▪ Small-scale dissemination.	▪ More or less fund-secured. ▪ Many donors interested.	

Information Systems	Strengths	Weaknesses and Constraints	Opportunities	Threats
	▪ Ongoing trade flow data collection effort.			
FEWS NET	▪ Good analytical capability. ▪ Good dissemination support (website, bulletin, etc,). ▪ Gives some technical and financial support to national MIS.	▪ Oriented toward statistics, food security monitoring, and decision-makers.	▪ USAID support.	▪ Project-based system.
Cheetah app	▪ Innovative application. ▪ Crowdsourcing of transport information.	▪ Has never been tested in the field. ▪ Cost of operation, smartphone usage by truck drivers is challenging. ▪ Availability of Internet connectivity on the road limited.	▪ Interest from many donors.	▪ Do not yet know the results of the pilot.
CBC freight-matching platform	▪ Innovative platform. ▪ Good adhesion of actors during pilots ▪ Experience of matching freight by CBC physically.	▪ Many actors are illiterate. ▪ Lack of a system to track closure of deals after information is provided.	▪ Platform can be deployed for a use by a large number of shippers and truckers.	▪ Still a pilot.

*AGRHYMET stands for *Agro-hydro-météorologique.* It is a drought monitoring and capacity building center in West Africa, and a specialized institution of CILSS.

8. RECOMMENDATIONS FOR TRADE HUB MIS SUPPORT

These recommendations will help the Trade Hub meet its key export and trade goals by improving value chain stakeholders' access to information and by closing gaps between demand and supply.

IN THE GRAIN AND LIVESTOCK VALUE CHAINS

1. ***Support RESIMAO in making its web platform more efficient*** in disseminating regional market information to key exporters, complementing the expansion of RESIMAO's network to all ECOWAS countries, and strengthening field data collection. RESIMAO is already gathering market information from 10 West African countries, but is facing challenges in disseminating this information. The project should support improvements to its web platform, development of stakeholder directories, and incorporation of these directories into the RESIMAO database so that stakeholders can receive regional market information.
2. ***Issue a competitive grant to select a market information service provider*** to provide technical support to:
   - Establish WAGN's market information system in its eight member countries, in collaboration with CTA and the Farm Foundation.
   - Develop COFENABVI's livestock MIS in the Trade Hub's target corridors (covering Benin, Burkina Faso, Côte d'Ivoire, Mali, and Senegal).

   The competitive grant should be a bid for market information service providers to propose their best tools and technical expertise to support WAGN and COFENABVI. The competitive grant should specify the roles and responsibilities of each party and the deliverables that each should achieve. The model proposed should go beyond the MIS and allow WAGN and COFENABVI to identify their members (also useful for market information dissemination), communicate with them, and improve the running of the association (vertical linkages in the value chain).

   The project should ensure technical backstopping and follow up on the execution on the grant contract. Sustainability of the system should be included in the grant. Each competitor should propose methods for involving private sector companies in the business model, including mobile operators, agro-input importers and dealers, agricultural equipment dealers, etc.
3. ***Support* Afrique Verte *in organizing one regional* bourse des céréales *every year and deploy its existing web platform*** to Mali, Niger, and the Republic of Guinea. The project should support participation by WAGN exporters from the network's eight member states in these regional *bourses des cereals.* The project should also support deployment of the promising web platform in the other countries where *Afrique Verte* is present.
4. ***Provide a platform for national livestock MIS to come together*** to share experiences and methodologies in order to be more efficient and to create a sustainable regional forum for delivering market information to livestock exporters. This forum should lead to a regional network like RESIMAO for national livestock market information system.

5. ***Collaborate with regional analysis information providers*** such as FEWS NET and AGRHYMET to make relevant information available to major traders and traders' associations at the regional and national levels.
6. ***Follow development of ROPPA's family farm regional observatory and its regional commodity exchange initiatives.*** If results are convincing, the project should support their expansion.

IN THE GLOBAL MARKET VALUE CHAINS

7. In **cashew,** support ACA's market information system to:
   - ***Conduct a study to identify cashew stakeholders' market information needs*** and propose a strategy for an MIS to respond to these needs.
   - ***Enlarge the scope of diffusion of market information*** by providing selected information to cashew stakeholders who are not paying members of the ACA.
   - ***Use mobile technology to disseminate selected market information*** to a larger number of users.
8. In **mango** and **shea**, work on the basis of emerging opportunities. However, the project should ***start working with existing national associations to identify the main exporters*** in Burkina Faso, Ghana, Mali, and Senegal and make international prices available to them through their associations. The Trade Hub should also ***support AAFEX in providing market information to mango exporters*** from producing countries.

IN THE TRANSPORT SECTOR

9. ***Follow the pilot of Cheetah's application*** in the Bamako–Ouagadougou–Accra corridor. If results are convincing, the project should support the deployment of the application along other corridors where it works.
10. ***Support the CBC to:***
    - ***Build the capacity of truckers and shippers*** to use the freight-matching platform.
    - Promote the platform to ***encourage use by more truckers and shippers.***
    - ***Organize a regional meeting*** to present the Burkinabé experience to other shippers' councils in the region.
11. ***Work with Borderless Alliance to make market information available at the Trade Information Centers that have been created and will be supported by the Trade Hub*** (these entities provide key information to traders to support their decision-making).

9. PRIORITY INTERVENTION FOR THE TRADE HUB PROJECT

Based on the recommendation, the authors identified 5 priority areas of interventions the project could focused on to support commodities trade (intra-regional trade for maize, millet/sorghum, rice, and livestock and global trade for cashew, shea, and mangoes).

The priority areas of intervention identified are:

- Issue a competitive grant to select an MIS provider to support WAGN and COFENABVI develop their market information systems
- Support RESIMAO to make its platform more efficient in disseminating regional market information
- Support Afrique Verte in organizing one regional "bourse des céréales" every year.
- Support the development of ACA's market information system
- Support the CBC in the deployment of their freight marching platform and work with Borderless to make market information available at its Trade Information Centers.

ANNEX A: LIST OF MARKET INFORMATION PROVIDERS CONSIDERED IN THE STUDY

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
1	ACA MIS	As part of efforts to ensure effective monitoring of cashew market activities, processing and production trends, the ACA offers its MIS. The MIS is a communication tool that employs a number of resources to obtain, analyze and disseminate information on market status and relevant developments in the cashew industry. Source: http://africancashewalliance.com/en	Cashew	Accra, Ghana	Association-based MIS	Functioning	13 countries
2	Esoko	Esoko is a powerful communications platform to help manage agricultural value chains. Set up your network, choose your apps and start connecting people to information. Source: https://esoko.com/	Cereals, agro-inputs, vegetables, livestock	Accra, Ghana	Private MIS provider	Functioning	East and West Africa
3	Manobi	Based on innovation and development, Manobi succeeded in both directions (pioneer of web-mobile convergence), and projects a strong presence on the ground. In connection with the large structures of the different sectors (ministries, NGOs, telecom operators, multinationals) Manobi is the link with the smaller players (households, individuals, farmers, fishermen, cooperatives, associations, traders). Source: http://www2.manobi.com/	Cereals, fish, vegetables	Dakar, Senegal	Private MIS provider	Functioning	West Africa

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
4	ImageAD	Founded in 2009, ImageAD specializes in the development of web applications, desktop applications, mobile wireless technologies and their integration with Microsoft's Windows platform. ImageAD integrates agricultural value chain actors through mobile phone and web applications. ImageAD provides cutting-edge mobile phone-based applications to a number of local and international organizations. Through close collaboration with international NGOs, the mobile platform is being used in 17 African countries. Source: http://imagead.net/	Agro-inputs, cereals	Accra, Ghana	Private MIS provider	Functioning	East and West Africa
5	WAGN information System	The establishment of WAGN, a formal regional network to promote and facilitate the intra-regional commerce in grains, is an initiative of private sector grains value chain actors to address the challenges faced by the cereals sector in West Africa. Information on regional markets supplied by regional information systems only partially responds to the significant demand of grain traders. Regional information on prices and trade flows at the borders is essentially "cold," with a time lag between information collection and dissemination that does not match traders' needs. WAGN carried out a study to establish its own information system. Source: Reports	Cereals	Ouagadougou, Burkina Faso	Association-based MIS	Non-functioning	West Africa

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
6	RESIMAO	RESIMAO is a network of MIS from Benin, Burkina Faso, Côte d'Ivoire, Guinea, Niger, Mali, Senegal, Togo, and Nigeria. They provide all stakeholders with up-to-date, accurate information on 400 rural and urban agricultural commodity markets. It monitors development of the agricultural sector by collecting and publishing statistics and analytical reports. Source: http://resimao.net/	Cereals, agro-inputs, livestock	Bamako, Mali	Public MIS	Functioning	West Africa
7	*Afrique Verte*	*Afrique Verte* International is a network of five organizations: 1) AcSSA[a]/*Afrique Verte Niger*, 2) AMASSA/*Afrique Verte Mali*, 3) APROSSA/*Afrique Verte Burkina*, 4) AGUISSA[b]/*Afrique Verte Guinée*, and 5) *Afrique Verte* in France. They are all partners for food security and sovereignty in the Sahel zone. Source: http://www.afriqueverte.org/index.cfm	Cereals	Ouagadougou, Burkina Faso; Niamey, Niger; Bamako, Mali	Association-based MIS	Functioning	Mali, Burkina Faso, Niger, and Republic of Guinea
8	COFENABVI	COFENABVI is the West African regional association for livestock and meat. The ATP Projects supported COFENABVI to set up an MIS for livestock and meat, but it has never started operating. Source: reports	Livestock	Abidjan, Côte d' Ivoire	Association-based MIS	Non-functioning	
9	Africafertilizer.org/ IFDC	AfricaFertilizer.org is an initiative to exchange information on soil fertility, fertilizers, and good agricultural practices in Africa. It coordinates partnerships and data-sharing mechanisms that provide information in two primary areas: 1) fertilizer statistics (production, trade, consumption, prices, production capacities and fertilizer use per crop); and 2) fertilizer market intelligence (fertilizer policies and regulations, subsidy programs, business and product directories, publications, and news). Source: http://africafertilizer.org/	Fertilizer	Accra, Ghana	Private MIS provider	Functioning	Africa

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
10	IFDC/West Africa Fertilizer Program	IFDC received funds from USAID to establish a regional MIS on fertilizer products in West Africa. Source: reports	Fertilizer	Accra, Ghana			West Africa
11	CountrySTAT/FAO	CountrySTAT is a web-based information technology system for food and agriculture statistics at the national and subnational levels. It acts as a one-stop center that centralizes and integrates data from various sources and harmonizes it according to international standards while ensuring data quality and reliability. Source: http://countrystat.org/	All products	Ouagadougou, Burkina Faso	Public MIS	Functioning	Worldwide
12	CILSS	CILSS, through its regional program (*Programme Régional d'Appui Accès aux Marchés)* supports different initiatives in the region. CILSS is increasingly serving as the institution that brings together most regional information systems. The CILSS information system has several components: market access, market dynamics, joint CILSS-RESIMAO newsletters, CORPAO,[c] and monitoring cross-border flows of agricultural and food products. Source: http://cilss.bf/	Cereal	Dakar, Senegal	Public MIS	Functioning	West Africa, Mauritania, and Chad
13	CORAF/WECARD[d]	CORAF/WECARD's vision is to contribute to the sustainable reduction of poverty and food insecurity in West and Central Africa. This will be achieved through agriculture-led economic growth, and improvements in agricultural research systems of the sub-region. CORAF/WECARD has received funds from USAID to establish an information system on the seed sector in West Africa. Source: http://www.coraf.org/index.php/en	Seeds		Public MIS	Non-functioning	West and Central Africa

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
14	ECOAGRIS	ECOAGRIS is an integrated information system on the agricultural sector covering the ECOWAS countries. Its objective is to centralize all information about agriculture in each country in the sub-region in terms of agricultural production, availability, deficits, and food balance sheets. Source: Reports	All products	Abuja, Nigeria	Public MIS	Non-functioning	West Africa
15	Cheetah App	The underlying premise of Cheetah is that combining new information from vehicle- and human-centric sensing systems can trace losses and reveal the sources of these losses (e.g., bad roads). The ICT platform has two components: 1) Cheetah Food focuses on food intelligence, continuously modeling post-harvest decay in vegetables and fruits during transport and displaying this information to users to increase awareness of post-harves losses; and 2) Cheetah Infra collects road condition data and shares it in real-time with road users. Source: http://cheetah.ujuizi.com/	Road and transport		Private MIS provider	Pilot stage	N/A
16	FEWS NET	Funded by USAID, FEWS NET is an information system designed to identify problems in the food supply system that could potentially lead to famine or other food-insecure conditions in sub-Saharan Africa, Afghanistan, Central America, and Haiti. Soure: http://www.fews.net/	Food security	Ouagadougou, Burkina Faso; Niamey, Niger		Functioning	Worldwide

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
17	ReSAKSS	ReSAKSS is an Africa-wide network supporting implementation of CAADP.[e] ReSAKSS offers high-quality analyses and knowledge products to improve policymaking, track progress, document success, and derive lessons for implementation of the CAADP agenda and other agricultural and rural development policies and programs in Africa. ReSAKSS is facilitated by IFPRI,[f] in partnership with the Africa-based CGIAR[g] centers, the NPCA,[h] the African Union Commission, and Regional Economic Communities. Source: http://www.resakss.org	Food security and policy analysis	Ibadan, Nigeria for West Africa		Functioning	Africa
18	AGRHYMET	Created in 1974, AGRHYMET is a specialized agency of CILSS. Its main objectives are to: 1) contribute to food security and increased agricultural production in member countries of CILSS and ECOWAS, 2) help improve the management of natural resources of the Sahel and West Africa. Source: http://www.agrhymet.ne/	Food security analisys	Niamey, Niger	Public MIS	Functioning	West Africa. Mauritania, and Chad
19	CBC	According to the statutes of the institution, the purpose of CBC is to: 1) ensure that Burkina Faso has a steady supply of products, goods, and commodities in the best conditions (cost, safety, and expedition) by assisting shippers and coordinating the transport chain; 2) contribute to Burkina Faso's export competitiveness for products on the international market; and 3) protect the interests of its members in the domain of transport of goods by sea, river, road, rail, and air.	Transport	Ouagadougou, Burkina Faso	Association-based MIS	Functioning	Burkina Faso
20	RATIN[i] (EAGC[j])	RATIN was developed to reduce food insecurity by strengthening markets' ability to provide poor households with access to affordable food and to improve food availability by providing incentives to	Grains	Nairobi, Kenya	Association-based MIS	Functioning	East Africa

#	Name of System	Brief Description *(Official description from website or reports. Not analysis or point of view of consultant)*	Value Chain(s) Covered	Address/ Location	Type of MIS	Status	Geographic Coverage
		producers. It is a collaboration of three USAID projects: FEWS NET, RATES,k and EAGC. It supplies traders with improved early marketing and trade information that will lead to more efficient and competitive food trade transactions between surplus and deficit regions in East Africa. Source: www.ratin.net					
21	ITC	ITC's mission is to foster sustainable economic development and contribute to achieving the Millennium Development Goals in developing countries and countries with economies in transition through trade and international business development. Source: http://www.intracen.org/	Mango		Regional analysis information provider	Functioning	International
22	CBI	CBI is an agency of the Ministry of Foreign Affairs of the Netherlands. It was established in 1971 to help producers and exporters get a foothold in the market in the Netherlands, assist business support organizations in improving their capabilities, and act as a matchmaker between suppliers and buyers. In 1991, its activities were expanded to the EU. CBI contributes to sustainable economic development in developing countries by expanding exports from these countries. Source: http://www.cbi.eu	Market inteligence on fresh fruits and vegetable	The Netherlands	Regional analysis information provider	Functioning	International

[a] AcSSA=*Actions pour la Sécurité et la Souveraineté Alimentaires au Niger*

[b] AGUISSA=*L'Association Guinéenne pour la Sécurité et la Souveraineté Alimentaire*

[c] CORPAO=*Conférence Régionale sur la Dynamique des Marches en Afrique de l'Ouest*

[d] CORAF/WECARD=*Conseil Ouest et Centre Africain pour la Recherche et la Développement Agricoles*/West and Central African Council for Agricultural Research and Development

[e] CAADP=Comprehensive Africa Agriculture Development Program

[f] IFPRI=International Food Policy Research Institute

[g] CGIAR=Consultative Group on International Agricultural Research

[h] NPCA=New Partnership for Africa's Development Planning and Coordinating Agency
[i] RATIN=Regional Agricultural Trade Intelligence Network
[j] EAGC=Eastern Africa Grain Council
[k] Regional Agricultural Trade Enhancement Support Program

ANNEX B: MIS SUPPLY ASSESSMENT QUESTIONNAIRE

MIS supply in West Africa questionnaire

(For any of the following questions, don't hesitate to give more details on a blank sheet)

Country : _____

Information about the person who fill the questionnaire :

- Name _____
- Function _____
- Phone number _____
- E-mail : _____

1. **Short presentation of the System**
   a. Date of creation : _____
   b. Name of the manager : _____
   c. Title of the manager _____
   d. P.O. Box of the MIS : Email _____ Phone. _____
   e. Web site address _____
   f. Geographic coverage _____
   g. Membership _____
   h. Type of MIS (public, private, association-based, service providers) _____

2. **Organization of the system**
   a. Implementing organization: _____
   b. Purpose and objectives : _____
   c. General description of the way the system function: _____

3. Description of the System

a. Number of markets covered : _____

b. Number of enumerators : _____

c. Value chains covered : _____

d. Technology used (web, SMS, etc.): _____

e. Type of database (SQL Server, MySQL, Access, Excel, etc.): _____

f. Number of users _____

g. How do you define a user? (e.g. registered member, somebody posting information) _____

4. Data and information

a. Frequency of data collection _____

b. Number of products monitored _____

c. How do enumerators transfer data to the system? _____

d. What are the steps between data collection and dissemination _____

e. How data is cleaned and validated _____

f. Frequency of data cleaning and validation _____

g. Frequency of data analysis _____

h. Type of information published:

i) *Price of product* _____

ii) *Matching offers and demand* _____

iii) *Quality of product* _____

iv) *Bid* _____

v) *Extension messages* _____

vi) *Weather* _____

vii) *Storage facilities* _____

viii) *Transport facilities* _____

ix) *Newsletter/bulletin* _____

x) *Other (Specify)* _____

i. What is the average time between data collection and dissemination? _____

j. What is the volume of information received in your database every week? (e.g. price, bid, etc.) _____

5. Information dissemination methods

Specify the way the end users have access to the information:

i) *SMS* _____

ii) *Web site* _____

iii) *email* _____

iv) *Newsletter/bulletin* _____

v) *Radio* _____

vi) *TV* _____

vii) *Other (Specify)* _____

b Is the information free? _____

_____

6. Users

Number of users of your system per categories:

i) *Producers* _____

ii) *Traders/exporters* _____

iii) *Processors* _____

iv) *Transporters* _____

v) *Decision-makers* _____

vi) *Industries* _____

vii) *Other (Specify)* _____

7. List example of some of your main users/partners with their contacts (email/phone):

i) _____

ii) _____

iii) _____

iv) _____

v) _____

vi) _____

vii) _____

8. Source of funding and donors (give percentage of total)

i) *Government institution* _____

ii) *Client/Members paying* _____

iii) *Donors* _____

iv) *Other (Specify)* _____

9. Technical partners of the MIS

Number of partners of the MIS. What are their contributions? (e.g. technical, financial, etc.,):

i) *Government institutions* .....

ii) *Research centers* .....

iii) *NGO* .....

iv) *Donors* .....

v) *Others (Specify)* .....

10. The major achievements of the MIS:

i) _____

ii) _____

iii) _____

iv) _____

v) _____

vi) _____

vii) .....

11. Provide an analysis of the MIS as per the table bellow

	Strengths	Weaknesses and Constraints	Opportunities	Threats
Technical set-up (platform, app, etc.)				
Internal organization				
Products/outputs/ Services				

Personnel				
Financial resources				
Material resources (equipment)				
Target group/clientele				

12. Challenges and capacity building needs

a. Does the MIS have an action or work plan Yes ☐ NO ☐

b. If yes, what are the main challenges faced by your system?

1. .....
2. .....
3. .....
4. .....
5. .....

13. Lessons learned and recommendations

a. Identify 3 lessons you've learned during the implementation of your MIS:

1. .....
2. .....
3. .....

b. Please give your observations/recommendations on how the Trade Hub can best assist selected value chain actors to receive information that helps them to increase their business?

1. .....
2. .....
3. .....
4. .....
5. .....

Thank you for your contributions

ANNEX C: WAGN DEMAND ASSESSMENT QUESTIONNAIRE

Quels types d'informations et services attendez-vous du ROAC ?

(Notez de 1 à 10 selon vos priorité : 1 = minimum, 10 = maximum)

1. **Mise en relation d'acheteurs et vendeurs** (diffusion de propositions d'achat et de vente, mise en contacts acheteurs/vendeurs) I_I_I
2. **Environnement légal** (règlements fiscaux, commerciaux et sanitaires, formulaires administratifs en ligne, notification d'entrave au commerce…) I_I_I
3. **Informations sur les marchés céréaliers** (Prix de détail, Prix de gros, Prix producteur, Prix CAF/FOB, Stocks, Volumes échangés) I_I_I
4. **Tendances et prévisions** sur les prix des céréales et des récoltes (observatoires filières céréales et agro-alimentaire, analyse de marchés) I_I_I
5. **Crédits et banques** (Comparaison de l'offre des banques : taux d'intérêts, délais de remboursement, coûts des dossiers de crédit, garanties, cautions, warrantage, frais de transfert, taux de change) I_I_I
6. **Qualité des produits** (Normes, standards, labélisations, indicateur géographique, charte de qualité) I_I_I
7. **Transports internationaux** (couts, offre et demande de transports régionaux)
8. **Marché des intrants et équipements** (analyse comparée des prix des semences, engrais, produits phyto, équipements...) I_I_I
9. **Echanges internationaux de céréales** (statistiques des échanges régionaux, imports, exports, prix CAF, volumes, taxes, marchés mondiaux, note de conjoncture…) I_I_I
10. Informations sur la **demande des grands acheteurs** (Grands moulins, usines de transformation, supermarchés, appel d'offre du PAM, grandes sociétés, armées,…) I_I_I
11. **Conseils** (service d'aide à la contractualisation, à l'intermédiation, à la certification, études de marché…) I_I_I
12. **Projets et mesures** commerciales et agricoles (décisions de la CEDEAO et UEMOA, subventions, accès aux fonds de développement, informations sur les projets d'infrastructures d'aménagements agricoles,…) I_I_I
13. **Alertes** (événements conjoncturels, forte fluctuation des prix, problèmes de transports, entraves au commerce, vie du réseau ROAC)
14. **Formations** (commerce régional, technique, gestion, marketing, formation continue,…) I_I_I
15. **Autres (précisez)**
    I_____I I_I_I

Quelles sources d'information utilisez-vous ?

J'ai déjà importé ou exporté des céréales dans la sous région *(O/N)* I_I

J'utilise les sources d'information suivantes :		pour les transactions dans mon pays	pour l'Import 'Export
1	Mes propres informateurs	I_I	I_I
2	Bulletins Radio et Télévision	I_I	I_I
3	Les informations fournies par mon OP	I_I	I_I
4	Les systèmes d'information spécialisés	I_I	I_I
	Si oui lesquels	I_____I I_____I I_____II_____I	
5	Autres sources d'information	I_____II_____I	
6	Aucune	I_I	

Je reçois ces informations par: téléphone I_I, SMS I_I, Email I_I consultation internet I_I Autres I_____I

Etes-vous satisfait de la qualité de ces informations ? Non I_I Moyen I_I Oui I_I

Quel mode de diffusion des informations du ROAC souhaitez – vous ?

(Cochez les 3 modes de diffusion que vous préférez)

1 Site Web I_I 2 E-mail I_I 3 SMS I_I 4 Téléphone I_I
5 Télévision I_I 6 Radio I_I 7 Bulletin papier I_I 8 Journaux I_I
9 Affichage I_I 10 Groupe de discussion électronique I_I
Autre I_____I

Caractéristiques de l'enquêté

Métier *(Cochez)* : Semencier I_I Producteur I_I Transformateur I_I
Commerçant I_I Transporteur I_I Agrobusiness I_I Autre I_I _I_I_I_I_I_I_I_I

Filières *(Cochez)* Riz I_I Maïs I_I Mil I_I Sorgho I_I
Vous importez ou exportez ? I_I I_I I_I I_I

Part commercialisée de votre production *en %* I_I_I

Nom des associations, groupements, réseaux,… dont vous êtes membre :
1) I_I _I_I_I_I_I_I_I_I 2) I_I _I_I_I_I_I_I_I_I 3) I_I _I_I_I_I_I_I_I_I

Nom I_I _I_I_I_I_I_I_I_I_I _I _I_I_I_I_I_I_I_I Prénom I_I _I_I_I_I_I_I_I_I
Si individu, Age I_I_I sexe *M /F* I_I
Pays I_I _I Région I_I _I_I_I_I_I_I_I_I, Tél. : ……

ANNEX D: RESPONSE TO USAID REVIEWER COMMENTS

USAID general Comment (in the email sent)

One thing we noted was that the report seems to suggest several different actions needed to address the regions MIS challenges. We have to be careful not to be too dispersed in our solutions. If there is any way we could focus on some select activities that would give us results, let's go for it.

Trade Hub response to the general comment

Based on this comment, the authors identified 5 priority activities to be implemented by the Trade Hub project. A section on priority activities has been added in the report (***Section 9. On page 46***)

USAID Comment #1 on Shea and Cashew MIS and project selected corridor

Both shea and cashew are wide spread throughout WA. Will the corridor focus be sufficient to take care of GSAs and ACAs members' need for information outside the prescribed corridors? If not there will be little buy-in on the part of the two organizations.

Trade Hub response to comment #1

The approach of the supply of market information section was to assess how well the Trade Hub selected corridors are covered by the existing systems. The recommendation of project interventions in these two value chain were not limited to the selected corridors but on all producing and exporting countries.

USAID Comment #2 on the list of ACA MIS challenges

This analysis is based upon what?

Trade Hub response to comment #2

The list of challenges faced by ACA MIS is based on the questionnaire filled by ACA and on discussions with ACA MIS specialist

USAID Comment #3 on the challenges of usage of mobile money

Where is the analysis of the problems of mobile money, like transferring funds between different networks?

What about transferring money from different phone companies is it possible? If so, where? It was my understanding that this was not possible in Ghana.

Trade Hub response to comment #3

As you noticed, the analysis appears in the analysis section (***Section 7.5. Page 39 & 40***) where you added the second comment. However, we added the issue of transferring money from one network to another within the same country into the report.