

Integrating Gender and Nutrition within Agricultural Extension Services

MALI

LANDSCAPE ANALYSIS

Working document

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MALI

Landscape Analysis

Working document

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Acronyms

ASACO	Community health organization
BFS	Bureau for Food Security
CARE	Cooperative for Assistance and Relief Everywhere
CIA	Central Intelligence Agency
CDC	Country Development Cooperation
CSCOM	Community health center
EAS	Extension and advisory services
FAO	Food and Agriculture Organization
FFP	Food For Peace
FGM	Female genital mutilation
FIDH	International Federation for Human Rights
FY	Fiscal year
GDP	Gross domestic product
IFAD	International Fund for Agricultural Development
INGENAES	Integration Gender and Nutrition within Agricultural Extension Services
ICT	Information and communication technology
Mali	Republic of Mali
NGOs	Non-governmental organizations
SUN	Scaling Up Nutrition
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USG	United States Government
WB	World Bank
WFP	World Food Program

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Introduction

The Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) project is funded through the Bureau for Food Security (BFS) of the United States Agency for International Development (USAID) to support the Presidential Feed the Future Initiative, which strives to increase agricultural productivity and the incomes of both men and women in rural areas who rely on agriculture for their livelihoods.¹

This landscape study provides an overview of Mali's agriculture and the status of the country's extension system. It also provides information on the prevalence of poverty, nutrition, and gender-related issues in the country with special focus on rural areas. The report summarizes Mali's current agricultural and nutrition policy and details the strategic goals and objectives of USAID and other donors in the country. The report provides a summary of the on-going projects by the USG and other donors in the country related to agriculture extension, and gender and nutrition impacts.

INGENAES supports the development of improved extension and advisory systems (EAS) to reduce gender gaps in agricultural extension services, increase empowerment of women farmers, and improve gender and nutrition integration within extension services by directly or indirectly assisting multiple types of stakeholders within a country, such as farmers, producer groups, cooperatives, policy makers, technical specialists, development non-governmental organization (NGO) practitioners, and donors.

INGENAES efforts will strengthen the capacity of key stakeholders and provide the fora and networks for them to coordinate and reach agreement on policies and strategies to implement improved EAS that better meet the needs of men and women farmers. While INGENAES project will not directly monitor beneficiary impact, it will focus on changes in institutions that directly impact men and women who access agricultural information, training, technologies and nutrition information. Improved services empower women and engage men.

INGENAES will strengthen institutions by identifying their needs and strengthening their capacity to effectively integrate gender and nutrition sensitive information and activities into agricultural extension systems with the aim to promote gender equality, improved household nutrition, and increased women incomes and, subsequently, household food security. Based on the identification of four main gaps in extension services in terms of gender and nutrition integration, INGENAES activities can be divided into the following action areas:

1. Build more robust, gender-responsive, and nutrition-sensitive institutions, projects, and programs capable of assessing and responding to the needs of both men and women farmers through extension advisory services (EAS);
2. Identify and scale proven mechanisms for delivering improved EAS to women farmers;
3. Disseminate technologies that improve women's agricultural productivity and increase household nutrition; and,

¹ The USAID cooperative agreement (Award No. AID-OAA-LA-14-0008) has been awarded to the prime implementer, the University of Illinois at Urbana-Champaign, the lead organization of the consortium. The consortium also includes the University of California-Davis, the University of Florida, and Cultural Practice, LLC. The project is currently working in select Feed the Future countries.

4. Apply effective, nutrition sensitive, extension approaches and tools for engaging both men and women.

Indicative activities of the INGENAES project include: learning exchanges, assessments, curricula development, training into action, mentoring relationships, internship experiences, and networks that focus on identifying gender-responsive and nutrition-sensitive innovations that can be promoted by EAS organizations, and adopted by men and women farmers. Developing these outputs collaboratively with agricultural extension experts and other partners will transform extension-relevant institutions working directly with men and women farmers.

In each country INGENAES needs to examine the relationships, identify the key change actors, build their capacity, and provide them the incentives to make changes (e.g., set new policies, employ new management practices, modify organizational structures, make changes in practice, adopt innovations). The key actors will vary from country to country, although policy makers, the Ministries of Agriculture and Health, NGOs and the private sector, and of course, women farmers, are likely to be involved in most countries. Key actors will be identified as part of the needs and scoping assessments. Thus, and in preparation of country level activities, the consortium gathers information and key contacts to develop a landscape study of the agricultural sector in that country, a simple description of the pluralistic extension system, nutrition related initiatives, and gender issues. As such, the landscape study is intended as a preparatory tool and handy reference document for work in country. Each landscape study will be updated periodically as INGENAES continues to engage in that country and identifies new key contacts, organizations, and initiatives.

Background

The Republic of Mali (Mali) is located in West Africa and is bordered by Algeria, Guinea, Cote d'Ivoire, Burkina Faso, Mauritania, Senegal, and Niger (see country map in Annex I). It encompasses over one million square kilometers and the capital district of Bamako is home to 2,515,000 people (UN Data, 2016). Mali is home to nine major ethnic groups and has thirteen national languages in addition to the official language of French. The population as of July 2015 is about 17 million with a population growth rate of 2.98% annually; the young population has grown particularly quickly within the last twenty years (USAID CDC, 2015) (Figure 1). Mali has a population density of fourteen people per square kilometer of land: one of the lowest in the world (World Bank Data, 2016). Seventy-eight percent of the population self-identifies as Muslim with 55% claiming no sectarian affiliation and 20% being Sunni (Pew Research Center, 2012).

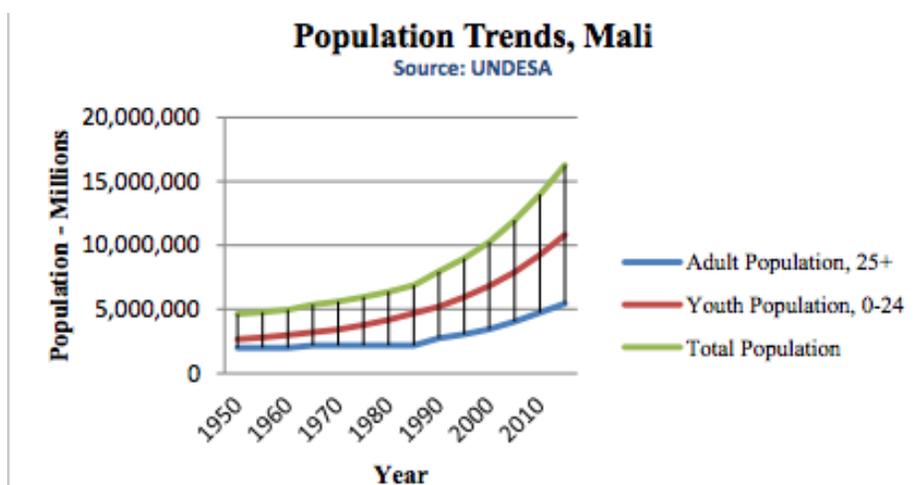


Figure 1: Population Trends of Mali (Source: USAID CDC, 2015).

Mali ranks 176th out of 188 countries in the Multidimensional Poverty Index (UNDP, 2015). Seventy-eight percent of the population lives in multidimensional poverty, which takes into account “deprivations” in health, education, and standard of living, while 56% live in severe multidimensional poverty (UNDP, 2015). The UNDP also notes that 50% of the population lives below the average poverty line of \$1.25 USD per day and the gross domestic product per capita is \$1,589 USD. Half of the rural population is considered poor and the lowest 20% only hold eight percent of the national income (Rural Poverty Portal, 2014). The life expectancy at birth is only fifty-six years while the population has a median age of sixteen years (UNDP, 2015).

Significant monetary development assistance is given to Mali annually by the United States government, with an increase in aid provided in 2012 due to the onset of heavy conflict (USAID CDC, 2015). A rebellion by Tuareg fighters in the north caused a civil war followed by Muslim extremist attacks and a military coup d'état (Al Jazeera, 2013). This solicited the involvement of the French military for peacekeeping and security efforts. Both the government and the rebels eventually signed a peace treaty in June of 2013. As a result of the civil war there are 86,000 internally displaced Malians as well as 135,000 refugees across the borders, with 1.9 million Malians surviving off of sustained emergency food assistance (USAID CDC 2015).

Agriculture

The agriculture sector of the economy makes up 39% of Mali's gross value added, or the value contributed by that sector from its services and goods, and employs approximately sixty-six percent of the population (UN Data, 2016). Thus, the majority of the population relies heavily on agriculture for their livelihoods and overall household food security. The majority of the working population engages in subsistence agriculture rather than commercial agriculture. Approximately five percent of Mali's land is arable, while over 61% is considered other, mainly desert, making much of the land unsuitable for agriculture (FAOSTAT, 2016). Pastures and savannah make up the greatest portion of what is considered to be agricultural land. The primary crops grown for subsistence include cereals such as millet and sorghum, while cash crops include cotton and sugarcane (FAO, 2003).

Mali is made up of four major climate zones, each characterized by a different level of annual rainfall increasing from north to south. The Sahara zone is the driest with less than 250 mm of annual rainfall and high daytime temperatures (FAO, 2003). Soils are typically too sandy and dry to sufficiently grow crops and therefore livestock is raised. Second, the Sahel zone has between 250 and 500 mm of annual rainfall with a long dry season and sandy, rocky soils. Livestock raising is also common here as well as nomadic pastoralism moving with the seasons (FAO, 2003). The Sudan zone has up to 1,100 mm of annual rainfall and is where most crop production occurs due to the presence of sub-humid soils that are able to hold more moisture (FAO, 2003). Lastly, the North Guinea zone has over 1,100 mm of annual rainfall through a long rainy season and is home to heavily forested areas (FAO, 2003).

Farmers typically raise small plots, with 68% being five hectares or less (IFAD, 2011). Poverty is likely to limit the plot size of farmers. Land tenure laws also have the ability to prevent farmers from acquiring adjacent plots that could help farmers achieve higher yields by increasing production (IFAD, 2011). Poverty in Mali greatly corresponds with farmers who live and work in the drier regions. Availability of resources such as water, education, credit, and inputs strongly affect income and the effectiveness of agricultural

production. As such, farmers in these regions generally do not produce more than what is necessary for subsistence (IFAD, 2011).

The two predominant cereal grains in the Malian diet are sorghum and millet (Food for Peace, 2015). These grains are marketed across the country as staple crops and are consumed at higher levels by the rural poor. While sorghum and millet are drought-resistant, they are still reliant on a certain level of rainfall rather than irrigation for consistent growth and decent yields (Food for Peace, 2015). Households that are able to produce and/or market sorghum and millet are more likely to be food secure.

According to the National Strategy for the Development of Rice Growing, the government of Mali has placed great emphasis on expanding the rice industry domestically to provide more reliable food security and reduce the amount of imports necessary to feed the population (Japan International Cooperation Agency, 2009). Being able to produce their own rice lowers subsistence farmers' risk to sudden increases in the cost of purchasing rice through international markets. The National Strategy for the Development of Rice Growing also notes that the government is in the process of developing more modern irrigation schemes as well as distributing varieties of rice that can grow with rainfall alone in order to increase the amount of rice that is domestically produced. Over two million hectares of land could be used to grow rice with the help of these technologies (Japan International Cooperation Agency, 2009). The agency also found that only 21% of agricultural laborers are involved in the production of rice, however this percentage is foreseen to increase with improvements in irrigation infrastructure and varieties promoted by the government. Rice is currently being produced primarily in regions close to the Niger River Inner Delta, as well as areas with the modern irrigation schemes supported by the government (Food for Peace, 2015). Rice is considered a staple cereal grain but is typically consumed more by wealthier urban families.

One of Mali's most vital agricultural value chains is livestock, which contributes to 30% of the GDP of the agriculture sector (USAID, 2012). USAID also found that livestock raising is more conducive to much of Mali's climate than is crop production yet much of the land that is best for grazing may not be available due to land tenure laws, therefore reforms would allow for incredible sector growth as there is an expanse of land on which inexpensive livestock are sold. Livestock is already considered a major export, however, a more definite business environment would enable improved international exports and a greater contribution to the national agricultural GDP (USAID, 2012).

Livestock most commonly raised include cows, sheep, goats, and camels (FAO, 2003). FAO also notes that three main livestock production systems occur based on agroecological zone and resources available: pastoral, nomadic, and transhumance. The pastoral system is practiced in the Sahara and Sahel zones, with livestock permanently occupying particular plots rather than crops, which are unable to grow in dry soils (FAO, 2003). FAO finds that these systems are the most likely to produce a surplus of livestock products as they remain on a permanent landholding. The nomadic system of livestock raising is practiced in the same zones, however livestock are generally raised for household consumption rather than to sell for profit (FAO, 2003). Nomads move to different areas based on what resources are available, such as water, shelter, and forage, while transhumant livestock raising is practiced in the Sahel and Sudan regions, as they receive more rain (FAO, 2003). Groups move with the seasons typically between two specified areas where herders know resources will be available at a given time.

In general, the quality of soil, amount of rainfall, accessibility to open land, availability of pastures that are not overgrazed, and quality of fodder and feed for animals all dictate when and where herders are able to raise their livestock as well as their overall productivity (FAO, 2003). These factors can all be limited by

climate change and stressors, mainly fluctuations in rainfall and hotter seasonal temperatures (IFAD, 2011). Drier and hotter growing seasons would increasingly affect the availability of suitable soils and grass that are not too dry to accommodate permanent crops. Just within the past few decades, Mali has seen a 30% reduction in annual rainfall amounts (IFAD, 2011). As the population continues to grow at a rapid rate, Malians must either produce more food on the same landholdings or improve accessibility to decent land and inputs (IFAD, 2011).

The livestock sector is one of the best sources of food security in Mali as it serves multiple sustainable purposes (Food for Peace, 2015). Livestock continuously generate products to be sold throughout the year, contribute to the health of the soil through manure secretion, and add variety and a protein source to a traditionally carbohydrate-dense diet. Women in particular are able to gain income through the livestock industry by selling animal products such as milk and eggs as well as the animals themselves to other markets (Food for Peace, 2015).

In addition to livestock, Mali exports several other agricultural products, including shea, mangoes, and cotton (Food for Peace, 2015). Recent developments in infrastructure aimed at the cotton industry have allowed for expansion of cotton production in southern Mali and contribute to its success as an exported cash crop.

Agricultural Challenges

Mali is seen as having great agricultural potential but not yet capitalizing on opportunities to develop further due to poor policies, markets, and initiatives. For example, there are over 43 million hectares of arable land but only seven percent of that is used for productive agriculture (USAID, 2016). Additionally, while the amount of hectares of lands with potential to be irrigated is not high at just over two million, less than a quarter of that is irrigated (USAID, 2016). In a country with such variable rainfall, developed irrigation schemes are an infrastructural resource that could enhance agricultural sector growth immensely (USAID, 2016). Emphasis in developing arable land and modern irrigation schemes are two potential focuses for national agricultural strategies and major development projects. Much of Mali's land is simply not conducive to crop production due to sandy soils and a lack of rainfall, however these agro-ecological zones can be effectively used for livestock raising with proper pasture management.

One of the greatest barriers to the growth of Mali's agricultural sector is the difficulty of doing business, with the country ranking 146 out of 189 countries in terms of the ease of doing business (USAID CDC, 2015). The USAID Country Development Cooperation Strategy notes that poor policy regulations and a lack of incentives for starting new businesses and exporting products out of the country hinder the progress of new agricultural enterprises designed to make a profit. Being landlocked also inhibits Mali's ability to export commodities to other continents by way of water and the lack of decent roads limits internal trade and export across borders to other African nations. Other factors affecting exports and doing agri-business in Mali include the lack of producer groups, high post-harvest losses, poor gender relations, and underdeveloped value chains (Food for Peace, 2015). In terms of gender disparities, women in Mali are less likely to gain access to credit, stay in school long enough to develop business skills, obtain business licenses, and also are likely to encounter "discriminatory hiring practices", all of which hindering women's' abilities to engage in agri-business (Food for Peace, 2015).

Mali regularly has to import agricultural inputs such as fertilizer and pesticides at high prices to aid in the yields of the crops its farmers produce and the level of imports is increasing. For example, Mali has doubled

the amount of pesticides it imports from 1997 to 2012, with over \$30 million USD being spent on imports in 2012 (FAOSTAT, 2016).

Nutrition

Mali's population typically ranks poorly in terms of indicators of good nutrition and within the past decade little improvement has been made upon these indicators (FAO Nutrition, 2010) (Figure 4).

Mali Nutrition Data

Population	15.8 Million	
Population under 5 years of age (0-59 months)	3 Million	
	2006 ^a	2012-13 ^b
Prevalence of stunting among children under 5 (0-59 months)	38%	38%
Prevalence of underweight among children under 5 (0-59 months)	27%	26%
Prevalence of wasting among children under 5 (0-59 months)	15%	13%
Prevalence of anemia among children aged 6-59 months	81%	82%
Prevalence of anemia among women of reproductive age (15-49 years)	68%	51%
Prevalence of thinness among women of reproductive age (15-49 years)	14%	n/a
Prevalence of children aged 0-5 months exclusively breastfed	38%	33%
Prevalence of breastfed children aged 6-23 months receiving a minimum acceptable diet	7%	n/a

Figure 4: Mali Nutrition Data (Source: FAO Nutrition, 2010).

Fifty-six percent of women of reproductive age in Mali are affected by anemia (Global Nutrition Report, 2014). Prenatal care such as supplementation of folic acid and iron as well as proper nutrition lower the risk of anemia (USAID Nutrition, 2014). Only 20% of women choose to exclusively breastfeed their children who are six months and younger (Global Nutrition Report, 2014). Exclusive breastfeeding aids in proper nutrition of young children and reduces the risk for fatal health outcomes through diseases such as acute diarrhea (FAO Nutrition, 2010). Fifty-nine percent of preschool-aged children in Mali suffer from Vitamin A deficiency (Global Nutrition Report, 2014). Approximately 38% of Malian children under the age of five are considered stunted as result of malnutrition (Food for Peace, 2015).

The aforementioned poor health indicators are indicative of regular food insecurity issues in Mali. Mali has encountered several instances of acute food insecurity within the past decade, mainly exacerbated by conflict and climate stressors such as drought (Food for Peace, 2015). According to Food for Peace, other factors causing food insecurity in this context include rural poverty, lack of economic and infrastructural inputs, land tenure laws, and discrimination against women. Conflict in particular has exacerbated food insecurity in Mali. Rural farmers are unable to continue their livelihoods as markets collapse due to instability and uncertainty. Mali has a score of 14.8 on the Global Hunger Index sponsored by the International Food Policy Research Institute, indicating moderate hunger throughout the country (Food for Peace, 2015). Nine percent of rural Malian households have little to no food on a consistent basis.

More money is spent in a typical Malian household on food than any other resource or service, with cereals comprising up to 50% of total expenditures annually (Food for Peace, 2015). Rising prices of cereal grains further affect impoverished households and their affordability. Cereals also make up approximately half of the typical Malian diet at 1,812 kcal per person per day, with most of the cereals consumed being produced domestically (Food for Peace, 2015)

Women's Status

The UNDP Gender Inequality Index highlights the discrepancies between men and women in Mali, with the country ranking 141st out of 148 countries worldwide (Food for Peace, 2015). Malian women are statistically less likely to pursue education beyond primary school and to actively be involved in income-generating activities in the labor force outside of their domestic production and reproduction responsibilities. Female heads of households are more likely to be impoverished than their male counterparts (Food for Peace, 2015).

Despite Mali's constitution recognizing men and women as equal under the law, this has not been realized in many sectors. There exist many gendered differences in social and economic rights including "unequal access to financial resources, very limited capacity for women to engage in decision-making in families, low level of female leadership within state structure, and prominent representation of men in elective institutions" (USAID CDC, 2015). In addition to the constitution, there exists a National Gender Policy adopted in 2010 and Mali has also signed the Convention of the Elimination of All Forms of Discrimination Against Women (CEDAW), but these forms of legislation have yet to be enforced on a large scale (Food for Peace, 2015). Mali is historically a patriarchal society and therefore there are numerous examples of social, political, and economic norms that reflect this.

In 2011 a new Family Code was adopted that discriminated against the rights of women in a formal matter. According to the code, "a woman must obey her husband and men are considered head of the family", indicating men have the ability to make all financial decisions (FIDH, 2011). It also allows for the marriage of girls at fifteen years of age. Seventy-one percent of girls in Mali enter into child marriages and are therefore more likely to have pregnancies that endanger both themselves and their child due to age at the time of childbirth (UNICEF, 2011). This may also contribute to vicious cycle of malnutrition among children.

Gender-based violence, particularly within the household, is a common occurrence in Mali, with 38% of women being beaten or assaulted (USAID, 2014). USAID also found that ten percent of Malian women have experienced an act of sexual violence. Additionally, "among women in relationships, 44% have experienced physical, sexual, or emotional violence by their current or most recent spouse" (USAID, 2014). A survey done by CARE International called "Men, Gender Equality, and Gender Relations in Mali" provided attitudes of Malian men and women on gender equality and gender-based violence (CARE, 2013) (see findings in Figure 5).

- **86% of men and 62% women surveyed believe that gender equality is an imported concept.**
- **63% of men and 41.3% of women interviewed agreed with the statement "There are times when a woman deserves to be beaten".**
- **41% of female respondents reported having experienced physical violence during their lifetime while 34.9% of male respondents reported having used physical violence against a female partner during their lifetime.**
- **Many of both women and men reported witnessing violence by a man against their mother during their childhood.**
- **Childhood exposure to violence was found by to be the factor most strongly associated with women's adult experience of Inter-Partner Violence (IPV) as well as with men's practice of IPV in adult relationships.**

Figure 5: Attitudes of Malian Men and Women on Gender Equality and Gender-Based Violence (Source: CARE, 2013).

As a result of the alarming numbers of gender-based violence in Mali, UN Women and the Mali National police set up a free hotline in 2013 to which men and women can call to receive help if a suspected act of sexual violence has occurred or is occurring (UN Women, 2015). According to UN Women, the hotline received 836 calls between March 2014 and August 2015.

Another example of a human rights violation and act of gender-based violence that frequently occurs in Mali is female genital mutilation (FGM). FGM has been performed on 89% of women in Mali, often before the age of five (UNICEF, 2013). This rate is one of the highest in the world, with many Malians reporting that their religious beliefs necessitate the practice on girls (UNICEF, 2013).

Land rights and inheritance are important factors in terms of women's role in agriculture in Mali. Almost half of Mali's female population works in the agricultural sector – either formally or informally – but most are unable to own their own land, one of the major capital resources necessary for a productive agricultural system (Focus on Land in Africa, 2011). Additionally, Focus on Land in Africa notes that the acquisition of land by women in Mali is particularly difficult in that no formal code specifies how land is inherited, only that men typically make these decisions. Traditional and religious laws give land rights primarily to men and the proponents of these laws typically have disagreed with land reforms that give more rights to women.

The dominance of Islam in Mali may also influence who is able to inherit and own land. According to Islamic law, “women inheritance shares equal to half the share a man would receive” (Focus on Land in Africa, 2011). Based on this information, it is possible that Muslim women in Mali may be likely to inherit less land or have fewer production resources than men.

Specifically in terms of agriculture, women are characteristically given temporary plots by their husbands to grow crops for a given season; these plots are returned to their husbands after the growing season (Focus on Land in Africa, 2011). The temporary nature of these landholdings cause women to be “dissuaded from making more permanent improvements to the land, such as installing irrigation and planting trees,” the latter of which is considered to be a way to entitle land as one's own and is considered taboo in this country context (Focus on Land in Africa, 2011). These factors prevent women from incorporating critical technological inputs and planting permanent plots, therefore lessening their economic outputs and food security from their plots.

AES Institutional Framework

Agricultural Institutions

The national agricultural extension system is broadly operated under the Ministry of Agriculture and consists of 340 staff members, with only 41 being women (GFRAS, 2016). The Global Forum for Rural Advisory Services, or GFRAS, provides the following information regarding the national agricultural extension program in Mali. Extension and advisory services for agriculture are provided through the ministries that represent crops, livestock, fishing, forestry, and rural development. Private sector firms and non-governmental organizations also contribute to extension services. Regional producer groups also exist for small-scale farmers in each of Mali's nine regions. These regional groups operate nationally under the following three organizations: Permanent Assembly of Agricultural Chambers, Association of Professional Peasants, and Federation of Farmers and Producer Organizations (GFRAS, 2016). Development of

information and communication technologies (ICTs) is not strong in Mali in terms of use by the agricultural extension sector. Agricultural extension agents are trained at the Université de Bamako with their education housed in the Institut Polytechnique Rural/Institut Formation et Recherche Appliquée de Katibougou. Lower-level technicians are often also trained at the Centre d'Apprentissage Agricole de Samanko (GFRAS, 2016).

Health Institutions

The health system currently does not provide adequate and accessible health services for expecting and new mothers, particularly those in impoverished rural locations (Food for Peace, 2015). In addition to stunting and other aforementioned nutritionally-affected negative health outcomes, children under five are also likely to suffer from diarrhea and respiratory illnesses, which also contribute highly to child mortality (Food for Peace, 2015). Because improved sanitation and water sources are often unavailable for impoverished rural Malians, diarrhea is common and is particularly harmful to those with poor nutrition and can contribute to undernutrition if not treated properly through increased feeding and fluid methods. Mali's health system lacks a proportionate amount of female professionals holding positions of authority (Food for Peace, 2015). As such, the priorities of the health system do not necessarily accurately reflect the priorities of women they are providing services to.

As of 2011, Mali is a part of the Scaling Up Nutrition (SUN) movement, which is a large-scale collaboration between leaders, donors, and civil society to improve nutritional health outcomes in Mali (FAO Nutrition, 2010). The Multi Partner Trust Fund and the Canadian International Development Agency are the primary donors for interventions in Mali. Emphasis has been placed on the role of civil society and their ability “to influence and advance the nutrition policy agenda” (FAO Nutrition, 2010). Additionally, the Ministry of Health established the National Policy of Nutrition in 2013 as a national guideline for nutrition intervention implementation, such as the Infant and Young Child Feeding Program and the Management of Acute Malnutrition Program (FAO Nutrition, 2010). The government of Mali established community health centers, or CSCOMs, in 1989 through the help of community health organizations called ASACOs to be organized on the local level to provide care to more rural populations at low costs. That being said, 42% of the population lives more than 5km from a community health center and many low-income families had to sell some of their assets in order to pay their medical bills (FAO Nutrition, 2010). This shows that in their current state, CSCOMs are not developed in a way that aids the entire population. Problems with service delivery for CSCOMs and other health service providers occur because the location is not optimal, the provider is not properly organized, drugs are not properly managed, communication and integration with hospitals and other large-scale providers is not adequate, and staff is not properly trained or motivated to provide proper treatment (FAO Nutrition, 2010).

Feed the Future Multi-Year Strategy

The most recent available publication on Feed the Future in Mali is the FY 2011-2015 Multi-Year Strategy, which “outlines the five-year strategic planning for the U.S. Government’s global hunger and food security initiative” (Feed the Future, 2011). Feed the Future aims to achieve sustainable economic development and food security in Mali through their development objectives of “inclusive agriculture sector growth” and “improved nutritional status especially of women and children” (Feed the Future, 2011) (See Annex 2).

Feed the Future programs geographically targeted the three regions of Sikkaso, Mopti, and Timbuktu, which are home to over three million people (Feed the Future, 2011). Feed the Future incorporates gender and

climate change knowledge into its interventions to ensure that actions are sustainable. Feed the Future works in the following core investment areas in Mali: technological advancement, value chain development, enabling environment, and nutrition (See Annex 3). Feed the Future plans to invest in the following three value chains to increase sustainable agricultural development: staple cereal grains such as millet and sorghum, rice and its corresponding irrigation systems, and livestock production (Feed the Future, 2011). Development of these value chains with aid in behavior change leading to better nutrition and positive health outcomes (Feed the Future, 2011).

Potential intervention programs include community-level capacity building, improved seed sector, small infrastructure development, improved technology and marketing, credit and finance, enabling policy environment for agriculture and nutrition, health system capacity building, agricultural research, nutrition research, agricultural extension and advisory services, social behavior change communication and social marketing program, and monitoring and evaluation systems (Feed the Future, 2011). Specific emphasis on women is included in programs such as building the capacity of women's cooperatives, introducing best management practices to women producers through agricultural extension services, the promotion of crop and nutritional diversification, and the development of irrigation infrastructure managed by women (Feed the Future, 2011).

USAID Country Development Cooperation (CDC) Strategy

USAID in Mali intends to invest \$600 million toward sustainable development between 2016 and 2020 so that people in Mali are able to “secure a democratic, resilient, and prosperous future” (USAID CDC, 2015). The Country Development Cooperation Strategy aims to achieve this goal through four major objectives: stabilization of conflict-affected areas, public trust in government improved, adaptive capacity of vulnerable communities and households improved, and socio-economic well-being advanced (See Annex 4). Conflict and other issues of security have the potential to limit the effectiveness of programs intended to achieve this goal, however USAID hopes to move more programming and services to the northern regions as security permits (USAID CDC, 2015). The USAID CDCS uses the following indicators to measure the success of their interventions: increase of the “agricultural sector GDP, [reduction in] maternal and child deaths, [improved] youth literacy, [reduced] prevalence of poverty and depth of poverty, [reduced] number of displaced peoples” (USAID CDC, 2015).

Food for Peace Food Security Country Framework 2015-2020

Food for Peace (FFP) contributed to two active food assistance projects between 2008 and 2013. The Consortium for Food Security in Mali and the Timbuktu Food Security Initiative (run by Catholic Relief Service and Africare, respectively) have together received \$41 million in aid from Food for Peace, however operations stalled in 2012 after the civil war began with as-needed emergency food services being provided when possible (Food for Peace, 2015). Mali does not currently have a country framework available, however a new five-year program for the country is in the development stage. The Food For Peace Food Security Desk Review for Mali was written with the purpose of helping to “inform planning for FFP-funded programs for FY 2015-2019” (Food for Peace, 2015).

Food for Peace focuses its efforts geographically in Kayes, Koulikoro, Ségou, Mopti, and the Northern regions as they are the most vulnerable to food insecurity. This is typically due to poverty levels, a rural setting, lack of access to markets and finances, conflict, and climate variations such as drought (Food for

Peace, 2015). Since conflict has caused difficulties for intervention in the Northern regions that are highly food insecure and vulnerable to rural poverty, FFP has focused its efforts primarily on the Mopti Region. Mopti is the most vulnerable to food insecurity, has the highest prevalence of stunting in children under five at 46%, and has the highest percentages of households with consistently no food available at ten percent (Food for Peace, 2015).

In addition to emergency food assistance to households in conflict-ridden areas or those who are absolutely food insecure, Food for Peace also aims to use its next project to “strengthen community level health services” and combat the issues in the health system that allow poor health outcomes to disproportionately affect women and children (Food for Peace, 2015). FFP places emphasis on the lack of women in positions of authority within the health sector, which adversely affects both social status and health outcomes. The program also aims to incorporate a gender assessment into the design of the new food assistance programs to address this issue as well as the correlation between female household heads and poverty and/or food insecurity.

Food for Peace has identified the following rural adaptive capacity strategies to help Malians be more resilient and resistant to poverty, climate change, and variable markets and looks to prioritize the promotion of these in future programs (Food for Peace, 2015):

- Changing food consumption patterns
- Reducing meal frequency and volume, reducing meal quality, and increasing consumption of wild fruits and leaves
- Altering economic or livelihood activities to increase net income or reduce risk,
- Changing household expenditure patterns
- Increasing reliance on borrowing money and/or food
- Migrating to domestic or foreign destinations to search for work opportunities
- Relying more on remittances from migrants
- Using health services to address morbidity and malnutrition challenges as they arise

Food for Peace asserts that those living near urban centers and those near the Niger River are most able to subscribe to these rural adaptive capacity strategies (Food for Peace, 2015). This is due to more available transportation, markets, and health services being available in these areas.

Projects by USAID, Other USG Agencies, and International Donors

The USAID Office of Food for Peace Food Security Desk Review for Mali, FY2015-FY2019 lists numerous policies and programs that are relevant to agriculture, health and nutrition, and gender. The include those performed by the Government of Mali, the United States Government/USAID, and other international donors (Food for Peace, 2015). These policies and programs can be found in annex 8.

The Resilience at USAID efforts are of particular importance as they work with numerous other USAID programs to battle the instability in the Mopti region as a result of climate change, drought, and conflict (Resilience at USAID, 2016). The resilience project aims to bring security and resilience to the Mopti region by creating new economic opportunities and creating plans in case of disaster. USAID is working with the Government of Mali to gather baseline data and begin to develop their priority and plans.

Numerous USAID and FAO-funded nutrition interventions are ongoing or have been carried out across Mali and are highlighted as follows. CARE and Save the Children both implement Nutrition and Hygiene

programs to both improve consumption of nutritious foods and improve effective WASH behaviors (FAO Nutrition, 2010). The IVPC project in the Sikasso region encourages women's groups to get involved in the production of nutritious vegetables for consumption and for commercial sale. The IRP project in Sikasso and Mopti aim to change household consumption behaviors of children and pregnant women with the objective of achieving better nutritional health outcomes (FAO Nutrition, 2010). The Tache d'Huile project also operates across Mali as well as numerous other Sub-Saharan African countries to increase the production and use of Vitamin A-fortified cooking oil to reduce deficiencies. The USAID/Mali Health Strategy for FY 2013 to 2018 also has a significant nutrition component. The strategy aims to cause behavior change that will ultimately affect nutritional health indicators, such as micronutrient deficiencies, stunting in children, and acute malnutrition. The Strengthening Community-Based Acute Malnutrition Prevention and Treatment project specifically targeted acute malnutrition in children below the age of five by working with community health volunteers and mothers' groups to initiate behavior change to improve nutrition. The Nutrition WASH Damu Ni Wassa project provides emergency humanitarian assistance to communities requiring "lifesaving nutrition services" (FAO Nutrition, 2010).

Conclusion

In conclusion, Mali has enormous potential for agricultural development and improvements in health, nutrition, and gender relations despite issues with governance, climate, and conflict. Emphasis on cash crop value chains of rice and livestock will plausibly contribute significantly to a growing agricultural sector. Both of these industries will need to operate with climate challenges in mind to make productive yields while successfully managing and conserving the natural environment. These sectors contribute significant profits that can aid in household food security. Additionally, emphasis on staple crop value chains will further security food for families on a daily basis. A significant portion of the population is food insecure and/or malnourished. These are unfortunate consequences of conflict, poor governance, climate change, and lack of resources. More stable food security would improve several health outcomes, particularly for women and children.

Women's status in Mali is not up to par with men and national legislation such as the Family Code inhibit their ability to be seen as valuable and productive citizens. That being said, other pieces of legislation provide the background for a potential improvement in status and awareness of rights. Land tenure laws as well as cultural factors have hindered women's ability to be productive in the agriculture sector, as well as being seen as vessels for reproductive and domestic work rather than productive labor. The Ministry of Agriculture and the Ministry of Health are not well documented or defined. USAID and other international donors contribute significantly to programs currently ongoing in Mali as well as future projects in line for after the civil war-related conflict subsides.

References

- Al Jazeera. (2012). *Timeline: Mali since Independence*. Retrieved 16 October 2016 from <http://www.aljazeera.com/news/africa/2012/03/2012322111037483270.html>
- CARE. (2013). *Men, Gender Equality, and Gender Relations in Mali*. Retrieved 11 July 2016, from <http://www.care.org/sites/default/files/documents/CARE-IMAGES-Mali-Summary-Report-FINAL.pdf>
- FAO. (2003). *Mali Country Pasture/Forage Resource Profile*. Retrieved 22 February 2016, from <http://www.fao.org/ag/AGP/AGPC/doc/Counprof/Mali/mali.htm>
- FAOSTAT. (2016). *FAOSTAT*. Retrieved 22 February 2016, from <http://faostat3.fao.org/home/E>
- Feed the Future. (2011). *Mali FY 2011–2015 Multi-Year Strategy*. Retrieved 11 July 2016, from <http://feedthefuture.gov/sites/default/files/resource/files/MaliFeedtheFutureMultiYearStrategy.pdf>
- FIDH. (2011). *Mali's new Family Law: women's rights denied, discrimination upheld*. Retrieved 22 February 2016, from <https://www.fidh.org/en/region/Africa/mali/Mali-s-new-Family-Law-women-s>
- Focus on Land in Africa. (2011). *Women, Inheritance, and Islam in Mali*. Retrieved 22 February 2016, from <http://www.focusonland.com/countries/women-inheritance-and-islam-in-mali/>
- GFRAS. (2016). *Mali World Wide Extension Study*. Retrieved 29 February 2016, from <http://www.g-fras.org/en/world-wide-extension-study/africa/western-africa/mali.html#references>
- IFAD. (2011). *Enabling the rural poor to overcome poverty in Mali*. Retrieved 22 February 2016, from http://www.ifad.org/operations/projects/regions/Pa/factsheets/mali_e.pdf
- Japan International Cooperation Agency. (2009). *NATIONAL STRATEGY FOR THE DEVELOPMENT OF RICE GROWING*. Retrieved 11 July 2016, from http://www.jica.go.jp/english/our_work/thematic_issues/agricultural/pdf/mali_en.pdf
- Map of Mali* [Online image]. (2016). Retrieved 11 July 2016, from <http://www.operationworld.org/files/ow/maps/lgmap/mali-MMAP-md.png>
- Pew Research Center. (2012). *The World's Muslims: Unity and Diversity*. Retrieved 16 October 2016 from <http://www.pewforum.org/files/2012/08/the-worlds-muslims-full-report.pdf>
- Rural Poverty Portal. (2014). *Mali Statistics*. <http://www.ruralpovertyportal.org/country/statistics/tags/mali>
- UN Data. (2016). *Mali Country Profile*. Retrieved 16 October 2016 from <http://data.un.org/CountryProfile.aspx?crName=mali>
- UNDP. (2015). *Mali Human Development Report*. Retrieved 16 October 2016, from <http://hdr.undp.org/en/countries/profiles/MLI>
- UNICEF. (2013) *Female Genital Mutilation/Cutting*. Retrieved 11 July 2016, from http://www.unicef.org/media/files/UNICEF_FGM_report_July_2013_Hi_res.pdf

UN Women. (2015). *Hotline helps prevent gender-based violence in Mali*. Retrieved 22 February 2016, from <http://www.unwomen.org/en/news/stories/2015/11/hotline-helps-prevent-gender-based-violence-in-mali>

USAID CDC. (2015). *Country Development Cooperation Strategy*. (1st ed., pp. 1-81). Retrieved 22 February 2016, from [https://www.usaid.gov/sites/default/files/documents/1860/USAID%20Mali%20CDCS%202016-2020%20\(FINAL%20-%20External\).pdf](https://www.usaid.gov/sites/default/files/documents/1860/USAID%20Mali%20CDCS%202016-2020%20(FINAL%20-%20External).pdf)

USAID helps Malian farmers [Online image]. (2016). Retrieved 16 October 2016, from <https://www.usaid.gov/mali/agriculture-and-food-security>

USAID. (2016). *Agriculture and Food Security*. Retrieved 22 February 2016, from <https://www.usaid.gov/mali/agriculture-and-food-security>

USAID. (2016). *Resilience at USAID: 2016 Progress Report*. Retrieved 25 October 2016, from <https://www.usaid.gov/sites/default/files/documents/1866/FFP-Desk-Review-Mali-Feb2015-Final.pdf>.

USAID. (2015). *USAID OFFICE OF FOOD FOR PEACE FOOD SECURITY DESK REVIEW FOR MALI, FY2015–FY2019*. Retrieved 11 July 2016, from <https://www.usaid.gov/sites/default/files/documents/1866/FFP-Desk-Review-Mali-Feb2015-Final.pdf>

USAID. (2012). *Livestock in Mali*. (1st ed.). Retrieved 11 July 2016, from <http://eatproject.org/docs/USAID-EAT%20VcCLIR%20Mali%20Livestock.pdf>

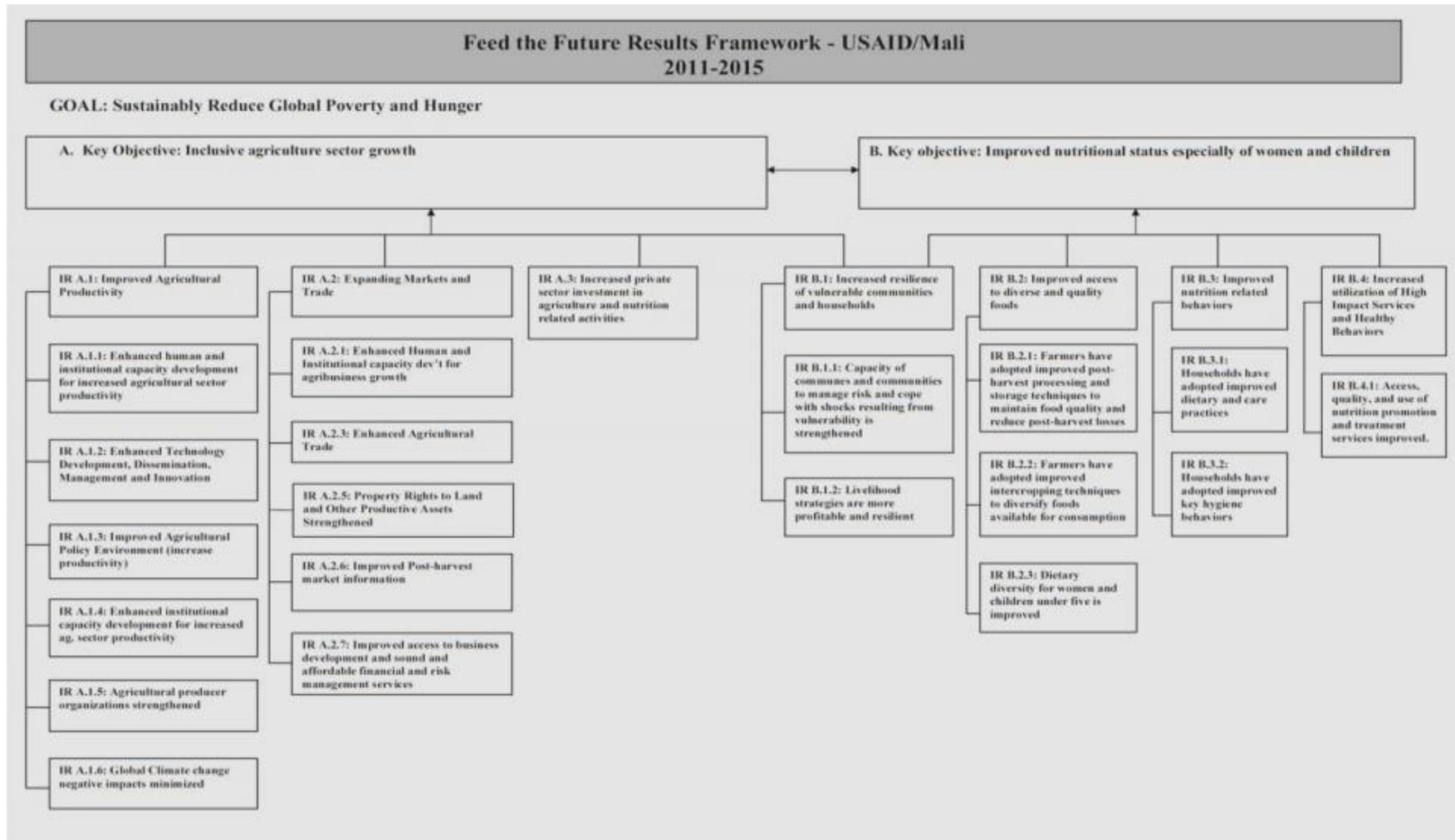
World Bank. (2016). *Population density (people per sq. km of land area)*. Retrieved 22 February 2016, from <http://data.worldbank.org/indicator/EN.POP.DNST>

Annex I: Map of Mali in Context of West Africa



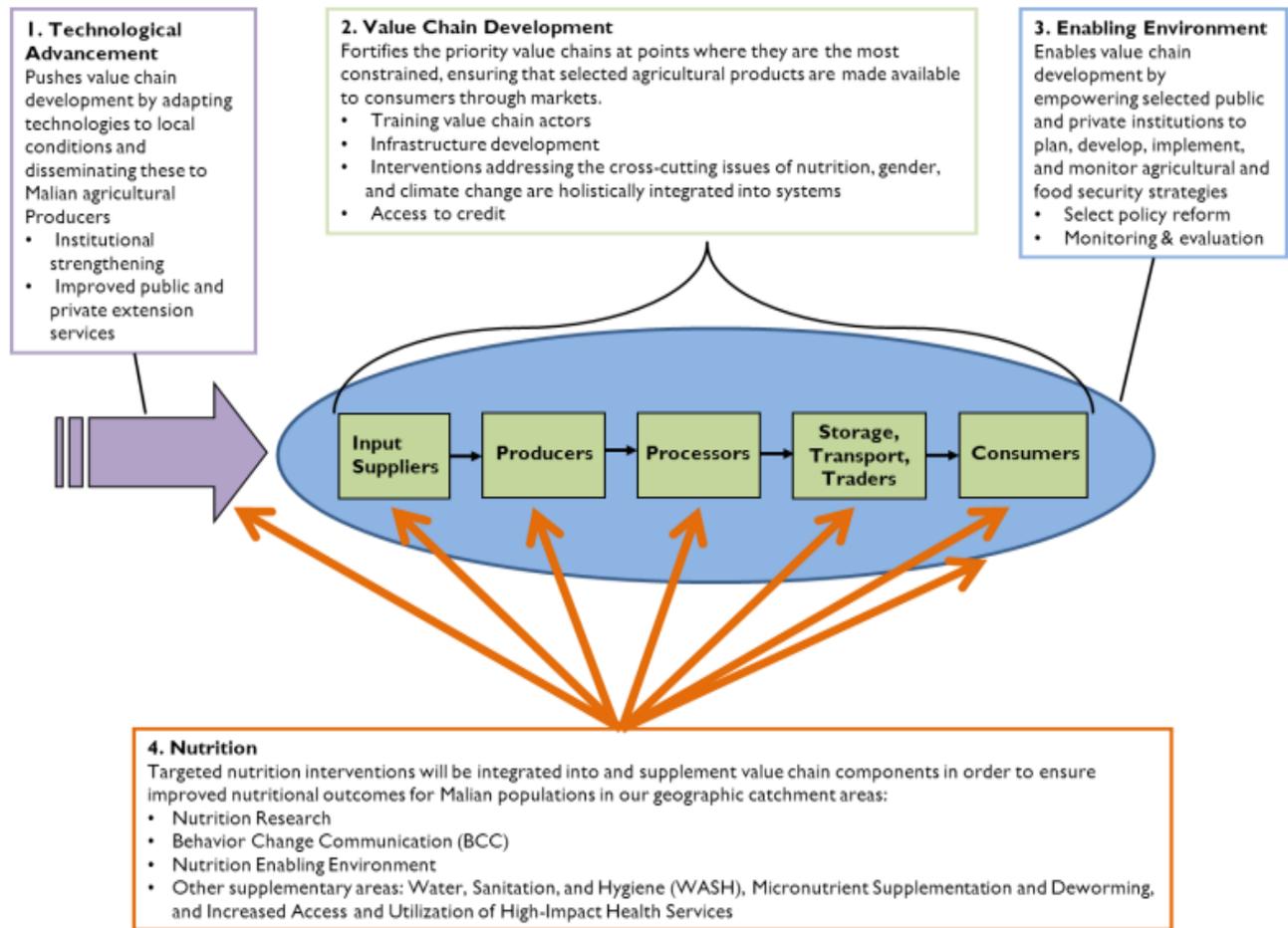
Source: Operation World, 2016

Annex 2: Feed the Future Results Framework – USAID/Mali 2011-2015



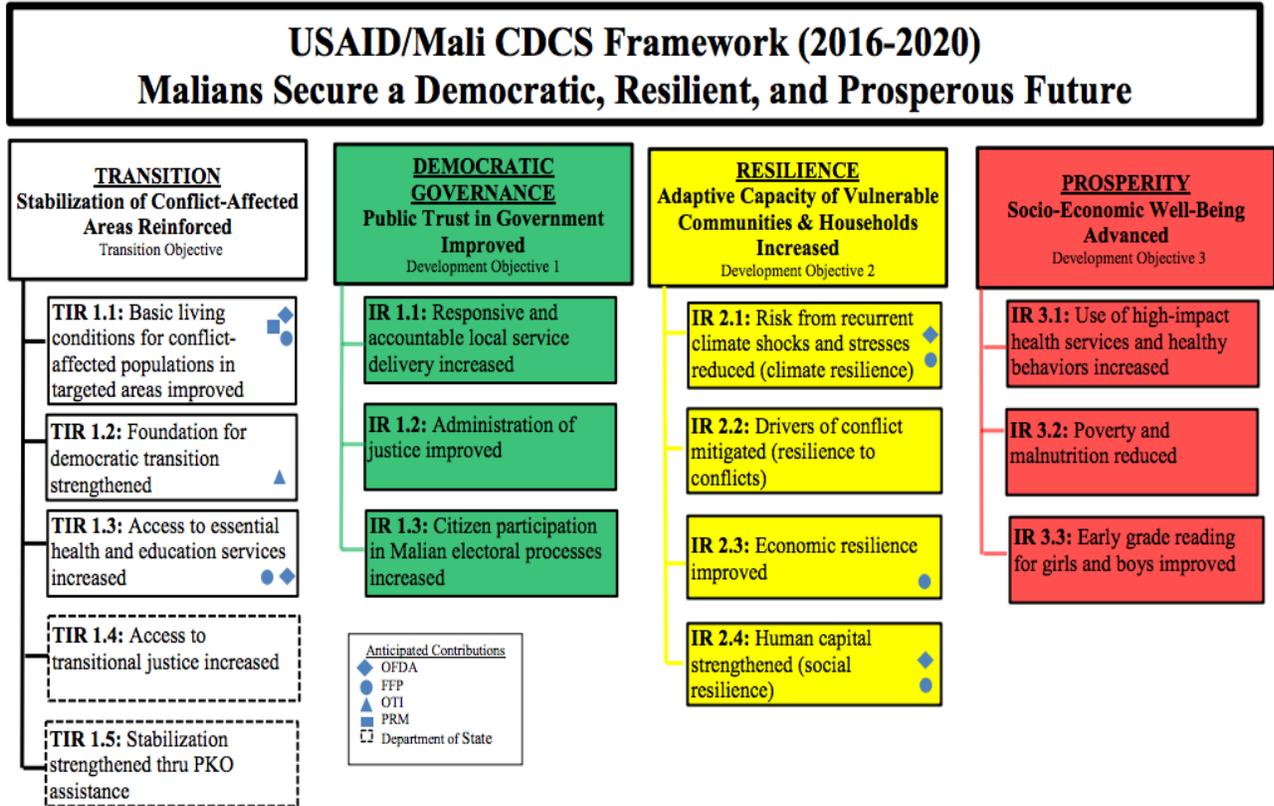
Source: Feed the Future, 2011

Annex 3: Mali Feed the Future Core Investment Areas



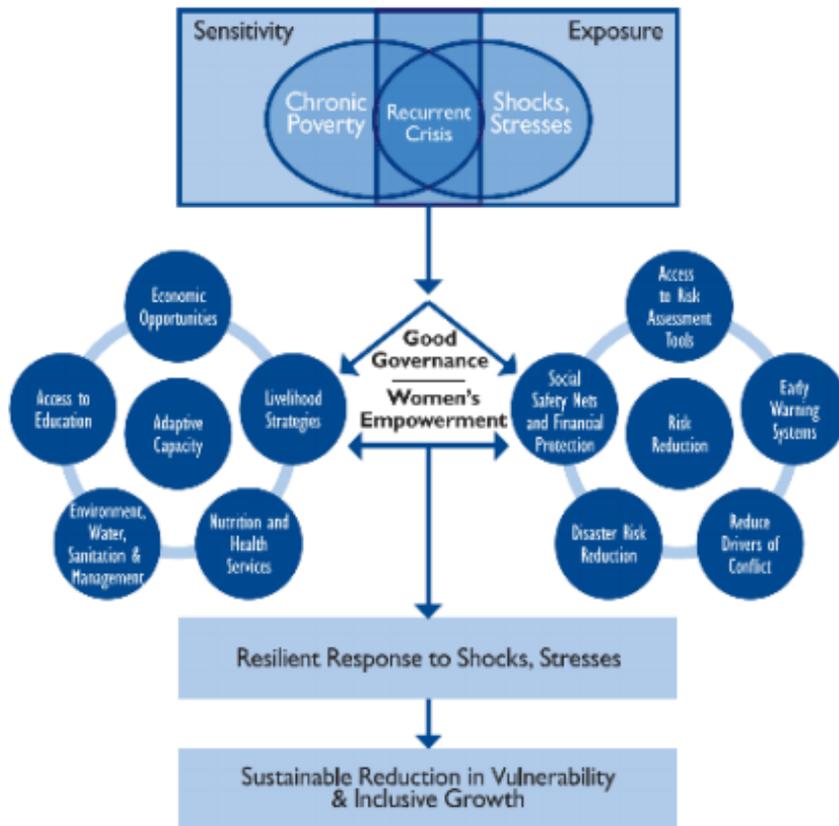
Source: Feed the Future, 2011

Annex 4: USAID/Mali CDCS Framework (2016-2020)



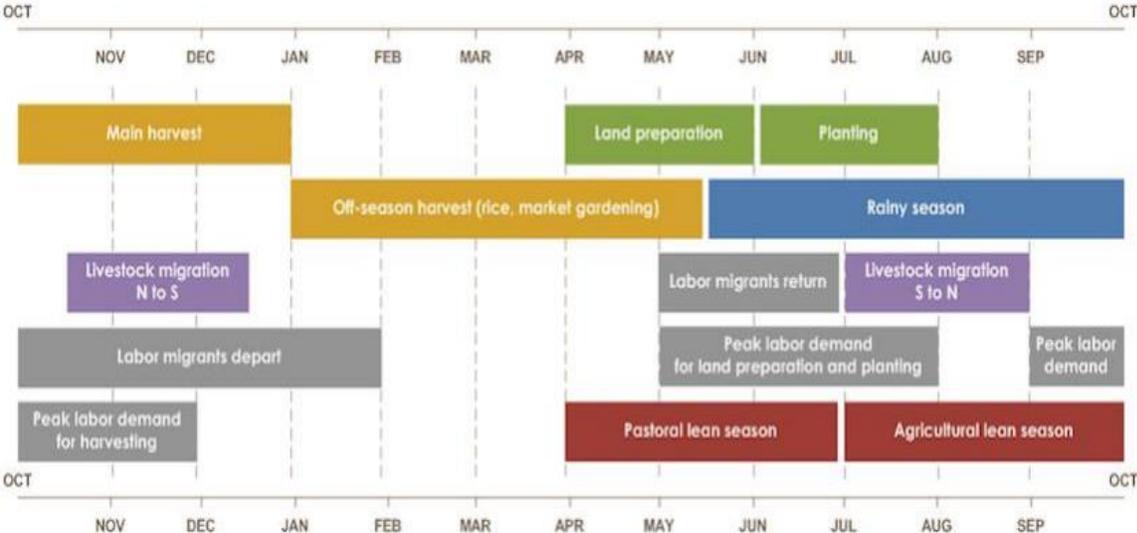
Source: USAID/CDC, 2015

Annex 5: USAID Conceptual Framework for Resilience



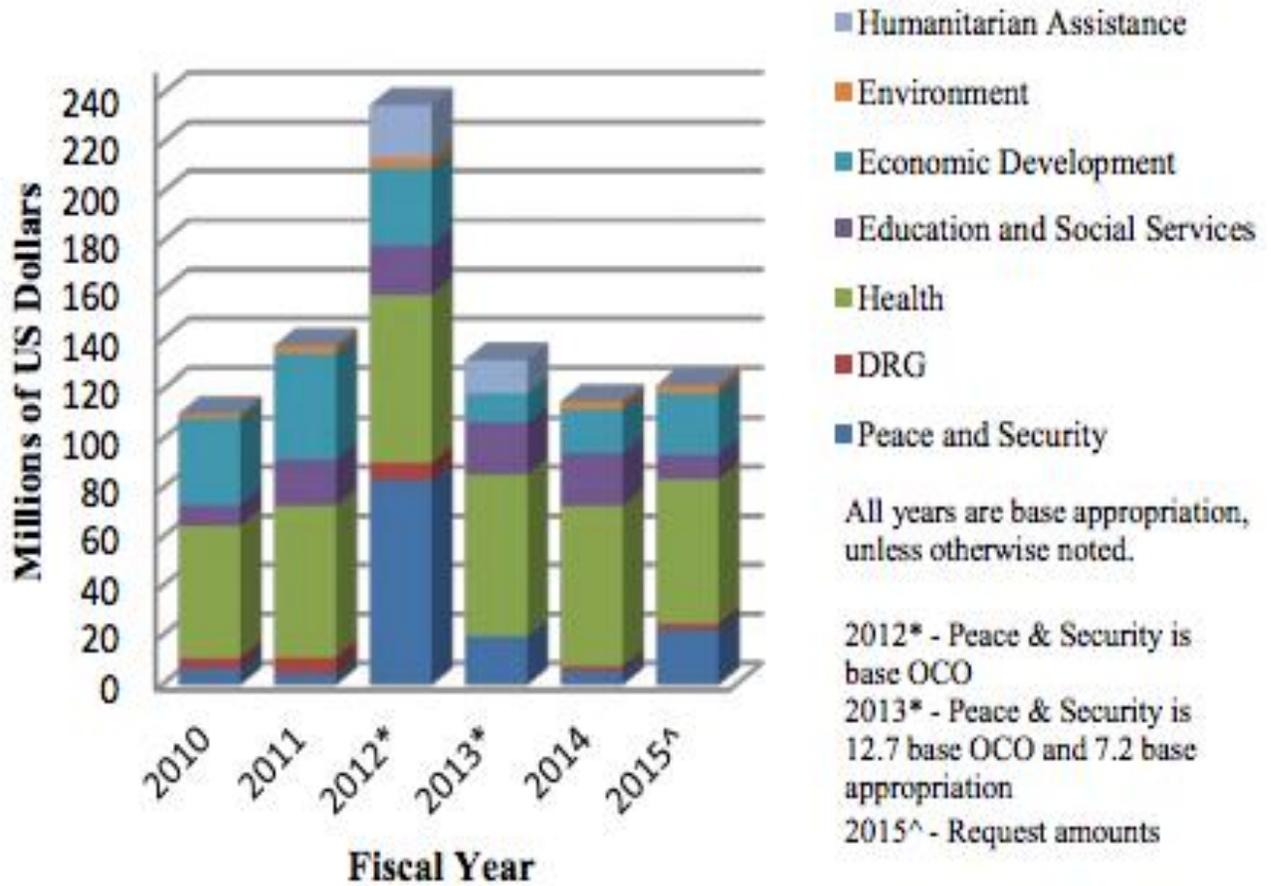
Source: Food for Peace, 2015

Annex 6: Seasonal Calendar of Agriculture in Mali



Source: Food for Peace, 2015

Annex 7: US Development Assistance to Mali, 2010-2015



Source: USAID CDC, 2015

Annex 8: Development Projects and Programs in Mali

Organization	Program/Activity	Region	Year
USAID	Global Health Initiative and Mali Health Strategy	All regions	2014-18
USAID	Malaria Initiative and Mali Malaria Operational Plan	All regions	2015-20
USAID	Feed the Future Initiative and Mali Feed the Future Multi-Year Strategy	Sikasso, Mopti, Timbuktu, Segou	2011-15
USAID	Global Climate Change Initiative in Mali	All regions	2014
USAID	Sahel Joint Planning Cell Strategic Plan	All regions	2013
USAID	Resilience at USAID	Mopti	2012-16
USAID	Transition Initiative in Mali	All regions	2012-16
USAID	RISE	All regions	2014-19
USAID	Trade Hub	Bamako	2015
USAID	Farmer-to-Farmer Program	All regions	2013-18
USDA	McGovern-Dole Food for Education and Child Nutrition Program	All regions	2015
USDA	Food for Progress Program	All regions	2015
USAID	Timbuktu Food Security Initiative	Timbuktu	2008-13
USAID	Strengthening Partnerships, Results, and Innovations in Nutrition Globally	Mopti	2015-16
USAID	Livestock for Growth	All regions	2014-19
USAID	Integrated Rural Program to Improve Nutrition and Hygiene in Mali	All regions	2013-18
UN	Development Assistance Framework for Mali	All regions	2008-12
UN	Joint UN Framework to Support Transition in Mali	All regions	2014-16
UN	Mali Strategic Response Plan	All regions	2014
World Food Programme	Country Program for Mali	All regions	2008-14
European Union	Global Alliance for Resilience Initiative in the Sahel	All regions	2012-32

UNICEF	Programme Strategy for Mali	All regions	2008-12
World Health Organization	Country Cooperation Strategy	All regions	2014
African Development Bank	Mali Transition Management Support Strategy	All regions	2013-14
African Development Bank	Bamako Potable Water Supply Project	Bamako	2013
African Development Bank	Animal Production Development Support Project	Kayes	2007-14
IFAD	Adaptation for Smallholder Agriculture Programme	All regions	2012-16
IFAD	Fostering Agricultural Productivity Project	Kayes, Sisakko	2012-17
World Bank	Improving Vegetable Production and Consumption in Mali	All regions	2011-14
World Bank	Natural Resources Management in a Changing Climate in Mali	All regions	2013-19
World Bank	Agricultural Competitiveness and Diversification Project	All regions	2012-13
World Bank	Fostering Agricultural Productivity Project	All regions	2010-16
Canadian Department of Foreign Affairs, Trade, and Development	Health and Nutritional Assistance	All regions	2014-15
Canadian Department of Foreign Affairs, Trade, and Development	Health Center Construction and Rehabilitation	Kayes	2013-15
Canadian Department of Foreign Affairs, Trade, and Development	Food, Infant, and Maternal Nutrition and Education	All regions	2012-15
Canadian Department of Foreign Affairs, Trade, and Development	Strengthening Decentralized Health Systems	Kayes, Timbuktu, Gao, Kidal	2010-20

Source: Food for Peace, 2015