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USAID OFFICE OF FOOD FOR PEACE  
FOOD SECURITY DESK REVIEW FOR KASAI  
OCCIDENTAL AND KASAI ORIENTAL,  
DEMOCRATIC REPUBLIC OF CONGO

SEPTEMBER 2015



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Food and Nutrition Technical Assistance III Project  
(FANTA)  
FHI 360  
1825 Connecticut Avenue, NW  
Washington, DC 20009-5721  
T 202-884-8000  
F 202-884-8432  
fantamail@fhi360.org  
www.fantaproject.org

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## ACRONYMS AND ABBREVIATIONS

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BMI	body mass index
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CSI	Coping Strategy Index
DHS	Demographic and Health Survey
DRC	Democratic Republic of Congo
FAO	Food and Agriculture Organization of the United Nations
FFP	U.S. Agency for International Development Office of Food for Peace
g	gram(s)
HIV	human immunodeficiency virus
INERA	Institute National pour l'Etude et la Recherche Agronomiques
INS	Institut National de la Statistique
kg	kilogram(s)
km	kilometer(s)
MCHN	maternal and child health and nutrition
MIBA	Societe Miniere de Bakwanga
MINAGRI	Ministry of Agriculture
mm	millimeter(s)
MPSMRM	Ministère du Plan et Suivi de la Mise en oeuvre de la Révolution de la Modernité
MSH	Management Sciences for Health (nongovernmental organization)
NAIP	National Agricultural Investment Plan
PRONADEF	National Program for Livestock Development
PRONANUT	National Nutrition Program
SCIM	Société Congolaise d'Investissement Minier
SD	standard deviation
SENADEP	Service National pour le Développement des Peches
SNSAP	Early Warning Surveillance System
SSADR	Strategie Sectorielle de l'Agriculture et du Développement Rural
TFR	total fertility rate
UDPS	Union pour la Democratie et le Progrès Social
U.S.	United States
USAID	U.S. Agency for International Development
WFP	World Food Programme
WHO	World Health Organization

# EXECUTIVE SUMMARY

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The U.S. Agency for International Development Office of Food for Peace (USAID/FFP) requested that FANTA conduct a food security desk review for Kasai Occidental and Kasai Oriental provinces in the Democratic Republic of Congo (DRC). This desk review draws from secondary resources and interviews with key informants to understand the history, politics, and food security and nutrition situation relevant to the two provinces. A better understanding of food security constraints in the Kasai provinces will help guide both FFP and potential applicants to design programs to address food security needs in the two provinces.

High malnutrition and disease burden in the Kasais are a reflection of the poor health and nutrition services and infrastructure in the provinces, poor feeding and care-seeking practices, and inadequate water, sanitation, and hygiene infrastructure and behaviors, particularly in Kasai Occidental. A 2014 nationwide Comprehensive Food Security and Vulnerability Analysis by the World Food Programme (WFP) found that 62% of households in Kasai Oriental were food insecure and 16% were considered severely food insecure, ranking it the second worst in the country after war-torn South Kivu. For neighboring Kasai Occidental, 45% of households were food insecure and 12% were severely food insecure. As reported in the 2013–14 DRC Demographic and Health Survey (DHS), the prevalence of stunting in both Kasai Oriental (46%) and Kasai Occidental (52%) are higher than the national average (43%); in fact the prevalence of stunting has increased in Kasai Occidental from 48% as reported in the 2007 DHS. The total fertility rate has increased in DRC from 6.3 in 2007 to 6.6 in 2013–14; similarly the total fertility rate for Kasai Occidental increased from 7.6 to 8.2 during the same period. The extremely poor water, sanitation, and hygiene infrastructure and situation is a significant contributor to the high prevalence of diarrhea, other morbidities, and malnutrition. Moreover, the provinces' health infrastructure is inadequate and unable to meet the needs of the population.

Agriculture and livestock production are the most important livelihoods in the Kasais, but artisanal diamond mining and forest foraging also benefit many. Households in this region rely on their own agricultural production and the market to source their food. Kasai Oriental has the highest number of households nationwide who depend on agriculture as a primary livelihood (90%), and 34% cultivate more than 2 hectares of land (WFP 2014). Among the largely rural population in Kasai Occidental, 69% depend on agriculture as a primary livelihood, although only 7% cultivate more than 2 hectares of land (ibid). The northern section of the provinces lies within the humid equatorial zone where farmers grow mostly tubers, whereas the southern portion is primarily savanna, where grain production and agro-pastoralism dominate. Kasai Oriental boasts DRC's largest diamond deposits, but lack of exploration, poor infrastructure, and mismanagement by a mining parastatal have prevented significant foreign exchange or economic benefits for the region over the past 5 years, in particular. Demand for food in the Kasais outpaces supply making them net importers. Poor storage and abysmal transport conditions constrain trade and lead to poorly integrated markets, which significantly limits household food access.

The region's persistent food insecurity is receiving greater scrutiny from the U.S. Government. Kasai Oriental and Kasai Occidental are among three provinces targeted under USAID's Country Development Cooperation Strategy 2015–2019 Development Objective 2, which aims to "improve lives through coordinated development approaches." In addition, the USAID/DRC Mission currently has a large health project in the Kasai provinces called the Integrated Health Program. The project is ending shortly, but a new program is now under pre-solicitation as a follow-on activity.

# 1. INTRODUCTION

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The U.S. Agency for International Development Office of Food for Peace (USAID/FFP) requested that FANTA conduct a food security desk review for Kasai Occidental and Kasai Oriental provinces in the Democratic Republic of Congo (DRC). This desk review draws from secondary resources and interviews with key informants to understand the history, politics, and food security and nutrition situation relevant to the two provinces. A better understanding of food security constraints in the Kasai provinces will help guide both FFP and potential applicants to design programs to address food security needs in the two provinces.

## 1.1 HISTORY

Kasai Occidental and Kasai Oriental (the Kasais) are located in a remote part of southern Democratic Republic of Congo and have not benefited significantly from development despite sizable industrial and jewelry-quality diamond deposits first discovered in 1907. There are numerous tribes and languages in the two provinces, but the Luba tribe dominates. The region derives its name from the Kasai River, Congo's second-longest, and was once part of the "Grand Kasai," one of the first regions in Congo created during the Belgian colonial period. The region was a rich source of ivory and rubber that was exploited by Belgium's King Leopold during his brutal reign over the country in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries (Hochschild 1998). Eventually, the Kuba tribe rose up against Belgium's police force in 1895 in Lulaobourg (present-day Kananga). A guerrilla war against the Belgians raged for 13 years. Much of the Kasai's ordeal was described by the famous Presbyterian minister, William Sheppard, an African-American, who brought the Congolese's suffering to light in the United States and Europe. He helped to establish the first Presbyterian mission in Kasai in the late 1890s (ibid). The country now known as DRC became independent in 1960.



Soon after Patrice Lumumba became president in 1960, secession movements arose in the diamond-rich Kasai and the copper-rich Katanga provinces, primarily financed by Belgium (Belgian nationals had significant mining and cash-crop agriculture holdings). Lumumba sought a unified Congo that was not split along ethnic or territorial lines (ibid). A faction of Lumumba's Mouvement National Congolais party led by Albert Kalonji, head of the Baluba tribe in southern Kasai, broke with Lumumba over the Kasai secession issue (Devlin 2007). With the Western powers and the United Nations turning a deaf ear to the crisis in Congo, Lumumba sought and received military support from the Soviet Union to crush the secession movements, resulting in a significant death toll in both Katanga and Kasai provinces. Months later, Lumumba was ousted and executed in a *coup d'état* led by Colonel Joseph Mobutu with support from the U.S. Central Intelligence Agency (ibid). By 1962, the Kasai region's bid for autonomy was extinguished.

From 1996–2001, Kasai Oriental was significantly affected by the uprising to remove President Mobutu Sese Seko, followed by a foreign-supported rebellion to overthrow President Laurent Kabila. Rebel forces backed by Rwanda and Uganda occupied northern Kasai Oriental, including Sankuru, Lubao, and

Kabinda. Foreign armies from Zimbabwe, Namibia, and Angola supported Kabila's government, transforming the town of Mbuji Mayi into a military base. Laurent Kabila was assassinated in 2001 and his son, Joseph Kabila, DRC's current president, took power. Successive wars had an enormous impact on the population and its already limited infrastructure. Foreign armies and rebels extracted diamonds, trees, cattle, and other resources. Societe Miniere de Bakwanga (MIBA), the parastatal overseeing diamond production, lost most of its financial and material resources during this period and had all but collapsed by 2010.

## 1.2 POLITICS

Individuals from the Kasai region have long had political influence at the national level. Congo's first leader, Patrice Lumumba, hailed from present-day Kasai Oriental. Another notable native son from the Kasai region is Etienne Tshisekedi, whose political party—Union pour la Democratie et le Progres Social (UDPS)—first challenged the Mobutu regime in 1990, a key turning point in the history of DRC, then known as Zaire. In the 1980s, Tshisekedi began criticizing the rampant corruption and authoritarian nature of the Mobutu regime though he had held ministerial posts in the government since the mid-1960s (Prunier 2009). In the 1990s, he served as prime minister for short periods lasting from 1 week to several months under a shaky power-sharing arrangement with Mobutu until Laurent Kabila's rebel forces ousted Mobutu in 1997. Upon Mobutu's ousting, multi-party politics were banned and Tshisekedi was temporarily sidelined.

During the tumultuous 2005–06 elections, Tshisekedi deemed the elections fraudulent and encouraged his brethren in Kasai to boycott the constitutional referendum held on December 18, 2005 (ibid). Election results from Kasai Oriental and Occidental showed that 80% of the electorate did not show up to the polls (ibid). After the 2011 national elections, the UDPS again refused to participate in Kabila's government. A field visit by USAID/DRC to Kasai Oriental in July 2014 confirmed that the local population does not feel adequately represented by the central government (USAID/DRC 2014a). Some political analysts believe that Tshisekedi's strategy politically marginalized the Kasai region, and this remains one of its weaknesses to this day, especially given the large number of ethnic Baluba in the Kasais, the national importance of their language (Tshiluba), and the Baluba's traditionally high profile in the country's public administration (ibid).

## 1.3 KASAI ORIENTAL OVERVIEW

From the lush rainforests of the north to the dry savanna of the south, Kasai Oriental has a prolonged rainy season, valuable minerals, and more recent stability in contrast to neighboring Katanga province, but it is deemed one of the poorest provinces in DRC. The northern portion of the province near the Sankuru River is heavily forested and has annual rainfall between 1,800–2,000 mm. The area south of Lusambo-Lubefu and Kabinda territories are primarily savanna with some forest and annual rainfall ranges between 1,400–1,500 mm (Ministère du Plan 2005). The province is affected by climate change, as evidenced by desertification and threats to the environment due to deforestation. Provincial authorities found that 32% of households use charcoal to prepare food and 63% use wood, contributing significantly to deforestation (Ministère de l'Agriculture et du Développement Rural [MINAGRI] 2010).

Following interethnic violence against Kasaienne communities in Katanga Province in 1992–93, roughly 500,000 families were forced to flee and resettle in their ancestral homes in Kasai Oriental. Many lost family members and all of their household possessions (Ministère du Plan 2005). Although Sankuru and Kabinda districts in Kasai Oriental were significantly affected by the 1996–2001 war, the region is now relevantly peaceful, in contrast to neighboring Katanga province. However, local conflicts for customary power remain pervasive and discredit customary leadership (USAID/DRC 2014a).

A third of Kasai Oriental’s population resides in urban areas (Ministère de l’Agriculture et du Développement Rural [MINAGRI] 2009) and Mbuji Mayi, the capital of Kasai Oriental, had seen significant population growth since independence until recently. Unlike other large cities in DRC, Mbuji Mayi lacks formal planning, evident from ad hoc construction and limited infrastructure. According to the vice governor of the province, hospitals, health centers, and health posts are in very poor condition, and there are frequent stock-outs of medicines (sometimes lasting more than 6 months). Immunization rates are low: the 2013–2014 Demographic and Health Survey (DHS) found that only 36.6% of children 12–23 months of age in the province had received age-appropriate vaccinations included in the World Health Organization’s Expanded Programme of Immunization (MPSMRM et al. 2014). The lack of reliable electricity makes it difficult to maintain a cold chain to preserve vaccines and other essential medicines. In addition, access to improved water sources is very low, and hygiene practices were also reported to be poor (USAID/DRC 2014a).

Kasai Oriental has roughly a tenth of the world’s industrial diamonds. During the height of its production in the 1980s the two parastatals that hold formal mining concessions—MIBA and Société Congolaise d’Investissement Minier (SCIM)—attracted Kasaiennes from rural areas for work opportunities. Although many residents of Mbuji Mayi have been returning to rural areas to farm due to a lack of job opportunities following the collapse of MIBA and SCIM (MINAGRI 2010), many people still also participate in artisanal mining. Apart from mining, agriculture and livestock rearing are the most important livelihoods in Kasai Oriental.

Kasai Oriental has three districts and is further delineated by 16 territories and 826 Groupements.<sup>1</sup> With the national government’s push to decentralize authority to the provinces, local populations have been vying to create new Groupements to try to access resources. However, the Ministry of the Interior has been slow to approve new Groupement applications, and the issue remains contentious during election periods. During its 2014 visit, the USAID/DRC survey team noted some misunderstanding about the decentralization process among provincial officials and citizens, with many people reporting broad frustration with the government due to its inability to provide services and its perceived corruption (USAID/DRC 2014a). According to the proposed plan to create new provinces, the central government

### Kasai Oriental at a Glance

**Population:** 7,638,287  
**Land area:** 173,110 km<sup>2</sup>  
**Elevation:** 450–900 meters  
**Main languages:** Tshiluba, Otetela, Songye, Swahili, Lingala, and French  
**Districts:** Kabinda, Sankuru, and Tshilenge  
**Capital:** Mbuji-Mayi  
**Food insecurity:** 62% (16% severely food insecure)  
**Infant mortality:** 63/1,000 live births  
**Total fertility rate:** 7.3  
**Improved water source:** 8%  
**Children under 5 stunted:** 46.1%  
**Children under 5 wasted:** 7.6%  
**Women’s literacy:** 63.9%

*Source: MPSMRM et al. 2014; Ministère du Plan 2005*

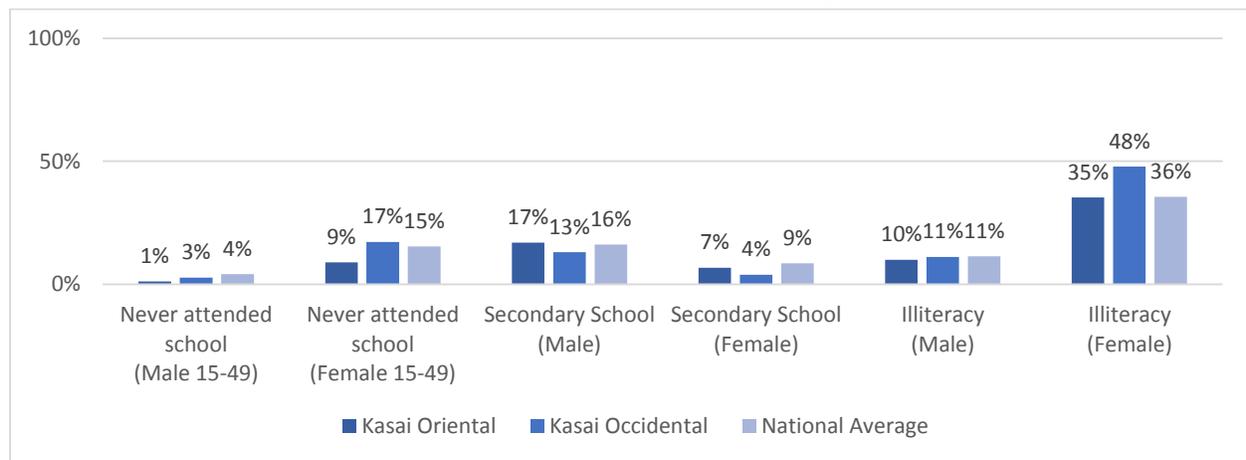
<sup>1</sup> Groupements are a collection of several villages, often composed of the same clan, which are led by a chief elected by members of the village. The classification has both a socio-economic and politico-administrative purpose (Ministère du Plan 2005).

would split Kasai Oriental into three provinces: Kasai Oriental (9,545 km<sup>2</sup>), Lomami (56,426 km<sup>2</sup>), and Sankuru (104,331 km<sup>2</sup>) (see Annex A).

Kasai Oriental is made up of two primary ethnic groups—the more numerous Bantus and the Pygmies. The largest tribe among the Bantus is the Luba, whose Tshiluba language is widely spoken in both Kasais. Other tribes include: Tetela, Kanyoka, Babindi, Bakwa-Mputu, Songe, Kanintshina, Kuba, Bambole, Bakete, Ohindo, Basha, and Bankutshu (MINAGRI 2010). Each tribe has its own language derived from the Bantu language group predominant in East, Central, and Southern Africa. The Batua, a pygmy tribe, are scattered throughout the province.

Gender inequality and high illiteracy rates are problematic in Kasai Oriental. Cultural norms and traditions prevent women from having equal standing in society, including in political office where they are underrepresented. Illiteracy rates among women are much higher than men, though comparable to the national average (see Figure 1) (MPSMRM et al. 2014). Artisanal mining in the province contributes to child labor and prostitution of young girls near mine sites.

**Figure 1. Educational Attainment in Kasais Compared to National Average**



Source: MPSMRM et al. 2014.

## 1.4 KASAI OCCIDENTAL OVERVIEW

Kasai Occidental’s topographic and agro-ecological orientation is similar to that of Kasai Oriental and rainfall patterns are quite similar. The province’s northern portion comprises dense equatorial rainforest, the central region is dense semi-deciduous rainforest, and the south is primarily savanna. The population in Kasai Occidental is somewhat less urbanized than Kasai Oriental, with only 22% living in urban areas (MINAGRI 2009). The health situation in Kasai Occidental is worse than in Kasai Oriental. While infant mortality has been improving—decreasing from 95 per 1,000 live births in 2007 to 72 per 1,000 live births in 2013–14—it is still very high. Fertility is increasing and stands at 8.2 children per woman; more than half the children in the province are chronically malnourished and stunting has increased from 2007 (as reflected in the 2007 and 2014 DHS). In addition to having the same health infrastructure problems as its neighbor to the east, the province is especially rural and remote; access to paved roads is extremely poor, which creates additional hurdles for people seeking health care and for providers trying to reach remote communities (USAID/DRC 2014b). Interestingly, the USAID 2014 field visit report noted a greater number of trained and qualified health care professionals in Kasai Occidental, which has a smaller population, than in Kasai Oriental.

Kasai Occidental also abounds in diamonds. Jewelry-quality diamond deposits are situated primarily around the province’s second-largest town, Tshikapa, near the Angolan border where artisanal diamond production dominates. There are also industrial diamond deposits, gemstones, and gold. However, the general slowdown in the mining sector has also affected Kasai Occidental. Agriculture and livestock are the primary livelihoods for most households.

The reopening of the Angolan border at Kamako along with the completion of a new road and two new bridges could dramatically improve the economy of Kasai Occidental by giving it direct road access to the Angolan port of Lobito. However, Angola has been aggressively deporting Congolese migrants from the diamond-rich Lunda Norte region since 2004. This remains a contentious issue between the two governments and complicates cross-border movement (ANGOP n.d.). Currently, DRC relies on the ports of Pointe Noire in the Republic of the Congo and Matadi in DRC for commercial imports and exports. Commercial shipments from Lobito port could arrive in Kamako in 2 days, thereby cutting costs on certain imports up to three times current levels. Consequently, Tshikapa and Kananga towns could become major transit points for imports for manufacturers in Kinshasa or Lubumbashi. The reopening of the border should also ultimately increase provincial revenue via migratory and customs fees, according to provincial authorities (USAID/DRC 2014b). Provincial authorities also mentioned that the completion of the Katende Dam Project in 2016 will provide an additional 65 megawatts of power to the province (ibid).

Kasai Occidental at a Glance	
<b>Population:</b>	5,366,068
<b>Land area:</b>	154,742 km <sup>2</sup>
<b>Elevation:</b>	500–1,000 meters
<b>Languages:</b>	Tshiluba, French
<b>Districts:</b>	Kasai, Lulua
<b>Capital:</b>	Kananga
<b>Food insecurity:</b>	45% (12% severely food insecure)
<b>Infant mortality:</b>	72/1,000 live births
<b>Total fertility rate:</b>	8.2
<b>Improved water source:</b>	4%
<b>Children under 5 stunted:</b>	51.7%
<b>Children under 5 wasted:</b>	7.2%
<b>Women’s literacy:</b>	51.1%
<i>Source: MPSMRM et al. 2014; Ministère du Plan 2005</i>	

The population of Kasai Occidental is divided evenly between ethnic Lulua, who speak only Tshiluba, in Lulua District, and dozens of other ethnic groups in Kasai district such as Bakuba, Babindi, Bashilele, Bakete, Pende, and Tshokwe. Conflict between the Lulua and the Baluba in the 1960s led to the deaths of thousands. A complicated political dynamic is at play in Kasai Occidental, fueled by tribalism and family disputes. Similar to Kasai Oriental, there is a significant push to create new Groupements. Currently there are 2 districts, 10 territories, and 537 official Groupements, with 89 applications for new Groupements pending approval by the Ministry of the Interior. During USAID/DRC’s mission to Kananga in July 2014, the province’s capital, provincial officials told the team that aspiring Groupements often arise from family disputes over succession of a deceased chief or a tribe or clan’s desire to become independent from their customary chiefs (ibid). Some politicians have received bribes to push applications at the national level or have done so to secure votes in the future. Many of the pending applications to create new Groupements would segregate the province further along tribal lines. This runs contrary to President Kabila’s effort to counterbalance the Baluba’s relative strength and historic domination through a program called Unité des Kasaienne (Kasaian Unity). The situation could worsen if the government splits Kasai Occidental into two new provinces called Kasai Central (59,111 km<sup>2</sup>) and Kasai (95,631 km<sup>2</sup>) as currently planned (see Annex A).

Regarding gender inequality in the province, paternalistic tribal practices and traditions in Kasai Occidental weaken women’s rights and contribute to their poverty. Nearly a quarter of girls in the Kasais have given birth by age 19 (MPSMRM et al. 2014). Key informants from the province said that some

girls are married at age 13 or 14 (USAID/DRC 2014b). Tradition requires that the dowry of the first female child be paid to one of her uncles from the father's family. As such, the uncle decides when a girl must marry, while the girl's mother has no say in that decision or on how the resources from the dowry may be spent, such as for household needs. Moreover, if the girl refuses to marry when the uncle chooses, her father can be forced to divorce her mother (USAID/DRC 2014b). Given the pressure to marry early, very few girls continue their education past primary school and illiteracy rates and educational attainment among women in Kasai Occidental are the worst in DRC (see Figure 1 previously). This prevents them from participating in politics or finding formal employment.

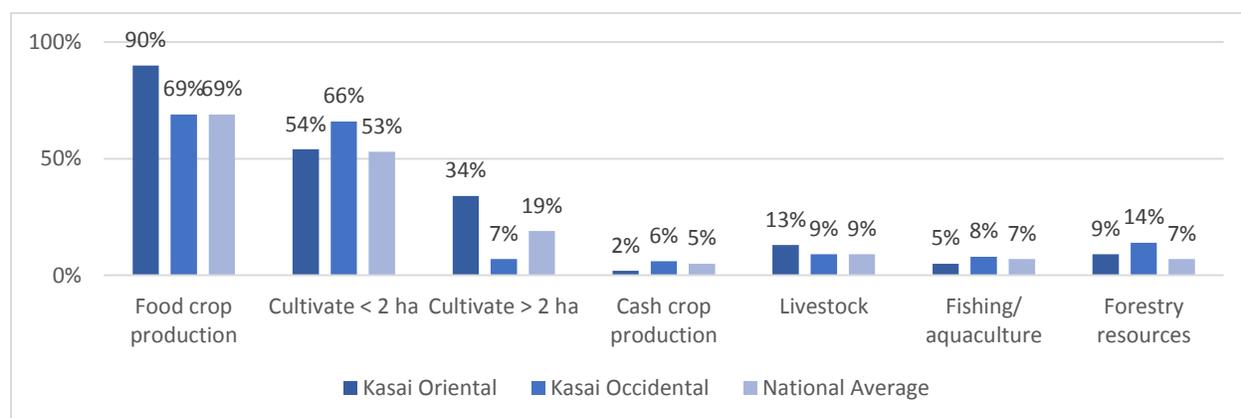
## 2. FOOD SECURITY CONTEXT

### 2.1 FOOD AVAILABILITY

#### PRODUCTION SYSTEMS, LEVELS, AND TRENDS

Agricultural production is an important livelihood for most households in the Kasais. Both provinces have an average household size of 6.6 people, roughly the national average, and a population density of 35/km<sup>2</sup> for Kasai Occidental and 38/km<sup>2</sup> for Kasai Oriental, compared to 28/km<sup>2</sup> for the entire country (World Food Programme [WFP] 2014). Kasai Oriental has the highest percentage of farming households (90%) nationally, and 34% of them farm on more than 2 hectares (see Figure 2). Kasai Oriental's high level of food insecurity despite significant land holdings is a paradox since this would normally imply higher household wealth status. Generally speaking, the relative abundance of fertile, arable land on vast plateaus offers diverse opportunities for farmers and pastoralists alike, especially given lower population densities in rural areas (Ministère du Plan 2005).

**Figure 2. Percentage of Households Citing Listed Agricultural Activities as One of Three Main Livelihood Activities Undertaken**



Source: WFP 2014

The two provinces have the highest percentage of households who own the land they cultivate, greater than 95%, although this land is not state-titled (WFP 2014). Land tenure is governed primarily by customary law, while state-issued land titles for most rural areas in DRC are more limited (MINAGRI 2009). A survey carried out in Kasai Oriental found that 93.5% of land allocated in Tshilenge and Kabinda districts are governed by customary law compared to 69% in Sankuru district (Ministère du Plan 2005). Most plantations and agro-industries are registered under a concessionary procedure with the state.<sup>2</sup> However, land disputes are common due to the contradictions between customary and formal law. Provincial authorities in Kasai Occidental and Kasai Oriental noted that land disputes take up nearly half of their time (MINAGRI 2010). Women in the Kasais are extremely active in the agricultural sector—55.7% in Kasai Oriental and 56.2% in Kasai Occidental—but they do not own land due to inheritance traditions (MPSMRM et al. 2014). Within the agriculture sector, women are primarily engaged in subsistence agriculture, small trade, transportation, processing of products, preparing food, and collecting

<sup>2</sup> After securing approval from traditional leaders, the applicant must apply for a grant at the land registry department. The land must be surveyed to assess the nature of the concession and dictate the manner in which current residents on the land will be compensated, either individually or collectively. This procedure effectively transfers the parcel from customary law to titled land approved by the state (Ministère du Plan 2005, p. 31).

water. Men are involved in land preparation, hunting, fishing, shelter construction/repairs, and producing cash crops. In some cases, women's associations have appealed to provincial governors to farm parcels of land cooperatively. For example, a women's group in Mbuji Mayi called APESKO collectively produces maize and cowpea seed for sale in the province (ibid). Given that women are unable to own or inherit land from a customary standpoint, it is likely that they are being affected by some applications for new land concessions. The extent to which this is happening in the Kasais is unclear.

There are two rainy seasons per year in the Kasais, which last from approximately January to April and September through December. The relatively wetter northern portion of the Kasais have a longer first rainy season, which ends between May and July (Ministère du Plan 2005). The Kasais' diverse agro-ecological zones allow a broad spectrum of crops to be grown in the provinces. In Kasai Occidental, farmers produce maize, cassava, peanuts, sweet potatoes, beans, legumes, pineapples, palm oil, and coffee. The predominant crops in Kasai Oriental include cassava, maize, beans, *niébé* (cowpeas), bananas, rice, sweet potatoes, yams, peanuts, and millet. Maize is the most important crop produced in the Kasais and it is traded with other provinces. The central part of Kasai Oriental, such as Tshilenge, Katanda, Kabinda, and Lubao territories, have some of the best soil and are ideal for seed multiplication (Ministère du Plan 2005). As a general rule, farmers living near forest zones, such as in the northern portion of the Kasais, tend to grow roots and tubers as well as perennial cash crops such as coffee, cocoa, and rubber (Ministère du Plan 2005). Savanna farmers, such as in the southern parts of the Kasais, grow mostly grain and tend livestock (including larger ruminants) (Ajayi 1985). Trade maps show that Kasai Occidental's most important intra-regionally traded commodities include palm oil, peanuts, beans, and bananas. Kasai Oriental has a similar list with the addition of rice. Most rice consumed in DRC is imported, but some of Kasai Oriental's rice is sold in Kinshasa (Mathys and Remancus 2010).

Part of northern Kasai Occidental is occupied by the world's largest tropical rainforest reserve, Salonga National Park, which is famous for its diverse wildlife and the endangered bonobo primates who live in the southern portion of the reserve. Fourteen percent of the province's inhabitants depend on forestry resources for their livelihood (WFP 2014). A study of inhabitants living near the park found that up to 40% of household income is derived from collecting and selling caterpillars, mushrooms, kola nuts, and forest fruits (Colom 2006). Deforestation for charcoal production (to be used as a source of cooking fuel) is a significant problem on the peripheral zones of protected forests and throughout the Kasais (MINAGRI 2010). Demand for charcoal is driven by concentrated populations in Kananga and Mbuji Mayi.

Constraints to agricultural production and marketing are similar in the two Kasais. Some of the most pressing issues that farmers face related to production include a lack of quality seeds, fertilizer, pesticide, tools, agricultural finance, and water for irrigation (USAID/DRC 2014a, 2014b). Although rainfall levels are quite good in the Kasais, erratic rainfall patterns in recent years have altered the traditional planting calendar. Land is also plentiful in rural areas of the Kasais due to urbanization. However, there is a significant agricultural labor shortage, thus few farmers can plant more than half a hectare. In terms of marketing, the nearly complete lack of roads and frequent breakdown of the rail line due to repeated derailments means that many farmers cannot get their goods to market. River transport is the most common means of transport, especially on the Lulua and Sankuru rivers, which pass near the major towns of Kananga and Mbuji Mayi. According to a recent survey conducted by the Belgian Cooperation in Kasai Oriental, only 9% of 700 households interviewed had been visited by an agricultural extension agent from MINAGRI in the past year (Belgian Development Agency 2015a). Provincial authorities interviewed by USAID/DRC noted that although the country's Agriculture and Rural Development Sector Strategy (Strategie Sectorielle de l'Agriculture et du Developpement Rural [SSADR]) requires that

smallholder farmers be provided agricultural extension services, they do not receive such support because the sector is underfunded and lacks extension agents and means of transport (USAID/DRC 2014a). The Belgian Cooperation donated 19 motorcycles to provincial authorities in Kasai Oriental in January 2015 for agricultural inspectors and extension agents (Ngoyi Vincent 2015). In the Kasais there is also a lack of financing in the agricultural sector due to the dearth of banking institutions, the high risk associated with unguaranteed loans to farmers, and the poor overall profitability of smallholder farming (MINAGRI 2010).

A household economy analysis undertaken by Save the Children in Kabinda District, Kasai Oriental found that better-off households tended to have access to both labor and finances to invest in improved agricultural inputs and commodities with higher returns, such as palm trees, animals, and pulses (Save the Children UK 2010). Less than 5% of farmers in Kasai Oriental accessed improved seed from the Institute National pour l'Etude et la Recherche Agronomiques (INERA), the government's agricultural research center (Belgian Development Agency 2015). Most farmers in Kasai Oriental either buy seed from the market (72%) or use their own seed stock (61%) (ibid). The lack of passable roads and crumbling rail infrastructure are also significant constraints to farmers' ability to bring goods to markets and to access improved inputs.

As in other parts of DRC, women play an important role in agricultural production in the Kasais but receive few of the benefits. The Ministry of Agriculture (MINAGRI) estimates that 85% of women nationally are engaged in agriculture, although they often farm on the least productive land (Mathys and Remancus 2010). Focus groups interviewed by USAID in Kasai Occidental in 2014 asserted that in several instances when inputs or tools are distributed, women are often overlooked. During a recent distribution of tractors by the government in Kananga, no women were among the recipients. On the rare occasion when farmers receive extension services from the government, such trainings are oriented toward men. Further, it is not uncommon for traditional chiefs to sell land on which women live and which they farm to outside interests without their consent. Widows are especially vulnerable to such occurrences.

All provinces in DRC are slated to receive agriculture support through domestic and external funds via the government's National Agricultural Investment Plan (NAIP). The plan accounts for the agriculture sector's strengths, needs, achievements, and investment and operational gaps from 2013–2020 (MINAGRI 2013). The plan includes elements to improve agricultural production through extension, research, and profitable value chains for smallholder farmers. Out of the projected, partially funded budget of \$5.7 billion over 8 years, Kasai Occidental and Kasai Oriental were allocated \$349.6 million and \$372.5 million, respectively, or 12.6% of the national budget (MINAGRI 2013).

## **LIVESTOCK**

The broad savanna in the southern parts of the Kasais is ideal for agro-pastoralism, and most households have some type of livestock. Of households interviewed for WFP's Comprehensive Food Security Vulnerability Analysis (CFSVA), 13% and 9% in Kasai Oriental and Kasai Occidental, respectively, reported livestock production as one of their three most important livelihood activities (WFP 2014). Households reported that they had poultry, goats, and pigs, while a minority had cattle. Provincial authorities from Kasai Occidental noted that cattle are present in Luiza, Tshikapa, Luebo, Dibaya, Kazumba, and Ilebo territories (USAID/DRC 2014b). Despite the potential for expanding cattle production given low population density and a vast supply of forage on the savannas, few households have the means to buy or manage a herd. In 2012, a large outbreak of ovine rinderpest (PPR) affected goats in Bandundu Province bordering Kasai Occidental (Long 2012). The unregulated movement of

livestock across provincial borders and lack of quarantine infrastructure contributes to the inability to contain animal disease outbreaks when they arise. Civil society representatives from Kasai Oriental said agro-pastoralists do not have access to veterinarians or animal vaccines in the province and mortality rates of poultry and other livestock are quite high as a result (USAID/DRC 2014b). However, the NAIP includes provisions to enhance animal health through veterinary and vaccination coverage, animal traction, marketing, breed diversification, and processing. Ostensibly, this effort would be led by the National Program for Livestock Development (PRONADEF).

## **FISHING AND AQUACULTURE**

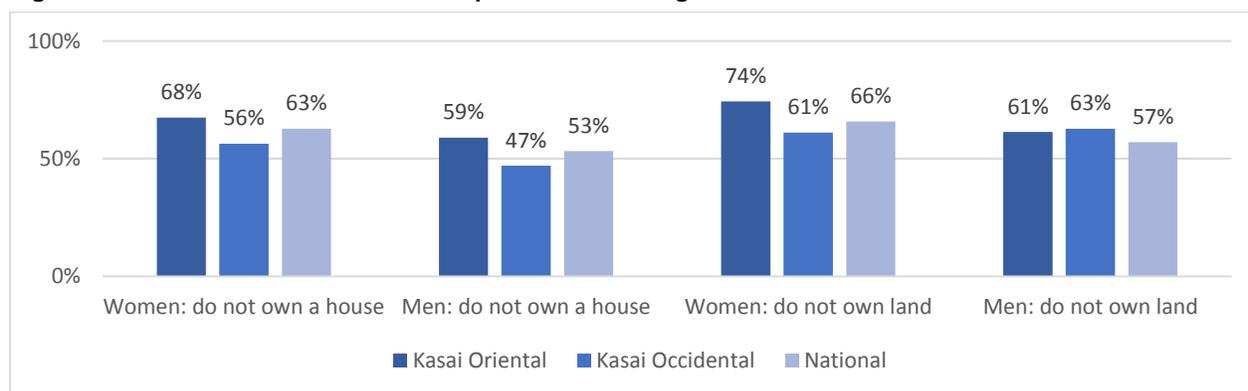
Fresh or dried/smoked fish is used in many national dishes daily throughout DRC. Fish also tends to be a more widely available protein source than meat and poultry (MINAGRI 2009). Fishermen in the Kasais depend on the Kasai, Sankuru, Lulua, Lukeni, and Lubilash rivers and some lakes to fish. An ongoing research project on the Lulua River in Kasai Occidental (carried out by le Département de Biologie de l'Université de Kinshasa since 2007) identified over 50 fish species (ibid). Inhabitants of Kasai Occidental are slightly more dependent on fishing, with 8% of households identifying it as one of their three primary livelihoods, compared to 5% in Kasai Oriental (WFP 2014). MINAGRI estimates that only 10–30% of those engaged in fishing do this full time as their only livelihood (MINAGRI 2009). Fishermen associations are active in the territories of Ilebo, Mwaka, and Dekese and the city of Kananga in Kasai Occidental (USAID/DRC 2014b). Unfortunately, evidence shows that the largest share of the poorest households nationwide can be found among fishermen (70%) (WFP 2014). However, while their income levels are low, they are relatively more food secure because they tend to have the most diverse diets due to the consumption of fish and because many also engage in farming (ibid).

According to a market survey, fresh fish prices in Kasai Oriental were the highest in the country (US\$5.50/kg) and lower than the national average in Kasai Occidental (US\$2.70/kg) (MINAGRI 2009). In both provinces, prices for smoked, dried, and salted fish were below the national average (MINAGRI 2009). Artisanal fishermen working alone or in a cooperative lack access to materials, knowledge of improved fishing techniques, credit, and markets (MINAGRI 2009). Fish catches are transported via motorcycle/vehicles (where feasible), boat, airplane, and rail. Kasai Oriental has some rail access, but its current functionality is unclear. The poor condition of the roads impedes access to more lucrative markets in Kananga and Mbuji Mayi. DRC, with an annual fish catch far below its potential. The Ministry of Environment's Service National pour le Développement des Pêches (SENADEP) is responsible for fisheries management and is supposed to have regional coordinators in the Kasais.

## **GENDER AND ASSET OWNERSHIP**

While there is limited information on actual asset ownership by men and women, the 2013–14 DRC DHS survey does provide some useful insights in terms of reported asset ownership. Figure 3 shows that at least about half of women and men interviewed reported not owning a house or land. Not shown in the graph is the age-related pattern of asset ownership at the national level. The majority (over 88%) of people 15–19 years reported not owning a house or land whereas less than half of those who are 45–49 years reported not owning a house or land. This pattern is likely the same in the Kasais.

**Figure 3. Women and Men 15–49 Who Reported Not Owning a House or Land**



Source: DRC DHS 2013–2014 (MPSMRM et al. 2014)

## 2.2 FOOD ACCESSIBILITY

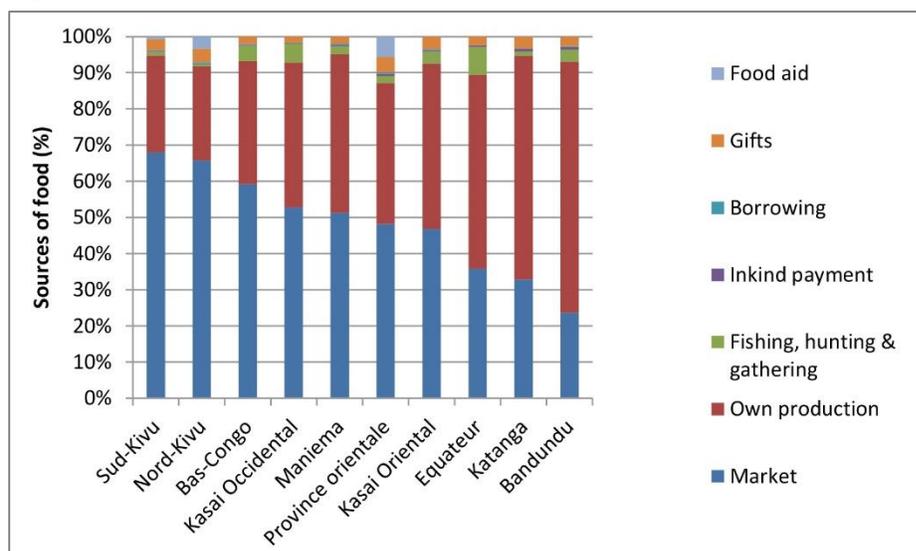
Food access is ensured when people have sufficient resources to obtain food (e.g., via their own production, purchase, or barter) of an appropriate quantity and quality for a nutritious diet. This sub-section examines how households in Kasai Occidental and Kasai Oriental obtain the food they consume and the reliability and sustainability of these sources.

### HOUSEHOLD FOOD ACCESS DETERMINANTS, TRENDS, AND VARIATION

At a national level, more than half (about 51%) of the food households consume in DRC is purchased, while the remainder is sourced from their own production (about 42%), borrowing/gifts/food aid (about 5%), and fishing and other hunting/gathering (about 3%) (WFP 2014). By contrast, when accounting for socioeconomic status, households in poorer wealth terciles get more than half of the food they consume from their own production, and the majority of the remainder is purchased (ibid). While these proportions do not account for potential intra-annual (seasonal) variations in how these households obtain their food, they do indicate the primacy of production and purchases as major household food sources nationally. The same overall trend holds in both Kasais, where half of household food is purchased and about 40% comes from households’ own production (see Figure 4).

Income from agriculture and agriculture-related activities (e.g., fishing, livestock, produce sales) accounts for one-half to three-quarters of household income in all provinces in DRC (WFP 2014). As mentioned in the previous sub-section, maize is an important crop that is widely marketed—about 11% and 16% of total national maize production comes from Kasai Occidental and Kasai Oriental, respectively. In addition, availability of grazing land in some areas of both provinces facilitates household production of livestock, as well as larger-scale cattle production in parts of Kasai Occidental (USAID/DRC 2014b). These production activities are complemented in parts of both provinces by employment in artisanal mining and industrial extraction of minerals (in particular, diamonds) in Kasai Oriental, which is discussed in more detail in the following sub-section (USAID/DRC 2014a).

**Figure 4. Sources of Food by Province**



Source: WFP 2014

Despite the primacy of agricultural production as a food and income source among the majority of households in the Kasais, myriad sources consulted during this desk review indicated that these households lack consistent sources of and/or access to agricultural inputs, including traditional and improved seed varieties, pesticides and fertilizers, equipment, and reliable access to water for irrigation (USAID/DRC 2014a). They also lack access to formal and informal financial services to facilitate investment in such inputs. These production constraints, combined with poor soil quality in some areas, a lack of knowledge of improved production skills and techniques, and limited support capacities of local agricultural extension agents, impede households from maximizing yields on the land they can cultivate (ibid).<sup>3</sup> Despite the provinces’ contribution to the national supply of some key crops, demand for crops across the Kasais often outstrips supply.<sup>4</sup> In addition, limited storage availability and poor transport conditions constrain trade and lead to weak, poorly integrated markets that favor neither the producer (who must sell to whatever buyers venture to their area at whatever price buyers set) nor the consumer (who faces sometimes significant transactional costs, due in part to poor transport networks, on top of significant seasonal price fluctuations).

Such production and post-production challenges constrain the amount of crops households can consume themselves and the amount of income they can earn from production for other purchases. Moreover, representatives from provincial government and civil society in the Kasais repeatedly noted that embedded cultural norms related to gender marginalize women, limiting their decision-making role in household and productive activities—for example, in determining what food is produced for the household and what is procured for household consumption. This can constrain household food access, given the key roles women play in both of these spheres (USAID/DRC 2014a). Data from the 2013–14 DHS supports this perspective, indicating that only 24% of women in Kasai Oriental and Kasai

<sup>3</sup> The CFSVA indicates that while a majority of households engaged in agricultural production in the two provinces produced crops on less than 2 hectares of land (about 92% in Kasai Occidental and about 61% in Kasai Oriental), access to land for cultivation did not broadly appear to significantly affect households’ food security status in these specific areas (WFP 2014).

<sup>4</sup> For example, while the Kasais contribute about 10–16% to the aggregate national maize production, they account for 16–18% of aggregate national demand for the crop.

Occidental reported participating in discussions related to their own health, household purchases, and visiting relatives.

As noted, non-agricultural income sources that may facilitate food purchases in the Kasais include fishing and mineral exploitation/extraction (via artisanal mining in Kasai Occidental and both artisanal and industrial mining in Kasai Oriental). However, the potential contributions of these income sources to essential food and non-food purchases are decreasing in Kasai Oriental and small in Kasai Occidental (USAID/DRC 2014b), due to the decline in all types of mineral extraction in these areas, the relatively small scale of fishing activities, and the relative poverty of households engaging in fishing.

## **DIAMOND MINING AND OTHER MINERAL RESOURCES**

The Kasai provinces have sizable diamond deposits. Diamond production is an important livelihood for many households, but it has seen a steady decline over decades. Kasai Oriental, in particular, has been DRC's largest producer of diamonds, but few of its most prospective diamond opportunities have been explored systematically (Diamond Empowerment Fund 2015). Most diamond production has occurred on a small scale by artisanal miners; relatively few areas use modern technology and production techniques (ibid). Industry experts also noted that fewer exploitable areas are available to the industry because of a new system of issuing mining permits to artisanal diamond producers, which account for the majority of DRC's rough diamond producers (Research and Markets 2014). As with many formerly productive sectors in DRC, its share of the world mining market has declined over the decades and saw a sharp decrease starting in the early 1990s (Prunier 2009). MIBA, the parastatal that managed the country's largest diamond concessions in Mbuji Mayi, produced 10 million carats at its peak in 1986. Production dropped to 6.5 million carats by 1996, less than 1 million carats by 2008, and had all but collapsed as of 2010 (ibid). In the 1980s, diamond purchasing companies such as De Beers (then a 20% shareholder in MIBA) had sales between US\$300–400 million per year, and other buyers, especially Lebanese traders who purchased diamonds from individual miners, had sales of about \$100 million per year (ibid). During the height of conflict in the country in the late 1990s, black market “conflict diamonds” flourished, until the introduction of the Kimberley Process, which banned their sale.<sup>5</sup> That said, industry experts estimate that about a third of the rough diamonds the DRC produces are smuggled out of the country (Research and Markets 2014). In addition, critics have argued that MIBA has been weakened by poor management, excessive taxes, theft by employees, and government predation to the point that it now operates largely in name only (Prunier 2009).

The contraction in the diamond market over the past decade has impacted the economy in the Kasais. Diamond production by MIBA slowed to a near halt due to cash flow problems, the global recession, and a sharp drop in sales of both consumer and industrial diamonds. In its 2014 annual report, De Beers noted that the most profitable and economically viable mines in Russia, Canada, Botswana, and India will take priority over mining operations in DRC in the next few years (De Beers 2014). Key informants from the government and civil society concurred that the sector's slowing has crippled both households who depend on artisanal mining or jobs at MIBA mines and farming households who have witnessed a drop in demand and market prices for food staples as former miners look elsewhere for work (USAID/DRC 2014a, 2014b).

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<sup>5</sup> The Kimberley Process is a joint initiative among governments, industry, and civil society to stem trade in conflict diamonds. The Process uses a certification scheme for rough diamonds in an effort to ensure that these purchases do not fund rebel movements (or their affiliates) seeking to undermine legitimate governments. More information is available at [www.kimberleyprocess.com](http://www.kimberleyprocess.com).

Apart from diamonds, provincial authorities in the Kasais note that there are other mineral resources extant in the provinces. Kasai Oriental has unexploited mineral reserves, including malachite (at Katende in Miabi territory), copper (at Mbuji Mayi, Basanga, and Lukula in Kabeya Kamuanga Territory), and iron (in the territories of Luilu and Kabeya Kamwanga). Kasai Occidental has seen discoveries of several precious metals, including gold, and alluvial diamonds in the rivers that have yet to be exploited. There may also be reserves of hydrocarbons in the north of the province, although this area borders Salongo National Park and is a protected, sensitive ecosystem (USAID/DRC 2014b).

## FOOD PRICES

In DRC, national and local food prices are influenced by several factors, including agricultural production levels and transport costs for locally produced and imported goods (constraints of which are discussed in the following sub-section), and season. Seasonal trends indicate that at the national level, prices for key staples such as maize and cassava flour and local rice (which are also staples in parts of the Kasais) typically decrease to their lowest levels after the first season harvest in August (when households' consumption of their own production is highest and the need to purchase food is lowest). These prices increase as households' need to complement their own production with purchases rises until second season harvests—which are typically smaller nationally—begin in February (see Figure 5) (WFP 2014).<sup>6</sup> While information on market price trends in the Kasais is limited, available data imply a similar seasonal pattern for food prices in Kasai Oriental's capital city market (see Figure 6).

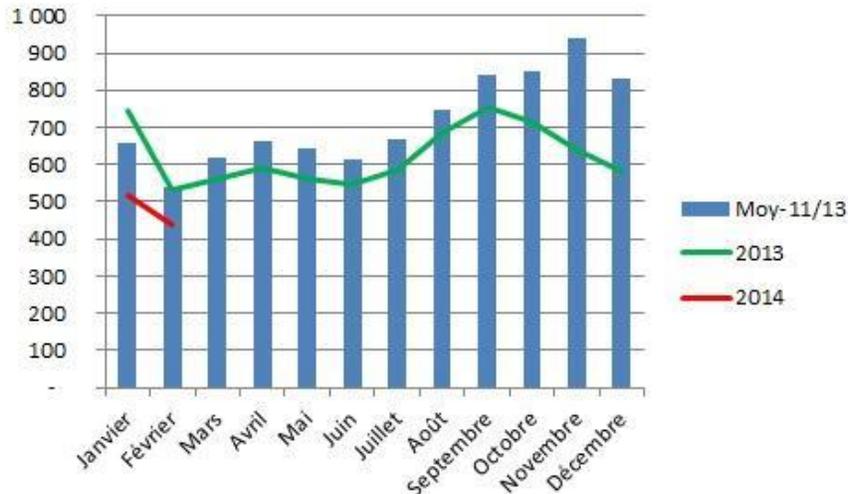
**Figure 5. Average National Monthly Seasonal Price Indices for Key Staple Foods and Fuel in DRC (2008–2013)**



Source: CFSVA 2011–12 (WFP 2014)

<sup>6</sup> While these price trends are broadly applicable nationally, significant variations are likely in areas that produce on unimodal (having one rainy season each year) rather than bimodal (having two rainy seasons each year) cycles. While maize harvests in the DRC's middle-south agro-ecological zone (where the Kasais are situated) are bimodal, caution should be used in applying these trends to these areas, given likely variations in production due to topography, the presence of microclimates, and other factors.

**Figure 6. Maize Flour Price Trends in Mbuji Mayi, Kasai Oriental, 2011–2014 (cubic foot/kg)\***



\* Note: Bars show average prices for 2011–2013.  
Source: WFP and FAO 2014

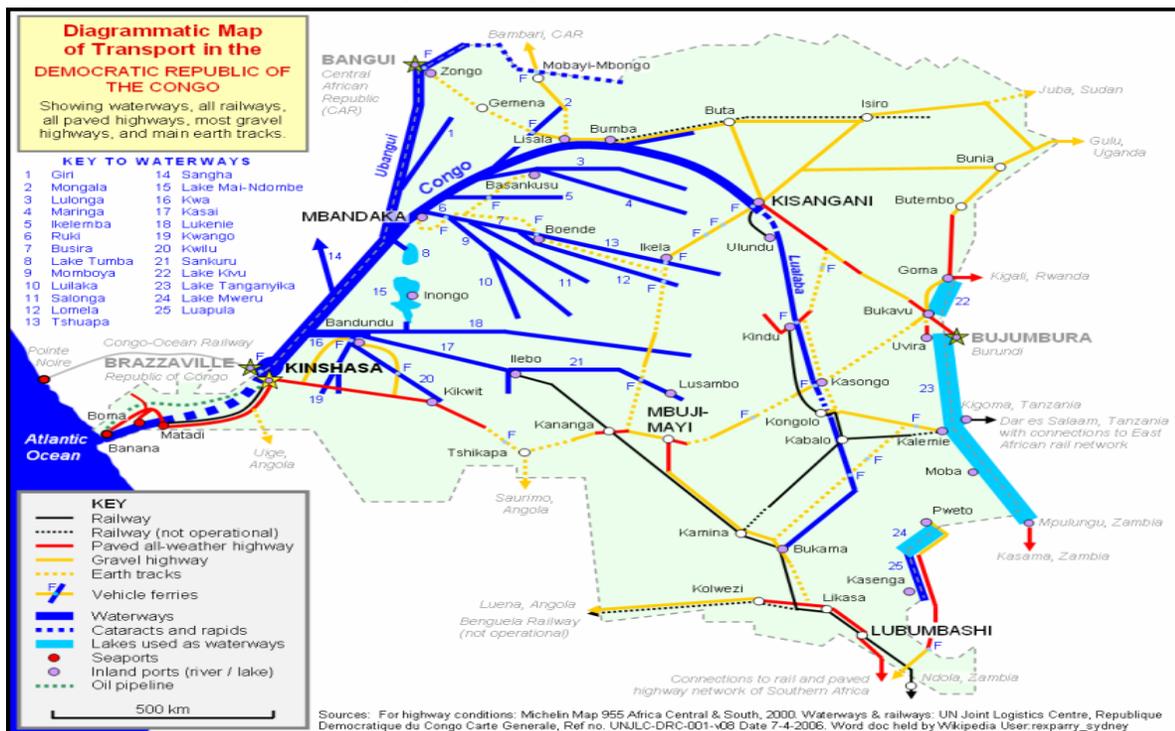
Constraints to agricultural production, limited consistent sources of non-agricultural income, and the relatively high costs of goods sourced outside of the isolated Kasai provinces stress the purchasing power of populations in these areas. This particularly affects less well-off populations, which compose more than half of the population in each province—almost 56% live below the poverty line in Kasai Occidental and over 60% in Kasai Oriental (USAID/DRC 2014a, 2014b). These challenges are compounded by a lack of availability of and access to affordable financing for agricultural and/or other enterprises and a lack of formal and vocational educational infrastructure and resources (including appropriately qualified teachers) to facilitate gender-equitable engagement in productive livelihoods (*ibid*).

Given these limitations, while agricultural production in the Kasais is relatively diverse, its scale and overall composition are insufficient to meet all household food needs. As a result, households must purchase foods that they cannot grow and/or store in sufficient quantities. However, the same constraints that limit production, when combined with dilapidated or non-existent infrastructure (the latter of which leads to higher prices for goods and unfavorable terms of trade for producers and consumers alike), also limit households’ ability to earn income from these production activities. At the same time, the structural factors needed to help people engage in more profitable and/or new non-agricultural livelihoods (e.g., equitable access to quality formal and vocational educational opportunities and formal and informal financing mechanisms) are largely lacking, all of which limits households’ food access.

## MARKET FUNCTIONALITY AND INTEGRATION

As noted, non-existent or dilapidated transport infrastructure limits the movement of goods and the overall integration of markets throughout much of the DRC, which in turn restricts the ability of producers of agricultural and non-agricultural goods to engage in efficient trade (USAID/Food for Peace 2010). The Kasais, both of which are isolated, face similar transport constraints (see Figure 7). For example, Kasai Occidental, with an area of 154,742 km<sup>2</sup>, has only 1,500 km of road, of which only 25 km are paved (USAID/DRC 2014b). Kasai Oriental, with an area of 173,110 km<sup>2</sup>, has only about 9,200 km of roads—539 km comprise the national highway, 2,741 km compose inter-provincial roads, and 5,937 km compose rural roads (MINAGRI 2010).

Figure 7. State and Nature of Transportation Systems in the DRC



Source: USAID 2012

Key informants from local governments and civil society organizations concurred that the lack of feeder roads throughout the Kasais was a significant impediment to farmers' ability to access inputs and sell their production beyond markets immediately surrounding the production areas (USAID/DRC 2014a, 2014b). These representatives further noted that the lack of roads in the provinces leaves many of the most fertile areas inaccessible (ibid). Sources consulted during this review indicate that the Belgian Cooperation recently began to rehabilitate 43 km of farm-to-market feeder roads north of Kasai Oriental's capital, Mbuji Mayi (Ngoyi Vincent 2014a). And, while other stakeholders are engaging in similar, smaller-scale rural (unpaved) road rehabilitation/construction initiatives, significant need remains.<sup>7</sup> In the medium term, the Chinese have ambitious plans to rehabilitate the Mbuji Mayi/Lubumbashi road, at an estimated cost of US\$500 million (Ngoyi Vincent 2014b).

In addition to roads, a century-old rail line traverses the Kasais, from Ilebo to Kananga and eastward to Lubumbashi, though the railway operates at a limited frequency due to lack of maintenance (USAID/DRC 2014a, 2014b) and its limited number of branch lines and operational locomotives and train cars provide poor overall coverage (MINAGRI 2010). In Kasai Occidental, despite the presence of the Kasai River (a major tributary to the Congo River and the country's second-longest river) and several other rivers, water transport also does not appreciably fill the goods transportation gap in the province due to poor maintenance of navigable waterways (e.g., lack of dredging and limited availability of functional

<sup>7</sup> Information on other road rehabilitation/maintenance/construction projects reported in Kasai Oriental include: 264 km of rural road in Sankuru and Kabinda districts by the MINAGRI's Rural Infrastructure Development Support (PADIR) project (MINAGRI, n.d.); 1,985 km of rural road across the province by the Belgian Cooperation's Program to Open Up Kasai Oriental (Belgian Development Agency 2015b); and 150 km of rural road each in Lomela and Katako Kombe territories by the Food and Agriculture Organization of the United Nations (FAO n.d.). Information on road rehabilitation/maintenance/construction projects reported in Kasai Occidental include: 133 km of national highway from Kananga to Tshikapa by the European Union-funded nongovernmental organization APROBES (APROBES n.d.); and 35 km of rural road from Kabue to Lwiza by APROBES (ibid).

docks and jetties) (MINAGRI 2010). When imports arrive at key river towns, such as Ilebo, they must then be sent via the poor road or rail networks or, in limited instances, airplanes, to other parts of the province or neighboring provinces.<sup>8</sup> Exports follow the same slow system in reverse. According to provincial government representatives, air transport is not frequently used because of its cost (USAID/DRC 2014a, 2014b).

While trade maps and other sources indicate that the Kasais' rely on both exports and imports (see Annex B), the relative isolation of these provinces contributes to high transaction costs for moving goods (USAID/Food for Peace 2010). High transaction costs appreciably constrain productive households' income-earning capacity and skew expenditure patterns (ibid). Isolation in Kasai Occidental is further compounded by simmering political tensions related to the expulsion of illegal Congolese miners from the diamond-rich Lunda Norte province in Angola since 2004 (Economist 2011). This has at times limited cross-border commerce at Kamako. Instead, goods are transported into and out of the province by a route through DRC that, as estimated by provincial government representatives, takes up to three times longer than a direct route across Kamako into Angola and onward to Angola's Lubito port and potential external markets (USAID/DRC 2014b).

The overall lack of market integration, largely due to infrastructure constraints that limit access to productive inputs and functional markets for produced goods, significantly limits household food access. As a corollary, limited dissemination of market price information (e.g., farm gate prices, retail prices) further disadvantages producers and consumers in their efforts to optimize decisions about how to access food. In the past, DRC's ministries of public health, agriculture, and planning—in partnership with WFP, UNICEF, the Food and Agriculture Organization of the United Nations (FAO), and the European Commission—have monitored indicators associated with food utilization, which also fed into the country's nutrition, food security, and early warning surveillance system (known as SNSAP). However, the extent to which these monitoring activities continue nationally and in the Kasais and the extent to which this or other surveillance systems include monitoring information associated with other food security pillars, such as market prices, remain unclear.

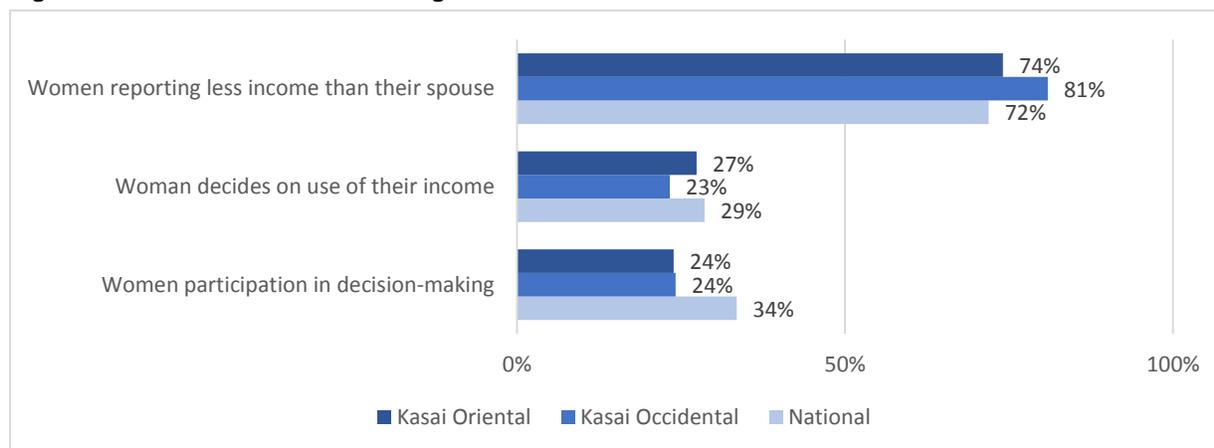
## **GENDER AND INCOME**

The majority of women across DRC and in the Kasais reported earning less than their spouses (see Figure 8). In addition, less than a third of women nationally and in the Kasais reported having control over use of their income. Importantly, only a quarter of women in the Kasais reported participating in household decisions (woman's own health, important household purchases, and visiting relatives)—the lowest among all the provinces—indicating the extent to which gender inequality is entrenched in these two areas. Women's limited control over their own income, their lack of participation in household decisions, and the extremely high fertility rate directly impacts women's control over food access and subsequently undermines their capacity to provide optimal care to prevent stunting and other poor outcomes in their children.

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<sup>8</sup> Challenges of water-based transport of food and non-food items are also significant in Kasai Occidental, where only portions of the province's rivers are navigable.

**Figure 8. Income and Decision-Making Indicators for Women 15–49**



Source: DRC DHS 2013–14 (MPSMRM et al. 2014)

## COPING CAPACITY AND RESILIENCE

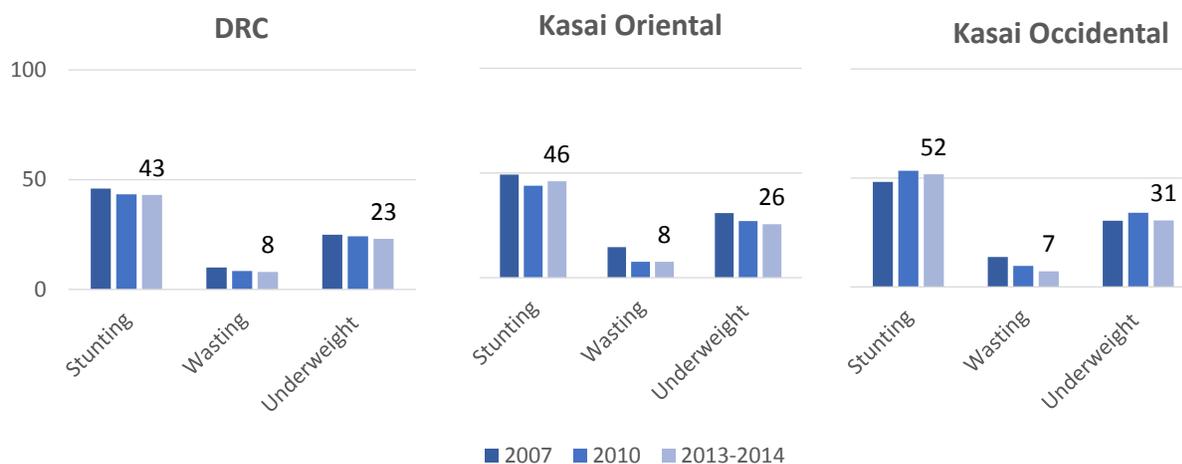
Household capacity to respond to shocks varies between the Kasais. WFP recently assessed nationwide coping strategies related to a household’s ability to access food during times of stress (WFP 2014). The assessment’s Coping Strategy Index (CSI) uses weighted values to determine the severity of coping strategies, such as reducing the number of meals per day. A high CSI score often reflects heightened exposure to food insecurity and limited resilience. Households in Kasai Oriental had some of the worst coping mechanism scores in DRC. In contrast, Kasai Occidental showed relatively strong coping capacity on par with the relatively wealthier Bas Congo, which includes Kinshasa and its environs, and was generally more food secure.

## 2.3 FOOD UTILIZATION AND HEALTH

### CHILD HEALTH AND NUTRITIONAL STATUS

**Trends in child health and nutritional status.** The health and nutritional status of children in DRC has historically been poor, and despite public health efforts in recent years, child health in DRC remains suboptimal. The mortality rate for children under 5 years of age in DRC is the eighth-worst globally (UNICEF 2014). Kasai Occidental and Kasai Oriental have the second- and fourth-highest under-5 mortality rates among the country’s provinces. The poor nutritional status of children under 5 is an important contributor to these high mortality rates. As shown in Figure 9, the prevalence of stunting and underweight in the Kasais exceed national levels and the prevalence of stunting in the Kasais has remained virtually unchanged from 2007 through 2013–14. (Table 1 at the end of this section provides further data on child health and nutritional status from the DHS, nationally and in the Kasais.)

**Figure 9. Trends in Percentages of Stunting, Wasting, and Underweight in Children under 5**



Adapted from MPSMRM et al. 2014

Malnutrition among children under 5 in DRC often begins in utero due to poor maternal nutritional status. Stunting and underweight begin to increase from 6–8 months at the national level, rising steadily until the age of 2 years. This is also likely the case in the Kasai provinces, suggesting that efforts to increase exclusive breastfeeding and improve complementary feeding practices in the first 2 years of life are crucial to prevent stunting and underweight in this age range. The extent to which mothers can provide optimum care in terms of improved infant and young child feeding practices is a challenge in the Kasais particularly given the exceedingly high total fertility rate, which is higher for both provinces than the national rate. These high rates leave women stretched in terms of household and caring responsibilities and result in limited time to provide each vulnerable under-2 child with optimum care and feeding.

Poor nutritional status of children under 5 in the Kasais raises the risk of mortality, illness and infections, delayed physical development, cognitive deficits, and delayed school entry and poorer school performance. Reducing and preventing malnutrition during the first 1,000 days (from pregnancy through the first 2 years of a child’s life) is critical, as this is a period of rapid physical and mental growth and is a window of opportunity during which interventions to prevent malnutrition can avert lifelong adverse health, education, and productivity consequences. Unfortunately few nutrition services are available to these children throughout the country, especially in remote provinces with poor infrastructure such as the Kasais.

In 2002, DRC adopted a national nutrition policy (Politique Nationale de Nutrition) to help end the deterioration of its nutritional situation. This policy, revised in 2013, provides broad guidelines to combat all forms of malnutrition. Based on the policy, the national nutrition program (PRONANUT) first developed a 5-year nutrition plan (2001–2005), then a 3-year plan in 2006, and finally a 2009–2015 plan (Plan Directeur de Développement de Nutrition en RDC) that outlines priority interventions, specific objectives, monitoring and evaluation indicators and targets, and a budget. The interventions in the latest plan are consistent with international recommendations for addressing malnutrition and with those proposed in this document.

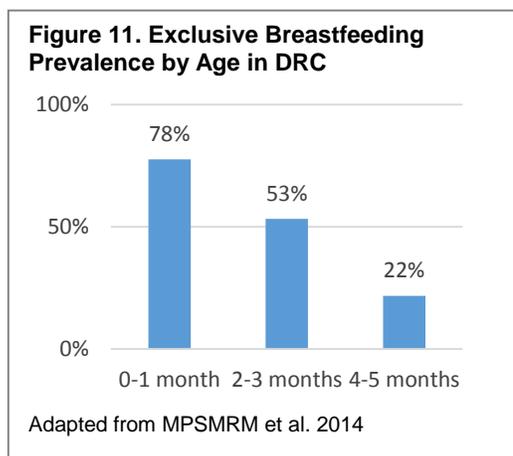
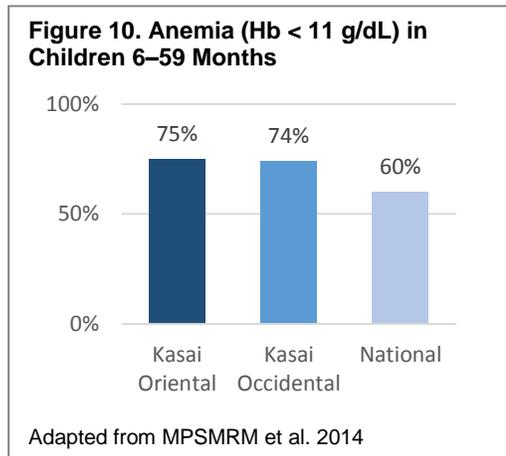
**Micronutrients.** Anemia, which influences a child’s brain development and school performance, is highly prevalent in children under 5 in DRC. Anemia is alarmingly high in Kasai Oriental and Kasai

Occidental (see Figure 10). Iron deficiency is a major contributor to anemia in children under 5 and micronutrient supplements such as sprinkles do not appear to be available nationally nor within the Kasais (MPSMRM et al. 2014). Malaria and hookworm, both of which are prevalent in the Kasais, are also significant contributors to the anemia prevalence. Over half of children in the Kasais have received deworming tablets in the past 6 months.

Vitamin A supplementation is an important public health measure to mitigate vitamin A deficiency and efforts by the government to promote vitamin A supplements have borne fruit, nationally and especially in the Kasais. Vitamin A deficiency is low in Kasai Oriental, possibly due to the consumption of red palm oil in this region, while more prevalent in Kasai Occidental (Ulimwengu et al. 2012). The majority of Congolese children live in households consuming iodized salt, however, it is difficult to draw conclusions on the extent of iodine deficiency in children, as the quality of iodization in the salt consumed by these households is unknown and it is also unknown whether children consume adequate quantities. In Kasai Oriental households consume less iodized salt which indicates that there may be a limited degree of iodine deficiency.

**Infant and young child feeding.** Adequate feeding practices during infancy are critical to ensure optimal nutritional status during the first 2 years of life and to prevent stunting and its long-term impacts. Breastfeeding in particular provides numerous nutritional, immunological, and cognitive benefits. The World Health Organization recommends exclusive breastfeeding for children under 6 months and appropriate feeding for children 6–23 months including continued breastfeeding, feeding solid/semi-solid food a minimum number of times per day, feeding a minimum number of food groups per day, continued feeding during and after illness, feeding appropriate quantities of food, providing food with appropriate consistency, and feeding nutrient-dense foods (Pan American Health Organization 2003).

Nationally and in the Kasais, almost every child under 5 is breastfed, but the median duration of exclusive breastfeeding is only 2.1 months and 1.2 months in Kasai Oriental and Occidental, respectively—far lower than the national median of 3.6 months. Figure 11 shows the rapid drop in exclusive breastfeeding nationally; by 4–5 months only 22% are exclusively breastfeeding. Only about 60% of children were put to the breast within 1 hour of birth in both provinces and in Kasai Occidental, 21% of infants are offered pre-lacteal feeds, the highest of any region in the country (MPSMRM et al. 2014). DRC has not seen much improvement in the area of breastfeeding. While the percentage of children who are exclusively breastfed rose from 36% in 2007 to 48% in 2013–14, the reason for the increase is unclear. Some of the change may be due to sampling differences between the two surveys. Other factors might be the intensive multi-pronged effort to increase exclusive breastfeeding in DRC or the possibility that mothers reported that they exclusively breastfed their children because they recognized it was a good practice. Given the alarmingly low prevalence of exclusive breastfeeding in



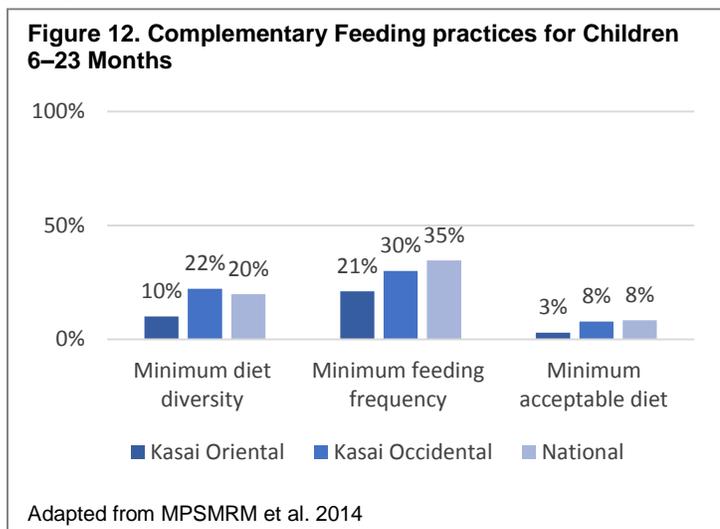
these provinces, continued efforts to improve this life-saving public health practice in the Kasais are warranted.

Nationally, few children 6–23 months have a minimum diet diversity, minimum feeding frequency, and minimally acceptable diets, and the diets of young children are dire in Kasai Oriental, virtually the lowest in all of DRC (see Figure 12). These suboptimal complementary feeding practices play a large role in the high malnutrition rates seen in the Kasais, as children need optimal nourishment to grow.

**Childhood illnesses.** The risk of stunting in DRC is not only a result of poor infant and young child feeding practices but is also a consequence of high disease burden from repeated illness such as diarrhea, fever, and acute respiratory infections that particularly affect the youngest children. As reflected in the DRC DHS, among children under 5 in

Kasai Oriental and Occidental, about a quarter experienced a diarrheal episode in the 2 weeks before the survey (slightly higher than the national average) and less than 40% of caregivers of children who experienced a diarrheal episode in the prior 2 weeks sought advice or treatment from a health facility or health provider. Less than 5% received zinc supplements, which significantly reduces the severity and duration of diarrheal episodes and prevents subsequent episodes (Bhutta et al. 2008). This indicates that in these two provinces, and nationally, there is an opportunity to improve treatment of diarrhea in children by expanding access to zinc supplements or formulating oral rehydration therapy (ORT) with zinc.

Malaria is prevalent in Kasai Oriental and Occidental in about 30% of children under 5 and is the highest among the countries' provinces. Malaria impedes a child's development and contributes to the high rates of anemia seen in the Kasais. In recent years, malaria prevention seems to have been a priority public health action and the Kasais have seen an increase in the percentage of households that own at least one bed net (the majority of which are long-lasting insecticide-treated nets) and an increase in the proportion of children under 5 who slept under long-lasting insecticide-treated bed nets, as reported in the DHS.



**Table 1. Child Health and Nutritional Status**

	National	Kinshasa	Kasai Oriental	Kasai Occidental
<b>Prevalence of Malnutrition</b>				
% of children under 5 stunted (< -2 standard deviations [SD])	42.7	17.3	46.1	51.7
% of children under 5 underweight (< -2 SD)	22.6	5.5	25.6	30.5
% of children under 5 wasted (< -2 SD)	7.9	3.5	7.6	7.2
<b>Anemia and Micronutrient Nutrition</b>				
Anemia (Hb < 11 g/dL) (6–59 months)	59.8	57.0	75.0	73.8
Received deworming treatment in the past 6 months (6–59 months)	60.6	84.7	58.3	61.2
Living in a house with iodized salt (6–59 months)	92.1	99.0	75.1	94.6
Received vitamin A supplement in the past 6 months (6–59 months)	70.4	90.6	65.4	74.0

	National	Kinshasa	Kasai Oriental	Kasai Occidental
<b>Nutrient-Rich Food Consumption (6–23 months)</b>				
% of children consuming iron-rich foods (6–23 months) in the past 24 hours	52.0	67.4	34.9	40.4
% of children consuming vitamin A-rich foods in the past 24 hours (6–23 months)	81.8	77.3	76.2	85.5
<b>Breastfeeding Practices</b>				
% of exclusive breastfeeding through 6 months†	37.0	22.7	45.6	29.9
Median duration (months) of exclusive breastfeeding	3.6	1.3	2.1	1.2
<i>Among children born in the 2 years preceding the survey</i>				
% who were breastfed	98.2	98.4	98.8	98.6
% who were put to the breast within 1 hour of birth	51.9	51.3	60.0	60.1
Among children born in the 2 years preceding the survey who were breastfed, % who received pre-lacteal feeds	10.5	20.8	7.8	21.1
<b>Complementary Feeding Practices among All Children 6–23 Months (Breastfed and Non-Breastfed)</b>				
% with minimum diet diversity	19.9	31.8	10.1	22.2
% with minimum feeding frequency	34.6	29.5	21.1	30.0
% with minimum acceptable diet	8.4	11.3	2.9	7.9
<b>Illness Prevalence and Prevention</b>				
% of children 12–23 months who received immunizations	45.3	67.7	36.6	42.7
% of children under 5 who had diarrhea in the 2 weeks preceding the survey	16.8	18.8	19.9	24.1
% of children under 5 with diarrhea; advice or treatment was sought from a health facility or provider	39.0	37.9	32.4	37.3
Among children under 5 who had diarrhea in the 2 weeks preceding the survey, % who received oral rehydration therapy	39.1	39.4	38.4	45.6
Among children under 5 who had diarrhea in the 2 weeks preceding the survey, % who received zinc supplements	2.4	3.0	2.2	3.7
% of children under 5 who had a fever in the 2 weeks preceding the survey	29.5	19.4	38.0	37.9
% of children under 5 with fever; advice or treatment was sought from a health facility or provider	39.9	48.7	40.1	33.9
% of children under 5 who had an acute respiratory infection in the 2 weeks preceding the survey	6.8	2.5	8.9	4.8
% of children under 5 with acute respiratory infection; advice or treatment was sought from a health facility or provider	41.6	—	55.7	39.7
% of children 6–59 months who tested positive for malaria, diagnosed by blood smear	22.6	18.1	29.4	32.0
% of children under 5 who slept under a long-lasting insecticidal net the previous night before the interview	55.4	46.2	49.8	35.8
<b>Infant and Child Mortality (per 1,000 live births)</b>				
Under-5 child mortality	104	83	122	135
Child mortality (13–59 months)	49	36	63	68
Infant mortality (under 12 months)	58	50	63	72
Post-neonatal mortality (difference between neonatal mortality and infant mortality)	30	34	33	49
Neonatal mortality (within the first 28 days)	28	16	30	23

Source: DRC DHS 2013–14 (MPSMRM et al. 2014) and, when indicated with a †, DRC MICS 2010 (INS and UNICEF 2011)

## MATERNAL HEALTH AND NUTRITIONAL STATUS

Poor maternal nutrition, which is prevalent in DRC, contributes significantly to an intergenerational cycle of malnutrition and poverty. Table 2 at the end of this section provides data on maternal health and nutritional status from the DHS, nationally and in the Kasais. As shown in the table, 18% and 15% of women of childbearing age in Kasai Oriental and Kasai Occidental, respectively, are underweight (body

mass index [BMI] <18.5) and almost half of women of childbearing age in the Kasais are anemic. Among pregnant women in the Kasais, less than 1% reported taking iron supplements during their last pregnancy for at least the recommended 90 days, only about half reported receiving deworming tablets during their last pregnancy, and about half slept under a long-lasting insecticide-treated bed net the night before the DHS interview. Coverage of intermittent preventive treatment of malaria (two doses) in pregnancy in the two provinces is quite low (below 16%).

Pregnancy at a young age exacerbates the nutrition burden. In both Kasai provinces, almost a quarter of adolescent girls 15–19 years of age have given birth, and nationally by age 19, more than half have begun childbearing (MPSMRM et al. 2014). Adolescent pregnancy is associated with a 50% increased risk of stillbirths and neonatal deaths, and an increased risk of low birth weight, premature birth, asphyxia, and maternal mortality (Bhutta et al. 2013; WHO 2007). Reducing the adolescent fertility rate and delaying first pregnancies beyond adolescence will reduce the risk of low birth weight and stunting in their children and will allow these girls to grow to their full potential, protecting their own nutritional status over the long term, preventing stunting in their offspring, and improving their educational and economic status.

Nationally the total fertility rate (TFR) has increased from 6.3 in 2007 to 6.6 in 2013–14. In Kasai Oriental the TFR has decreased from 7.6 in 2007 to 7.3 in 2013–14, but in Kasai Occidental, the TFR has increased from 7.6 in 2007 to 8.2 in 2013–14, which is an alarming trend. The implication of the high fertility rates in these provinces are manifold; moreover, it is important to note that the ideal number of children women want in these two provinces mirrors the current TFR in the provinces (see Table 2), suggesting that women perceive they are valued for having many children. Access to family planning is low nationally and in the Kasais. Only 12% of women in Kasai Oriental use a contraceptive method, and only 4% are using a modern method. The situation is slightly better in Kasai Occidental, with 24% of women using a contraceptive method, but only 7% using a modern method (MPSMRM et al. 2014). The high fertility rate is likely outstripping households' ability to achieve food security. Any new programming activity in these two provinces that focuses on food security and nutrition will need to address the fertility issue; otherwise, it could erode any gains in food security and nutrition outcomes.

HIV is not a widespread problem in DRC or in Kasai Occidental, where less than 1% of men and women tested positive. It is slightly more prevalent in Kasai Oriental, with over 2% of women and over 1% of men testing positive. Adequate care and treatment for people living with HIV in the Kasais should be provided (including nutritional support) and prevention of mother-to-child transmission of HIV to infants should be promoted (MPSMRM et al. 2014).

Addressing the pressing health needs of mothers and children in the Kasais is a challenging task. According to the 2011–2015 national health plan, Kasai Oriental is divided into six health districts, with a total of 49 health zones, while a 2014 USAID trip report to the province divides it into five health districts with a total of 51 health zones (Ministère de la Santé Publique 2010 and USAID 2014a). Kasai Occidental, according to the 2011–2015 health plan, is divided into four health districts, with a total of 43 health zones, while the USAID 2014 trip report to the province mentions 44 health zones (Ministère de la Santé Publique 2010 and USAID 2014b). Each health zone is further divided into *aires de santé*, which are each supposed to have a fully functioning primary health care center. However, according to the USAID trip reports, the health system in both provinces suffers from major constraints, including a heavy disease and malnutrition burden; very poor health infrastructure (e.g., absence of or dilapidated state of hospitals, health centers, health posts, administrative buildings); frequent stock-outs of medicines and other pharmaceuticals (sometimes longer than 6 months) in public health facilities; a lack of health

promotional materials; a lack of transportation and other logistics to reach rural populations; and the advanced age of public servants in this sector, many of whom are past retirement age and/or need training to bring them up to speed with the latest medical developments (USAID 2014a, 2014b).

The USAID-funded Integrated Health Project (2011–2015), implemented by Management Sciences for Health (MSH) in 9 health zones in Kasai Occidental and 25 health zones in Kasai Oriental, aims to address some of these constraints and improve the population’s access to essential health and nutrition services (MSH 2014). In nutrition, the program provided counseling for women during antenatal and postnatal visits on early initiation of and exclusive breastfeeding and support groups to educate and counsel mothers on infant and young child feeding. It also supported the distribution of iron and folic acid to pregnant women and of vitamin A to children under 5 (Danaux and Shiner 2015). In addition, the program supports the treatment of severe acute malnutrition in the health zones it covers by helping with the transportation of ready-to-use therapeutic food (RUTF), F75, or F100 provided by UNICEF through PRONANUT to some of the project-assisted health facilities, coordinating with PRONANUT on monitoring program activities, and coordinating with PRONANUT on health training and education at the community level (Faye 2015). At the end of its fourth year, the program was on track to reach or exceed its targets in infant and young child feeding promotion, iron and folic acid distribution, and vitamin A distribution to children in Kasai Oriental but was a little further from targets in Kasai Occidental (Faye 2015). USAID is expected to issue a request for proposals for a similar program covering both Kasais as well as South Kivu and Katanga, which would run from June 2016 through June 2021. A draft statement of objectives for the program was published in August 2015. The new program would target facility-level and community-level primary health care platforms, with preventive and curative services including family planning and reproductive health; maternal and child health; malaria; tuberculosis; water, sanitation, and hygiene; and nutrition (USAID/DRC 2015).

**Table 2. Maternal Health and Nutrition**

	National	Kinshasa	Kasai Oriental	Kasai Occidental
Maternal mortality ratio (per 100,000 live births)	846	—	—	—
Total fertility rate (children per women)	6.6	4.2	7.3	8.2
Number of ideal children as reported by women age 15–49 years	6.1	4.5	8.0	7.6
Median age at first union (of women 20–49 years)	18.8	—	17.8	17.7
% of women 15–49 years in polygamous unions	22.1	8.2	30.8	32.7
Median age at first birth (of women 20–49 years)	19.9	—	19.4	19.4
% of women 15–19 years who have begun childbearing by 19	50.8	—	—	—
% of women 15–19 years who have begun childbearing	27.2	12.7	24.1	23.8
% of women 15–49 years who are undernourished (BMI < 18.5)	14.4	7.4	17.5	15.0
% of women 15–49 who are anemic (non-pregnant < 12.0 g/dL; pregnant < 11.0 g/dL)	38.4	46.7	40.9	46.9
% of women 15–49 years reporting having taken iron supplements for 90 days or more during their last pregnancy	4.7	18.0	0.4	0.3
% of women 15–49 years reporting having taken deworming tablets during their last pregnancy	55.9	86.3	48.7	51.1
% of women with a child born in the past 5 years given vitamin A supplements after birth of last child	26.6	39.8	20.9	22.0
% living in houses with iodized salt (among women with a child born in the previous 5 years)	92.3	99.0	75.8	94.3
% of pregnant women 15–49 years who slept under an long-lasting insecticidal net the previous night	59.7	38.4	55.0	44.8

	National	Kinshasa	Kasai Oriental	Kasai Occidental
% of women 15–49 years who gave birth in the preceding 2 years who reported receiving 2 doses of intermittent preventive treatment	14.3	15.1	6.3	15.2
Median number of months since preceding births (of women 15–49 years)	30.4	34.0	30.0	30.0
% of women 15–49 using any modern method of birth control	7.8	19.0	4.2	6.5
% of women in union reporting wanting to limit births	23.4	32.1	13.6	14.9
% of women 15–49 receiving antenatal care from a medically trained provider	99.1	96.4	80.5	88.6
% of births delivered by a medically trained provider	79.9	97.9	72.2	84.0

Source: DRC DHS 2013–14 (MPSMRM et al. 2014)

## GENDER AND NUTRITION

Gender inequality is pervasive in DRC and is a significant underlying factor that exacerbates food insecurity and malnutrition and as such is critical to address. One of the clearest manifestations of this relationship is the prevalence of early marriage and adolescent pregnancy among girls 15–19 years, which reflects prevailing gender norms that discriminate against women and girls and contribute significantly to the high prevalence of low birth weight and chronic undernutrition in their children. Nationally, a much greater number of women are married by the age of 19 (62%) compared to men (18%) (MPSMRM et al. 2014). In many respects the gender issues that exist nationally are magnified further in the Kasais; in almost every instance, gender indicators for the Kasais are worse compared to other provinces and the whole nation (see Table 3).

Gender inequality is reflected in several other key indicators. Maternal education is a key indicator of women’s empowerment, and children are less likely to be stunted if their mother had secondary education or higher than if their mother had no education. Women 15–49 years of age are much likelier than men in DRC to have no education, and this is also the case in Kasai Oriental and Kasai Occidental (MPSMRM et al. 2014).

Domestic violence is widely prevalent in DRC, as well as in the Kasais as reported in the most recent DHS. In Kasai Oriental, over half, and in Kasai Occidental, close to two-thirds of women reported having been victims of physical violence. Recent sexual violence is also common, with close to a quarter of women in the Kasais reporting having experienced it in the past 12 months. Often, the violence was perpetrated by their husbands/partners. Less than half of women who reported having experienced domestic violence spoke to anyone about it or sought help from anyone. In both provinces, a majority of men and women are of the opinion that the use of violence against women is an acceptable practice (even higher than the already high national prevalence). This reflects how deeply entrenched gender inequality and violence against women are, both nationally and especially in the Kasais; moreover, the fact that more women than men perceive violence against women to be acceptable demonstrates women’s deep acceptance of these norms. Addressing domestic violence is an important aspect of programs aiming to help women improve their own and their children’s nutritional status, as women who live in this context have virtually no control over aspects of their lives such as sexuality, fertility, income, and household decision-making power—all of which affect the number of children they have and their ability to both provide and care for them well.

**Table 3. Key Gender Indicators**

	National	Kinshasa	Kasai Oriental	Kasai Occidental
<b>Education</b>				
<i>Women 15–49 years</i>				
% who report no education	15.4	0.8	8.9	17.2
% who report completing secondary school	8.5	27.1	6.7	3.9
<i>Men 15–49 years</i>				
% who report no education	4.1	0.3	1.1	2.7
% who report completing secondary school	16.2	23.5	16.9	13.0
<b>Domestic violence</b>				
% of women 15–49 years who report use of violence against women is acceptable	74.8	64.1	87.2	85.2
% of men 15–49 years who report use of violence against women is acceptable	59.5	52.5	69.7	68.1
% of women 15–49 years who report their partner/spouse exhibits at least 3 controlling behaviors	44.7	40.4	54.8	49.4
% of women 15–49 years who report having experienced acts of physical violence against them from the age of 15	51.8	57.4	57.4	61.8
% of women 15–49 years who report having experienced physical violence against them in the past 12 months	27.2	20.7	30.8	35.4
% of women 15–49 years who report experiencing sexual violence in the past 12 months	16.3	5.6	20.3	23.5
% of women 15–49 years who report experiencing physical or sexual violence committed by their partner/spouse in the past 12 months	36.8	27.0	43.9	49.1
% of women 15–49 years who report experiencing any form of violence (physical, sexual, emotional)	57.4	57.1	67.3	68.4

Source: DRC DHS 2013–14 (MPSMRM et al. 2014)

## WATER, SANITATION, AND HYGIENE

Access to improved drinking water sources as well as to improved sanitation facilities nationally is relatively low (only about half of households have such access) (MPSMRM et al. 2014). In the Kasais, the water, sanitation, and hygiene infrastructure and situation is particularly dire, and is a significant contributor to the high prevalence of diarrhea, other morbidities, and malnutrition (see Table 4). Ensuring that children have a hygienic environment to live and play in is critical as recent evidence suggests that improving children’s diets can reduce stunting only by one-third and that other interventions, including those addressing water and sanitation issues, may be essential to reduce stunting further (Dewey and Adu-Afarwuah 2008). The unhygienic conditions in which children live, open defecation (which is common in the Kasais), and living near animals can lead to environmental enteric dysfunction (a subclinical disorder of the small intestine that creates inflammation in the gut and reduces absorption of nutrients), which is caused by ingesting large quantities of fecal bacteria (Humphrey 2009; Spears 2013).

Effectively preventing malnutrition in children under 2 in this context will depend on continued efforts to work with communities to ensure access to safe drinking water, hygienic sanitation facilities, and hygienic environments for children to play in. However, improving access to water, sanitation, and hygiene facilities alone will not be sufficient as behavior change to improve handwashing behaviors is also needed.

**Table 4. Water, Sanitation, and Hygiene**

	National	Kinshasa	Kasai Oriental	Kasai Occidental
% of households with access to improved drinking water*	46.5	88.8	43.0	12.4
Among households using unimproved water sources, % of households using POU (point-of-use) treatment*	2.1	2.0	0.2	1.3
% of households with access to improved (not shared) sanitation*	5.9	18.5	7.1	0.3
% of households practicing open defecation*	14.5	24.7	17.8	41.0
% of households with handwashing stations**	13.7	32.3	3.8	17.0
Among the households that have handwashing stations, % with soap and water**	24.4	45.8	39.5	10.8

Sources: \* DRC MICS 2010 (INS and UNICEF 2011) \*\* DRC DHS 2013–14 (MPSMRM et al. 2014)

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## ANNEX A. NEW PROVINCES BASED ON THE 2006 CONSTITUTION

LES 26 NOUVELLES PROVINCES DE LA RDC SELON LA CONSTITUTION DE 2006					
	*superficie		**population 2005		capitale
1. KINSHASA	9 965	km2	6 700 000	hab.	Kinshasa
2. KONGO-CENTRAL	53 920	km2	2 760 000	hab.	Matadi
3. KWANGO	89 974	km2	1 428 000	hab.	Kenge
4. KWILU	78 441	km2	3 637 000	hab.	Kikwit
5. MAÏ-NDOMBE	127 243	km2	1 261 000	hab.	Inongo
<i>TOTAL ex-BANDUNDU</i>	<i>295 658</i>	<i>km2</i>	<i>6 326 000</i>	<i>hab.</i>	<i>Bandundu</i>
6. EQUATEUR	103 902	km2	1 138 000	hab.	Mbandaka
7. TSHUAPA	132 957	km2	921 000	hab.	Boende
8. MONGALA	58 141	km2	1 255 000	hab.	Lisala
9. NORD-UBANGI	56 644	km2	1 037 000	hab.	Gbadolite
10. SUD-UBANGI	51 648	km2	1 920 000	hab.	Gemena
<i>TOTAL ex-EQUATEUR</i>	<i>403 292</i>	<i>km2</i>	<i>6 271 000</i>	<i>hab.</i>	<i>Mbandaka</i>
11. TSHOPO	199 567	km2	1 622 000	hab.	Kisangani
12. BAS-UELE	148 331	km2	686 000	hab.	Buta
13. HAUT-UELE	89 683	km2	1 198 000	hab.	Isiro
14. ITURI	65 658	km2	2 617 000	hab.	Bunia
<i>TOTAL ex-PROVINCE ORIENTALE</i>	<i>503 239</i>	<i>km2</i>	<i>6 123 000</i>	<i>hab.</i>	<i>Kisangani</i>
15. NORD-KIVU	59 483	km2	5 416 000	hab.	Goma
16. SUD-KIVU	65 130	km2	3 667 000	hab.	Bukavu
17. MANIEMA	132 250	km2	1 386 000	hab.	Kindu
18. TANGANICA	134 940	km2	1 835 000	hab.	Kalemie
19. HAUT-LOMAMI	108 204	km2	1 878 000	hab.	Kamina
20. HAUT-KATANGA	132 425	km2	2 928 000	hab.	Lubumbashi
21. LUALABA	121 308	km2	1 240 000	hab.	Kolwezi
<i>TOTAL ex-KATANGA</i>	<i>496 877</i>	<i>km2</i>	<i>7 881 000</i>	<i>hab.</i>	<i>Lubumbashi</i>
22. KASAÏ-ORIENTAL	9 545	km2	1 980 000	hab.	Mbuji-Mayi
23. LOMAMI	56 426	km2	1 501 000	hab.	Kabinda
24. SANKURU	104 331	km2	1 007 000	hab.	Lodja
<i>TOTAL ex-KASAÏ-ORIENTAL</i>	<i>170 302</i>	<i>km2</i>	<i>4 488 000</i>	<i>hab.</i>	<i>Mbuji-Mayi</i>
25. KASAÏ-CENTRAL	59 111	km2	2 053 000	hab.	Kananga
26. KASAÏ	95 631	km2	2 218 000	hab.	Luebo
<i>TOTAL ex-KASAÏ-OCCIDENTAL</i>	<i>154 742</i>	<i>km2</i>	<i>4 271 000</i>	<i>hab.</i>	<i>Kananga</i>
<b>RÉP. DÉMOCR. DU CONGO</b>	<b>2 344 858</b>	<b>km2</b>	<b>55 289 000</b>	<b>hab.</b>	<b>Kinshasa</b>

## ANNEX B. INTER-PROVINCIAL TRADE OF AGRICULTURAL GOODS IN DRC

	Beans	Palm Oil	Wheat Flour	Maize	Rice
<b>From Bandundu to:</b>					
Kinshasa		X		X	
Kasai Occidental		X		X	
Kasai Oriental		X		X	
Katanga		X			
<b>From Bas Congo to:</b>					
Kinshasa	X	X	X	X	
Bandundu	X		X		
Equateur			X		
Province Orientale					X
<b>From Equateur to:</b>					
Kinshasa	X	X		X	X
Province Orientale					X
<b>From Kasai Occidental to:</b>					
Kasai Oriental		X			
Katanga		X			
<b>From Kasai Oriental to:</b>					
Kinshasa					X
Kasai Occidental	X				X
Katanga	X	X			
Bandundu	X				X
<b>From Katanga to:</b>					
Kasai Oriental				X	
Kasai Occidental				X	
<b>From Maniema to:</b>					
Nord Kivu		X			X
Sud Kivu		X			X
Kasai Oriental		X		X	
Kasai Occidental		X		X	
Katanga		X		X	X
<b>From Nord Kivu to:</b>					
Maniema	X				
Kinshasa	X				
Equateur	X				
Sud Kivu	X				
<b>From Province Orientale to:</b>					
Kinshasa	X				X
Equateur	X				
Maniema	X				
Sud Kivu	X				
Nord Kivu		X			X

Source: USAID/Food for Peace 2010