

Comprehensive
Food Security and
Vulnerability Analysis
(CFSVA)

Democratic Republic of Congo



January 2014

Data collected in 2011-2012



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Programme**

DEMOCRATIC REPUBLIC OF CONGO
COMPREHENSIVE FOOD SECURITY AND VULNERABILITY ANALYSIS
(CFSVA)

Data collected from 2011-2012.
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2 EXECUTIVE SUMMARY

The United Nations agencies in the DRC have formulated the United Nations Development Assistance Framework (UNDAF) for the 2013-2017 periods. The DRC Government is committed to work with UN agencies to achieve the stated objectives in UNDAF, especially with respect to the main pillars of second growth and poverty reduction strategy paper (DSCR 2) that defines a wide range of priorities over the 2011-2015 periods. At the same time, WFP and other humanitarian organizations continue to meet the needs of households affected by food insecurity, malnutrition and hunger through their respective programs.

The majority of DRC population remains widely exposed to food insecurity, malnutrition and hunger despite the country's enormous agricultural potential. DRC is one of the few African countries with tremendous potential for sustainable agricultural development (millions hectares of potential cultivable land, a diversity of climates, an important hydrographic network, a fishery and important livestock potential). Instead, the DRC is classified among low-income food-deficit countries (LIFDCs). In terms of human development index, UNDP ranked the country the 187th out of the 187 countries listed in 2011. The food security situation remains precarious; the MICS 2010 survey reported that 57.8% of DRC people have poor or limited food consumption. The November 2012 CPI report estimated at 5.4 million the number of people in acute food crisis. According to IFPRI report in 2011, the global hunger index (GHI) of the DRC has increased by 63%, mainly due to the conflict and political instability. The results of the recent food security assessments conducted by WFP in the Eastern province, North and South Kivu, Kasai Occidental, Province orientale, Equateur, Maniema, and Katanga have shown that on average, more than 1/3 of households in the DRC have a poor or limited food consumption. Recent assessments conducted in the areas affected by the armed conflict in North Kivu, South Kivu, and Katanga indicates rates of global acute malnutrition above the 15 percent emergency thresholds in some areas.

In this context, an in-depth analysis of food security and vulnerability (CFSVA) is intended to provide a better understanding of food insecurity and vulnerability among rural households in a non-emergency setting throughout the country. Such understanding will guide the design of appropriate strategies to meet the needs of the people affected by food insecurity. The current analysis will also help guide interventions by the Government, the UN agencies including WFP and other humanitarian organizations. It will also help to update the database on food security used in the CFSVA conducted by WFP in 2007-2008.

The current CFSVA report mainly builds on the Food Security and Vulnerability Analysis household survey (as opposed to mixed-method survey, including anthropometric measurements, a community questionnaire, and a market questionnaire) designed and implemented in 2011-2012 by WFP in partnership with the Ministry of Agriculture, PRONANUT, INS, FAO, UNICEF, NGOs, national and international members of the food security cluster. The survey was conducted in 2011-2012 and covered 24884 rural households

in 10 provinces. A stratified and multi-stage sampling approach was used to provide estimates of a set of food and nutritional security indicators at the provincial and national levels.

This report includes specific findings on the number of food insecure and vulnerable people in the country, the geographic distribution of the food insecure and vulnerable groups, their characteristics, their capacity to manage shocks, and the driving forces of food insecurity and vulnerability. It includes additional findings from the Multiple Indicator Cluster Survey (MICS, 2010) and the Demographic and Health Survey (DHS, 2007).

The assessment of the state of household food security in the DRC starts with the analysis of household food consumption, which is based on the food consumption score and complemented by the household wealth and coping strategies.

Food consumption score (FCS): In this report, FCS is computed by grouping together food items for which consumption was assessed over a seven-day recall period. At national level, cereals are consumed at an average of 4.3 days a week with maize being the most frequently eaten. Tubers are consumed every day (6.5 days) with cassava being the most important item in the tuber group. Legumes and nuts are consumed 3.8 days a week, vegetables 5.7 days a week. Animal protein including animal products such as eggs is consumed 2.5 days a week, consumption of oil is high (6.1 days), while fruit and dairy products are hardly consumed (1.3 and 0.5 respectively).

The frequency of food consumption, as measured by the number of days the item was consumed in a week, varies by provinces. The number of days households living in Nord-Kivu, Sud-Kivu, and Equateur eat cereals is less than the national average. Consumption of cassava remains almost seven days a week across all provinces with exception of Bas-Congo (2.7 days) and Province orientale province (5.3 days). Consumption of legumes and nuts, source of vegetal protein are above the national average in only three provinces: Bandundu (5.1 days), Province orientale province (5.1 days), and Nord-Kivu (4.8 days). No significant difference has been found in the fish and meat consumption - important sources of animal protein. The same holds for vegetables, sources of vitamins. Milk/dairy products are only consumed in Bas-Congo for 2.1 days a week.

Household food security is classified according to a combination of three indicators: (i) the food consumption score (FCS), which divides households into three groups: poor, borderline and acceptable food consumption, (ii) the wealth index, which is based on asset ownership and housing conditions, and divides households into terciles, and (iii) the coping strategy index (CSI), which is an indicator of the severity of households' regular behavioral responses to food shortage and divides households into terciles.

By combining the three indicators above households are subsequently divided into three food security groups:

- Severely food insecure – i) households with poor food consumption and ii) households with borderline food consumption but in the lowest wealth tercile and in the most severe coping strategy index tercile;
- Moderately food insecure – i) the remaining households with borderline food consumption and ii) households with acceptable food consumption but in the most severe coping strategy index tercile;
- Food secure – the remaining households with acceptable food consumption.

Food insecure households in the DRC: How many are they? Where are they?

At the national level, 54% of the rural households (about 28 million people) were considered to be food insecure of which about 7.5 million people are severely affected. The province with the highest absolute number of food insecure people is Equateur because of its large rural population (7.5 million) combined with the relatively high proportion of food insecure households (60%). In addition to Equateur, the provinces with shares of food insecure households above the national average include Sud-Kivu (64%), Kasai Oriental (62%), Province orientale (58%) and Katanga (57%). Map 4 which presents food insecurity in the 149 territories, the administrative units below the province, gives more insight on spatial distribution of households most affected by food insecurity in the country.

Food insecure households in the DRC: Who are they?

- ***Livelihood activities:*** engaging in just one livelihood activity is most common in the DRC (55%), followed by two (30%). Having three livelihood activities was mentioned by 11% of households. The first most important income source for all livelihood groups provides at least 80% of the households' average annual income. Food crop farmers and agricultural wage laborers are the two groups that are most reliant on one single income activity contributing up to 90% to their overall annual income. The largest share of poorest households was found among fishermen (70%), followed by food crop farmers (57%), artisan (46%), and cash crop and livestock farmers (36%).

The ways households access their food differ by livelihoods. Market purchases are the dominant food source for overall household across all livelihoods (except the food crop producers and fishermen with respectively 50% and 48 % of their food source coming from own production); less than 40% of their food come from their own production.

At national level, notable difference was found across livelihoods in terms of food security status. Unsurprisingly, highest shares of food secure household were found among the fishermen (54%), and the salaried (49%). While at national level, agricultural wage labor was the livelihood with highest share of household falling into food insecure group, in Equateur province this livelihood was among the provinces with highest share of household being food secure. **After all, food insecurity is not necessarily related to the source of livelihood where**

the poor households are involved in. Further research by province is important to better understand the relationship between food insecurity and source of livelihood.

- **Household expenditure:** Non-food expenditures and food expenditures covering 22 food items and 8 food groups were calculated. At national level, 67% of households' income is spent on food. Expenditures on "meat, fish and egg" group is the largest food expenditure (20%) followed by cereals (16%), tubers (12%), legumes and nuts (7%), fats and oils (6%), and sweet (4%). Largest non-food expenditures are on health (6%), followed by education (5%), energy (5%), transport (4%), and alcohol and tabac (4%).

There are significant provincial differences especially on cereals and tubers expenditures patterns. Households living in Kasai Oriental and Bas-Congo devote the largest share of their food expenditures on cereals (36% and 32% respectively) but the smallest share on tubers (9% and 8% respectively) compared with Nord-Kivu where expenditure on tubers account for 29% with relatively small share of expenditures on cereals. This finding should be interpreted with cautious as **the difference may result from substitution patterns during lean and harvest seasons of the year.**

As expected, poor households spent a larger share of their income on food (72%) than rich households (62%). Similarly, **there is clear difference in the share of food expenditures between the severely food unsecure households (73%), the moderately food insecure households (68%) and the food secure households (66%).** The annual median and the average per capita food and non-food expenditures totaled 100 thousands CFs and 179 thousands CFs respectively. Surprisingly, share of food expenditures on meat and fish are higher among the poor households (35%), than the rich (25%). Similar distribution holds for the expenditures on fats and oils and sweets food group.

- **Wealth index:** it is a composite index, a proxy indicator for household wealth that complements income and expenditure information. The wealth index is based on non-income information including ownership of mobile phone and housing conditions (safe drinking water, improved roof material, and improved wall material) collected during the CFSVA2011-2012. At national level, most of the population is found in the two lowest wealth terciles (70%). The distribution of wealth across surveyed provinces shows that the provinces with the share of the poor households below the national average include Equateur (87%), Bandundu (80%), Kasai Oriental (73%), Kasai Occidental (65%) Katanga (63%) and Maniema (51%). Wealthier provinces include Bas-Congo, Sud-Kivu and Nord-Kivu with about less than 15% of households considered poor. These results are in line with the findings on poverty using the DHS 2007 (Macro International Inc., 2008) when considering only the rural areas. The wealth index distribution (tercile) is also consistent with the expenditure distribution derived from the same CFSVA 2011-12 data.

Wealth is not automatically a shield against food insecurity; it is not always right to assume that a poor household is automatically food insecure, after all, 47% of poor households were found to be food secure at national level, slightly higher than the percentage in the non-poor household (45%). Similarly, 55% of the richest households were found to be food insecure. This percentage is not different from those of the households in the poor and the middle tercile.

- **Other household characteristics:**

- Types of agricultural activities: Agriculture (including fishing) was found to generate income to 97% of households in rural DRC. Food crop farming was the most common among agricultural activities (69%), followed by livestock production (9%), fishing and forestry resources (7% respectively) and cash crop production (5%). Food crop production is a common livelihood activity for rural population across all eleven provinces. Fishing is more prevalent in Bandundu and Equateur.
- Access to land for cultivation: While access to land for cultivation is clearly an asset and potentially a sign of wealth, it does not appear to affect the Congolese food security in general and their food consumption in particular. While 72% of households with an adequate diet have access to land for cultivation, 70% of households with poor food consumption also do. Clearly, access to land does not mean much in itself; what matters is the way that land is accessed, its size, available inputs and source of labor, the level of market participation that influences the cultivator's wealth and food security status.
- Seventy two percent of all households interviewed reported that they had cultivated land during the agricultural season preceding the survey. Fifty two percent (53%) used less than 2 ha and 19% cultivated on more than 2 ha. Among rural households interviewed who cultivated land during the agricultural season preceding the survey, 86% cultivated their own land, 11% rented land and the rest accessed land through sharecropping. Land renting were most common in Bas-Congo, Province orientale province and Nord-Kivu.
- Overall mean household size is 6.8 members. At national level, the dependency ratio, which is an age-population ratio of those typically not in the labor force (people aged 0-13 and those aged 60 and over) and those typically in the labor force (people aged 14-59), is 1.2. Higher dependency ratio is observed among food insecure households.
- Sex of household head: Female and male headed households do not differ in their food security patterns, refuting common allegations that female-headed households are more likely to be food insecure than male-headed households (as in Ndobu and Sekhampu, 2013; Felker-Kantor and Wood, 2012; Fuwa, 2000). Again, differences appear when disaggregated by province. The same conclusion holds for the difference between the food consumption of elderly and non-elderly headed households.
- In line with previous research, the more educated the household head, the better is the household's food security status. While only 13% of household heads who attended primary school are found in the severely food insecure households, 41 % and 46% of them belong to the moderately food insecure and food secure households, respectively.

The above characteristics of the severely and moderately food insecure should not be used to conclude on causal relationships. Instead they are indications, tendencies and could be considered as targeting criteria for food or non-food interventions. The list of characteristics discussed above is not exhaustive, nor should each one of them be given equal weight across different situations and locations. Development of more refined geographic- and situation-specific targeting tools is crucial.

3 CFSVA OBJECTIVES AND METHODOLOGY

The overall objective of this CFSVA is to provide information on the food security, vulnerability to food security and nutritional status in DRC by:

- Analyzing the status of food insecure and vulnerable households in the context of the human, social, physical and natural capital.
- Identifying the various risks that households are exposed to and the coping mechanisms they employ.
- Evaluating the factors that determine food and nutrition security.

How to measure food security?

Food security' defines a situation in which all people at all times have physical and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life (FAO, 1996). Hence, food security has four main dimensions:

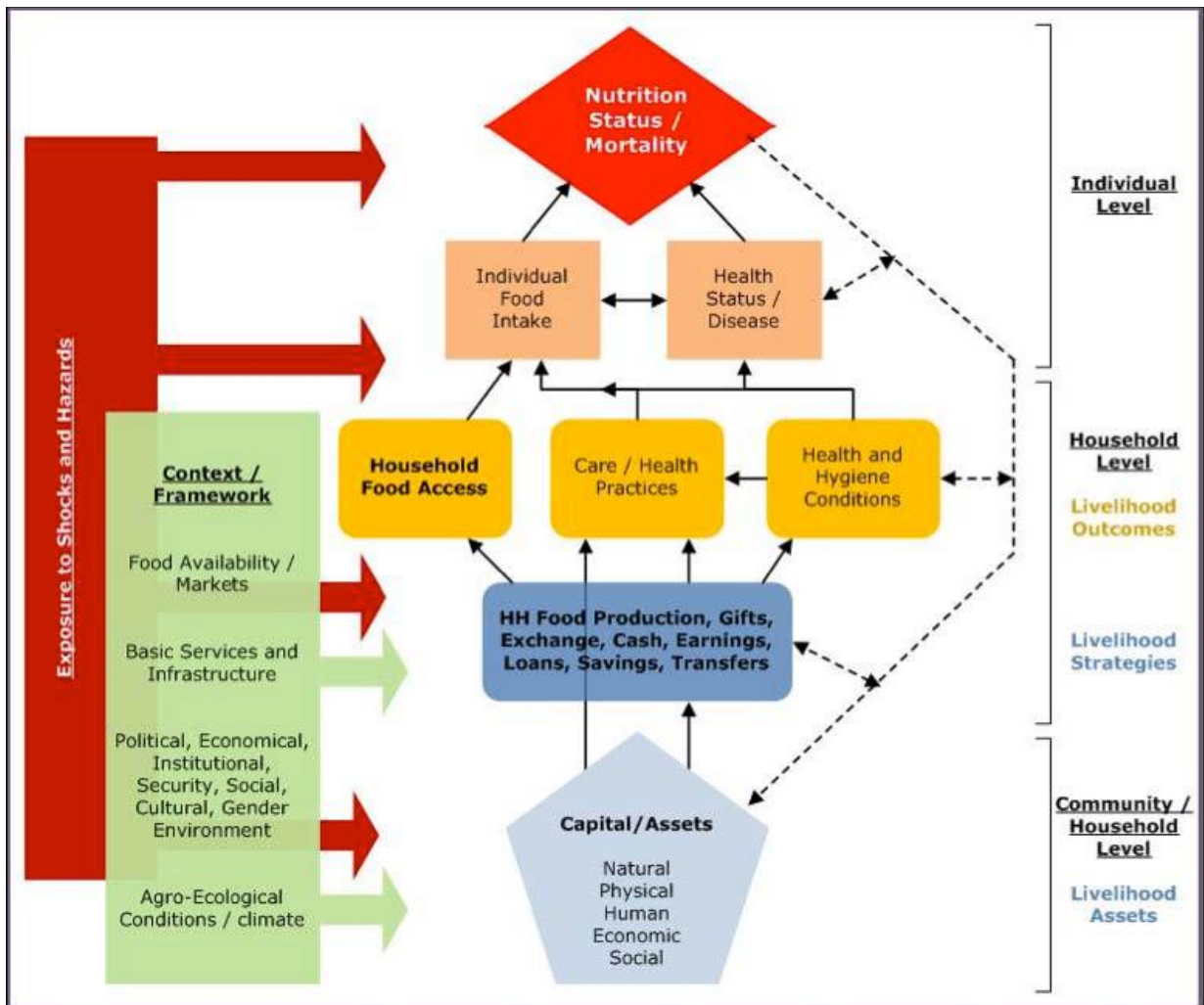
Availability of food -This is the extent to which sufficient quantity and quality of food is physically present in an area. This includes food found in markets, produced on local farms or home gardens or provided as food aid or gifts.

Access to food - Even if food is available people cannot always access it. Food access is ensured when communities, households and all individuals have enough resources to obtain sufficient quantity and quality of food for a nutritious diet through a combination of home production, stocks, purchase, barter, gifts, borrowing or food aid.

Utilization of food - Even if food is available and can be accessed, inefficient absorption of food by the body will lead to malnutrition. Food utilization may be affected by endemic disease, unsafe drinking water, poor sanitation or lack of appropriate nutritional knowledge, especially child feeding practices.

The Food and Nutrition Security Conceptual Framework below illustrates the relationships between all factors influencing food security and vulnerability. The framework highlights that food security is often an outcome of the livelihood strategies adopted by households. Livelihood strategies are the behavioral practices and choices adopted by households to make a living. These strategies are based upon the assets available to households, which include human, social, natural, physical and capital resources. A livelihood strategy is considered to be sustainable when it can cope with and recover from stresses and shocks, while maintaining its capabilities and assets both now and in the future, while not undermining the natural resource base.

Figure 1: Food and nutrition security conceptual framework



Source: WFP, 2009

4 FOOD SECURITY AND VULNERABILITY ANALYSIS

Households strive to secure sustainable, sufficient and adequate income and resources to meet basic needs which include access to food, clean water, health facilities, economic and educational opportunities, ensuring an adequate nutritional status, availability of adequate housing, physical safety and availability of time for community participation and social integration. There are six distinct assets or capitals – natural, human, physical, economic, social and political capitals - that are critical to meet these basic needs and determine the level of households' livelihood security. Shedding light on the relative importance of each of those assets and the extent to which they are available, functional, and adequate and combined, can unveil opportunities households enjoy and most importantly, point to the constraints that may be experienced with detrimental effects on households' welfare and food security.

4.1 Natural Capital

The natural capital refers to the environment in which people make a living and use the resources that are available to them. Natural capital includes land, water and other natural resources all of which play a major role not only for households' economic production but also in providing resilience in response to a shock, for example.

4.1.1 Agriculture at household level

Types of agricultural activities: Agriculture (including fishing) was found to provide an income to 97% of households in rural area of DRC. Food crop farming was the most common among the different agricultural activities (69%), followed by livestock production (9%), fishing and forestry resources (7% respectively) and cash crop production (5%). Food crop production is a common livelihood activity for rural population across all eleven provinces. Fishing is more prevalent in Bandundu and Equateur. Agro-pastoralism is common in Bandundu and Maniema. Forest resources are also an income source for a large share of households living in Bandundu and Kasai Occidental. Numerous parties have been engaged in helping the country with forest resource issues over the last several years. Working groups have identified the need for implementation of national policies that advance the livelihoods of forest-dependent communities, help secure their rights to the land and resources, develop mechanisms for participatory community involvement, map community forest resources, and develop forest management plans (USAID 2010).

Table 1: Percent of households citing each agricultural activity as one of the three main livelihood activities of the household by province

Province	Food crop production, home gardening	Cash crop production	Livestock production/Animal husbandry	Fishing	Forest resources, hunting and gathering
Bas-Congo	77	3	4	1	6
Bandundu	35	12	24	32	22
Equateur	84	1	12	23	9
Province orientale	54	5	10	4	4
Nord-Kivu	56	11	7	0	3
Maniema	68	9	17	7	5
Sud-Kivu	55	4	9	4	5
Katanga	86	1	3	12	8
Kasai Oriental	90	2	13	5	9
Kasai Occidental	69	6	9	8	14
Total	69	5	9	7	7

Source: CFSVA 2011-12

Cultivation of and access to land: Generally, in rural areas, the more land available, the better the household wealth status. Seventy two percent of all households interviewed said they had cultivated land during the agricultural season preceding the survey. Fifty two percent (53%) used less than 2 ha and 19% cultivated on more than 2 ha. The average agricultural land size per household is estimated at 2.5 ha given that the country has 25 million ha of agricultural land (FAO, 2013)¹ and 66% of the population is rural (WDI, 2012). In Bandundu, Equateur,

¹ Agricultural area, this category is the sum of areas under:

a) Arable land - land under temporary agricultural crops, temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). Data for "Arable land" are not meant to indicate the amount of land that is potentially cultivable;

(b) permanent crops - land cultivated with long-term crops which do not have to be replanted for several years (such as coffee); land under trees and shrubs producing flowers, such as roses and jasmine; and nurseries (except those for forest trees, which should be classified under "forest");

Katanga, and Kasai Oriental, more than 80% of all households cultivated land on less than 2 ha. The share of household cultivating land of more than 2 ha is the highest in Province orientale province 54%, followed by Maniema (40%) and Kasai Oriental (34%).

Table 2: Percent of households **who cultivated in 2011-2012 by province**

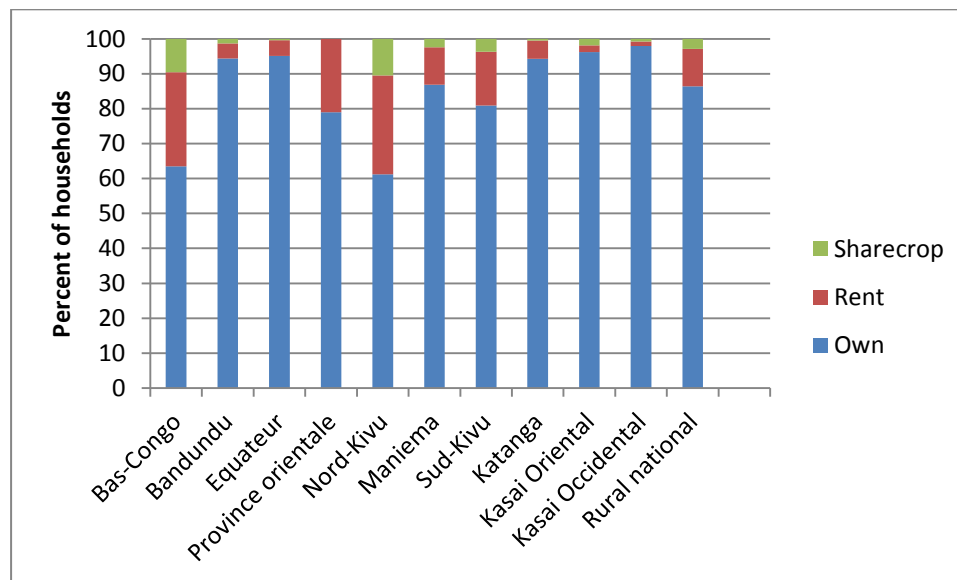
	N	Cultivated in 2011-12	Cultivated <=2ha	Cultivated >2ha
Bas-Congo	1565	79	78	1
Bandundu	2511	90	81	9
Equateur	2066	82	78	4
Province orientale	1760	62	8	54
Nord-Kivu	2852	54	41	13
Maniema	2201	63	23	40
Sud-Kivu	4783	59	41	18
Katanga	2086	87	80	7
Kasai Oriental	2845	88	54	34
Kasai Occidental	2205	72	66	7
Total	24874	72	53	19

Source: CFSVA 2011-12

The way people access land may influence their use of it. Among interviewed rural households who reported to cultivate during the agricultural season preceding the survey, 86% reported to have their own land, 11% rented land and the rest accessed land through sharecropping. Land renting were most common in Bas-Congo, Province orientale and Nord-Kivu. Interestingly, ownership of land does not appear to be reserved for the richer provinces such as Katanga and Nord-Kivu. It is obvious that the widespread and persistent conflict and violence in the highly productive zones in eastern Congo caused massive population displacements that deprived several households of access to land.

(c) Permanent meadows and pastures - land used permanently (five years or more) to grow herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land).

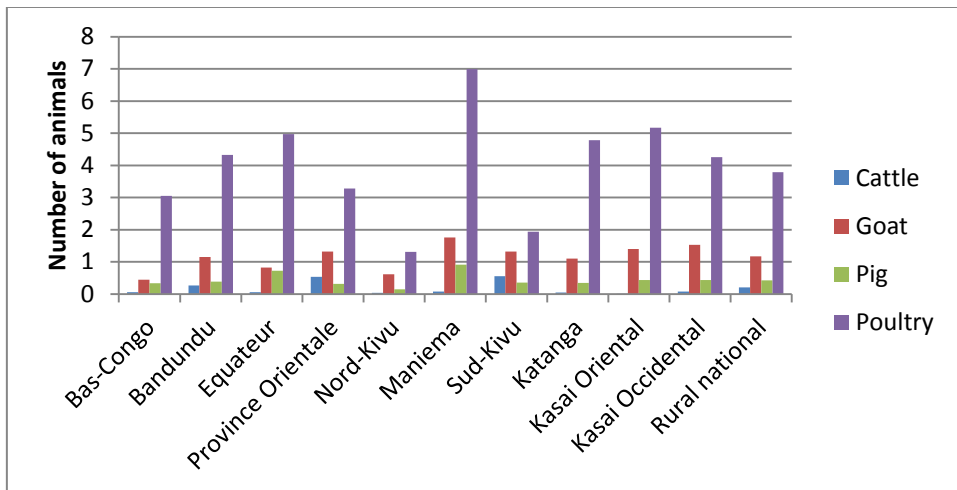
Figure 2: Percent of households who cultivated in 2011-2012 by land access and by province



Source: CFSVA 2011-12

Livestock and poultry: Most commonly owned types of livestock include goats, poultry, sheep and cattle. The concept of Tropical Livestock Units (TLU) would provide a convenient method for quantifying a wide range of different livestock types and sizes in a standardized manner if information on different size of different species was collected. To account for different livestock varieties - which may differ significantly in size, average number of animals per household has been calculated. Poultry and goats are common in all rural provinces. Pastures are one of the basis of the breeding of small ruminants, which have sometimes replaced cattle in areas where conflicts have significantly reduced the breeding of large ruminants. Thus, goats have become an important source of income for small farmers. Highest number of pig is found in Maniema and Equateur province. Poultry is raised mostly in Maniema, followed by Kasai Oriental, Equateur and Katanga. Cattle ownership is most common in Province orientale and Sud-Kivu.

Figure 3: Average number of livestock per household by province



Source: CFSVA 2011-12

4.1.2 Farmers' constraints

The main constraints faced by most farmers include:

Limited access to agricultural inputs: At national level 51% of interviewed households raised the lack of access to improved varieties of seeds as one of the main constraints to agriculture, 45% reported having experienced difficulties to access even traditional seeds. There is a huge demand in seeds and improved seedlings which is unmet. The seed market is not structured and remains largely informal. Peasants involved in a project or living in areas targeted by NGOs or nearby INERA stations are more likely to access modern cultural practices. Seed operators focus their program only around the seed demand in the context of the emergency program of FAO, UNHCR, ICRC and CARITAS (MINAGRI, 2009).

Lack of modernization: Lack of modern equipment is reported by 45 % of households. Production tools remain rudimentary: traditional farming tools such as the hoe and cutlass, as well as bullock farming, are still common throughout the country. Mechanized farming is still rare and mainly operational on large scale crop farms. The Congolese Government has created National Service of agricultural mechanization (SNMA), the Service National of motorization agricultural "SENAMA», the National Service of Animal Traction «SENATRA» and the National Service of appropriate technology (SENATEC) to increase agricultural production. Despite the government effort to sustain the mechanization by acquisition of agricultural equipment such as tractors, their coverage is barely 5% of the total of 8,000,000 ha annually cultivated. In addition, maintenance of the equipment remains a problem.

Pests and diseases: 44% of households mentioned animal pests among the agricultural constraints they have experienced. Surveys and reports from the veterinary services of the country show that many enzootic, epizootic, and panzootiques diseases considered by the International Organization of Epizootics (OIE) as a priority prevail in the DRC. The organoleptic qualities of the goat in Kasai are recognized, which could be an asset in the development of this livelihood sector. However, the progression of this farming may be hampered by the

threat of *peste des petits ruminants* (PPR); therefore veterinary supervision support to accompany its development is important.

The last time rinderpest was seen in the DRC was in 1952. However, the various conflicts that the country experiences since 1996 expose it to various animal diseases (contagious pleuropneumonia of cattle, foot and mouth disease, Rift Valley fever), as a result of cross-border movements of people fleeing the war with their livestock (MINAGRI 2009)

Soil quality was another constraint reported by 24% of household. Mineral fertilization is rarely used, even if it is recommended depending on the nature of the soil. The issue on chemical fertilizers was studied for more than a decade in the 1980s by the Programme National Engrais (PNE) supported by FAO and the SENAFIC. For most cultures, a good response to fertilizer applications has been found. However the cost of chemical fertilizers remains a constraint as their import to the country as well as their delivery to users are very expensive. On the other hand, the private sector has little or no interest in this activity as the market is too narrow and too unstable (MINAGRI, 2009)

Lack of rain and irrigation: 24% of households indicated that they have experienced limited irrigation and rainwater for cultivation. The estimated irrigation potential varies from 4 to 7 million hectares, including small lowland perimeters. Despite this very important potential, irrigated perimeters did not exceed 13 500 ha. The DRC is perfectly suited to rice cultivation, either rainfed (Maniema), irrigated (Ruzizi valley), or lowland (all provinces). Irrigation systems on a small scale with a major participation of producers are proven to be highly efficient (MINAGRI 2009). Moreover, irrigated horticulture and rice have high productive and remunerative potential (e.g. on the sites of Pool Malebo - wide flood zone by seasonal and flooding between Kinshasa and the Congo River with a potential of 6 000 ha).

Table 3: Percent of household having experienced different types of agricultural constraints

Access to improved varieties of seeds	51
Access to traditional seeds	45
Lack of equipment (tools)	45
Pests and diseases	44
Agricultural labor	39
Soil quality	28
Lack of rain, irrigation	24
Access to plow	22
Lack of draft animals	21

Access to land	20
Insecurity	15
Flood	5

Source: CFSVA 2011-12

Limited access to land: It is paradoxical that 20% of households in a country with great potentially cultivable land reported that they experienced difficulties to access land. For example, the high demographic pressure in some parts of the Province oriental province (in particular in Ituri) is responsible for the continuous parceling out of cultivated surface areas and strong ethnic polarizations that do not foster expansion over spaces yet available but unexploited (WFP, 2012). Unclear land tenure system might be also one reason for this claim. Both the formal and customary systems of land dispute resolution in the DRC are facing significant challenges to their effectiveness, especially in protecting the rights of populations who now live in forest and agricultural areas subject to REDD/REDD+ considerations and of those populations that have been displaced through conflict and continuing violence (USAID, 2010).

Security: The other constraint that was mentioned by 15% of the household is insecurity. This security question to the households was broad and does not precise which security related constraints they are.

4.2 Human Capital

Discussed in this chapter are descriptive summaries of the social, economic, and households' demographic characteristics. One focus of this chapter is to describe the general characteristics of the population, such as household arrangements (size, headship), age-sex structure, residency status, literacy and education, and housing facilities (sources of water supply, sanitation facilities, dwelling characteristics and household possessions). A distinction is made between provinces because many of these indicators differ by province. These indicators influence and determine the amount and quality of work and income available to the individual and household, which in turn influence their overall welfare and food security status.

The size and composition of households and the sex of the household head are important factors affecting their welfare. The Table 4 below presents summary statistics on the average household size and the sex and age of the head of household. In DRC, the mean household size is 6.8 persons, with households in Maniema being the largest (9.8 persons) while households in Bandundu are the smallest (5.5 persons).

Seventeen percent of households are headed by a person 60 years or older. Elderly headed households were most commonly found in Katanga province.

Twenty two percent of households are headed by females. The highest percentage of female headed households was found in Sud-Kivu (33%), followed by the Province orientale (30%), Bas-Congo and Bandundu (27% respectively). The other provinces have a percentage of female-headed household below the national average.

Table 4: Household characteristics by province

Province	Average HH size	Elderly HH head (%)	Female HH head (%)	N
Bas-Congo	5.5	18.7	27.0	1,565
Bandundu	5.4	16.7	27.0	2,511
Equateur	8.1	15.0	7.6	2,066
Province orientale	6.0	16.7	30.0	1,768
Nord-Kivu	6.4	15.3	28.2	2,852
Maniema	9.8	17.3	14.1	2,201
Sud-Kivu	7.0	17.2	33.4	4,783
Katanga	6.6	23.2	17.0	2,086
Kasai Oriental	6.6	16.2	13.3	2,846
Kasai Occidental	6.6	13.7	12.1	2,206
Rural national	6.8	16.9	22.1	24,884

Source: CFSVA 2011-12

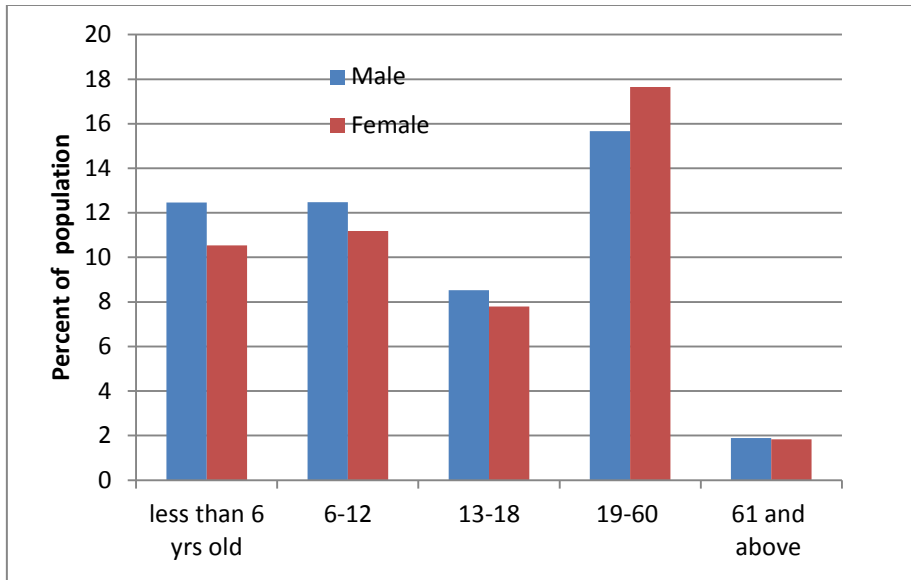
The dependency ratio is an age-population ratio of those typically not in the labor force (the dependent part) and those typically in the labor force (the productive part). It is used to measure the pressure on productive population. Provinces were split in two based on available data on age group. Table 5 shows that the dependency at the national level is 1.2 for the first group of provinces where the number of the population of 13-60 years old is available. This ratio is 1.5 for the group of provinces where active population is defined as those between 13 and 65 years old.

Table 5: Dependency ratio (%)

Province	(1)	(2)
Bas-Congo	1.1	
Bandundu	1.1	
Equateur	1.3	
Province orientale		1.8
Nord-Kivu	1.2	
Maniema	1.2	
Sud-Kivu	1.2	
Katanga	1.4	
Kasai Oriental		1.4
Kasai Occidental		1.4
Rural national	1.2	1.5
(1) dependents/ active population 13-60 years old		
(2) dependents/ active population 13-65 years old		

Age and sex are important variables in analyzing demographic structure. Figure 4 presents the distribution of the household population in the survey by five year age groups below the age of 19, one group for 9 to 60 years old and another group for 61 years old and above according to sex of household members. While the results from the first group of provinces indicate that 47 % of the population is under 13 years and 4% percent of the population is in the older groups (61 years and above), the proportion of the population between 13 and 18 years of age is 16%, and between 19 and 60 years of age is 33%. The age structure is typical of a young population characterized by high fertility. This type of population structure imposes a heavy burden on the country social and economic assets.

Figure 4: Population by age groups and sex



Source: CFSVA 2011-12

4.2.1 Migration

The DRC is among the country with the largest internally displaced population (IDPs) in Africa. These populations have been forced to flee or to leave their homes or places of habitual residence to avoid the effects of armed conflict and violence. There are three types of IDPs in DRC: the ones who found some assistance with relatives, the ones who live in camps, and the ones who returned home. According to the survey results, about 3% of the household interviewed are IDPs in host families, 2% are IDPs in sites to take advantage of humanitarian aid, and 4% are returning IDPs (Table 6). Province orientale has the largest IDPs in host families (12%), in sites (11%), and returning (19%). Nord-Kivu is ranked second in terms of IDPs in host families (10%), followed by Sud-Kivu (4%). Bas-Congo is the second province having large number of IDPs in sites; Sud-Kivu is the second province in terms of number of returning IDPs. The different armed conflicts affecting the country, in particular in the East, keep taking a heavy toll on the region. Indeed, the region has been experiencing a quasi-widespread insecurity since 2005 with the presence of the LRA (Lord Resistance Army) rebels and armed military groups (NALU) which commit thefts, pillaging, rapes of women, kidnappings on civilian populations; causing thousands of people to be displaced. Population movements caused an important reduction in agricultural production and weakened the households livelihood essentially based on agriculture and animal husbandry (WFP, 2011; UNOCHA, 2012)

Table 6: Percent of household by residency status and by province

Provinces	IDPs in host families	IDPs in sites	Returning IDPs	Resident	Refugee	Repatriate	Deported	Other
Bas-Congo	0.8	3.6	2.1	93.4	0.2			
Bandundu	0.4	0.6	3.0	95.9	0.1	0.0		
Equateur	0.3	0.1	3.2	96.2	0.1	0.2		
Province orientale	11.5	11.2	19.7	57.0	0.6			
Nord-Kivu	10.0	1.6	2.0	85.6	0.1		0.1	0.6
Maniema	2.1	1.5	1.1	93.6	0.1	0.3		1.4
Sud-Kivu	3.6	2.6	4.2	86.5	1.9	0.2	0.2	0.9
Katanga	0.1	0.6	1.2	97.8		0.3		
Kasai Oriental	1.5	0.9	2.5	95.0	0.1			
Kasai Occidental	0.1	0.6	4.3	94.8	0.1	0.1		
Rural national	3.2	2.1	4.0	89.8	0.5	0.1	0.1	0.4

Source: CFSVA 2011-12

Table 7: Percent of household that hosted displaced / returnee over the last 12 months

Provinces	
Bas-Congo	6
Bandundu	10
Equateur	3
Province orientale	21
Nord-Kivu	27
Maniema	10
Sud-Kivu	25
Katanga	7

Kasai Oriental	17
Kasai Occidental	9
<hr/>	
Rural national	15

Source: CFSVA 2011-12

4.2.2 Education

Education is important in ensuring the general well-being of a population and in strengthening people's resilience to shocks that could have damaging effects on their livelihoods. Research has proven that a good educational status among all, both men and women, results in significant decrease in their vulnerability to food insecurity. The CFSVA 2008 found that the higher the educational level of the household head, the better the family's food consumption.

Primary School Attendance Ratio (6 – 12 years)

In this report, attendance rates is considered as a proxy for formal enrolment. In the analysis, specific attention was given to the disaggregation of attendance rates by the sex of the child and provinces. At national level the percent of primary school attendance of children between six to twelve years is 87% for boys and 82% for girls. Lowest attendance rates were found in Province orientale for both boys and girls (71% and 68% respectively).

Significant gender difference was also found with regards to primary school age children who never attended school. Twelve (12%) of girls were not attending any school at all compared to only 4% for boys. Similarly, at the provincial level, the highest rate of children never attending school was in Kasai Oriental (18%) followed by Katanga (16%) for girls and in Nord-Kivu (10%) followed by Sud-Kivu for boys.

Asking about the reasons for children missing school for one month, inability of parents to fund the child's education was the main reason for more than half of households. The child's sickness is the second reason (20% of households for boys and 17% for girls). The same reasons are reported for children not attending any school at all.

Table 8: School attendance of children of 6-12 years old by province

Province	Male			Female		
	Go to school	Never go to school	Miss school for 4 weeks in 2010-2012	Go to school	Never go to school	Miss school for 4 weeks in 2010-2012
Bas-Congo	96	2	9	88	6	1
Bandundu	95	2	5	89	4	2
Equateur	90	3	9	84	9	4
Province orientale	71	4	13	68	12	4
Nord-Kivu	78	10	12	77	10	11
Maniema	90	4	11	86	10	4
Sud-Kivu	89	5	15	83	13	7
Katanga	82	2	17	71	16	2
Kasai Oriental	85	3	15	78	18	5
Kasai Occidental	96	3	11	92	11	3
Rural national	87	4	12	82	12	5

Source: CFSVA 2011-12

Education of household heads

The CFSVA 2011-2012 collected information on whether the household head can write and/or read or not. At national level, 31% of household head do not read/write. Highest illiteracy rate was found in Bandundu (43%) followed by Province orientale and Sud-Kivu (36%). The gender difference in literacy of household head is striking: women head of household are more likely to be illiterate (53%) than men (25%).

Regarding the highest educational level attained by the household head, at national level 32% had no schooling at all, 28% of household heads have completed primary school, 37% completed secondary school, and 3% had a higher degree beyond secondary school. Similar to literacy, there is also a marked difference in household head educational attainment by province; in Bandundu 44% of household heads never attended school at all, followed by Province orientale (38%), Sud-Kivu and Katanga (35%) compared to 24% of uneducated household heads residing in Bas-Congo.

It appears that female household heads are less likely to have received any schooling compared to their male counterparts. This is in line with adult literacy levels (15 to 24 years) identified by the MICS (2006) with 68% literate women compared to 75% literate men at a national level.

Table 9: Education of household head by province (%)

Provinces	Do not read/write	None	Primary	Secondary	Higher
Bas-Congo	23	24	18	52	6
Bandundu	43	44	14	40	2
Equateur	26	27	25	47	1
Province orientale	36	38	38	22	1
Nord-Kivu	29	27	35	31	6
Maniema	24	26	43	27	3
Sud-Kivu	36	35	27	33	5
Katanga	32	35	32	33	1
Kasai Oriental	27	28	26	44	2
Kasai Occidental	29	30	22	46	2
Rural national	31	32	28	37	3

Source: CFSVA 2011-12

4.3 Physical Capital

Physical capital refers to all productive and non-productive assets a household owns. They include the household's shelter, water supplies and sanitation facilities, as well as tools and equipment necessary for the livelihood the household engages in. The more durable and stable these location-specific assets, the thicker the "buffer" that protects household members against shocks, such as high food prices, floods, droughts, the death of a household member, etc. Physical capitals determine households' wealth which is a proxy for households' coping capacities to fend off threats or risks that could have detrimental effects on its welfare and food security status.

Households were asked whether they own a number of different assets. The list included productive assets (i.e. agricultural tools and machines such as cutlass, plough, charrette, mill, fishing gear), non-productive assets (bike, motorcycle, TV, sewing machine, solar panel, generator, radio, mobile phone), household amenities (i.e. types of water supply, toilet and

sanitation facilities, roofing material, etc.) and other assets such as the number of rooms available to the household, land and livestock ownership, etc.

Table 10: Percent distribution of households by housing characteristics and ownership of various household assets.

	% of households
Safe source of water	34
Latrine	4
Improved roof	31
Wall in brick	12
Improved source of energy for cooking	1
Improved source of energy for lighting	4
Dwelling has more than 2 rooms	53
Livestock	37
Cattle	3
Goat	30
Sheep	6
Pig	12
Hoe, axe	83
Plow	1
Cart (charrette)	1
Mill	5
Bike	30
Radio	46
Hunting equipment	13
Telephone	26
Motorcycle	1
Household number	24884

Source: CFSVA 2011-12

The most common non-productive assets owned by the surveyed households included radio (46%), bike (30%), and mobile phone (26%). Cutlass is the only common productive assets owned (83%).

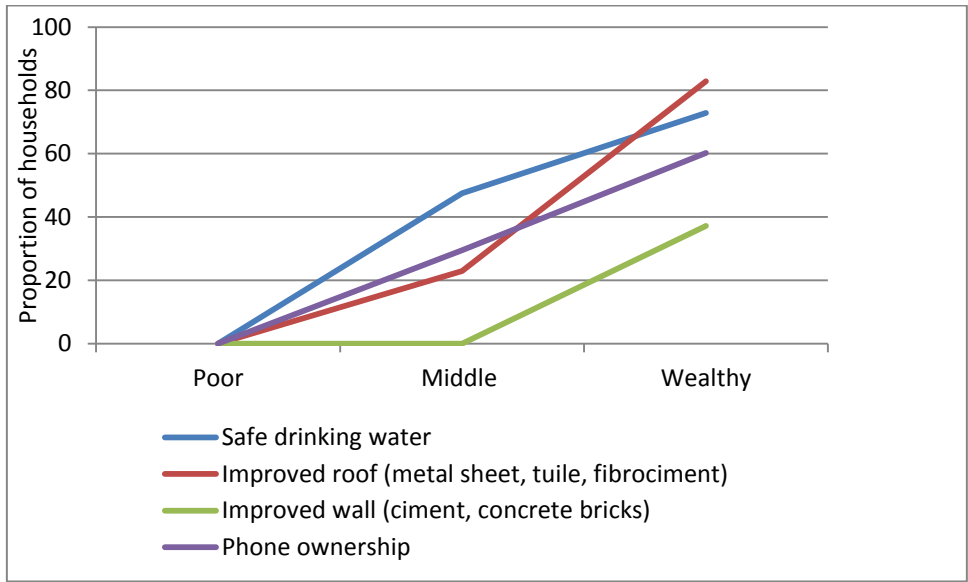
4.3.1 Household wealth index

A composite index - the wealth index - is a proxy indicator for household wealth that complements income and expenditure information. The wealth index is based on information on ownership of certain assets and housing conditions collected during the CFSVA2011-2012². A series of iterations of the wealth index was run until an appropriate model was found. The variables used in the final model are ownership of mobile phone, safe drinking water, improved roof material, and improved wall material³. The graphs below illustrate the relationship between the factors in the model and the created wealth terciles.

² The method used involves Principal Component Analysis (PCA) of variables relating to ownership of assets and housing conditions. The PCA method is a form of data reduction which attempts to describe the underlying relationship between a series of variables. The PCA creates a continuous variable which explains the underlying relationship and can be used as a proxy for household wealth. As the continuous variable alone is not easily interpreted, it is used to rank households and divide them into terciles which are more easily describable. These wealth terciles allow for descriptive analysis of relative poverty. Poor (mean=-0.85, median=-0.85); Middle (mean=-0.06, median=-0.04); Wealthy (mean=1.30, median=1.08)

³ The selection of variables was based on a low level of both under- and over-correlation between variables and a sufficient proportion of households with presence of the attribute (> 5 % of households and <95%). For example, improved sanitation facilities and improved source of energy for lighting are used by only 4% of household and excluded from the index. Livelihood specific assets were not included nor were variables showing small variance across the wealth quintiles, for example ownership of radio which was found to be common over all wealth terciles.

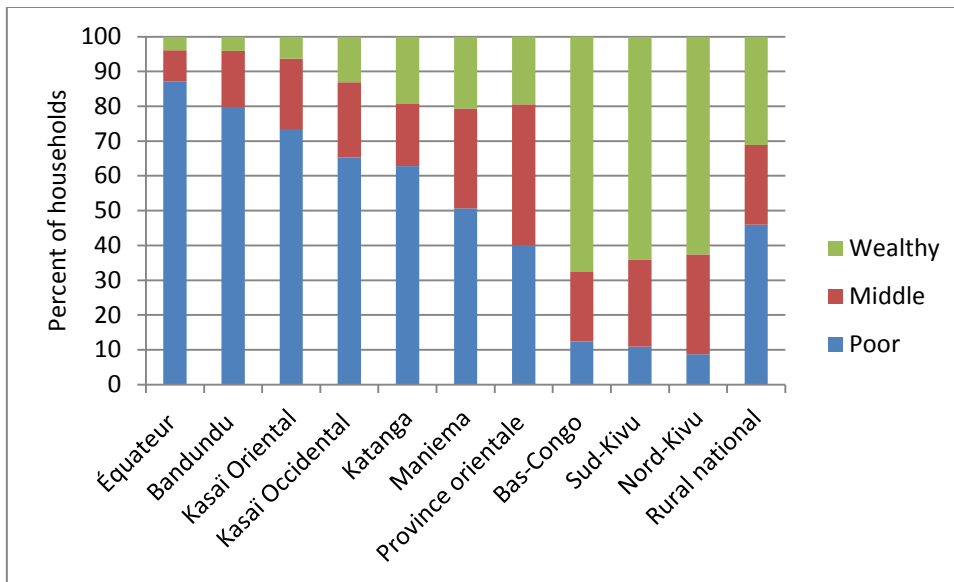
Figure 5: Wealth terciles by the variables included in the PCA



Source: CFSVA 2011-12

The distribution of wealth across provinces suggests that the provinces with the share of the poor households below the national average include Equateur (87%), Bandundu (80%), Kasai Oriental (73%), Kasai Occidental (65%) Katanga (63%), and Maniema (51%). Wealthy provinces include Bas-Congo, Sud-Kivu and Nord-Kivu with about less than 15% of poor households. These results are consistent with the expenditures estimated from the same CFSVA 2011-12 data (section 1.5.2). They are also in line with the findings on the levels of poverty identified by the DHS 2007 when considering only the rural areas.

Figure 6: Wealth Index terciles by provinces



Source: CFSVA 2011-12

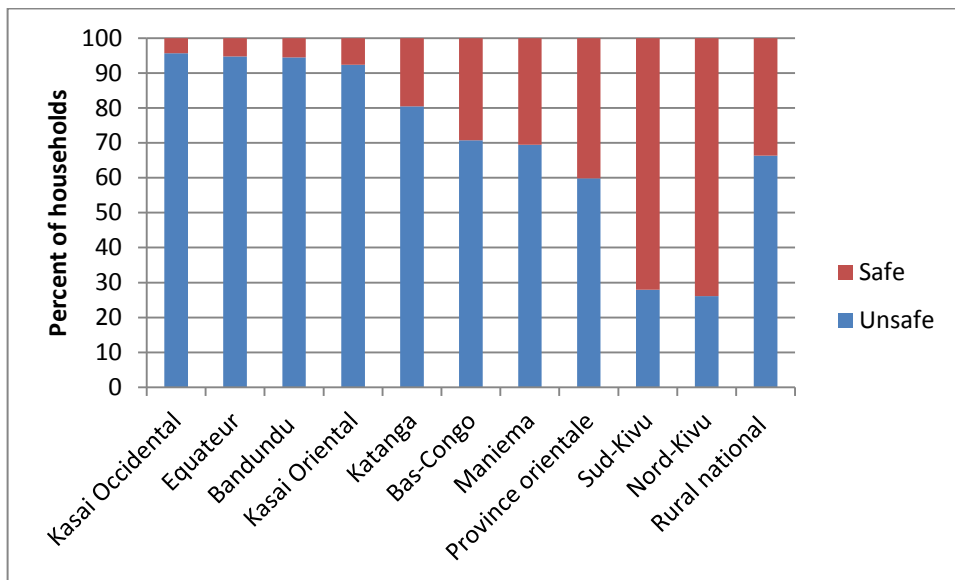
4.3.2 Drinking water and sanitation facilities

Households’ source of drinking water is a significant component of the wealth index and an indicator of socio-economic status that can help identifying the most vulnerable in the population. The source of drinking water is important because it is linked to potentially fatal diseases, such as diarrheal diseases, guinea worm, bilharzia, and cholera. A report by USAID (2010) indicates that 80% of disease in the DRC and one-third of all fatalities are related to contaminated water.

At national level safe drinking water⁴ is accessible to 34% of households. Findings highlight differences across wealth groups and provinces. Seventy three (73%) of the rich households have access to improved drinking water sources, while the majority of the poor households are still drinking water from unprotected wells, springs, rivers or ponds. Almost all of the households in Kasai Occidental (96%), Equateur province (95%), and Bandundu (95%) are drinking water from sources considered unsafe. The largest shares of households with safe sources of drinking water were found in Nord-Kivu (74%) and in Nord-Kivu (72%) which is in line with the MICS 2010 findings.

⁴ Safe sources of drinking water include public tap/standpipe, piped water into dwelling, motorized tube well or borehole, tanker truck, protected dug well, protected spring. Unsafe sources include unprotected dug well, unprotected spring, surface water.

Figure 7: Percent of households using safe and unsafe drinking water by province



Source: CFSVA 2011-12

Regarding access to improved sanitation facilities, although this type of household amenities is not used to provide an indication of households' relative wealth, but is essential for food security analysis as it gives an insight into potential health implications. An improved toilet facility is considered the most efficient and hygienic method of human waste disposal.

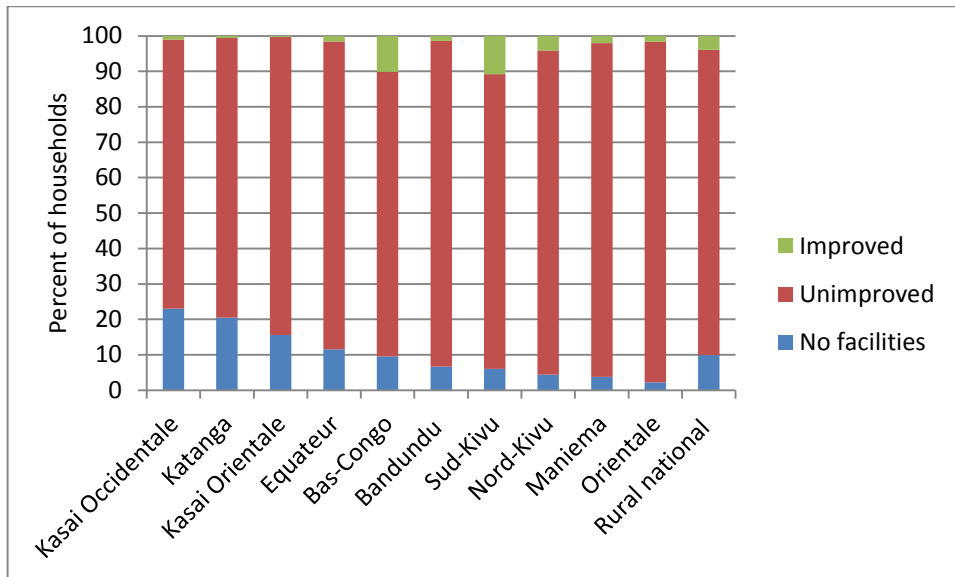
At national level improved sanitation⁵ is accessible to only 4% of households compared to 86 % of households who use unimproved sanitation facilities and 10 % of households who do not have toilet facilities at all. These figures indicate deterioration since the MICS 2010 which recorded 14% of the population having access to improved sanitation facilities.

Discrimination between wealth groups remains; 10% of the better off households are using improved sanitation facilities, compared to only 1% of poor households. Eighty five percent (85%) of the latter are still using traditional latrines while 14% of them are not using any facilities at all compared to 4% of the wealthy population.

Similar trends can be found across the provinces; less than 1% of the population in Katanga and the two Kasai provinces are using improved sanitation, compared to 10% in Bas-Congo and Sud-Kivu.

⁵ Improved sanitation facilities are defined as “improved latrine” in the CFSVA questionnaires whereas unimproved facilities are “traditional latrine”.

Figure 8: Percent of households using improved and unimproved sanitation facilities by province



Source: CFSVA 2011-12

4.3.3 Source of lighting, housing, and tenure

Regarding the other household characteristics, at national level, only 3% of the households in DRC are using electricity as lighting sources. Almost none of the household in Bandundu, Equateur and Kasai Oriental have electricity compared with 7% in Nord-Kivu and 5% in Sud-Kivu. Nationally, about 40 % of the population is using lanterns, 15% is using kerosene and 22% oil for lighting.

Eighty three percent (83%) of the households own their homes, 8% of the household rent and 5% live for free. The number of rooms used for habitation provides an indication of the extent of crowding in households. Overcrowding increases the risk of contracting infectious diseases like acute respiratory infections which particularly affect children. There was no significant difference between poor and non-poor households according to the average number of rooms (2.6 rooms for the poor households and 3 rooms for the wealthy households).

Poor households' homes are predominately made of inexpensive non-durable materials such as mud and earth (79%). Cement and concrete bricks are the most common wall material among the rich (37%). Roofing materials also differ between wealth groups. While poor households' roofs are predominately thatched (99%), corrugated iron sheets, fibrocement, and tile constitute the roofs of the majority of rich households (83%).

As for household durable goods, mobile phones are available in 60 % of rich household and 30 % of the household in the second tercile. None of the household in the poor tercile has mobile phone. Ownership of radio is common in both poor and non-poor households. Similarly, no difference has been found between poor, middle and wealthy in terms of bike ownership, thirty percent of the households in each wealth tercile have bike.

4.4 Economic Capital

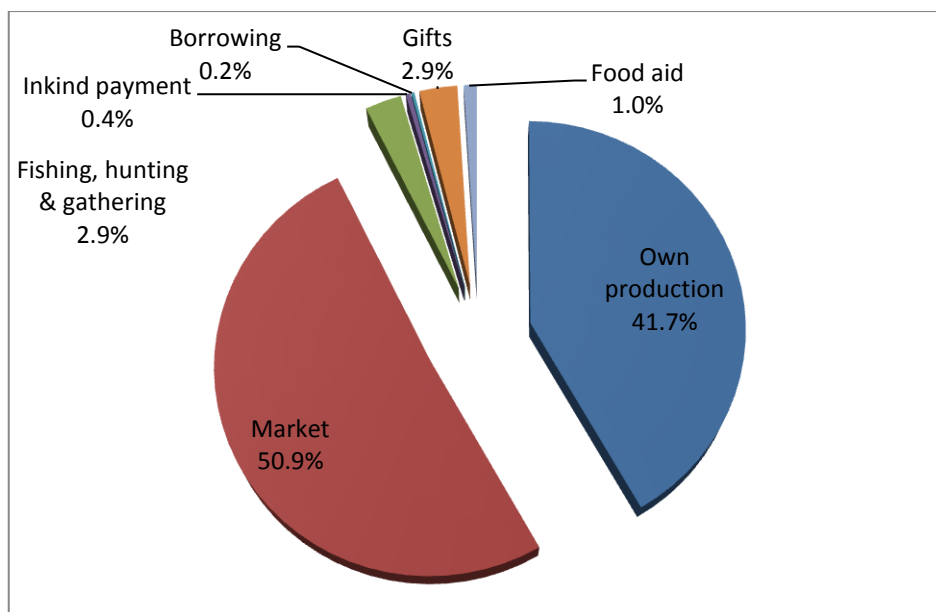
Economic capital includes a household's financial flows, such as income and expenses and access to credit which are used to maintain, strengthen or change livelihood strategies.

4.4.1 Household participation in markets

Knowing where households get the food they consume provides an insight into the level of stability, reliability and sustainability of the access to their food.

Households were asked to indicate the main source for each food item they consumed over the last seven days. Options included own production, purchase from market, gathering and hunting and fishing, in-kind payment of labor, borrowing, gift, or food aid. At national level, 51% of household food consumption⁶ was purchased, 42% came from their own production, 3% from fishing, hunting, and gathering and the remaining 5% was borrowed, received as gifts or food aid.

Figure 9: Contribution of different sources of food at national level



Source: CFSVA 2011-12

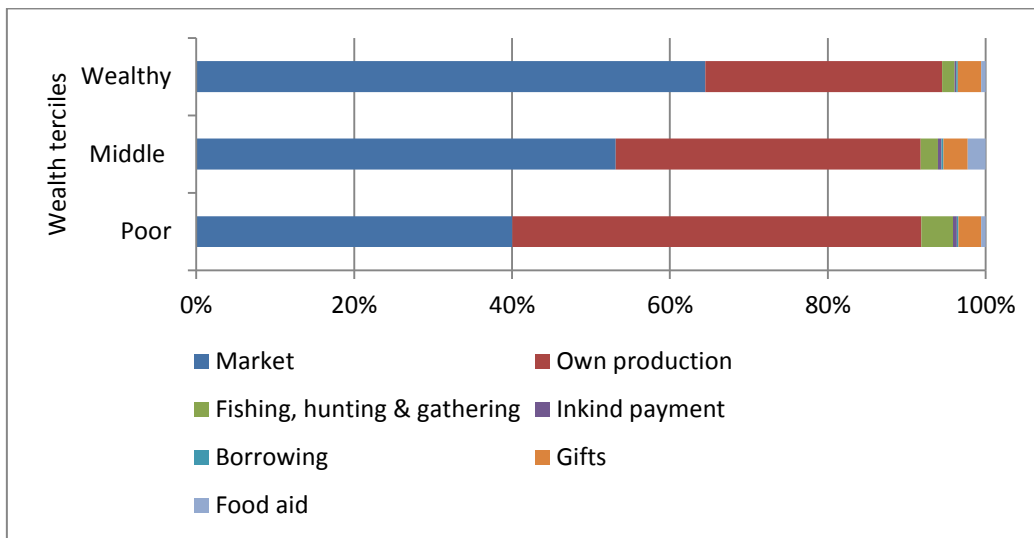
The results suggest that high reliance on own food production is positively related to high poverty. More than half (52%) of the food consumed by the poor household came from their own production compared with 39% and 30% for the household in the second and third terciles respectively. Market purchases is the second most important food source of the poor household (40%) followed by fishing, hunting, and gathering (4%). The contribution of food

⁶ Evaluated in terms of food consumption scores which was built as composite scores

measuring food frequency and dietary diversity

sources that does not provide any assurance of stability such as gifts and food aid is very small.

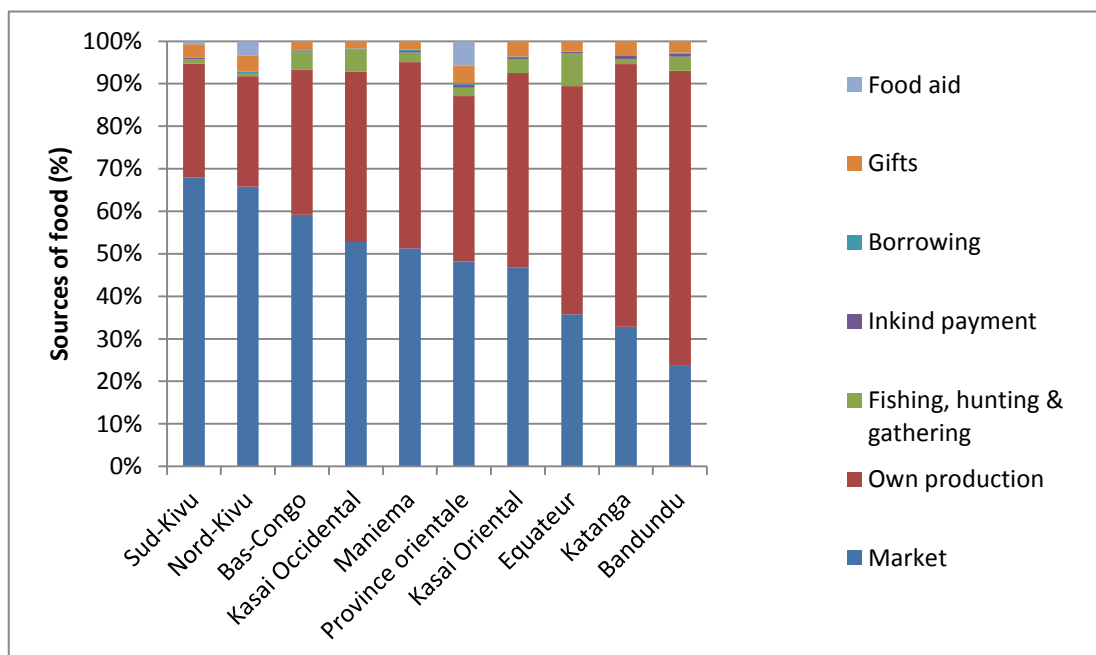
Figure 10: Percent of sources of food by wealth terciles



Source: CFSVA 2011-12

Relatively rich provinces mainly rely on market purchase as food source, Sud-Kivu (68%), Nord-Kivu (66%), Bas-Congo (59%), Kasai Occidental (53%). Bandundu is the province that rely the least on market purchases (24%) followed by Katanga (33%). It is worth noting that Bandundu and Katanga has had the highest annual cassava and maize production of the ten provinces with an average of 3.3 and 2.8 million MT per year respectively (SNSA, 2009). Seventy percent (70%) of the households' food consumption came from their own production in Bandundu and 62% in Katanga.

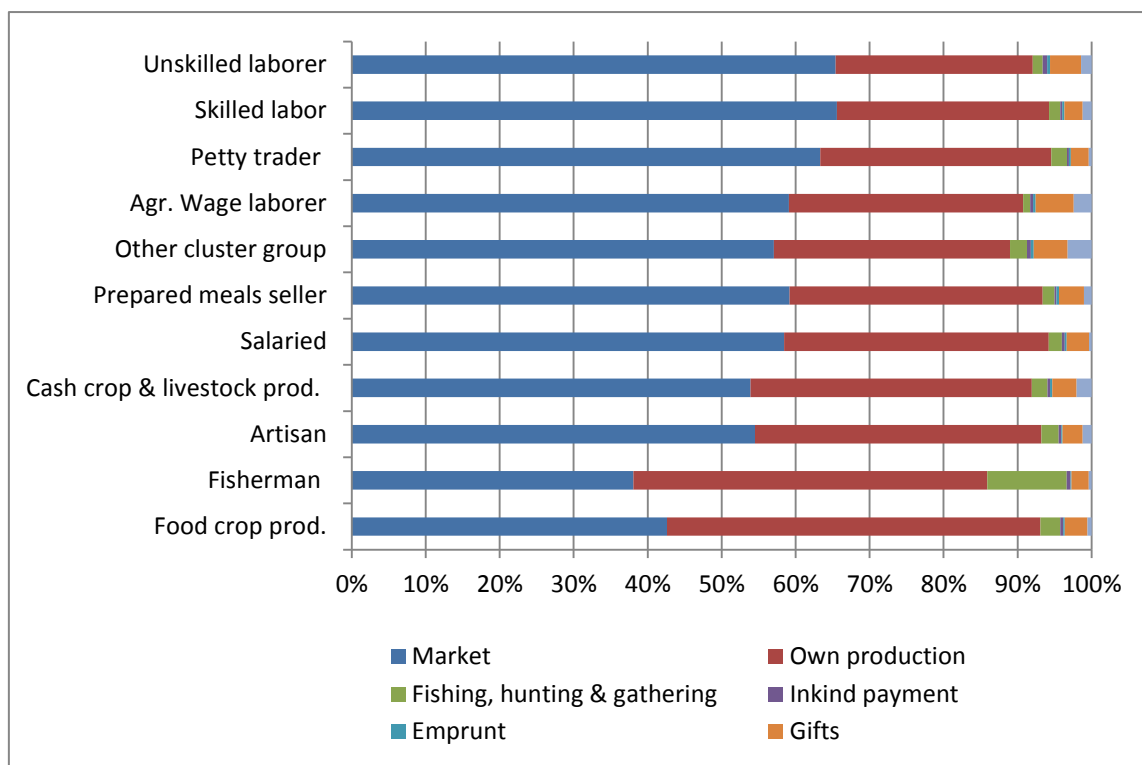
Figure 11: Sources of food by provinces



Source: CFSVA 2011-12

The ways households access their food differ by livelihoods. Market purchases are the dominant food source for overall household across all livelihoods (except the food crop producer and fishermen with respectively 50% and 48 % of their food source is own production); with 27% to 39 % of their food coming from their own production. These households engaged also in farming livelihoods including food crop agriculturalist, cash crop agriculturalist, agro-pastoralist, and fishing/hunting/gathering (cf. section 1.6.2)

Figure 12: Percent of food sources by households' livelihoods



Source: CFSVA 2011-12

While the previous findings provide a general, very informative picture of how people access their food, it is important to note that they are only valid for the time the data was collected which varies by province. A seasonal variation analysis would provide a better understanding of the households' sources of food. For example, during the lean season the market purchase may increase even further.

4.4.2 Food and non-food expenditures

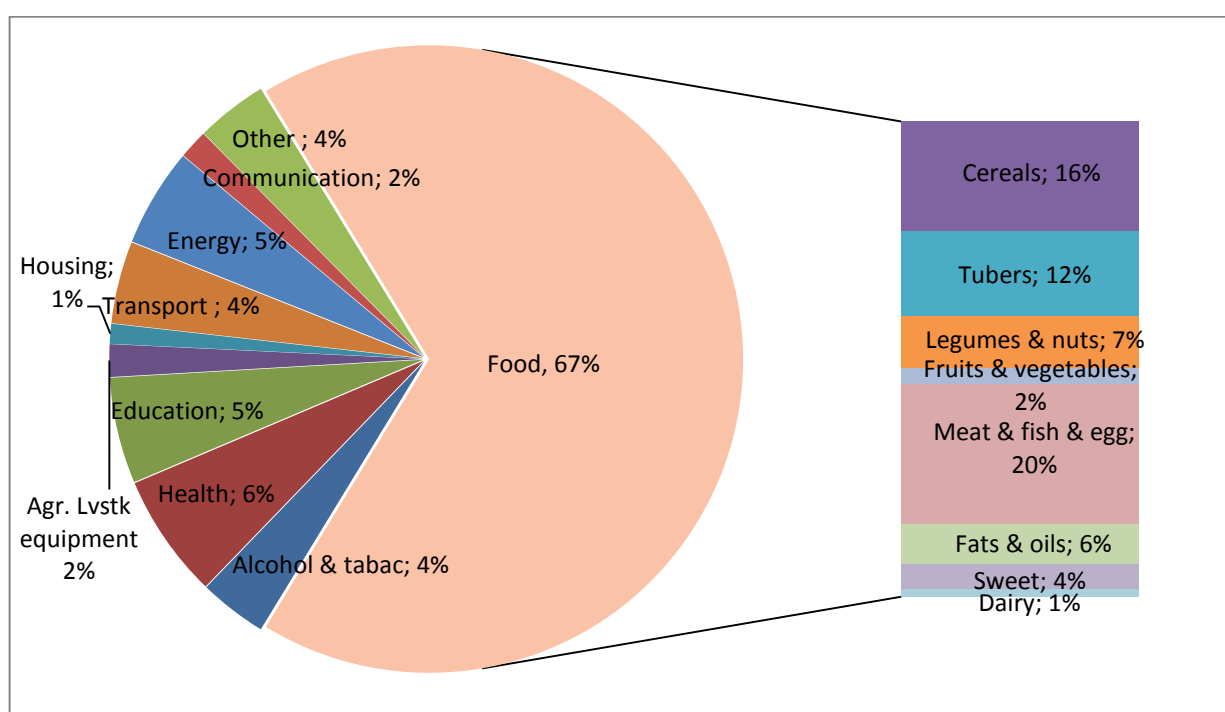
Household expenditure patterns reflect relative wealth and they serve as a proxy indicator for households' food access. The CFSVA therefore asked households to provide estimates of the monthly expenditures on a number of more regular food and non-food items as well as the

less frequent expenditures over a recall period of 6 months. Current expenditures were estimated for a list of 22 food items that covered the 8 food groups: Cereals, tubers, legumes and nuts, animal protein, fruits and vegetables, dairy, fats and oils, sweets and non-food items such as soap and firewood. Six month expenditures included health, education, agricultural equipment, livestock, communication, transportation, rent, and ceremony and clothing expenses.

At national level, 67% of households' income is spent on food. Expenditures on "meat, fish and egg" group is the largest food expenditure (20%) followed by cereals (16%), tubers (12%), legumes and nuts (7%), fats and oils (6%), and sweet (4%).

Largest non-food expenditures are on health (6%), followed by education (5%), energy (5%), transport (4%), and alcohol and tobacco (4%).

Figure 13: Average food and non-food expenditures at household level

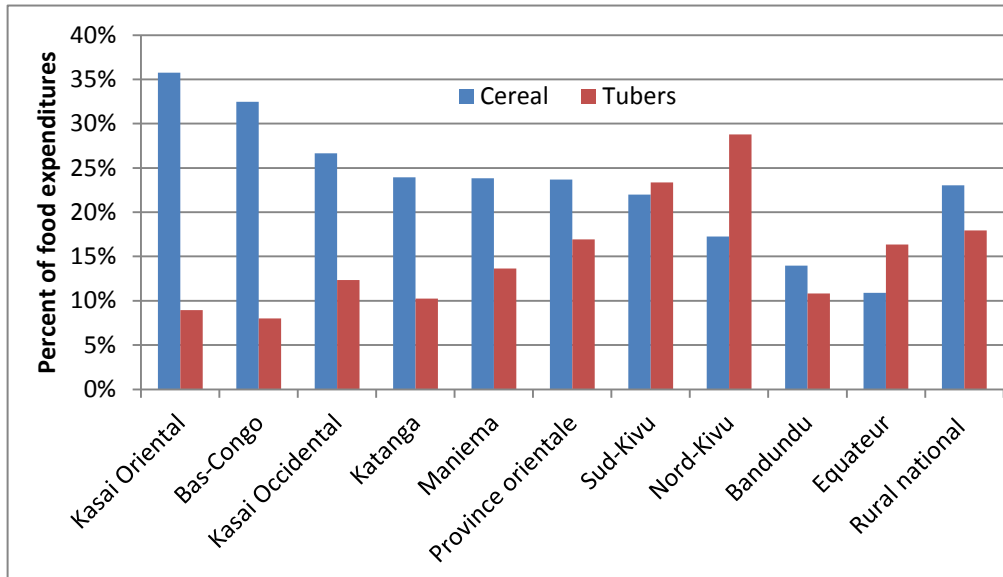


Source: CFSVA 2011-12

Cereals and tubers account for 23% and 18% of total food expenditure. As illustrated in the figure below, there are significant differences when expenditures on cereals and tubers are disaggregated at the provincial level. Households living in Kasai Oriental and Bas-Congo devote the largest share of their food expenditures on cereals (36% and 32% respectively) but the smallest share on tubers (9% and 8% respectively) compared with Nord-Kivu where expenditure on tubers account for 29% with relatively small share of expenditures on cereals.

This information should be interpreted with particular care and may call for further research as the difference may explain the substitution patterns during different times of the year. For example, during the lean season, cassava tuber provides a significant dietary supplement as a substitute for maize at a time of the year when lower household stocks and higher prices move maize out of the reach of many poor households.

Figure 14: Percent of total food expenditures on cereals and tubers by provinces



Source: CFSVA 2011-12

As expected, poor households spent a larger share of their income on food (72%) than rich households (62%). This is an important finding that needs to be kept in mind when analyzing the potential impact of high food prices on the level of food security among poor households.

Also, in order to get an indication of household's cash availability, households estimated absolute cash expenditures on food and non-food were analyzed. The consumption of home produced foods was not taken into consideration in these estimations. The magnitude that lies between the extremes, i.e. the rich and the poor as well as across provinces provided in this section are in line with the findings from the 123 household surveys although households' expenditures are often over or underestimated due to the difficulty in recalling household expenditures over a one and six months period.

The annual median⁷ and the average per capita food and non-food expenditures totaled 100 thousands CFs and 179 thousands CFs respectively.

⁷ The median was considered more appropriate than the mean per capita expenditures as the median is immune to extreme outliers

Table 11: Total annual average per capita expenditures by wealth tercile

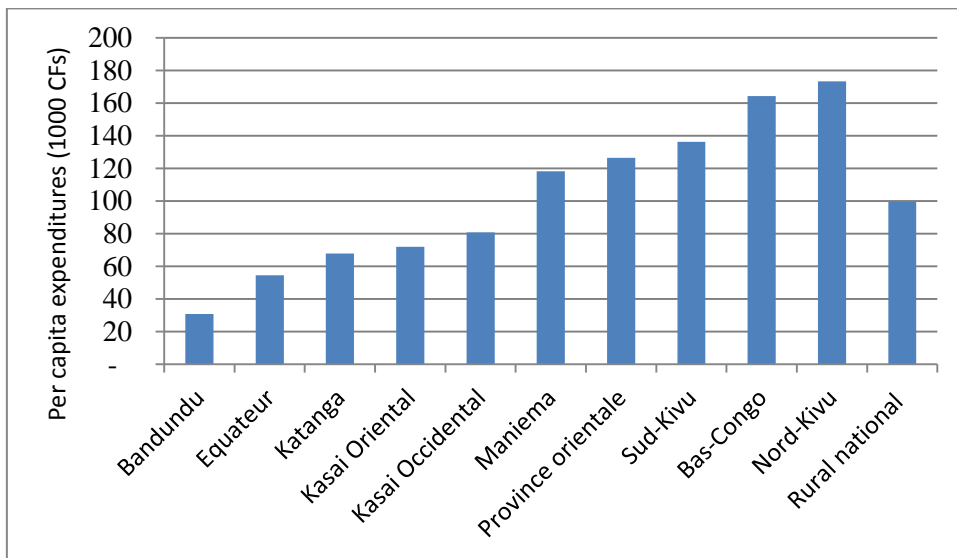
	Poor	Middle	Wealthy
Food expenditures/total expenditures (%)	72.3	71.7	62.0
Per capita annual expenditures (CF)	118,327	187,792	262,501
Cereal exp./food exp.	22.4	23.8	22.9
Tubers exp./food exp.	14.0	18.5	20.6
Legumes and nuts exp./food exp.	8.2	11.4	12.9
Fruits and veg. exp./food exp.	2.8	3.4	3.8
Meat-fish-eggs. exp./food exp.	35.4	28.2	25.3
Dairy/food exp.	1.2	1.5	2.0
Fats and oils exp./food exp.	9.6	8.0	7.8
Sweets exp./food exp.	6.3	4.5	5.1

Source: CFSVA 2011-12

Surprisingly, share of food expenditures on meat and fish are higher among the poor households (35%), than the rich (25%). Similar distributions appear for the expenditures on fats and oils and sweets food group. Apart from these exceptions, there is no significant difference in the types of food rich and poor households spend money on.

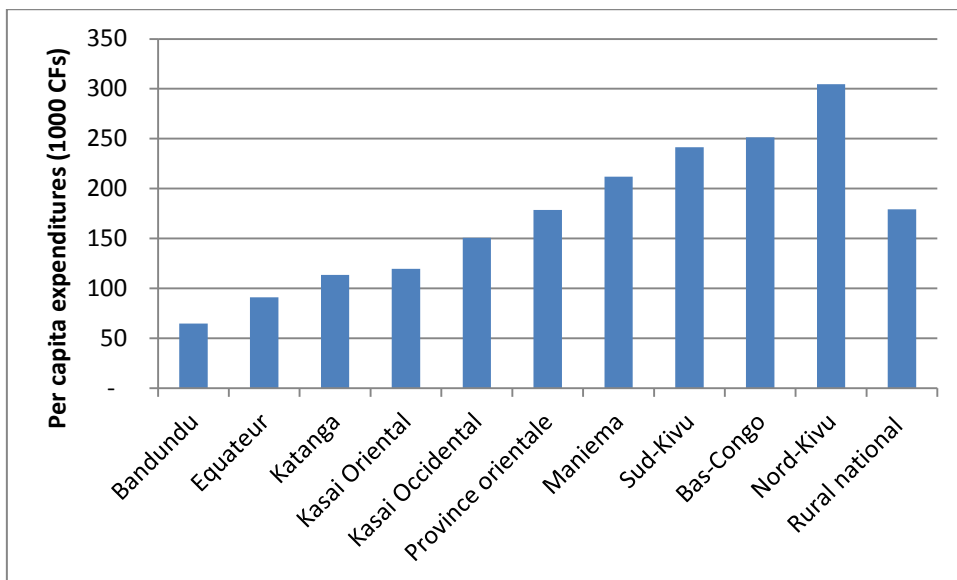
Lower annual per capita expenditures below the national average were found among households living in Bandundu, Equateur, Katanga, Kasai Oriental, and Kasai Occidental.

Figure 15: Total annual median per capita food and nonfood expenditures (1,000 CFs) by province



Source: CFSVA 2011-12

Figure 16: Total annual average per capita food and nonfood expenditures (1,000 CFs) by province



Source: CFSVA 2011-12

Staple food prices, combined with households' food expenditure discussed above, provide a portrait of the households' consumption pattern. Table 12 presents the regional average staple food in 2011-2012, years of the survey, as well as its annual variation over the period 2008-2012. Price of fuel is also presented as indicator of input and transaction costs for producers, and transport costs for consumers. Food prices affect households differently depending on their food composition and whether they are net buyers or net sellers. The nominal price of cassava flour is the lowest among the price of staple food, 532 CFs per kg compared to 707 CFs per kg for maize flour and 1422 CFs per kg for rice at the time of the

survey 2011-2012. Rice is the most expensive staple food and its price rose sharply with an annual growth of 19% over the period 2008-2012.

Table 12: Price of main staple food and fuel by province

Province	Maize flour		Imported rice		Cassava flour		Fuel	
	Av. price	Annual growth	Av. price	Annual growth	Av. price	Annual growth	Av. price	Annual growth
	2011-12	2008-12 (%)	2011-12	2008-12 (%)	2011-12	2008-12 (%)	2011-12	2008-12 (%)
Bas-Congo	841	23	1148	17	539	-7	1256	15
Bandundu	640	14	1420	22	337	-9	1632	13
Equateur	674	17	1528	21	530	-4	2009	11
Province orientale	1026	34	1029	10	600	23	1848	16
Nord-Kivu	697	11	1069	10	526	19	1659	16
Maniema	623	-11	2096	10	294	-23	2246	0
Sud-Kivu	646	28	1111	24	563	15	1627	13
Katanga	557	-8	1463	26	533	-11	1789	12
Kasai Oriental	635	8	2002	21	511	27	2480	20
Kasai Occidental	644	-9	1941	23	493	-3	2365	17
National	707	9	1422	19	532	1	1833	13

Source: Price data collected by FAO/WFP

Ulimwengu et al. (2011) find that among both rural and urban households, all food groups respond negatively to increases in their own prices. The most responsive food group is cereals, whose own-price elasticities exceed unity in both rural and urban households. For example, among rural households, cereals' own-price elasticity approaches 3, at -2.805. As expected, cross-price elasticities with cereals are all positive, suggesting that households substitute other food groups for cereals when the prices of cereals rise. In rural areas, the magnitude of tubers' responsiveness to cereals' price (1.394) is much larger than in urban areas (0.505).

In their study, fruits and vegetables, and fat and oil display also a negative own-price elasticities. Legumes and nuts, and meat and fish, however, behave very differently; indeed, even if both food groups have negative own-price elasticities, their cross-price elasticities with each other are also negative. In both rural and urban areas, an increase in the prices of legumes and nuts is associated with a larger decrease in expenditures on meat and fish, while an increase in the prices of meat and fish is associated with a small decline in expenditures on legumes and nuts.

In rural areas, increases in tuber prices are associated with decreases in expenditures on not just tubers, but also fruits and vegetables, and fat and oil

4.5 Livelihoods

Livelihoods are "the capacities, assets and activities required for a mean of living linked to survival and future well-being".

4.5.1 Livelihood activities

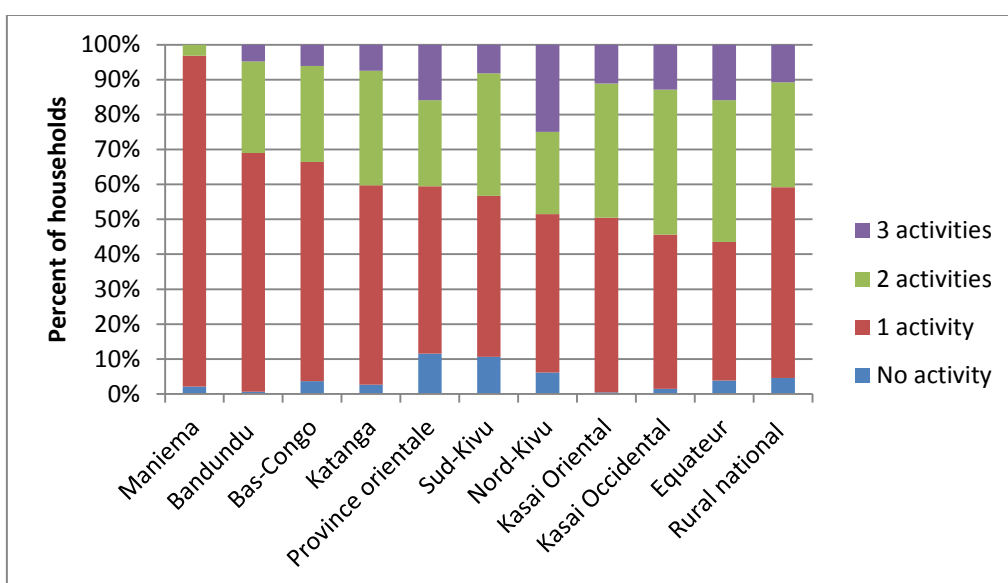
Households' livelihood activities determine food access and therefore impact the level of food security. This section first describes the most commonly reported activities, person involved and location. It also discusses any change in the household labor force over the preceding twelve months.

Households were asked to name the three main activities that sustain them in order of importance and roughly estimate the cash value (in CFs) each activity has contributed to the total household's income over the preceding twelve months.

At national level, engaging in just one livelihood activity is most common (55%), followed by two (30%). Having three livelihood activities was mentioned by 11% of households. Compared to the results of CFSVA 2008 that found only 23% of population engaging in one livelihood activity, these figures show dynamism towards an increase of the population relying on only one activity as source of income. The province where the largest share of households engaged in only one livelihood activity is Maniema (95%) followed by Bandundu (69%), Bas-Congo (65%). This may suggest that job opportunities are limited in these provinces. However, this can be also an indication of availability of one relatively regular and stable job that provides sufficient resources for the household (Bandundu as main producer of maize and cassava, Bas-Congo as the province closest to the city -Kinshasa, Katanga as the main mining province).

The province where the largest share of households engaged in three livelihood activities is Nord-Kivu (25%), followed by Equateur (16%) and Province orientale (16%)

Figure 17: Percent of household by number of livelihood activities households are engaging and by province



Source: CFSVA 2011-12

The table below lists the frequency of livelihood activities reported by the surveyed households as their main income source. Food crop production is the most frequent livelihood activities mentioned (46%), followed by sales of prepared meals (7%) and employment in public/private sector (6%).

Table 13: Most frequently mentioned livelihood activities as main income source (% HHs)

Food crop production (incl. home gardening)	46.0
Sales of prepared meals	6.7
Employment in public/private sector	6.4
Handcraft (Artisanat)	5.4
Livestock production/Animal husbandry	5.3
Petty trade, street vending	4.5
Fishing	4.3
Forest resources, hunting, gathering	4.1
Other	2.9
Cash crop production	2.8
Unskilled labor	2.7
Skilled labor	2.4
Agricultural wage labor	2.3
Gift/donation	1.7
Transport (incl. taxi moto)	1.2
Support from family/friends	0.9
Pension	0.4

Source: CFSVA 2011-12

4.5.2 Livelihood profiles and incomes

Eleven relatively homogenous livelihood profiles were created based on the contribution of each livelihood activity to households' annual income. Cluster analysis was used to group people who share the same basic means of livelihood and lifestyle – the same main subsistence and income-generating activities, and social and cultural practices – and face the same risks of food and nutrition insecurity.

Table 14 reports the eleven livelihood groups with their average annual per capita income and shows the contribution of the three most important activities that characterize each livelihood group.

Table 14: Livelihood groups with their average annual per capita income

Livelihood groups	N	% of HH	Annual income per capita		Most important income	% contribution to total income	Second most important income		Third most important income	
			Median	Mean			% contribution to total income	% contribution to total income		
Agriculturalist (food crops)	12,546	57	40,00	95,625	Food crop production	90	Handcraft	1	Sales of prepared food	1
Agriculturalist (cash crops, forest , livestock)	2,595	12	50,00	165,361	Cash crop production & forest & livestock	46	Food crop production	10	Transport	10
Salaried and consultant	1,624	7	71,250	270,238	Formal employment in private/public sector	84	Food crop production	8	Sales of prepared food	2
Prepared meals seller	1,035	5	52,500	214,249	Sales of prepared food	86	Food crop production	7	Formal employment	1
Artisan	806	4	46,182	143,692	Artisan	84	Food crop production	10	Petty trading	1
Petty trader	706	3	62,500	219,382	Petty trading and street vending	84	Food crop production	7	Sales of prepared food	2
Fisherman	687	3	41,000	103,976	Fishing	79	Food crop production	3	Petty trading	1
Other livelihood group	556	3	44,444	196,806	Other livelihood	86	Food crop production	8	Petty trading	1
Skilled laborer	507	2	69,610	313,930	Skilled labor	84	Food crop production	8	Sales of prepared food	2
Unskilled laborer	507	2	70,000	308,746	Unskilled labor	85	Food crop production	6	Sales of prepared food	2
Agricultural wage laborer	478	2	60,000	225,586	Agricultural wage labor	90	Food crop production	4	Sales of prepared food	1

The first most important income source for all livelihood groups provides at least 80% of the households' average annual income, except the second type of agriculturalist (cash crop

production & forest resources & livestock) that provides 46% of the households' average annual income.

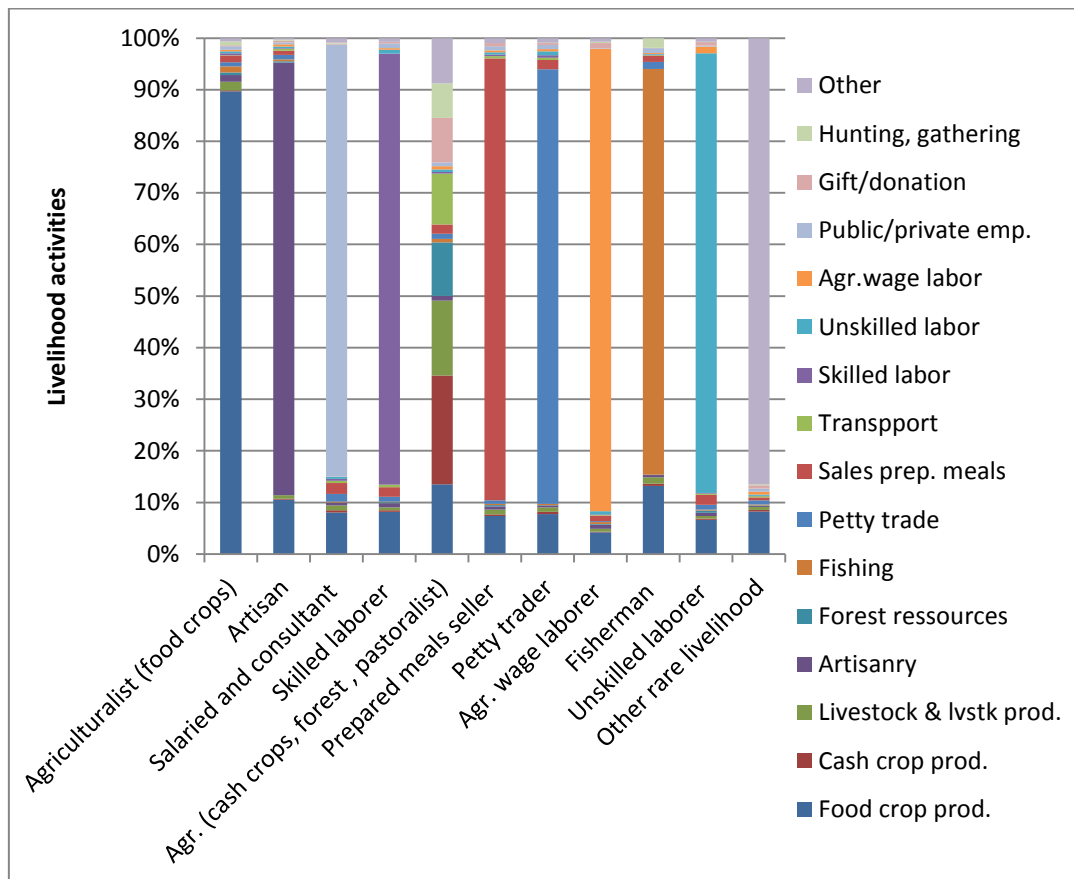
The second most important income source for 10 out of 11 livelihoods was found to be food crop production, underlining the importance of agriculture in the lives of Congolese. The food crop farmers' livelihood group is an exception with naturally the food crop farming as the number one income source.

The third most dominant income source for 6 out of 11 livelihoods is sales of prepared food.

Food crop farmers and agricultural wage laborer are the two livelihood groups of the eleven that are most reliant on one single income activity with their main income source contributing up to 90% to their overall annual income. This dependency may make them vulnerable given that they do not have the possibility to alternate between activities in times of need. This is particularly true for poor households whose main income activity is largely seasonal, the returns of which are irregular and unpredictable depending on external factors such as weather variability.

Figure 18 complements table 13 in that it illustrates the contribution of each of the different activities to each livelihood group.

Figure 18: Contribution of livelihood activities (%) to overall livelihood group



Source: CFSVA 2011-12

Table 15 shows that the largest share of poorest households can be found among the fishermen (70%). They are followed by the food crop farmers (57%), artisan (46%), and cash crop and livestock farmers (36%).

Table 15: Livelihood of lowest wealth tercile

Livelihood groups	N	% HH	% in poorest wealth tercile
Fisherman	687	3	70
Food crop prod.	12,546	57	57
Artisan	806	4	46
Cash crop & livestock	2,595	12	36

prod.

Other cluster group	556	3	36
Agr. wage laborer	478	2	33
Prepared meals seller	1,035	5	24
Salaried	1,624	7	24
Petty trader	706	3	21
Unskilled laborer	507	2	20
Skilled labor	507	2	18

Source: CFSVA 2011-12

4.6 Household Food Consumption: Diet Diversity & Frequency of Food Consumed

Food consumption is a reflection of food availability and food access at the household level and is used as proxy for food security.

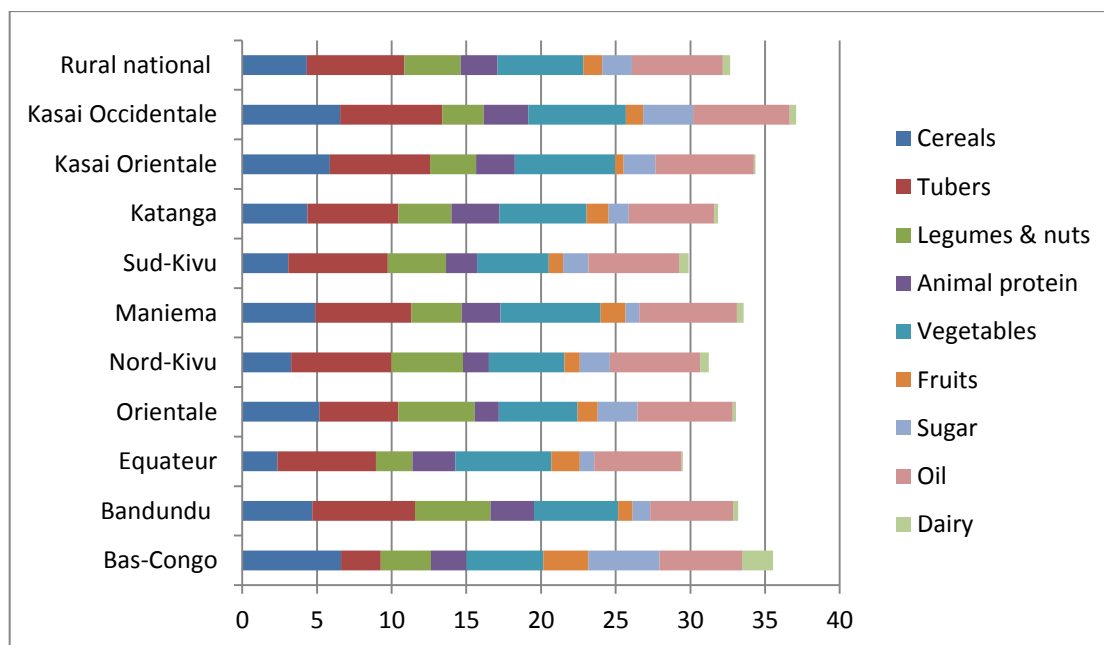
Food consumption, according to WFP's standard methodology, is made up of the diversity of the diet and the frequency staple and non-staple foods are consumed. Together, diet diversity and frequency of food consumption are considered reliable proxy indicators of the access dimension of food security and nutrition intake. Research has demonstrated that diet diversity is highly correlated with caloric and protein adequacy, percentage of protein from animal sources (high quality protein) and household income.

Diet diversity is measured by the number of different foods from different food groups consumed in the household and the frequency by the number of days in a week those items were eaten. The quantities of the foods items are not considered. Households were asked how many days over the past seven days prior to the data collection they had eaten seventeen different food items. The individual food items included maize, rice, sorghum, millet, other cereals, bread, plantains, cassava, sweet potatoes, potatoes, other tubers, beans, peas other legumes, fish/seafood, poultry, meat, eggs, chenilles, nuts, vegetables, fruits, oil, milk, and dairy.

At national level, cereals are consumed at an average of 4.3 days a week with maize being the most frequently consumed. Tubers are consumed every day (6.5 days) with cassava being the most important item in the tuber group. Legumes and nuts are consumed 3.8 days a week, vegetables 5.7 days a week. Animal protein including animal products such as eggs is consumed 2.5 days a week, consumption of oil is high (6.1 days), while fruit and dairy products are hardly consumed (1.3 and 0.5 respectively).

The frequency of food consumption varies by provinces. People living in Nord-Kivu, Sud-Kivu, and Equateur eat cereals less than the national average. Consumption of cassava remains almost seven days a week across all provinces with exception of Bas-Congo (2.7 days) and Province orientale (5.3 days). Consumption of legumes and nuts, source of vegetal protein are above the national average in only three provinces: Bandundu (5.1 days), Province orientale (5.1 days), and Nord-Kivu (4.8 days). No significant difference has been found in the fish and meat consumption - important sources of animal protein. The same holds for vegetables, sources of vitamins. Milk/dairy products are only consumed in Bas-Congo for 2.1 days a week.

Figure 19: Consumption of food groups (in days) by province over the last seven days



Source: CFSVA 2011-12

The average number of meals consumed by the adult household members the day preceding the survey was 1.9. Adults living in Bas-Congo consumed slightly more frequently than those living in other provinces (2.2). Equateur and Sud-Kivu had the lowest average number of meals per adult (1.8). Children eat more frequently than adult (2.1). Similar to adults, children living in Equateur, Sud-Kivu and Kasai Oriental had the lowest number of meal per day (1.9).

The number of meals children ate is similar whether the household is headed by a man or a woman.

Table 16: Average number of meals household members ate the day preceding the survey

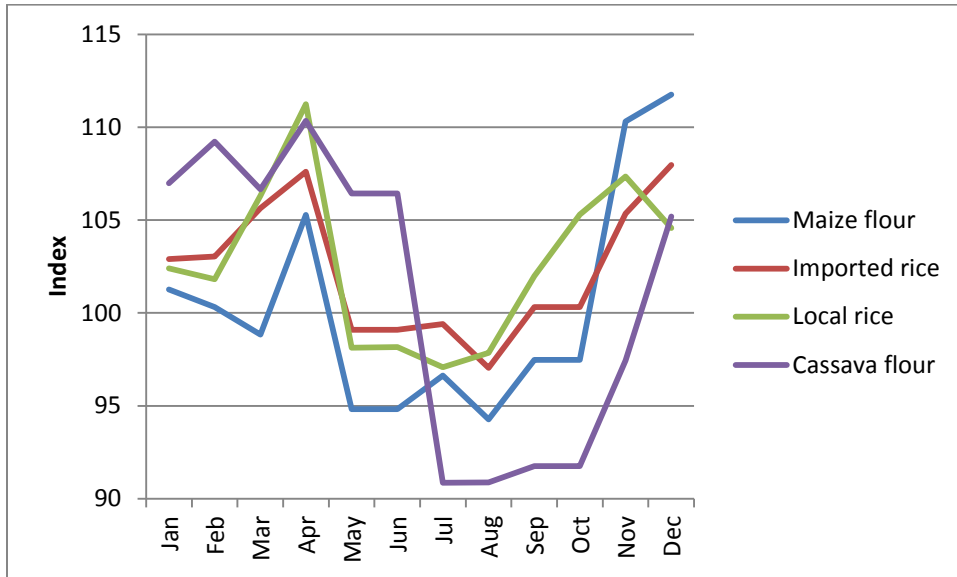
Province	Adults	Children
Bas-Congo	2.2	2.3
Bandundu	2.1	2.5
Equateur	1.8	1.9
Province orientale	1.9	2.1
Nord-Kivu	2.0	2.1
Maniema	2.1	2.2
Sud-Kivu	1.8	1.9
Katanga	2.0	2.0
Kasai Oriental	1.9	1.9
Kasai Occidental	1.9	2.1
Rural national	1.9	2.1

Source: CFSVA 2011-12

4.6.1 Seasonality of food consumption

The potential impact of seasonality is important when analyzing food consumption patterns. Households were asked whether they experienced any difficulties in getting enough food to eat over the last 12 months and when. As reported in Figures 21.a-21.j, different trends have been observed. In-depth market analysis taking into consideration regional influential factors such as cultural calendar, rainfall, price trends throughout the year would give a better understanding of the difficulties households experience in getting enough food; this would be useful to determine best timing and geographical targeting of food interventions.

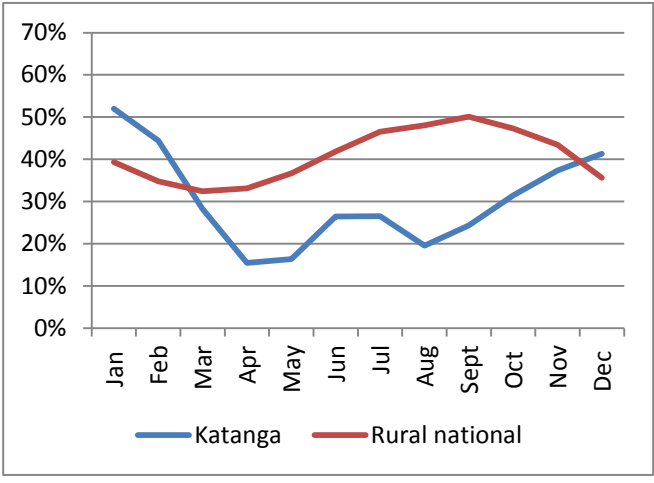
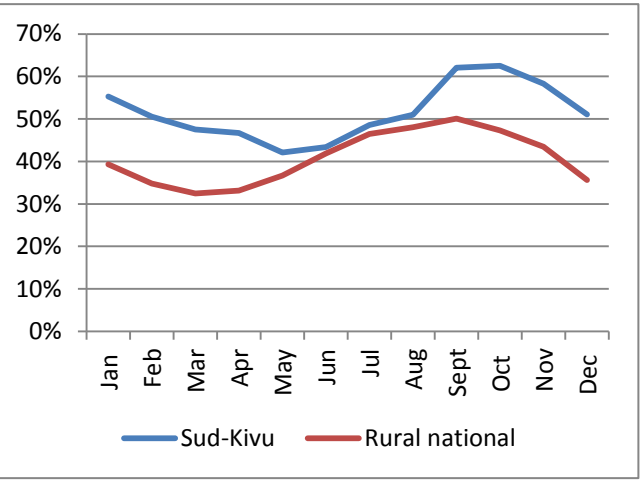
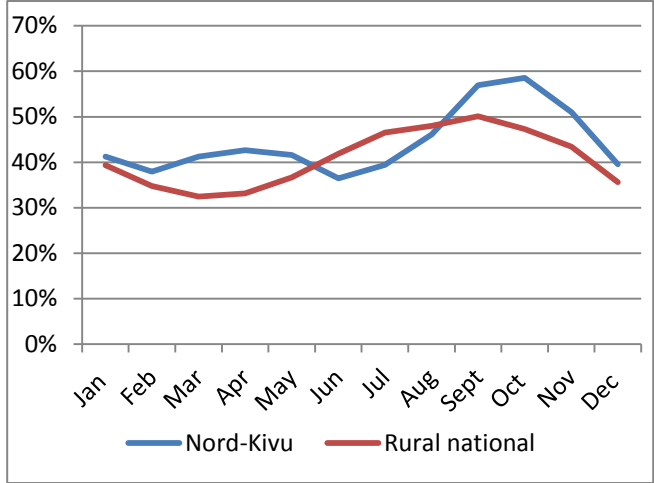
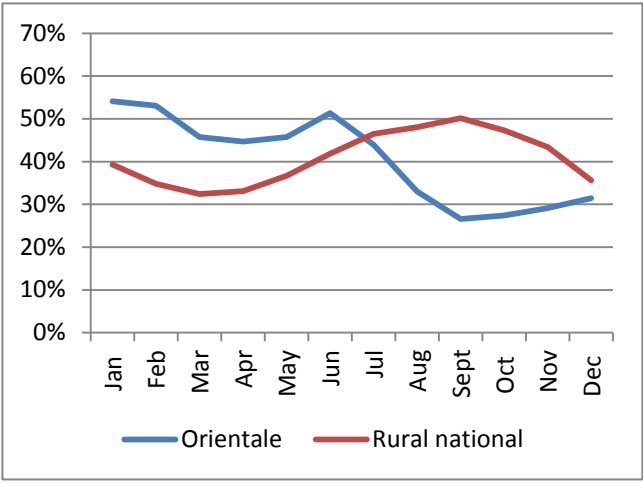
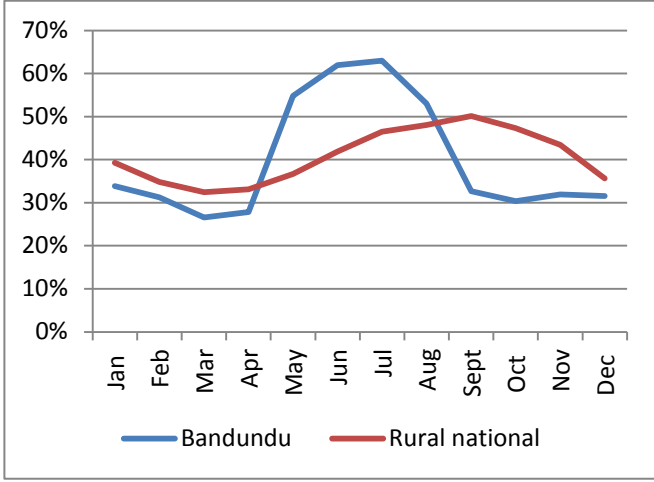
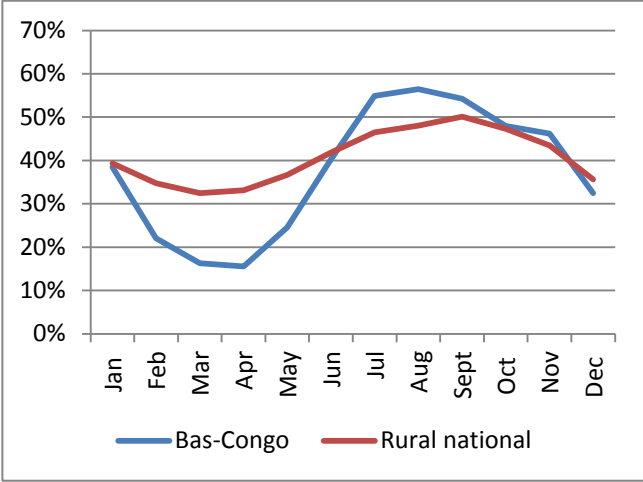
Figure 20: Monthly seasonal price indices of main staple food and fuel in DRC (2008-2012)

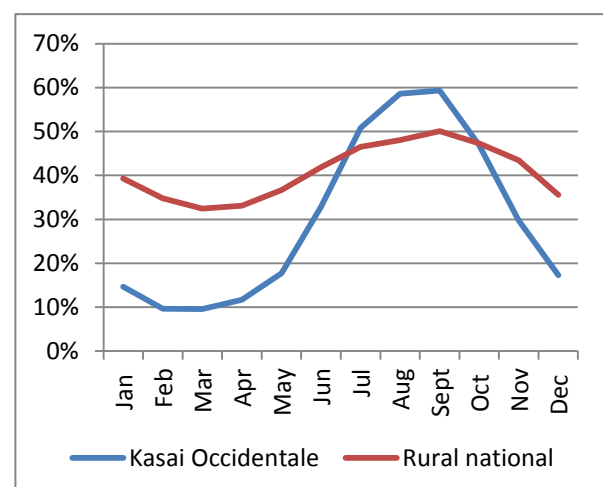
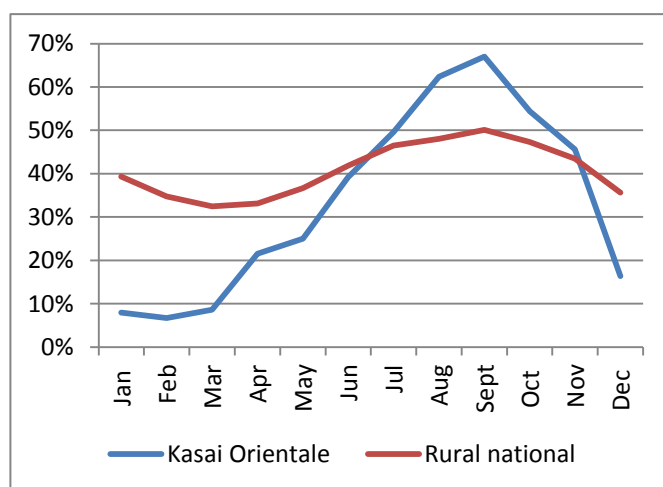
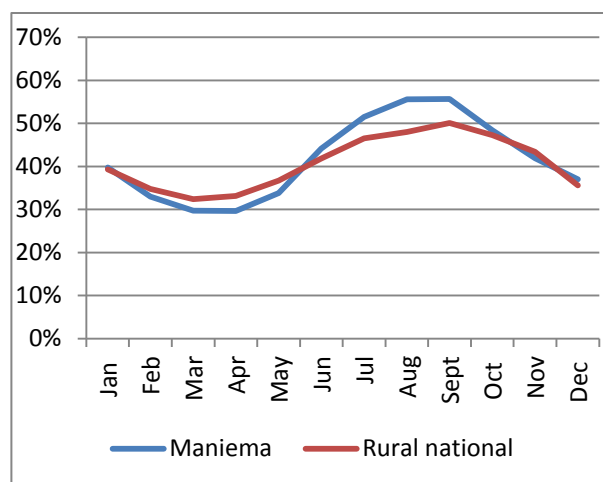
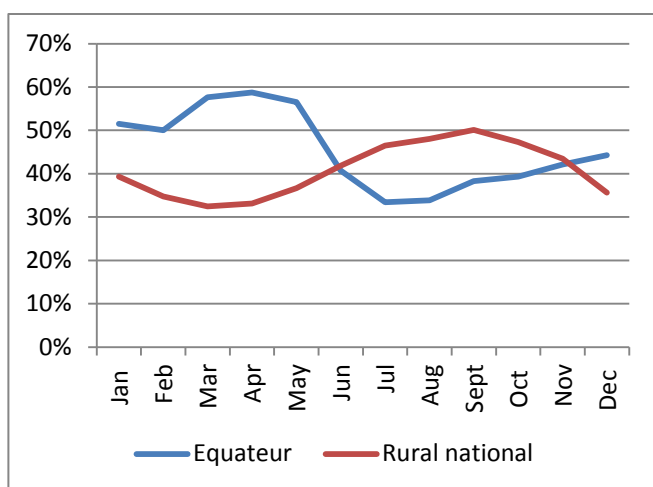


Source: Prices collected by FAO/WFP

Trends in seasonal prices suggest that the prices of staple food reach their lowest level in August when the harvest of first season reaches the markets. During the harvest of maize and rice in the Central Basin and in the northern agro-ecological zones and that of cassava in all regions between July and August (cf. agricultural seasonal calendar in Annex A), one would expect the consumption of staple foods increases because it is more affordable and available due to low price. Then, prices begin to increase again and stay high until the harvest of the second season in February for maize and rice although they do not reach the same level as during the first season. As for cassava, further analysis is needed as it can be kept in the ground for as long as wanted until climatic conditions are best for drying, which may affect its price in addition to the agricultural calendar and its substitution with other staple food.

Figure 21: Percent of households reported to have experienced "difficulties" accessing enough food over the past 12 months





Source: CFSVA 2011-12

4.6.2 Household food consumption groups

Food consumption groups are created on the basis of similar household food consumption characteristics and patterns. For the grouping, food consumption scores (FCS) were computed to distinguish between those different consumption groups. Reported dietary diversity and the frequency with which staples and non-staple foods had been consumed (number of days per week) were used for this analysis. The rationale being that diet diversity is proven to be correlated to nutrient adequacy, children's and women's anthropometry and socioeconomic status.⁸ It is therefore a good proxy indicator for the access dimension of food security and nutrition intake. The detailed methodology can be found in annex.

⁸ Ruel M. (2003): Operationalizing Dietary Diversity: A Review of Measurement Issues and Research Priorities. *Journal of Nutrition* 133 (11 suppl. 2) 3911S-3926S

The FCS is computed by grouping together the food items for which consumption was assessed over a seven-day recall period. For each food group the frequency represents the number of days an item from the food group was consumed, with a range from 0 (never) to 7 (every day). A weight is assigned to each food group, representing the nutritional importance of the food group. The FCS is the sum across food groups of the product of the frequency by the weight.

WFP's standard Food Consumption Groups include poor, borderline and acceptable.

Poor food consumption (0 to 28) in DRC corresponds to a diet a household is expected at least to eat that is dominated by starches on daily basis (3 days of cereals and 6 days of tubers) complemented by vegetables 5 days a week. Through a cluster analysis, the DRC population is found to homogeneously consume oil nearly daily; therefore, the 21 threshold corresponding to the minimum staple and vegetables was raised from 21 to 28 by adding 7 to the threshold that accounts for the daily consumption of oil which gives 7 points to the FCS.

The mean food consumption score at national level for the poor food consumption group is 24.

Borderline food consumption (28.5 - 42) remains similar to poor food consumption with a focus on starches, a bit more vegetables (5.5 days a week), oil, complemented by a consumption of pulses (2 days/week) and meat/fish (1.5 days/week) as sources of protein and sugar (1 day/week).

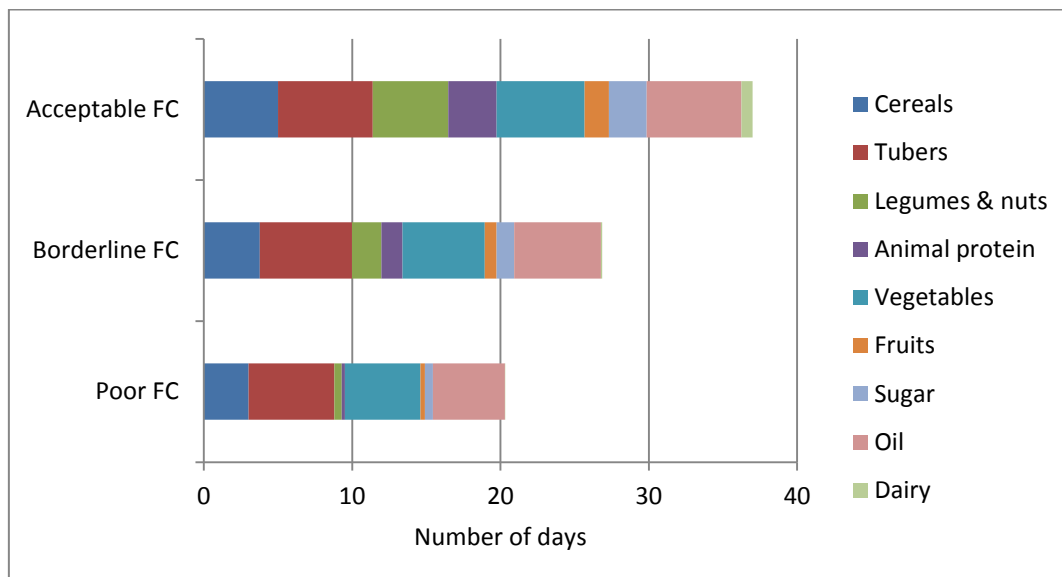
The mean food consumption score at national level for the borderline food consumption group is 36.

Acceptable consumption group (42.5 +) consists of a diet with daily consumption of starches, vegetables, oil, more pulses/beans/nuts as essential sources of vegetal protein (5 days a week) to which are added 3 days a week of meat/fish consumption as source of animal protein and 3 days a week of sugar; fruits and dairy products are rarely consumed.

The mean food consumption score at national level for the acceptable low food consumption group is 57⁹.

⁹ Poor (mean=24; median=25); Borderline (mean=36, median=36); Acceptable (mean=57, median=55)

Figure 22: Consumption of food groups (in days) by food consumption groups over the last seven days



Source: CFSVA 2011-12

Nationally, 10% of the population can be considered to have poor and 28% borderline food consumption. Their diet is not diverse enough, nor is essential food groups sufficiently and often consumed to guarantee a healthy and active life. (See also when was the survey conducted (lean vs harvest) to see if households who fall into those two consumption groups are considered food insecure.

Nine percent (62%) of the population have a diet considered as acceptable. (Same note as above).

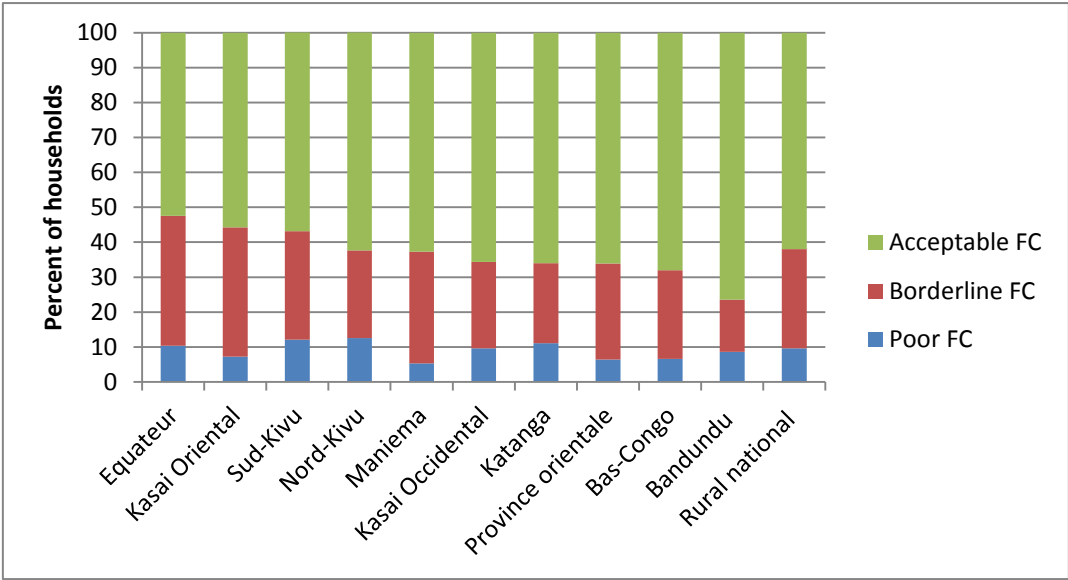
Although the majority of the population has an acceptable diet, the national prevalence tends to hide regional differences highlighted in the preceding sections.

4.6.3 Geographic distribution of the three food consumption groups

As presented in Figure 22 below, four provinces have households with non-acceptable food consumption above the national average: Equateur (10% of poor and 37% of borderline consumption), followed by Kasai Oriental (7% poor and 37% borderline), Sud-Kivu (12% poor and 31% borderline), and Nord-Kivu (13% poor and 25% borderline). Households with poor food consumption above the national average live in Nord-Kivu (13%), Sud-Kivu (12%), Katanga (12%), and Equateur and Kasai Occidental (10%).

As expected and in line with the previous findings, the largest share of households with acceptable food consumption above the national average live in Bandundu (76%), the province with the highest food production, followed by Bas-Congo (68%), Kasai occidental, Katanga, and Province orientale (66%), and Maniema (63%).

Figure 23: Percent of households by food consumption groups and by provinces

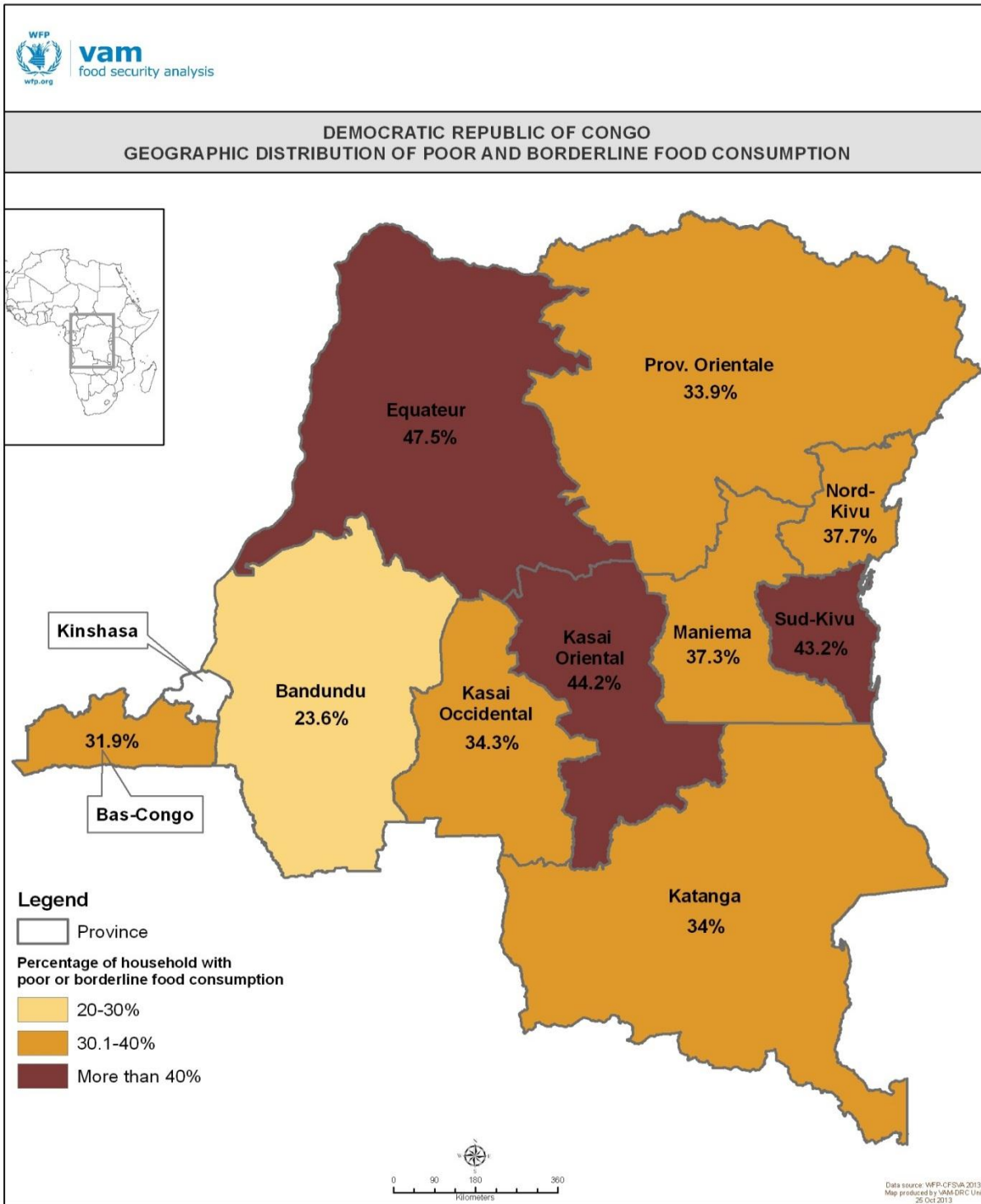


Source: CFSVA 2011-12

Province	CFSVA-11/12			CFSVA-2008		
	Poor FC	Borderline FC	Acceptable FC	Poor FC	Borderline FC	Acceptable FC
Equateur	10	37	52	2	25	73
Kasai Orientale	7	37	56	7	34	59
Sud-Kivu	12	31	57	12	33	55
Nord-Kivu	13	25	62	6	30	64
Maniema	5	32	63	5	51	44
Kasai Occidentale	10	25	66	1	16	83
Katanga	11	23	66	11	35	54
Orientale	6	27	66	5	32	63
Bas-Congo	7	25	68	7	30	63
Bandundu	9	15	76	6	26	68
Rural national	10	28	62	6	30	64

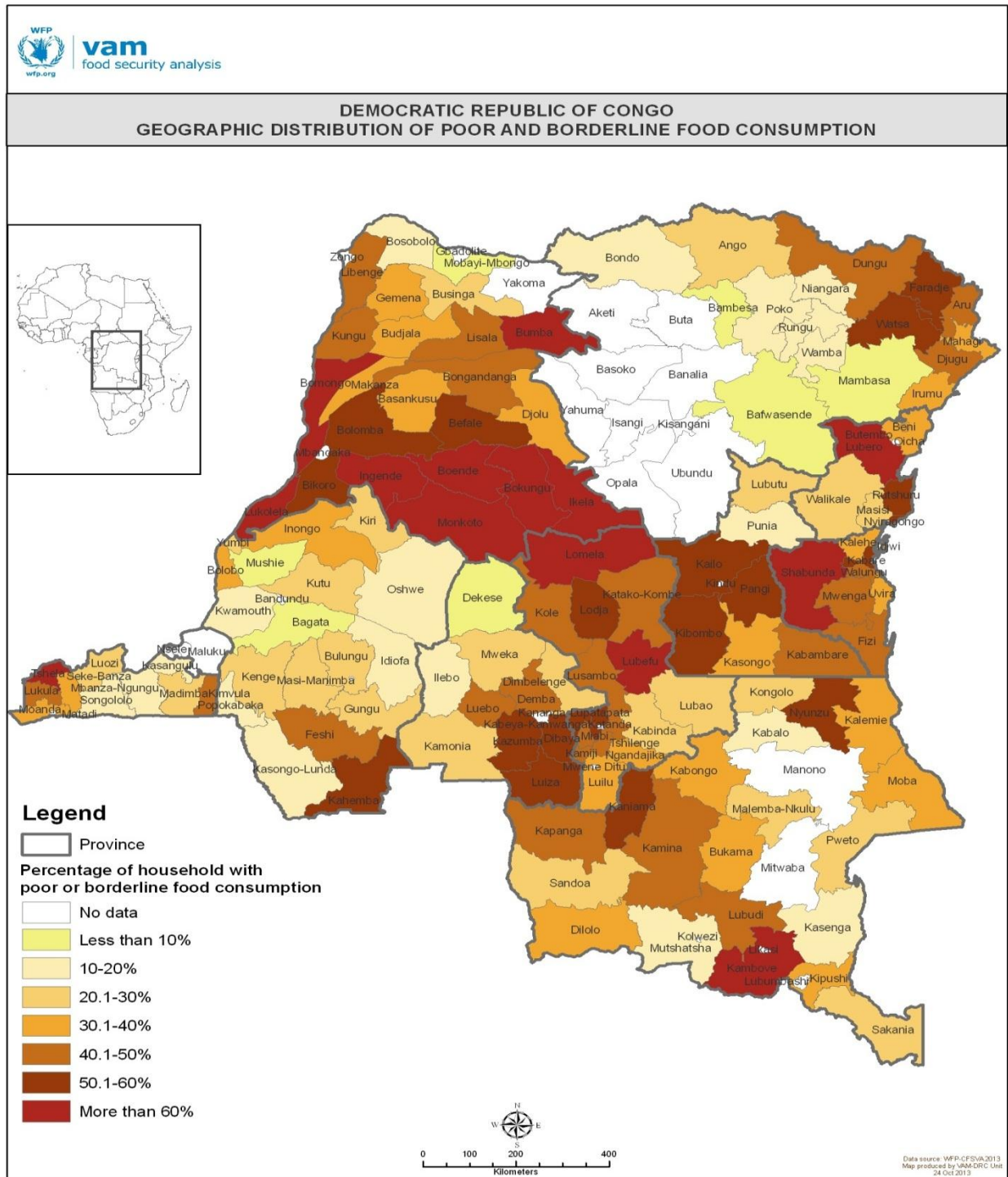
Although there is no significant change in the overall food consumption pattern, the results showed that the percentage of household with poor food consumption score has increased from 6 percent in 2008 to 10 percent in 2011/2012. The percentage of household with poor or borderline food consumption increased from 36% in 2008 to 38% in 2011/2012. The food security situation has been deteriorated in the Equateur and Kasai Occidental provinces.

Map 1: Distribution of food consumption score at the provincial level



Source: CFSVA 2011-12

Map 2: Distribution of food consumption score at the territorial level



Source: CFSVA 2011-12

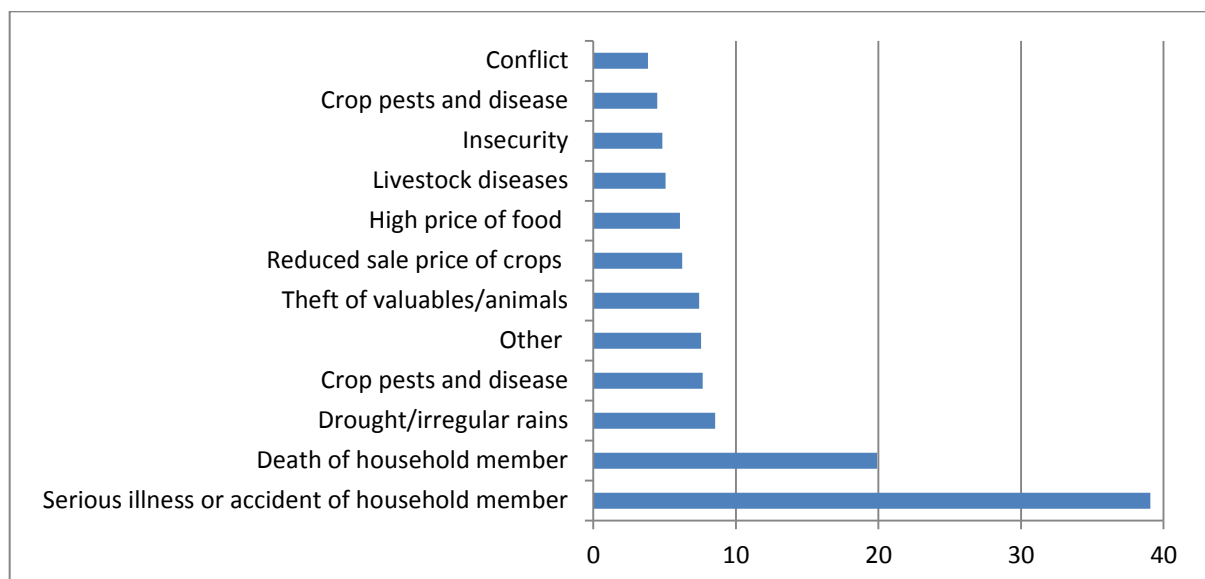
4.7 Risks and Vulnerabilities

The following section provides an insight into the general vulnerability context, difficulties experienced and households' capacities to resist them.

4.7.1 Exposure to risks and shocks

In the CFSVA households were asked whether they had experienced any “difficulties” over the last 12 months. The most frequently mentioned out of a total of twenty different shocks are listed in the figure below:

Figure 24: Percent of household having experienced different types of difficulties over the last 12 months prior the survey

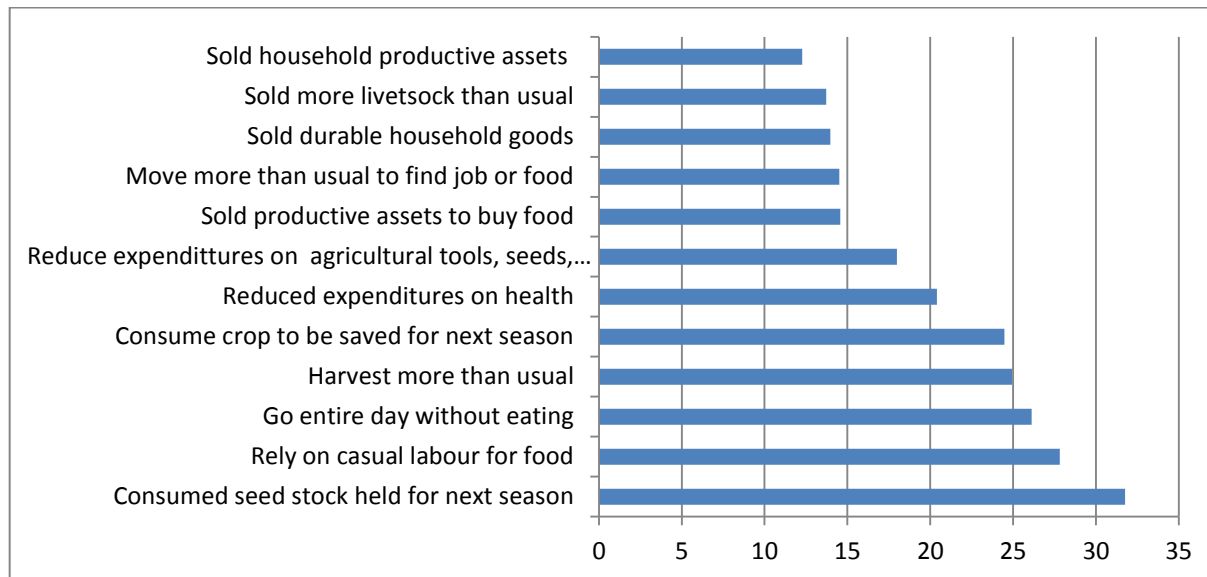


Source: CFSVA 2011-12

4.7.2 Capacities to cope

This section analyze the shocks that households have been confronted with, the strategies they adopted to cope with and the initiatives they have taken to prevent a similar shock from having the same deteriorating impact in the future. A single question: “What do you do when you do not have enough food, and do not have enough money to buy over the last month preceding the survey” was asked to the household. The answers are a series of behaviors about how households manage or “cope” with a shortfall in food consumption. Coping strategies have the objective to fend off any potentially negative impact on the household’s welfare; however, certain types of coping strategies have the potential to be damaging by increasing vulnerability.

Figure 25: : Most frequently mentioned coping strategies used in response to “difficulties” experienced over the last 30 days prior the survey



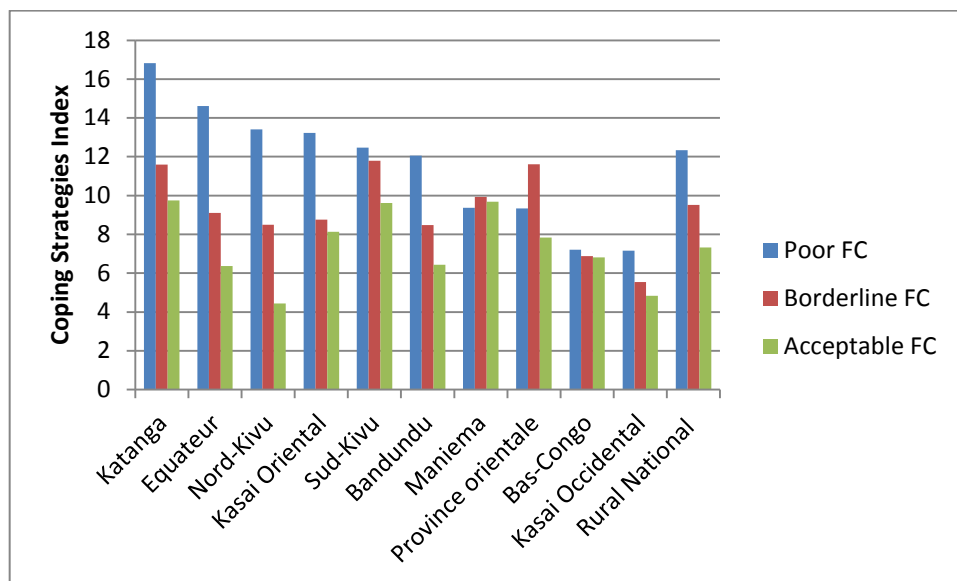
Source: CFSVA 2011-12

A reduced series of questions about frequency of household’s use of coping strategies with a shortfall in food consumption were asked: i) rely on less preferred and less expensive foods, ii) borrow food or rely on help from a friend or relative, iii) limit portion size at mealtimes, iv) restrict consumption by adults in order for small children to eat, and v) reduce number of meals eaten in a day. The recall period is the past seven days. These strategies are “weighted” by values that reflect their severity before being added together to create the coping strategy index (CSI). This simple numeric CSI score is often used as a proxy for food insecurity as it measures stress on the household, related to food access. The reduced CSI is very useful for geographic targeting because it characterizes the same set of behaviors. Higher CSI scores indicate a more serious food security situation. The mean CSI at national level is 8.4¹⁰.

As shown in Figure 26, the CSI in Katanga, Sud-Kivu, Maniema, Province orientale, and Kasai Oriental are above the national average.

¹⁰ 1st tercile of CSI (mean=1, median=0), 2nd tercile (mean=6, median=6); 3rd tercile (mean=19, Median=16)

Figure 26: Coping Strategy Index by province



Source: CFSVA 2011-12

4.8 Household Food Security Profiling

4.8.1 Food Insecure Households in the DRC: Where and how many are affected?

This section provides an overview of the magnitude and geographic distribution of food insecurity using household level data. Household food security is classified according to a combination of three indicators: (i) the food consumption score (FCS), which combines diet diversity, frequency of consumption and the relative nutritional importance of different food groups. It divides households into three groups: poor, borderline and acceptable food consumption, (ii) the wealth index, which is based on asset ownership and housing conditions, and divides households into terciles with the lowest generally referred to as poor, and (iii) the coping strategy index (CSI), which also divides households into terciles based on the severity of households' regular behavioral responses to food shortage.

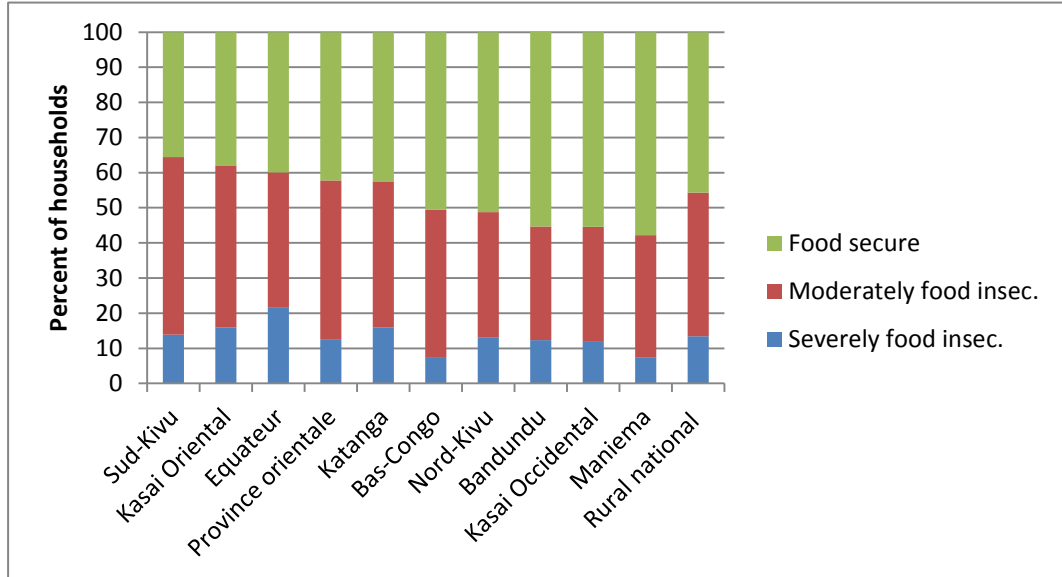
By combining the three indicators above households are subsequently divided into three food security groups:

- Severely food insecure – i) households with poor food consumption and ii) households with borderline food consumption but in the lowest wealth tercile and in the most severe coping strategy index tercile;
- Moderately food insecure – i) the remaining households with borderline food consumption and ii) households with acceptable food consumption but in the most severe coping strategy index tercile;
- Food secure – the remaining households with acceptable food consumption.

In this report food insecurity refers to households that are either severely or moderately food insecure. The highest proportion of food insecure households is in Sud-Kivu where 64% of

households are either severely or moderately food insecure. This compares with 42% of households in Maniema, against a national average of 54%.

Figure 27: Prevalence of food insecure households by province



Source: CFSVA 2011-12

It is worth noting that although the mildly food insecure households may not consume an adequate diet at the time of the survey; their food insecurity is likely to be temporary because they are wealthier and more able to use their resources to access food. At the time of the survey their inadequate diet may be explained by the fact that the survey was carried out during the lean season when household food access is impaired. To estimate the absolute total number of food-insecure and vulnerable people, we apply the prevalence of food insecurity found in each province to the entire population of the province from which the sample was drawn.

Table 17: Total number of rural population by food insecurity status and by province

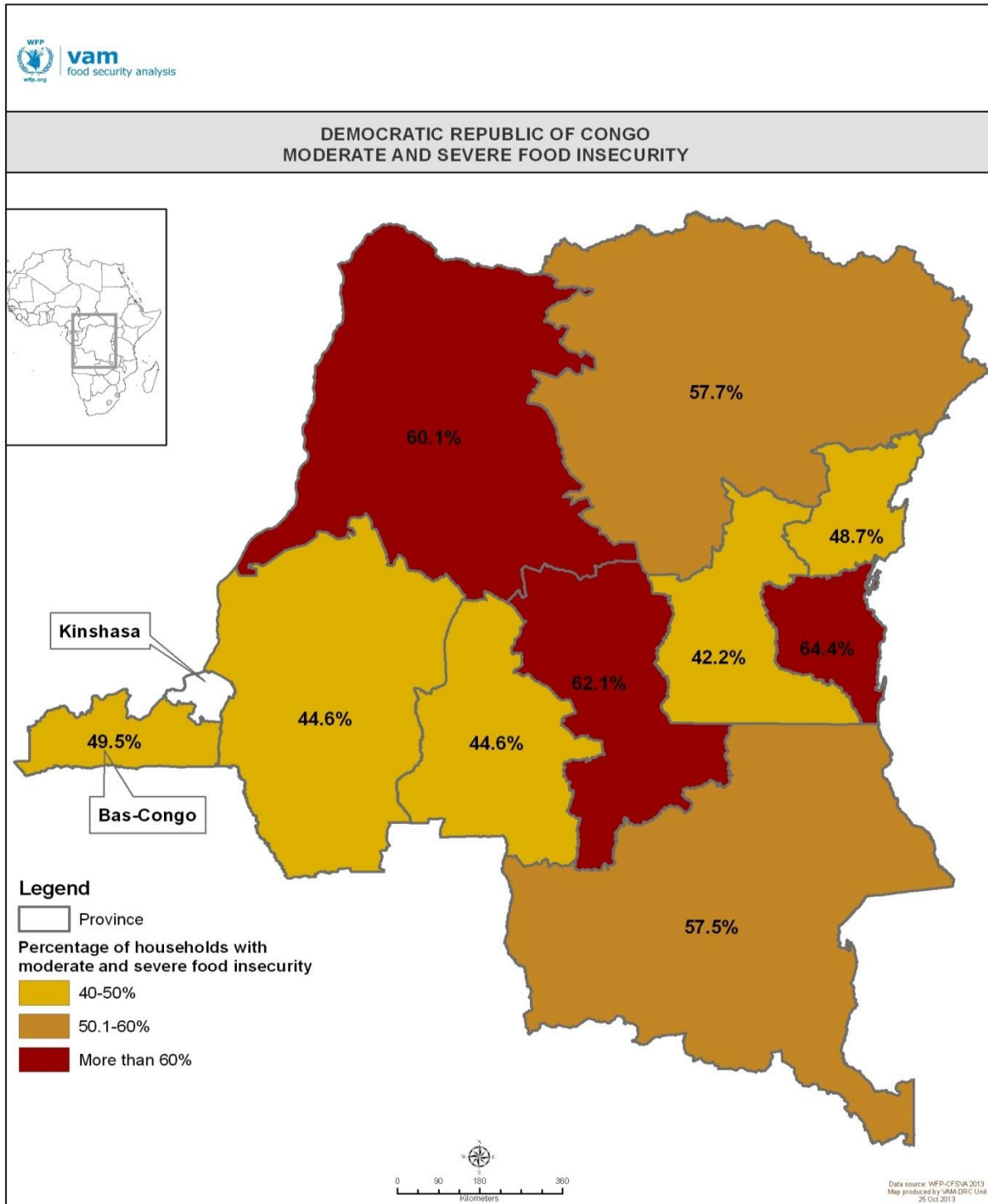
Province	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Equateur	22	1,612,887	38	2,855,287	60	4,468,174	7,439,518
Katanga	16	1,233,694	42	3,220,624	57	4,454,318	7,749,335
Province orientale	13	731,562	45	2,618,773	58	3,350,335	5,801,447
Bandundu	12	850,019	32	2,223,127	45	3,073,147	6,882,747
Sud-Kivu	14	646,768	51	2,364,630	64	3,011,398	4,673,181
Kasai Oriental	16	769,385	46	2,231,313	62	3,000,699	4,832,821
Kasai Occidental	12	720,972	33	1,954,009	45	2,674,981	6,003,099
Nord-Kivu	13	476,700	36	1,285,789	49	1,762,489	3,616,846
Bas-Congo	7	198,790	42	1,117,263	50	1,316,052	2,657,618
Maniema	7	141,419	35	669,627	42	811,046	1,921,454
Rural national	14	7,380,821	40	20,538,386	54	27,903,734	51,578,066

Source: CFSVA 2011-12

The results in Table 17 indicate that in rural areas of DRC, about 28 million people are considered either severely or moderately food insecure at the time of the survey. The province with the highest absolute number food insecure people is Equateur because of its large rural population combined with the relatively high proportion of food insecure households.

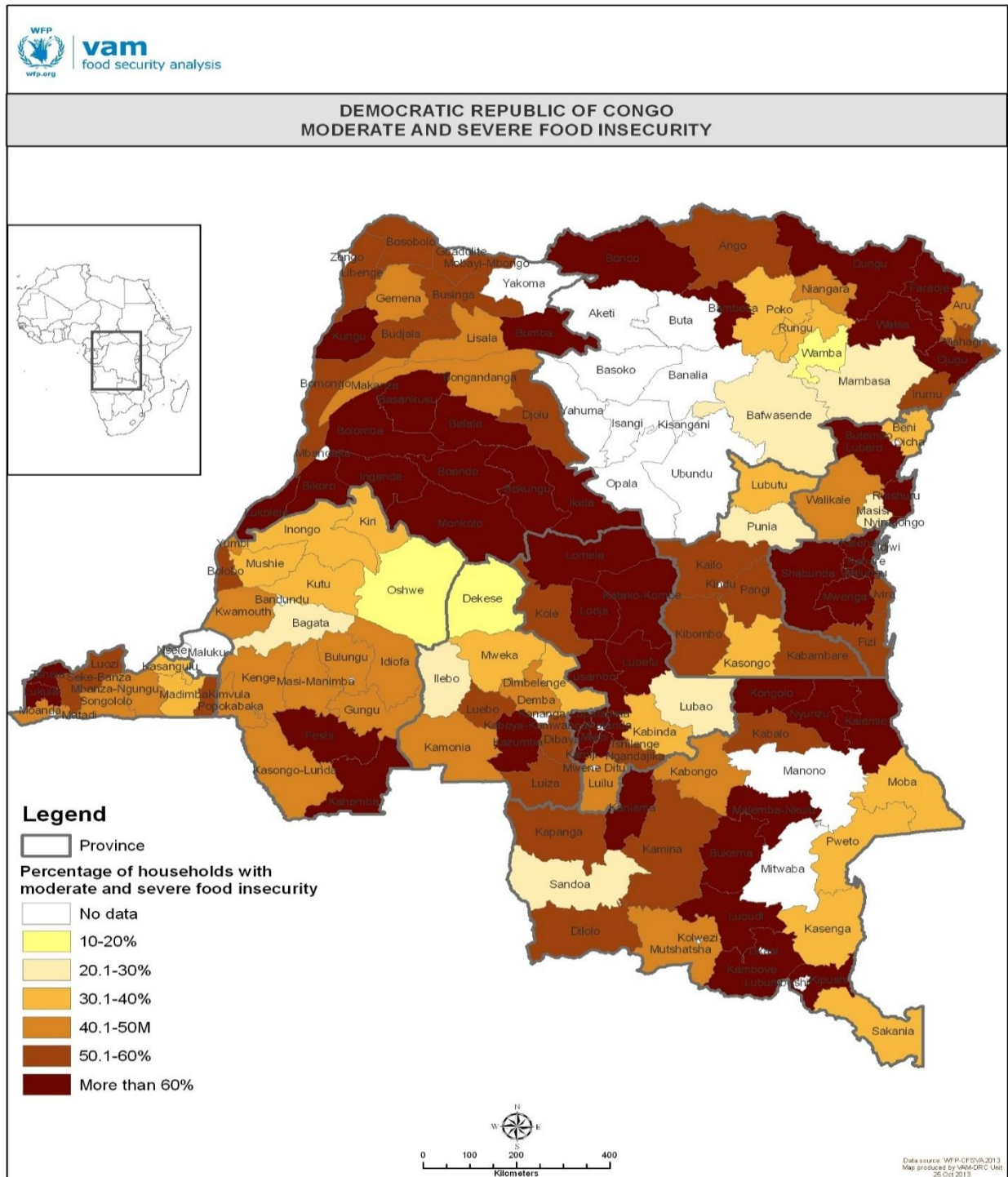
Maps 3 and 4 show the geographical distribution of the prevalence of food insecure households. Tables reporting this indicator by territory are given in Annex B.

Map 3: Prevalence of food insecure households at the provincial level.



Source: CFSVA 2011-12

Map 4: Prevalence of food insecure households at the territorial level.



Source: CFSVA 2011-12

4.8.2 Food Insecure Households in the DRC: Who are they?

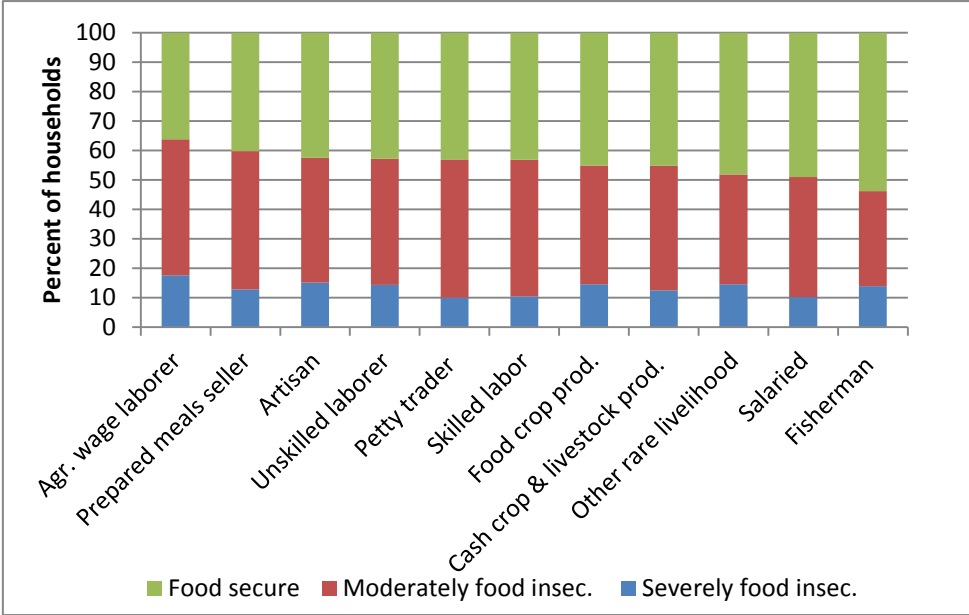
This section explores indicative characteristics associated with households falling into severe, moderate food insecure, and food secure groups. The analysis of characteristics of food insecurity households is purely descriptive; therefore, no causality should be inferred. Instead it provides indications and tendencies that could be used as targeting criteria for food or non-food interventions. The list of characteristics provided is not exhaustive, nor should each one of them be given equal weight across different situations and locations. They form a basis for the development of more refined geographic- and situation-specific targeting tools. Additionally, they can also point to potential response options that could reduce peoples' vulnerability to food insecurity.

4.8.2.1 LIVELIHOODS

At national level, there is difference between food consumption of livelihoods. As expected, the highest shares of food secure households were found among fishermen (54%) and the salaried (49%). Although fishermen are likely to be poor, as their annual income per capita is among the lowest (Table 13) and the largest share of poorest households in terms of wealth index can be found among them (Table 14), they tend to have better diets than households dependent on other livelihood strategies with some 46% being either severely or moderately food insecure. The relatively low proportion of food insecure households among households engaged in fishery is due to their regular consumption of fish, a good source of protein, which significantly raises the food consumption score¹¹. As for the salaried workers considered as richer livelihoods (more than 60% of them are in the richest tercile), probably the results of their ability to frequently purchase more diverse food. The highest share of food insecure was found among agricultural wage laborers (64%). It is worth noting that only 25 % of agricultural wage laborers were found in the richest tercile which seems to suggest a relationship between wealth and food insecurity. This livelihood group was also found to have the highest share of expenditures on food (72%) which is a proxy of household's capacity to access food; the higher the share of income spent on food, the more likely it is for the household to be poor and food insecure.

¹¹ Also, the high weight on fish as described in the calculation of the FCS based on 'nutrient density'. See also PER (Protein Efficiency Ratio)

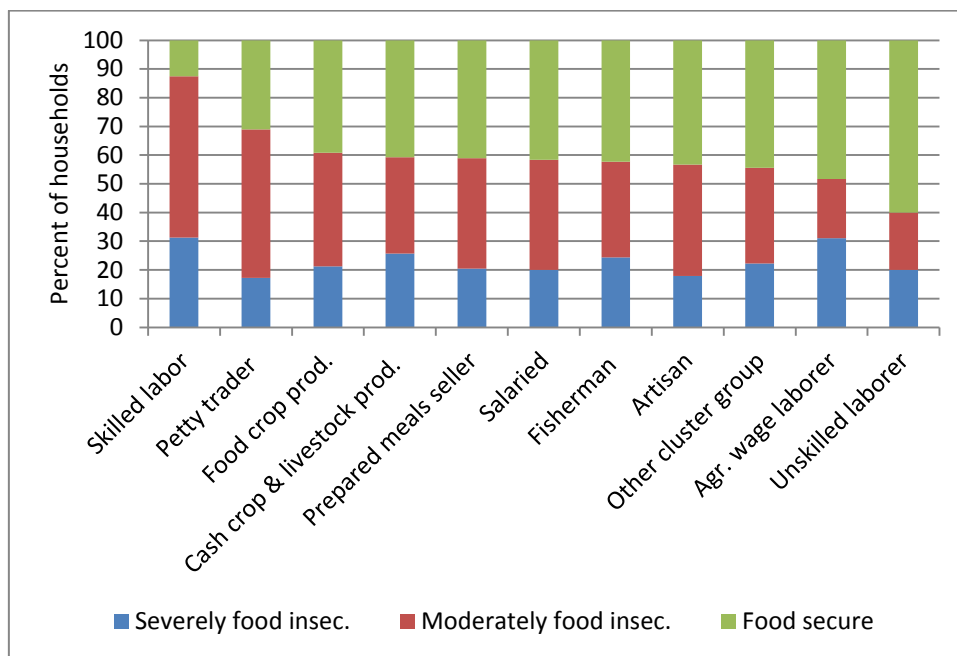
Figure 28: Prevalence of food insecurity by livelihood at national level



Source: CFSVA 2011-12

This national average hides important findings across provinces. The figure below for example shows the distribution of food consumption groups by livelihood in Equateur where the share of households in poor food consumption group is the highest among the provinces.

Figure 29: Prevalence of food insecurity by livelihood in Equateur



Source: CFSVA 2011-12

While at national level, agricultural wage labor worker was the livelihood with the highest share of household falling into food insecure group, in Equateur province this livelihood was among the provinces with highest share of household being food secure. Similarly, while in Equateur the skilled worker was the livelihood with greatest share of households being food insecure, this livelihood is among the better off in terms of food security at national level.

After all, food insecurity and poor food consumption in particular are not necessarily related to the livelihood where the poor households are assumed to engage in. Further research by province is important to better understand the relationship between the two variables.

Number of income activities: Households with more or less number of activities do not differ in their food security patterns. On average, the poor food consumption households engaged in slightly fewer income activities than their counterparts in borderline and acceptable food consumption group.

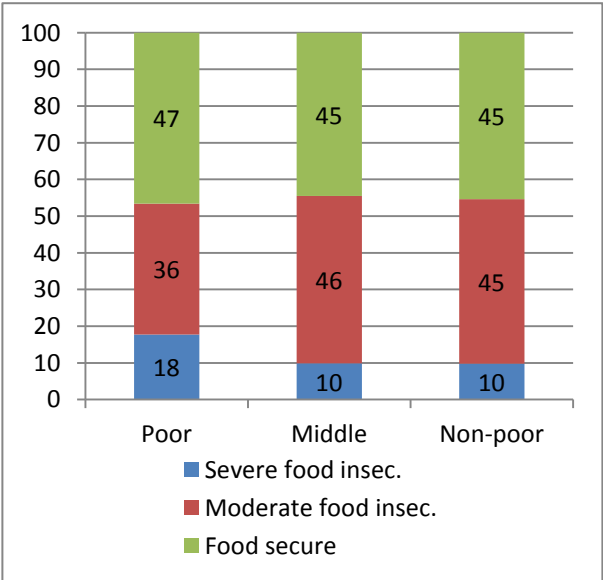
4.8.2.2 WEALTH, ASSETS AND EXPENDITURES

Wealth: While the most severe food insecurity was found among the poor households, this group has also the least prevalence of moderate food insecure households. One explanation is that households in the middle and non-poor groups employ more severe types of consumption coping strategies when they face shortfall of food.

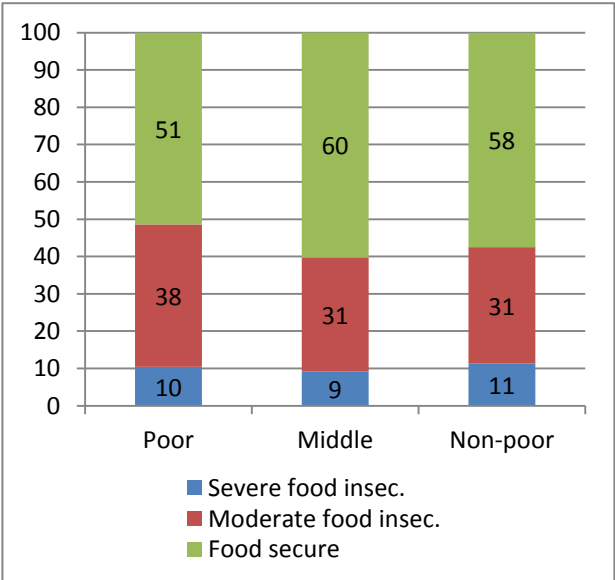
Wealth is not automatically a shield against food insecurity; it is not always right to assume that a poor household is automatically food insecure. Indeed, 47% of poor households were found to be food secure at national level, slightly higher than the percentage in the non-poor household (45%). Similarly, 55% of the richest households were found to be food insecure. This percentage is not different from those of the households in the poor and the middle tercile as highlighted in the Figure 29. Again, the national prevalence tends to hide provincial differences which are also highlighted in the example of figures below. Maniema is the province with lowest prevalence of food insecure households.

Figure 30 : Prevalence of food insecurity by wealth tercile

At national level



In Maniema



Source: CFSVA 2011-12

Improved and unimproved household amenities: As household amenities such as water and sanitation facilities form part of the wealth index, households' access to those amenities can be considered as a proxy for their wealth in addition to potential underlying factors. Lack of access to improved sanitation is another key disadvantage in DRC. While the national average for no access to a toilet facility is 10% and access to unimproved facility is 86%, the corresponding rates for the food insecure households are just slightly lower (9% and 85%) which means that food secure households do not have more access to improved sanitation than their food insecure counterparts.

The CFSVA data shows significant difference between severe food insecure and secure households with regards to safe drinking water. In DRC, 66% of households use unsafe sources of drinking water. The corresponding rate for the severely food insecure households is 76%, compared to 67% for food secure households.

Source of lighting: Nationally, the three most common sources of lighting are lantern (39%), kerosene (24%) and oil (22%). The distributions of the use of the three different sources across the three food security status groups are uniform.

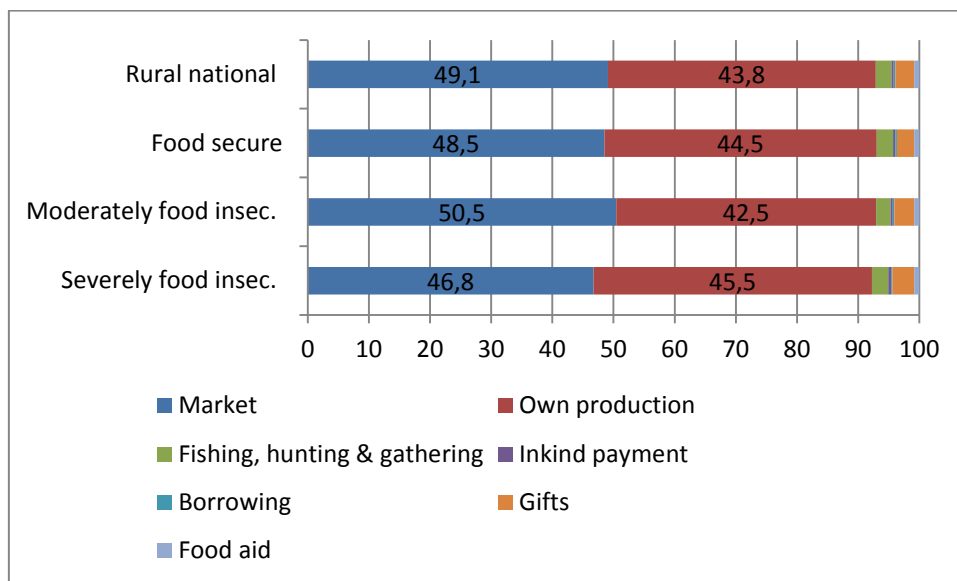
Roofing and wall materials: The dominant roofing material is thatched roofs (68%), followed by metal sheets (30%). More severely and moderately food insecure households use thatched (15% and 39% respectively) than metal sheets (10% and 45% respectively).

Food and non-food expenditures: The shares of food expenditure suggest a significant difference between food insecure (69%) and food secure households (65%); the difference is more apparent when comparing severely food insecure households (73%) to food secure household. Similarly in terms of absolute value, there is a significant difference between the annual mean per capita expenditures of food insecure (175 thousand CFs) and food secure households (184 thousand CFs). The difference is more obvious when accounting for the severity of food insecurity. The annual mean per capita expenditures of severely food insecure households is 153 175 thousand CFs.

4.8.2.3 AGRICULTURE AND MARKET PARTICIPATION

Market dependency: Markets are the main source of food for all households regardless of their food security status. Severely food insecure households depend more on own production as a food source (46%), with a corresponding lower reliance on market purchases (47%) compared with the national average. This is a distinct contrast to moderately food insecure and food secure households, which are typically more reliant on market purchases.

Figure 31: Prevalence of food insecurity by main sources of foods



Source: CFSVA 2011-12

Access to land for cultivation. While access to land for cultivation is clearly an asset and potentially a sign of wealth, it does not appear to significantly affect the status of food security among Congolese in general and their food consumption in particular. While 72% of households with an adequate diet have access to land for cultivation, 70% of households with poor food consumption also do. Clearly, access to land does not mean much in itself; what matters is the way that land is accessed, its size, available inputs and source of labor, the level of market participation that influences the cultivator's wealth and food security status. For both rural households with poor and acceptable high food consumption, the major source of access to land is ownership of the land (86%), followed by renting (11%).

Size of land cultivated. Of all households who cultivated and are severely food insecure, 79% of them cultivated less than 2 ha of land compared to 76% of households who are moderately food insecure or food secure. In terms of food consumption, of all households who cultivated and with poor food consumption, 78% of them cultivated less than 2 ha of land compared to 73% of households who had acceptable diets. This finding may be an indication that the size of cultivated land is positively associated with the pattern of a household's food consumption. In other words, the smaller the size of cultivated land, the more likely the quality of the diet will deteriorate. It appears that the cut-off of 2 ha can be safely used as one criterion for targeting the most vulnerable smallholders. However, using average land size as an indicator of geographical patterns of food security might be misleading. Average holding sizes might be smallest in the densely populated province, even below 2 ha, and yet those are the provinces where the population is least affected by food insecurity in general and inadequate food consumption in particular.

Table 18: Percent of households who cultivated less than 2 ha in 2011-2012 by food security status

	Severely food insecure	Moderately food insecure	Food secure
Bas-Congo	98	98	98
Bandundu	93	91	89
Equateur	92	96	95
Province orientale	8	16	12
Nord-Kivu	83	81	75
Maniema	34	38	42
Sud-Kivu	76	77	79
Katanga	94	93	90
Kasai Oriental	64	65	55
Kasai Occidental	94	91	90
Total	79	76	76

Source: CFSVA 2011-12

4.8.2.4 HOUSEHOLD CHARACTERISTICS

Dependency ratio: Overall mean household size are 6.8 members. The dependency ratio at national level was 1.2. Dependents include children below 13 years and elderly above 60 years of age. The results suggest that dependency ratio for the food insecure households is larger than that of the food insecure ones.

Sex of household head: Female and male household heads do not differ in their food security patterns, refuting common allegations that female-headed households are more likely to be food insecure than male-headed households. It should not be assumed that female headed households have worse consumption patterns by default. The same conclusion holds for the difference between elderly and non-elderly headed households.

Table 19: Percent of female and male, elderly and non-elderly household heads by food security status

	Female HH head	Male head HH	Elderly HH head	Non-elderly head
Severely food insec.	13	14	14	13
Moderately food insec.	42	41	42	41
Food secure	45	46	44	46

Source: CFSVA 2011-12

- **Education of household head:** In line with previous research, the educational background of the household head is positively associated with food consumption. In other words, the more educated the household head, the better is the household's food security status. While only 13% of household heads who attended primary school are found in the severely food insecure households, 41 % and 46% of them belong to the moderately food insecure and food secure households, respectively.

The food consumption score – wealth – CSI – based classification should be compatible with nutritional status of household members. Nutrition surveys give the best information about the status of individual (usually children under the age of five years). However, nutrition surveys themselves provide little information about causal factors unless complemented with other information such as health status indicators.

5 HEALTH AND NUTRITION

This chapter presents the nutrition and health situation of the Democratic Republic of The Congo (DRC) using secondary data from the 2007 Demographic and Health Survey (DHS) and the 2001 and 2010 Multiple Indicator Cluster Surveys from UNICEF. The analysis of those three different surveys describes the trend in nutrition, health status, and intervention among socio economic and demographic groups, and points the main determinants of malnutrition.

5.1 Health and Food Security: Conceptual Framework

From the definition of food security, it can be inferred that good health requires a good state of food security. Inadequate diet increases the risk of illness and mortality. Food security is in turn determined by a combination of factors at the individual and household, and community levels. To achieve food security, individuals need the physical ability to produce enough food or the financial mean to access it. By reducing productivity, poor health status prevents individuals and households to achieve food security. Food security and health are interrelated and this relation can be explored through social and economic phenomenon.

5.1.1 Food insecurity, poverty and health

The relationship between poverty and food insecurity is bi-directional and can often lead to the establishment of a vicious circle (Harrigan, 2008). Lacking financial means to access food, poor households are more likely to be food unsecured and consequently they are exposed to health problems. Food insecurity in turn worsens poor household's situation by forcing them to use coping mechanisms such as asset sales, which make them poorer and prevent them to escape the poverty trap.

Poverty also denies individuals access to health care, safe water, sanitation and education, which are known to be the important determinants of health status.

5.1.2 Food insecurity, nutrition, and health

Food insecurity implies the inability to access not only sufficient food but also nutritious food that meets human dietary needs for healthy life. Poor diet intake leads to protein-energy malnutrition and micro nutrient deficiency. These two forms of malnutrition are very common in developing countries and are considered major causes of death and illness of millions people, especially pregnant women and children (Muller & Krawinkel, 2005). In DRC, while about 15 percent of households suffer from protein deficiency, at least 50 percent of the population is deficient in vitamin B12, calories, riboflavin, iron, vitamin E, folate, and zinc (Ulimwengu et al, 2012).

5.2 Current Health Situation in DRC

5.2.1 Place of delivery

Giving birth under medical supervision and in a clean and sterile environment increases the chances that mother and child will have better health outcomes (WFP, 2009). The presence of skilled attendant, who can provide or insure obstetric care, has an important role in preventing maternal death (Bergstrom & Goodburn, 2001). In developing countries, the place of delivery has been associated with child malnutrition. Rahma & Chowdhury (2007) found that Bangladeshi children delivered at home under traditional delivery system without medical care had a higher risk of stunting than children delivered in a hospital.

In DRC, more than 70% of women give birth in health facilities and this percentage has increased by 5 points from 2007 to 2010; but less than 60% in rural areas, in 2007. Despite the improvement during the 2007-10 period, nearly one-third (29%) of rural women were reported to give birth at home in 2010. In some provinces, more than half of women give birth at home. Equateur has the highest percentage of women delivering at home (59.1% in 2007 and 56% in 2010). Table 23 shows that the choice of place of delivery is correlated with socio economic factors. Rates of delivery in health facility increases with mother's education and wealth while rates of delivery at home decreases with mother's education and wealth. Urban women are more likely to give birth in a health facility than rural women are.

Table 20: Trend in percentage of birth by place of delivery

Socio economic characteristics	DHS 2007 ¹			MISC 2010 ²		
	Home	Health facility	Other	Home	Health facility	Other
Place of Residence						
Urban	9.9	89.1	0.2	5.0	93.0	2.0
Rural	39.2	58.1	1.2	28.6	68.8	2.6
Province						
Kinshasa	1.8	96.8	0.4	1.2	98.1	0.7
Bas-Congo	5.9	92.2	1.6	2.4	95.0	2.6
Bandundu	29.1	69.0	0.7	10.4	88.7	0.9
Equateur	59.1	38.7	1.5	56.1	39.7	4.2

Province Orientale	31.3	65.9	1.0	25.8	73.8	0.4
Nord-Kivu	12.3	84.9	0.3	2.7	90.4	6.9
Maniema	36.5	61.1	0.6	37.9	60.1	2.0
Sud-Kivu	13.5	84.0	0.4	16.5	81.9	1.6
Katanga	31.5	67.0	0.6	31.3	66.5	2.2
Kasai Oriental	28.4	69.8	0.7	25.0	73.8	1.2
Kasai Occidental	21.7	75.7	0.7	24.8	70.0	5.2
Mother's education						
No education	42.3	54.6	1.4	36.9	60.1	3.0
Primary	32.1	65.6	0.7	24.5	73.0	2.5
Secondary and Higher				9.7	88.3	2.0
Secondary	13.0	85.7	0.5			
University	1.0	98.8	0.0			
Wealth Index quintile						
Poorest	42.2	54.8	1.4	37.9	59.9	2.2
Second	41.9	55.2	0.9	30.0	67.4	2.6
Middle	30.3	68.1	0.6	25.5	71.6	3.0
Fourth	14.3	84.0	0.8	11.2	86.0	2.7
Richest	2.2	96.9	0.2	1.8	96.6	1.6
Total	27.8	70.1	0.8	22.6	74.9	2.5

¹From the 2007 DHS report

²Computed from MICS 2010 data sets

5.2.2 Health interventions: Insecticide Treated Net (ITN) usage, Vitamin A supplementation and Deworming

5.2.2.1 ITN usage

Malaria constitutes a major health problem in DRC. It is reported to be the principal cause of morbidity and mortality, which the greatest burden falls on pregnant women and children under five (PMI, 2012). In recent years, the country has received from various donors funding for malaria prevention programs. One of the key policy interventions of these programs is the distribution of ITN.

As shown in Table 23 below, the use of ITN in DRC has considerably increased in the last decade. From 2001 to 2007, the percentage of under-five sleeping in an ITN went from 0.7 to 10.9 and reaches 38% in 2010. Despite this improvement, more than half of the under-five children population does not sleep under ITN. In only four provinces (Kinshasa, Equateur, Maniema, and Province Orientale), the percentage of under five sleeping in an ITN is more than 50 and the lowest rates are recorded in the two Kasais. ITN use for children under five is correlated with socio-economic characteristics; indeed, it increases with health status and is higher in urban than in rural areas.

Table 21: Trend in ITN usage, Vitamin A supplementation, and De-worming

Socio-economic characteristics	ITN usage ¹			Vitamin A ²			De-worming ³	
	MICS 2001 ^r	DHS 2007 ^r	MISC 2010 ^r	MICS 2001 ^r	DHS 2007 ^r	MISC 2010 ^d	DHS 2007 ^r	MISC 2010 ^d
Place of Residence								
Urban	2.1	15.5	44.0	13.7	66.0	80.1	4.3	49.1
Rural	0.1	7.8	36.0	10.4	47.0	75.0	3.1	40.7
Province								
Kinshasa	4.5	20.2	51.0	22.1	83.5	78.5	4.3	46.4
Bas-Congo	0.0	39.6	36.0	13.3	84.5	87.0	1.8	57.5
Bandundu	0.2	14.3	42.0	15.3	59.9	87.8	0.9	64.1
Equateur	0.0	4.0	52.0	16.0	52.3	67.2	5.6	34.4
Province Orientale	0.9	3.1	52.0	9.4	41.4	80.2	4.6	45.4
Nord-Kivu	0.0	5.1	32.0	25.3	54.6	84.6	2.3	43.9
Sud-Kivu	1.2	12.3	36.0	3.7	57.5	75.3	2.5	47.7
Maniema	0.0	16.2	57.0	7.1	34.6	63.3	6.0	34.2
Katanga	0.3	14.1	33.0	3.0	40.1	69.4	1.5	37.8
Kasai Oriental	0.1	4.8	14.0	7.9	50.4	76.8	3.8	27.4
Kasai Occidental	0.0	8.1	20.0	9.6	47.5	66.4	5.8	29.4
Mother's education								
No education				9.9	43.7	73.0	2.6	39.1
Primary				9.9	49.7	75.3	4.0	40.4

Secondary and Higher				15.1		80.2		49.2
Secondary					66.5		3.7	
University					85.1		4.6	
Non formal program				15.0				
Wealth Index quintile								
Poorest	0.0	6.5		8.2	44.4	72.0	3.0	38.7
Second	0.1	7.3		12.8	41.8	74.7	3.3	38.1
Middle	0.2	9.9		10.8	57.7	77.0	3.9	41.9
Fourth	0.4	12.1		10.5	60.1	78.4	3.8	47.5
Richest	3.1	21.1		15.1	73.0	80.8	4.0	50.3
Total	0.7	10.9	38.0	11.5	54.6	75.6	3.6	42.5

¹Under-five sleeping under ITN the night preceding the survey (%)

²Under-five who received vitamin-A supplementation in the last six months preceding the survey(%)

³Under-five who received de-worming in the last six months preceding the survey (%)

^r From report

^d From data sets

Sources: MICS, 2001; MICS, 2010; DHS, 2007.

In 2012, one out of two households (51%) possessed at least one ITN. This proportion was higher in urban area (58%) than in rural areas (48%). In four provinces (Bas-Congo (42%), Katanga (36%), Kasai Oriental(19) and Kasai Occidental (28%) the percentage of household possessing a ITN is less than 50. The lowest rate of ITN possession was recorded in Kasai Oriental (19%), while the highest was in Maniema (84%). In all provinces, the percentage of

women or children sleeping under ITN is lower than the percentage of household ITN possession.

Table 22: ITN usage in 2010

Insecticide Treated Net (ITN) use	Household with at least one ITN (%)	Pregnant women sleeping under ITN the night preceding the survey (%)	Under-five sleeping under ITN the night preceding the survey (%)
DRC	51	43	38
Urban	58	43	44
Rural	48	42	36
Kinshasa	71	42	51
Bas-Congo	42	33	36
Bandundu	52	43	42
Equateur	66	53	52
Province Oriental	72	62	52
Nord-Kivu	51	39	32
Maniema	84	67	57
Sud-Kivu	50	57	36
Katanga	36	35	33
Kasai Oriental	19	15	14
Kasai Occidental	28	24	20

Source: MICS, 2010

5.2.2.2 Vitamin A supplementation and Deworming

Ulimwengu et al (2012) showed that at the national level, 12% of households suffer from Vitamin A deficiency with Bandundu (40%), Kasai Occidental (20%), Sud-Kivu (15%) and Nord-Kivu experiencing nutrient deficiencies that exceed the national level. Vitamin A deficiency can

affect the immune system and increases the risk of blindness. Since 1987, WHO has advocated the routine administration of vitamin A in countries where vitamin A deficiency is a problem. In DRC, vitamin A is administered to children during immunization campaigns. Since 2005, the Congolese government organizes twice a year, a Vitamin A campaign along with mebendazole deworming.

As shown in Table 24, the coverage of Vitamin A supplementation and de-worming has increased considerably in the last decade. In 2010 more than 75% of the under five population received vitamin A supplementation and more than 42% were dewormed. The percentages of children who received vitamin A supplementation and deworming is higher in urban than rural areas; and increase with the economic status of the household and mother's education. The provinces with the least coverage in vitamin A supplementation in 2010 were Equateur (67.2%), Maniema (63.3), and Kasai Occidental (66.4%).

5.2.3 Disease prevalence among children and Regional pattern of childhood disease

Results from the MISC 2010 indicate that 27% of children had fever in the two weeks preceding the survey while 18% was reported having diarrhea. Pneumonia has the lowest prevalence among the three diseases (6%) although higher rates were recorded in the two Kivu (10%), in Katanga and in Kasai Occidental (9%). As shown in Table 26, the prevalence of these diseases is slightly higher in rural than urban areas. The two Kasai provinces display higher rates for fever and diarrhea.

5.2.4 Access to health care

Nationally, less than half children receive treatment for fever (39%), diarrhea (39%), or pneumonia (42%). In only three provinces (Kinshasa, Bas-Congo and Maniema), more than 50% of children received adequate treatment for fever. The percentage of children seeking care for diarrhea exceeds 50 in Bas-Congo and Bandundu. Treatment for pneumonia is sought by more than half of children in Bas-Congo, Katanga and Kasai Oriental

Table 23: Disease prevalence and care seeking among children under five

	% of under five having the following disease			% of under 5 having following treatment		
	Fever	Diarrhea	Suspected pneumonia	Anti-malaria drug for fever	Oral rehydratation with continuous feeding for diarrhea	Antibiotic for suspected pneumonia
DRC	27	18	6	39	39	42
Urban	23	17	5	49	37	52
Rural	28	18	7	36	40	39
Kinshasa	22	14	4	57	37	36
Bas-Congo	31	12	3	60	57	56
Bandundu	24	17	4	44	60	27
Equateur	20	22	5	39	37	28
Province Orientale	25	18	6	37	36	16
Nord-Kivu	25	20	10	25	42	31
Maniema	25	10	5	53	38	38
Sud-Kivu	36	19	10	31	31	43
Katanga	26	15	9	31	36	65
Kasai Oriental	34	20	3	40	37	63
Kasai Occidental	36	27	9	38	29	40

Source: INS, 2011

5.2.5 Child feeding practices

Worldwide, over two-third of malnutrition related death is often associated with feeding practices (WHO, 2003). *“Infant and young child feeding practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival. Improving infant and young child feeding practices in children 0–23 months of age is therefore critical to improved nutrition, health, and development of children”* (WHO et al., 2008).

WHO and UNICEF developed, in 2003, the Global Strategy of Infant and Young Child Feeding to increase awareness about the impact of feeding practices on child health and growth (WHO & UNICEF, 2003). This strategy should be implemented by government as a comprehensive policy, in the context of national policies for nutrition, child and reproductive health, and poverty reduction.

The Global Strategy of Infant and Young Child Feeding recommends exclusive breastfeeding from birth to six month of age in order to provide infant with necessary energy and nutrients, as well as maternal antibody to enhance immune system. After six months, complementary food should be introduced but breastfeeding should continue until the child is two years old.

In DRC, only 37% of the child population under six months of age is exclusively breastfed. More than 80% of children are still breastfed at 1 year old. The percentage of children still breastfed at one year is higher in rural (90%) than urban areas (78%).

Table 24: Child feeding practices

	Exclusively breastfed (at least 6 months) (%)	Still breastfed at 1 year (%)	Still breastfed at 2 years (%)	Introduction of Solid or soft food in children aged 6-8 months (%)	Required number of meals in children aged 6-23 months (%)	Adequately breastfed children 0-23 months (%)	Prevalence of low birth weight (%)
DRC	37	87	53	52	22	50	10
Urban	37	78	29	56	20	47	11
Rural	37	90	61	50	22	51	9
Kinshasa	23	74	18	58	18	38	12
Bas-Congo	20	92	49	44	16	41	12
Bandundu	30	91	81	79	42	64	7
Equateur	41	86	45	28	12	31	6
Province Orientale	51	76	48	54	24	57	9
Nord-Kivu	58	87	67	55	23	57	13
Maniema	57	90	59	56	37	62	9
Sud-Kivu	39	91	62	40	20	50	10
Katanga	31	89	42	38	15	44	10
Kasai Oriental	46	88	54	72	19	63	12
Kasai Occidental	30	97	76	80	29	66	7

Source: INS, 2011

5.3 Child Nutrition

For decades, the nutritional situation of children in DRC has been one of the worst in the world. In 2007, 45 percent of children under five were stunted. In terms of IFPRI's Global Hunger Index¹², the DRC stands out among the six countries in which the hunger situation worsened. From 2010-2011, its GHI rose by about 63 percent (von Grebmer, et al., 2011).

To assess the nutritional status of children, anthropometric measures are used. Children weight and height are compared to a reference population with respect to their age. Anthropometric measures are usually expressed in terms of standard deviations from the median of the reference population, also called "z-score." In 2006, WHO sets standard on child growth, which are used to assess children nutritional status. The three anthropometric measures are:

- Height- for- age (HAZ): a measure of linear growth and its deficit generally indicates long-term, cumulative effects of inadequate nutrition and poor health status. Children whose height-for-age are more than two standard deviations below the median of the reference population are considered to be stunted.
- Weight- for- Height (WHZ): a measure of acute or short-term exposure to a negative environment. It is sensitive to changes in calorie intake or the effects of disease. Children whose weight- for- height are more than two standard deviations below the median of the reference population are considered to be wasted. The indicator may reveal significant seasonal shifts associated with changes in the availability of food or prevalence of disease.
- Weight-for-age (WAZ): a measure of both acute and chronic malnutrition. Children whose height-for-age are more than two standard deviations below the median of the reference population are considered to be underweight.

In DRC, stunting is the most prevalent form of malnutrition. As shown in Table 28 below, 43% of children under five were stunted in 2010, while only 9% were wasted and 10 % underweight. While the prevalence of wasting and underweight has decreased since 2001, the percentage of stunted children has increased from 2001 to 2007 and slightly decreased in 2010. For all three indicators, girls display better nutritional status than boys do. The provinces the most affected by stunting are the two Kivu and Kasai Occidental. In those provinces, the prevalence of stunting was higher than 50% in 2010.

From, 2001 to 2010, the prevalence of stunting has been higher in rural than urban area. The difference in nutritional status between urban and rural children in the developing world has often been proved to be significant, especially for stunting. Smith, Ruel, & Ndiaye, 2005

¹² The GHI is an indicator of hunger designed to measure and track hunger globally, by country and by region. It is calculated by combining three other hunger measures: **undernourishment, child underweight and child mortality**.

Kinshasa	19.9	23.4	24.0	14.3	9.3	9.0	18.2	14.8	13.0
Bas-Congo	43.1	45.7	48.0	9.2	9.3	10.0	35.3	25.6	29.0
Bandundu	36.7	46.8	37.0	16.5	6.7	13.0	34.4	27.8	26.0
Equateur	40.7	50.9	41.0	16.2	10.1	10.0	31.4	29.2	23.0
Province Orientale	39.8	46.2	45.0	9.6	7.7	11.0	26.3	21.4	22.0
Nord-Kivu	45.4	53.6	58.0	9.9	6.6	5.0	33.6	20.0	27.0
Sud-Kivu	47.6	55.5	51.0	12.2	7.8	6.0	35.1	30.8	27.0
Maniema	45.5	43.9	40.0	9.5	10.6	8.0	37.5	18.1	20.0
Katanga	38.3	45.0	43.0	15.1	12.2	6.0	32.9	20.2	22.0
Kasai Oriental	36.6	49.2	44.0	14.2	14.6	8.0	29.9	30.8	27.0
Kasai Occidental	38.7	48.2	53.0	16.9	13.7	10.0	33.7	30.3	34.0
Mother's education									
No education	44.5	50.7	50.1	15.4	10.6	8.5	38.3	28.7	28.3
Primary	40.0	48.4	46.3	13.5	11.8	9.1	33.3	28.6	26.4
Secondary and Higher	29.8		35.2	11.3		7.7	21.1		17.2
Secondary		35.2			7.7			15.7	
University		2.5			8.1			5.4	
Non formal program	30.1			16.2			25.5		
Wealth Index quintile									
Poorest	43.0	46.6	47.3	13.0	10.3	9.7	35.4	26.6	28.5
Second	42.4	48.7	47.6	15.4	12.1	9.6	37.6	29.4	27.7

Middle	41.3	54.1	48.5	13.8	9.2	9.9	33.6	27.6	27.4
Fourth	39.3	48.2	45.0	13.7	9.8	6.2	29.6	24.5	21.1
Richest	24.4	25.8	26.5	11.1	8.7	6.7	18.8	14.9	12.1
Total	38.2	45.5	43.0	13.4	10.0	9.0	31.1	25.1	24.0
^d From data set									
^r From report									

Sources: MICS, 2001; MICS, 2010; DHS, 2007.

5.3.1 Socio economic correlates of child nutrition

Empirical study has proved that child nutritional status is determined by the socioeconomic status of their households and/or their caregiver. For example, Christiansen & Alderman (2004) and Grima & Grenebo (2002) show that child nutritional status improves with maternal education in Ethiopia. In DRC, Pfingu (2011) found that the wealth index as proxy of income has a positive and very significant effect on child's nutrition status in urban areas. A unit increase in household wealth index is associated with a 0.29 increase in child height- for- age score. As for rural areas, the wealth index effect is also very significant but negative. The relationship between secondary and higher education is positive and significant at national level. The same study found that in urban areas, children from female headed household have better nutritional status than male headed households, and the difference in HAZ between those children is 0.57. In rural areas, female headed households are associated with worse child nutritional status with a coefficient of -0.76.

To capture the differences between provinces, Pfingu (2011) included geographic dummy variables in the model for all provinces with Kinshasa and Bas-Congo together as reference. Most of the provincial variables are found to be negative and significant. The HAZ of Maniema and Kivu children are respectively 1.47 and 0.76 lower compared to Kinshasa and Bas Congo. Bandundu also has a rather large HAZ deficit of -0.7. For urban children only, the difference is higher in Kivu (-1.05) than in Maniema (-0.98). For rural areas, Katanga and Bandundu are both more than 0,9 lower than Kinshasa and Bas Congo.

The difference between nutritional status in urban and rural areas is significant. Urban children have better nutritional status than rural children. These differences are due to the cumulative effect of more favorable socioeconomic conditions in urban areas (Garret and Ruel, 1999). The rural effect reduces HAZ by -0.38, holding all other factors constant including regional differences Compared to rural children, urban children have better educated and healthier mother, easy access to health services and safe water. The combined effect of other rural-urban differences such as education of the mother and wealth index would make this difference larger.

6 Conclusion

This in-depth analysis of food security and vulnerability (CFSVA), which provides a mapping of food insecurity in the DRC as well as its causes, will help guide the Government, the UN agencies including WFP and other humanitarian organizations design and implement most appropriate strategies to meet the needs of the people affected by this insecurity.

While the 2011-2012 CFSVA is not directly comparable with the previous CFSVA because i) the two surveys did not use the same weight to classify household food consumption as poor, borderline and acceptable, ii) the latter did not use the combination of food consumption, wealth index, and coping strategies index to assess the state of food security, and iii) it is not sure whether the two surveys were carried out at the same time of year, it is still clear that food security in the DRC remains a major concern with more than half of the population estimated to be either severely or moderately food insecure. More than ten in every 100 rural households or about 7.5 million rural people are severely food insecure. Equateur is the province with the highest absolute number of food insecure people because of its large rural population (7.5 million) combined with the relatively high proportion of food insecure households (60%). The prevalence of food insecure households exceeds also the national average in Sud-Kivu (64%), Kasai Oriental (62%), Province orientale (58%), and Katanga (57%).

In addition to the spatial difference in the prevalence of food insecure households, there are socio-economic factors that affect food security of sub-groups in the population. Poorer households who have limited means of purchasing food and are often smallholder farmers relying on their own smaller harvests production for consumption, households who engage in agricultural wage labor, those with uneducated head are more often found to be food insecure than other households. The moderately food insecure households have borderline or acceptable food consumption. However, they are at high risk of falling into severely food insecurity as they use negative coping strategies which affect their productivity making them highly vulnerable when shocks affect their food availability. Calorie deprivation is also a good indicator of household food insecurity although the results should be interpreted with caution due to the general limitations in the computation of calorie deficiency.

To deal with the precarious food security situation described above the following actions are important:

☐ **Promotion of agricultural production of smallholder farmers.** To broaden food supply and increase households' income in targeted areas, the Congolese Government and its partners have to encourage the revival of food production of small-scale farmers. First, the Government needs to facilitate and accelerate smallholder access to seeds and fertilizers. World prices of seeds and fertilizers are out of reach of small-scale farmers.

Support for their access to seeds and fertilizers through provision of agricultural credits is essential. Under the current situation where the Congolese banking system is more focused on the mining sector, a subsidized agricultural credit program at the PCP level is justifiable. These programs on access to seeds, fertilizer, and credits must nevertheless be limited in time and include private sector since their conception. Similarly, they must target agricultural activities with high potential for increasing productivity and smallholder farmers' income.

▣ **Promotion of agricultural innovation.** The agricultural yield of most crops remains relatively low in the DRC. For the case of cassava for example, only 15% of cultivated areas are covered by improved varieties. The situation remains similar for cereals (corn, rice) and pulses (groundnuts, cowpea, soybean, and bean). It is therefore essential to provide assistance to the National Institute for Agronomic Research (INERA) to increase its capacity to assist farmers in targeted areas.

- **Development of food safety nets.** Households' food insecurity or their inability to acquire the required level of food is mainly due to shortage of food supply and low purchasing power of households. To reduce food insecurity, the Government and its partners must distinguish between socio-economic groups that can afford to purchase food and those whose access to food is limited, or impossible. The latter includes the vulnerable group of population: the elderly, children, unemployed, disabled and sick. Thus, for social equity reason, the Government should initiate social protection programs including both protective actions to mitigate short term risks, and preventive actions for negative consequences in the long term. Programs such as conditional cash transfer, school canteen service, pension systems, and employment plan will be part of the protective actions.
- **Promotion of microfinance.** In DRC, access to bank credit is reserved mainly to large food importers. Non-institutionalized credit comes mainly from non-governmental organizations (NGOs) through emergency assistance programs whose sustainability is not guaranteed. Microfinance, which includes both credit and savings, is recommended to fend off any potentially negative impact of certain types of households' coping strategies, such as selling productive assets, on households' way out of poverty.

Annex A. Agriculture seasonal calendar

Table 26: Agriculture seasonal calendar

Agro-ecological zones	Administrative areas	First season		Second season	
		Planting period	Harvesting period	Planting period	Harvesting period
	Maize				
Central Basin	Equator, East Province	15/03 - 15/04	15/07 - 15/08	15/09 - 15/10	15/01- 15/02
Centre South	West Kasai, East Kasai	15/08 - 15/09	15/12- 15/01	15/01 - 15/02	15/05- 15/04
East	North Kivu, South Kivu, Maniema, East Province	15/09 - 15/10	15/01- 15/02	15/03 - 15/04	15/07- 15/08
North	Equator (North), East Province (North and Northeast)	15/03 - 15/04	15/07- 15/08	15/09 - 15/10	15/01- 15/02
Southeast	Katanga	15/09 - 15/10	15/01- 15/02		
Southwest	Kinshasa, Bandundu, Lower-Congo	15/10 - 15/11	15/02- 15/03	15/01 - 15/02	15/05- 15/06
	Rice				
Central Basin	Equator, East Province	15/03 - 15/04	15/07 - 15/08	15/09 - 15/10	15/01 - 15/02
Centre South	West Kasai, East Kasai	15/09 - 15/10	15/01 - 15/02	15/02 - 15/03	15/06 - 15/07
East	North Kivu, South Kivu, Maniema, East Province	15/11 - 15/12	15/04 - 15/05	15/09 - 15/10	15/12 - 15/01

North	Equator (North), East Province (North and Northeast)	15/03 - 15/04	15/07 - 15/08	15/09 - 15/10	15/01 - 15/02
Southeast	Katanga	15/09 - 15/10	15/01 - 15/02		
Southwest	Kinshasa, Bandundu, Lower-Congo	15/02 - 15/03	15/06 - 15/07	15/10 - 15/11	15/02 - 15/12
	<i>Cassava</i>				
Central Basin	Equator, East Province	15/03 - 15/04	15/07 - 15/08	15/10 - 15/11	15/12 - 15/01
Centre South	West Kasai, East Kasai	15/10 - 15/11	15/07 - 15/08	15/03 - 15/04	15/12 - 15/01
East	North Kivu, South Kivu, Maniema, East Province	15/10 - 15/11	15/07 - 15/08	15/03 - 15/04	15/12 - 15/01
North	Equator (North), East Province (North and Northeast)	15/03 - 15/04	15/07 - 15/08	15/10 - 15/11	15/12 - 15/01
Southeast	Katanga	15/10 - 15/11	15/07 - 15/08		
Southwest	Kinshasa, Bandundu, Lower-Congo	15/10 - 15/11	15/07 - 15/08	15/03 - 15/04	15/12 - 15/01

Annex B. Prevalence and absolute number of food insecure people at the territory level

Table 27: Average coping strategy index by province

Province ID	Coping Strategy Index
Bas-Congo	6.8
Bandundu	7.2
Equateur	8.2
Orientale	9.0
Nord-Kivu	6.6
Maniema	9.8
Sud-Kivu	10.6
Katanga	11.0
Kasai Orientale	8.7
Kasai Occidentale	5.2
Total	8.4

Table 28: Average coping strategy index by class of food consumption

Class food consumption score	Coping Strategy Index
Pauvre	12.34
Limite	9.52
Acceptable	7.33
Total	8.44

Table 29: Food consumption score by coping strategy index categorie.

Class CSI	Food consumption score			Total
	Poor	Borderline	Acceptable	
CSI <10	7.3%	26.6%	66.1%	100%
CSI 10-20	13.5%	30.0%	56.6%	100%
CSI >=20	18.1%	33.5%	48.4%	100%
Total	9.8%	28.1%	62.1%	100%

Table 30: Prevalence of food insecurity in Bas-Congo

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Kasangulu	3.3	5,943	29.7	53,491	33.0	59,434	180,284
Kimvula	8.3	5,565	43.1	28,752	51.4	34,317	66,780
Lukula	13.1	33,176	50.0	126,671	63.1	159,847	253,342
Luozi	2.7	5,319	56.6	113,476	59.3	118,795	200,356
Madimba	4.9	18,122	32.3	120,266	37.2	138,388	372,329
Mbanza Ngungu	3.2	18,230	37.2	214,713	40.4	232,943	577,293
Muanda	5.7	11,611	39.5	79,989	45.2	91,600	202,552
Seke Mbanza	10.6	21,204	46.8	93,298	57.4	114,502	199,319
Songololo	2.3	5,780	39.1	100,190	41.4	105,970	256,254
Tshela	20.1	70,212	52.0	181,381	72.1	251,592	349,109

Source: CFSVA 2011-12

Table 31: Prevalence of food insecurity in Bandundu

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Bagata	4.6	17,532	19.0	72,321	23.6	89,854	381,331
Bolobo	14.3	16,895	40.5	47,870	54.8	64,765	118,267
Bulungu	15.6	112,465	31.2	224,930	46.8	337,395	721,474
Feshi	21.6	18,331	47.7	40,520	69.3	58,851	84,899
Gungu	14.2	27,180	31.5	60,497	45.7	87,677	192,013
Idiofa	12.5	118,493	25.9	244,549	38.4	363,041	945,420
Inongo	9.8	32,360	26.8	88,989	36.6	121,349	331,686
Kahemba	22.1	76,867	45.1	156,809	67.3	233,676	347,439
Kasongo-Lunda	9.7	47,277	38.8	189,109	48.5	236,386	486,955
Kenge	16.5	24,771	33.5	50,212	50.0	74,983	149,965
Kiri	15.7	26,079	21.6	35,859	37.3	61,938	166,253
Kutu	1.0	4,231	36.6	156,538	37.6	160,769	427,306
Kwamouth	7.3	7,340	41.5	41,594	48.8	48,934	100,314
Masimanimba	10.8	17,516	35.8	58,021	46.6	75,537	162,020
Mushie	4.5	4,928	27.3	29,569	31.8	34,497	108,418
Oshwe	0.0	0	18.8	31,937	18.8	31,937	170,329
Popokabaka	7.3	11,356	38.2	59,617	45.5	70,973	156,140
Yumbie	21.4	392,682	32.1	589,024	53.6	981,706	1,832,517

Source: CFSVA 2011-12

Table 32: Prevalence of food insecurity in Equateur

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Basankusu	32.6	97,275	29.2	87,212	61.8	184,486	298,532
Befale	19.5	41,364	41.6	88,244	61.0	129,609	212,337
Bikoro	26.0	74,263	37.0	105,682	63.0	179,944	285,626
Boende	21.0	59,041	52.0	146,196	73.0	205,237	281,146
Bokungu	45.3	95,330	40.7	85,552	86.0	180,882	210,215
Bolomba	46.4	150,829	17.5	56,980	63.9	207,809	325,120
Bomongo	43.3	66,013	25.0	38,084	68.3	104,097	152,338
Bongandanga	0.0	-	40.2	185,184	40.2	185,184	460,315
Bosobolo	11.4	31,496	40.9	113,387	52.3	144,884	277,169
Budjala	14.0	65,487	38.0	177,749	52.0	243,236	467,761
Bumba	2.4	17,745	63.5	479,121	65.9	496,866	754,172
Businga	7.8	34,159	48.1	210,646	55.8	244,805	438,371
Djolu	16.5	42,191	39.6	101,258	56.0	143,448	255,956
Gemena	10.9	103,094	38.4	364,266	49.3	467,360	948,466
Ikela	35.2	34,868	34.1	33,743	69.3	68,612	98,981
Ingende	50.6	72,890	14.9	21,536	65.5	94,425	144,123
Kungu	15.6	68,526	48.9	215,367	64.4	283,893	440,524
Libenge	22.0	74,333	33.0	111,500	54.9	185,833	338,215
Lisala	2.6	15,083	38.2	218,710	40.8	233,793	573,170
Lukolela	53.3	86,669	40.0	65,002	93.3	151,671	162,504
Makanza	13.3	16,455	38.8	47,891	52.1	64,346	123,412
Mobay	3.7	3,433	48.1	44,629	51.9	48,062	92,691
Monkoto	23.9	23,492	38.8	38,174	62.7	61,666	98,372

Source: CFSVA 2011-12

Table 33: Prevalence of food insecurity in Province Orientale

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Ango	11.4	10,326	42.9	38,724	54.3	49,050	90,355
Aru	21.0	146,579	25.2	175,895	46.2	322,474	698,694
Bafwasende	0.0	-	30.0	51,670	30.0	51,670	172,232
Bambesa	5.1	-	71.8	-	76.9		
Bondo	6.2	13,335	60.0	130,012	66.2	143,347	216,687
Djugu	6.3	70,121	67.6	752,627	73.9	822,748	1,112,579
Dungu	25.3	41,629	38.0	62,443	63.3	104,071	164,500
Faradje	26.0	51,589	55.8	110,820	81.7	162,409	198,712
Irumu	4.8	33,965	53.6	378,469	58.4	412,434	705,990
Mahagi	15.4	160,420	38.5	401,050	53.8	561,470	1,042,730
Mambasa	2.9	8,643	18.4	54,736	21.4	63,379	296,728
Niangara	6.5	6,262	37.4	36,178	43.9	42,439	96,706
Poko	6.6	12,438	32.8	62,189	39.3	74,626	189,675
Rungu	0.0	-	31.6	154,053	31.6	154,054	487,836
Wamba	0.0	-	13.3	14,553	13.3	14,553	109,146
Watsa	29.8	65,242	51.0	111,543	80.8	176,785	218,877

Source: CFSVA 2011-12

Table 34: Prevalence of food insecurity in Nord-Kivu

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Goma	4.0	6,843	31.5	54,256	35.5	61,099	172,055
Lubero	31.2	394,108	43.9	554,315	75.1	948,423	1,262,428
Masisi	1.4	13,212	28.4	258,955	29.9	272,167	911,626
Nyaragongo	27.6	-	47.2	-	74.8		
Rutshuru	19.1	189,816	45.3	449,142	64.4	638,958	991,856
Walikale	8.9	24,765	31.3	87,218	40.2	111,983	278,881

Source: CFSVA 2011-12

Table 35: Prevalence of food insecurity in Maniema

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Kindu-Alunguli	6.2	3,814	30.2	18,595	36.4	22,410	61,507
Kasuku_Mikelenge	5.2	5,932	17.8	20,338	23.0	26,270	114,401
Kabambare	9.9	34,880	41.6	147,104	51.5	181,985	353,354
Kailo	12.1	14,557	44.0	53,090	56.0	67,647	120,736
Kasongo	5.7	29,502	28.3	146,587	34.0	176,089	518,126
Kibombo	4.7	7,769	48.3	79,359	53.0	87,129	164,269
Lubutu	2.5	4,181	27.7	45,990	30.2	50,171	166,191
Pangi	12.4	36,548	45.0	132,592	57.3	169,139	294,931
Punia	7.0	9,001	21.6	27,645	28.6	36,646	127,939

Source: CFSVA 2011-12

Table 36: Prevalence of food insecurity in Sud-Kivu

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Bagira	6.1	3,708	26.8	16,316	32.9	20,024	60,814
Fizi	16.7	74,554	40.6	181,685	57.3	256,239	447,322
Ibanda	2.9	7,879	29.4	78,786	32.4	86,665	267,873
Idjwi	7.2	13,173	40.1	73,588	47.3	86,761	183,515
Kabare	16.5	90,465	54.3	297,083	70.8	387,548	547,257
Kadutu	1.1	2,310	31.0	62,379	32.2	64,689	200,998
Kalehe	5.7	30,925	66.5	359,757	72.2	390,682	541,182
Mwenga	18.7	88,800	54.3	258,220	73.0	347,020	475,546
Shabunda	28.3	139,193	54.2	266,609	82.6	405,802	491,459
Uvira	7.6	47,165	51.8	321,378	59.4	368,543	620,819
Walungu	17.8	149,007	53.8	450,284	71.7	599,290	836,396
Bukavu (urban)	4.2	-	50.5	-	54.7	-	-

Source: CFSVA 2011-12

Table 37: Prevalence of food insecurity in Katanga

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Malemba-Nkulu	20.0	149,998	68.5	513,455	88.5	663,453	749,991
Bukama	20.8	188,924	55.8	506,317	76.7	695,242	906,837
Dilolo	15.0	88,989	37.0	219,507	52.0	308,496	593,261
Kabalo	4.4	8,130	46.7	85,367	51.1	93,497	182,929
Kabongo	17.9	114,349	30.8	196,027	48.7	310,377	637,089
Kalemie	22.5	87,633	45.0	175,265	67.6	262,898	389,088
Kambove	36.4	103,785	35.5	101,191	71.8	204,976	285,410
Kamina	13.6	63,143	40.9	189,430	54.5	252,574	463,052
Kaniama	20.0	48,781	41.1	100,272	61.1	149,053	243,906
Kapanga	24.8	51,877	33.0	69,170	57.8	121,048	209,431
Kasenga	1.9	6,046	34.3	111,860	36.1	117,906	326,509
Kipushi	15.0	36,855	63.0	154,792	78.0	191,647	245,701
Kongolo	18.5	31,344	48.9	82,971	67.4	114,315	169,629
Lubudi	35.0	88,111	45.0	113,286	80.0	201,397	251,746
Moba	4.0	15,969	34.0	135,734	38.0	151,703	399,219
Mutshatsha	2.0	4,703	39.0	91,708	41.0	96,411	235,148
Nyunzu	26.7	52,672	45.5	89,738	72.3	142,410	197,033
Pweto	3.0	14,601	30.0	146,011	33.0	160,613	486,705
Sakania	1.1	2,299	31.8	64,374	33.0	66,673	202,319
Sandoa	9.1	52,212	20.0	114,867	29.1	167,079	574,333

Source: CFSVA 2011-12

Table 38: Prevalence of food insecurity in Kasai Oriental

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Kabeya Kamwanga	23.8	34,152	43.5	62,365	67.4	96,517	143,290
Kabinda	4.5	19,766	29.7	130,454	34.2	150,220	438,800
Kamiji	17.2	14,564	54.4	46,203	71.6	60,766	84,872
Katako Kombe	20.2	53,387	49.8	131,605	70.0	184,992	264,451
Katanda	15.8	49,071	51.6	160,300	67.4	209,371	310,786
Kole	0.0	-	56.4	43,763	56.4	43,763	77,627
Lodja	18.4	74,437	51.3	207,360	69.7	281,797	404,086
Lomela	12.9	21,668	64.4	108,338	77.2	130,005	168,340
Lubao	4.9	22,518	23.8	110,339	28.6	132,857	463,875
Lubefo	23.5	62,489	68.7	182,837	92.2	245,326	266,156
Lupatapata	26.9	72,924	37.0	100,585	63.9	173,509	271,580
Lusambo	17.0	23,828	69.8	97,960	86.8	121,789	140,322
Lwilu	18.7	-	31.1	-	49.8		
Miabi	23.2	66,674	50.6	145,631	73.8	212,305	287,752
Ngandajika	12.5	51,144	40.0	163,660	52.5	214,804	409,151
Tshilenge	21.1	232,204	50.7	558,277	71.7	790,481	1,101,733

Source: CFSVA 2011-12

Table 39: Prevalence of food insecurity in Kasai Occidental

Territory	Severely food insecure (A)		Moderately food insecure (B)		Total food insecure (A+B)		Rural population in 2011
	%	Population	%	Population	%	Population	
Dekese	1.3	1,702	16.7	21,279	18.0	22,981	127,672
Demba	18.4	118,502	31.6	203,146	50.0	321,648	643,296
Dibaya	12.1	65,195	45.1	242,153	57.2	307,349	537,084
Dimbelenge	5.3	8,902	25.0	42,286	30.3	51,188	169,143
Ilebo	0.6	2,467	20.6	83,873	21.2	86,339	407,029
Kazumba	24.2	264,038	38.1	414,916	62.3	678,954	1,089,679
Luebo	21.0	72,430	31.2	107,547	52.2	179,977	344,590
Luiza	26.0	31,935	31.8	39,093	57.8	71,028	122,784
Mweka	6.4	29,264	29.2	134,615	35.6	163,879	460,423
Tshikapa/Kamonya	5.8	121,881	39.0	819,545	44.8	941,426	2,101,398

Source: CFSVA 2011-12

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