



Photo: Mercy Corps – FSP DRC

# DR CONGO – FSP PROGRAM STRATEGIC RESILIENCE ASSESSMENT

## Final Report

NOVEMBER 2017



## Table of Contents

<b>List of acronyms</b>	<b>3</b>
<b>Executive summary</b>	<b>4</b>
<b>Rationale and methodology</b>	<b>7</b>
Introduction	7
Development context	7
Programmatic context	9
STRESS methodology	11
Application of STRESS for FSP	12
<b>STRESS findings in South Kivu</b>	<b>15</b>
Main shocks and stresses for vulnerable rural households in the 3 targeted health zones	15
Effect of shocks and stresses on FSP's expected outcomes	22
Responses to shocks and stresses implemented by the target population	26
Strengthening Resilience Capacities: programmatic implications for FSP	30
1. Resilience to land degradation for increased agricultural productivity (refined)	31
2. Resilience to pests/plant diseases for increased agricultural productivity (refined)	33
3. Resilience to theft for increased agricultural productivity (new)	34
4. Resilience to uncertain land tenure and associated land disputes for increased agricultural productivity (refined)	35
5. Resilience to multiple taxation for increased market system engagement (new)	37
6. Resilience to waterborne diseases for improved health/nutrition/WaSH outcomes (refined)	39
<b>Conclusion</b>	<b>41</b>

# List of acronyms

<b>APC</b>	Action pour la Paix et la Concorde (local organization)
<b>BXW</b>	Banana Xanthomonas Wilt
<b>CDM</b>	Mediation and Dialogue Committee
<b>DRC</b>	Democratic Republic of the Congo
<b>FFP</b>	Food For Peace
<b>FGD</b>	Focus Group Discussion
<b>FSP</b>	USAID / Food For Peace - South Kivu Food Security Project
<b>GBV</b>	Gender Based Violence
<b>GRF</b>	Local task force on land issues
<b>HA</b>	Health area (geographical subdivision)
<b>HH</b>	Household
<b>HZ</b>	Health zone (geographical subdivision)
<b>INERA</b>	National Institute for Agricultural Research
<b>KII</b>	Key Informant Interview
<b>LDC</b>	Local Development Committee
<b>LDP</b>	Local Development Plan
<b>MFI</b>	Microfinance Institutions
<b>M&amp;E</b>	Monitoring & Evaluation
<b>MUSO</b>	Solidarity Savings Groups
<b>NGO</b>	Non-Governmental Organization
<b>R&amp;I</b>	USAID Refine & Implement Process
<b>SBCC</b>	Social Behavior Change Communication
<b>SENASEM</b>	National Seed Service
<b>STRESS</b>	Strategic Resilience Assessment
<b>ToC</b>	Theory of Change
<b>UEA</b>	Université Evangélique en Afrique
<b>USAID</b>	United States Agency for International Development
<b>VSLA</b>	Village Savings and Loan
<b>WBD</b>	Waterborne diseases
<b>WFP</b>	World Food Program
<b>WV</b>	World Vision

# Executive summary



The complex interplay of repeated conflict, economic and ecological shocks and stresses in South Kivu has weakened not only food security systems, but also the capacity of households, especially women and youth<sup>1</sup>, to build the necessary human, financial and social capital to address food and nutrition security adequately. To address food and nutrition insecurity in South Kivu, a consortium led by Mercy Corps and composed of Mercy Corps, World Vision (WV), HarvestPlus and two local organizations: Université Evangélique en Afrique (UEA) and Action pour la Paix et la Concorde (APC) implements a 5-year Food-for-Peace funded program, the Food Security Project (FSP). The overall program goal is that vulnerable populations (approximately 35,000 households or 210,000 people) from 3 health zones of Kalehe and Kabare Territories, South Kivu improve their food and nutrition security and economic well-being. FSP is structured around **3 program purposes**:

- **Purpose 1 (P1):** Income increased for vulnerable households despite exposure to shocks and stresses
- **Purpose 2 (P2):** Improved nutritional status of children under two, pregnant and lactating women and other women of reproductive age
- **Purpose 3 (P3):** Operating environment for sustainable development made more stable and inclusive

In order to develop a resilience-specific program theory of change and guide the integration of strategies throughout the program, the FSP team conducted a Strategic Resilience Assessment (STRESS)<sup>2</sup> of target areas. STRESS analyzed the social, ecological, and economic systems within which communities are embedded and how these conditions determine vulnerability to shocks and stresses and food security outcomes. The STRESS process has enabled the FSP consortium to identify the main risks potentially preventing communities from protecting their expected food security outcomes. For each of these risks, local capacities have been identified and gaps in FSP design were addressed. The STRESS analysis also permitted for a better understanding of specific vulnerabilities impacting age and sex specific groups. Two new strategies have been added to the FSP workplan and four were refined based on the findings. FSP will incorporate resilience measurement to track the effectiveness of program strategies in building capacities and protecting food security outcomes, with an emphasis on adaptive learning for consortium partners.

---

<sup>1</sup> According to Mercy Corps, youth is comprised of boys and girls between the ages of 10 to 24 year. For the purpose of this research, FSP targeted youth between the ages of 12 to 24.

<sup>2</sup> For information on Mercy Corps' STRESS process, visit [mercycorps.org/resilience](http://mercycorps.org/resilience)

## MAIN SHOCKS/STRESSES AND RELATED RESILIENCE STRATEGIES

Refined or new	Type of shock or stress	Related resilience strategies applied by households and/or communities
Refined	Crop diseases and pests	<ul style="list-style-type: none"> <li>• Integrated Pest Management</li> <li>• Advocacy via LDPs for institutional response</li> </ul>
Refined	Land degradation	<ul style="list-style-type: none"> <li>• Integrated soil fertility management</li> <li>• Agroforestry at community-level</li> <li>• Community-level landscape management planning</li> </ul>
New	Thefts	<ul style="list-style-type: none"> <li>• Community-level theft prevention strategies</li> <li>• Household preventive measures and smart production strategies</li> </ul>
New	Multiple taxation	<ul style="list-style-type: none"> <li>• Communities and authorities act on improved awareness of legal taxes to access market</li> <li>• Reporting of illegal taxes to LDCs and LDCs to advocate to authorities regarding taxation</li> </ul>
Refined	Uncertain land tenure and associated land disputes	<ul style="list-style-type: none"> <li>• Secure land tenure (community-derived land delimitation with customary title)</li> <li>• Conflict management skills, transparency and fairness</li> <li>• Develop alternative sources of income</li> </ul>
Refined	Waterborne diseases	<ul style="list-style-type: none"> <li>• Hygiene practices adopted</li> <li>• Knowledge of LDCs, WaSH committees and health workers on the connection between climate conditions and risk of WBD to take preventative measures and prepare</li> </ul>

Regarding **food availability**, food production is threatened by crop diseases and pests, especially Banana Xanthomonas Wilt (BXW) on banana trees and mosaic virus on cassava. Other food crops also suffer from unexpected pest attacks. FSP will strengthen the Integrated Pest Management approach to support projects such as experimenting with a bitter-resistant variety of cassava and improving vegetable production in swamps. Soil fertility is decreasing and so are crop yields, due to an extensive overuse of smallholders' plots, a non-adoption of fertility management practices by land renters, poor management of water flows, and erosion on hill slopes. FSP will work at both plot and community levels to tackle this trend. The resilience design for smallholder farming system will be disseminated to smallholders and land renters. Agroforestry as part of the resilience design approach will be developed at the community-level, following a "hill approach" for effective erosion reduction at scale and water management, and integrated in a broader land management planning included in Local Development Plans (LDPs). Furthermore, the risk of crops theft, common in the area, has consequences on farmer's strategies, such as the selection of crop varieties and drives early harvesting of some varieties, reducing their nutrient values and potential earnings. Finally, the responsibility of ensuring adequate food for the entire family falls upon women. When there is theft or lack of food availability, it adds an emotional burden on them.



While intra-community conflicts are frequent, traditional conflict management systems (i.e. through local elders, heads of villages and churches) are typically less than satisfactory. Thefts are becoming more frequent as thieves suffer no real consequences. FSP will support theft prevention strategies that will be designed and implemented at a community level. Additionally, it will support household preventive measures and smart production strategies. This will inform the selection of which crops FSP will support and how to promote production, storage and processing to prevent risk of theft.

On **food access**, STRESS has shown that farmers, and especially women and young girls, struggle to supply local markets partly because of multiple taxation. FSP will promote communities and authorities' awareness of all legal taxes to access markets and encourage LDCs to include an advocacy section on taxation in their LDP.

Effective **food utilization** faces challenges, with an estimated 37.7% of children under 5 years in the province having suffered from diarrhea just before the STRESS assessment was done<sup>3</sup>. Waterborne diseases (WBD) are the most common form of illness in South Kivu and gravely impact food security. WBD keep many households in the vicious circle of poverty and poor health conditions by preventing adults from working and children from going to school. The cumulated effects of diseases, and especially from waterborne diseases as their frequency is higher than any other disease, paralyze the economy. FSP will promote i) improved hygiene practices through SBCC activities to prevent waterborne diseases and encourage the use of public health facilities for treatment of waterborne diseases, and ii) food demonstration techniques to ensure a higher retention of nutrients while cooking and storing.

**Gender based violence** (GBV) has been identified as an underlying stress that FSP will continue to assess throughout all stages of program implementation. Economic violence and indirect GBV<sup>4</sup>, characterized by harmful norms and attitudes, along with varying levels of agency and self-efficacy, impact women and youth's access to and control of key resources. These issues were brought up frequently throughout the STRESS process as critical factors undermining resilience. It is important to note that, while conflict-related GBV is often highlighted in most international narrative about the DRC, studies show that domestic violence as well as intimate partner violence (IPV) are far more rampant, especially in territories that are less conflict-affected such as Kabare and parts of Kalehe<sup>5</sup>.

**Other constraints for sustainable development** have been identified during this process. Local Development Committees (LDCs) are not functional in every community, and their Local Development Plans (LDPs<sup>6</sup>) do not cover collective planning such as landscape management, disaster risk reduction, land access or risks associated with community-scale conflicts and population displacement. Land access under fair conditions is also a major challenge in the intervention area. Uncertain land tenure is an ongoing stress vulnerable households face, often leading to land disputes. Landlords hoard agricultural land and ask for overwhelming renting conditions. Renting and sharecropping agreements are done on annual terms, without guarantee of being renewed. Moreover, smallholders have no official titles for their lands, as most cannot afford even the customary recognition act delivered by traditional authorities. This can be an important shock for smallholders as, from one day to another, they can lose the land they think they own if they have no official land title to prove ownership. The need for titles is then obvious. Official services (Cadastre) are used only by landlords, who can extend their surface area at the expense of smallholders. FSP will work on securing and improving land tenure amongst targeted communities through community level actions on customary "land titles", LDCs capacity building to develop standards for renting contracts at fair conditions, and awareness sessions on wills and rights related to Family Law (especially regarding

---

3 Division Provinciale de la santé du Sud Kivu, 2017.

4 For a definition of direct and indirect GBV, please go to page 23.

5 Baseline Evaluation USAID Ushindi: Overcoming SGBV in Eastern Congo project, Overseas Consulting Corporation, 2016. <https://imaworldhealth.org/wp-content/uploads/2016/11/OSC-IMA-Ushindi-Baseline-2016-.pdf>.

6 Development plans at a village / community level, but they don't have necessarily the official LDP title.

women's land rights). FSP will support transparent and fair conflict management structures, like the CDM or GRF. Finally, FSP will support renters and smallholders at risk of losing their lands to be able to access more diverse income streams (small breeding systems, VSLA, etc.) to spread their risk.

## Rationale and methodology

### Introduction

#### Development context

South Kivu is a province located in the eastern part of the Democratic Republic of Congo. South Kivu shares international borders with the Republic of Rwanda along the Ruzizi River and Kivu Lake in the east and with Burundi and Tanzania in the south along the Tanganyika Lake. Thirteen ethnic groups live in South Kivu with an average of 56.04 inhabitants/km<sup>2</sup>.<sup>7</sup>

The province was affected by the 1994 genocide in Rwanda, with movements of both refugees and armed groups seeking asylum outside Rwanda. Additionally, local dissident armed groups have emerged during the last 20 years which have created a climate of violence unfavorable to local development. The situation has deteriorated in 2012 due to the activism of the Raïya Mutomboki and Forces Démocratiques de Libération du Rwanda (FDLR) armed groups<sup>8</sup>. In 2017, 52 armed groups are active in the province<sup>9</sup> and commit thefts and attacks, collect illegal taxes and exploit natural resources (forests and mines).



The complex interplay of repeated conflict, economic and ecological shocks and stresses in South Kivu has weakened not only food security systems, but also the capacity of households, especially women and youth, to build the necessary human, financial and social capital to address food and nutrition security adequately. A CFSVA conducted in 2011-2012 by the World Food Programme (WFP) showed that 64% of the rural population in South Kivu was food insecure, Kalehe and Kabare ranking respectively at the 3<sup>rd</sup> (72.2% of the population was food insecure) and 4<sup>th</sup> (70.8%) positions over the 12 South Kivu territories<sup>10</sup>.

**Food availability:** Although lack of food is not the major underlying cause of food security in South Kivu<sup>11</sup>, much still needs to be done to improve the quantity and nutritional quality of food produced. Changes in climate patterns have decreased the number of production seasons from three to two and will continue to put stresses on production and infrastructure<sup>12</sup>. Sustained deforestation resulting from overpopulation

7 Rapport de la Division Provinciale de l'Intérieur, 2007.

8 Bulletin humanitaire provincial de OCHA pour le Sud-Kivu, 2012.

9 Fonds Social de la RDC, Cartographie des Conflits de la Province de Sud Kivu, Février 2017.

10 WFP, Comprehensive Food Security and Vulnerability Analysis (CFSVA) Democratic Republic of Congo, 2014.

11 FEWS NET, Staple Foods Market Fundamentals Report, October 2015.

12 Taylor Smith, Climate Change and Environmental Assessment: Kalehe, Kabare and Walungu Territories, March 2016.

compounds these negative effects, making climate change adaptation an urgent priority<sup>13</sup>. In South Kivu, many challenging factors characterize smallholder agriculture production: fragmented land plots co-exist with large landholdings with absentee owners; soil fertility is decreasing due to erosion, overpopulation and inappropriate land management techniques (Kabare); and transport is lacking (Kalehe)<sup>14</sup>. Other constraints common to smallholder farmers throughout DRC include inappropriate technical skills for production and post-harvest, limited access to inputs, and lack of financing mechanisms. The issue of land access in South Kivu is particularly critical to improving food availability, especially for women who, in spite of recent legislation giving them more rights, are often without recourse in land disputes<sup>15</sup>.

**Food access:** Farmers, and especially women and young girls, struggle to supply local markets partly because of multiple, mainly informal, taxes. South Kivu households—on average purchasing 68 percent of food in markets instead of relying on their own production—must barter or secure adequate income to ensure they have adequate food<sup>16</sup>. However, alternate revenue options are limited: small commercial centers lack processing capacities; with limited investments from private or government sectors, business services are almost nonexistent; the market for non-agricultural products remains undeveloped; and lack of access to financial services constrains entrepreneurs.

**Food utilization:** Even when an adequate quantity of nutrient-dense food is available at the household level, other barriers may prevent the most vulnerable from optimally utilizing that food. Examples include: i) traditional intra-household distribution of food, which usually favors men to the detriment of women and children, and ii) poor maternal, infant and young child nutrition (MIYCN) practices, including sub-optimal breastfeeding and complementary feeding<sup>17</sup>. Underlying health conditions can negate the nutritional benefits of a healthy diet. For example, diarrhea—often a result of lack of access to appropriate WASH facilities—prevents children from absorbing nutrients in food and can contribute to a vicious cycle of illness and malnutrition throughout childhood.

---

13 Center for International Forestry Research (CIFOR), Agriculture and Deforestation in the DRC—A Synthesis of the Current State of Knowledge, 2015.

14 Mercy Corps Livelihood Assessment, February 2016.

15 UN-Habitat, Improving Women's Access to Land in Eastern DRC: Challenges and Emerging Opportunities, 2015.

16 Country Specific Information: Democratic Republic of the Congo, April 2016.

17 A Qualitative Analysis of Barriers and Facilitators to Optimal Breastfeeding and Complementary Feeding Practices in South Kivu, DRC, Food and Nutrition Bulletin p. 1-13. 2016.



## Programmatic context

To address food and nutrition insecurity in South Kivu, a consortium led by Mercy Corps and composed of Mercy Corps, World Vision (WV), Harvest Plus and two local organizations: the Université Evangélique en Afrique (UEA) and Action pour la Paix et la Concorde (APC) is implementing a 5-year Food For Peace funded program, the Food Security Project (FSP). The overall program goal is that vulnerable populations (approximately 35,000 households or 210,000 people) from 3 health zones of Kalehe and Kabare Territories, South Kivu, improve their food and nutrition security and economic well-being.

FSP is structured around 3 program purposes:



**Purpose 1 (P1):** Income increased for vulnerable households despite exposure to shocks and stresses

**Purpose 2 (P2):** Improved nutritional status of children under two, pregnant and lactating women and other women of reproductive age

**Purpose 3 (P3):** Operating environment for sustainable development made more stable and inclusive

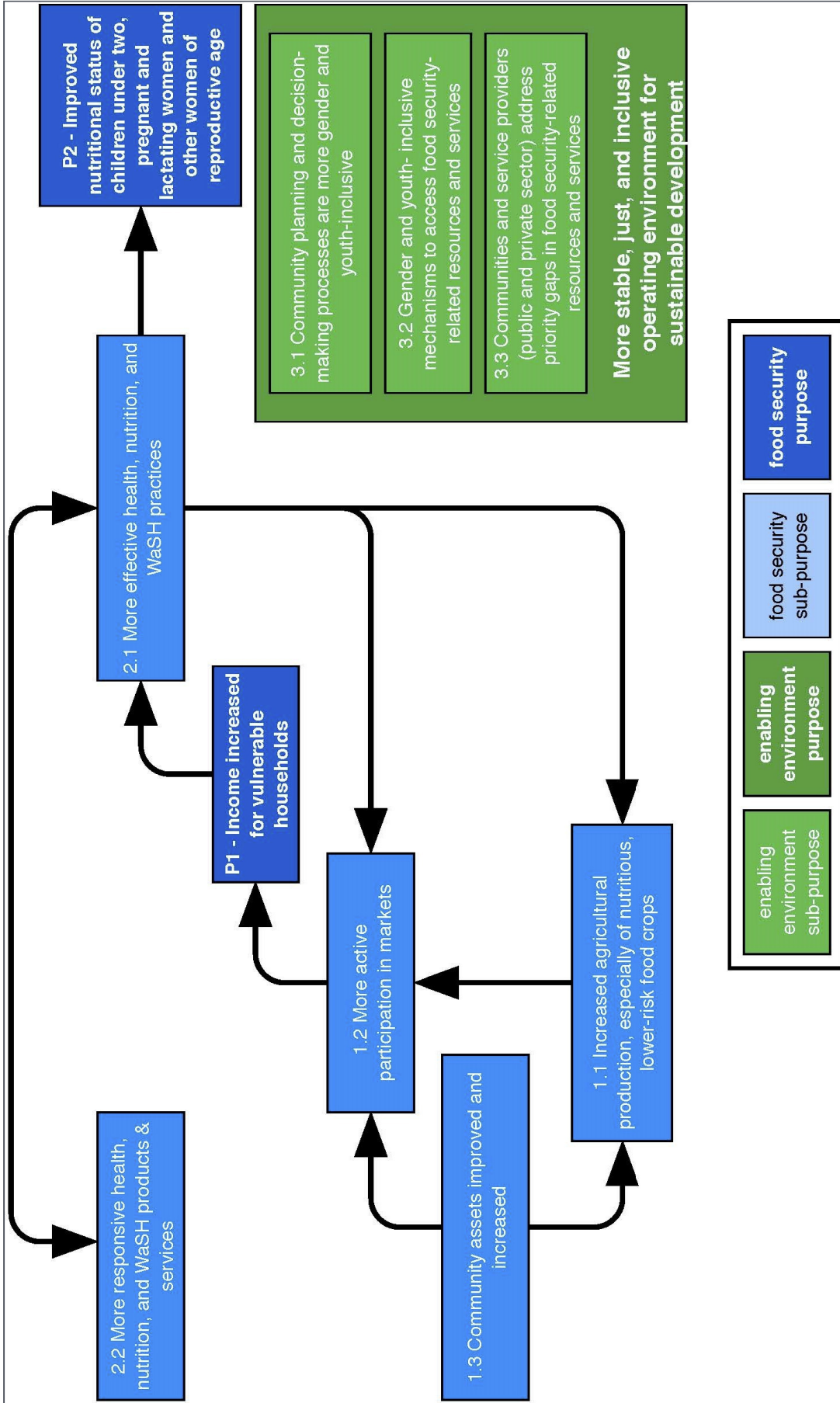
The cross-cutting themes of gender equality, youth engagement, behavior change, climate risk management and conflict sensitivity run through each Purpose, contributing to the overall program goal.

The first year of FSP implementation is dedicated to program refinement<sup>18</sup>, to ensure that the theory of change and the implementation plan reflect the realities and needs on the ground. In order to develop a resilience-specific program theory of change and guide the integration of strategies throughout the program, the FSP team conducted a Strategic Resilience Assessment (STRESS) in target areas.

---

<sup>18</sup> USAID Refine & Implement process (R&I).

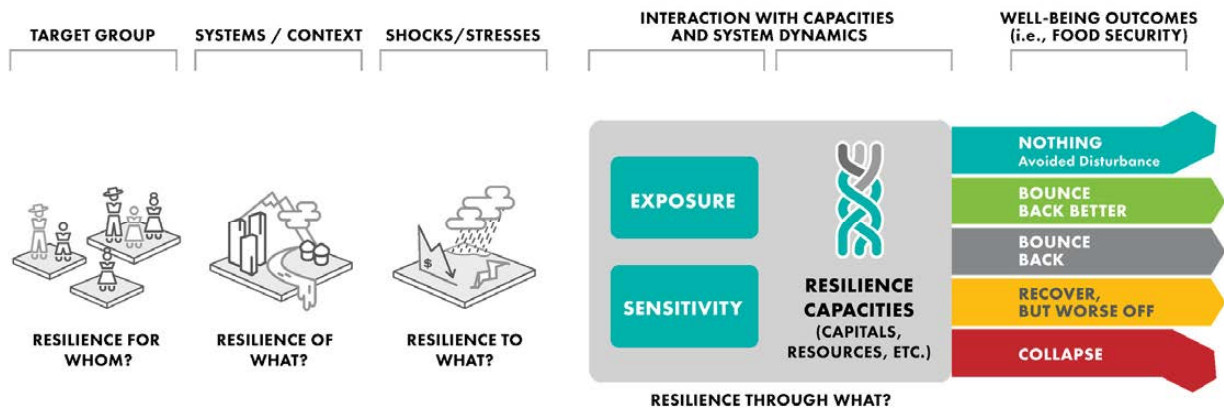
FIGURE 1: FSP RESILIENCE LOGIC OVERVIEW, MAIN OUTCOMES



# STRESS methodology

In order to develop a resilience-focused theory of change (ToC) for FSP, and use this as a basis for program design, the DRC-FSP team conducted a STRESS in target areas. In collaboration with a wide range of actors, STRESS was designed to analyze the dynamic social, ecological and economic systems in rural areas within which communities are embedded and how these conditions determine vulnerability to shocks and stresses and social and economic well-being outcomes. The STRESS process was also designed with an explicit objective to build the FSP team and partners' capacity to understand and operationalize resilience. To support this learning goal, the FSP team played a leading role at numerous points during the STRESS, including drafting scopes, conducting data collection and analysis and designing resilience strategies. These resilience learning objectives will be carried through to the Implement phases to ensure ongoing adaptive management. The process was structured around Mercy Corps' four key resilience questions that defined and focused the exercise.

FIGURE 2: MERCY CORPS' STRESS FRAMEWORK



**Resilience for Whom?** This question helps to understand how and why different groups of population are exposed to different shocks and stresses.



**Resilience of What?** This question helps to understand which systems (social, political, agro-ecological, economical) should be more resilient.



**Resilience to What?** This question helps to identify and prioritize stresses, shocks and systemic constraints that threaten targeted communities' development.



**Resilience through What?** This question helps to identify how different groups of the population cope with shocks and stresses. Coping strategies may be absorptive (i.e. implemented to decrease their immediate sensitivity to shocks and stresses), adaptive (i.e. proactive change of practices before or in response to a shock or stress) or transformative (i.e. long-term learning process at community or higher systems level).

Framed by the four resilience questions, the STRESS process helps to: 1) identify, understand and prioritize shocks and stresses that could undermine development outcomes, including differences in impact among populations or geographies; and 2) understand the ability of or opportunities for people, households, communities and systems to absorb, adapt and transform in the face of these disturbances.



THE FOUR PHASES OF THE STRESS PROCESS

## RESILIENCE AT MERCY CORPS

*Mercy Corps defines resilience as the capacity to learn, cope, adapt and transform in the face of shocks and stresses.*

*Capacities can be:*

**Absorptive** - helping people, households or systems better prepare for or recover from existing shocks and stresses;

**Adaptive** – mitigating the very presence or nature of shocks and stresses over time by proactively changing practices;

**Transformative** – enhancing the enabling environment to maximize access to and use of absorptive or adaptive capacities.

*For Mercy Corps, resilience is not the outcome of good development, but rather an approach and process that allows development to continue on a positive trajectory in spite of disruption.*

## Application of STRESS for FSP

The STRESS methodology is conducted through 4 phases:



**Phase I: Scope** - which helps teams to define the rationale and scale of their process, then set the key research questions, define research methods and develop a management plan for the following phases. To do so, a workshop was held March 20<sup>th</sup>-23<sup>rd</sup> 2017 involving the consortium’s partners. The FSP team defined the South Kivu context and identified knowledge gaps. After this exercise, the FSP team developed 7 scopes of work to address resilience knowledge gaps, while also aiming to answer other information needs relevant to program start-up<sup>19</sup>.

To answer the research questions, 7 topic-specific studies have been designed by the FSP team:

- Agriculture practices
- Land security & Conflict
- Ecosystems
- Market system
- Health, Nutrition & WaSH
- Youth
- Gender

<sup>19</sup> FSP STRESS process was done for the first time in the context of the Refinement Phase of a project, which included other information gathering objectives critical to program start up. The STRESS process tried to balance and harmonize Refinement activities with explicit resilience learning goals. A case study is ongoing to understand the benefits and drawbacks of using STRESS during Refinement.





**Phase II: Inform** - aims to collect sufficient quantitative and qualitative information from different scales and perspectives to answer the key questions determined in the Scope Phase.

The STRESS study population is composed of all people vulnerable to food insecurity (with a special attention to women and youth) living in the three health zones (HZ) targeted by FSP: Miti Murhesa and Katana HZs (in Kabare territory) and Kalehe HZ (Kalehe territory). Different subgroups of interest are identified and are included in the study design: smallholders living from agricultural activities (both small landowners and sharecroppers, as well as daily workers), households affected by land-related and/or inter-communities-related conflicts, youth (12 – 24 years old) and women.

Different approaches were implemented to collect the required data depending on the research questions.

A literature review has been conducted by the FSP team for the 3 program purposes, prior to primary data collection. This review was used to prepare relevant data collection tools and triangulate the primary data collected by the team.

A qualitative approach was used for 6 of the 7 studies. Different methods of qualitative data collection were used: focus group discussion (FGD), key informant interview (KII), observation, and participatory mapping. A limited number of respondents were interviewed but giving them ample time to discuss the research topics. The sampling strategy is designed to cover the local diversity regarding the research questions (see below).

A non-probability sampling was applied using a “purposive sampling method”. The reasons for choosing this method is that in-depth information can be collected, which requires spending quite a lot of time discussing with people (each focus group is made up of 5-8 people and lasts around 1.5 hours). The sampling strategy was designed to cover a **maximal diversity of situations** (or “heterogeneous sampling”) regarding FSP implementation context: **(1) diversity between villages** and **(2) diversity of respondents**.

The selection of both villages and respondents was done based on a list of clear and transparent criteria developed jointly by the FSP team and the assessment lead. The sampled villages are considered as **sentinel sites**, i.e. a limited number of villages within the FSP area which reflects the diversity amongst vulnerable households with respect to the major factors that affect their food security. The sites are referred to as “sentinels” because they act as look-outs and possible sources of information for other villages with similar characteristics.

For the agricultural practices assessment (including a part on access to markets) and land security assessment, 9 sentinel sites were selected depending on the following criteria: distance and accessibility to the main road and main market, prevalence of conflicts (both land-related and community-related), exposure to floods and/or landslides. Respondents were selected depending on the following criteria: gender, age, landowners having inherited their lands, landowners having bought their lands, renters and daily workers.



FGD with women who rent their lands, Kalangane village. Photo: Mercy Corps DRC



In the 9 sentinel sites, a total of 119 FGD were conducted with 752 individuals (20% young adults, 41% women). 93 KII were also conducted (13% women) with important landowners, local association representatives, civil society members, officials from Land Affairs Ministry, traditional and religious leaders.

For the gender and youth assessments, 6 sites were selected depending on their location: peri-urban versus rural sites. For the gender assessment, 240 respondents (52% women) were interviewed during FGD. For the youth assessment, 357 young people between 12-22 years old (45% girls or young women) were interviewed during FGD. 35 other FGD with adults over 35 years old and 25 KII were also conducted, as gatekeepers.

One study (i.e. health/nutrition/WASH) was partly conducted using a quantitative data collection run with sampled villages and households (behaviors barriers analysis), using a non-probabilistic approach. The sampling was made selecting 6 villages (2 per targeted health zones), then 45 individuals having adopted a specific behavior and 45 individual non-adopters for each of the 10 behaviors of interest, for a total of 900 respondents. The broader Health/Nutrition/WaSH assessment, mainly focused on access to services leading to a services mapping, was conducted using qualitative data collection: FGD with RECO, men, women, girls and boys and KII with Doctors Chiefs of Health Zone, medical directors, nurses, health centers staff, nutrition centers managers, local authorities, etc.

The ecosystems assessment led by UEA aimed at identifying the practices of erosion control and sustainable soil management used in the 9 sentinel sites and barriers to the adoption of improved practices, by doing field visits and conducting focus group discussions. Using drones, they developed a mapping of erosion in the area (see Figure 3).

For the market assessment, led by an external consultant, after a literature review, FGD and KII were conducted in Bukavu and in FSP interventions areas with different stakeholders and actors of the market system: producers organizations, input suppliers, traders, transporters, processors, INERA, SENASEM, market committees, NGOs, agricultural products collection centers (CCA), etc.

The data collection methods, data sources and in-depth analysis for the 7 studies are presented in each assessments' dedicated report.



**Phase III: Analyze** - was conducted by the FSP team who analyzed available information and data collected during the Inform Phase. While the Inform and Analyze Phases are presented here as distinct, they function in practice as iterative cycles of information collection and analysis.



**Phase IV: Strategize** - used the identified resilience capacities to refine the FSP theory of change to better incorporate resilience. A workshop was held in Bukavu between the 12<sup>th</sup> and 15<sup>th</sup> of September 2017, with FSP consortium members and national partners to present and discuss main STRESS findings and prioritize pro-resilience actions to design and implement in the duration of FSP.

# STRESS findings in South Kivu

## Main shocks and stresses for vulnerable rural households in the 3 targeted health zones

Targeted individuals (i.e women and men, youth, daily workers, land renters and smallholders) living in the selected 9 sentinel sites were asked to rank the main shocks and stresses they have to face and their trends over the last 5 years. The tables below present this analysis:

AVERAGE SEVERITY AND TRENDS OF MAIN SHOCKS & STRESSES FOR TARGETED VULNERABLES HHS

Ranking order	Type of shock or stress	Severity from 0 (null) to 3 (very severe)	Trend over the last 5 years From 0 (null) to 3 (strong increase)
1	Crop diseases and pests	2.7	2.6
2	Land degradation	2.2	2
3	Thefts	2.1	2
4	Multiple taxation	2	2.2
5	Dry spells	1.9	1.5
6	Flood	1.8	1.4
7	Landslide	1.6	1.4
8	Intra-community conflicts	1.5	1.4
9	Land disputes	1.3	1.2
10	Waterborne diseases	1.3	1.6

AVERAGE SEVERITY OF MAIN SHOCKS & STRESSES FOR TARGETED DISAGGREGATED BY SEX AND AGE

Type of shock or stress	Women	Men	Youth
	from 0 (null) to 3 (very severe)		
Crop diseases and pests	2.94	2.44	2.83
Land degradation	2.71	1.89	1.83
Thefts	2.12	1.89	2.67
Multiple taxation	2.29	1.83	1.83

Dry spells	2.00	2.11	1.17
Flood	1.82	1.94	1.17
Landslide	1.76	1.33	1.67
Intra-community conflicts	1.76	1.56	0.67
Land disputes	1.47	1.17	1.33
Waterborne diseases	1.29	1.33	1.50

**Crop diseases and pests** is by far the most prominent stress for all interviewed individuals, regardless of age and sex. Two of their major crops have been damaged by diseases over the last 10 years: banana trees, usually produced by men, are destroyed by the BXW and local varieties of cassava suffer from the mosaic virus. In 2009, cooking banana and beer banana production loss was estimated from 16 to 27% in South Kivu<sup>20</sup>. Even if many communities were trained in preventing BXW spread, vulnerable households report poor knowledge and adoption of such techniques.

In South Kivu, cassava is a subsistence crop and a cash crop. The importance of cassava in South Kivu is explained by its great ecological adaptability and capacity to be produced under marginal field conditions. Cassava is a food high in caloric energy, but one which also requires being combined with foods rich in protein and lipids to form a balanced diet. The mosaic of cassava causes losses to both tubers and leaves consumed as vegetables. Depending on the strain of the virus and the variety of cassava used, the tuberous rooting losses were evaluated between 30 and 90% in South Kivu, but can reach 100% in case of a virulent strain (ex: the Ugandan variety), and 100% of consumable cassava leaves<sup>21</sup>.

Sudden attacks of new pests also occur, like caterpillars on maize in 2017, but farmers are not informed about these attacks and the means to prevent them.



*“We don’t know how to prevent our crops from diseases and pests, because we have never been trained on prevention and new cropping techniques. So we will do the same old way”.*

— FGD with youth, Kangoko

**Land degradation** is a critical concern for the studied population, especially for the land renters who represent an important part of the targeted population. Land degradation covers both (i) a decrease of soil fertility, due to a decrease in using fallows between cropping cycles and a decrease of organic fertilizer (ex. cow manure (see quotation below), banana leaves) availability and (ii) an increase of erosion on cropped plots, due to deforestation and disturbance of rainfall patterns (i.e. concentration of heavy rains instead of a regular spread of rains). Most of the farmers access lands through renting/sharecropping

20 Beed, Fenton & Fiaboe, Komi & Ouma, Emily & Vigheri, Ndungo & Tinzaara, W. (2010), Scale and scope of the problems due to BXW in Eastern DRC (North and South Kivu and Province Oriental): an expert evaluation of existing information commissioned by USAID office of Economic Growth and Livelihoods, Kinshasa, DRC.

21 INERA Mulungu, Rapport annuel 2016, Sud Kivu.

agreements that cover one year, which discourages them from investing in long-term erosion control techniques. UEA estimated that 40% of the intervention area is at risk of erosion.

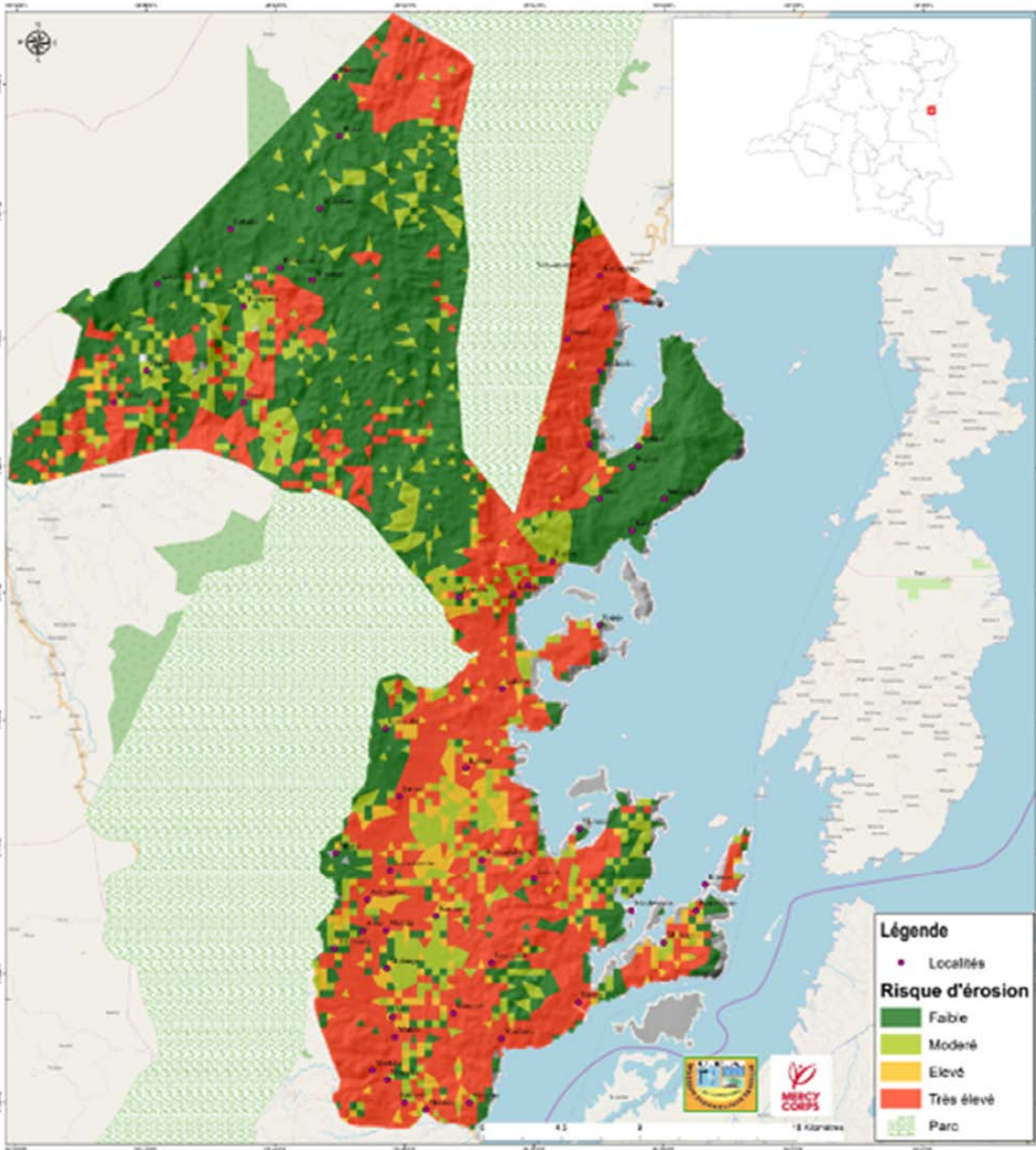


***“Because we don’t own these plots, it’s difficult for us to manage them properly”***— FGD with men renting their lands, Kabumbiro

***“Our cows have been stolen by armed group ‘Interahamwes’. Before, we used to spread the manure as fertilizer during the dry season in our plots. That helped to get good productions. Now we have no manure available and our lands are getting poor”*** — FGD with women owning their lands, Nyamutwe

The decrease in using fallows between cropping cycles is primarily due to the increase in demographic pressure and continual division of land parcels. Each generation inherits less than the previous one. In addition, as lands have lost their fertility over the last decades, production has also declined. This results in less land under cultivation or lower production rates, driving the need to cultivate throughout the year to meet household needs. The decrease in availability of organic fertilizers is primarily due to a reduction of livestock and the decrease of banana leaves used as bio fertilizers or compost (diminution of banana trees due to the BWX disease).

EROSION RISK SIMULATION DERIVATED FROM THE RUSLE EQUATION IN THE FSP TARGET AREA (UEA, 2017)





**Thefts** happen mostly in plots, with very poor households (ex. landless households, IDPs) stealing agricultural products for consumption. Sweet cassava varieties, vegetables, sweet potatoes and corn are especially subject to theft, because they are ready to eat. This is a concern raised especially by interviewed young girls and women. The data collected does not determine the exact reason why theft was perceived as a bigger shock for women and youth over men. However, given the context, it can be inferred that this is because of the emotional burden of being responsible for feeding the entire family combined with the perceived physical risk. Armed attacks at home can happen when households have sold their production in a market and brought back the money. In that case, complicities with police forces are suspected, leading local communities to push back police and/or national army forces from their village.



*“Because they are so poor, with no income, children and their families look for food in other’s plots”.*

— FGD with men smallholders, Kabumbiro

**Multiple taxation** on agriculture products going to market is a problem, especially for smallholders and women. Women and young girls are principally in charge of bringing harvest to the market and thus are more exposed to taxation. This, combined with their lower literacy rates and lower status in society, impacts their bargaining power regarding taxation. Respondents have difficulties differentiating official taxes from illegal ones. Some are at village level, then on the road to the nearest market farmers have to pay in-kind taxes to security forces. Finally, at the market itself, several taxes must be paid, sometimes duplicated between local authorities. To mitigate this, group sale of coffee was supported in some villages through the set-up of cooperatives, but for other crops (potatoes, tomatoes, maize, groundnut, beans, cassava, etc.) sales are managed individually by farmers, which puts them in a weak negotiating position when illegal taxes are demanded.



*“There is a tax called ‘transfer tax’ that we pay as soon as we leave our plot, but we don’t get a receipt for it. Other tax agents then come to our house arguing that we are moving products from Kalehe to Kabare territories. In fact, these are legal agents who create illegal taxes for their own”.*

— KII with a man member of a farmer’s cooperative, Nyamutwe

**Dry spells**<sup>22</sup> are a concern for all farmers. They report a change in the rain pattern, rains coming later and being less regular, causing a loss of seeds at the beginning of the cropping season and appearance of pests (ex. caterpillars). On the other hand, heavy rains occur and sometimes cause destructive **floods** in agricultural plots and deadly **landslides** in villages, both exacerbated by land degradation and erosion.

---

<sup>22</sup> Rain variability and impredecability periods.



*“One of the most important challenge that we face when we grow crops is climate hazards, such as heavy rains or droughts. Because in any case, we have already paid the rent”.*

— FGD with men renting their lands, Buhoho

**Intra-community conflicts** cover tensions about unwanted pregnancies and forced marriages, damages caused by cattle wandering, indebtedness between households and more broadly neighborhood conflicts. Vulnerable households are exposed to corruption when they request traditional or local authorities for arbitration. Because of that, resorting to popular justice is more and more common which can result in murders (ex. for suspicion of sorcery or theft).



*“The fact that some cannot afford to send their children to school while others do creates hate between people. Some schooled kids have been poisoned recently”.*

— FGD with men smallholders, Kabumbiro

**Land disputes** happen quite often between smallholders about plots' limits. Smallholders cannot afford to pay for customary land titles (\$25 USD per plot) and even less for official land titles (\$150-300 USD/ha), which make them vulnerable in case of land disputes. Another source of conflict is the transmission of land when no will is prepared by the parents. Usually, the older son receives most of his parents' land. Women's rights to inheritance, while protected by national law, are not yet recognized in the communities, which makes them depend on their husband for accessing lands. In addition, when land is inherited or bought by women, their low literacy rates compounded by their lower status in society propagates their level of dependence on their male relatives. **Access to lands** is challenging in the targeted area of intervention. Most of the farmers rely on renting lands from landlords. Renters pay in advance between \$200-400 USD per year per hectare<sup>23</sup> (two agricultural seasons) plus often a day of free labor on the landlord's plantation every week, with no guarantee of being renewed the next year. The ones who cannot afford to pay (especially women and youth) such price to access land can be sharecroppers, placing them in a more precarious position. In that case, they will have to give 50% of their main crop to the landowner plus a day of free labor (*mukolo*) on the landlord's plantation every week during the agricultural season. The shocks affecting sharecroppers are the same as for all farmers, however they have heightened sensitivity, as the impact on their livelihood will be greater because regardless of their harvest, they will still be obliged to give 50% of it.



*“Here, there are available lands to grow but then it depends on your financial capacity to rent a plot. It happens that we cannot afford to pay the rent because of other charges at the same time: school fees or medical care”.*

— FGD with men renting their lands, Nyamatwe

---

<sup>23</sup> In general, farmers rent small plots about 50m long x 25m large.



*“Now we see women fighting for their rights to inherit parents’ lands. Men want to be the only ones to receive lands without considering their sisters. Men even sell household’s plots without asking their wife”.*

— KII with a woman in charge of a women’s association, Kabumbiro

**Waterborne diseases** (ex. diarrhea, cholera) are an important concern, especially for young people. Two weeks before the STRESS assessment took place, an estimated 37.7% of children under 5 years old had diarrhea in the health areas of Miti-Murhesa and Katana<sup>24</sup>. Waterborne diseases are the cause of multiple deaths per year in Kalehe and Kabare territories. Waterborne diseases keep households in a vicious circle of poverty and poor health, making them unable to go to their fields and preventing children from going to school. As a result, the cumulative effects of waterborne diseases paralyze the household economy.

**Access to drinkable water** was given as a priority for village development in many cases. When water is not readily available, it falls upon young girls to find and carry water back to their household, which can potentially expose them to additional risks, including GBV. The drying-up of water sources is a key finding of the assessment conducted in FSP areas. This leads to hygiene issues as no water is available to wash hands, causing “dirty-hands diseases”, and also leads to difficulties in watering vegetable gardens for the production of food rich in vitamins and minerals.



*“There is a lack of drinkable water in the village. People drink water from the river and we see diseases because of that”.*

— FGD with men renting their lands, Buhoho

## Gender based violence

Issues of **GBV**, including direct violence (such as physical, sexual, psychological and economic violence) as well as indirect structural violence which arise from gender stereotypes, norms and attitudes, have been highlighted as a result of the STRESS assessment. It is important to note that most issues classified as GBV were not overtly seen as such by communities. There exists a preponderance of discriminatory cultural norms and practices deeply affecting equality between men and women, as well as preventing young girls, and young boys from fully accessing and controlling resources and enabling their own agency and self-efficacy. Diminishing livelihoods (reduced field, loss of banana as a cash crop) has reduced men’s capacity to earn income and placed additional burden on women to compensate for that loss. Access and control to resources and assets, such as land, credit, loans, reproductive health services and legal land ownership and inheritance greatly impact women and youth’s capacity to become empowered. Twenty years of conflict means that most youth today have spent their entire lives exposed to varying levels of violence and tension. A recent report by USAID (USAID ECCN Alternative Education in the DRC, Final Research Report, December 2016) indicated that more than half of youth in North Kivu feel unsafe or only somewhat safe.

24 Division Provinciale de la santé du Sud Kivu, 2017.

## Effect of shocks and stresses on FSP's expected outcomes

The STRESS Inform and Analyze Phases have revealed that several shocks and stresses<sup>25</sup> and systems constraints can prevent FSP from achieving its expected outcomes related to food security<sup>26</sup>.

Under **Purpose 1 “Households increase income”**, the three expected outcomes are at risk with the following **shocks, stresses and constraints**.

### Sub-Purpose 1.1 Agricultural production, especially of nutritious, lower-risk food crops, increased

**Food availability** is disrupted for smallholders and land renters because of a decrease in crop production. Contamination of banana tree plantations by BWX and cassava plots by the mosaic virus for more than 10 years has a substantial impact on households' farm productivity. New pest outbreaks also damage food crops like maize and beans. **Crop diseases and pests** is by far the highest concern of FSP's targeted population.

**Land degradation** is the second ranked concern for these populations, causing decreased yields. Smallholders no longer have access to a fertilizer management system (previously based on cow manure and/or banana leaves) for their continuously cropped plots. Renters cannot afford to invest in fertilizers and erosion control of their plots as they have no guarantee to access them for another year.

Disturbance of the rainfall pattern resulting in shocks such as **droughts, floods and landslides** are also risks threatening Sub-Purpose 1.1.

In FSP areas, agriculture **is not perceived as a profession**, but rather as a subsistence activity. The combination of land degradation, plant diseases, low yielding crops and an increasing issue of accessing land will continue to propagate the rejection of a farming profession by youth. Long term, this situation will always disable communities and more specifically youth to have a broader vision of the benefits that can be gained through agriculture, including income generation.

### Sub-Purpose 1.2 Men, women, & youth actively participate in markets

**Food access** in the area is constrained by a difficult access to markets for communities living in remote villages. **Distance** to the nearest markets and **poor road conditions** are strong constraints for farmers to sell their products. Farmers' associations exist but focus mainly on the production side (collective labor organization). **Poor post-harvest management and marketing** for crops like maize, beans, potatoes, cassava and vegetables means farmers are at a disadvantage for negotiating prices with buyers, another constraint for farmers to adequately supply markets.

Farmers have no clear understanding of the market tax systems. **Multiple taxation** is a main concern for local farmers, which includes legal taxes sometimes duplicated between authorities and illegal taxes (cash or in-kind) requested by official agents or security forces on the road. This discourages some farmers to supply local markets; instead, they prefer to sell their crops in the village to neighbors and/or collectors,

---

<sup>25</sup> FSP prioritized a limited, manageable set of shocks and stresses to focus on based on what the program can address. As such this list is a starting point, and FSP will monitor to be aware of other shocks and stresses that influence household food security,

<sup>26</sup> During the R&I year, and in parallel of the STRESS process, FSP has revised its Theory of Change accordingly. Main according revised activities, rephrasing of sub-purposes/outcomes and new linkages identified are reflected in the updated project ToC, submitted to USAID on Nov. 6th, 2017, to be discussed and considered for validation by USAID in the Nov. 23rd to Dec 3rd, 2017 M&E workshop, that closes the R&I process. However, because these changes to the ToC have not yet been validated by USAID; FSP has not presumed to include the proposed Purposes and Sub Purposes' modification in the current report. FSP has respectfully taken this approach after reviewing the theoretical underpinnings of both ToC versions and concluding that changes to the Purposes and SubPurposes do not hold significant implications for STRESS' related recommendations, but will influence FSP's resilience M&E plan.

always at lower price compared to market. As it is foremost women who are responsible for the sale of crops, their **lower bargaining power** towards all types of taxation impacts their capacity and desire to bring harvest to the market. In-kind taxation rates are not based on the quantity carried to the market but a set rate, typically using an empty powder milk can. Therefore, as women don't tend to bulk sell, they are reticent to passing through multiple taxation barriers that will repeatedly reduce the volume of crops. Women also report facing violence when they are unable to pay the requested tax.

Under **Purpose 2 “Improved nutritional status of children under two, pregnant and lactating women and other women of reproductive age”**, the two expected outcomes are at risk with the following **shocks, stresses and constraints**:

Sub-Purpose 2.1 People employ more effective health, nutrition and WaSH practices

**Waterborne diseases** are identified by targeted households as a stress in their daily life, mainly because of poor access to drinkable water. Such diseases prevent a good absorption of nutrients. The barrier analysis shows that the **lack of knowledge and information, tools, access to water and financial means** are the main constraints for the adoption of recommended hygiene practices. Moreover, **gender norms** are a constraint: men usually receive more and better food than the rest of the household, which makes it difficult for women to give priority to children or themselves, especially when pregnant/lactating. In addition, carrying for sick children (if necessary bringing them to health centers) falls predominantly under the responsibility of women, keeping them away from all other household tasks, including activities pertaining to value chain.

Sub-Purpose 2.2 People have access to more responsive health, nutrition and WaSH products and services

Per the minimum health facility standards established by the Ministry of Health, each health area must have a health center operating 24 hours a day. A minimum package of activities, including the curative activities of waterborne diseases, should be provided. Health center services require inputs such as consultation fees, laboratory services, and pharmaceuticals and other medical supplies. The barrier analysis found that the financial capacity of targeted households is the main constraint to individuals accessing health services in these areas.

For example, families are asked to pre-purchase a case journal in which all details of the consultation will be recorded--before they are allowed to see a health care worker.

The health service evaluation found that only the *infirmiers titulaires* (lead nurses) have the capacities in health centers to better care for sick people; when these lead nurses are not present at the health centers, the quality of health services declines drastically.

Under **Purpose 3 “Operating environment for sustainable development made more stable and inclusive”**, the three expected outcomes are at risk with the following **shocks, stresses and constraints**:

Sub-Purpose 3.1 Targeted communities implement local development plans, inclusive of women and youth, that reduce disaster and natural resources risks

Local Development Committees (LDCs) are in charge of developing and monitoring local development plans (LDPs). However, not every village has a functional LDC. And most LDCs do not have a formal LDP. When available, LDP objectives focus on road maintenance, water access or agricultural productions. LDP do not cover collective planning such as landscape management, disaster risk reduction, economic development, etc. Prevailing cultural norms reinforce a strong hierarchy when it comes to decision making.



It is perceived as the elders' responsibilities to make community decisions, thus usually excluding youth's voice.

Sub-Purpose 3.2 Communities, including women and young people, have better access to and control of resources through tax relief and land reform

**Uncertain land access** is an ongoing stress in the targeted area for FSP target populations that inhibits their access and control of resources that can support their resilience and food security. As described earlier, landlords hoard agricultural lands and ask for overwhelming renting conditions, which makes it difficult for poor households to get land. The most vulnerable households rely on sharecropping. Renting and sharecropping agreements are done for a year, without guarantee of being renewed. As previously mentioned, this is even more critical for women and youth.

Smallholders have no official titles for their lands, as most cannot afford even the customary recognition act delivered by traditional authorities. Women, even in cases where they legally inherit land, often go without their rights recognized. Official services (Cadastre) are used only by landlords, who sometimes corrupt their agents to extend their legal surface area at the expense of smallholders.

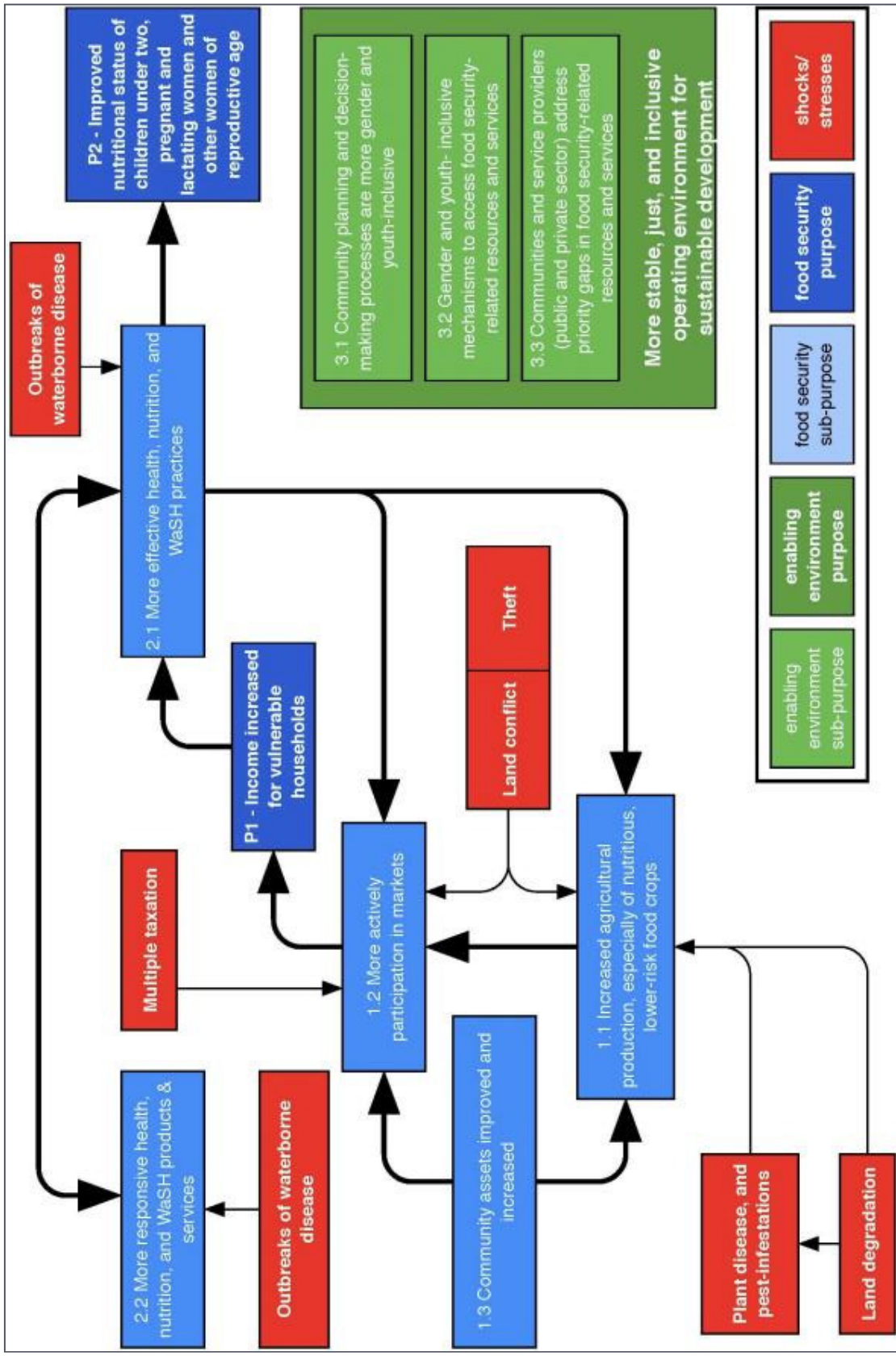
As previously mentioned, **cultural norms** constrain women's empowerment by refraining their control and sometimes access to key resources, such as financial resources, land, as well as decision making power. Men lead financial decisions related to on-farm activities despite the fact that women play an important role in crop management.

Women associations' members reported that women are now starting to claim their rights to inherit lands from their parents; however, this right is not broadly accepted in the communities. Even in cases where women legally inherit land, it is still not assured that this will be recognized. This can result in land disputes, and cases have been reported of husbands selling off women's plots without it being discussed, or a brother can even take his sister's plot when her husband dies.

Sub-Purpose 3.3 Inclusive and effective conflict management mechanisms accessed by citizens

While **intra-community conflicts** are frequent, traditional conflict management systems (i.e. through local elders, head of village, church) are in most cases not satisfactory. Complainants must pay or give presents before they can request arbitration, and corruption is frequent which leads to frustration and discouragement. **Thefts** are becoming more frequent as thieves usually face no real consequences. Thefts also stand to increase if conflicts in South Kivu worsen, because IDPs and armed groups' relatives (military or non-state) are reportedly some groups who steal crops. Theft of crops has in turn important consequences on farmers' production strategies, such as selection of varieties (ex. improved sweet cassava variety is avoided, early harvest of vegetable, etc.), which in turn affects income (P1) and nutrition (P2).

FSP RESILIENCE LOGIC OVERVIEW, MAIN SHOCKS AND STRESSES: UNDERSTANDING HOW FOOD SECURITY CAN BE COMPROMISED



## Responses to shocks and stresses implemented by the target population

In order to improve their resilience to the shocks and stresses mentioned above, a number of resilience capacities are critical for the target population. These capacities help the target population access resources and implement strategies in ways that enable them to absorb and adapt to those shocks and stresses, while also addressing constraints to bring about deeper, transformative changes critical to their ability to learn and change with the dynamic risk environment over time.

The STRESS examined current practices employed by target population when responding to shocks and stresses. As mentioned above, the underlying constraints posed by GBV prevent women and youth from implementing sustainable resilience strategies, especially those related to control of resources. For example, to bypass cultural norms related to men's monopoly on household incomes, women have reported hiding their incomes (ex. by digging a hole in the ground) or investing in women's savings and loans associations (MUSO, VSLA). However, being a member of a MUSO or VSLA requires a weekly deposit, which is a limitation for the poorest women as well as for youth.

Under **Purpose 1 "Households increase income"**, the following responses are implemented by the FSP target population:

### Sub-Purpose 1.1 Agricultural production, especially of nutritious, lower-risk food crops, increased

#### **Crop diseases and pests**

Farmers say that they don't know how to prevent diseases like BWX on banana tree or the mosaic virus on cassava plant. Some have been trained on preventive techniques such as cleaning farming tools by fire, but few have actually adopted those techniques. Smallholders on banana production and women on cassava production report removing sick plants and burying or burning them. However, this has not enabled them to stop disease spread amongst their plots. Adoption of the improved cassava variety resistant to the mosaic virus is very low, as this sweet variety is highly subject to theft, is less preferred for its taste compared to other local varieties and loses more water when dried before marketing.

Some smallholders reported they plan crop rotations in their plots to decrease pests and diseases. For sudden pest attacks (ex. caterpillars on maize), farmers have neither preventive nor curative actions, as they are not informed of upcoming attacks and how to deal with them.

#### **Land degradation**

To prevent erosion, smallholders dig canals around their plots and sometimes plant trees to reduce water's flow. However, those canals are not always designed the best way and are dug parallel to the direction of the slope instead of perpendicular, which can create floods in lower lands. Land renters are not allowed to dig deep canals nor plant perennial plants. They only dig superficial drains to avoid erosion and floods. Women do the same on their plots.

On the fertility management side, options also differ depending on the tenure situation. Smallholders are the most exposed to short-term decrease of fertility, as they don't own enough plots to include fallows in their crop rotation. Most use households' organic wastes in their plots. Some were trained and have adopted burying green fertilizers (such as weeds, leaves), composting (even if a lack of green material is critical, due to BWX disease on banana trees) and intercropping (ex. beans and maize). Some youth who are members of local associations are promoting small breeding systems (guinea pigs) to access new sources of income and manure. Land renters also use short-term strategies such as use of household

waste. But their main strategy is to leave infertile lands to rent a new one that is not yet too infertile, driving a cycle of land degradation.

### **Dry Spells**

Farmers use few strategies to proactively manage dry spells and rainfall variability, like crop association in one land. This strategy helps in case a variety is more affected than others, farmers can still harvest other crops. Farmers do not manage to sow their crops at the best moment because of the changes in the rainfall pattern and the lack of information on weather forecasts. When rains come late, they lose their seeds and need to start a new cropping cycle. Due to their lack of control over financial resources and cultural norms putting priority on other household needs, women in particular report difficulties buying new seeds to sow a second time.

#### Sub-Purpose 1.2 Men, women, & youth actively participate in markets

### **Multiple taxation to access markets**

To help sell their products, farmers living in some remote villages have started local associations aiming to develop collective sales (ex. local youth farmers' association in Kabumbiro to promote maize sales). However, in general, farmers associations struggle to develop such actions by themselves because of a lack of transparency in financial management, a lack of trust between members and general low capacity to manage those structures.

Because they sell their productions individually, farmers go by themselves to the nearest markets without accurate information on prices, taxes, etc. Illegal taxes on the road are paid in kind (a portion of the production brought to the markets). Women especially complain about threats on the roads by 'security' agents, so much that they try to stay in their village to sell their products. They sell at low price to collectors or other villagers.

Women from different sites have reported that advocacy groups exist in other villages to discuss this problem with local authorities. This approach was approved and requested to FSP staff during interviews.

Under **Purpose 2 “Improved nutritional status of children under two, pregnant and lactating women and other women of reproductive age”**, the following responses are implemented by the FSP target population:

#### Sub-Purpose 2.1 People employ more effective health, nutrition and WaSH practices

Most of targeted households (>85%) do not use washing hands stations nor improved water sanitation to prevent water borne diseases<sup>27</sup>. Interviewed households said that they buy soaps at local shops, but most did not know about water disinfectant. Half of the mothers from the targeted province do exclusive breastfeeding until their child is 6 months old<sup>28</sup>.

#### Sub-Purpose 2.2 People have access to more responsive health, nutrition and WaSH products and services

When a household member is getting sick with diarrhea, around 46% of them look for health care in the province<sup>29</sup>. As mentioned above, each health area must have a health center capable of treating basic

---

27 Division Provinciale de la santé du Sud Kivu, op. cit.

28 Ibid.

29 Ibid.

diseases, including waterborne diseases. The Health Service evaluation found that the quality of service is mostly poor, notably because of the lack of continuous presence of the lead nurses.

In FSP areas, communities are followed by community health volunteers (*relais communautaires*, RECO) that engage with around 15 households each, discussing treatments for basic health ailments as well as when necessary, referrals to health centers. For example, some households have been coached by their RECOs on how to treat mild cases of diarrhea at home, including the use of Oral Rehydration Serum (ORS) that can be purchased at a pharmacy and mixed with one liter of water or homemade rehydration solutions.

Under **Purpose 3 “Operating environment for sustainable development made more stable and inclusive”**, the following responses are implemented by the FSP target population:

Sub-Purpose 3.1 Targeted communities implement local development plans, inclusive of women and youth, that reduce disaster and natural resources risks

No specific response was detected within the communities to address this lack of inclusive, long-term development plan regarding disaster risk reduction and natural resources management.

Sub-Purpose 3.2 Communities, including women and young people, have better access to and control of resources through tax relief and land reform

Vulnerable households practice some strategies for securing access to land, but few local strategies exist to mitigate the ongoing stress of uncertain land tenure. Sharecropping and renting lands for one year from landlords are the most common ways to access lands for vulnerable households. Because landlords have informal agreements on renting rates (\$200-400 USD/ha/year), the price does not drop even if there are a surplus of available lands.

When buying land, villagers rely on a bill of sale delivered by the seller, and signed by witnesses. This bill can be signed by the head of the village. This title has no legal value, but is recognized locally. It does not help avoid land disputes with potential members from the seller’s family who do not recognize the transaction, nor with neighbors concerning the plot’s limits.

Sub-Purpose 3.3 Inclusive and effective conflict management mechanisms accessed by citizens

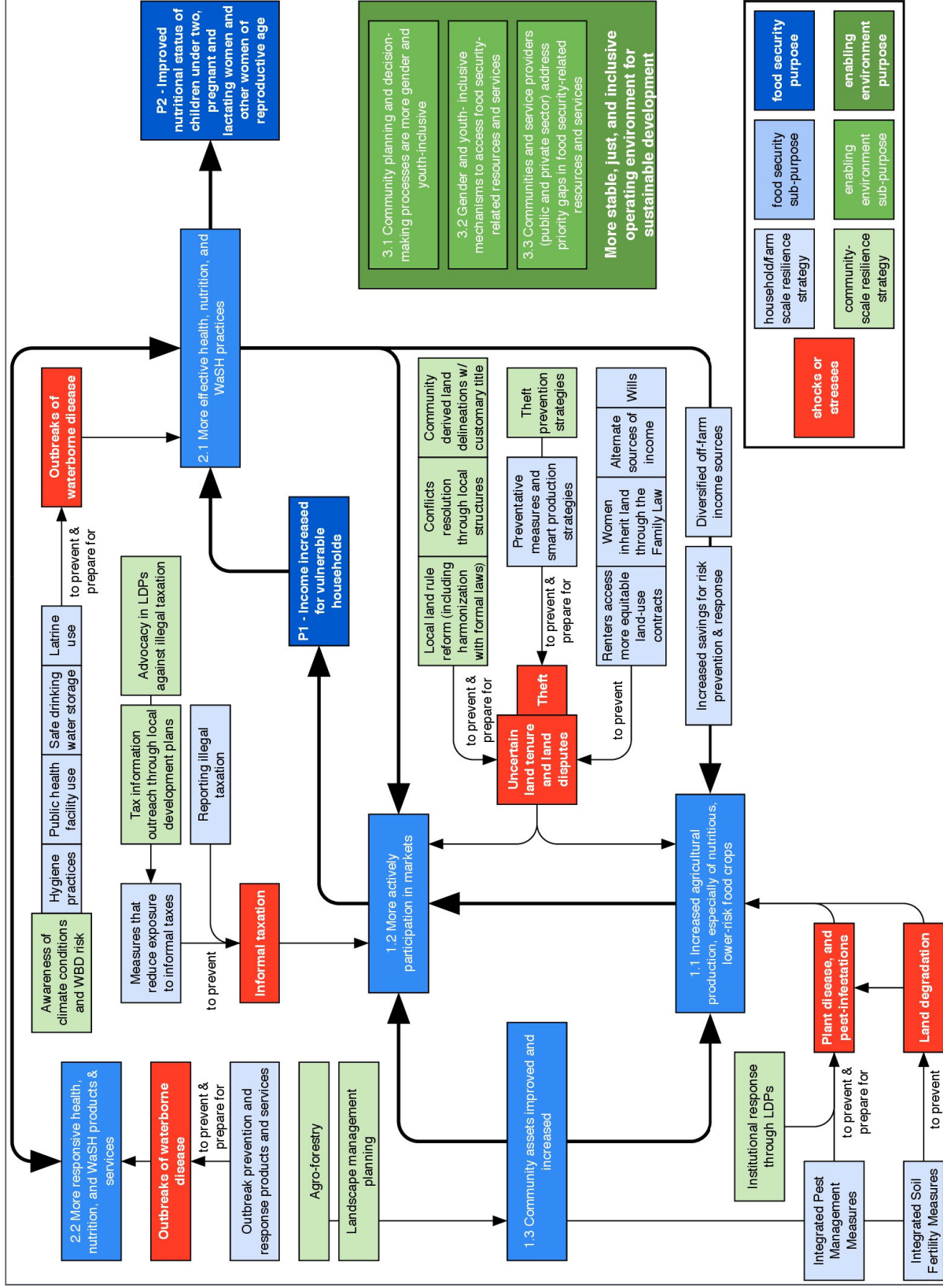
Vulnerable households resort to conflict management associations (ex. CDM) where available to deal with **local conflicts**, such as crop thefts, cattle damages to crops, inheritance complaints, delimitation of plots and unwanted pregnancies between unmarried youth. These organizations are appreciated because they are free of charge and impartial. When those structures are not available in the communities, villagers go to traditional authorities (elders, heads of villages, religious structures) who ask for some compensation (money, drinks) before they look at the conflict, and sometimes there is corruption in this system. When those conflicts are not solved locally, then the head of village sends the complainants to province courts and/or national police.

To avoid **thefts**, farmers try to guard their crops before harvest, but it is difficult for them to control plots that are farther away, especially at night. Women said that they harvest some vegetables when still green to avoid theft, but as a consequence they cannot keep seeds for next season, and some crops lose nutritional and market value.

Because of the corruption and frequent early release of thieves, many communities have resorted to ‘popular justice’, which means killing the supposed thief by torturing him or burning him alive.



FSP RESILIENCE LOGIC OVERVIEW, MAIN RESPONSES TO RISKS ON OUTCOMES



## Strengthening Resilience Capacities: programmatic implications for FSP

During the analysis workshop held in Bukavu in September, 12<sup>th</sup> to 15<sup>th</sup> 2017, FSP consortium members had the opportunity to review all these shocks and stresses and constraints related to FSP expected outcomes, and how local communities address them currently. Based on this analysis, the consortium chose to prioritize an initial 6 shocks and stresses and include new and/or refine strategies to support appropriate responses in the implementation plan:

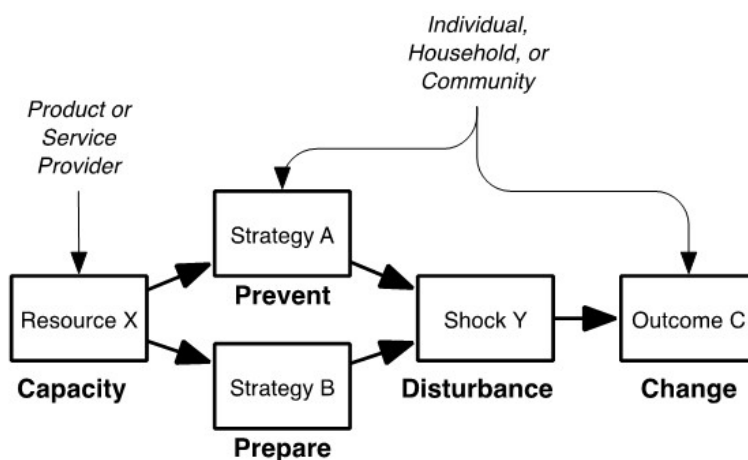
- Land degradation
- Pests & plant diseases
- Thefts
- Land disputes
- Multiple taxation to access markets
- Waterborne diseases

The consortium developed six “resilience storylines” to explain the strategies target populations need to employ in the face of each shock/stress in order to produce a response that protects their progress towards food security outcomes. These are described below, each with descriptions of existing resources that can support strategies, as well as actions that FSP will take to facilitate uptake of these strategies. FSP will monitor the effectiveness of these resilience strategies throughout the Implementation Phase in order to adapt the program approach and deepen learning on what works to support household resilience for food security in South Kivu. In instances where resilience strategies fall outside the scope of FSP, the program will work to forge partnerships and advocate to other actors to cover gaps.

Even if ranked lower than other shocks and stresses, FSP considers waterborne diseases a main shock that does impact the other resilience strategies (below) and program outcomes. It is included in the resilience logic diagram and storylines because if not addressed, the risks to agriculture production and household income will increase. During the STRESS process it became clearer how addressing the risk of waterborne disease has a critical role in helping protect other program outcomes, though the strategy associated with it was already well developed and planned for in the FSP design.

FSP will take into consideration two other important risks within the program’s resilience approach: i) volatile context with a chance of increasing number and intensity of conflicts in South Kivu that could lead to an increase of IDP movements that, combined with uncertain land tenure, could reduce food access and lead to a rise of thefts, and potentially spark new stresses. FSP will monitor for this and ensure a contingency plan is in place to address any major influx of IDPs into the program zone. ii) As mentioned above, GBV is also an underlying stress that FSP will continue to assess throughout all stages of program implementation, as physical and economic violence and indirect GBV impact women and youth’s access and control of key resources critical for their resilience capacities.

## RESILIENCE STORYLINES



A capacity is a resource with certain attributes that enables people to either prevent or positively respond to a shock or stress in a way that does not compromise their development outcomes

### 1. Resilience to land degradation for increased agricultural productivity (refined)

As presented earlier in this report, land degradation is a critical concern for the studied population, especially for the land renters who represent an important part of the targeted population. Land degradation covers both (i) a decrease of soil fertility, due to a decrease in using fallows between cropping cycles and a decrease of organic fertilizer availability and (ii) an increase of erosion on cropped plots, due to deforestation and disturbance of rainfall pattern (i.e. concentration of heavy rains instead of a regular spread of rains). Trees and other soil-fixing plants have been removed from hillsides, both to increase land availability and to use the wood for construction and fuel. Other crops that could help stabilize hillside soils, such as banana trees, have been decimated due to plant disease.

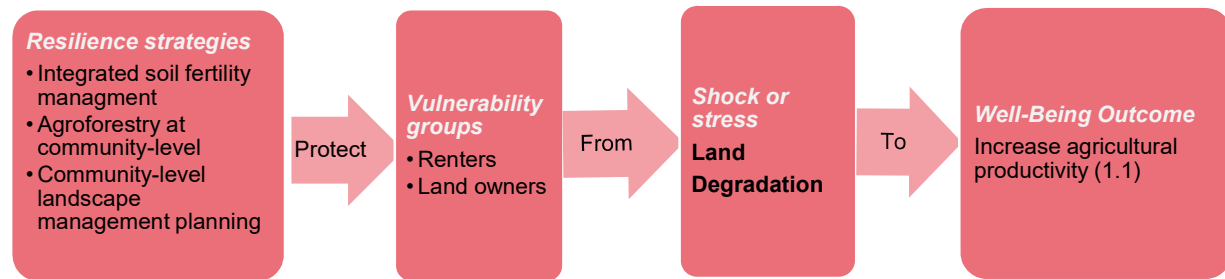
In addition, most of the farmers access lands through renting/sharecropping agreements that cover one year at a time, which discourages them from investing in long-term erosion control techniques. This uncertain land tenure means farmers have no guarantee of benefiting from improved practices. This is especially true for women whose land tenure is often less stable than men's and whose decision making power is less recognized. Therefore, FSP needs to identify soil anti-erosion and fertility practices that provide short term incentives while identifying ways to improve the land tenure problems.

The identified available resources in communities that support the application of strategies to address land degradation are the following:

- **Providers of credits**, formal or informal-using MUSO (VSLA) to pay daily workers for small works (canals, tree plantation) around smallholders' plots;
- **Farming tools** (hoe, spade, machete, wheelbarrow, peel, pickaxe, trident) to implement those works. Availability of tools was subject to discussions with interviewed communities, especially youth and women, who are the least to access them in a family. However, they are supposed to be available with **input suppliers** in local markets. These locally available tools and resources can be used to implement small earthwork practices such as swales, berms, and check dams to minimize soil erosion;

- **Sources of technical information:** NGOs that provide technical support (Antibwaki, GIZ, IITA, Harvest Plus), local research centers (INERA MULUNGU, UEA), Farmers to farmers, Public Services Agents. Technical information is available through these sources; however, most of the farmers don't have access to it, mainly because of geographical distance. And again, if the information is accessible, due their lower literacy rates and decision making power, women often have less influence to act upon the information received.

The FSP consortium identified three strategies that renters and landowners need to apply to support resilience to land degradation.



### FSP's Role

Promote **integrated soil fertility management** to smallholders and land renters. This set of activities was already planned in FSP for year 2, for example tree planting, increasing coverage and increasing biomass, but additional water management components have been added: support to adequate drainage as well as small-scale irrigation schemes. These technical aspects will be added in the planned Farmer Field School approach and Junior Farmer Field Schools targeting youth during year 2 (information gathering and design of adequate actions) and year 3 and 4 (activities implementation) of FSP (P1).

Promote **agroforestry** at community-level. FSP planned to promote agroforestry at household level, but the ecosystem assessment has shown that a 'hill' approach must be preferred. Tree seedlings will be produced through nurseries, then distributed to targeted households depending on their location on targeted hills<sup>30</sup>. For each targeted hill, a development plan will be designed with the communities: location and slope for trails, drainage canals, tree plantations. During year 2 of implementation, the tree nurseries will be set-up (P1) through youth associations, lands for the hill approach pilots will be selected, and trainings will be provided to communities on impact of erosion and the potential of trees to mitigate it (P1). During year 3 and 4, once the hill approach is launched with distribution of seedlings, it will be important to document the impact of tree planting in the agricultural fields of these communities in order for them to recognize the benefits. This will be part of TOPS Resilience Design for Smallholder Farming Systems that encompasses soil health, water harvesting, water management, and agroforestry at the farm and landscape level. FSP will have a strong focus on drainage, potentially small scale irrigation and rainwater harvesting in this landscape approach.

The Resilience Design approach at the landscape level will require the involvement of communities and the development of **community-level landscape management planning** that covers the "hill approach" and includes advocacy and support to LDCs to develop a landscape management plan included in their LDP. This landscape management plan must lead local communities to agree on long-term soil fertility

<sup>30</sup> This community-level activity is not here meant to be on community lands, but is implemented at community scale. Part of landscape management, this means that each farmer will plant trees on its own agricultural land but alongside others on the same hill to increase the impact, rather than providing seedlings to households that are not on the same hill.

management and erosion control, which implies agreements between landlords and land renters on longer-term land access conditions and implementation of promoted techniques (hedges, agroforestry, design of adequate drainage system [canals], integration of livestock pasture management into collective rotation, etc.). During year 2, FSP will also advocate for community development plans to include reforestation efforts (P3). This reforestation activity has limited budget in the current FSP design, so it will be partially implemented. This approach must be a priority for additional funding to strengthen local communities' resilience to land degradation.

## 2. Resilience to pests/plant diseases for increased agricultural productivity (refined)

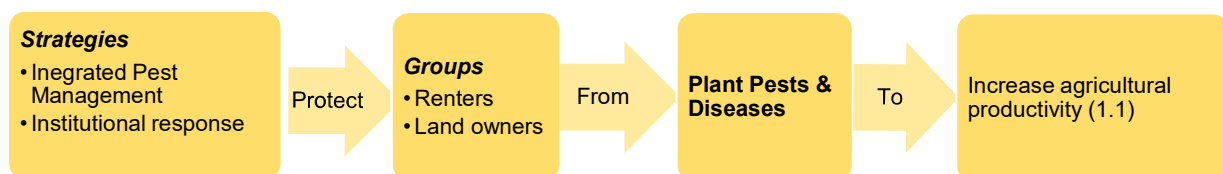
In the past several years, the spread of plant diseases and pests has constrained agricultural productivity and food security in South Kivu. Cassava, a staple crop, has been affected by cassava mosaic disease (CMD) and cassava brown streak disease (SBSD), reducing women's food production for home consumption and decreasing incomes. Bananas, previously a lucrative cash crop, have been decimated by Banana Xanthomonas Wilt (BXW), cratering income generation for men. New diseases, such as the Fall Army Worm (FAW) that is quickly spreading across the continent and devastating maize and other cereal crops, are also likely to impact South Kivu in the coming years.

Unfortunately, adoption of disease and pest management techniques is low for two reasons. First, technical support to control and warn about these diseases and pests is largely inadequate and, therefore, there is poor knowledge of disease and pest control methods. While some sources of technical information are present locally, barriers to uptake exist which FSP will continue to explore. Second, the availability and affordability of products to control diseases and pests is likewise poor. Current pest and disease management practices include removing affected plants, but the efficacy of such methods is limited.

The identified available resources in communities that support the application of strategies to address pests and plant disease are the following:

- **Providers of credits**, formal or informal-using MUSO (VSLA) to buy inputs;
- **Savings**- They are obtained / made after sale of harvest, sale of livestock, VSLA (savings) in order to put in place mitigation measures to shocks and stresses;
- **Farming tools** (Hoe, spade, machete, wheelbarrow, peel, pickaxe, trident), **seeds** (food, market gardening and cash crops), bio-pesticides and **input suppliers** in local markets and small shops of agricultural inputs (tools and bio-pesticides);
- **Sources of technical information**: NGOs that provide technical support (Antibwaki, GIZ, IITA, Harvest Plus), local research centers (INERA Mulungu, UEA), Farmers to farmers, Public Services Agents.

The FSP consortium identified two strategies that renters and landowners need to apply to support resilience to plant pests and diseases: integrated pest management and use of early warning information.



## **FSP's Role**

Promote **Integrated Pest Management (IPM)** to smallholders and land-renters to help them mitigate plant pests and diseases. This set of activities was already planned with a Farmer Field School (FFS) approach, but it was refined based on STRESS findings: (i) include a soft component on banana production, with the implementation of a barrier analysis on adoption of BWX prevention technique in year 2 then, if judged important and with potential impact, provision of awareness sessions on BWX prevention during years 3 and 4 within FFS (P1); (ii) support Harvest Plus's experimentation of an improved bitter variety of cassava resistant to the mosaic virus in year 2 and if positive, support its dissemination in targeted communities (P1) ; (iii) include drainage, rainwater harvesting and management, and potentially irrigation trainings in FFS in lowlands/swamps for vegetable production (P1). In addition, this will be discussed in the Junior Farmer Field School activities.

FSP will not directly promote banana production but will gather information through barrier analysis to understand why BWX prevention techniques haven't been adopted in the past years. During the STRESS studies, the population requested information about BWX management and the banana leaves can be used as natural soil fertilizers. In all cases, dependency on a unique crop does not support resilience and FSP will encourage diversification of crops, which also means diversification of risk of production related shocks.

Advocate for **institutional response** to plant pests and diseases outbreaks. Government's technical services or consular chambers (ex. Conseil Agricole Rural de Gestion [CARG]) should have a role in implementing and maintaining a warning system to farmers when pest outbreaks are detected. A whole early warning system strategy being too ambitious for the scope of FSP, the project will more focus on a local solution within LDPs to advocate for an institutional response. This will for example consist in advocating for the inclusion within the LDP of an information chain to bring the information to the attention of the CARG, and then have the CARG provide appropriate advice on the behavior to be adopted.

### **3. Resilience to theft for increased agricultural productivity (new)**

Main thefts are thefts of crops, not for commercial purposes but for consumption. Different root causes of theft in the community have been identified: i) the difficulty of access to land for vulnerable populations, including displaced people and populations, especially Pygmies, who used to live upon Kahuzi Biega Park' resources (hunting and gathering) as their sole source of income, exploitation that is now banned. Without a concrete alternative for income-generating activity, theft remains a survival strategy; ii) high unemployment in rural areas, especially among young people, increases poverty of households who steal to feed their families; iii) finally, the lack of control and resources allocated to local security services - some police and army personnel assigned to remote areas are involved in theft and burglary.

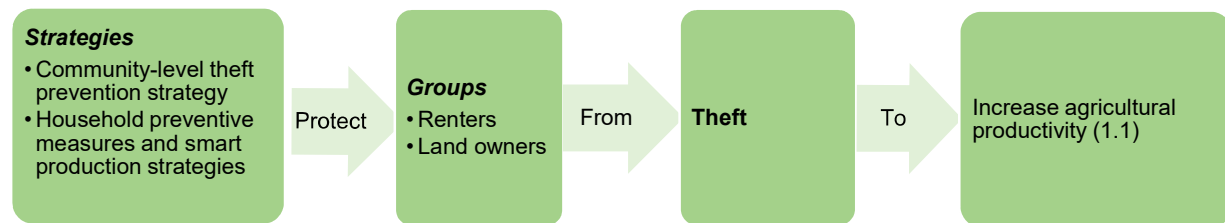
Sweet cassava varieties, vegetables, sweet potatoes and corn are especially subject to theft, because they are ready to eat (not requiring cooking or processing). With little recourse, farmers have begun adapting their practices, such as guarding their crops before harvest. Farmers, however, often live far from their fields, which means they are unable to oversee their crops or on-farm belongings to prevent theft, especially at night. Women said that they harvest some vegetables when still green to avoid theft, but as a consequence they cannot keep seeds for next season, and some crops lose nutritional and market value. Thieves rarely experience real consequences. Because of that, popular justice is more and more applied in cases where theft is suspected.

The identified resources in communities that support strategies to address thefts include the following:



- **Community level management structures and authorities**, such as CDM, Peace&Justice Commissions, and traditional authorities (elders, head of village);
- **Providers of agricultural inputs and information**, to enable access to seed varieties less vulnerable to theft;
- **Plot close to home** for back-up permagarden, not to rely only on the crops cultivated in lands.

The FSP consortium identified two strategies that renters and landowners should apply to support resilience to theft.



### FSP's Role

Support to a **local theft prevention strategy, designed and implemented at community level** (P3). Increase awareness about the laws regarding theft and supporting authorities to enforce anti-theft laws and measures to help reduce the likelihood of theft occurring, allowing farmers to plant more profitable foods and grow them until maturation, which will increase food production and income. Involvement of both local authorities and conflict management structures during year 2 are important to reach a consensus and avoid having recourse to popular justice. Sensitization on local authorities' accountability to citizens, in terms of dealing with local conflicts, will be delivered to local authorities and citizens. A monitoring system at community level could be developed to help local authorities to monitor thefts. This will also lead to peaceful resolution of theft using established and accountable platform as the CDM.

Support to **household preventive measures and smart production strategies**, determining the usefulness of asset protection measures at the household level, such as hedges around plots, storage sheds (for tools), starting in year 2 of implementation (P1). This strategy concerns also the selection of crops to be promoted by FSP, favoring the varieties that are less at risk of theft but still support nutrition diversity; those, for example, needing prior processing before eating (this will be included in the FFS curricula as well). This household-level strategy will also discuss with households potential approaches like promoting multiple production sites to spread risk of theft, like having a permagarden as a back-up for food consumption in case of crop theft. FSP will also work with VSLAs to see how they can serve as safety nets for victims of theft.

## **4. Resilience to uncertain land tenure and associated land disputes for increased agricultural productivity (refined)**

Land tenure is unclear for almost all farmers in South Kivu. The existence of multiple layers of different governance systems, which are vulnerable to corruption, means that even those that have titles for their lands still risk losing access to them. For farmers who lease land, there is substantial risk to losing access to the land in the following year. Traditional practices regarding women's land access often supersede formal laws that guarantee their rights.

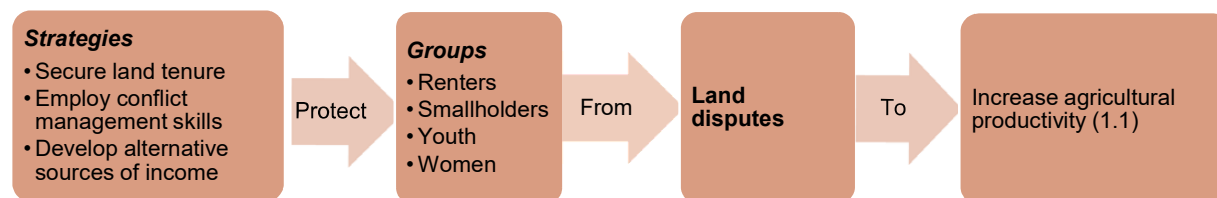
Unclear land tenure across South Kivu is highly concerning for FSP’s target groups, who also avoid investing in resource-intensive farming practices to increase the production quality of the land because of the risk of losing the land in the following year. Losing one’s land access can result in absolute destitution as there are few off-farm incomes that households engage in. Unclear land tenure is thus a systemic constraint that essentially becomes an ongoing stress for all farmers and can lead to land disputes about plot’s delimitation, transmission of land to inherit without a will prepared in advance, and poor community recognition of women’s right to inherit lands.

The identified available resources in communities that support the application of strategies to address land disputes are **conflict management structures (CDM, GRF, local authorities)**. However, in South Kivu rural areas, there is actually no structure that supports households to understand land access policies or legal land tenure procedures. IFDP and APC are among the recognized Congolese organizations that carry out some awareness-raising actions on land policies and regulations at the provincial and local levels. The Chiefdom and the CDMs focused their community sensitization solely on obtaining customary titles.

To access alternative livelihoods in case of loss of land, identified available resources in communities are:

- **Small shops** selling necessities (soap, salt, fry, etc.);
- **Small livestock breeding** (goats, chickens, rabbits, guinea pigs), especially for youth and women;
- Young people are millers using **small processing units** of *Cassette de Manioc*, and work in the **associations by driving motorcycles**. Other processing / conservation opportunities will be assessed and considered by FSP.

The FSP consortium identified three strategies that renters and landowners, youth and women need to apply to support resilience to land disputes: improve land tenure, increase conflict management skills and develop alternative sources of income.



### FSP’s Role

Secure and improved **land tenure** amongst targeted communities (P3) is already planned in FSP, but several actions have been refined in FSP’s workplan for years 2 to 4.

- Support smallholders to acquire community-derived delimited land with customary “land title;”
- Advocate at local and provincial levels for a harmonization of customary and national laws on land tenure;
- Support farmers’ organizations in negotiating fair access to land for renters;
- Support to LDCs to develop standards for renting contracts (length, time, soil management, price);
- Support community awareness of wills for inheriting lands; and
- Support community awareness of the Family Law regarding women’s land rights.

Support transparent and fair conflict management structures, such as CDM or GRF during years 2 to 4 (P3), to ensure communities can resort to non-violent **conflict management in settling disputes**. Those

associations need trainings on land laws and family law. Some remote villages do not have such associations and still rely on traditional mechanisms to manage conflicts, which expose vulnerable households to unfair decisions. Such support was already planned in FSP's workplan.

Support renters and smallholders to access **more diverse incomes** (P1), starting from year 2. Such activities were already planned (small breeding systems, VSLA, permagarden, sanitation marketing) but FSP needs to ensure that its target population for income diversification includes people more at risk of land disputes to build a better resilience. FSP will also ensure that the same target population is also involved in fee-based services or IGA such as transportation expended to multiple villages for various products, processing, etc. This diversity of activities will also support resilience to thefts. People who are at risk of losing land or more vulnerable groups at risk of engaging in theft (ex. IDPs, minority groups and military wives) must be included in this set of activities.

## **5. Resilience to multiple taxation for increased market system engagement (new)**

A series of both formal and informal taxes are levied against individuals engaging in market activity; primarily for FSP's target groups this series of taxes affects the sale of agricultural crops. Women and young girls are principally in charge of bringing the harvest to the market and thus are more exposed to taxation. This, combined with their lower literacy rates and lower status in society, impacts their bargaining power. Respondents have difficulties differentiating official taxes from illegal ones. Some taxes begin at village level, then on the road to the nearest market farmers have to pay in-kind taxes to security forces. Finally, at the market itself, multiple taxes are levied, sometimes duplicated between local authorities. The sale of crops at market is managed individually by farmers, which puts them in a weak negotiating position when illegal taxes are demanded.

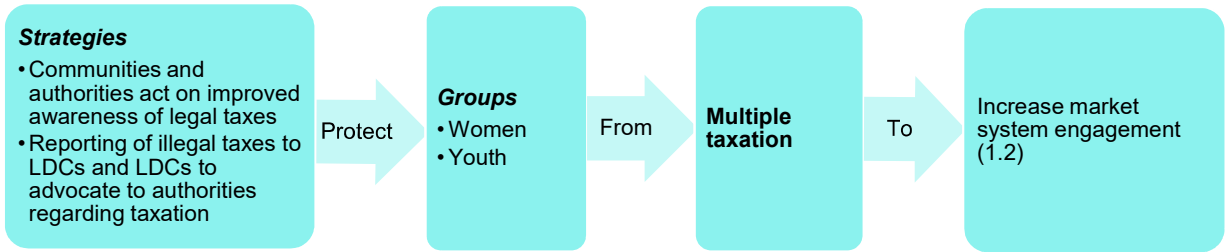
To avoid paying such taxes, women will often opt to sell crops at the field-level rather than risking taxes on the road and at markets, and/or violence and abuse when they are unable to pay the tax (reported by some respondents). This means that the prices they receive for such goods are lower than if they were to sell at market, resulting in less income to support food security more broadly.

Although there is low-level advocacy by association leaders for the removal of illegal taxes and other barriers to market access, these efforts have yet to curb multiple taxation due to the poor capacity of these leaders to affect change.

The identified available resources in communities that support the application of strategies to address multiple taxation are the following:

- **Sources of technical information:** NGOs, local research centers (INERA Mulungu), farmers to farmers, public services agents;
- **Producer organizations** to potentially decrease the cost of taxes per farmer;
- **Traders** who interact with producer organizations;
- **Psychosocial qualities and literacy rate:** the desire to obtain income in a sustainable way and capacities to bargain.

The FSP consortium identified three strategies that households and communities need to apply to support for resilience to multiple taxation and which will benefit women and young girls in particular.



### FSP's Role

Promote **communities and authorities' awareness of all legal taxes** so they can refuse when taxes are being improperly levied, thereby improving their access to markets (P1). During year 2, the FSP team will collect all information and consult with local authorities to detect potential duplicate taxes between authorities. During years 3 and 4, this information will be spread across associations, LDCs, etc., and made available to farmers (including women, youth, smallholders, renters). If both community members and authorities are aware of all the legal and illegal taxes that households face when they try to engage in market activity, then community members (and women in particular) would be better equipped to refuse to pay informal taxes, and authorities would be better able to prevent those who are levying informal taxes from doing so.

Support LDCs to include an **advocacy section on taxation** in their LDP (P1 & P3). When **illegal taxes are identified and reported** by farmers, it is important that a mechanism is set-up to collect this information and share it formally with the appropriate local authorities via LDCs. This approach will also include an accountability aspect for local authorities towards the citizens, on how much tax is asked and for what purposes it is used. If LDCs integrate taxation into their advocacy strategies, they may successfully lobby for authorities to restrict the level of informal/illegal taxes being levied, which will reduce the overall level of taxation that women farmers face.

FSP will also liaise with other USAID-funded programs in South Kivu: Integrated Governance Activity (IGA) and South Kivu Strengthening Value Chains (SVC) to advocate the taxation issues.

*Illegal, in-kind taxes on the road to markets are not targeted by FSP, as it involves also protection aspects which are not included in the FSP design. Indeed, some barriers are needed to protect villagers against armed groups of thieves. Ideally, a discussion between security forces and civil society should take place to define a consensus on how many security barriers are needed and where. FSP will not cover this point but preexisting protection committees are working in certain intervention areas.*

## 6. Resilience to waterborne diseases for improved health/nutrition/WaSH outcomes (refined)

Waterborne diseases are the most common illness in South Kivu and gravely impact food security. Waterborne diseases keep households in the vicious circle of poverty and poor health conditions, by preventing the adults from working and the children going to school. The cumulative effects of diseases, and especially waterborne diseases as their frequency is higher than any other disease, paralyze the economy. Cholera and other diarrhea pathologies are responsible for a significant number of deaths per year within the most vulnerable communities of Kalehe and Kabare, most of the deaths being children under five. When children and other vulnerable household members have diarrhea due to poor water quality, they cannot absorb the nutrients they consume, which results in malnutrition. Some 37.7% of children are ill with diarrhea at any given time in South Kivu, and less than half of those who experience diarrhea seek medical assistance for it<sup>31</sup>.

Improper hygiene and poor infant and young child feeding practices are contributing factors to waterborne disease. Roughly 14% of households use hand washing stations in South Kivu. Likewise, only 14% of households use improved sanitation. Fifty-two percent of women do not exclusively breastfeed infants during the first 6 months after birth<sup>32</sup>. Water sources' drying up has been reported during different assessments as a major concern by the population, which causes issues for: hand washing at the 5 key moments of the day, leading to "dirty hands" diseases; and lack of water for the watering of gardens/permagardens that produce vegetables or other vitamin and minerals-rich foods.

Variable climate conditions also influence vulnerability to waterborne disease in South Kivu and must be understood as linked to disease outbreaks in order to effectively build resilience. Outbreaks of some of South Kivu's most common diseases are indirectly driven by rainfall variability and temperature change. Vulnerability to cholera outbreaks, for example, increases dramatically in eastern Congo with abnormally warm temperatures, abnormal amounts of rainfall that cause significant flooding, and landslides which collapse pit latrines, become contaminated easily, and other water routing and sanitization infrastructure.<sup>33</sup> While health workers and households have some understanding that climate and more specifically rainy seasons are linked to diseases, community and household natural resource management practices do not take explicit actions to address climate risk as a preventative health strategy. Women likely have less of this knowledge, putting them at a disadvantage to take adaptive measures.

The identified available resources in communities to address water borne diseases are the following:

- **Information for households:** water treatment and storage, techniques on the 5 key handwashing moments and how to identify waterborne and other diseases;
- **Information for communities:** capacity building of WaSH committees on water supply maintenance and protection against contamination;
- **Infrastructure investment:** rehabilitate or construct functional faucets;
- **Product Suppliers:** Aquatabs suppliers;
- **Natural resources:** local equipment for the construction of latrines, availability of water to clean latrines.

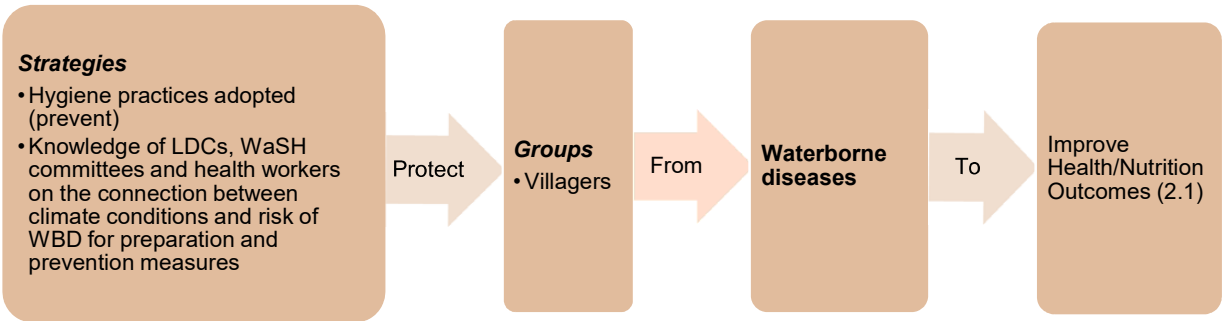
The FSP consortium confirmed two strategies that FSP target populations need to employ to support resilience to waterborne diseases (see chart on following page):

---

31 Division Provinciale de la santé du Sud Kivu

32 Ibid.

33 The Potential Financial Costs of Climate Change on Health of Urban and Rural Citizens: A Case Study of *Vibrio cholerae* Infections at Bukavu Town, South Kivu Province, Eastern of Democratic Republic of Congo. MB Théodore MUNYULI, J-M Mbaka KAVUVU, Guy MULINGANYA, G Mulinganya BWINJA. Iran J Public Health. 2013; 42(7): 707–725. Published online 2013 Jul 1.



**FSP’s Role**

In addition to encouraging use of public health facilities for treatment of waterborne diseases, FSP will promote **improved hygiene practices** to prevent waterborne diseases starting from year 2 of implementation (P2). Selected improved hygiene practices are (i) safe storage of drinking water; (ii) hand washing at 5 critical moments and (iii) use and maintenance of latrines. FSP will support the DRC Government and UNICEF project “Programme Village-Ecole Assainis” and their Community-Driven Total Sanitation approach « *Assainissement Total Piloté par la Communauté (ATPC)* », which encourages the community to address critical issues of hygiene and sanitation. FSP, with support from the Ministry of Health, will train and support local “clean village committees” in implementing the ATPC by constructing latrines and adopting essential hygiene practices.

Regarding water sources drying up, FSP will have to revise its spring capping strategy (one per health area) and identify the best way to respond to water needs, within its capacities and budget. This will be included in the FSP initiation of integrated management of natural resources to be advocated for among a range of stakeholders, such as other NGOs intervening in the areas in soil management, resources conservation and local authorities. FSP also aims to **increase knowledge of LDCs, WaSH committees and health workers on the connection between climate conditions and risk of waterborne diseases** so they can identify their own local solutions to prepare and take preventative measures. FSP will further support farm-level and community-level agricultural activities (such as reforestation, water drainage design) **to mitigate erosion, flooding and landslides** (planned under P1) and in the end support water committees to design optimal placement and better construction of pit latrines so they are less vulnerable to landslides and contamination.

As a result of the STRESS assessments, FSP also identified a gap in communication on health and hygiene issues. P2 targets are mostly pregnant and lactating women, which does not necessarily include all women of reproductive age. FSP will therefore reinforce its integration efforts for communication on health, nutrition and WaSH throughout all Purposes to spread the messages more broadly and to encourage communities to refer to health facilities for proactive treatments. Also, this approach will be reinforced by FSP’s advocacy to the USAID Integrate Health Project that will take place in Kalehe and Kabare.



# Conclusion

Smallholders and land-renters struggle to achieve food security in South Kivu. The STRESS process has shown the complexity of food insecurity drivers and their inter-relations in a holistic approach. Based on this analysis, FSP has adapted its theory of change to better incorporate resilience and identify the local resources and appropriate strategies employed by the FSP target population to mitigate shocks and stresses.

FSP has refined and added new interventions in its workplan to support the adoption of resilience strategies that can **reduce the likelihood that the expected food security outcomes are compromised by the identified shocks and stresses**. These strategies are designed to promote the active participation and involvement of youth as well as women, especially to address their unique vulnerabilities to stresses and shocks and where they are key participants to enable effective responses and/or prevention actions.

To ensure these strategies have lasting impact, it is also critical FSP involves local governance bodies as much as possible, promoting dialogue and accountability between local stakeholders.

Particularly noteworthy, this STRESS process underlined the importance of the program's strong governance approach. Promotion of accountability and inclusivity, gender equity, good governance of conflict management groups and production organizations, and ensuring local development plans that are realistic and oriented towards the community's life improvement and land tenure are all key transformative factors. The refined or new strategies require in-depth work with local authorities, local civil society organizations and conflict management committees to build the bases of community and household resilience.

In parallel of the FSP implementation, a new priority for Mercy Corps in South Kivu is to work on developing and funding a complete community-level landscape management approach, involving hill management, agroforestry and a long-term fertility management strategy inclusive of land-renters. Through the STRESS this emerged as a priority area influencing resilience at a higher scale in South Kivu.

Finally, incorporating resilience more explicitly into FSP's theory of change highlights the need for FSP to ensure strong adaptive management processes and a practical approach for resilience measurement. With the Refinement Phase ending, additional follow up from the STRESS process to support program implementation and resilience learning is planned in Year 2.



## CONTACT

Jean DANIEL  
FSP Chief of Party  
[jdaniel@mercycorps.org](mailto:jdaniel@mercycorps.org)

Pauline SCHIBLI  
FSP Program Quality & Grant Manager | STRESS Coordinator  
[pschibli@mercycorps.org](mailto:pschibli@mercycorps.org)

Danielle JOLICOEUR  
Senior Resilience Advisor | North, West & Central Africa  
[djolicoeur@mercycorps.org](mailto:djolicoeur@mercycorps.org)

### About Mercy Corps

Mercy Corps is a leading global organization powered by the belief that a better world is possible. In disaster, in hardship, in more than 40 countries around the world, we partner to put bold solutions into action — helping people triumph over adversity and build stronger communities from within.

Now, and for the future.



45 SW Ankeny Street  
Portland, Oregon 97204  
888.842.0842  
[mercycorps.org](http://mercycorps.org)



The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

South Kivu Food Security Project is a consortium of :

