



Food and Agriculture Organization  
of the United Nations

ANALYSING RESILIENCE FOR BETTER TARGETING AND ACTION



# RESILIENCE ANALYSIS OF PASTORAL AND AGROPASTORAL COMMUNITIES IN



## OUTH SUDAN'S

### CROSS-BORDER AREAS WITH SUDAN, ETHIOPIA, KENYA AND UGANDA

FAO RESILIENCE  
ANALYSIS REPORT  
**No. 17**

RESILIENCE INDEX MEASUREMENT AND ANALYSIS II **▶ RIMA II**



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# ACRONYMS AND ABBREVIATIONS

<b>ABS</b>	Access to Basic Services
<b>AC</b>	Adaptive Capacity
<b>AST</b>	Assets
<b>CAHW</b>	Community-Based Animal Health Worker
<b>EU</b>	European Union
<b>FAO SS</b>	Food and Agriculture Organization South Sudan
<b>FAO-RTEA</b>	FAO Resilience Team in Eastern Africa
<b>FCS</b>	Food Consumption Score
<b>FGD</b>	Focus Group Discussion
<b>FHH</b>	Female-headed Household
<b>FSNMS</b>	Food Security and Nutrition Monitoring Survey
<b>HDDS</b>	Household Dietary Diversity Score
<b>IDPs</b>	Internally Displaced Persons
<b>IGAD</b>	Intergovernmental Authority on Development
<b>IPC</b>	Integrated Food Security Phase Classification
<b>KII</b>	Key Informant Interview
<b>MHH</b>	Male-headed Household
<b>MoAFS</b>	Ministry of Agriculture and Food Security
<b>NBeG</b>	Northern Bahr el Ghazal
<b>NBS</b>	National Bureau of Statistics
<b>NGO</b>	Non-governmental Organization
<b>NRM</b>	Natural Resources Management
<b>RCI</b>	Resilience Capacity Index
<b>RIMA</b>	Resilience Index Measurement and Analysis
<b>SSDP</b>	South Sudan Development Plan

<b>TAD</b>	Transboundary Animal Disease
<b>TLU</b>	Tropical Livestock Unit
<b>UN</b>	United Nations
<b>UNICEF</b>	United Nations Children's Fund
<b>USAID</b>	United States Agency for International Development
<b>USD</b>	United States dollar
<b>WFP</b>	World Food Programme



## EXECUTIVE SUMMARY

“Strengthening the Livelihoods Resilience of Pastoral and Agropastoral Communities in South Sudan’s Cross-border Areas with Sudan, Ethiopia, Kenya and Uganda” is a three-year project funded by European Union (EU) that aims to improve governance and conflict prevention to reduce forced displacement and irregular migration in the cross-border areas of South Sudan.

The Intergovernmental Authority on Development (IGAD) member states of Djibouti, Somalia, Kenya, Uganda, South Sudan, Sudan and Ethiopia are situated in a region that is exposed to recurrent natural shocks coupled with political instability. The region is characterized by both internal and cross-border displacement of large parts of its population. In all IGAD member states, low-lying borderlands inhabited by pastoralists and agropastoralists are the areas most affected by natural shocks and political instability.

Conflict is the root cause of food insecurity in South Sudan. It causes massive internal and cross-border displacement, preventing households from engaging in typical livelihood activities, and inhibits economic growth by hampering the extraction of oil and other natural resources and disrupting markets and trade routes. As a result, income-earning opportunities are limited, and the Government’s earnings in United States dollars are very low, which has led to hyperinflation.

The current study is a baseline study and its main objective is to collect information on the indicators that will be used to estimate the impact of the cross-border project after its three year of implementation. An additional objective is to gain a better understanding of the drivers of instability and irregular migration, as well as of the determinants of food security and resilience. The primary tool used in this study is the RIMA-II model developed by FAO (FAO, 2016).

This report presents the results of the baseline survey; it is based on data collected by FAO and partners during July - August 2017 under the nationwide Food Security and Nutrition Monitoring Survey (FSNMS), triangulated with qualitative data from secondary sources. Overall, the sample contains 6 231 households, of which 1 487 households (25 percent) are located in the project’s target areas.



## 1

## BACKGROUND AND OBJECTIVES OF THE ANALYSIS

*This section presents background information on the IGAD region and South Sudan. It also provides an overview of the project's objectives and results, and of the purpose of the baseline analysis*

### GENERAL CONTEXT

The IGAD member states of Djibouti, Somalia, Kenya, Uganda, South Sudan, Sudan and Ethiopia are situated in a region that is exposed to recurrent natural shocks coupled with political instability. The region is characterized by both internal and cross-border displacement of large parts of its population. In all IGAD member states, low-lying borderlands inhabited by pastoralists and agropastoralists are the areas most affected by natural shocks and political instability.

Misguided policies (e.g. land expropriation) and the unsustainable exploitation of natural resources contribute to the instability and hardship in the borderlands. Additional challenges include population pressure, the shrinking of natural resources, increasingly frequent cattle raiding incidents and conflicts between communities that are, in certain cases, sanctioned by higher political motives. In 2011–2012, a severe drought caused a grave food crisis that threatened the livelihoods of around 9.5 million people, with over 200 000 reported deaths in southern Somalia and northern Kenya. This further strengthened the growing recognition of the need for cross-border interventions towards improved livelihood resilience in the borderlands.

A large part of the extensive cross-border areas of South Sudan is inhabited by pastoral and agropastoral communities whose livelihood and lifestyle are based on livestock rearing. These communities have long adopted a wide range of cross-border strategies to manage their livelihood systems, including the joint management and sharing of grazing land and water, the strategic use of natural resources through seasonal cross-border mobility, and the sharing of information on rainfall and on the availability of grazing land and water.

Approximately 75 percent of the country's land area is suitable for agriculture while, approximately 330 000 square kilometers, or about half of the total land space, is estimated to be suitable for cultivation. Although 50 percent of its arable land mass as prime agricultural land only 4 percent of this area is cultivated continuously or periodically. According to FAO (2015) estimates, the country has the highest per capita livestock holdings in Africa with an estimated livestock population of 12 million cattle, 25 million goats and 20 million sheep. The country ranks sixth on the continent in terms of total livestock population. Dense forests cover about 25 percent of the country's total land area. One of Africa's largest wetlands, White Nile Sudd wetland, is located in the central part of South Sudan.

Conflict is the root cause of food insecurity in South Sudan. It causes massive internal and cross-border displacement, preventing households from engaging in typical livelihood activities,

and inhibits economic growth by hampering the extraction of oil and disrupting markets and trade routes. As a result, income-earning opportunities are limited, and the Government's earnings are very low, which has led to hyperinflation.

Household access to food in South Sudan is extremely low, and IPC Phases 3 ("acute food and livelihood crisis") and 4 ("humanitarian emergency") prevail in all regions throughout the year but heightened during the lean season (IPC, 2019). An estimated four million people are living outside their homesteads, and half of which are internally displaced, many of whom have been displaced more than once. Market failures and monetary and economic downturns have destabilized food systems and affected households' access to food and income, resulting in severe food and nutrition insecurity, destitution and displacement.

The Government of South Sudan has identified food security and agricultural development as one of its major priorities. This is reflected in the country's policy and planning documents, including the South Sudan Development Plan (SSDP) 2011–2013, which provides general directions, and the South Sudan Development Initiative (SSDI), an investment plan complementing the SSDP (Ministry of Finance and Economic Planning, 2011 and 2013). However, due to an economic downturn the SSDP was not implemented by 2013 as planned, and its operational phase was extended until 2016. Additional government documents include the South Sudan National Development Strategy, which aims to consolidate peace and stabilize the economy and covers the period 2018–2021, and its 2017 draft of priorities (Ministry of Finance and Economic Planning, 2018).

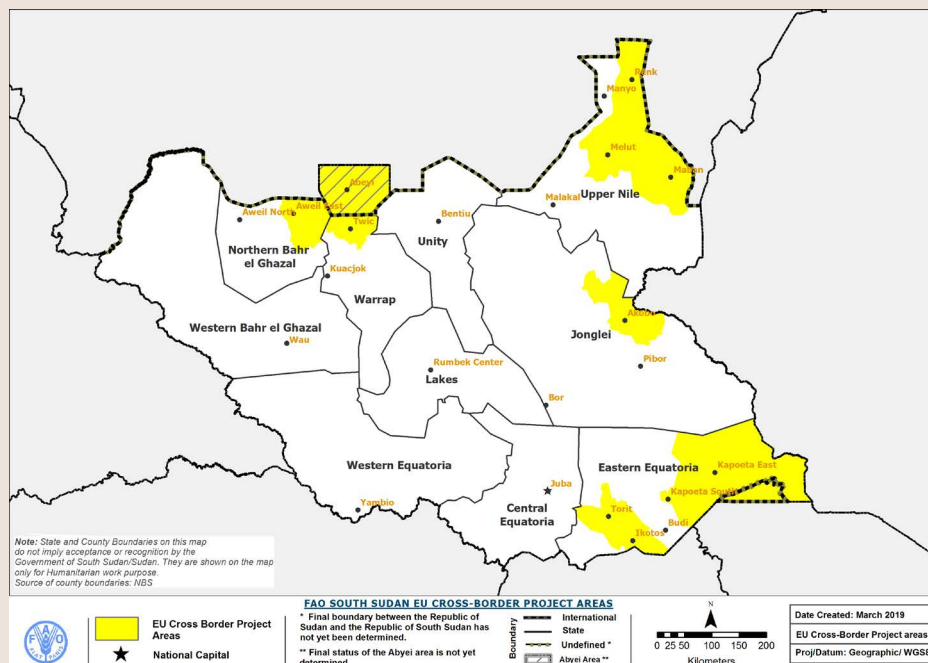
For over 40 years, FAO has been providing humanitarian assistance and working towards development in South Sudan to protect, save and restore livelihoods, reduce food insecurity and malnutrition, address climate change and improve the resilience of livelihoods and agricultural systems to food insecurity and climate change. Specifically, FAO has been helping vulnerable households to step up their agricultural production by providing technical support and coordination, promoting sustainable land cultivation, livestock and fishery practices, providing improved agricultural production technologies and creating new marketing opportunities.

## **THE PROJECT**

### **Overview**

Against the above background, the project "Strengthening the Livelihoods Resilience of Pastoral and Agropastoral Communities in South Sudan's Cross-border Areas with Sudan, Ethiopia, Kenya and Uganda" builds on the nexus between humanitarian and development programming to improve governance and conflict prevention, with the aim of reducing forced displacement and irregular migration in the cross-border areas of South Sudan.

Figure 1. **Implementation areas of the project “Strengthening the Livelihoods Resilience of Pastoral and Agropastoral Communities in South Sudan’s Cross-border Areas with Sudan, Ethiopia, Kenya and Uganda”**



Source:  
Authors' own elaboration

The project aims to promote sustainable livelihoods for vulnerable populations by improving household food security, nutrition and income and enhancing the resilience of pastoral and agropastoral communities in cross-border areas of South Sudan.

The project aims to contribute to Objectives 2 and 4 of the EU Emergency Trust Fund for Africa, namely to strengthen the resilience of the most vulnerable (Objective 2) and to improve governance and conflict prevention and reduce forced displacement and irregular migration (Objective 4).<sup>1</sup> In addition, the project aims to contribute to the Government's National Development Strategy (2017–2021).

## Implementation areas

The project covers four areas (“clusters”) in South Sudan that cross the border into Sudan, Ethiopia, Kenya and Uganda (see Table 1):

- the Abyei cluster, with specific supporting activities in northern Bahr el Ghazal and Warrap, along the border with Sudan;
- the north-east cluster, including Maban, Melut and Renk;
- the south-east/east cluster with Torit, Ikotos, Kapoeta East and South; and
- the Akobo cluster.

<sup>1</sup> The EU Emergency Trust Fund was established at the Valletta Summit on Migration in 2015. It emanates from the first priority pillar of the Valletta Action Plan: “development benefits of migration and addressing root causes of irregular migration and forced displacement”. For more information, see European Commission, n.d.

**Table 1. Clusters and counties targeted by the project**

Cluster	Number of target counties	Target counties
South-east/east	4	Torit, Kapoeta East, Kapoeta South, Ikotos
Akobo	1	Akobo
North-east	3	Maban, Renk, Melut
Abyei/northern Bahr el Ghazal/Warrap	4	Abyei box, Aweil East, Aweil North, Twic
<b>Total</b>	<b>12</b>	

*Source:*  
*Author's own elaboration*

### Expected results

The overall objective of this project is to improve governance and conflict prevention to reduce forced displacement and irregular migration in the cross-border areas of South Sudan. More specifically, the project aims to improve household food security, nutrition and income and enhance the resilience of pastoral and agropastoral communities in cross-border areas. These objectives are translated into four expected results (see Table 2).

**Table 2. Expected results, aims and key activities of the project**

Expected result	Aim(s)	Key activities
<b>Expected result 1.</b> Information and early warning systems related to the food security and nutrition situation of (agro) pastoral communities in South Sudan and its border areas are strengthened to improve regional and national policy and response capacities.	Ensure that national and regional food security and nutrition policies, strategies, plans and interventions are informed by evidence (i.e. data and data analysis based on projects) and backed up by information management systems.	<ul style="list-style-type: none"> <li>➤ Improve data collection and analysis and strengthen information management and monitoring systems.</li> <li>➤ Strengthen evidence-based analysis and consensus building for informed decision-making.</li> <li>➤ Improve communication and reporting for evidence-based coordination and decision-making at cluster, national and regional levels.</li> </ul>
<b>Expected result 2.</b> Measures to prevent, detect and control transboundary animal diseases (TADs) in the border areas of South Sudan are strengthened and harmonized.	Ensure that outbreaks of TADs in the border areas of South Sudan are significantly reduced through more effective national surveillance, diagnostic, reporting and control systems; protect the livelihoods of pastoralist and agropastoralist households through well-targeted campaigns to vaccinate and treat animals.	<ul style="list-style-type: none"> <li>➤ Undertake an institutional assessment of the veterinary capacities and epidemiological tools in the operational areas.</li> <li>➤ Build adequate capacity to manage TADs by training and equipping additional community-based animal health workers (CAHWs).</li> <li>➤ Implement TAD prevention, detection and control measures.</li> <li>➤ Promote the coordination, harmonization and communication of activities related to animal health.</li> <li>➤ Facilitate policy dialogue and stakeholder engagement related to animal diseases in cluster areas.</li> </ul>
<b>Expected result 3.</b> The diversification of agropastoral livelihoods is enhanced, and access to livestock markets is improved.	Increase the income of pastoralist and agropastoralist households by improving the marketing of livestock and animal products and diversifying livelihoods.	<ul style="list-style-type: none"> <li>➤ Undertake baseline studies to identify gaps and opportunities in pastoral and agropastoral livelihood systems in the four cluster areas.</li> <li>➤ Undertake value chain analyses, conduct feasibility studies of alternative livelihoods, and explore ways to develop and coordinate policies related to livestock trade.</li> <li>➤ Strengthen livestock marketing systems.</li> <li>➤ Promote supplementary/alternative livelihood activities (e.g. the production of skins and hides, meat, milk, honey, foraged plants and other foods, poultry and seeds, and agro-processing).</li> </ul>
<b>Expected result 4.</b> Natural resources management (NRM) practices in cross-border areas are improved on a sustainable basis.	Establish and support local NRM committees and communities/groups practicing sustainable NRM along livestock corridors.	<ul style="list-style-type: none"> <li>➤ Create a common basis of information to support NRM dialogue and planning in cluster areas.</li> <li>➤ Ensure equitable access to natural resources in selected parts of the cluster areas.</li> <li>➤ Improve the management of water resources and ensure equitable access to water for livelihood activities within target communities.</li> </ul>

*Source:*  
*FAO, 2017.*

## Assumptions

The assumptions for the successful implementation of the project are the following:

- The Government of South Sudan provides support for the project at the national and local level.
- IGAD is successful in securing the active participation of neighboring countries in this cross-border project, and ensures coordination with relevant regional programmes.
- No extreme external shocks occur during the implementation of the project, including extreme weather events (droughts, floods, etc.) or political instability (such as border conflicts with neighboring countries).

## Objectives of the analysis

The overall objective of this baseline survey is to assess the project's key indicators before its implementation. The specific objectives of the survey include:

1. establishing baseline values to measure the project's impact on resilience;
2. providing information for area-wide resilience profiling, to inform resilience-related programming and policymaking in the project's border areas;
3. gaining a better understanding of the drivers of instability and irregular migration and of the determinants of resilience; and
4. providing information to target future resilience projects and, where possible, prioritize project activities.

# 2

## KEY MESSAGES

*This section summarizes the main results of the analysis and their implications for policymaking and programming*

### KEY MESSAGE 1

**Assets and education are the most significant determinants of household resilience.**

- *Adaptive capacity (AC) and assets are important determinants of the resilience to food insecurity of households in the cross-border area. The adaptive capacity of a household is primarily determined by the level of education of its members, as well as by the degree of diversification of its income sources. In the context of this study, "assets" primarily mean productive assets, including land.*

### KEY MESSAGE 2

**Resilience varies widely between locations. The least resilient counties are characterized by conflict and dwindling economic opportunities.**

- *Households in the Abyei cluster are more resilient than those in other clusters. Aweil East, Renk and Aweil North are the most resilient counties; they are characterized by easy access to water sources and households' adequate asset holdings and highly diversified income sources.*

### KEY MESSAGE 3

**Households whose primary occupation is the production and sale of crops have the highest resilience and food security outcomes.**

- *Households with high resilience are generally reported to hold a considerable stock of productive and household assets.*



**KEY MESSAGE 4**

**Host communities are more resilient than internally displaced persons (IDPs) and refugees.**

- *Host communities score higher than IDPs and refugees on all four pillars of resilience, notably assets (livestock and land holdings) and adaptive capacity (determined by average education levels and income diversity).*

**KEY MESSAGE 5**

**The three shocks that households are most frequently exposed to are high food prices (reported by 61 percent of all surveyed households), violent insecurity (32 percent) and droughts and prolonged dry spells (26 percent).**

- *Overall, natural and man-made shocks and a growing scarcity of resources such as land, water and livestock make households more vulnerable. This finding was confirmed by the information coming out of the KIIs and FGDs, which showed that for all clusters, a high degree of vulnerability is generally associated with a low diversification of income sources and thus limited household resilience.*

**KEY MESSAGE 6**

**The more assets a household possesses (both productive assets, such as livestock, and non-productive assets), the higher its food security scores.**

- *The determinants of a household's food security status were evaluated through regression analysis. Two indicators for food security were used as dependent variables in the analysis, namely the food consumption score (FSC) and the household dietary diversity score (HDDS).*

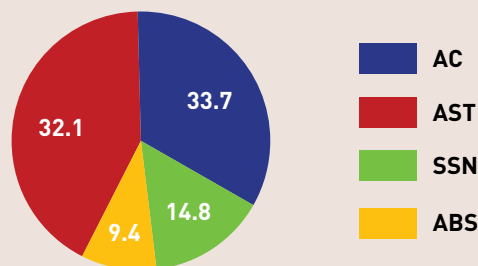
# 3 MAIN FINDINGS AND THEIR IMPLICATIONS FOR POLICY MAKING AND PROGRAMMING

*This section discusses the resilience of the surveyed households (disaggregated by different characteristics) and its determinants*

## MAIN FINDING 1

*Household asset holdings and adaptive capacity are the two most important determinants of resilience in cross-border areas. Positive determinants of resilience as seen in the most resilient regions include ownership of assets, access to education, income diversification and, for regions where livestock rearing is important, the holding of livestock assets.*

Figure 2. Determinants of resilience, relative contribution to the RCI (entire sample)



Source:  
Author's own elaboration

Both productive and non-productive household assets play a critical role in ensuring resilience, as does the size of the land owned by a household. The more educated and trained a household's head and members are, the higher the household's adaptive capacity and thus resilience. Education can open the door to new opportunities for income generation, have ripple effects within a family and help reduce poverty across generations; educated persons are better equipped to denounce violations of human rights. The generally low level of education among respondents is a result of the fact that they had no access to education during violent conflicts.

The level of education of men was found to be an especially strong positive determinant of a household's resilience. Another positive determinant of resilience is the diversification of income sources. Households with a higher per capita expenditure on non-food items (a proxy for income) were found to be more resilient. Larger households were found to be more resilient.

#### POLICY RECOMMENDATIONS

- *The best way to increase the resilience of all types of livelihoods is to augment the assets held by households. Assets have a different importance, depending on the type of livelihood (for example, investments in livestock assets would mostly benefit households that are primarily engaged in livestock production); however, the finding that assets in general are essential to face and overcome risks and shocks holds true for all types of livelihoods.*
- *Due to the importance of assets in strengthening household resilience, initiatives to maintain and increase households' productive and non-productive assets (including livestock) are crucial to improve food security and prevent the depletion of assets. The finding that the possession of assets is the prime determinant of resilience applies to both host communities and refugees and IDPs.*
- *Boosting adaptive capacity, especially by promoting the diversification of income sources and improving education levels, is another key strategy to strengthen the resilience of households that are primarily engaged in crop and livestock production.*

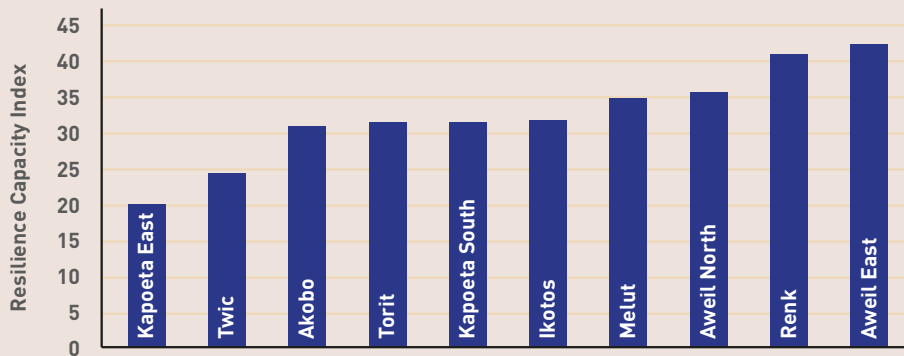
#### MAIN FINDING 2

*The average Resilience Capacity Index (RCI) of the households in the target locations of the cross-border project is estimated at 31. Figure 3 shows the average RCI per county. Aweil East was the most resilient county with an estimated RCI of 42, followed by Renk (41). The least resilient county is Maban (19), followed by Kapoeta East (20). These two counties are marked by conflict, dwindling economic opportunities and low education levels. Male-headed households (with an average RCI of 33) have a significantly higher resilience than female-headed households (29).*

Households in the Abyei cluster (which includes Aweil North, Aweil East, Twic and Abyei) have a significantly higher resilience than those in the other three clusters (South-east, Akobo, and North-east), which have similar RCI levels (see Figure 4).

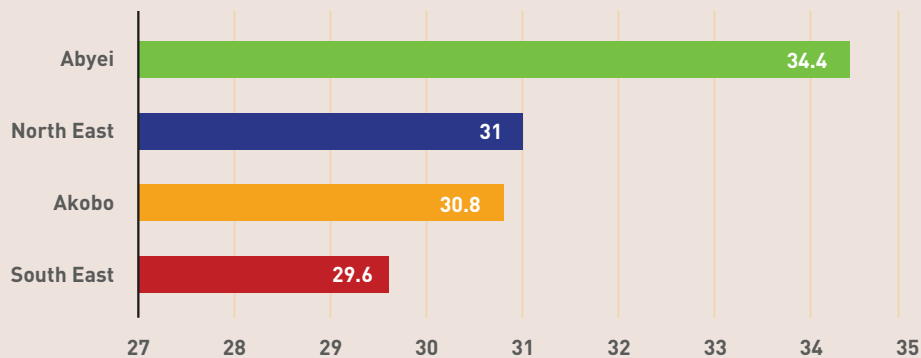
Focus group discussions (FGDs) and key informant interviews (KIIs) brought the following reasons for the relatively high resilience in Renk and Aweil East to light.

Figure 3. Average RCI by county



Source: Author's own elaboration

Figure 4. Average RCI per cluster



Source: Author's own elaboration

**Renk**

- Income sources are more diversified (commercial farming, fishing, gum extraction, oil drilling and border trade with Sudan).
- Households have access to credit from formal and informal institutions (e.g. Ivory Bank and Agricultural Bank) to support crop production, gum extraction and other business endeavours.
- Households have better possibility of selling assets to absorb shocks.
- Seasonal labour migration to productive areas in Sudan provides an alternative source of income.
- Adequate infrastructure (for example roads) provides easy access to markets and social services.

**Aweil East**

- Seasonal migration to Sudan and border trade provide alternative sources of income.
- The level of business activity in the area is high, and businesses can rely on the support of government officials during crises.

- Many persons are employed in the army and receive salaries to support their households in the face of shocks.
- Many people are involved in petty trade activities (for example, tea or vegetables).
- The development of Aweil East has been boosted by the many programmes implemented by development partners in the area.
- The area boasts easy access to markets and adequate infrastructure.

Among the reasons for the low resilient counties such as Maban and Kapoeta East include:

- Livelihoods and economic activities of the communities in these areas rely to a great extent on natural resources (for example woods, for the collection of firewood or hunting), which are dwindling as a result of unsustainable practices (such as the cutting of trees to make charcoal).
- Conflicts between host communities and with refugees (Maban) have resulted in the displacement of local populations.
- The level of education of the local population is low.
- Risk management strategies among the local population are limited.
- Communities depend on a limited number of income sources.
- The current economic crisis has a magnified negative resilience impact in these areas.

The higher level of resilience in the Abyei cluster may result from the area's proximity to Sudan, which offers possibilities for seasonal migration and better market access. However, it is crucial to note that data gaps prevent a more comprehensive understanding of the drivers of resilience in the entire Abyei cluster. Indeed, data are available for Aweil North, Aweil East and Twic, but not for the Abyei box itself. Future analyses should take a closer look at this cluster to better understand resilience in this area.

Male-headed households have more access to education, productive and non-productive assets, credit and opportunities to diversify their income than female-headed households – a result confirmed by the results of KIIs and FGDs.

#### POLICY RECOMMENDATIONS

- *Efforts towards increased resilience should target the least resilient populations of Maban and Kapoeta East. Here, communities would benefit greatly from education and training programmes aiming to diversify income sources and improve natural resource management practices. Indeed, such programmes would boost households' adaptive capacity and hence resilience. Meanwhile, a better understanding of the factors causing intercommunity conflicts and conflicts with refugees would help enhance social stability and mitigate the effects of the ongoing economic crisis.*
- *Increased access to assets, and especially productive assets (including land), would benefit both female- and male-headed households. Increased livestock holdings would boost the resilience of female-headed households, in particular. Efforts to increase the level of education of the head and members of households would help strengthen the adaptive capacity of both female- and male-headed households.*

### MAIN FINDING 3

*Households whose primary occupation is the production and sale of crops have the highest resilience and food security outcomes. These households are generally reported to hold a considerable stock of productive and household assets.*

Of the seven livelihood profiles considered in this study, households whose primary livelihood source is the production and sale of crops were found to be most resilient.<sup>2</sup> Resilience is most likely linked to the considerable asset base held by these households (particularly productive and household assets). They also have the best food security outcomes as measured by both the household dietary diversity score and the food consumption score. Households providing skilled and unskilled labour had the second highest resilience scores, followed by households engaged in business and trade.<sup>3</sup> Both livelihood types perform well in terms of adaptive capacity, especially as far as the education level of household heads and members (male and female) is concerned.

Meanwhile, households relying on assistance (including proceeds from begging, food and cash transfers, gifts from family members and borrowing) have the lowest resilience scores. These households are the least educated (resulting in limited adaptive capacity) and hold limited stocks of productive and household assets, although they receive the largest transfers from NGOs and governmental institutions.

#### POLICY RECOMMENDATIONS

- *Increased access to assets would boost the resilience of all types of livelihoods considered in the study, and especially those of households that are primarily engaged in the production and sale of livestock, the gathering of wild fruits or other marginal activities, as well as those relying primarily on assistance. Efforts to promote the adoption of climate-smart and conservation agriculture practices, improve farmers' access to seeds and other inputs, and provide extension advisory services (including agroforestry programmes) would improve crop productivity in the face of increasingly intense droughts. Another way to strengthen farmers' resilience is by promoting storage and conservation practices that reduce post-harvest losses (e.g. the use of drying floors). Growing plants for the production of traditional medicines would also contribute to resilience, as well as promote the conservation of medicinal trees.*
- *Improving access to veterinary services, promoting community awareness of livestock diseases, building animal health service facilities and setting up systems for livestock disease surveillance and control in border areas would improve the health of livestock. In addition, improving livestock markets and creating better access to these markets would facilitate trade (and thus boost incomes).*

<sup>2</sup> Households were asked to cite their primary, secondary and third livelihood sources. This analysis is based on primary livelihood sources. The livelihood sources indicated by the respondents include: production and sale of crops (cited by 34.57 percent of all respondents), business/trading (23.47 percent), labour (skilled/unskilled) (13.72 percent), production and sale of livestock (7.13 percent), gathering wild fruits and other activities (12.37 percent), assistance (6.79 percent), and fishing (1.95 percent).

<sup>3</sup> Although households that source their livelihood from fishing scored the second highest RCI (31.51), they accounted for only 1.95 percent of the sample (or 29 households) and were therefore left out of the analysis.



- *Investments in physical infrastructure (notably in roads and water infrastructure) in the medium to long term would enhance access to markets and basic services (including safe water and health facilities), thus improving health outcomes.*
- *Income-generating activities that can be promoted in addition to crop and livestock production include petty trading, beekeeping, handcrafting and agro-processing. The latter type of activity is particularly suited for women; it includes the production of milled maize or groundnuts, sorghum flour and sesame paste and the processing of cassava and fish, and has the potential to generate extra income for families and empower women. The development of alternative sources of income should take due account of the close linkages between rural livelihoods, gender and natural resources.*
- *Households working in business or trade would benefit from improved access to credit, while the resilience of labourers and livestock farmers could be strengthened by improving access to basic facilities, and particularly markets, to allow them to exchange goods and services with greater ease.*

#### MAIN FINDING 4

*Host populations are more resilient than internally displaced persons (IDPs) and refugees; they score higher for all four pillars of resilience, notably assets (including livestock and land) and adaptive capacity (determined by the level of education and income diversity).*

Host community households score better on all four dimensions of resilience, as well as food security, than refugee or IDP households. Host communities generally have a sizeable advantage over refugees and IDPs in terms of asset holding (including productive assets, such as livestock – measured in TLU – or land, and non-productive assets), which is the most important determinant of resilience for host households (followed by access to social safety nets).<sup>4</sup>

Meanwhile, the resilience of refugee and IDP households is determined equally by access to assets and by access to social safety nets. Of all assets, productive assets (including land) have the largest impact on resilience (for both host communities and refugee and IDP households), while access to credit is the most significant variable within the social safety pillar. Host households enjoy a higher level of education than refugee and IDP households and have a larger number of income sources. Finally, host communities have better access to formal assistance (including transfers) provided by NGOs and government authorities, which constitutes an additional way of coping with shocks. The fact that host households score better than refugee and IDP households in terms of food security (especially as measured by the food consumption score or FCS) indicates that host households eat more diversified food of better quality.<sup>5</sup>

<sup>4</sup> Tropical Livestock Unit (TLU) is a unit of measurement for livestock assets; it enables the aggregation of livestock from various species by converting numbers of animals to their equivalent TLU on the basis of conversion factors, with one TLU corresponding to 250 kg live weight.

<sup>5</sup> The food consumption score (FCS), developed by the World Food Programme (WFP), is a food security indicator based on the frequency of consumption of different food groups by a household over the seven days prior to a survey. Standard weights are attributed to each of the food groups that are included in the food consumption score. More information can be found in a technical guidance sheet (see WFP, 2008).

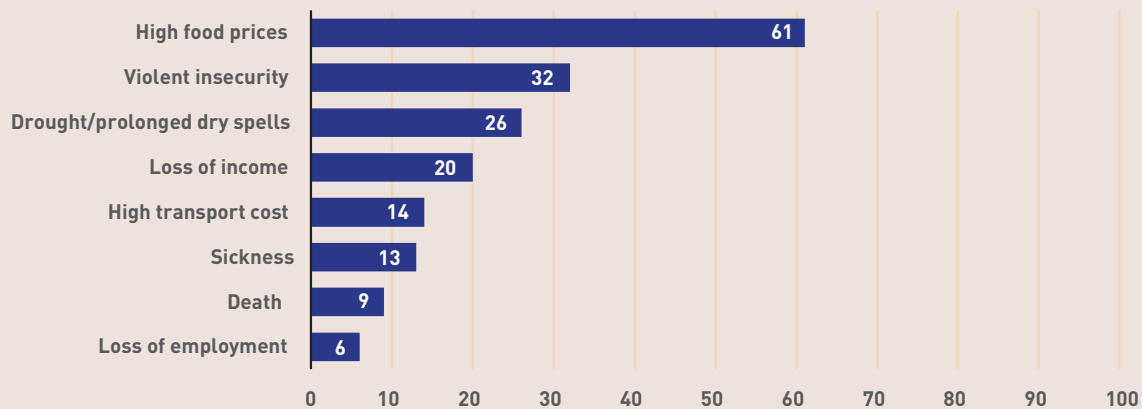
**POLICY RECOMMENDATIONS**

➤ *The adaptive capacity, and thus resilience, of refugee and IDP populations can be enhanced by improving access to social safety nets, credit and diversified sources of income. The diversification of income sources can be increased by providing education and training regarding value-adding in agriculture (e.g. agro-processing); such efforts should be complemented with the granting of loans to start a business. The creation of opportunities to diversify income sources would improve food security outcomes. Such opportunities may include seasonal migration (for example to Sudan), which could be promoted by improving cross-border coordination, collaboration and information sharing. This survey found seasonal migration to be a key determinant of resilience in the most resilient counties (Renk and Aweil East).*

**MAIN FINDING 5**

*The three shocks that households are most frequently exposed (Figure 5) to are high food prices (reported by 61 percent of all households), violent insecurity (32 percent) and droughts and prolonged dry spells (26 percent).*

Figure 5. **Shocks experienced over the twelve months preceding the survey (percent of households reporting a type of shock)**



Source: Author's own elaboration

High food prices was the shock affecting most households in each of the clusters (reported by 71 percent of all households in the south-east cluster, 52 percent in Akobo, 62 percent in the north-east cluster and 60 percent in Abyei). Violent insecurity was most prevalent in the north-east cluster (57 percent) and Akobo (41 percent). The Abyei cluster had the lowest proportion of households reporting violent insecurity (7 percent); high fuel prices were reported as the second most important shock (29 percent). Other shocks that were reported in all clusters include the loss of income (20 percent), high transportation costs (14 percent), sickness (13 percent), death (9 percent) and the loss of employment (6 percent).



Overall, natural and man-made shocks and a growing scarcity of resources such as land, water and livestock make households more vulnerable. This finding was confirmed by the information coming out of the KIIs and FGDs, which showed that for all clusters, a high degree of vulnerability is generally associated with a low diversification of income sources and thus limited household resilience.

Shocks and control variables that were not used to construct the RCI were tested through regression analysis, to determine the determinants of resilience. Although reduced income and drought/prolonged dry spells have a negative effect on resilience, this effect is not statistically significant.

#### POLICY RECOMMENDATIONS

- *Decision makers and aid organizations should help households prepare for and adapt to violent insecurity (the second most prevalent shock) by setting up warning systems to identify situations of insecurity and conflict and alert citizens via SMS or radio of areas to avoid. This would require the establishment of an informal network across communities to disseminate important information in a timely manner.*
- *To diminish the risks of droughts or prolonged dry spells (the third most prevalent shock), the use of drought-resistant crop varieties should be considered; in addition, households should be encouraged to diversify their sources of income away from primary agriculture, towards other parts of agricultural value chains (such as the production and sale of animal skins and other plant- or animal-based household items). Programmes are needed to enhance communities' capacities for the management of the environment and natural resources (e.g. rangelands).*

#### MAIN FINDING 6

*The more productive and non-productive assets (including livestock) a household possesses, the higher its food security scores.*

The determinants of a household's food security status were evaluated through regression analysis. Two indicators for food security were used as dependent variables in the analysis, namely the food consumption score (FCS) and the household dietary diversity score (HDDS). Households with access to credit were found to have a higher level of food security as measured by both the FCS and the HDDS, as do households with adequate access to water and highly diversified sources of income. Meanwhile, households that frequently resort to borrowing have lower HDDS.<sup>6</sup>

<sup>6</sup> The impact of frequent borrowing on the FCS was not statistically significant.

### POLICY RECOMMENDATIONS

- *The access to food sold in markets can be improved by:*
  - *encouraging the establishment of local markets within a more accessible distance to communities in need;*
  - *promoting improved practices for the storage and conservation of food; and*
  - *facilitating cross-border food trade through simplified border trade procedures.*
- *The best way to increase the resilience of all types of livelihoods is to augment the assets held by households. Assets have a different importance, depending on the type of livelihood (for example, investments in livestock assets would mostly benefit households that are primarily engaged in livestock production); however, the finding that assets in general are essential to face and overcome risks and shocks holds true for all types of livelihoods.*
- *Boosting adaptive capacity, especially by promoting the diversification of income sources and improving education levels, is another key strategy to strengthen the resilience of households that are primarily engaged in crop and livestock production.*

# 4 CONCLUSIONS

*This section presents recommended actions and strategies as brought to light by the survey*

The present study is a baseline study for the project “Strengthening the Livelihoods Resilience of Pastoral and Agropastoral Communities in South Sudan’s Cross-border Areas with Sudan, Ethiopia, Kenya and Uganda”. The findings of this baseline analysis provide insight as to how resilience can be strengthened at the country and regional level.

This section details the various policies that are conducive to the country’s priority objectives, based on the findings of the analysis.

## **OBJECTIVE: SUSTAINABLY INCREASE PRODUCTION AND PRODUCTIVITY AND STRENGTHEN NUTRITION SECURITY**

1. Promote the adoption of climate-smart and conservation agriculture practices, improve farmers’ access to seeds and other inputs, and provide extension advisory services (including agroforestry programmes) to improve crop productivity in the face of increasingly intense droughts.
2. Promote storage and conservation practices that reduce post-harvest losses (e.g. the use of drying floors), and encourage the cultivation of plants for the production of traditional medicines.
3. Improve access to veterinary services, promote community awareness of livestock diseases, build animal health service facilities, and set up systems for livestock disease surveillance and control in border areas.
4. Improve the functioning of, and access to, livestock markets.
5. Encourage youths to become engaged in agriculture by raising awareness and providing training on opportunities in parts of agricultural value chains other than primary production (notably the production and sale of animal products). Publicize success stories through public campaigns.

**OBJECTIVE: STRENGTHEN THE RESILIENCE OF HOUSEHOLDS TO FOOD AND NUTRITION INSECURITY**

1. Invest in efforts to boost households' productive and non-productive assets and promote strategies to minimise the depletion of assets.
2. Invest in efforts to increase households' income and promote the diversification of income sources. Income-generating activities that can be promoted in addition to crop and livestock production include petty trading, beekeeping, handcrafting and agro-processing. The latter type of activity includes the production of milled maize or groundnuts, sorghum flour and sesame paste and the processing of cassava and fish, and has the potential to generate extra income for families. The development of alternative sources of income should take due account of the close linkages between rural livelihoods, gender and natural resources.
3. Improve the level of education of both pastoralist and agropastoralist households – this is a critical element of resilience building.
4. Improve access to clean water by constructing water infrastructure and supporting community-based watershed management systems.

**REGIONAL INITIATIVE/PRIORITY OBJECTIVE: BUILD LIVELIHOOD RESILIENCE IN AFRICA'S DRYLANDS**

1. Improve cross-border coordination, collaboration and information sharing to promote seasonal migration (for example to Sudan) in search of alternative sources of income. This survey found seasonal migration to be a key determinant of resilience in the most resilient counties (Renk and Aweil East).
2. Strengthen local initiatives (e.g. peace forums) to prevent and resolve conflicts between communities and promote peaceful coexistence, cross-border trade and sharing of resources between communities.
3. Invest in programmes to enhance communities' capacities for the management of the environment and natural resources (e.g. rangelands).
4. Invest in physical infrastructure (notably roads) to enhance the access to markets and social services.

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This report is part of a series of country level analysis prepared by the FAO Resilience Analysis and Policies (RAP) team. The series aims at providing programming and policy guidance to policy makers, practitioners, UN agencies, NGOs and other stakeholders by identifying the key factors that contribute to the resilience of households in food insecure countries and regions.

The analysis is largely based on the use of the FAO Resilience Index Measurement and Analysis (RIMA) tool.



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