

The Fragility Index:

A Research Partnership Between IOM & Duke University



Duke
NICHOLAS SCHOOL
of the ENVIRONMENT

Duke
SANFORD SCHOOL of
PUBLIC
POLICY

 Duke Law

 IOM
UN MIGRATION

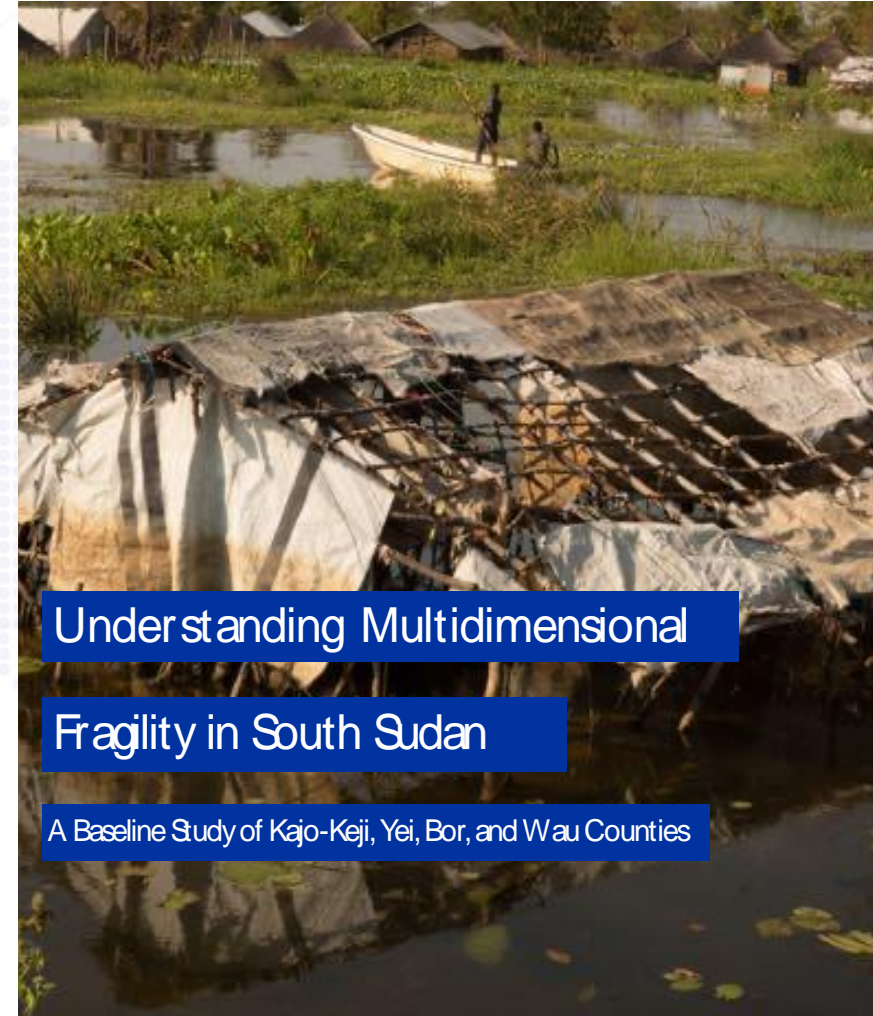
Duke
GLOBAL HEALTH
INSTITUTE


THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

 BROWN
UNIVERSITY

Duke Research Team

- **Dr. Mara Revkin**, Associate Professor of Law and Political Science
- **Dr. Gabriella Levy**, Postdoctoral Fellow (recent Duke Ph.D., Incoming Assistant Professor of Political Science at University of Washington)
- **Dr. Aunchalee Palmquist**, Associate Professor of the Practice at the Duke Global Health Institute and Cultural Anthropology
- **Dr. Erica Field**, Professor of Economics
- **Dr. Kerilyn Schewel**, Co-Director of the Duke Program on Climate-Related Migration
- **Dr. Erica Weinthal**, Professor of Environmental and Public Policy



Understanding Multidimensional

Fragility in South Sudan

A Baseline Study of Kajo-Keji, Yei, Bor, and Wau Counties

South Sudan

- Youngest country in the world (won independence from Sudan in 2011)
- Devastating civil war (2013-2020) followed by delays in crucial transitional milestones
- Still waiting on a new constitution & first-ever elections

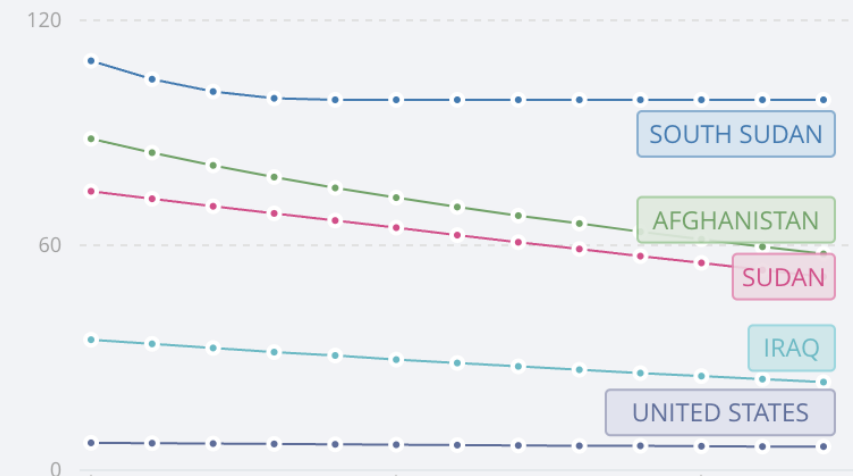


Context: South Sudan

- Today, one of the poorest, least electrified countries in the world with among the highest infant and maternal mortality rates:
- 1 in 10 children die before age 5
- 65% of adults are illiterate
- only 2% of roads are paved & often impassable during rainy season



Mortality rate, under-5 (per 1,000 live births)



Data from World Bank

Context: South Sudan

- Severe displacement crisis (4.4 million IDPs & refugees = ~40% total population, most are children)
- Hunger crisis (51% of the population suffering from severe food insecurity)
- Both are getting worse amid the ongoing war in neighboring Sudan & economic crisis



South Sudan

- Despite these challenges, South Sudan has seen a sharp decline in humanitarian aid
- Part of a global trend driven by changing donor priorities, frustration with lack of progress, and concerns about corruption and risk of aid diversion by non-state armed actors

Overview of humanitarian response in South Sudan

For a full overview of the humanitarian response, visit humanitarianaction.info ↗

Humanitarian Response Plan

Funding update ←

Total requirements (USD)

1.8B

2024

Funding coverage (%)

30.82

2024

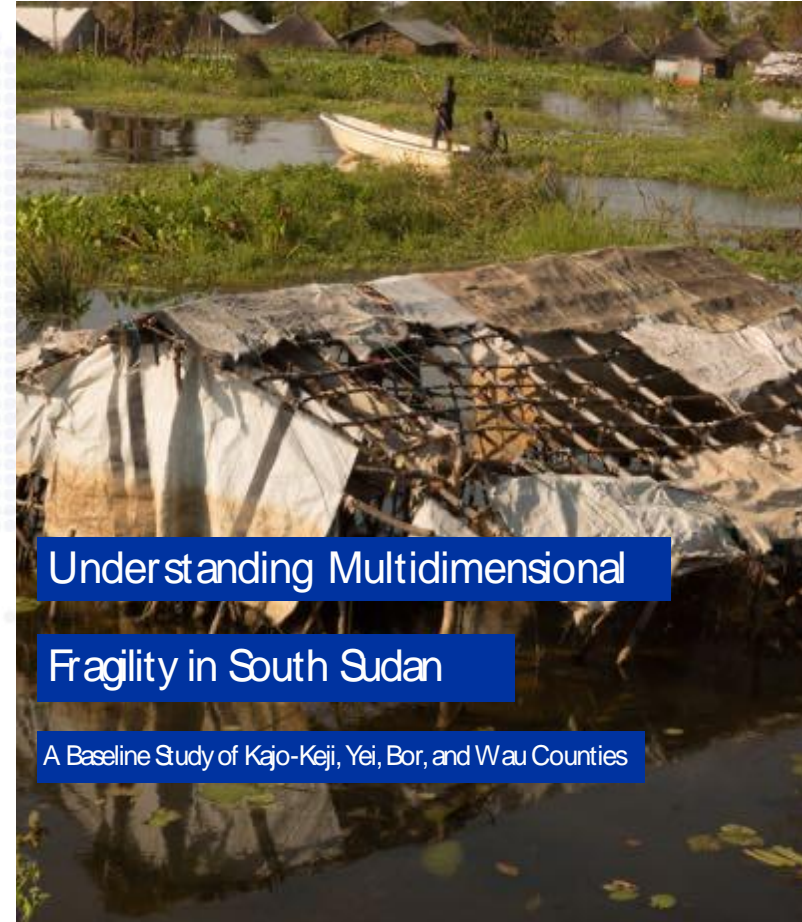
Funding gap (USD)

1.2B

2024

Overview of IOM-Duke Partnership

- **Donors & Support:** IOM & European Union (IOM); at Duke: Trent Foundation, Duke Global FGEF, Bass Connections, OR&I Project Management Core
- **Objectives:** Leverage interdisciplinary + international collaboration to build a powerful tool (Fragility Index) for evidence-based targeting of humanitarian and development aid in South Sudan and beyond



Understanding Multidimensional

Fragility in South Sudan

A Baseline Study of Kajo-Keji, Yei, Bor, and Wau Counties

Broader Goals of IOM-Duke Study

1. Enable **efficient and equitable allocation of aid and resources** based on accurate measures of needs and capacities
2. Provide insight into community **perceptions of current and anticipated risks** to support early warnings systems
2. Potential to support **baseline and endline impact evaluations** of specific IOM interventions
3. Validate a **powerful tool** that can be adapted to different contexts beyond South Sudan and applied to a wide range of HDP outcomes

Defining “Multidimensional Fragility”

OECD definition of “fragility:” (1) **exposure to risk** and (2) **insufficient coping capacities** of the state, system, and/or communities to manage, absorb, or mitigate those risks:

- **Dimensions:** (1) political/legal, (2) security, (3) economic, (4) societal, (5) environmental, and (6) human
- **OECD index** is based on macro country-level indicators (e.g., GDP)
- The **IOM-Duke study** develops the first index of multidimensional fragility measured at the household level with 30 survey questions, enabling us to map subnational variation in fragility

	Severe			Minor	
Dimension					
Economic	●	●	●	●	●
Environmental	●	●	●	●	●
Political	●	●	●	●	●
Security	●	●	●	●	●
Societal	●	●	●	●	●

Why “Multidimensional Fragility?”

- Other IOM tools focus on a single dimension or need (e.g., Vulnerability Index focuses on shelter, Stability Index focuses on security) or a sub-group of beneficiaries (e.g., Migrant Integration Toolkit)
- The multi-dimensional **Fragility Index**
 1. provides a more comprehensive assessment of needs and risks among the general population in communities where IOM works
 2. uses **fine-grained data** to inform the design of contextualized, coordinated, multi-sectoral programming spanning the pillars of recovery, stabilization, and reintegration
 3. enables **precise geographical targeting** of programming based on objective evidence-based criteria, improving the efficiency and perceived fairness of aid in the eyes of communities
 4. distinguishes between **different sub-groups** in diverse communities (e.g., based on age, gender, displacement status)
 5. measures **changes over time**

Fragility Index Methodology

- 6 dimensions x 5 indicators = 30 questions
- Embedded in larger survey questionnaires administered by DTM
- Informed by:
 - previously validated surveys in South Sudan
 - consultations with local experts and IOM national staff
 - focus groups in study locations



Environmental Fragility

Dimension	Concept	Indicators in South Sudan
Environmental Fragility	<p>1. Climate change's impact on income</p> <p>2. Climate change's impact on food consumption</p> <p>3. Climate change's impact on mobility</p> <p>4. Climate change's impact on health</p> <p>5. Ability to act on early warning information to ensure household safety</p>	<p>Q11.10A Many people in South Sudan have experienced the following: too much rain, too little rain, temperatures that are too high, temperatures that are too low, pests and crop diseases, and deforestation and erosion. How severe would you say the impact of any of these experiences have been on your household income, on a scale from 1 to 5 where 1 means "not severe at all and 5 means "extremely severe?"</p> <p>Q11.10B And how severe would you say the impact of any of these experiences have been on your household food consumption?</p> <p>Q11.10C And how severe would you say the impact of any of these experiences have been on your household's ability to choose where you live?</p> <p>Q11.10D And how severe would you say the impact of any of these experiences have been on your household's health?</p> <p>Q11.11 Imagine that there was a flood coming to your town tomorrow. If you knew about this incoming flood before the water arrived, to what extent do you agree with the following statement: "I would be able to use this information to protect my household"</p>

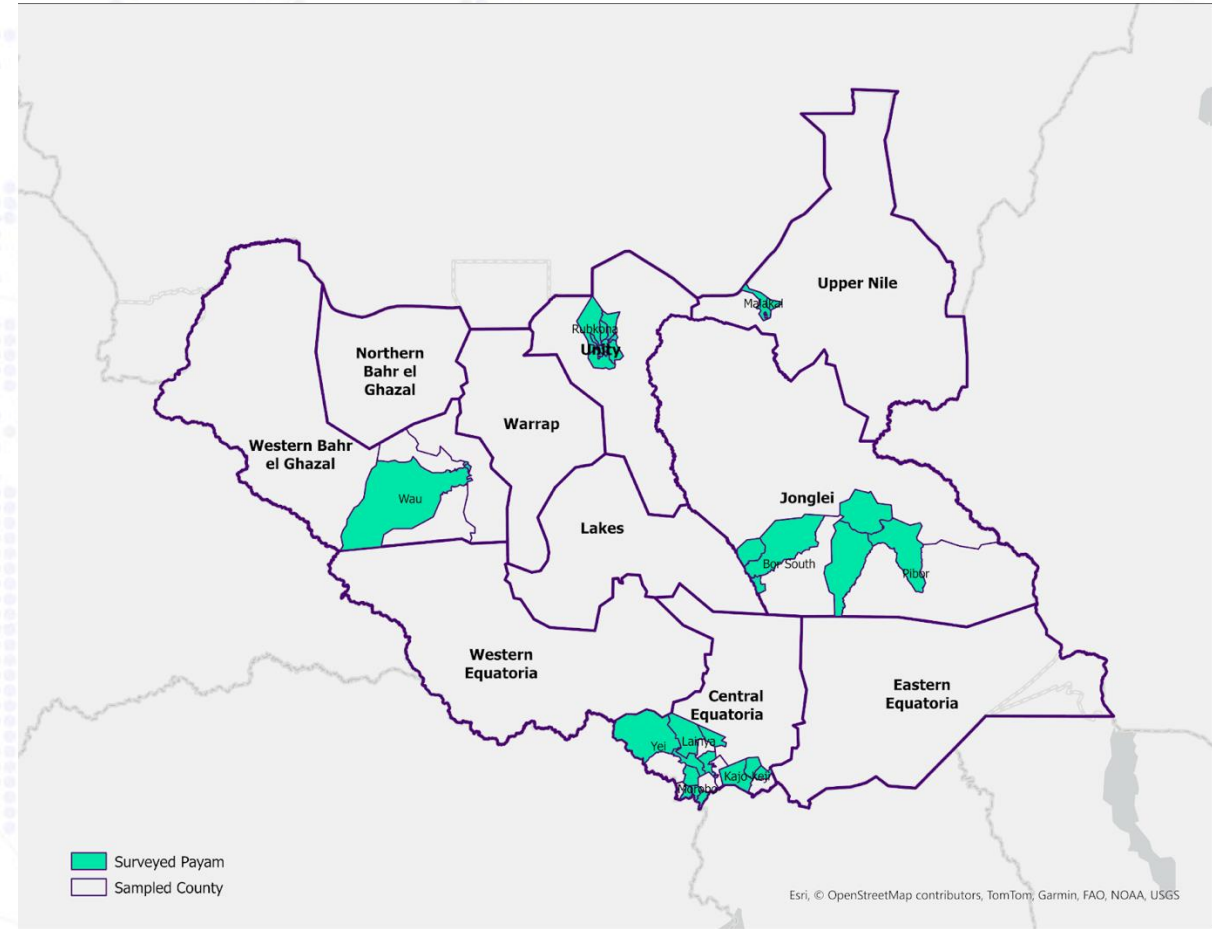
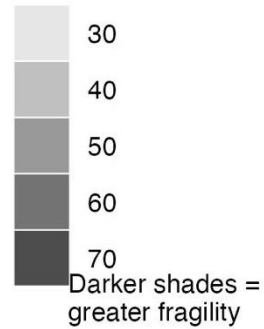


Preliminary Survey Results

Mean Fragility Scores by County

Bor South	49.10	60.60	76.60	28.90	53.80	60.10
Kajo-keji	38.40	47.10	60.80	29.40	59.20	55.10
Lainya	39.70	53.80	62.90	39.00	56.80	51.00
Malakal	46.50	58.00	58.90	31.50	46.90	48.50
Morobo	39.30	47.20	57.60	38.50	53.30	56.80
Pibor	50.50	54.10	63.80	53.00	60.10	57.00
Rubkona	38.00	63.70	59.30	31.50	69.30	66.20
Wau	45.50	50.50	72.60	32.80	45.50	55.40
Yei	36.20	57.70	53.30	36.30	53.10	48.10
	Human Fragility	Political and Legal Fragility	Security Fragility	Social Fragility	Economic Fragility	Environmental Fragility

Mean Score



- May-June 2024
- N=3,700; 9 counties
- 0 (light) represents least fragile & 100 (dark) represents most fragile



THANK YOU

1. Environmental Fragility:

- Floating gardens in flood-risk areas (cross-cutting with economic and security fragility)
- Early warning systems for natural disasters and security

2. Societal Fragility:

- Community dialogues (youth, civilian-civilian, civilian-military)
- Social cohesion and reintegration programming

3. Political/Legal Fragility:

- Improving women's inclusion in governance and resource management with customary law and water committees
- Codifying customary law and improving alignment with state law

4. Security Fragility:

- Peacebuilding
- Stabilization

5. Human Fragility:

- Food and life-saving assistance
- Shelter

6. Economic Fragility:

- Improving women's inclusion in governance and resource management with customary law and water committees
- Codifying customary law and improving alignment with state law

Indicators: Security Fragility

Dimension	Concept	Indicators in South Sudan
Security Fragility	Affected by crime	Q8.5 On a scale from 1 to 5, where 1 means “not at all frightened” and 5 means “very frightened,” how afraid are you of the following happening in your community? → Q8.5.2 Violent crimes
	Affected by war	Q8.5.3 Armed conflict / War
	Affected by land conflict	Q8.5.7 Land conflicts
	Affected by resource conflict	Q8.5.8 Conflicts over cattle
	Affected by local armed groups	Q8.5.9 Violence involving community-based militias, vigilante groups, or self-defense groups



Indicators: Political and Legal Fragility

Dimension	Concept	Indicators in South Sudan
Legal/Political Fragility	Trust in state government	Q10.1 How much confidence do you have in the following institutions? → Your state government
	Trust in informal authorities	Q10.1 How much confidence do you have in the following institutions? → Informal authorities
	Participation in democracy without fear	Q10.10 South Sudan's next national elections are scheduled for December 2024 after being postponed several times. How safe or unsafe would you feel going to a polling station to cast your vote?
	Freedom of speech	Q10.12 At present, how safe do you feel speaking publicly on politically sensitive issues?
	Trust in national government	Q10.13 Which of the following statements best describes the role that politicians in Juba play in your community?



Indicators: Societal Fragility

Dimension	Concept	Indicators in South Sudan
Societal Fragility	Experiences of acceptance	Q6.1 How much do you feel welcomed or accepted in your current community?
	Experiences of discrimination	Q6.2 In the past year, how often, if at all, have you been personally discriminated against based on any of the following: your gender, your religion, your ethnicity, any disability you might have, or your place of origin?
	Social cohesion	Q6.3 To what extent do you agree with the following statement? “People in your boma are willing to help each other.”
	Network embeddedness	Q6.4 Imagine that you were in an argument with your neighbor about a small issue. To what extent do you agree or disagree with the following statement? “I know who I could seek help from to resolve this argument.”
	Societal engagement	Q6.8 Are you a member of any social group, such as a community organization, farmers’ association, saving group, youth group, mother support group, health committee, etc.?

Indicators: Human Fragility

Dimension	Concept	Indicators in South Sudan
Human Fragility	Education	<p>Q2.3 What is the highest level of education you have completed?</p> <ol style="list-style-type: none"> 1. No formal schooling 2. Primary school 3. Secondary school 4. Vocational courses only 5. University <p>-2. Prefer not to answer</p>
	Mobility	<p>Q2.4 To what degree do you feel that you have the ability to choose the location in which you live?</p>
	Food Access	<p>Q5.5 Over the past year, how often, if ever, have you or anyone in your family gone without enough food to eat?</p>
	Water Access	<p>Q5.5 Over the past year, how often, if ever, have you or anyone in your family gone without enough clean water for home use?</p>
	Medical Treatment Access	<p>Q5.5 Over the past year, how often, if ever, have you or anyone in your family gone without necessary medicines or medical treatment?</p>



Indicators: Economic Fragility

Dimension	Concept	Indicators in South Sudan
Economic Fragility	Ability to pay for expected large costs	Q5.7 On a scale from 1 to 5, where 1 is “very difficult” and 5 is “very easy,” how easy would it be for your family to pay a bride price currently?
	Ability to pay for unexpected large costs	Q5.9 How severe would you say the impact of an unexpected death would be on your household’s economic situation?
	Access to financial support from social networks	Q5.10 If you had a family member that needed to go to Juba for medical treatment, would your household be able to get a loan?
	Dependency on aid	Q5.22 To what extent is your household dependent on monetary or other forms of aid from NGOs, the UN, or the government?
	Time spent obtaining critical resources	Q5.23 How many hours per week do members of your household take to collect fuel?



List of Sampled Locations

County	Payam	Boma
Lainya	Lainya	Lokurubang
Wau	Wau_North	Hai Kalvario
Pibor	Lekuangole	Lekuangole
Lainya	Kopera	Korobe
Rubkona	Rubkona	Yoanyang
Pibor	Pibor	Kavachoch
Morobo	Kimba	Kaya
Malakal	Ogod	Padit
Wau	Bagari	Bussere
Pibor	Pibor	Pibor
Rubkona	Nhialdiu	Nyaromne
Rubkona	Panhiany	Panhiany
Bor South	Jalle	Akuai-deng
Morobo	Gulumbi	Kendila
Malakal	Malakal_Centre	Mederia
Malakal	Ogod	Wau
Malakal	Malakal_North	Hai Chathi
Bor South	Bor	Panapet
Wau	Wau_South	Nazareth
Morobo	Kimba	Kimba Centre
Morobo	Lujulo	Yugufe
Rubkona	Rubkona	Nying
Yei	Tore	Adio
Yei	Yei_Town	Adio
Yei	Yei_Town	Pakkula
Yei	Tore	Baka
Yei	Tore	Avokaya
Yei	Tore	Mundu
Kajo-keji	Lire	Mekir
Kajo-keji	Lire	Likamerok
Kajo-keji	Liwolo	Kendiri
Kajo-keji	Lire	Mere
NA	NA	NA
Kajo-keji	Nyepo	Kansuk
Kajo-keji	Nyepo	Lori
Yei	Mugwo	Longamere
Yei	Yei_Town	Hai Sobе Zone
Yei	Yei_Town	Longamere
Lainya	Mukaya	Dimu One
Lainya	Mukaya	Biri
Lainya	Lainya	Bereka
Lainya	Mukaya	Lorega
Rubkona	Rubkona	Tong
Wau	Bagari	Bagari
Wau	Bagari	Bringi
Malakal	Malakal_South	Tarawa
Malakal	Lelo	Obwa
Bor South	Bor	Langbar
Bor South	Baidit	Mathiang
Bor South	Bor	Bor Town
Pibor	Gumruk	Tangnyang

Variable Distribution

