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P. O. Box 34, Juba, South Sudan • Tel: +211 (0)956 305 780
Email: thesudd.institute@gmail.com • www.suddinstitute.org

SPECIAL REPORT

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Climate Change and Gender in South Sudan

*Nyathon Hoth Mai
Jok Madut Jok
Nhial Titmamer*

Summary

Climate change poses global risks (World Economic Forum, 2016, IPCC, 2014). These risks adversely affect women in developing countries because of their little capacity to adapt (Brody et al, 2008). Previous studies show that women are more vulnerable to climate change than men for a variety of reasons, including illiteracy, low socioeconomic skills, inadequate access to assets, and social isolation, among others (Ahmad and Fajber, 2009; Archer 2003; UNISDR, 2008; Neumayer and Plumper, 2007). Thus, if empowered, women can contribute significantly to climate change adaptation and mitigation.

Limited understanding exists on climate change gender impact disparity in South Sudan. Using literature and empirical data, we find that in South Sudan:

- Women are at the lower rung of social hierarchy, which produces imbalances that highly expose them to climate change disasters,
- Women have less resilience assets, rely more on natural resources, have high rate of illiteracy, low skills and low access to professional employment, which make them more vulnerable to climate change calamities than men, and
- Households headed by females are more vulnerable to disasters such as famine.

We recommend to the government and partners to:

- Prioritize technical capacity building within key government institutions to be able to mainstream climate change and gender equality measures.
- Design policies that equally empower women and men to become resilient to climate change impacts.

- Build climate data infrastructure to inform gender equality and climate change policies and plans.

1. Introduction

Climate change¹ poses global risks (World Economic Forum).² These risks include high temperatures, floods and droughts, which are expected to engender “severe and widespread impacts on unique and threatened systems, substantial species extinction, large risks to global and regional food security” (IPCC, 2014, 2007). Such perils are “expected to exacerbate poverty in most developing countries and create new poverty pockets in countries with increasing inequality, in both developed and developing countries” (IPCC, 2014). Least developed countries, like South Sudan, are more vulnerable and the level of vulnerability increases in marginalized regions and disadvantaged groups, like women, due to their limited capacity to adapt (Brody et al, 2008; IPCC, 2014).

Women are “more vulnerable to climate change impacts due to gender norms and discrimination that result in greater drudgery and a skewed division of labor, lower income and livelihood opportunities, less access and control of land and property, fewer legal rights, and less political representation³” (Nelson, 2011). For example, in much of rural Africa, especially in places like South Sudan, where development is limited and where the majority of the population base their livelihood directly or indirectly on agriculture, food production takes up 80% of a household’s labor expenditure; and more than 60% of people work in this field (FAO, 2012).⁴

South Sudan has experienced considerable increase in temperatures, floods and droughts (Funk et al., 2011, Adkins, 2016, BRACED, 2016, Tuitmamer et al., 2017, 2018). However, little is understood about gender-based difference in the impacts of such hazards in South Sudan. To contribute to this understanding, this study analyzes existing literature and empirical data to determine the difference in gender impacts. Understanding the magnitude of climate change impact disparity on gender is essential in mitigating climate change induced vulnerability. We analyse rainfall and temperature data, health and nutrition data, and climate disasters data to determine the extent to

¹ Climate change, according to United Nations Framework Convention on Climate Change (UNFCCC), is defined as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”. Natural climate variability is the fluctuation in average rainfalls, temperature and other climate components on smaller timescales such as in a month, several months or a year (World Meteorological Organization – WMO 2017, Ramamasy & Baas, 2007).

² For more information, see 2016 Global Risks Report by the World Economic Forum: <http://reports.weforum.org/global-risks-2016/part-1-title-tba/>

³ For more information, see <https://gendersourcebook.weadapt.org/3-sourcebook-background/3-2-gender-issues-and-gender-strategies-for-climate-change/>

⁴ Food and Agriculture Organization of the United Nations (FAO) “Labor Map 6. www.fao.org/docrep/015/i2490e/i2490e01b.pdf

which climate change affects females and males differently in terms of nutrition and health outcomes.

2. General literature review

Gender is a social construct. This assigns different roles to boys and girls or men and women (World Health Organization, 2011). In other words, gender is constructed by social norms and rules that “determine what is allowed, expected and valued in a woman and a man in a given context” (Edward, 2014). Gendered roles define how men and women get access to resources, information and power, which determine where they live, and how they cope and adapt to changing climate (Haines et al., 2006).

These socially constructed norms and rules determine access to assets that are vital for climate change resilience. Such assets include “secure land and water rights, agricultural technologies, livestock, knowledge, and social capital, which can help individuals and households adapt to increasing variability of production” (Goh, 2012). These assets are classified into six categories namely (1) natural capital, (2) physical capital, (3) human capital, (4) financial capital, (5) social capital and (6) political capital (Goh, 2012). These six capitals were categorized by Brody et al., (2008) in a scoping study on knowledge and gaps. While the results were mixed, majority of studies found women being more affected by climate change than men due to (1) Illiteracy and low skills, (2) Inadequate access to assets, (3) Water scarcity, (4) Difficult access to energy (e.g. difficulty access firewood during flood), (5) Lack of swimming skills, (6) Lack of access to early warning to get prepared for an impending disaster, (7) Social isolation, (8) Low socio-economic status, and (9) Huge workload at home after men fled homes due to flood (Ahmad and Fajber, 2009, Archer, 2003, UNISDR, 2008, Neumayer and Plumper, 2007).

Ahmad and Fajber (2009) found climate change induced disasters affect women more than men due to differentiated access to early warning information and lack of swimming skills. In South Africa, women could not find access to early warning information about the impending flood disaster due to language barrier (Archer, 2003). During Hurricane Mitch in 2010, more women remained at home, making them exposed to hazards (Jungehülsing, 2010). UNISDR (2008) found that during Asian Tsunami more women died of disasters due to social isolation and also because they put children first before their safety. More women than men were killed in disasters in societies where they have low socio-economic status (Neumayer and Plumper, 2007). During Cyclone Nargis in Myanmar in 2009, households headed by women were not able to recover their assets and vulnerable to violence shocks (WPTWG, 2009).

Women face difficulties due to loss of assets (Cannon, 2002). In Nigeria, men migrated due to flood and drought, leaving huge workload on women (Agwu and Okhimamb, 2009). In Bangladesh during the Cyclone Aila, men found jobs following the displacement but women, who depended on natural resource based livelihoods, could not find jobs to earn a living (Kartiki, 2011). In Senegal, Ethiopia, Nepal and Vietnam, water scarcity due to drought affected women more than men as they had to spend a lot of time to check water levels in boreholes, exposed to physical pain as they traveled long distances to collect water and firewood (Shaw et al. 2008, Asheber et al 2010,

Dankelman et al, 2008, and Leduc 2008).

Crop failures caused by drought significantly affect unmarried and widowed women (Biskup and Boellstorff, 1995). Women also quickly lose their livestock assets compared to men (Kristjanson et al 2010). Women reduce their meal intake, leading to reduction in weight, which exposed them to health risks.

Due to being active in agriculture as their main livelihood, women are exposed to flood and drought risks. For example, when a drought or a flood hits, it affects agricultural yield, constrains access to water and diminishes energy sources, especially forest-based resources (Sorenson et al., 2011). This means women have to walk long distances to fetch water and firewood, which they carry on their heads or backs. Also this means women go to fetch water and firewood in more dangerous places where they could suffer from physical abuse.

In comparison, men died in greater number compared to women during Hurricane Mitch in Central America (Bradshaw, 2004). During a drought in Zimbabwe, fewer males married because of difficulty to find a bride price (Hoogeveen et al 2004). Men suffer from heatstroke, dehydration, physical injuries, mental health issues and death during extreme events such as heat wave, drought and floods. They suffer heat stroke and dehydration because they are active in hot weather during heat wave. Men committed suicide due to disaster induced stress and mental illness in Australia and India. Due to traditional beliefs about the roles of men as protectors and rescuers during disasters, men suffer physical exhaustion, drowning or physical injuries during flood.

3. Climate change gender impact disparity in South Sudan

While some studies have been carried out on environmental issues, we could not find any particular study that empirically looks at how climate change affects men and women in South Sudan. Funk et al., (2011) have documented how unpredictable rainfalls have become as well as the increase in temperatures and the shrinking of rain fed agriculture areas in South Sudan. Johnson (1992) also documented the history of floods in the Upper Nile region of South Sudan while Omoj et al, (2016) looked at the precipitation history dating to the 1960s. Edward (2013) looked at factors hindering gender equality in South Sudan. Mai (2015) also looked at gender from the perspective of women participation in the peace process to bring an end to the ongoing conflict in South Sudan. However, these studies paid little attention to climate change gender impact disparity in South Sudan. While no study has been devoted to look at the matter empirically, the way in which resources are accessed means that climate change has a great potential to have greater negative impacts on women than men. However, this remains a hypothesis until a link is empirically established.

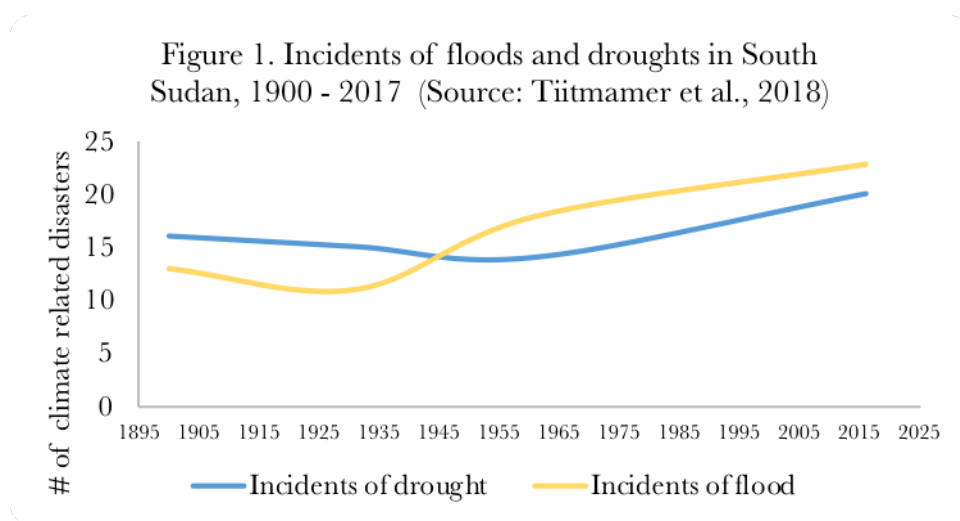
Analysis of empirical data

As mentioned previously, we obtained rainfall and temperature data, child mortality data and climate disasters data with the objective of determining the extent to which

climate change affects affect women and men differently. However, we could not precede with causal analysis to determine gender impact disparity using these data because they were not disaggregated on the basis of gender. Due to this limitation, we only describe climate change manifestations, malnutrition by gender of heads of households, and gender access to assets in South Sudan. The results we present are descriptive and contribute to our understanding of the prevalence of climate change and how it affects both men and women.

Droughts and floods in South Sudan

Floods and droughts have increased in frequency (Funk et al., 2011, Tiitmamer et al., 2018, see figure 1). The major types of flood reported mostly are flash floods and river overflow or the bank bursting following a heavy rain (BRACED, 2016). For example, floods have occurred almost every year since 2007 and in more than two states in South Sudan (Tiitmamer et al., 2017, see table 1).



Collectively, flood and drought have had direct major impacts on health, infrastructure, food security and settlement (BRACED, 2016, also see table 1). The leading impacts are on crops, shelter damage and access to education and health facilities (BRACED, 2016). Consequently, these direct impacts can be experienced differently by women and men. However, media reports, from which we compile these incidents, have not disaggregated the impacts on the basis of gender.

Table 1: Incidents of flood every year in South Sudan, 2007 – 2017 (Source: Tiitmamer et al., 2017 and additional compilations by authors)

Year	Month	Impacts	Location	Source
2007	August and September	Destroyed houses, crops and displaced people	Six states including Northern Bar el Ghazal and	BBC ⁵

⁵ <http://news.bbc.co.uk/2/hi/africa/6924510.stm>

			Warrap	
2008	Between August and October	Destroyed houses, crops and displaced people	Northern Bar el Ghazal and Warrap	Prevention web ⁶
2009	Between August and October	Destroyed houses, crops and displaced people	Warrap and Northern Bar el Ghazal	Prevention web ⁷
2010	August and September	57, 000 displaced people, destroyed houses and caused water borne diseases	Northern Bar el Ghazal, Warrap and other states	BBC ⁸
2011	August, September	Destroyed crops, basic infrastructure and displaced people	Unity, Northern Bar el Ghazal	Sudan Tribune ⁹
2012	August and July	Displaced people, destroyed crops and infrastructure including houses	Northern Bar el Ghazal and other states	Radio Tamazuj ¹⁰
2013	August, September, October	Displaced people, destroyed houses, crops and affected cattle and caused water borne diseases	Seven states include Warrap and Northern Bar el Ghazal	Sudan Tribune ¹¹
2014	August, September,	About 14 people died, thousands	Northern Bar el Ghazal,	Floodlist ¹²

⁶ http://www.preventionweb.net/files/37784_37784ssdchffloodvulnerabilityandcon.pdf
<http://reliefweb.int/report/sudan/fews-south-sudan-food-security-update-aug-2008-flooding-and-conflict-north-and-east>

⁷ http://www.preventionweb.net/files/37784_37784ssdchffloodvulnerabilityandcon.pdf

⁸ South Sudan's Aweil region swamped by floods: <http://www.bbc.com/news/world-africa-11150357>
<http://www.ifrc.org/docs/appeals/10/MDRSD009EA.pdf>

⁹ <http://www.sudantribune.com/spip.php?article39874>

<http://www.sudantribune.com/spip.php?article40143>

¹⁰ <https://radiotamazuj.org/en/article/rains-flood-hundreds-homes-aweil>

<http://www.sudantribune.com/spip.php?article42639>

<http://reliefweb.int/disaster/fl-2012-000128-ssd>

¹¹ <http://www.sudantribune.com/spip.php?article48044>

¹² <http://floodlist.com/africa/60000-displaced-floods-sudan-south-sudan>

	October	displaced and homes and crops destroyed.	Warrap and other states	
2015	Between August and September	Displaced people and destroyed crops and basic infrastructure	Warrap, Jonglei	Sudan Tribune ¹³
2016	July, Oct & Dec in Jonglei	Over 25,000 people affected in Twic East ¹⁴ ; over 70,000 people affected in Fangak ¹⁵ ; more than 56,000 people with over 11,000 households affected ¹⁶ severe	Jonglei, Lakes, Fangak, Maiwut and Nasir	Radio Tamazuj Sudan Tribue
2017	September	11 000 people in Aweil North and Aweil West affected. Many people displaced and huge impacts on physical infrastructure (roads and houses) and crops in Raga, Aweil North, Aweil East, Pibor, parts of Eastern and Western Equatoria, 650 households	Former Upper Nile, Northern Bahr al Ghazal, Western Bahr al Ghazal, Jonglei, Eastern Equatoria and Western Equatoria	Relief Web, ¹⁷ World Food Program

¹³ <http://www.sudantribune.com/spip.php?article56351>

Heavy floods halt classes in Warrap State: <http://www.theniles.org/en/articles/society/20080/>

¹⁴ Radio Tamazuj, 'Over 25,000 People Affected by Twic East Floods' (PANYAGOOR, 2016) <<https://radiotamazuj.org/en/news/article/over-25-000-people-affected-by-twic-east-floods>>.

¹⁵ Radio Tamazuj, 'Over 70000 Flood Victims in Fangak Appeal for Humanitarian Aid' (Old Fangak, 2016) <<https://radiotamazuj.org/en/news/article/over-70000-flood-victims-in-fangak-appeal-for-humanitarian-aid>>.

¹⁶ Sudan Tribune, 'Longochuk County Commissioner Appeals for Emergency Aid Intervention', 2016 <<http://www.sudantribune.com/spip.php?article60061>>.

¹⁷ See <https://reliefweb.int/disaster/fl-2017-000137-ssd>

affected and some
deaths and injuries
in 8 villages in
Maban

Malnutrition impacts by gender

We examined proportion of wasting children based on the gender of the household in Warrap, Northern Bhar el Ghazal (NBEG), Greater Upper Nile and Greater Equatoria. The data were collected by FAO, UNICEF and WFP between 2010 and 2016 for Warrap and NBEG and between 2015 and 2016 for Greater Upper Nile and Greater Equatoria. While the data have several shortcomings including the small sample size and short time frame, which makes it difficult to measure gender impact disparity based on changes in precipitation and temperature, the results demonstrate that proportion of malnourished children is higher in households headed by females (see tables 2, 3, 4, 5)). While the reason for wasting of children is not clear in the data, factors that contribute to malnutrition include climate-induced shocks such as floods and droughts and political and communal violence, which cause famine. Both factors lead to crops failure and looting of assets such as livestock and asset dispossession (e.g. land displacement).

Table 2: Proportion of wasting children by Sex of household head in Greater Equatoria (Source: Data Source: Food Security and Nutrition Monitoring System, collected by FAO, UNICEF and WFP).

Timing of the FSNMS	Basis for nutrition assessment	Sex of the household head			
		Male		Female	
		Count	% Wasting	Count	% Wasting
Mar-15	WHZ	88	7.6%	16	8.0%
Jul-15	WHZ	72	6.7%	12	7.4%
Jun-16	WHZ	102	8.6%	19	10.1%
Jun-16	MUAC	70	5.8%	14	7.2%
Dec-16	WHZ	15	6.0%	79	8.7%
Dec-16	MUAC	12	4.6%	51	5.3%

Table 3: Proportion of wasting children by Sex of household head in Greater Upper Nile (Data Source: Food Security and Nutrition Monitoring System, collected by FAO, UNICEF and WFP).

Timing of the FSNMS	Basis for nutrition assessment	Sex of the household head			
		Male		Female	
		Count	% Wasting	Count	% Wasting
Mar-15	WHZ	188	19.6%	152	24.3%
Jul-15	WHZ	80	21.9%	32	16.2%
Jun-16	WHZ	184	21.3%	176	27.7%
Jun-16	MUAC	118	13.2%	106	16.0%
Dec-16	WHZ	66	12.6%	155	14.0%
Dec-16	MUAC	50	8.4%	133	10.7%

Table 4: Proportion of Wasting Children based on Sex of the household head in NBEG (Data Source: Food Security and Nutrition Monitoring System, collected by FAO, UNICEF and WFP).

Timing of the FSNMS	Basis for nutrition assessment	Sex of household head			
		Male		Female	
		Count	% Wasting	Count	% Wasting
Oct-10	MUAC	21	14.5%	18	14.0%
Jun-11	MUAC	15	10.8%	12	6.3%
Oct-11	MUAC	10	9.9%	9	5.3%
Oct-12	MUAC	6	8.2%	40	11.8%
Jun-13	MUAC	27	9.9%	10	15.2%
Oct-13	MUAC	33	11.3%	10	11.6%
Aug-14	WHZ	56	14.8%	6	9.7%
Dec-14	WHZ	62	13.7%	17	16.7%
Jul-15	WHZ	114	23.0%	38	33.0%
Dec-15	WHZ	89	18.5%	24	26.4%
Jun-16	WHZ	138	30.0%	36	41.9%
Jun-16	MUAC	68	14.3%	15	17.0%
Dec-16	WHZ	51	11.1%	120	15.8%

Table 5: Proportion of Wasting Children based on Sex of the Household in Warrap (Data Source: Food Security and Nutrition Monitoring System, March and July 2015 and December 2016 collected by FAO, UNICEF and WFP).

Timing of the assessment	Basis for nutrition assessment	Sex of household head			
		Male		Female	
		Count	% Wasting	Count	% Wasting
Oct-10	MUAC	14	18.7%	62	38.5%
Jun-11	MUAC	36	23.5%	12	31.6%
Oct-11	MUAC	32	13.1%	5	15.2%
Oct-12	MUAC	5	4.8%	28	8.2%
Jun-13	MUAC	35	15.1%	4	19.0%
Oct-13	MUAC	12	8.1%	8	18.6%
Aug-14	WHZ	83	24.3%	23	26.1%
Dec-14	WHZ	55	15.9%	17	20.2%
Jul-15	WHZ	73	20.2%	27	25.0%
Dec-15	WHZ	60	16.7%	27	31.8%
Jun-16	WHZ	69	20.9%	24	27.6%
Jun-16	MUAC	42	12.2%	14	15.7%
Dec-16	WHZ	186	13.9%	85	13.6%

Gender roles and access to assets

Males constitute 52% while women account for 48% of South Sudan's population (Adkins, 2016, NBS, 2010). Of those who are poor, 48.4% are men while 51.6% are women (NBS, 2010). Gender roles are clearly separated and still very traditional (Adkins, 2016; Edward, 2014; Mai 2015). Women are on the lower part of the social hierarchy, producing inequities, all of which get exacerbated during extreme climate events. They are on the low part because of a number of factors which include (1) high illiteracy rate, (2) early & forced marriage, and (3) Gendered division of labor. This exposes women to risks of food insecurity and other socio-economic outcomes caused by climate change induced shocks. The Government's National Policy on Gender recognizes that "although women are the main producers of food, women and children are the most vulnerable to food insecurity because of traditional gender roles and limited access and control of productive assets."¹⁸ For example, women fetch water, grass for thatching houses, grind and cook food, care for the children and the elderly, milk the cows, and take care of chicken while men herd cattle, goats, sheep, cut timber

¹⁸ Ministry of Gender, Child and Social Welfare (MGCSW), (2013). National Gender Policy. Juba: Government of the Republic of South Sudan, pg. 35.

for house construction, hunt and go fishing (Edward, 2014).

These roles could change given that the Transitional Constitution of South Sudan (2011 and as amended severally) provides women with at least 25% representation in the institutions of decision making. However, this quota largely remains on paper. In addition to lack of implementation, “gender equality and respect for women’s human rights are conflated with the 25 percent quota allocated to women in decision-making structures, which can cause neglect of other areas relevant to women’s empowerment and participation” (Ali, 2011). This has implications for climate change as gender equality, particularly equal access to power and resources, is an important tool for climate change resilience.

In South Sudan, males headed households have more assets than females headed households (NBS, 2014). This means climate change in South Sudan can adversely affect women more than men as assets are vital for climate change resilience (Goh, 2012). Women mainly rely on agriculture and other assets of low value, which are highly vulnerable to climate change disasters. For example, women get exposed to high risks of famine or food insecurity and hunger as floods or droughts destroy crops. Flood or drought also destroys other natural resources like thatching grass and wild fruit that they rely on. Men can also be affected but are relatively in a better position due to other sources of livelihood and assets such as cattle, goats, hunting, and fishing, among others.

In urban areas, more men than women have access to formal jobs that earn higher incomes (NBS, 2014). Men dominate the formal economy in the private and public sectors earning higher incomes than women due to women’s illiteracy and lack of formal skills as 87% of household female heads have no formal education (NBS, 2014, see table 6). The type of jobs determines the level of resilience to flood and drought. This is in line with empirical evidences elsewhere that show men who hold formal jobs are resilient to climate disasters as they quickly find new jobs after a disaster compared to women who depend on agriculture and domestic work (Kartiki, 2011).

Table 6: Roles & Access to assets by gender (Source: NBS, 2014, compiled by the authors)

roles & assets	females	Males	Implications for climate change resilience
Literacy	Constitute 12.7% of 27% literate population	Constitute 87.3% of 27% literate population	Little capacity to get disaster emergency preparedness and resilience information.
Education	87% of women have no formal education	65.7% of male heads of households have no formal education	Inadequate capacity to have access to gainful employment anywhere one is displaced by flood or drought.
Paid job	Only 8.9%	25.4% have	Inability to stay resilient to climate

	women have access to paid jobs	access to paid jobs	induced disasters.
Agriculture	Majority of women rely on subsistent agriculture.	Men relatively rely on multiple sources of livelihoods	Exposure to risks of hunger following destruction of crops by floods and droughts
Livestock	livestock mostly belong to men in some communities and some communities have inadequate or no livestock at all		Inadequate access or movement with it causes high risks of hunger or violence that may lead to death.
Water	84.9% of women collect water	5.8% of men collect water	Water scarcity, coupled with responsibility to collect it from long distance, leads to high risks of pain walking, exhaustion, rape and death.
Energy resources	Energy resources are rudimentary and accessing lies with women	only few men engage in getting energy resources for the family	High risks of physical and mental pain, exhaustion, rape and death accessing energy resources.
Shelter	Women collect grasses, perform the thatching and mud plastering	Men fetch poles, build mud walls and roof frames	Shelter destruction leading to vulnerability and high risks in the building process.

Lack of adequate health facilities in South Sudan (NBS, 2014) creates low level of climate change resilience, which can adversely affect women more than men because of physical and social factors. Over 84.9% those who collect water in South Sudan are women (NBS, 2014). They travel long distances to fetch water where they are exposed to security risks, sometimes getting raped or killed. Besides, women shoulder huge burden to collect firewood to cook. In the event of flood, the wood gets dampened by water. Women wade through water sometimes knee-deep or chest deep to collect firewood and sometimes get exposed to danger, such as contracting diseases.

Cattle in South Sudan are good assets for resilience as they can move with people to new areas not affected by drought or flood. However, building resilience in this manner depends on the social capital a cattle rearing community has with neighbors. However, in most cases, it is men who move with livestock, leaving women behind in the homesteads exposed to high risks of hunger as the family's assets get displaced with men. In case there is no mechanism for conflict resolution, displacement often results in new conflicts with host communities (Titmamer et al., 2017). If this is the case, men are

sometimes exposed to high risks of deaths if displacement causes a violent conflict with a host or a neighboring community. Women also get affected negatively in the event of conflict as they get exposed to high risks of rape, captivity and deaths. Besides, women are also left behind during droughts or flood to take care of the homesteads and therefore, they suffer from hunger as the family's assets, the livestock, migrate to safer areas with men. Flood destroys houses as the capacity of women, often left behind, is overwhelmed by the magnitude of flood and not able to build dykes to protect houses. Grass gets destroyed making it difficult for women to access them and exposing them to high risks of rape or deaths in the forest. Trees get destroyed by floods making it difficult for men to access them for construction poles.

Lack of access to land makes women vulnerable to climate change induced shocks and stresses. In most parts of South Sudan, women are entitled to rights to use, control, own, rent, lease and sell, inherit from husbands, and to have their land protected (Tiitmamer et al., 2017). However, they are not entitled to share land with husbands following a divorce. While women are entitled to land access in natal communities in accordance with the customs, this is not the same with urban women who find it difficult to access land on their own (Tiitmamer et al., 2017, see table 7). Urban areas are some of the main destinations for rural migrants following a flood or drought disaster, making female headed households displaced to urban areas to face difficulties with access to land following a flood or drought displacement. They face difficulty in accessing land because of low income that prevents them from buying land. In rural areas, land is possessed or owned by usage. This means the higher the capacity to mark large track of land and cultivate, the larger the size of land and the bigger the income level.

Table 7: Gender access to land rights under customary and statutory laws in parts of South Sudan (Source: Tiitmamer et al., 2017)

No	Land right category	Customary Law		Statutory Law	
		Male	Female	Male	Female
1	Right to use	√	√	√	√
2	Right to control	√	√	√	√
3	Right to own	√	√	√	√
4	Right to inherit from father	√	X	√	X
5	Right to inherit from spouse	√	√	√	√
6	Right to get a share of the land after divorce	√	X	√	X
7	Rights to rent, lease or sale,	√	√	√	√
8	Residuary right	√	√	√	√
9	Right to protection	√	√	√	√

Key: √= Yes, X= No

Women have difficulty to access new land during time of flood or drought displacement as they cannot move in the same pace as men and be able to mark a land and cultivate

due to physical and social constraints. While women can hire labor to cultivate their land, low income makes it difficult for them to do so.

4. Conclusion and recommendations

We have explored different ways that expose men and women to climate change induced impacts. Empirical evidences show that climate disaster events have increased in frequency and have become erratic (Funk et al., 2012, BRACED, 2016, Tütmamer et al., 2018). While there is a general low climate change resilience capacity in South Sudan, women are more highly exposed to climate change risks than men due to inadequate access to resilience assets and reliance on natural resources compared to men.

We recommend to the government and partners to:

- Officially recognise that women are more likely to be affected by climate change disasters as they depend more heavily on natural resources.
- Build technical capacity within key government institutions to be able to mainstream gender equity and climate change adaptation and mitigation measures.
- Design policies that ensure women and men have equal access to assets that can help them become resilient to climate shocks and stresses.
- Build climate data infrastructure on potential areas of impacts to inform adaptation and mitigation policies and plans.

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About Sudd Institute

The Sudd Institute is an independent research organization that conducts and facilitates policy relevant research and training to inform public policy and practice, to create opportunities for discussion and debate, and to improve analytical capacity in South Sudan. The Sudd Institute’s intention is to significantly improve the quality, impact, and

accountability of local, national, and international policy- and decision-making in South Sudan in order to promote a more peaceful, just and prosperous society.

About the authors

Nyathon James Hoth Mai is a Research Associate at the Sudd Institute. She has a BSc in Geology from the University of Ballarat, Victoria, Australia, and an MSc in Global Energy and Climate Policy from the School of Oriental and African Studies (SOAS), University of London. Her research interest areas include: Geology, climate change and energy policy, and issues affecting South Sudanese women. In addition, Nyathon was the Co-founder and Managing Director of My Referendum for Freedom (MRF) that actively engaged the South Sudanese youth from all over South Sudan and diaspora as a vehicle for civic education to the rest of the populace during the South Sudan Referendum. She also devoted much of her time to South Sudan community development in Australia.

Nhial Titmamer is lead Researcher and Program Manager for environmental, energy and natural resources at The Sudd Institute and the Institute's Focal Point on Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED), a climate change resilience programme being implemented in South Sudan by a consortium composed of The Sudd Institute and five international organizations. Nhial received his undergraduate and graduate education in Environmental Studies and Sustainable Energy in Canada where he spent stints as an environmental consultant and research associate in environmental studies. Nhial is the co-founder of the NewSudanVision.com and has extensively commented and written on issues about South Sudan.

Jok Madut Jok is a cofounder of the Sudd Institute. He is the author of three books and numerous articles covering gender, sexuality and reproductive health, humanitarian aid, ethnography of political violence, gender based violence, war and slavery, and the politics of identity in Sudan.