



UNIVERSITY
OF JUBA



RELIEF AND REHABILITATION COMMISSION (RRC)

FLOOD ASSESSMENT IN SOUTH SUDAN November 2022



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For more information contact:

John Mayen Deng,

Director for Monitoring and Evaluation

Relief and Rehabilitation Commission (RRC)

Email: mayendedeng@gmail.com

Telephone: +211 924 496 836



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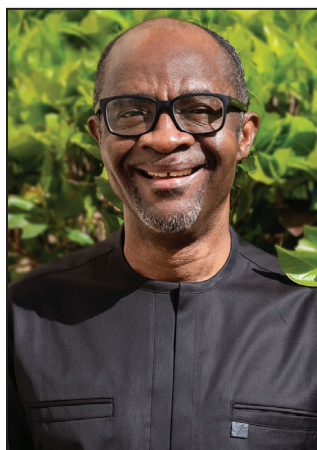
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PREFACE



The annual seasonal flooding that impacted all ten states of South Sudan from 2019 to 2021 resulted in humanitarian emergencies that undermined many humanitarian and development efforts. In the last two decades, the recurring flooding combined with insecurity and political instability and further exacerbated by food insecurity has eroded livelihoods, affected service delivery and governance institutions, displaced and decimated human capital, and destroyed physical infrastructure.

The impact of floods created a serious and complex humanitarian crisis in the country and these conditions call for comprehensive and collective strategies that can augment resilient recovery and pave the way for long-term risk and vulnerability reduction in communities. Therefore, this report identifies the geographical areas and estimates the number of people affected and displaced by flooding, considering climate predictions of above-normal rainfall. It has also determined the need for an effective response to mitigate the impact of flooding on the vulnerable population. The report provides actionable recommendations for addressing, immediate to long-term recovery and to build the resilience of vulnerable populations and communities.

I would like to acknowledge the effective leadership of the Relief and Rehabilitation Commission in commissioning and completing this report. UNDP remains committed to supporting efforts that build the resilience of the government and communities within South Sudan.

A handwritten signature in blue ink, appearing to read 'Samuel Doe'.

Samuel Doe, Phd.
UNDP, Resident Representative
Republic of South Sudan

FORWARD



This report presents recent information on the current flooding of large parts of South Sudan and its repercussions for people and stability. Approximately 2.6 million people have been affected throughout the ten states and three administrative areas of our country. Blamed on changing climate, the floods pose serious challenges to peacebuilding, development and, in particular, the affected populations.

The flooding of large areas is another significant obstacle to the implementation of the 2018 Revitalized Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS), which has been progressing at a slower than anticipated pace due to several challenges. In particular, the floods undermine efforts to facilitate the return of displaced persons and refugees to their places of origin in safety and with dignity. When vital infrastructures are washed away by torrents of floodwater it renders the movement of people and goods, in particular humanitarian assistance, challenging. In fact, the floods have not only made movement treacherous, they have also caused displacement of many people including some who had returned from camps for IDPs and refugees.

Despite the bleak situation, the Government of South Sudan (GoSS) and partners are exerting enormous efforts and resources to relieve the dire situation of the affected people.

I also would like to appreciate our President and other leaders for coming quickly to the aid of our vulnerable people, and also the UN agencies, international NGOs and national NGOs providing assistance to the flood-affected people. As the needs are huge and largely remain unmet, I urge that more assistance is mobilized and distributed to the needy by our government and partners.

The information provided in this report fills gaps in what we already know about the severity of the floods and their repercussions for the country and people. I thank all those who worked on the report, which is a valuable asset for all those supporting the flood-affected people and communities.

A handwritten signature in black ink, appearing to read 'Manase Waya', written in a cursive style.

Hon Dr. Manase Lomole Waya
Chairperson
Relief & Rehabilitation Commission (RRC)
Republic of South Sudan, Juba

ACKNOWLEDGEMENTS



Conducting this rapid assessment during this time of floods, and within a short period, has not been easy, and therefore I must thank all those who took part. Although it is not possible to mention the names of all the persons whose efforts made the production of this report possible, I have to send special thanks to a few persons who played a crucial role.

First, I want to thank Hon Dr. Manase Lomole Waya, the Chairperson of the RRC, for tirelessly working to improve the conditions of vulnerable people, particularly those currently grappling with challenges caused by the devastating flooding of large parts of our country.

Second, I want to recognize the courage and efforts of my colleagues at the RRC and officials from the Ministry of Humanitarian Affairs and Disaster Management (MHA&DM) who went out to the field to collect the information. They achieved much in a very difficult environment and within a very short time.

Third, I would like to register our appreciation to UNDP for providing the financial resources which made this assessment possible. UNDP has always been a reliable partner.

Last but not least, I commend the support of Dr. Leben Nelson Moro, Professor of Development Studies at the University of Juba, for writing the report. He has worked with us on a number of other initiatives in the past. I also thank his colleague, Mr Emmanuel Pitia, a lecturer at the University of Juba, who developed the questionnaire used in the assessment and analysed the data. All of them are also our reliable partners.

A handwritten signature in black ink, consisting of a large, stylized loop followed by a horizontal line extending to the right.

Hon Santino Bol Muoter
Deputy Chairperson
Relief & Rehabilitation Commission (RRC)
Republic of South Sudan, Juba

ACRONYMS

CSOs	Civil Society Organizations
GoSS	Government of South Sudan
HHs	Households
IDPs	Internally Displaced Persons
IGAD	Intergovernmental Authority on Development
MHADM	Ministry of Humanitarian Affairs and Disaster Management
NFIs	Non Food Items
NGO	Non-governmental Organization
POCs	Protection of Civilians Sites
R-ARCSS	Revitalized Agreement on Resolution of the Conflict in the Republic of South Sudan
RRC	Relief and Rehabilitation Commission
RTGoNU	Revitalized Transitional Government of National Unity
SPLM-IO	Sudan People's Liberation Movement in Opposition
UNDP	United Nations Development Programme
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNMISS	United Nations Mission in South Sudan





EXECUTIVE SUMMARY

This year's floods, which began around August 2022, impacted large parts of the country, with implications for peace and stability. Cognizant of the evolving crisis, teams of officials from the RRC conducted a rapid assessment, from the end of October to the beginning of November 2022, in the ten states and three administrative areas of the country. The assessment sought to ascertain the gravity of the flood situation, the impacts on people and properties, and the needs of the affected populations, and to make suggestions for robust interventions.

The results of the assessments indicate that the floods caused huge humanitarian, development and peacebuilding challenges. About 2,632,960 people in all the ten states and administrative areas were affected by the devastation wrought by the floods. About 80 percent of the 164 people interviewed for the assessment contended that the current floods were the worst in recent memory.

A big number of individuals lost lives or suffered injuries directly or indirectly due to the floods. Many people were uprooted from their homes and forced to seek for safety mainly on higher grounds. About 90 percent of respondents reported that they had been displaced, and 76 percent said there was much or extensive displacement in their areas.

Multitudes faced livelihood disruptions, especially death of livestock and loss of crops. Grazing areas and fields were submerged under water. About 77 percent of respondents said that animals had died due to the floods and grazing

areas had been submerged under floodwater. With regards to crops losses, about 55 percent reported that crops had been washed away or submerged under water. Moreover, thousands of dwellings had collapsed or suffered partial damage.

The floods inflicted substantial damage on the infrastructures in the flood affected areas. In some areas, roads and bridges had been washed away, schools and health facilities destroyed, phone and internet connections disrupted, and clean water sources and latrines ruined. About 62 percent of the respondents stated that schools in their areas had closed down; about 34 percent said that health facilities had been washed away and also about 34 percent revealed that facilities and equipment had been submerged under floodwater; and about 63 percent of respondents stated that source of water was floodwater.

The needs of the affected people and places are huge. They urgently require food and non-food items (NFIs) and also building or repairing collapsed or damaged houses, schools, health facilities, and roads and bridges. Besides, obstacles to the implementation of the peace agreement resulting from the flood devastation, including delays in graduation of unified forces, need to be addressed.

In this appalling situation, many people were left with nothing and had to survive on humanitarian assistance, support of kin and friends, selling livestock, fishing, gathering wood and grass for sale, and eating wild fruits and leaves.

The ongoing humanitarian support of the government, which recently released 20 million to buy lifesaving assistance from Sudan, should be scaled up, as should support from partner organizations. Moreover, development assistance should be increased because schools, healthcare facilities, vital roads and bridges as well as other infrastructures need to be repaired, so as to remain open or operational. Passable roads are essential during this time in order for humanitarian organizations to easily access people in need of support. Moreover, the government and partner organizations should increase livelihoods recovery activities, including providing seeds and agricultural tools so as to reduce poverty.

It is also vital to pay attention to peacebuilding, including implementation of the peace agreement and addressing communal conflicts. Obstacles to implementation of the Revitalized Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS), caused or worsened by the advent of floods, need to be addressed so that the momentum to transition the country to lasting peace and stability is not lost. Moreover, local peace activities need to be undertaken to reduce tensions caused by movement of people during the floods.

South Sudan is facing unprecedented impacts of climate change.

In 2021 between July and October alone, 856,000 people were affected by floods and 389,000 were uprooted from their homes.



1. INTRODUCTION

1.1 BACKGROUND

Like many countries around the globe, South Sudan is facing unprecedented impacts of climate change. Since 2017, the country has experienced heavy downpours which have resulted in rampant floods. For instance, between July and October 2021 alone, 856,000 people were affected by floods and 389,000 were uprooted from their homes¹. According to the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), by October of this year, an estimated 900,000 people had been affected by floods, 64 percent of them in Bahr el Ghazal, Warrap, and Unity states². However, this figure is much lower than estimates of the flood-affected people revealed by the current assessment.

Aware of the gravity of the situation and the need for urgent interventions, the Relief and Rehabilitation Commission (RRC), with funding from the United Nations Development Programme (UNDP), conducted a rapid assessment of the flood situation. Teams of officials from the RRC headquarters in Juba, joined by officials from offices in states and administrative areas, visited some accessible affected locations to observe and collect information from employees of governmental and non-governmental organizations (NGOs) as well as

1. www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/south_sudan_flooding_snapshot_4.pdf

2. UNOCHA (2022) South Sudan: Flood snapshot No. 2. 11 October.

affected community members. The information gathered from the field was complemented with data generated during reviews of situation reports compiled by aid organizations and other relevant literature.

1.2 COUNTRY CONTEXT

The floods are occurring in a very difficult context. South Sudan only gained its independence in 2011 from Sudan after decades of civil war. Unfortunately, in 2013, it relapsed into violent conflict which led to the displacement of millions of people from their homes, some becoming internally displaced persons (IDPs) in Protection of Civilian Sites (PoCs) or refugees in neighbouring countries. In May 2021, over 1.6 million South Sudanese were IDPs³ and, according to UNHCR, by the end of 2021, 2.4 million others were refugees in neighboring countries⁴. In addition, the country is hosting thousands of refugees, mainly from Sudan.

To restore peace and development, the parties to the conflict in the country concluded the Revitalized Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS) in September 2018 with the support of the Intergovernmental Authority on Development (IGAD) and the neighboring countries of Sudan and Uganda. The implementation of the agreement has raised hope for lasting peace and sustainable development. Fighting between armed groups has died down throughout the country but sporadic inter- and intra-communal fighting, cattle rustling and revenge attacks involving youth have continued. Nonetheless, mainly due to the improvement of security, as of May 2021 over 300,000 refugees had spontaneously returned home from the neighboring countries, and in addition since 2017, 1.3 million IDPs returned to their original places⁵. Recent figures of returns are high, especially for Eastern Equatoria State, where the UNHCR has boosted its presence and activities.

Apart from conflicts, the country has been grappling with poverty, severe food insecurity and epidemics. In 2021, 82 percent of South Sudanese were poor and hence faced challenges in putting food on the table and meeting other basic needs⁶. According to the Integrated Phase Classification (IPC), between February and March 2022, an estimated 6.83 million people (55 percent of the population) faced high acute food insecurity (IPC Phase 3 or above) and the figure was expected to increase during the April to July lean period⁷. Many of these destitute people have probably been leaving their home areas in search of food and other essentials in other locations. Moreover, the country is recovering from the impact of COVID-19 and is now preparing for possible Ebola spread from Uganda.

Without doubt, the rampant floods only made worse the pre-existing insecurity, humanitarian, and development challenges facing large numbers of people in the country.

3. UNHCR Overview of the IDP population per county.

4. UNHCR (2021) *Global Trends: Forced Displacement in 2021*, page 17. <https://www.unhcr.org/globaltrends>

5. www.reporting.unhcr.org/sites/default/files/IDP%20Initiative%20Update%20March%202021.pdf

6. *National Development Strategy*

7. *Integrated Food Security Phase Classification (IPC) (2022) South Sudan: Acute Food Insecurity and Acute Malnutrition Situation for February-March 2022 and Projections for April-July 2022.*

www.ipcinfo.org/ipc-country-analysis/details-map/es/c/1155527

1.3 OBJECTIVES AND QUESTIONS

The RRC had been receiving alarming information and complaints from the local authorities and communities as well as information from aid organizations operating in the flood-affected areas. Hence, it decided to direct officials from its head office in Juba to make fact finding visits to all the ten states and three administrative areas to assess the developing flood situation.

The overarching objective for undertaking the assessment was to collect recent and reliable information on severity of the current floods; impacts on people and properties; coping strategies of affected populations; their needs; and suggestions for interventions or responses.

The specific objectives were as follows:

- Gather information on people effected by the floods.
- Interview individuals and groups about the flood situation.
- Observe and record relevant information on the flood situation.
- Collect situation reports and other documents produced by aid organizations working on the flood situation.
- Prepare reports on their visits for submission to the RRC headquarters and the national experts contracted to produce this report.

]The key questions the assessment sought to answer are:

- How grave or severe is the current flood situation in the country?
- How many people have been affected by the floods?
- What are the impacts of the floods on the lives and livelihoods of affected populations?
- What is the damage inflicted by the floods on basic services in the affected locations?
- On what coping measures are the affected populations reliant?
- What are the current needs of the affected populations?
- Are there any ongoing support activities for affected populations?
- What interventions can be mounted by the government and partner organizations to relieve the suffering of the affected populations?



Buildings under water in Malakal

2. METHODOLOGY

To generate quantitative and qualitative information, the RRC staff involved in the assessment organized individual interviews and focus group discussions in the ten states and three administrative areas namely Central Equatoria State, Eastern Equatoria State, Western Equatoria State, Western Bahr el Ghazal State, Lakes State, Northern Bahr el Ghazal State, Warrap State, Unity State, Upper Nile State, Jonglei State, Abyei Administrative Area, Ruweng Administrative Area, and Pibor Administrative Area.

In total, there were 13 teams, of which 12 had three members each. Two members were from the RRC headquarters in Juba and one from the state or administrative area. One team had 4 members. Each team was led by an official from the RRC headquarters. The teams interviewed people using a questionnaire, and held discussions with key informants such as local RRC employees, local administrators, chiefs, and NGO staff guided by set questions. Moreover, they held focus group discussions with groups of people, including women and youth. In addition, team members collected assessment reports on the flood situation from humanitarian and development organizations. These were complemented by online reports from UN agencies and other humanitarian and development organizations. The information generated from the questionnaires was analyzed using SPSS software.

There were limitations to the assessment, including the short time to do the work, inadequate financial resources, and inaccessibility of many places due to floods or conflict.

Table 1: Names of team members and questionnaires completed

Names of Officials	Period of Visit	Counties Visited	State or Administrative Area	Questionnaires Completed
Francis Mattong Otire, Jackson Joseph Angelo, John Odongi Simon	21–27 October	Torit, Magwi, Lafon	Eastern Equatoria State	11
Kungcien Akec, Charles Babu, Satimon Ladu	24–29 October	Terekeka and Juba Counties	Central Equatoria State	42
Fr Santo Loku Waden, Francis Boroyo, Yak Riak Yak	22–28 October	Yambio County	Western Equatoria State	12
Daniel Thon Deng, Mayom Ngor, Isaac Karkon	21–27 October	Cuibet, Rumbek East, Rumbek North, Rumbek Center, Wulu	Lakes State	9
Rizik Akuma Sali, Anjelo Wani Bero, Deng Kuel Kuel	22–26 October	Aweil South, Aweil Centre, Aweil East, Aweil North, Aweil West	Northern Bahr el Ghazal State	10
Moses Bul Deng, Joseph Majok Akotdit, James Mawien, Atem Kuot	21–27 October	Jur River County Wau, County Raja County	Western Bahr el Ghazal State	20
Kerubino Kuot Aluk, Emmanuel Yanga, Santino Agany	21–28 October	Tonj North, Tonj South County, Tonj East County, Gogrial East County, Gogrial West County, Twic County	Warrap State	10
John Mayen, Lucy Kaku, Joseph Pajok	22–28 October	Bor Town	Jonglei State	11
Fr Mark Lotang-Juba, Samuel Adieng-Malak, Mathew Ngor-Juba	24–28 October	Malakal Town	Upper Nile State	10

Names of Officials	Period of Visit	Counties Visited	State or Administrative Area	Questionnaires Completed
Amos Gatkek Lam, Gordon Koang Pieny	3–7 November	Bentiu, Rubkona, Guit	Unity State	7
Charles Lopere, Angelina Deng, Kwaje Yai Kuol	3–10 November	Ramamer, Majak Ameth Agouk, Alal, Abyei Municipality, Abyei Admin Area	Abyei Admin Area	6
Ayor Maluk Kur, Chiengkou Kennedy, Gabriel Lueth Yai	22–28 November	JamJang, Aliiny, Touch, WunKur, Jau, Lake No	Ruweng Admin Area	18
Jacob Madut, Joseph Nyao, Dominic Jacob	22–28 October	Pibor Town	Pibor Admin Area	17
Total				182



3. FINDINGS AND ANALYSIS

3.1 BASIC INFORMATION ABOUT RESPONDENTS

The number of questionnaires completed accurately was 164. This section presents basic information about the 164 respondents. As Figure 1 indicates, all the states and administrative areas were covered with the lowest number of respondents in Unity State, which suffered the most severe flood devastation. In terms of gender, as shown in Figure 2, 66 percent of the respondents were males which reflects the dominant role of men in South Sudanese society. As far as age is concerned, nearly 45 percent of the respondents were between the ages 24 and 44. With regards to educational level achieved, the majority (about 41 percent) did not attend school, which was not surprising in the context of South Sudan where illiteracy is endemic.

In addition to the information generated through interviews using questionnaires, RRC officials engaged in the assessment carried out key informant and group discussions and also observed the situation in the areas visited.

Figure 1: State of residence of respondents

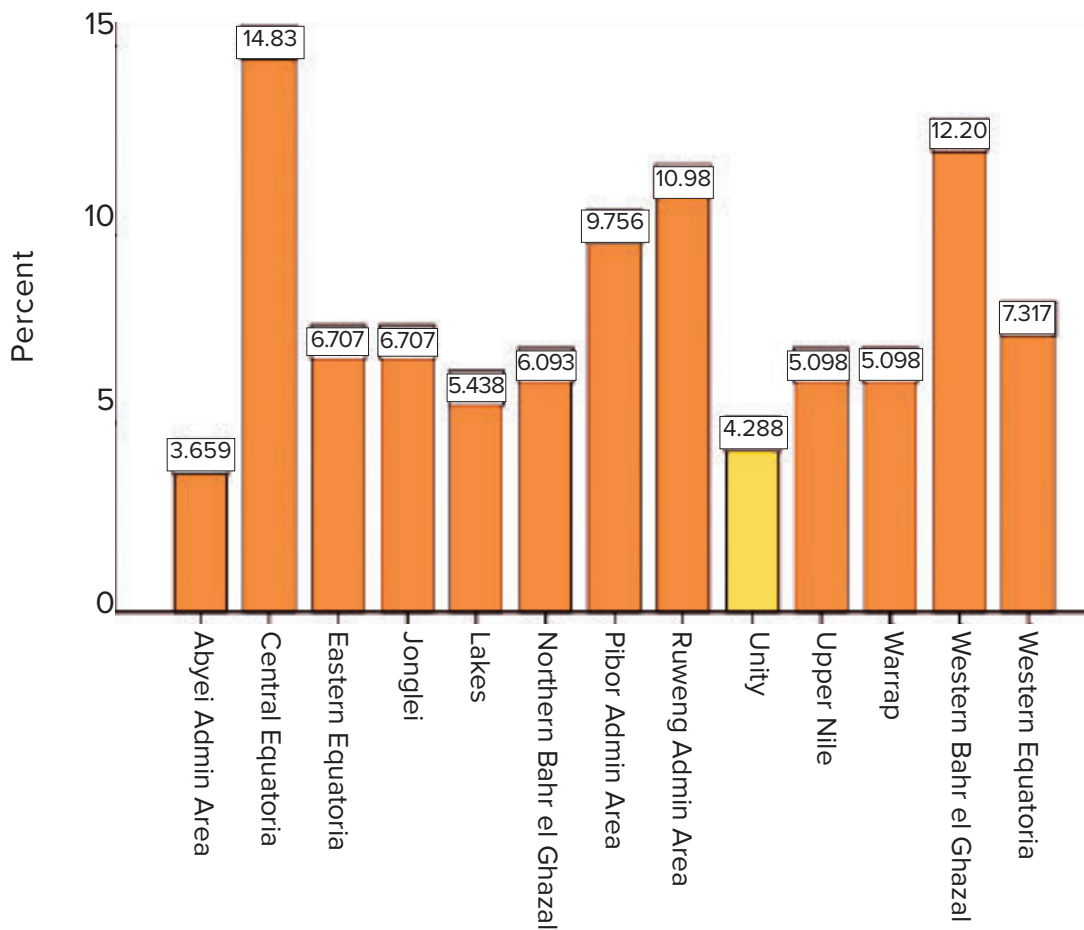
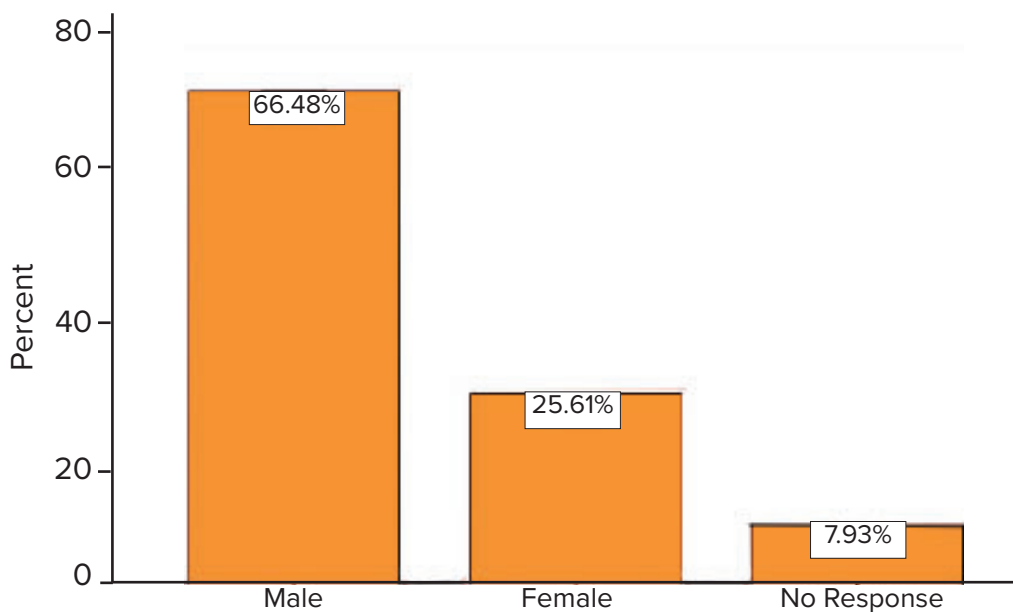


Figure 2: Gender of respondents



3.2 SEVERITY OF FLOODS

Since 2017, floods have caused the death of people and animals, displaced people from their home areas, and damaged basic infrastructures such as schools, health facilities, roads, and bridges. All contribute to major setbacks in development efforts that have so far been achieved since the country gained independence.

People interviewed for this assessment consistently complained about the increasing severity of the floods and their impacts on people. According to Figure 3, out of 164 people interviewed, about 96 percent stated that their areas had been affected by floods; and according to Figure 4, about 90 percent of the respondents felt that the magnitude of the floods was very high, and according to Figure 5, about 80 percent of the respondents perceived the current floods to be the worst in comparison to past floods.

Figure 3: Floods In the area

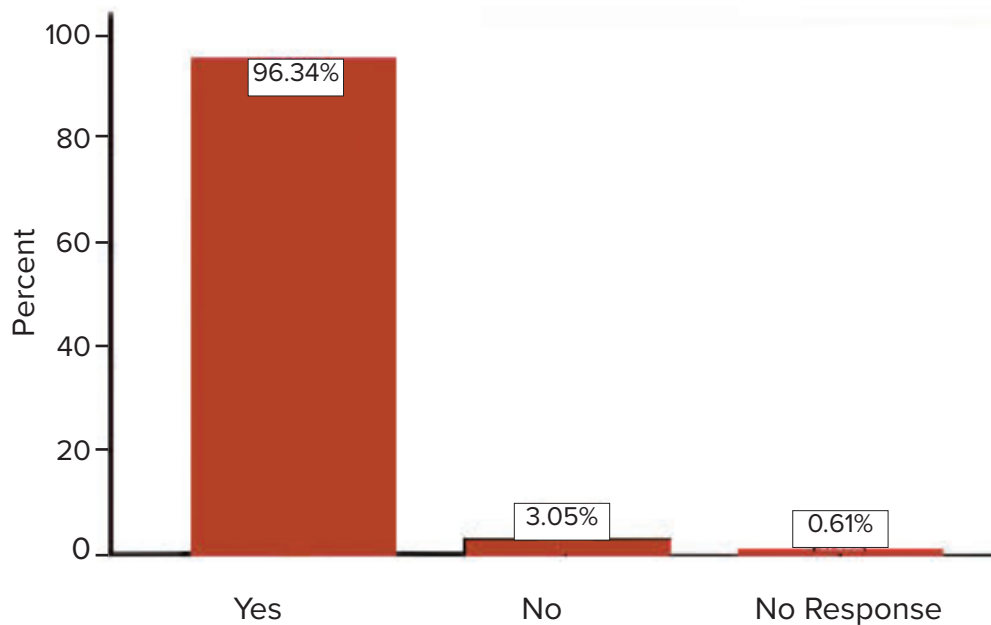


Figure 4: Magnitude of floods

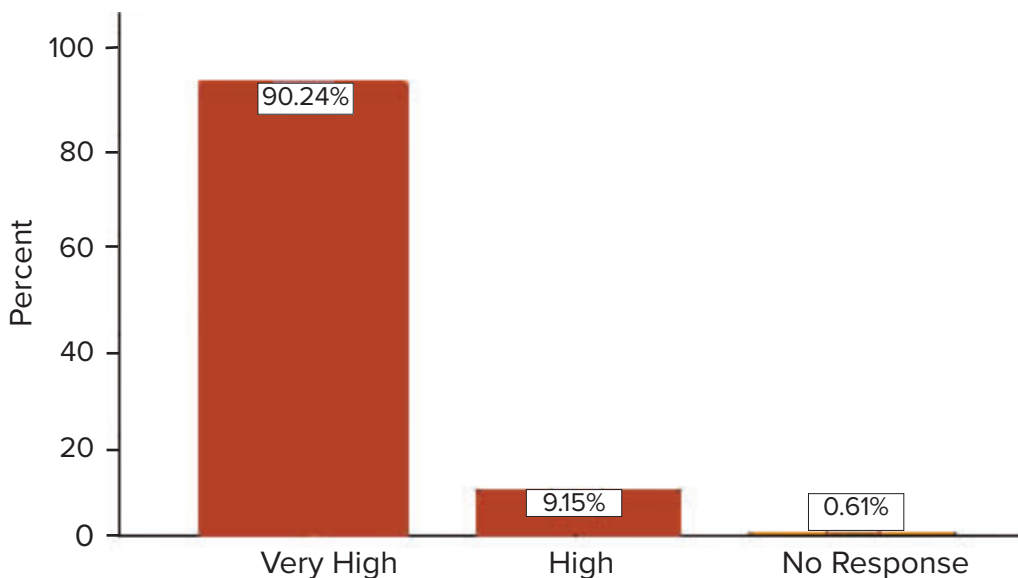
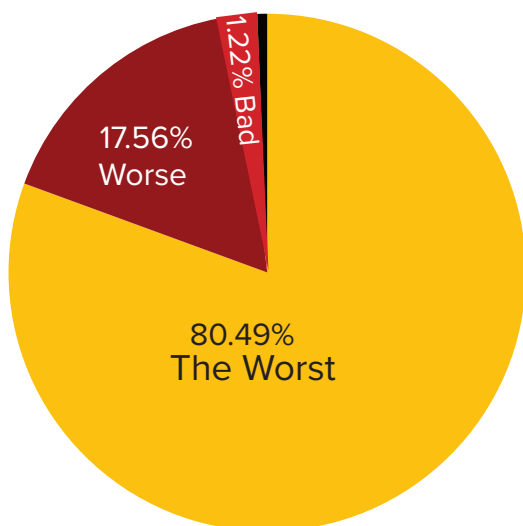


Figure 5: Current floods compared to previous floods



Key informants and groups of local people also echoed the same feeling about the increasing severity of floods. In Northern Bahr el Ghazal, one of the worst affected states, local people reported that the current floods were a total disaster, which could not be compared to floods of recent years except for those that devastated the region decades ago.

With regards to impact on individuals, Table 2 shows that 1,981,036 people had been affected by the floods and that the worst affected states included Northern Bahr el Ghazal, Warrap, and Unity State.

Table 2: Number of flood-affected people per state and administrative area

State or Administrative Area	Affected People	Affected Households	Remarks
Eastern Equatoria	85,350	14,225	Magwi, Lafon and Torit are affected.
Central Equatoria	84,282	14,047	Juba County 41,025 and Terekeka 43,257 (8,958 HHs).
Western Equatoria	111,878	18,646	Ibba, Mundri East, Mundri West, and Mvolo are affected.
Lakes	196,075	39,220	Rumbek East, Rumbek Centre, Wulu, Rumbek North, Cuitbet, Yirol West, Yirol East, Awerial counties affected.
Northern Bahr el Ghazal	451,722	75,287	5 counties affected.
Western Bahr el Ghazal	177,850	39,641	All 3 counties are affected.
Warrap	380,004	39,088	All 6 counties (Tonj South, Tonj East, Tonj North, Gogrial East, Gogrial West and Twic) affected.
Jonglei	406,021	64,606	4 counties (Bor, Twic East, Duk and Pigi) out of the 12 counties are most affected.
Upper Nile	151,562	25,260	8 counties out of 13 are affected.
Unity	422,160	67,301	All 7 counties and headquarters are affected, 5 cut off from Bentiu town.
Abyei Admin Area	141,719	23,620	All 5 counties are affected.
Ruweng Admin Area	14,001	2,334	October 2022 inter-agency assessment.
Pibor Admin Area	10,336	1,879	Displaced persons from all 7 counties with 4 counties seriously affected.
Total	2,632,960	425,154	

3.3 IMPACTS OF FLOODS

3.3.1 Deaths, Injuries and Personal Property Losses

The floods caused deaths of individuals and injuries as well as huge loss of property including livestock and crops.

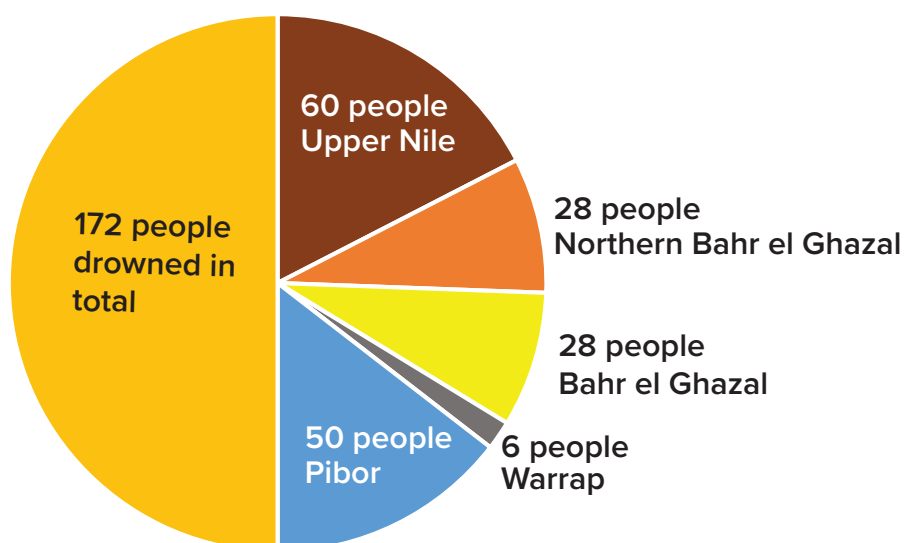
3.3.1.1 Human deaths and injuries

Some people drowned or died in floodwater, or were injured by collapsed houses. Others were bitten by poisonous snakes or crocodiles. Some people likely died after suffering from waterborne diseases especially malaria or diarrhea. Expectedly, the most vulnerable individuals were the most affected, including lactating and pregnant women, children, the elderly, and the disabled.

About 77 percent of respondents said 'yes' when asked whether any person had drowned in their area. When asked about the number of those who had drowned, about 13 percent said between six and seven people, and 17 percent stated that over eight people had drowned.

Discussions with key informants and groups of local people revealed more information about the challenge of people drowning due to floods. Local officials and ordinary people said that 60 people drowned in Upper Nile, 28 in Northern Bahr el Ghazal, 28 people in Bahr el Ghazal, 6 people in Warrap, and 50 people in Pibor (Figure 6).

Figure 6: Number of people drowned in their area



Snakes and crocodile attacks also posed a significant threat to people. In Figure 7, about 88 percent of respondents agreed that people had been bitten by snakes; and, as shown in Figure 8, 16 percent of respondents said that the number of deaths ranged from 16 to 20 people, and 24 percent said that the number was between 21 and 25 people.

During discussions with key informants and groups of local people, the challenge posed by snakes was reported to be very serious. In Malakal, local people reported that 49 people had been bitten by snakes, out of which six died and 43 survived with injuries; in Eastern Equatoria, 17 people had been bitten by snakes, out of which four died; in Western Bahr el Ghazal, 124 were reportedly bitten; in Unity, 195 people were bitten, out of which 45 died, 118 healed, and 32 had not recovered; and in Lakes, 64 suffered snake bites, out of which five died.

Figure 7: The number of snake bites

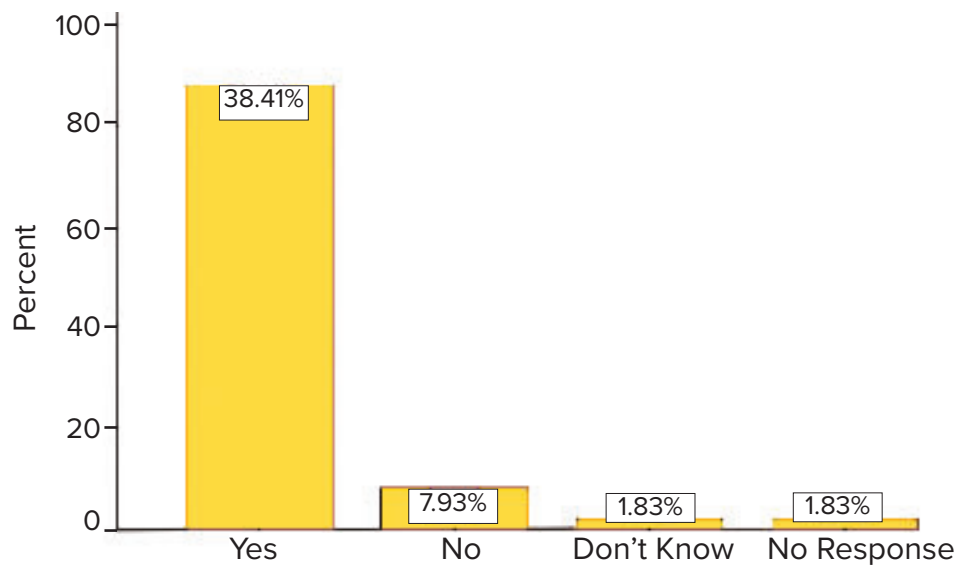
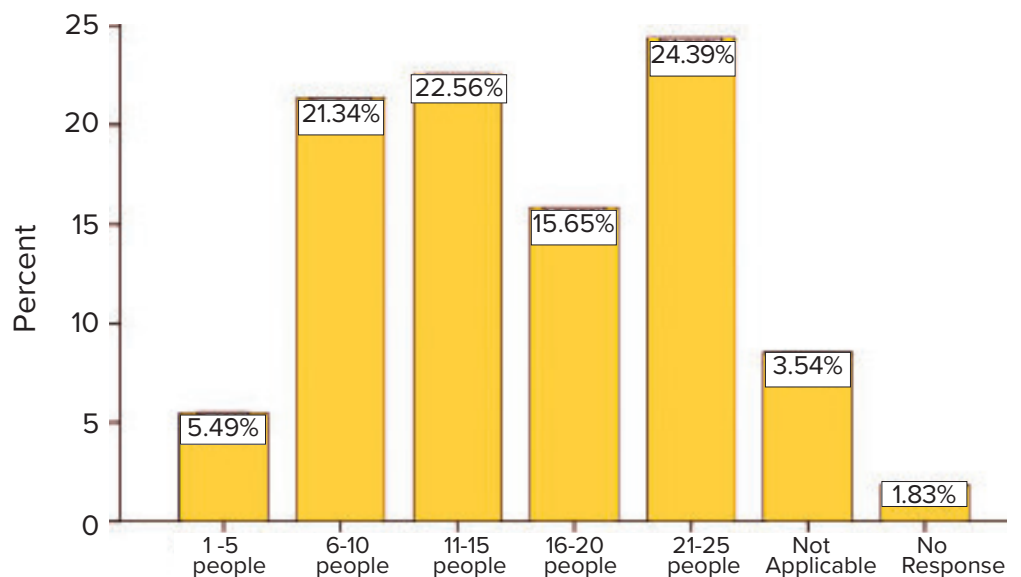


Figure 8: People who died due to snake bites



3.3.1.2 Shelters or houses destroyed

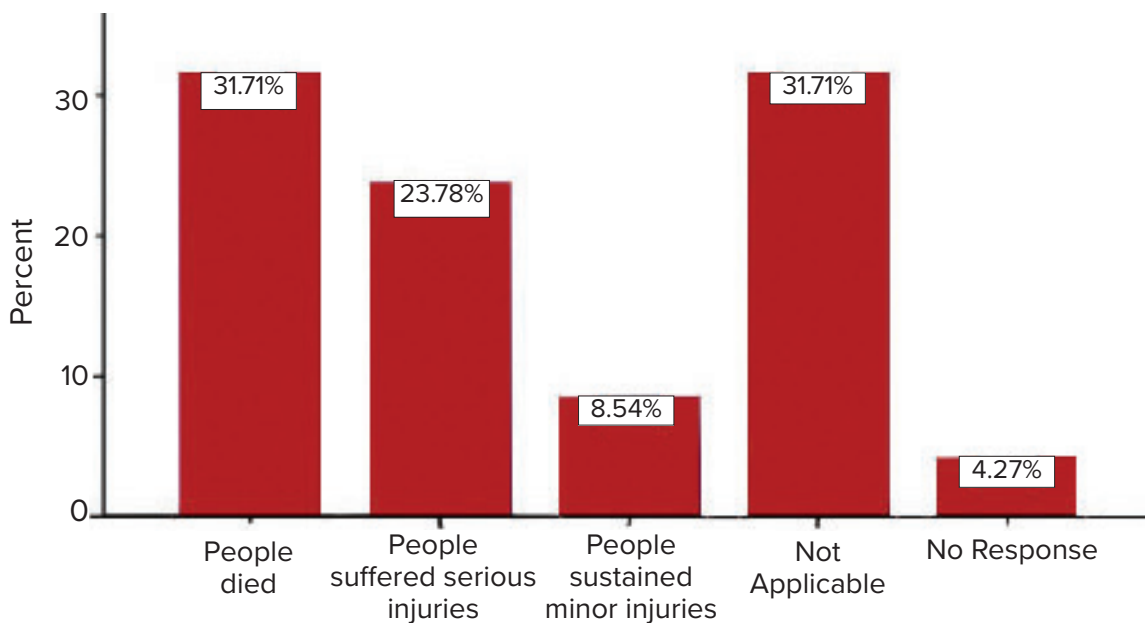
The floods destroyed houses, forcing some people to stay in the open or find safety in homes of relatives or friends, and so social capital played a big role. About 95 percent of the respondents stated that shelters were destroyed; 66 percent of the respondents said people had been harmed by shelters collapsing or being destroyed; and as shown in Figure 9, 55 percent of respondents said people died or sustained injuries due to shelter destruction.

Discussions with key informants and groups of local people indicate that in Northern Bahr el Ghazal, 58,409 houses collapsed affecting 351,654 people. In Western Bahr el Ghazal, 15,000 houses collapsed, killing or injuring some people. Damage to houses in the other affected states and administrative areas was likely substantial as well.

3.3.1.3 Other property losses

Losses due to destruction of household properties, such as utensils and stored food items, was also huge.

Figure 9: Extent of harm due to shelter collapse



3.3.2 Displacements

One of the major impacts of the floods was the displacement of people. Often times, the displacement overlapped with displacement caused by conflict as will be discussed later. In Figure 10, 89 percent of respondents revealed that displacement had occurred in their areas; and, according to Figure 11, 76 percent of respondents contended that there was much displacement in their areas.

Figure 10: Displacement of respondents

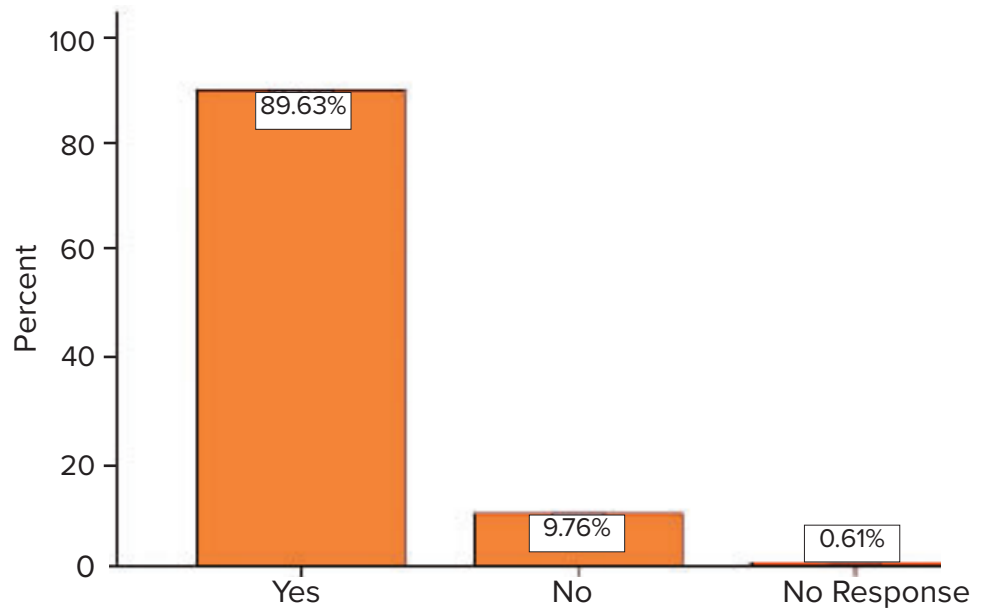
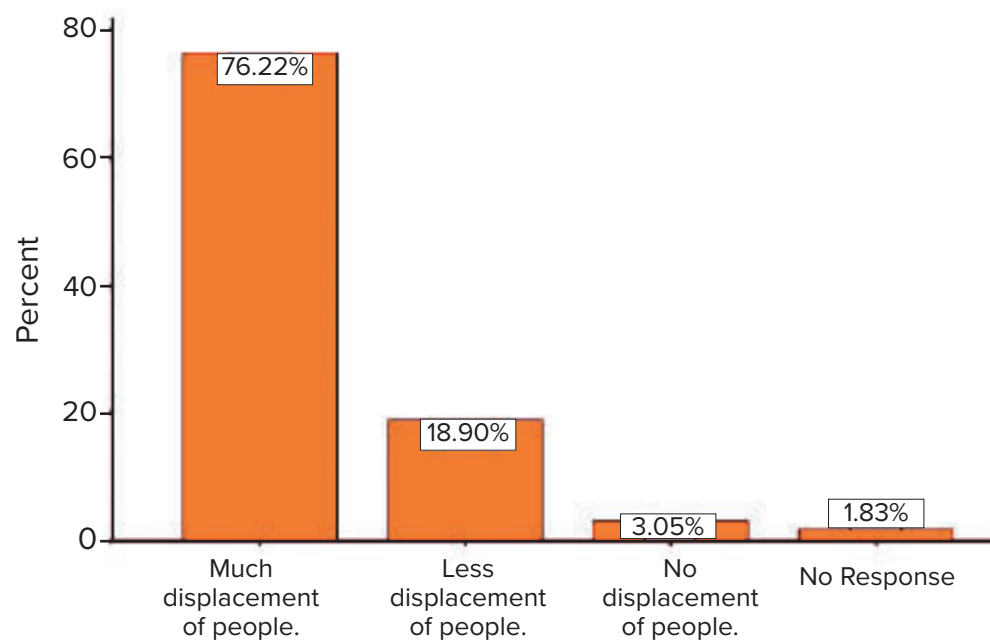


Figure 11: Magnitude of displacement from the area



As stated earlier, in some places the flood-induced displacements compounded displacement due to conflicts. For example, in the Shilluk or Chollo Kingdom in Upper Nile, the floods occurred after clashes involving armed groups, which had forced many people to leave their homes. According to the commissioner of Panyikang County, who was interviewed in the town of Malakal, fighting involving the factions of the Aguelek forces under Gen Johnson Olony and Gen Gatwech caused massive displacement. Of the estimated 72,890 people (*NBS Population Progression for 2015-2020*), it was estimated that only 27,000 remained in the county, out of which between 20,000 and 21,000 were targeted for assistance in Owaci and Malakal PoC.

The Commissioner of Malakal County also said that conflict and floods had affected people. Out of the original population of 203,161, 35,000 were affected by both conflict and floods, he estimated. He added that in the most recent fighting between the armed factions, 460 houses were reportedly burnt down.

The team that travelled to Upper Nile conducted interviews among Danger Shufu Catholic Church/Daniel Comboni, South Payam, where 1,825 IDPs (550 households) from Fangak were temporarily sheltered and 7,136 (931 households) in Malakal-Fire Brigade Site, North payam of Malakal town. Here, the team only saw water sources but not latrines and so IDPs practiced open defecation around the site.

In Warrap, 6,514 households were displaced due to floods and 7,500 were displaced due to the Anet/Abyei fighting. Meanwhile, in Pibor, 10,336 (1,879 households) were displaced from their homes. Also, in Lakes, 99,080 (19,816 households) were displaced, plus 4,260 (852 households) affected; and 2,390 (478 households) were displaced from Unity State (Mayendit).

Discussions with local people also indicated there has been a huge displacements of people from the other flood-affected states and administrative areas.

3.3.3 Livelihood Disruptions

3.3.3.1 Animal deaths and health issues

According to Figure 12, 77 percent of respondents asserted that animals died, grazing areas were submerged under floodwater, and also suffered other flood-related problems. When asked about the number of animals lost, about 13 percent of respondents mentioned 41 to 50 cattle or goats and sheep died, and 38 percent said 51 or more animals were lost (Figure 13).

Figure 12: Impact of the floods on animals

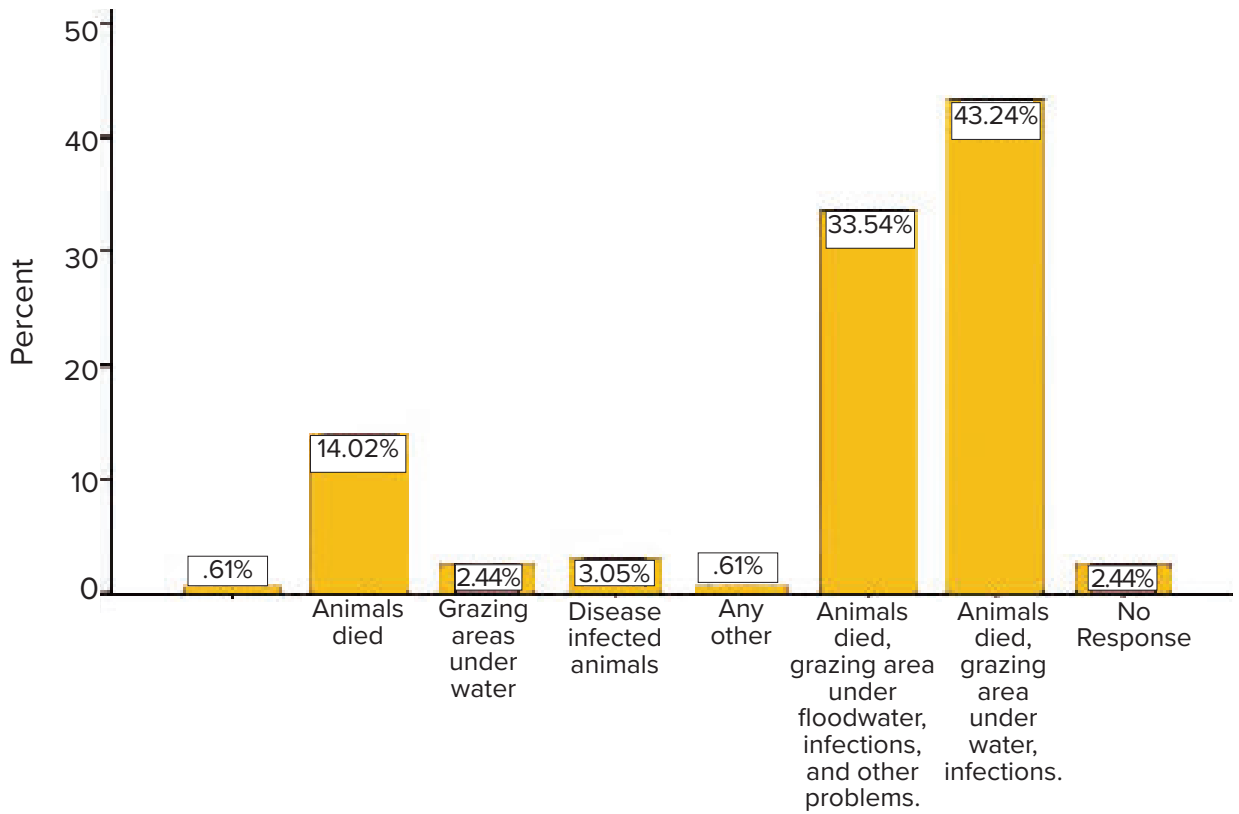
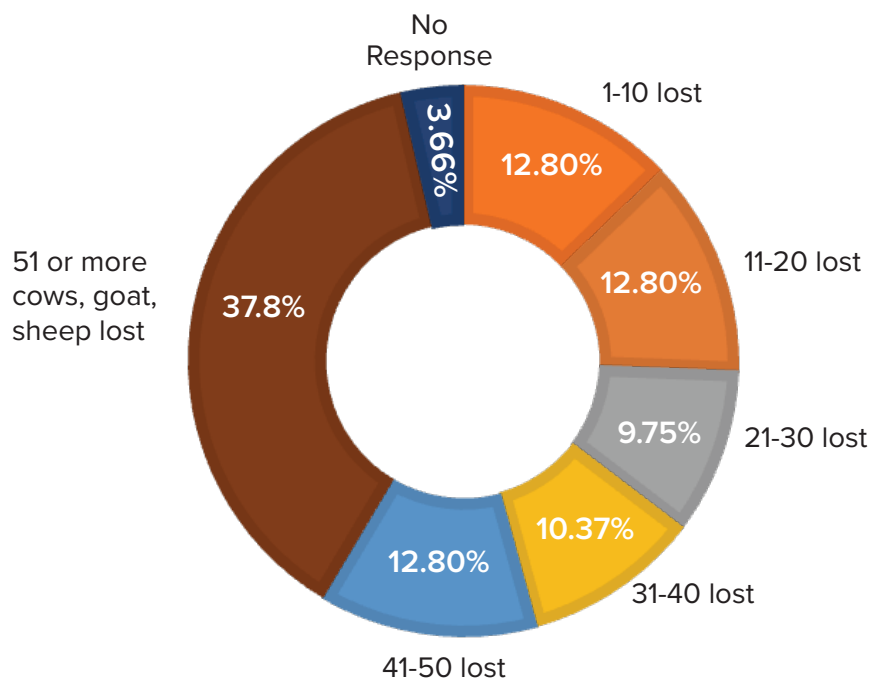


Figure 13: Number of livestock (cows, goat, sheep) lost



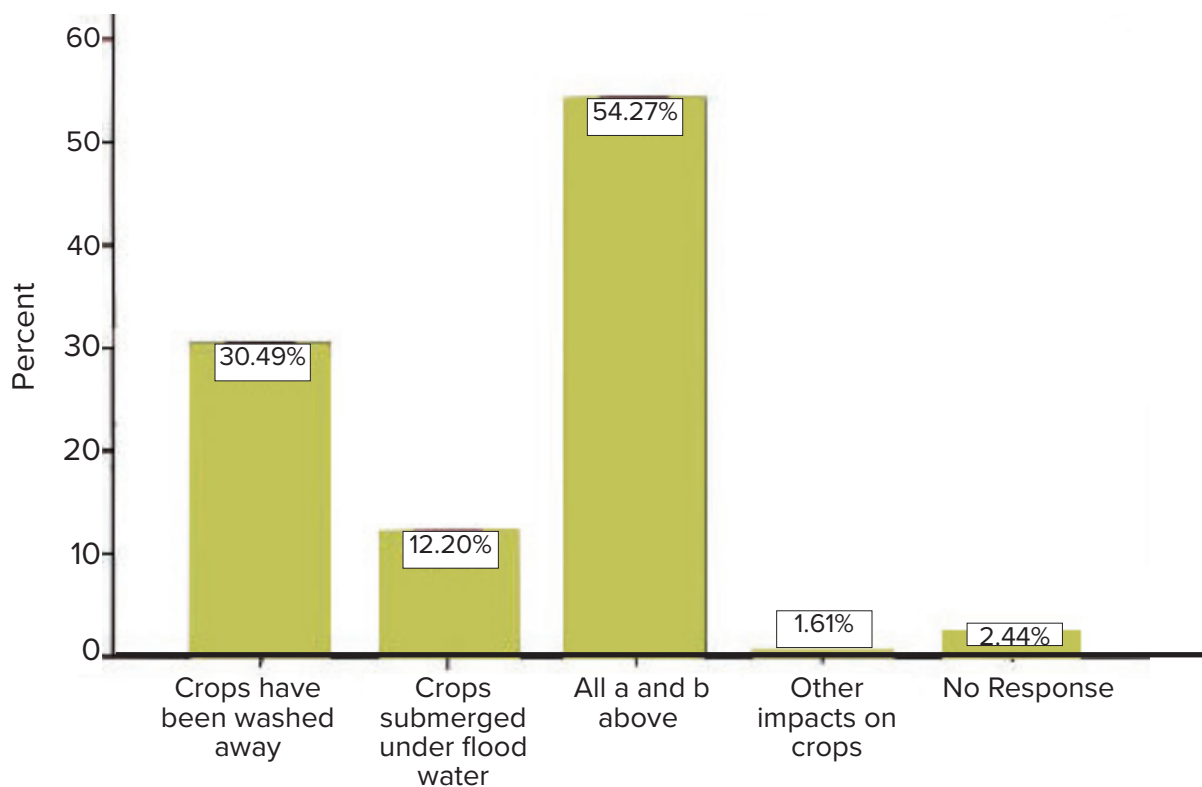
During discussions with key informants and groups of local people, it was evident that the loss of animals due to floods was huge. In Upper Nile, reportedly around 391 heads of cattle died; in Northern Bahr el Ghazal, 133 cattle drown as well as 211 sheep and goats; in Western Bahr el Ghazal, 10,000 cattle and 1,000 sheep and goats died due to diseases linked to floods; in Pibor, 100 cattle and 200 sheep and goats died due to floods or diseases; in Unity, seven persons counted their losses as 87 cattle died, 359 goats and sheep died; in Lakes, 745,624 cattle were affected, out of which 2,160 died, and 928,328 sheep affected, out of which 3,890 died and 874,018 affected goats, out of which 7,896 died; and in Terekeka in Central Equatoria, 1,234 livestock in cattle camps reportedly died.

3.3.3.2 Crop losses

A major challenge to ordinary people affected by floods was loss of crops on which families depended, leaving them in precarious circumstances. Figure 14 below indicates that about 55 percent of respondents had crops washed away or submerged under water.

Discussions with key informants and groups of ordinary people revealed that in Northern Bahr el Ghazal, 123,000 feddans were destroyed, impacting the livelihoods of 82,000 people; and in Terekeka in Central Equatoria, 9,788 feddans were flooded and crop was submerged, leading to total crop failure. This caused a rise in prices of food and other items in the market.

Figure 14: Crop losses



3.3.3.3 Market disruptions

Markets in the flood-affected areas were impacted to varying degrees. When respondents were asked whether goods were sold or bought (exchanged), about 57 percent answered yes; and when asked about the condition of markets, 54 percent replied that they were very bad as shown in Figure 15. Moreover, increases in prices were often a concern, as seen in Figure 16, 92 percent of respondents perceived prices as very high. Those owning shops also struggled: 35 percent of respondents said that shops were open but goods were not coming in, 21 percent said it was difficult to get goods, 7 percent asserted that customers had no or little money, and 24 percent said shop was closed.

Figure 15: Condition of markets In the area

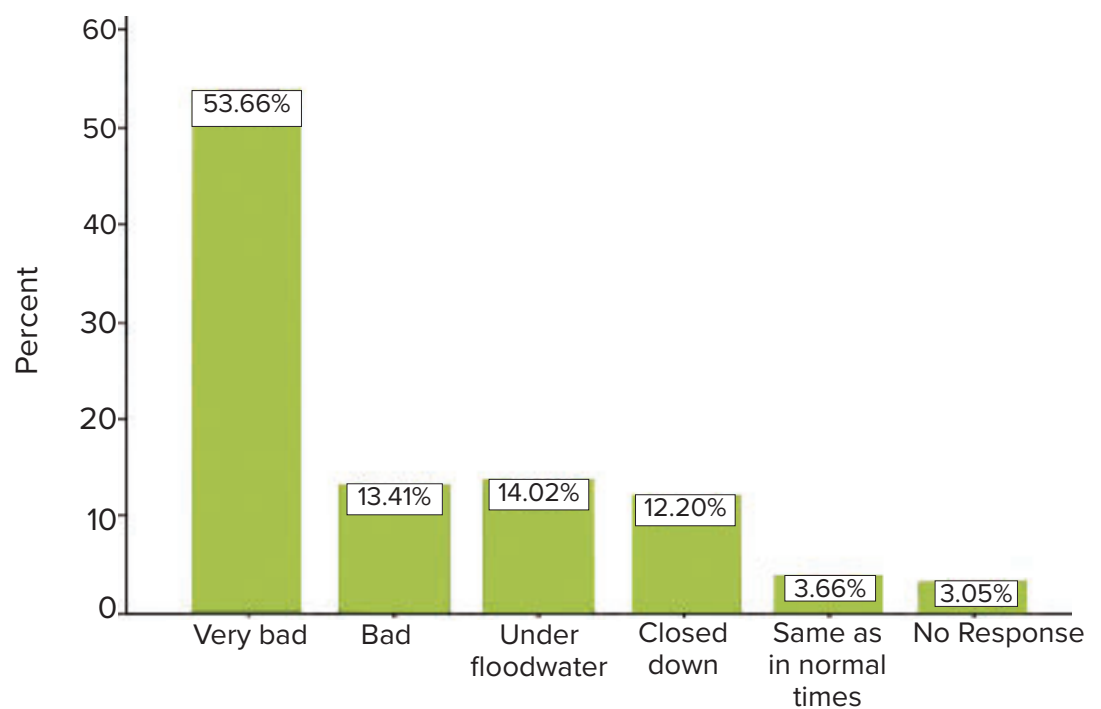
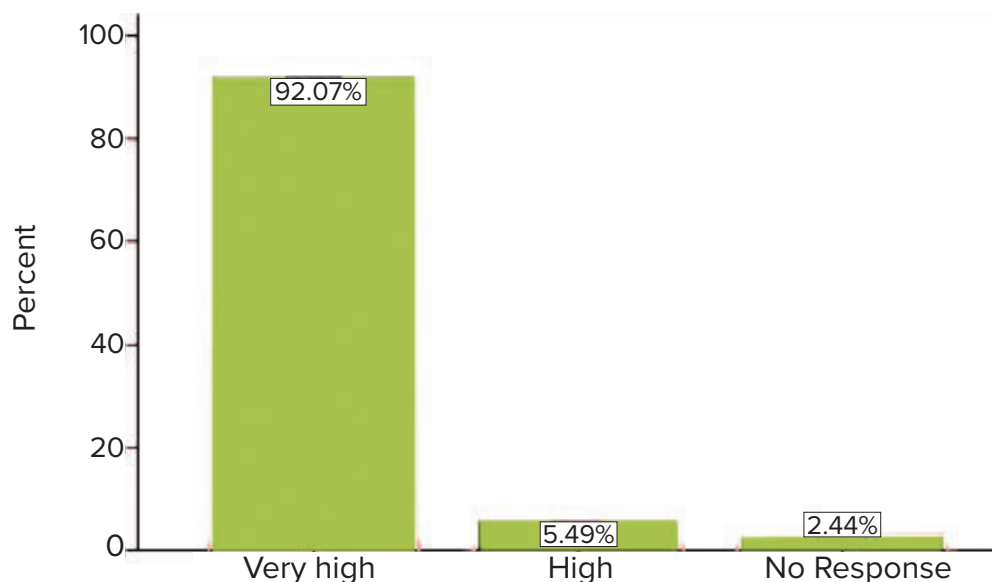


Figure 16: Prices in the area



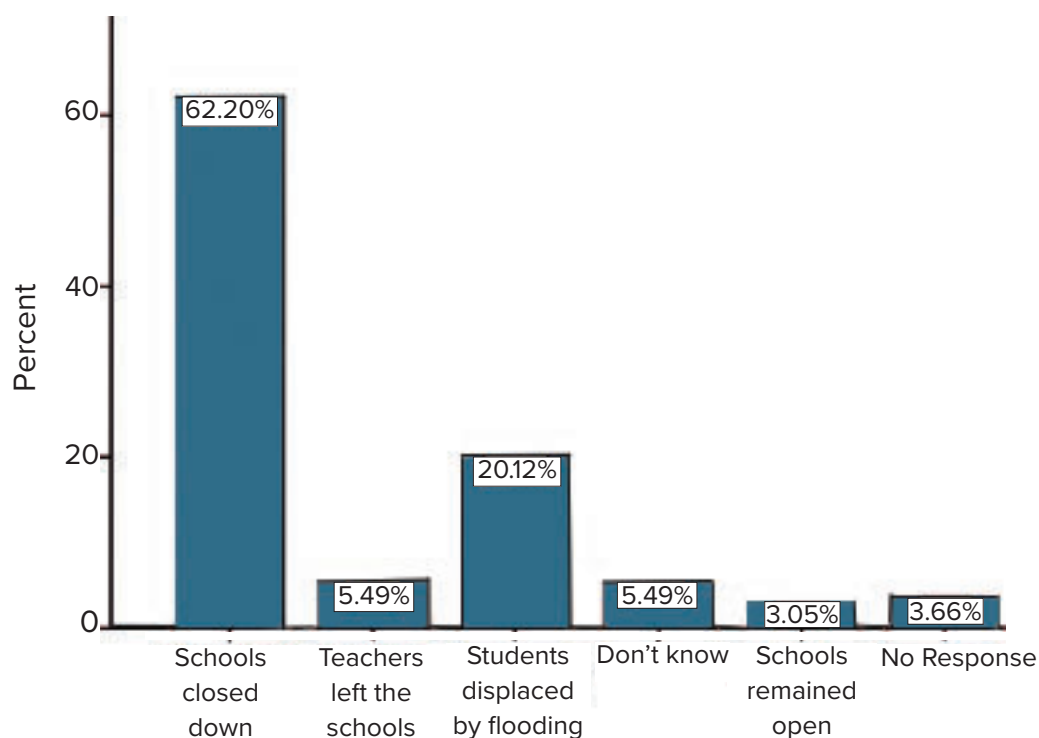
3.3.4 Infrastructures Damage

3.3.4.1 Schools

The education sector sustained enormous damage during the floods from which it will take a long time to recover. As evident in Figure 17, about 62 percent of respondents stated that schools closed down during the floods, 5 percent said teachers left the schools, and 20 percent said learners were displaced.

Discussions with key informants and groups of ordinary people shed more light on the impacts of the floods on education. For example, in Upper Nile, it was reported that 13 schools were submerged, or completely or partially collapsed. In Warrap, 5,171 learners (2,427 boys and 2,744 girls) were affected by floods, and the schools operating under trees closed down. Moreover, high rates of absenteeism were reported, especially in classes 1 and 2 due to fear of drowning and snakes. In addition, it was reported that learning materials such as textbooks were destroyed during the floods. Out of 66 schools in Terekeka County and Central Equatoria State, only 19 were benefitting from school feeding programs, resulting in a negative affect on learning. Moreover, schools in cattle camps were reportedly forced to relocate, which compelled children from pastoralist families to miss out on continued education.

Figure 17: Impact of floods on schools



3.3.4.2 Healthcare facilities

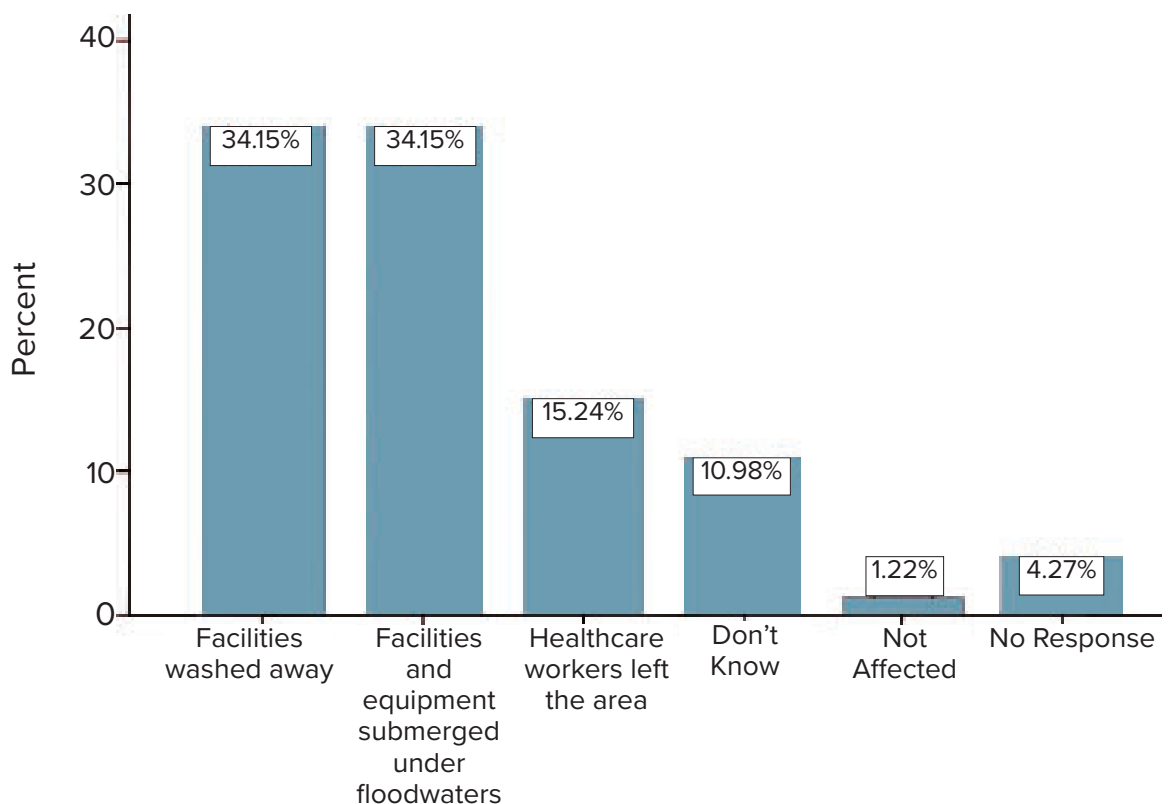
The floods exerted substantial negative impact on health care with some facilities washed away by floodwater or submerged. As shown in Figure 18, about 34 percent of respondents said health facilities had been washed away, 34 percent said health facilities and equipment had been submerged under floodwater, and 15 percent mentioned that health workers had deserted centres or units due to floods.

Discussions with key informants and groups of ordinary people provided more details on the repercussions of the floods for health care delivery. For example, in Upper Nile, it was reported that seven health care units had been submerged and totally or partially collapsed.

3.3.4.3 Water and Sanitation facilities

The provision of water and sanitation services was impaired during the floods. Figure 19 shows the perceptions of people on sources of water and sanitation provision before the floods, with about 30 percent mentioned river as the source of water, 14 percent mentioned stream, 49 percent borehole. However, this changed during the floods, as shown in Figure 20, with only 24 percent of respondents indicating that borehole was the source of water, and 63 percent saying source of water was floodwater. About 70 percent of respondents confirmed that during the floods their main source of water as a household had changed.

Figure 18: Impact of floods on health care



Reliance on standing floodwater had serious health implications. This was a suitable environment for mosquitoes to breed, increasing the risk of spread of malaria disease. Moreover, defecation in the open or in floodwater increased the risk of waterborne diseases, especially diarrhea. When asked about diarrhea infection of a family member, about 97 percent reported that this happened.

Figure 19: Drinking water sources before floods

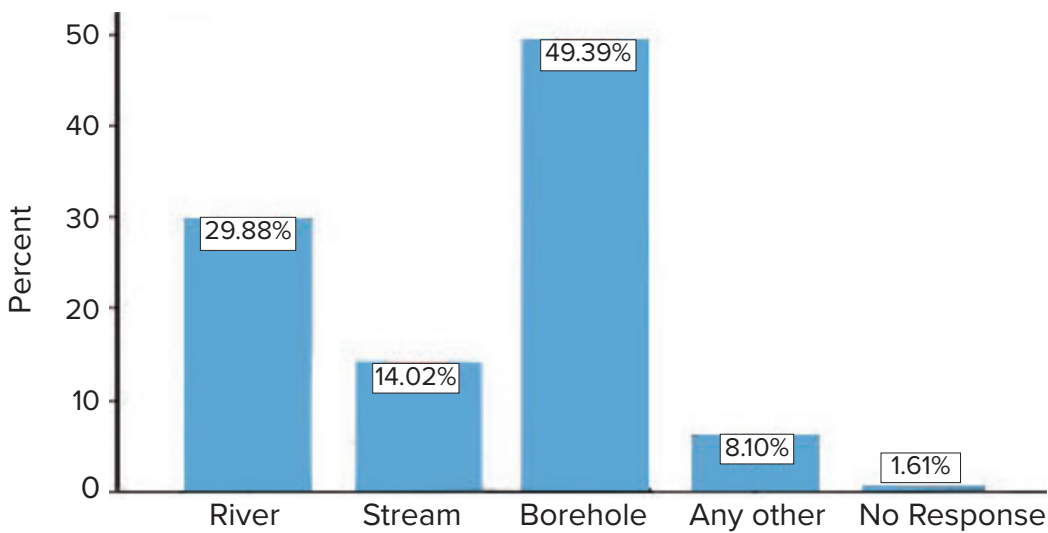
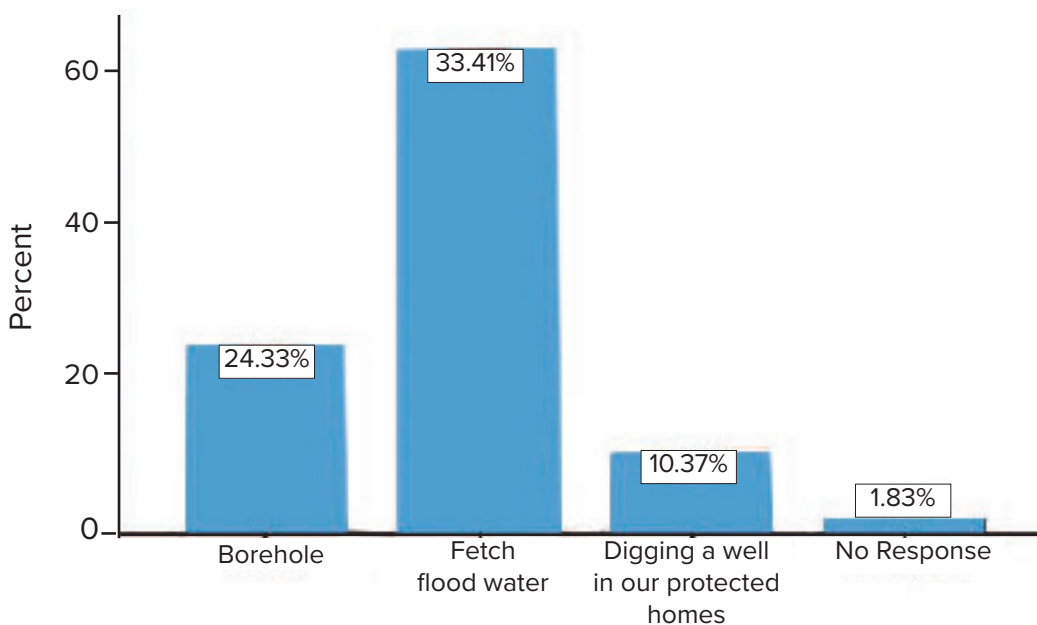


Figure 20: Drinking water sources during floods

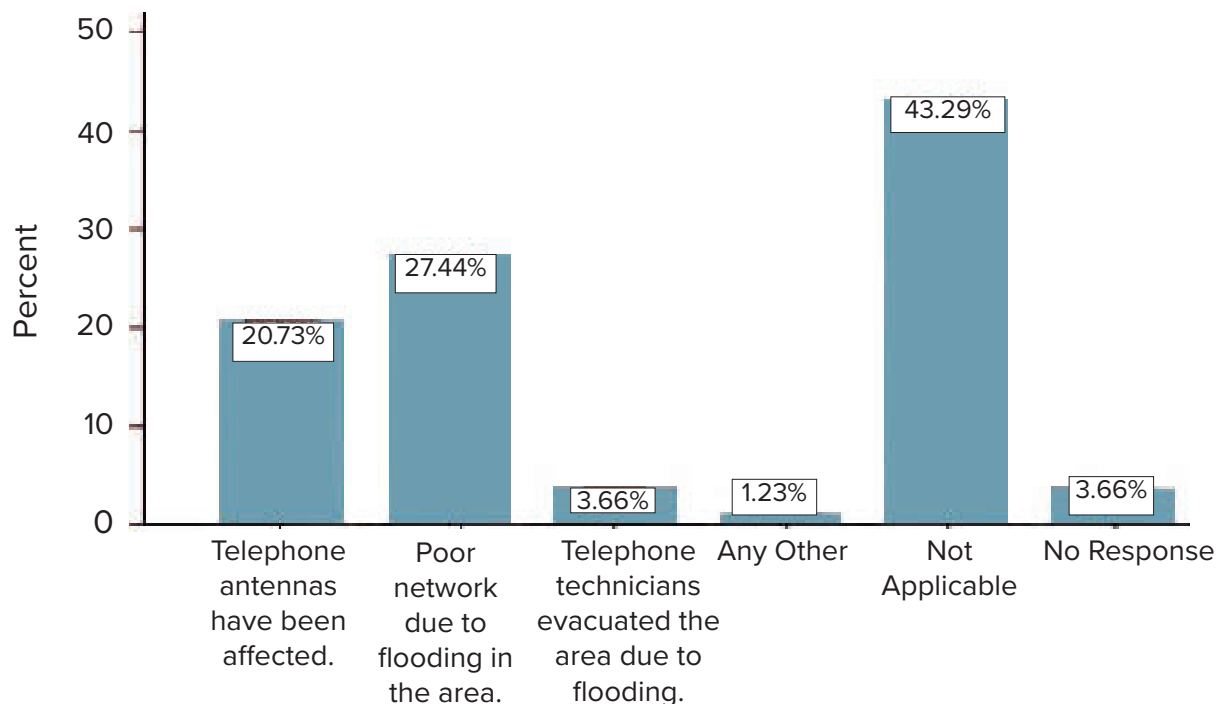


3.3.4.4 Roads, bridges, and communication facilities

The flood waters damaged roads, bridges, and communication infrastructure. For example, five out of the seven counties in Unity State had been cut off from Bentiu town because roads were made unusable due to floodwater. The bridge on the road connecting Wau and Raga was damaged which meant the two areas were disconnected.

When asked whether floods had an impact on transportation, 35 percent of respondents said yes. According to Figure 21, 21 percent of respondents stated that telephone antennas had been affected, 27 percent said telephone network connectivity was poor, and 4 percent talked about technicians leaving their workplaces.

Figure 21: Type of impact of floods on communication systems





In this dire situation, the affected people had to adopt desperate measures to cope and to use whatever assistance was provided.

Most of their needs remained unmet.

4. COPING MEASURES, ONGOING ASSISTANCE, AND NEEDS

In this dire situation, the affected people had to adopt desperate measures to cope and to use whatever assistance was provided by humanitarian organizations. However, most of their needs remained unmet.

4.1 COPING MEASURES

The affected people adopted several coping measures including:

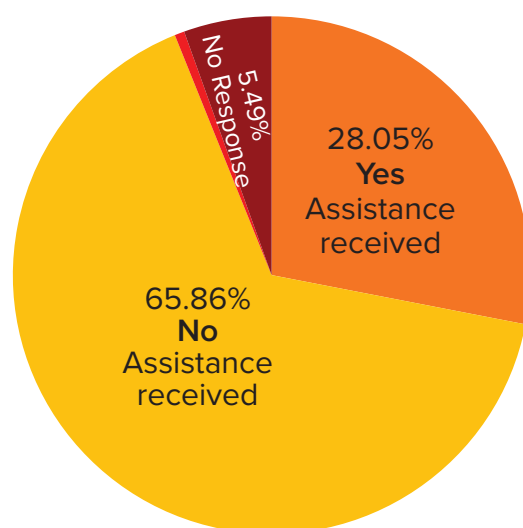
- ◆ Relocating to higher grounds or occupying public buildings and compounds such as school premises.
- ◆ Support of kin and friends—relying on social capital.
- ◆ Fishing.
- ◆ Eating wild fruits and leaves (agok) or water lilies.
- ◆ Selling livestock.

4.2 ASSISTANCE RECEIVED

The Government of South Sudan is keen to support the flood-affected individuals. In October, the Ministry of Humanitarian Affairs and Disaster Management reportedly purchased 20 million US dollars worth of sorghum from Sudan, provided by the national government⁸. For example, in Upper Nile, food and non-food items (NFIs) were distributed to most vulnerable people in addition to cash of 40,000 South Sudanese pounds per household. In general, however, the respondents in the field complained about lack of support. As Figure 22 shows, nearly 66 percent of the respondents said that they had not received any humanitarian assistance; when asked about the source of any assistance received, 11 percent responded national NGOs, and 10 percent stated International Humanitarian Organizations, as shown in Figure 23.

Regarding flood awareness activities, not much was done. Only 30 percent of respondents stated that awareness on flood management was received by the flood-affected communities; according to Figure 24, 17 percent of respondents said that the government was the source of the awareness activities; and Figure 25, 17 percent of respondents specifically pointed out that the state government was the main source of the awareness activities. Therefore, the ongoing awareness on flood management has been mainly carried out by public authorities at the State level. With respect to the effectiveness of awareness activities, only 26 percent of the respondents confirmed that they were helpful, as shown on Figure 26.

Figure 22: If assistance received



8. Jildo, Adia (2022) 'Government procures food for vulnerable flood victims' No. 1 Citizen Volume 003 Issue No. 705 Wednesday, November 2.

Figure 23: Source of assistance

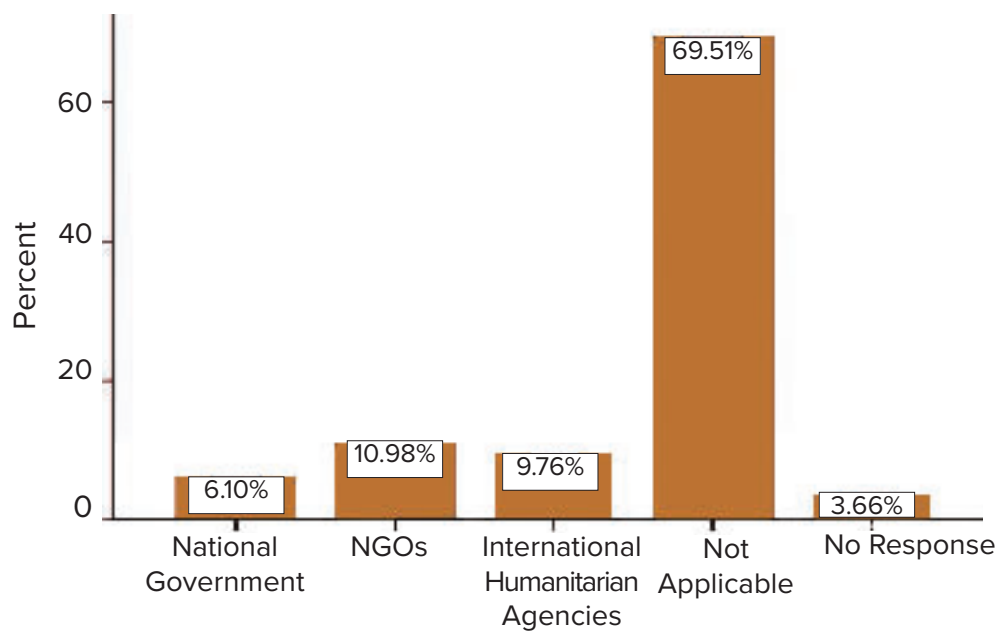


Figure 24: Awareness provider, if received

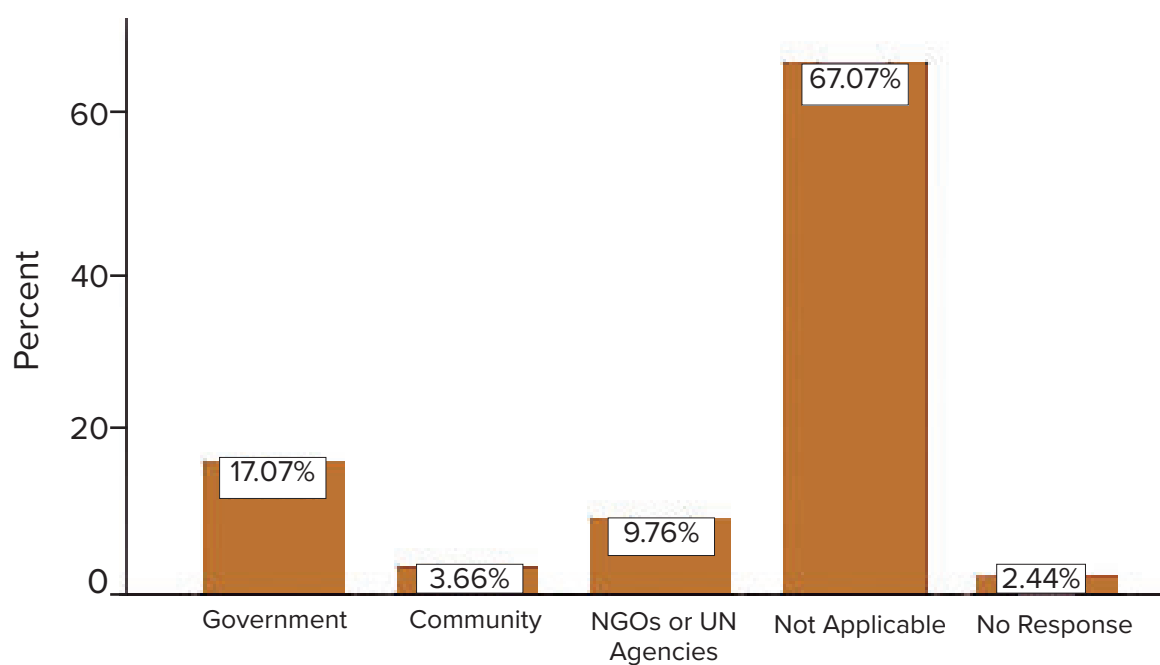


Figure 25: Level of government providing awareness

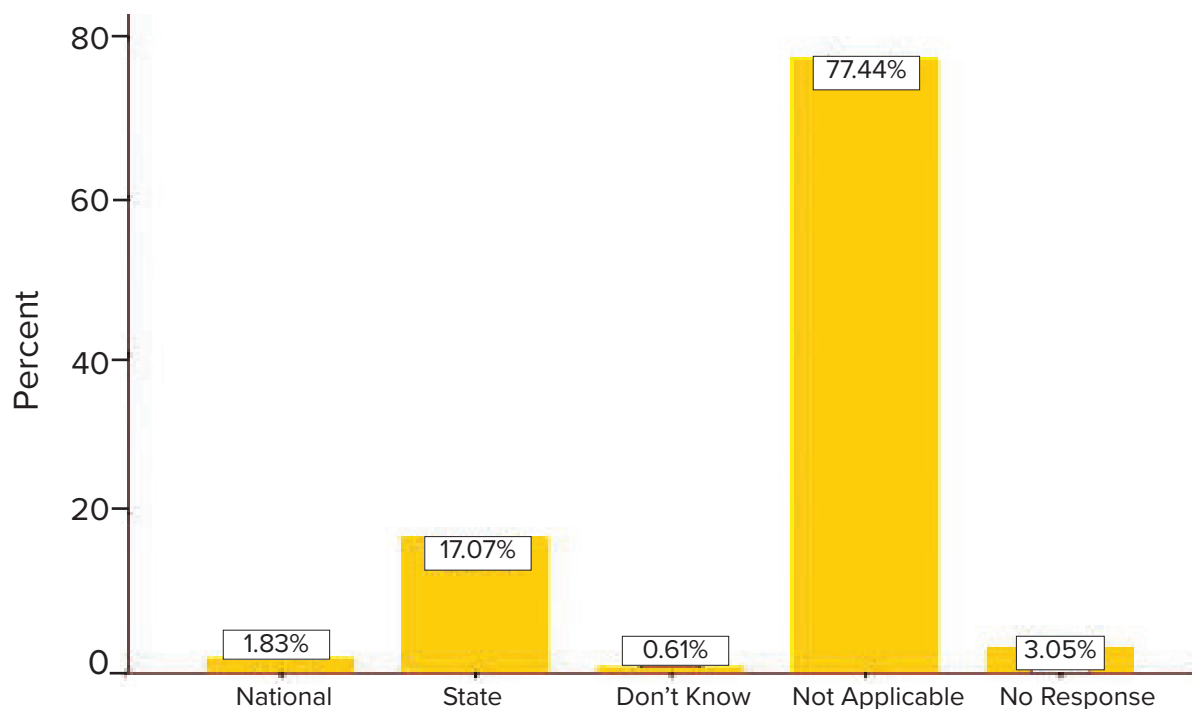
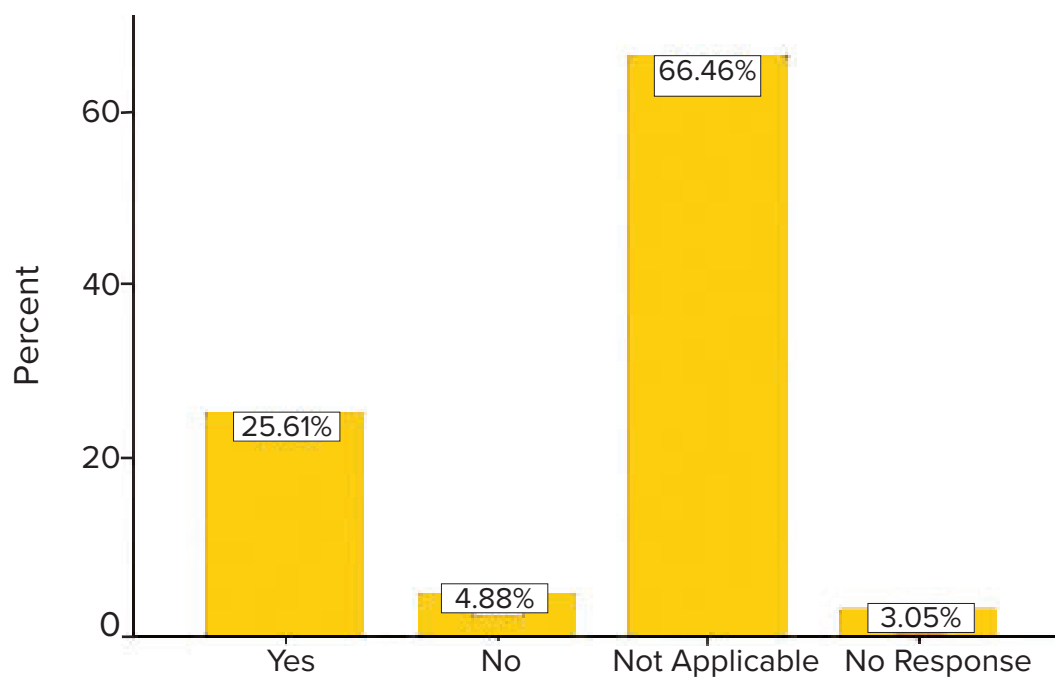


Figure 26: Whether the awareness provided was effective or helpful



4.3 NEEDS

Considering the significant number of needs, it is essential for the government and for humanitarian, development, and peace partners to mount a substantial emergency response and other support activities as follows:

Immediate humanitarian assistance:

- ◆ Food supplies should be delivered to all in need especially those displaced from their homes;
- ◆ Non-food items need to be provided as the flood-affected people lost most of their personal properties, including emergency shelter materials, plastic sheets, cooking sets, and mosquito nets;
- ◆ Healthcare services such as human and animal drugs;
- ◆ Water and sanitation services including clean drinking water and support with latrines construction;
- ◆ Educational assistance including provision of temporary learning centres and scholastic materials; and
- ◆ Provision of fishing nets and gear.

Recovery assistance

There is also a need to provide support to promote economic recovery of affected areas, including supply of agricultural tools and seeds to farmers as well as assisting those who lost all animals to restock.

Long term development assistance and peace support

There is a need to construct and maintain roads and bridges as some areas have been cut off, affecting the movement of people and goods. Also, schools, boreholes, health care centres and units, and other basic services require repair or building. Moreover, peacebuilding, reconciliation and healing have to be prioritized since without peace it is difficult to achieve other priorities.



Crop under water in Terekeka

The results of the assessments reveal that 2,632,960 people in all ten states and administrative areas have been affected by the floods.

The impact of the floods was catastrophic.

People drowned and others were injured. The floods also had enormous impact on livelihoods.

5. CONCLUSION AND RECOMMENDATIONS

This section presents the conclusion and recommendations of the rapid assessment conducted throughout the country.

5.1 CONCLUSION

From the end of October and beginning of November 2022, officials from the RRC conducted a rapid assessment of the flood situation in the ten states and three administrative areas of the country. The assessments aimed mainly to ascertain the gravity of the situation, impacts, needs of the affected populations, and possible interventions. The teams of RRC officials used a questionnaire to collect information from individuals, conducted discussions with key informants and groups of ordinary people, and observed the situation in the different areas visited.

The results of the assessments revealed that about 2,632,960 people in all the ten states and administrative areas had been affected by the floods. About 96 percent of the respondents (164 individuals) said that the magnitude of the floods was very high, and about 80 percent of respondents said they were the worst.

The impact of the floods was catastrophic. Some people drowned and others were injured. Snake bites and attacks by crocodiles posed a big challenge. Eighty-eight percent of respondents said people had been bitten by snakes in their areas. Many houses collapsed due to the floods. 96 percent of respondents said they lost their shelters.

Many people were uprooted from their homes and forced to seek for safety mainly on higher grounds or in public buildings such as schools. About 90 percent of respondents reported that they had been displaced, and 76 percent said there was much displacement in their areas.

The floods also had enormous impact on livelihoods, especially death of livestock and loss of crops as fields were submerged under flood water. About 77 percent of respondents said animals had died due to the floods and grazing areas had been submerged under floodwater. With regards to crops losses, about 55 percent reported that crops had been washed away or submerged under water.

Moreover, the floods inflicted damage on the infrastructures in the flood-affected areas. Some roads and bridges were washed away, schools and health facilities destroyed, phone and internet connections disrupted, and clean water sources and latrines negatively affected. About 62 percent of respondents stated that schools in their areas had closed down; about 34 percent said that health facilities had been washed away and also about 34 percent revealed that facilities and equipment had been submerged under floodwater; and about 63 percent of respondents said source of water was floodwater. This raised the risk of waterborne disease spread.

The flood-affected people urgently require emergency support including food and non-food items. Moreover, they need economic recovery support including agricultural tools and seeds. Additionally, development assistance is paramount, including rebuilding basic infrastructures especially roads and bridges, schools and health facilities. Moreover, support for peacebuilding, reconciliation and healing is essential.

At this difficult time, the affected people and communities are mainly relying on support of relatives and friends, fishing, eating wild fruits and leaves, and selling animals as well as the limited humanitarian assistance supplied.

5.2 RECOMMENDATIONS

Based on the results of the assessment, the following are recommendations to the government and partner organizations:

Emergency assistance:

- ◆ Provide food and non-food items including tents, plastic sheeting, blankets, mats, and utensils.
- ◆ Provide malaria prevention and treatment services as well as diarrhea prevention and treatment.
- ◆ Vaccinate children.
- ◆ Provide access to sanitary materials.
- ◆ Conduct emergency repairs of critical facilities like boreholes, health clinics, schools, and feeder roads.
- ◆ Establish mobile courts where necessary.
- ◆ Provide ambulances.
- ◆ Provide psychosocial and mental health services.
- ◆ Provide temporary and semi-permanent learning spaces as well as renovate existing structures.
- ◆ Print and distribute textbooks.
- ◆ Provide desks and chairs.
- ◆ Support local communities with tools, seeds and fishing kits.
- ◆ Resolves disputes over land, houses and property.
- ◆ Support provision of shelter and housing for the affected people.
- ◆ Build capacity of community leaders/chiefs to resolve Housing, Land, and Property disputes.
- ◆ Support IDPs to return to their home areas.

Recovery support:

- ◆ Give agricultural tools and seeds as well as extension services.
- ◆ Provide goats and sheep so that people can restock.
- ◆ Provide self-help based livelihood trainings and other livelihood activities.
- ◆ Support community structures to address floods and use early warning mechanism to support communities to become resilient.
- ◆ Rebuild, rehabilitate and renovate existing infrastructures such as roads, schools, healthcare centres and units, and boreholes and other water points with community support.

- ◆ Support rehabilitation of markets and businesses.
- ◆ Construct permanent learning structures.
- ◆ Conduct peacebuilding, reconciliation and healing activities among the communities.

Long term sustainable development assistance:

- ◆ Build permanent roads and bridges, schools, healthcare centres, communication infrastructure etc..
- ◆ Open up channels so that water can flow into low areas or into the rivers.
- ◆ Construct dykes.
- ◆ Strengthen informal justice structures in addition to formal ones.
- ◆ Build new courts in areas that are highly populated.
- ◆ Strengthen local level peace making and mediation process as development is hard to achieve without peace and stability.
- ◆ Implement flooding and disasters risk reduction and prevention.
- ◆ Encourage community settlement on high land areas to allow the lowland for grazing.
- ◆ Provide power and telecommunication equipment;
- ◆ Development and expand communications and mobile networks.
- ◆ Develop affordable public housing.
- ◆ Compensate for lost houses, land, and property or provide alternatives.
- ◆ There is a need to collect detailed data on losses suffered due to floods.



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