Research Methodology Note

Shocks Monitoring Index (SMI) – Fangak verification mission

SSD1902

South Sudan

May 2021
V1

REACH Informing more effective humanitarian action

1. Executive Summary

Country of intervention	South Sudan					
Type of Emergency	x	Natural disaster	x	Conflict	□	Other *(specify)*
Type of Crisis	x	Sudden onset	□	Slow onset	x	Protracted
Mandating Body/ Agency	UK Foreign, Commonwealth and Development Office (FCDO), French Ministry for Europe and Foreign Affairs' Crisis and Support Centre (CDCS)					
IMPACT Project Code	32DPW/AIE, 32EFI/ANS					
Research Timeframe	1. Pilot/ training: NA		6. Preliminary presentation: NA			
	2. Start collect data: 03/06/2021		7. Outputs sent for validation: 28/06/2021			
	3. Data collected: 08/06/2021		8. Outputs published: 05/07/2021			
	4. Data analysed: 14/06/2021		9. Final presentation: 06/07/2021			
	5. Data sent for validation: 14/06/2021					
Humanitarian milestones	**Milestone**		**Deadline**			
	□	Donor plan/strategy	_ _/_ _/_ _ _ _			
	□	Inter-cluster plan/strategy	_ _/_ _/_ _ _ _			
	□	Cluster plan/strategy	_ _/_ _/_ _ _ _			
	□	NGO platform plan/strategy	_ _/_ _/_ _ _ _			
	□	Other (Specify):	_ _/_ _/_ _ _ _			
Audience Type & Dissemination *Specify **who** will the assessment inform and **how** you will disseminate to inform the audience*	**Audience type**		**Dissemination**			
	x Strategic □ Programmatic x Operational		**x** General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors) x Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting x Presentation of findings (e.g. at HCT meeting; Cluster meeting) x Website Dissemination (Relief Web & REACH Resource Centre)			
Detailed dissemination plan required	□	Yes	x	No		
General Objective	To inform the humanitarian response in Fangak county specifically, and flooded areas in South Sudan more broadly, about the conditions in major settlements in Fangak following widespread flooding, and guide REACH's approach to monitoring flooding through remote sensing.					

Specific Objective(s)	• To understand the extent, causes, and patterns of flooding in major settlements in Fangak county and its impact on livelihoods and mobility • To understand the measures in place to mitigate the effects of flooding in Fangak county • To compare remote sensing data on water levels in Fangak county with the situation on the ground and identify stategies to improve detection of flooding.

Research Questions	• What is the physical extent of flooding in major settlements in Fangak county?
	• What are the causes of the flooding?
	• Have flooding patterns in Fangak changed over time?
	  ○ Have rainfall patterns changed over time?
	  ○ Has the severity of flooding changed over time?
	• To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
	• To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
	• What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
	• How does the physical extent of flooding line up with visible and detected standing water and water-logged ground in satellite imagery?

Geographic Coverage	Major settlements in Fangak county, Jonglei state, South Sudan – specifically Old Fangak and New Fangak towns
Secondary data sources	• Climate Hazards Group Infrared Precipitation with Station data (CHIRPS) remote sensing • FEWS NET, South Sudan Livelihoods Zones and Descriptions, 2018 • UNOSATsatellite imagery • Flood risk analysis: UNDRR (United Nations officer for Disaster Risk Reduction), 2018: Words into action guidelines, implementation guide for addressing water-related disasters and transboundary cooperation • WorldPop population estimates

Population(s)				
	□	IDPs in camp	□	IDPs in informal sites
	x	IDPs in host communities	□	IDPs [Other, Specify]
	□	Refugees in camp	□	Refugees in informal sites
	□	Refugees in host communities	□	Refugees [Other, Specify]
	x	Host communities	□	[Other, Specify]

Stratification *Select type(s) and enter number of strata*						
	□	Geographical #:_ _ _ Population size per strata is known? □ Yes □ No	□	Group #: _ _ _ Population size per strata is known? □ Yes □ No	x	*[Other Specify]* #: NA Population size per strata is known? □ Yes □ No

Data collection tool(s)				
	x	Structured (Quantitative)	**x**	Semi-structured (Qualitative)

	Sampling method	**Data collection method**
Structured data collection tool # 1 Direct geospatial observations	x Purposive □ Probability / Simple random □ Probability / Stratified simple random □ Probability / Cluster sampling □ Probability / Stratified cluster sampling	□ Key informant interview (Target #):_ _ _ _ _ □ Group discussion (Target #):_ _ _ _ _ □ Household interview (Target #):_ _ _ _ _ □ Individual interview (Target #):_ _ _ _ _

	□ [Other, Specify]				x Direct observations (Target #): 16[1] □ [Other, Specify] (Target #):_ _ _ _ _	
Semi-structured data collection tool (s) # 1 Focus group discussions with participatory mapping	x Purposive □ Snowballing □ [Other, Specify]				□ Key informant interview (Target #):_ _ _ _ _ □ Individual interview (Target #):_ _ _ _ _ x Focus group discussion (Target #): 8[2] □ [Other, Specify] (Target #):_ _ _ _ _	
Semi-structured data collection tool (s) # 2 Key Informant Interviews with local authorities and NGO staff	x Purposive □ Snowballing □ [Other, Specify]				x Key informant interview (Target #): 8 □ Individual interview (Target #):_ _ _ _ _ □ Focus group discussion (Target #):_ _ _ _ _ □ [Other, Specify] (Target #):_ _ _ _ _	
Data management platform(s)	x	IMPACT			□	UNHCR
	□	[Other, Specify]				
Expected ouput type(s)	x	Situation overview #: 1	□	Report #: _ _	□	Profile #: _ _
	□	Presentation (Preliminary findings) #: _ _	x	Presentation (Final) #: 1	□	Factsheet #: _ _
	□	Interactive dashboard #:_	□	Webmap #: _ _	x	Map #: 2
	□	[Other, Specify] #: _ _				
Access	x	Public (available on REACH resource center and other humanitarian platforms)				
	□	Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms)				
Visibility	**REACH**					
	Donor: FCDO, CDCS					

2. Rationale

2.1 Background

Jonglei state and other parts of South Sudan have experienced abnormally high levels of rainfall and flooding in recent years, especially during the 2019 and 2020 rainy seasons.[3] As a result, water levels in the Sudd are unseasonably high and many locations along the Nile that normally host settlements remain uninhabitable. Within Jonglei state, Fangak county is one of the locations that have been affected particularly significantly. Fangak is located in the wetland along the Nile known as the Sudd. Most areas in the Sudd tend to be waterlogged year-round, but there are some settlements located on higher ground within the wetland. In Fangak county, the largest of these settlements are Old and New Fangak. In a January 2020 market assessment in Old and New Fangak as well as other towns in the area, REACH found that flooding had greatly reduced the local harvest, while the supply of market goods remained limited due to access restrictions.[4] Since then, further abnormally high rainfall has occurred. Authorities in Fangak have appealed for humanitarian aid in response to the most recent floods in May 2021.[5]

[1] In each location to be assessed, at least eight physical measurements are to be taken.
[2] The target is eight focus group discussions, with four to eight participants each.
[3] United Nations Office for the Coordination of Humanitarian Affairs (2021), South Sudan Flooding Situation Report Inter-Cluster Coordination Group – As of 31 January 2021
[4] REACH Initiative (2020), Fangak Rapid Market Assessment, January
[5] L. Mulai & K.P. Chang (2021), Fangak Appeals for Humanitarian Aid as Floods Engulf Areas. Eye Radio, 11 May.

2.2 Intended impact

The intended impact of the assessment consists of three components:

1. To inform humanitarian organisations operation in Fangak county of the current state of humanitarian needs in relation to flooding, and of gaps in mitigation efforts.
2. To provide strategic actors in South Sudan with a case study of the evolution of needs in areas affected by protracted and recurring flooding. Given the high levels of flooding across South Sudan, this will give partners an insight into prioritisation of aid for flood-affected areas and specific response modalities that may be relevant across these areas.
3. To inform REACH's future work on flood monitoring, including through remote sending. Through new climate-focused work streams, REACH South Sudan strives to monitor the levels of standing water in flood-affected areas, and the potential effects on humanitarian needs, but further research is needed to inform how this data should be interpreted. Visiting a flooded location will aid with this.

3. Methodology

3.1 Methodology overview

The methodology will consist of three components. The first two components are qualitative in nature, and will comprise focus group discussions with an integrated participatory mapping exercise with local populations, as well as key informant interviews with local authorities and NGO staff. The third component is quantitative in nature, and will consist of physical measurements of the extent of both flooded and inundated locations.

3.2 Population of interest

The area of interest will consist of major settlements in Fangak county. The team will visit Old Fangak and New Fangak towns. Other locations will be considered based whether team is able to physically access them, and may include Tonga, Jaibor, and Toch towns. This area was chosen because of its location in the wetlands and because it has been particularly severely affected by the flooding that has taken place across South Sudan in recent years. As a result, data collected in Fangak may be indicative of conditions across the wetlands and of future conditions in areas that have not historically been wetlands but that currently remain inundated after consecutive years of flooding. Participants will be chosen from the local population. Key informants will include staff working for local authorities and NGOs, as well as other individuals with good knowledge of the local area and flood mitigation mechanisms. Focus group discussion participants will be selected in coordination with local partner NGOs and the Relief and Rehabilitation Commission.

3.3 Secondary data review

GIS analysis will be conducted using satellite imagery provided by UNOSAT and Google Earth Engine, in order to identify areas that existing analysis scripts flag as being inundated with water. This secondary data will then be compared to primary (physical) measurements in order to calibrate remote sensing scripts. Additionally, data collected will be compared with available land cover classifications by the United Nations Food and Agriculture Organisation , in order to determine where changes in land use may have occurred over time.

3.4 Primary Data Collection

1. Focus Group Discussions

In each settlement be visited (at least two; Old and New Fangak), the REACH field team will conduct at least four focus group discussions (FGDs): at least one with only women and one with only men. Other focus group discussions may be mixed or with a single gender, depending on information needs and the availability of participants. Each FGD will include at least four participants, and no more than eight. These focus group discussions will begin with a participatory mapping exercise, where participants will be encouraged to map their community, key landmarks and facilities in their community, and finally the extent of the flooding that is affecting the community at the moment. Further components will cover the impact of flooding in the area, specifically as it relates to livelihoods and population movement. Information will be recorded through detailed notes of what was said, and analysed in line with IMPACT Initiatives Qualitative Data Processing & Analysis Minimum Standards Participants will be selected in coordination with local NGO partners and the Relief and Rehabilitation Commission, and will need to have good knowledge of the local community and surrounding areas.

2. Key Informant Interviews

In each settlement to be visited, the REACH field team will interview representatives of local authorities such as the Relief and Rehabilitation Commission (RRC) and local government, as well as NGO staff. Key Informants will be recruited through a snowballing methodology, starting with the RRC and local NGOs, and proceeding with individuals they recommend talking to who have good knowledge of the topic. These interviews will be qualitative in nature and focus on the nature of flooding, and how it has changed over time, as well as how it affects livelihoods and access to markets. Finally, Key Informants (KIs) will be asked about the measures and infrastructure in place to cope with flooding, and how functional they are. In each location, at least two Key Informants will be interviewed. The information will be recorded through detailed notes of each interview, and analysed in line with IMPACT Initiatives Qualitative Data Processing & Analysis Minimum Standards.

3. Geospatial component

In each settlement to be visited, GIS staff will physically verify current inundation in a select number of locations. The locations to be assessed will be selected purposively, based on accessibility and on two characteristics: land use and inundation. The aim is to collect samples of different types of territory to see what they look like on satellite imagery, to check whether this imagery can be used to classify land use in the area, and to provide the information needed to classify land use if so. In each settlement, areas with four different types of land use will be selected: agriculture, natural vegetation, livestock keeping, and residential. For each type of land use, at least two locations will be covered: one will be inundated with water, whereas the other will be dry. As such, a minimum of eight locations will be covered per settlement. More locations may be added depending on feasibility. In each location, GIS staff will walk along the boundary of areas with different uses with GPS measurement devices and map either the extent of one of these areas (e.g. the extent of an agricultural field) or a polygon of at least one square kilometre in size. Capturing the boundary of these areas will also allow for the investigation of whether land use boundaries have changed over time. Data collected will be used to verify satellite imagery for the assessed settlements, as well as to create maps for the assessed locations. On these maps, data collected physically will be overlaid with participatory mapping layers and satellite imagery to create a more complete picture of inundation and land use in the area of interest. Finally, the data collected through this method may be used to classify land use and inundation in future assessments.

3.5 Data Processing & Analysis

Records from KI interviews and FGDs will be processed in accordance with IMPACT Initiatives Qualitative Data Processing & Analysis Minimum Standards, which include the preparation of Data Saturation and Analysis Grids outlining key topics of conversation and recoding the information collected in order to analyse it. Participatory mapping data will be overlaid with satellite imagery to verify and augment remote sensing analysis of flooding completed in Google Earth Engine. Geospatial

data of the extent of flooding and of water depth will be compared to satellite imagery in order to verify what inundation looks like and to calibrate ongoing remote sensing analysis of flooding in Google Earth Engine.

4. Key ethical considerations and related risks

The proposed research design meets / does not meet the following criteria:

The proposed research design…	*Yes/ No*	*Details if no (including mitigation)*
… Has been coordinated with relevant stakeholders to **avoid unnecessary duplication** of data collection efforts?	Yes	
… **Respects respondents, their rights and dignity** (*specifically by: seeking informed consent, designing length of survey/ discussion while being considerate of participants' time, ensuring accurate reporting of information provided*)?	Yes	
… Does not **expose data collectors to any risks as a direct result** of participation in data collection?	Yes	
… Does not **expose respondents / their communities to any risks as a direct result** of participation in data collection?	Yes	
… Does not involve **collecting information on specific topics which may be stressful and/ or re-traumatising** for research participants (both respondents and data collectors)?	Yes	
… Does not involve **data collection with minors** i.e. anyone less than 18 years old?	Yes	
… Does not involve **data collection with other vulnerable groups** e.g. persons with disabilities, victims/ survivors of protection incidents, etc.?	Yes	
… Follows IMPACT SOPs for management of **personally identifiable information**?	Yes	

5. Roles and responsibilities

Table 2: Description of roles and responsibilities

Task Description	*Responsible*	*Accountable*	*Consulted*	*Informed*
Research design	Research Manager	Research Manager	Senior Assessment Officer, GIS Manager, Senior GIS Manager (HQ), Research	Research Reporting Unit (HQ), Country Coordinator

			Design Unit (HQ)	
Supervising data collection	GIS Officer, GIS Manager, Senior Assessment Officer, Research Manager	Research Manager	Relief and Rehablitation Commission	Country Coordinator
Data processing (checking, cleaning)	GIS Officer, GIS Manager, Senior Assessment Officer, Research Manager	Research Manager	Senior GIS Manager (HQ)	Research Unit (HQ)
Data analysis	GIS Officer, GIS Manager, Senior Assessment Officer, Research Manager	Research Manager	Senior GIS Manager (HQ), Research Reporting Unit (HQ)	Research Design Unit (HQ)
Output production	GIS Officer, GIS Manager, Senior Assessment Officer, Research Manager	Research Manager	Senior GIS Manager (HQ), Research Reporting Unit (HQ)	Research Design Unit (HQ)
Dissemination	GIS Officer, Senior Assessment Officer	GIS Manager, Research Manager	Country Coordinator	Local partners
Monitoring & Evaluation	GIS Officer, Senior Assessment Officer	GIS Manager, Research Manager	Local partners	Country Coordinator
Lessons learned	GIS Officer, GIS Manager, Senior Assessment Officer, Research Manager	Country Coordinator	Local partners	Donors, Research Unit (HQ)

Responsible: *the person(s) who executes the task*

Accountable: *the person who validates the completion of the task and is accountable of the final output or milestone*

Consulted: *the person(s) who must be consulted when the task is implemented*

Informed: *the person(s) need to be informed when the task is completed*

6. Data Analysis Plan

1. KEY INFORMANT INTERVIEW TOOL

Tool question	**Research question**
Flooding	
1) What normally causes flooding in this community?	What are the causes of the flooding?
2) Is the current rainy season different than previous rainy seasons?	Have flooding patterns in Fangak changed over time?
a. If so, how? Prompt:	
i. Start of rainfall	

ii. Severity of rainfall	
iii. Start of flooding	
iv. Severity/extent of flooding	
v. Area affected by rainfall/flooding	
vi. Level of standing water	
vii. Effect on local services	
viii. Effect on livelihoods	
b. How does it compare to the last 3 years?	
c. How does it compare to more than 3 years ago?	
d. If there has been a change, why do you think this is?	
3) What is the current extent of flooding in and around this community?	What is the physical extent of flooding in major settlements in Fangak county?
a. If not mapped before, draw the extent of flooding on the map	
b. Where has flooding affected the most infrastructure?	
c. Where is the standing water the deepest? The shallowest?	
d. Please indicate areas of particular concern	
i. Flooded shelters	
ii. Infrastructure	
iii. Safety concerns	
4) How does the current flooding affect daily life in this community?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
a. Has flooding affected shelter/living conditions?	
b. Have there been disruptions to local services? Prompt:	
i. WASH	
ii. Health	
iii. Education	
iv. Food distributions	
v. Markets	
c. How long have these disruptions lasted/did these disruptions last?	
d. How frequently have these disruptions occurred in the last 3 years?	
5) How does flooding affect security in the community?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
6) What proportion of the population is affected by flooding?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
7) Is there any time of day when the effects of flooding are most felt?	
Livelihoods	
8) What are the most common livelihoods in this community?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
a. Prompt: do households engage in these livelihoods for food production or for income generation?	
b. To what extent do these livelihoods make use of the land around the community?	
c. Do any of these livelihoods require movement inside and out of the community?	
i. Are there common barriers to this movement?	
9) How have these livelihoods been affected by flooding?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
a. Which livelihood types have been most affected?	

b. Has agricultural output been affected? If so, how?	
c. Have the levels of food stocks kept by households been affected? If so, how?	
d. Have people changed their livelihoods to adapt to flooding? If so, how?	
e. If there has been a change, when did it first occur?	
i. How has the situation developed since? (Improved, deteriorated?)	
10) How do you expect access to livelihoods to change in the next year?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
a. How about the next 3 years? 10 years?	
Markets	
11) How do goods normally reach markets at this time of year? (If relevant, draw routes on the map)	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
12) Has the current flooding affected the flow of goods to markets?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
a. If so, how?	
b. When did this change first occur?	
c. How does this affect access to basic goods?	
i. Which goods are most affected?	
d. How are households coping?	
Mitigation	
13) What measures are in place to prevent flooding or reduce the effect of flooding?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
a. Are they sufficient?	
b. In case of physical infrastructure: where is it located?	
i. Who erected it?	
ii. Who is responsible for maintenance?	
iii. Is the expertise to maintain it available in the community?	
iv. Are the tools to maintain it available in the community?	
c. In case of social measures: how do they work?	
i. Who is responsible?	
ii. Who participates?	
d. What else is needed?	
14) How do community members support each other in times of flooding? Prompt:	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
a. Do community members support each other in carrying out their livelihood activities?	
b. Are community members sharing more food/resources than normal?	
c. Are community members jointly taking on infrastructure projects/maintenance?	
15) Has the community received humanitarian aid in response to flooding?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
a. If so, what kind? Prompt:	
i. Has the community received food aid?	

ii. Has the community received livelihood support	
iii. Has the community received non-food items or shelter support?	
iv. Has the community received WASH support, such as hygiene items, infrastructure, or water	
b. What is the frequency of this aid?	
c. Is it sufficient?	
d. What else is needed?	

2. Focus Group Discussion and Participatory Mapping Tool

Tool question	Research question
Initial participatory mapping: location and landscape	
Show a map of the local area to participants; point out where the FGD is taking place; draw features on the map	
1) Where are prominent landmarks/geographic features?	
2) Where are the boundaries of the settlement?	
3) Please identify locations of key infrastructure:	
a. Boreholes	
b. Health facilities	
c. Educational facilities	
d. Local authorities	
e. NGO offices	
f. Distribution sites	
g. Markets	
h. Cattle grazing areas	
i. Fishing camps	
j. Road/river routes	
k. Dykes/flood barriers	
4) What is the land in surrounding areas normally used for? (Wetland, agriculture, livestock, etc.)	
a. In the dry season	
b. In the rainy season	
5) Please indicate which areas are currently inundated with water	What is the physical extent of flooding in major settlements in Fangak county?
a. If relevant, please indicate level of inundation (waterlogged soil, flooded, etc.)	
Flooding	
1) Which areas in and around this community are normally covered with water at any time of year?	What is the physical extent of flooding in major settlements in Fangak county?
2) When does the rainy season normally start?	Have flooding patterns in Fangak changed over time?
a. When did the rainy season start this year?	
b. When did the rainy season start last year?	
3) Which areas normally flood during the rainy season?	Have flooding patterns in Fangak changed over time?
4) When did flooding start this year?	Have flooding patterns in Fangak changed over time?

a. How have flood levels changed since then? (Increased? Decreased?)	Have flooding patterns in Fangak changed over time?
b. How does flooding this year compare to flooding last year?	
i. Prompt: water levels, flooding extent, duration, severity/impact on community?	
5) Have patterns of flooding changed in recent years?	
a. If so, how? Prompt: water levels, flooding extent, duration, severity/impact on community?	
b. When did flooding patterns start changing?	
i. How have they developed since then?	
6) What efforts are made by the community to prevent flooding?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
7) What infrastructure is in place in your community to reduce the impact of flooding?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
a. Draw the locations of dykes/flood barriers	
8) When was this infrastructure erected?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
9) Are there any issues associated with this infrastructure?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
a. Please specify the issues (E.g. broken, not enough)	
10) Who is in charge of maintaining this infrastructure?	What measures are in place in Fangak county to mitigate the impact of flooding and excessive rainfall?
11) What are the key issues the community is facing as a result of flooding?	
Livelihoods	
1) In a normal year, what are the most commonly employed livelihood or income generating activities in your community?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
a. What are normally the main sources of food for households in this community?	
b. What does the usual cultivation calendar look like in this area (months of sowing/growing/harvesting)?	
c. When are food stocks typically exhausted?	
d. How common is it for households to own livestock?	
e. How is livestock normally used in your community?	
2) Have people in this community changed their livelihood activities in response to recent shocks?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
a. What are currently the main livelihoods?	
i. How does the community manage food for livestock during flooding?	
b. When did this change first occur?	
i. How has the situation developed since? (Improved, deteriorated?)	
c. Which population groups have been most severely affected by the change in access to livelihoods?	
i. How have single/female-headed households been affected by recent shocks?	
ii. How have old/young people been affected by recent shocks?	
iii. How have people with disabilities been affected by recent shocks?	

iv. How have socially/geographically isolated community members been affected by recent shocks?	
d. How do you expect access to livelihoods to develop in the next year?	
Markets	
3) How much do you people in this community usually rely on markets for food?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
a. What are the basic goods your households need and typically buy from the market?	
b. How often do you normally go to the marketplace to buy food?	
c. In the lean season? Harvest season?	
4) Has flooding affected the flow of goods to local markets?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
a. If so, how?	
5) Has flooding affected access to markets?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
a. Have prices changed due to flooding?	
b. Are any items unavailable?	
c. Which population groups have been most affected?	
Coping	
6) What are the usual strategies that most households in your community adopt to cope with a lack of resources to meet their basic needs?	To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county? To what extent have flooding and excessive rainfall affected access to livelihoods in Fangak county?
7) Are most households currently able to use these strategies?	
a. If not, which coping strategies are they currently using?	
b. Probe for use of extreme coping strategies:	
i. Are people marrying off daughters for food?	
ii. iiAre people eating wild foods that are known to make them sick?	
iii. Are people selling or slaughtering their last cattle?	
c. For each of the strategies, ask:	
i. Can you describe this coping strategy>	
ii. In a 'normal' year, when is this strategy used, if at all?	
1. How common is it normally for a household to use this strategy?	
iii. Which households use this coping strategy?	
1. Prompt: better off households? Worse off households?	
iv. When has this coping strategy been used in the last year?	
1. Have any households run out of the option to use this coping strategy?	
2. What types of households?	
vii. What are barriers to using this coping strategy?	
1. Do people have to forego other crucial activities in order to employ this strategy (zero-sum coping)?	
Movement	
1) Could you tell us about normal movement for people from your community for this time of year?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?

a. Probe: seasonal movement, cattle herding, fishing, other livelihoods-related mobility	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
b. Are any of these movements necessary for the MAIN source of livelihoods for this area and time of year?	
c. Do people from the community normally move due to flooding at this time of year?	
d. Is there anywhere that people usually move to when facing severe food insecurity?	
e. Where to households generally move when facing severe food insecurity?	
2) Have there been any barriers that restrict households' ability to move to certain locations in the last 3 months?	
a. What are these barriers?	
b. Do any of these barriers block routes associated with the main source of livelihoods for this area and time of year?	
c. Do any of these barriers block routes that have been used previously by people facing severe food insecurity?	
d. Are they currently still restricting people's ability to move?	
e. Who do these barriers affect the most? (Prompt for vulnerable profiles)	
f. How do these barriers relate to flooding?	
g. How do you expect these barriers to develop in the future?	
3) Are there people currently living in your community who were displaced by shocks in other areas?	To what extent have flooding and excessive rainfall affected population movement/mobility and the supply of goods in Fangak county?
a. If so, when did these people arrive?	
b. Probe for scale of movement (5,000 people or more?)	
c. Why did they come to the community?	
i. Probe: climatic shocks, conflict, etc.	
d. Where did people come from? (Mark on map)	
e. What areas did people move to? (Mark on map)	
i. Why did people move to these areas specifically?	
f. What means of transportation did most arrivals use?	
g. Did these people face barriers to movement?	
i. If so, which?	
h. Are these any tensions between the arrivals from elsewhere and the communities that were already here?	
i. Has there been any added strain on resources available in the community since their arrival?	