



Guidelines for Assessing the Human Impact of Disasters

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The **Guidelines for Assessing the Human Impact of Disasters** commissioned by the United Nations Development Programme (UNDP) aims to help national governments and national and international agencies assess the impact of disasters on people, their living conditions, access to basic services, livelihoods, social status, coping capacities, and also on overall levels of poverty and human development. It adds to the compendium of Post-Disaster Needs Assessment (PDNA) guidelines published jointly by the European Union, World Bank (WB) and the United Nations for conducting assessments in disaster-affected countries.

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INTRODUCTION

BACKGROUND

In 2013, the United Nations Sustainable Development Group, the World Bank and the European Union jointly published the Post-Disaster Needs Assessment (PDNA) guidelines. The overarching purpose of these guidelines are to provide improved support to governments in post-disaster recovery assessments and planning through a coordinated approach. The more immediate objective of the guidelines is to provide an agreed framework and predictable arrangements for effective, efficient and coordinated support from the European Union, the United Nations and the World Bank to governments requesting international assistance for post-disaster recovery and reconstruction. At present, the PDNA guidelines comprise two volumes: Volume A and Volume B.¹

This document, Guidelines for Assessing the Human Impact of Disasters, has been developed as part of the PDNA guidelines, and similarly follows a people-centred, human-recovery approach. The concept of human development is central to these guidelines, particularly measures that ensure people recover their ability to lead productive and creative lives to the extent possible, in accordance with their needs and interests. In order to achieve this, people need equitable access to secure livelihoods, health services, shelter, land, security, freedom, community life and other quality-of-life services essential for human recovery and development. Equally important is the need to empower and strengthen human capabilities to help people recover and meet the additional challenges presented by disasters. Human recovery involves creating an enabling environment for women and girls, boys and men, communities, population subgroups and governments to recover from the impact of disasters.

A people-centred, human-recovery approach to post-disaster assessment and recovery focuses on the following elements:

- the human development impact of disasters
- the distinct needs and priorities of women, girls, boys and men of all ages and subgroups of affected populations, through stakeholder engagement
- the participation of affected stakeholders in their own recovery process
- recognition of and support to spontaneous recovery efforts for the affected population
- consideration of the sociocultural aspects of disaster recovery, in addition to economic imperatives
- measures to build resilient communities and societies.

These guidelines aim to ensure that the human impact of disasters is accurately assessed during a PDNA. This is especially important, as the assessment exercise is crucial in forging links between initial humanitarian efforts, recovery measures and longer-term development.



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Volume A of the PDNA guidelines facilitates the planning and organization of the PDNA, presents the assessment approach and outlines the process and steps for conducting a PDNA. Volume B provides technical guidance for sector-specific assessments aimed at technical experts who participate in the PDNA.

THE HUMAN IMPACT OF DISASTERS

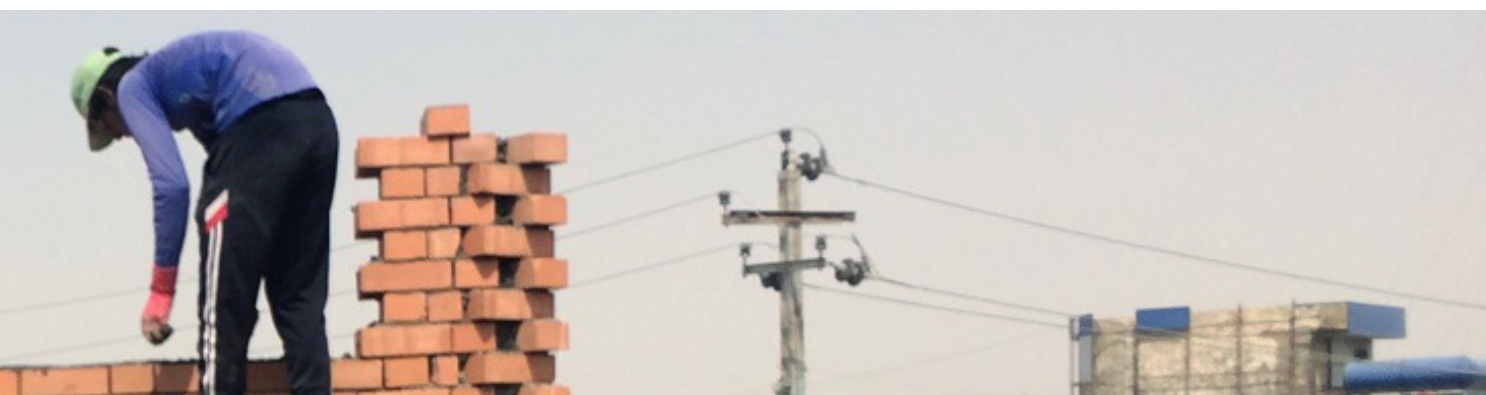
In addition to the significant effects that disaster events have on the economy, they severely impact people's well-being. Disaster events can deprive households of their basic living conditions and standard of living, destroy their livelihoods and income base, erode their productive assets, reduce their access to basic services, such as health and education, and compromise their food security. As a result, poverty may become entrenched, inequality may increase and human development progress may be undone or at risk.

When disasters occur, poor households suffer disproportionately. While the total share of economic losses sustained by poor households may be relatively low, the impact upon these households is usually very high. This is because poor people often live in hazard-prone regions, are exposed to hazards more often, are more vulnerable and lose a bigger proportion of their wealth and assets in the disaster. They also have a lower capacity to cope in the aftermath and receive less support from safety nets and social protection mechanisms.

Disasters are in fact a driver of poverty. Although the full effect of disasters on poverty has not yet been quantified, a growing body of empirical evidence suggests that household well-being and poverty status are largely affected by disasters. One study in Peru on disasters and poverty from 2003 to 2008 found that one extra disaster per year increased poverty rates by 16–23 percent. In coastal communities in Bangladesh that were affected by Cyclone Aila in 2010, the poverty headcount rate increased from 41 percent before the storm to 63 percent afterwards. A larger study of 89 countries found that on average, floods and drought are responsible for the extreme poverty of about 25 million people every year.

The same study estimates that if all disasters could be prevented in the following year, the number of people in extreme poverty – those living on less than \$1.90 a day – would fall by 26 million.² Disasters, exacerbated by climate change, present a major obstacle to achieving the Sustainable Development Goals (SDGs). As temperatures warm, many of the world's poorest and most vulnerable will face more intense or lengthy droughts, extreme rainfall and flooding and more powerful hurricanes or cyclones – risks that threaten lives and livelihoods and hamper poverty reduction efforts.

One study concluded that there will be very high levels of vulnerability to poverty in 2030, based on projected income poverty, and that the highest levels of vulnerability lie in Asia, Central America and sub-Saharan Africa. The study estimates that up to 325 million extremely poor people will be living in the 49 most hazard-prone countries in 2030, the majority in South Asia and sub-Saharan Africa.³ By 2050, hunger and child malnutrition could increase by up to 20 percent because of climate-related disasters.⁴



2 Hallegatte, Stephane, et al., *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters* (Washington D.C., International Bank for Reconstruction and Development and World Bank, 2017).

3 Shepherd, Andrew, et al., *The Geography of Poverty, Disasters and Climate Extremes in 2030* (London, ODI, October 2013)

4 The United Nations World Food Programme: <https://www.wfp.org/stories/8-facts-disasters-hunger-and-nutrition>.



THE HUMAN IMPACT ASSESSMENT

OBJECTIVES AND KEY QUESTIONS TO ANSWER

The overall goal of a human impact assessment is to evaluate the impact of disasters on people, their living conditions, health, access to education, livelihoods, food security, social status, as well as on overall levels of poverty and human development. More specifically, the objectives of a human impact assessment are to:

- understand the human dimension of the disaster's impact
- inform the recovery strategy, especially to mitigate the impact on humans
- guide priority recovery actions and identify population groups, for example, to prioritize and target households and areas with the highest human impact or incidence of poverty
- inform the adjustment of national development plans, poverty reduction strategies and social protection programmes
- analyse how the impact on humans may compromise the achievement of national SDG targets and policy considerations.

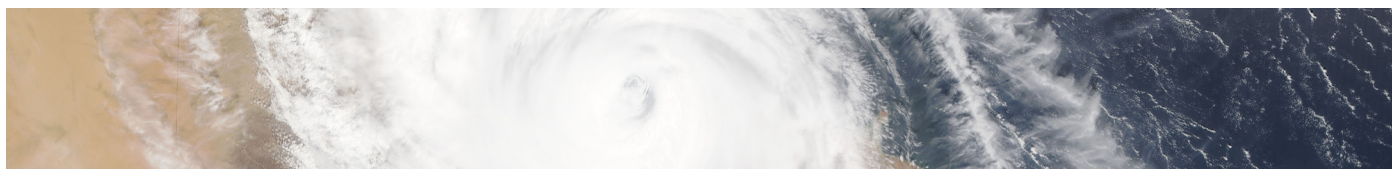
To achieve the overall goal, the human impact assessment must answer the following key questions:

- What are the main demographic characteristics of the areas and populations affected – for example, the main population groups in terms of income/wealth, livelihood groups, ethnicity, social class, gender, religion, disability, age?
- What are the main social networks and support mechanisms?
- How is the disaster affecting different population groups; who is most affected and why; and which groups are particularly vulnerable or at risk?

- How did the disaster (including damage and losses) affect people, their households, living conditions, health, access to education, livelihoods, food security and social equality?
- How are households coping with the disaster and its impact?
- What are the capacities and resources that people and communities can contribute to recovery?
- What are the priorities for people's recovery?
- What are the overall potential future consequences, for example, in relation to poverty?
- What are the key recommendations for the recovery process to minimize the human impact?

A human impact assessment should follow the general guidance on conducting a PDNA that is provided in Volume A of the PDNA guidelines. It should therefore follow the same guiding principles, processes, procedures, preparation arrangements, coordination mechanisms, data-collection and analysis practices, needs analysis and response options, formulation of the recovery strategy and implementation arrangements, as per the guidance.





DESIGNING THE ASSESSMENT

As a component of the PDNA, a human impact assessment should be undertaken under the leadership of the national government. The lead government agency for the PDNA will determine the most appropriate ministry or office to support the human impact assessment. This will likely be the national office typically responsible for human development, which may be the Ministry of Planning, the Ministry of Finance or the Ministry of Development, among others.

In consultation with the lead government agency, it will be important to identify the other key government stakeholders that will form part of the assessment or support the human impact analysis, for example, the National Bureau of Statistics, which can provide baseline data, the office responsible for poverty reduction, which can support the analysis of the disaster's impact on poverty, or the office responsible for gender or women, which can help collect relevant data and with gender analysis. The human impact assessment should also engage the expertise of the United Nations Development Programme's (UNDP) human development team in the country that usually produces the national human development reports, as well as the relevant in-country expertise available from the World Bank, European Union and other United Nations organizations.

The human impact assessment should be coordinated and undertaken with the participation of the PDNA sector leads, who will play a crucial role throughout the process. The human impact assessment may be conducted jointly with the gender team to produce one chapter for the PDNA.

The following comprise the main tasks to consider when preparing the human impact assessment:

- identifying the government ministry or agency that will lead the human impact assessment
- identifying the assessment team members that will participate in the human impact assessment – the team should ideally include social science and economics experts
- reviewing these guidelines and adapting them to the national context and PDNA exercise as necessary, selecting the core indicators and subindicators that are relevant or most appropriate
- agreeing with the sector leads on collecting pre-disaster baseline and post-disaster data, as well as information that will be needed from relevant sectors to undertake the human impact analysis
- providing training to sector teams on data-collection methods and sources of information
- arranging and coordinating field visits with the other sector teams

- organizing and planning logistics, budgets and implementation if a household and community survey is to be conducted

The following comprise the main tasks to consider once the PDNA field visits are complete:

- cross-checking the findings with sector teams to ensure consistency
- consulting with the sector leads to arrive at a joint analysis of the human impact and its potential outcomes (for example, on poverty or the SDGs) for their sectors
- agreeing on the recovery recommendations to ensure that human impact is addressed within the relevant sector recovery strategies and budget, as per the findings of the PDNA
- presenting the overall findings of the human impact assessment in a chapter for the final PDNA report (as is the case for all PDNA sectors) – it is important for the government to be involved in the writing process and to approve the findings and recommendations (annex 2 is a template to help guide the write-up and structure of the human impact chapter and to ensure consistency)
- obtaining official endorsement from the designated government counterpart for the overall findings and recommendations, and for the human assessment chapter of the PDNA report.



CORE INDICATORS OF A HUMAN IMPACT ASSESSMENT

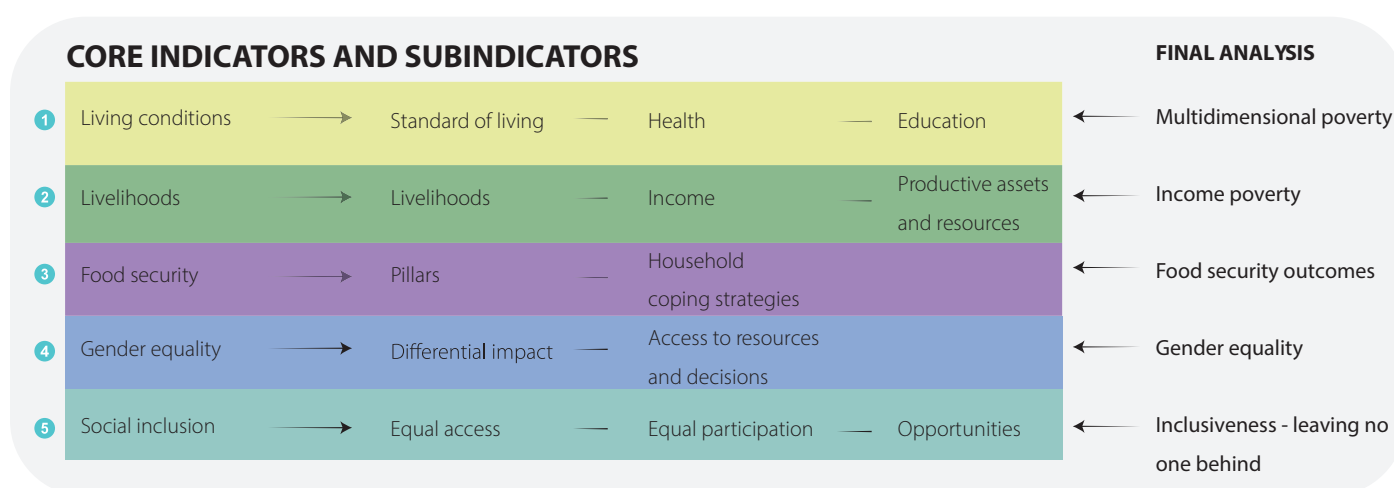
This section describes the five core indicators used to measure the human impact of disasters, presenting a set of subindicators for each, the corresponding information and data requirements and the sources. To measure the human impact of disasters, the assessment considers the following five core indicators:

- 1) Living conditions, health and education: Based on the Multidimensional Poverty Index (MPI), this indicator is measured in terms of the impacts of the disaster on water, sanitation, electricity, cooking fuel, housing and basic household assets, as well as health and education.
- 2) Livelihoods: Measured in terms of people's access to livelihoods (all occupations), income and productive assets, and resources.
- 3) Food security: Measured in terms of the three pillars of food security and household coping strategies.
- 4) Gender equality: Measured in terms of the gender differential impact, access to resources and decisions.
- 5) Social inclusion: Measured in terms of unequal access, unequal participation, denial of opportunities and the identification of vulnerable populations.

Using the five core indicators and subindicators should provide a good overview of the human impact of a disaster, but they may be adapted to reflect the specific circumstances of the country, disaster or PDNA. The type of disaster, the availability of data, the time-frame for the PDNA and the sector findings will influence the specific approach taken to assess the human impact.

As illustrated in Figure 1, the five core indicators form the basis for the final analysis on poverty, food security outcomes, gender equality and inclusiveness. This final analysis will be described in detail in the last section of these guidelines.

Figure 1: The human impact analysis:
core indicators, subindicators and final analysis



To conduct the human impact assessment, the analysis tracks the cascading effects that begin with the baseline information, then considers the disaster's immediate effect, its impact in relation to the core indicators and people's coping capacities and resources, in order to inform the final human impact analysis.

- 1) The baseline information or pre-disaster context considers the conditions in the country and/or disaster-affected districts prior to the disaster in relation to each of the core indicators identified in these guidelines. It forms the basis for the comparative analysis of pre-disaster and post-disaster conditions.

- 2) The disaster's immediate effects are typically assessed by the PDNA sector teams. It includes, for example, the damage to crops, microenterprises, infrastructure and services, which have direct human impact consequences. The specific immediate effects identified by sectors that are most relevant for each core indicator will be described in these guidelines.
- 3) The five core indicators and subindicators (see Figure 1) are used to analyse human impact, which is described in detail in these guidelines.
- 4) The coping strategies that the affected populations adopt to overcome the immediate effects of the disaster also have important human implications that need to be considered in the analysis.
- 5) The final human impact analysis is based on the findings from the four previous steps shown in Figure 2. It builds a composite picture of the overall impact and its potential consequences on poverty, gender equality, food security outcomes and social inclusiveness.

Figure 2: The cascading human impact of disasters



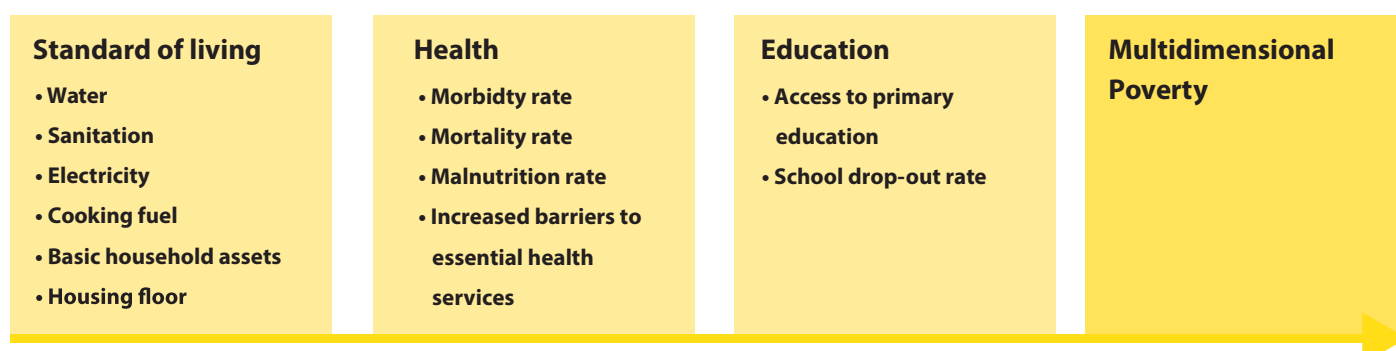
Core indicator 1: Living conditions, health and education

Main dimensions of this indicator

The first core indicator considers the disaster's impact on the living conditions, health and education of the disaster-affected population. This indicator is based on the MPI,⁵ which identifies three dimensions of deprivation:

- 1) standard of living
- 2) health
- 3) education

Figure 3: Core indicator 1: Living conditions, health and education, and its subindicators



⁵ The Multidimensional Poverty Index (MPI) complements monetary measures of poverty by considering overlapping deprivations suffered by individuals at the same time. The index identifies deprivations across the same three dimensions as the Human Development Index (standard of living, health and education) and shows the number of people that have multidimensional poverty (meaning they suffer deprivations in 33 percent or more of the weighted indicators) and the number of weighted deprivations with which poor households typically contend.

Each dimension is measured through a set of subindicators that has been adapted from the MPI for post-disaster situations. Figure 3 indicates the subindicators used to measure each of the three dimensions of deprivation. The objective is to assess how the disaster has deprived affected households of their basic living standards and their well-being in health and education.

- What are the number and/or proportion of households that have been deprived of their basic living conditions and access to services as a result of the disaster?
- How are these deprivations affecting households, especially considering that multiple deprivations are being faced at the same time?
- What are the main strategies, resources and capacities households are pursuing to cope with these deprivations?
- What are the resulting outcomes of these deprivations and coping capacities?

The results of the analysis on living conditions, health and education will not only be used to assess the disaster's impacts, but also to measure the impact on multidimensional poverty, as will be discussed in a later section (see "The final human impact analysis") of these guidelines.

The key questions that the analysis can answer include:

- How are households deprived of their basic living conditions?
- How is people's health affected by the disaster (morbidity, mortality, malnutrition rates) and how do they face increased barriers to accessing health services and education?
- What are the number and/or proportion of households that have been deprived of their basic living conditions and access to services as a result of the disaster?
- How are these deprivations affecting households, especially considering that multiple deprivations are being faced at the same time?
- What are the main strategies, resources and capacities households are pursuing to cope with these deprivations?
- What are the resulting outcomes of these deprivations and coping capacities?

Baseline, measurements and information sources

The three dimensions of core indicator 1 will be discussed here in the context of the human impact assessment, including the subindicator used for each dimension, the baseline data requirements and the sources of information.

- 1) Standard of living: This is defined in terms of six deprivation subindicators.

- (a) Electricity: Households without access to electricity due to the disaster.
- (b) Water: Households with no access to water or with access to a water source that is a 30-minute or more round-trip walk from their home due to the disaster.
- (c) Sanitation: Households with no access to sanitation or shared access with other households as a result of the disaster.
- (d) Housing: Homes that the disaster has destroyed or severely damaged.
- (e) Cooking fuel: Households that cook with dung, wood, charcoal or coal as a result of the disaster.
- (f) Basic household assets: Households deprived of at least one asset that gives access to information (radio, TV, telephone) and at least one mobility asset (bike, motorbike, car, truck, animal cart, motorboat) or one livelihood support asset (refrigerator, own agricultural land, own livestock).

- 2) Education: The second deprivation dimension is defined in terms of two subindicators, namely children's access to primary education and the number of households with at least one child who dropped out of school as a result of the disaster.
- 3) Health: The third deprivation dimension is defined in terms of four subindicators, namely mortality, morbidity and malnutrition rates, especially among children under 5 years and pregnant and nursing mothers, and the increased barriers to essential health services faced by households.

The human impact assessment will measure each of these three dimensions and their subindicators and compare the findings with the pre-disaster baseline data in the affected districts. The tables that follow indicate the pre-disaster baseline information needed, the measures used and the information sources.



Table 1: Standard of living – baseline data, measurements and sources of information

Pre-disaster baseline	Baseline source	Measurement	Measurement source
The number and/or proportion of households that had access to electricity in affected districts.	• population and housing censuses Multiple Indicator Cluster Surveys (MICS) • national development plans • national poverty reduction strategies • humanitarian situation reports from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and other United Nations organizations.	The number of households affected by power outages as a result of the disaster, and estimated length of time.	PDNA electricity sector assessment.
The number and/or proportion of households that had access to safe drinking water in affected districts.		The number of households without access to water sources as a result of the disaster.	PDNA water and sanitation sector assessment.
The number and/or proportion of households that had access to sanitation facilities in affected districts.		The number of households whose water source is a 30-minute or more round-trip walk, as a result of the disaster.	Field visits, interviews, focus groups and/or household surveys.
		The number of households without access to sanitation facilities as a result of the disaster.	PDNA water and sanitation sector assessment.
The number and/or proportion of households that lived in a dwelling with a cooking stove in the affected districts.		The number of households who cook with dung, wood, charcoal or coal as a result of the disaster.	Field visits, interviews, focus groups and/or household surveys.
The number and/or proportion of dwellings or houses that had a finished floor in the affected districts.		The number of destroyed or severely damaged houses as a proxy.	PDNA housing sector assessment.
The number and/or proportion of households that had access to information (radio, TV, phone), mobility (bike, motorbike, car, truck, animal cart, motorboat) or livelihood support assets (refrigerator, own agricultural land, own livestock).		The number of destroyed or severely damaged houses as a proxy for the loss of the following household assets:	PDNA housing sector assessment.
		a) access to information (radio, TV, telephone) b) access to mobility (bike, motorbike, car, truck, animal cart, motorboat) c) Access to livelihood support (fridge, own agricultural land, own livestock).	PDNA agriculture sector assessment.

Table 2: Health and education – baseline data, measurements and sources of information

Pre-disaster baseline	Baseline source	Measurement	Measurement source
Education The normal rate of school enrolment in affected areas.	The baseline information may be collected from the PDNA health and education teams. Alternatively, key data can be obtained from: • MICS • demographic and health surveys (DHS) • health sector reviews • universal health coverage monitoring reports • health risk assessments and mapping • The Ministry of Health • education management information systems (EMIS) • school censuses • The Ministry of Education • The United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics or the World Bank's Education Statistics (EdStats) • population censuses • national household surveys • national development plans • national poverty reduction strategies • humanitarian situation reports from OCHA and other United Nations organizations.	Education Number of children who lost access to education as a result of the disaster, for example, school dropout rates.	PDNA education sector assessment.
Health The number and/or proportion of households that had access to health care.		Health Number of households with increased barriers when they need essential health services as a result of the disaster. Number of households in which any family member has become ill as a result of the disaster. Number of households in which a child has become malnourished as a result of the disaster. Number of households exposed to increased risks of epidemics as a result of the disaster.	PDNA health sector assessment. Health risk analysis. Multi-Cluster/Sector Initial Rapid Needs Assessment (MIRA) or multi-sector household surveys carried out specifically for the PDNA assessment.

As indicated in the tables, for most measures, the information should be provided by the respective PDNA sector teams (except where indicated). To ensure this is the case, it will be important to coordinate with the sector leads at the start of the PDNA exercise to ensure that the data are collected by sectors or that alternative arrangements are made. The exception will be for cooking fuel and distance from water sources, where the findings will need to be collected from field visits, interviews, focus group discussions and/or a household survey.

It is important to identify the constraints to people's access to water, sanitation, electricity, housing, cooking fuel, education and health services. This analysis will help formulate the appropriate recovery strategies that will remove the barriers and restore people's access. When evaluating access, consider the following potential barriers and constraints:

Physical

- Increased barriers to services as a result of the damage or destruction of health facilities, school buildings, water and sanitation facilities and road infrastructure, among others.
- Safety and security: Lack of safety may impede people's access to basic services, due to conflict, landmines or violence against women for example.
- Geographic barriers: Migration or displacement may move people to areas lacking services.

Financial

- Income: People's inability to pay for services or transport as a result of the loss of their livelihoods and/or income.
- Expenditures: Increases in the cost of living, such as the cost of food or water, can result in higher expenditures that prevent a household from being able to afford other services (for example, health care).
- Financial services: Loss of savings and productive assets, lack of credit and other financial services.

Sociocultural

- Access may be particularly difficult for certain disadvantaged population groups, based on ethnicity, social class, religion, gender, disability and age.

The findings of this first core indicator will yield a composite picture of the deprivations, barriers, risks and increased needs resulting from the disaster, including the multiple and potentially overlapping deprivations that can have a direct negative impact on people's standard of living and overall well-being. As described in a later section of these guidelines (see "The final human impact analysis"), the results can also form the basis for estimating the impact on multidimensional poverty.

Core indicator 2: Livelihoods

Main dimensions of this indicator

The second core indicator considers the disaster's impact on people's livelihoods. The objective is to assess how the disaster has deprived affected households of their livelihoods, income, productive assets and resources, in order to identify how households are coping and determine the resulting livelihood outcomes. Figure 4 shows the three dimensions of livelihood deprivation and the subindicators used to measure each. The results of the livelihoods analysis will also serve to estimate the number of people who may have fallen below the national poverty line or who have fallen into extreme poverty as a result of the disaster, as will be discussed in a later section.



Figure 4: Core indicator 2: Livelihoods – three dimensions and subindicators

These are some of the key questions that need to be answered by the analysis.

- How has the disaster impacted the livelihoods of the affected population?
- How many people or households lost their livelihoods, by occupation group?
- How many people became unemployed, by occupation and for how long?
- How many workdays have been lost and what is the total income loss?
- What has happened to people's access to productive assets and resources?
- How are affected households coping with the impact on their livelihoods?
- What are the livelihood outcomes resulting from the combination of the disaster's impact on livelihoods and of people's coping strategies?

Baseline, measurements and information sources

The three dimensions used to measure livelihood deprivation are as follows:

- 1) **Livelihoods:** Households who lost access to their source of livelihood as a result of the disaster, for all occupations including farming, commerce, industry and tourism, among others.
- 2) **Income:** Households deprived of their income due to the disaster. This may be the result of unemployment, the loss of business, disruption, destruction of microenterprises or market closure, among other factors.

- 3) **Productive assets and resources:** Households deprived of their productive assets and resources. These may be grouped under the following three categories:

- **Financial:** credit and loans, savings, liquid assets, among others;
- **Physical:** productive assets such as shops, business machinery and materials, tools and equipment, stores, housing, livestock, infrastructure, among others; and
- **Natural:** land, water, forests, among others.

It is important to consider possible constraints to people's access to income, productive assets and resources. Consider the following potential barriers or constraints to access based on the disaster context:

- damage or destruction caused by the disaster
- physical constraints, such as blocked or damaged roads, debris, among other constraints
- lack of alternative employment
- safety and security
- geography, such as migration or displacement
- the sale of productive assets to meet basic needs
- morbidity and/or mortality of key assets, such as livestock
- disruption of local markets
- lack of credit or other financial services

Table 3 provides guidance on the measures to use for each of the subindicators, the information sources and the baseline information needed for the comparative analysis.

Table 3: Livelihoods – Baseline, measurements and sources of information

Pre-disaster baseline	Baseline source	Measurement	Measurement source
Access to livelihoods			
Main livelihood groups or wealth groups in affected districts (for example, agriculture, microenterprises, industry)	Agricultural census	Number of people or households that lost access to their livelihoods as a result of the disaster, by occupation and estimated length of time	PDNA sector assessments for agriculture, livelihoods and employment, commerce, industry and tourism
Number and/or proportion of people involved in each livelihood group in affected districts	Labour force survey		
	Agriculture sector development plan		
	Food and Agriculture Organization Corporate Statistical Database (FAOSTATS)	Number of people or households that have become unemployed, by occupation	
Income loss			
Number and/or proportion of people employed in each occupation group (for example, farming, microenterprises, industry, tourism)	Labour force survey	Number of people or households that have lost their income	PDNA sector assessments for agriculture, livelihoods and employment, commerce, industry and tourism
	Agricultural census		
Average income per occupation group	National census	Total income loss in \$ for all affected occupation groups, based on the number of worked days lost for each occupation group	
Productive assets and resources			
Main productive assets owned by households in each livelihood group (for example, livestock, land or microenterprises)	National household survey	Main assets lost, such as microenterprises, livestock	PDNA livelihood sector assessment
Main productive resources that households typically have access to in each livelihood group (for example, saving schemes or credit from moneylenders)		Number of people or households that have lost their productive assets	Agriculture sector assessment
		People or households that have lost their access to productive resources such as savings, credit or loans, or markets, among others	Field visits, interviews, focus groups, consultations with local authorities or lending institutions, a survey

For most measures, to assess the human impact on livelihoods, the information should be provided by the respective PDNA sector teams – as indicated in Table 3 – namely from the teams responsible for the agriculture, livelihood, commerce, industry and tourism sectors. As previously mentioned, it will be important to coordinate with the sector leads at the start of the PDNA exercise to ensure that both baseline and post-disaster data are collected by sectors or that alternative arrangements are made. The information may also need to be obtained through field visits, interviews with the affected population or local authorities, focus group discussions and/or a household survey, especially for the qualitative analysis of access and to validate and triangulate findings.

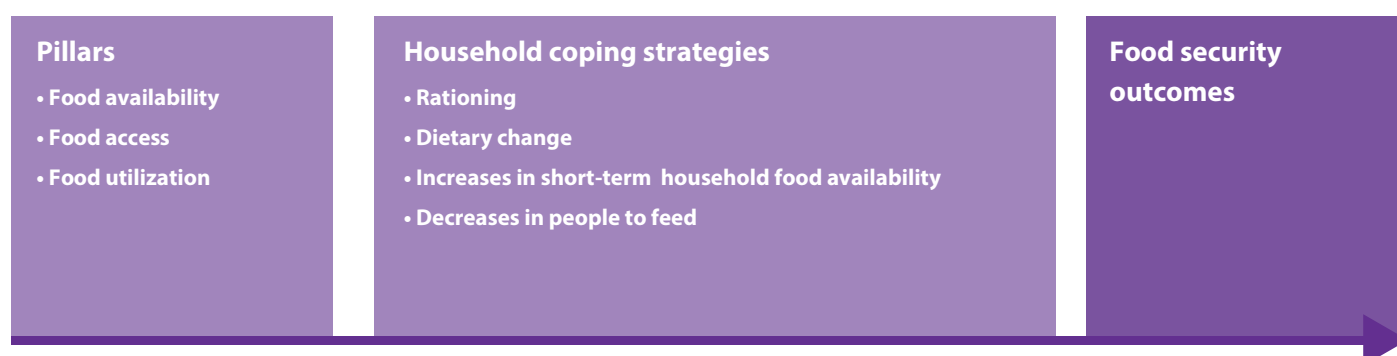
The assessment findings on this second core indicator will help to provide a holistic picture of the disaster’s impact on people’s livelihoods, including all occupations. As described later in these guidelines, the results will also serve to estimate the number of people who may have fallen below the national poverty line or who have fallen into extreme poverty as a result of the disaster.

Core indicator 3: Food security

Main dimensions of this indicator

The objective of the third core indicator is to assess how the disaster has deprived affected households of their food security. Figure 5 shows the two dimensions used to measure food security and their respective subindicators.

Figure 5: Core indicator 3: Food security – two dimensions and subindicators



These are some of the key questions that need to be answered by the analysis.

- How has the disaster impacted food availability, access and utilization?
- How many households are food insecure as a result of the disaster and for how long?
- What population groups are most food insecure or at risk of becoming food insecure?
- How are affected households coping with the disaster’s impact on their food security?
- What are the food security outcomes that can result from the disaster’s impact on food security and the coping strategies of households?

Baseline, measurements and information sources

Food security exists when “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”⁶ The two dimensions of food security used for the human impact analysis are described below.

1) The pillars

The first step will be to consider the overall context of food insecurity resulting from the disaster, which can be guided by three of the four pillars that typically form the basis for an analysis of food security, namely:

- (a) food availability
- (b) food access
- (c) food utilization

For the most part, the information should be collected from the PDNA teams responsible for the agriculture, livelihoods and health sectors. Humanitarian reports produced by the United Nations World Food Programme (WFP), Food and Agricultural Organization of the United Nations (FAO) and the United Nations Children's Fund (UNICEF) and other United Nations agencies can also be an important source of food security data, particularly those based on humanitarian assessments.

- **Food availability:** The disaster's impact on food available in disaster-affected districts, which can come from local production, other districts not affected by the disaster, commercial imports and food aid. Food availability can also be determined by trade through local markets, stocks held by farmers, traders and in government reserves and food transfers.
- **Food access:** A household's ability to acquire adequate amounts of food through one or a combination of ways – own home production and stocks; purchases; barter; gifts; borrowing; and food aid. It is important because food may be available but not accessible to certain households if they cannot acquire sufficient quantity or diversity of food. People's access to food can be constrained by physical, financial and sociocultural barriers.
- **Food utilization:** The use of food within households. Food may be available and accessible but certain household members may not benefit fully if they do not receive an adequate share of the food in terms of quantity and diversity, or if their bodies are unable to absorb food because of poor food storage and preparation, inadequate sanitation, nutrition, caring practices or sickness.

Table 4 shows the minimum information requirements that should be collected for the human impact assessment.

Table 4: Food security pillars – baseline, measurements and sources of information

Pre-disaster baseline	Baseline source	Measurement	Measurement source
The number and/or proportion of people who were food insecure in affected districts prior to the disaster	Agricultural census	The number and/or proportion of people who face food insecurity in disaster-affected districts	The PDNA teams responsible for the agriculture, livelihoods and health sectors
	The agriculture sector development plan	Population groups currently most at risk and number (for example, children, pregnant women, the homeless or the landless)	Humanitarian reports, assessments and surveys conducted by the government, WFP, FAO, UNICEF and other United Nations agencies ⁷
	FAOSTATS	Additional population groups expected to become at risk	Field visits, interviews, focus group discussions and surveys

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Humanitarian assessments or food security studies should be used. In some cases, these may report specific food security indicators, such as the food consumption score or the reduced coping strategies index, which are proxies for food insecurity.

2) Household food security coping behaviours

The second step considers household food security coping behaviours employed by the disaster-affected population. The aim is to identify the behaviours that households are adopting in response to their reduced access to enough food. There are a number of fairly regular behavioural responses to food insecurity – or *coping strategies* – that people use to manage household food shortages. For the assessment, consider the following four types of consumption coping strategies, which are typically employed by food insecure households.⁸

- **Rationing:** This is the most common coping strategy, in which households attempt to manage the shortfall by rationing the food available to the household, through methods such as reducing portion sizes or the number of meals consumed in a day, favouring certain household members over others or refraining from eating on certain days.
- **Dietary change:** Households may change their diet, such as switching food consumption from preferred foods to cheaper, less preferred substitutes.
- **Increase short-term household food availability:** Households can attempt to increase their food supplies using short-term strategies that are not sustainable over a long period. Typical examples include borrowing or purchasing on credit. More extreme examples are begging or consuming wild foods, immature crops or even seed stocks.
- **Short-term measures to decrease the number of people to feed:** If the available food is still inadequate to meet needs, households can try to reduce the number of people that they have to feed by sending some members elsewhere, for example, sending children to eat with relatives or neighbours.

Several different individual coping behaviours can be considered under each of the four strategies. Table 5 provides some examples as a reference.

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The guidance in this section is based on the Coping Strategy Index (CSI), from USAID, World Food Programme, Feinstein International Center, Cooperative for Assistance and Relief Everywhere and TANGO, *The Coping Strategies Index: Field Methods Manual, Second Edition* (January 2008).

Table 5: Examples of household food security coping behaviours employed by disaster-affected populations

Coping category	Individual coping behaviour
Rationing	• Limit meal portion sizes • Restrict consumption by adults in order for small children to eat • Feed working members of the household at the expense of non-working members • Reduce the number of meals consumed in a day • Refrain from eating for a day or more
Dietary change	• Rely on less preferred and less expensive foods
Increase short-term household food availability	• Borrow food from friends or relatives • Purchase food on credit • Gather wild food, hunt or harvest immature crops • Consume seed stock held for next season
Decrease the number of people to feed	• Send children to eat with relatives or neighbours • Send household members to beg

All coping behaviours in Table 5 indicate a problem of household food insecurity, but they are not necessarily all problems of the same severity. Modest dietary adjustments, such as eating less preferred foods, are reversible strategies that do not necessarily jeopardize longer-term prospects. More extreme behaviours, such as the sale of productive assets in order to eat, may suggest higher levels of food insecurity that can have more serious long-term consequences, such as entrenched poverty. Therefore, the assessment should try to measure the frequency of these coping behaviours (how often is the coping strategy used?) and estimate the severity of the strategies (what degree of food insecurity do they suggest?). Both the frequency and severity will contribute to the analysis of the household's food security status.

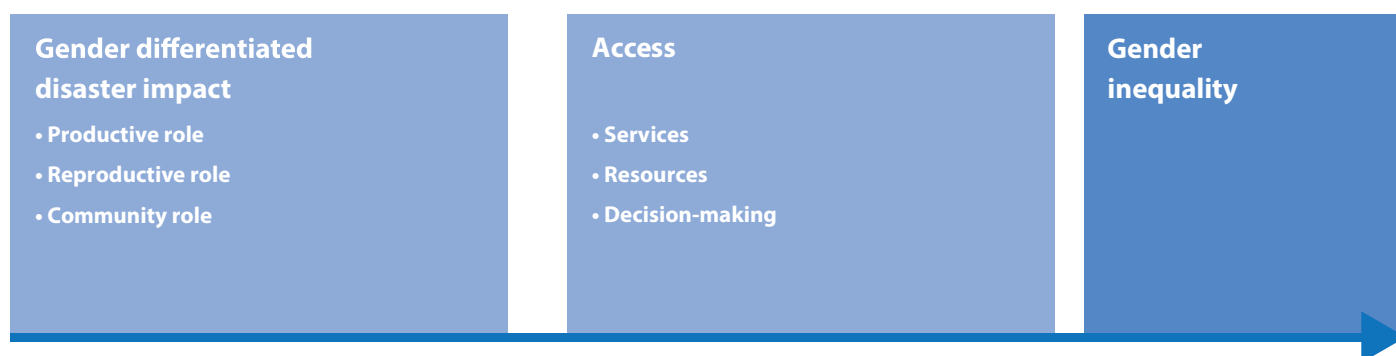
The PDNA findings from some sectors may provide useful information for the analysis of food security coping capacity, such as the agriculture or livelihoods sectors. However, in many cases, the information needed will have to be collected from field visits, interviews, focus group discussions and/or household surveys. Annex 1 contains a section on coping strategies that can be used as a reference to guide household interviews.

Core indicator 4: Gender equality

Main dimensions of this indicator

The fourth core indicator considers the disaster's impact on gender. In the context of the human impact assessment, the objective is to assess the way the disaster has affected gender-specific roles and responsibilities, as well as its impacts on access and control of services, resources and decision-making, to identify how women are coping and determine the resulting outcomes on gender equality. The analysis will help to formulate gender-responsive recovery programmes. Figure 6 shows the subindicators used to measure the two dimensions of the gender analysis.

Figure 6: Core indicator 4: Gender equality – two dimensions and subindicators



The subindicators, baseline and information sources

The two dimensions of the gender analysis will be discussed here in relation to the human impact assessment, including the measures for each subindicator, the baseline data requirements, the analysis that can be quantified or qualified and the sources of information. The following two subindicators will guide the analysis on gender equality.

1) The gender-differentiated impact of the disaster

As noted, disasters have different impacts on women, girls, boys and men because they play different roles in economic activities, domestic work and in communities. They have different capacities and resources to respond to disasters and resort to different coping strategies. It is therefore necessary to identify the gender-differentiated impact of the disaster, particularly in relation to the following three main gender roles of women and girls: 1) women's productive role;⁹ 2) women's reproductive role;¹⁰ and 3) women's community role.¹¹

9 Refers to economic activities and work for payment in cash or in-kind. It includes both market production and subsistence or home-based production. This may include women's work as independent farmers, farm wage workers, home-based businesses such as shops, micro-enterprises in the informal economy, paid domestic work and vendors in local markets.

10 Refers to women's domestic responsibilities, such as childbearing, the care of children, the sick and elderly, home maintenance, cooking, water and fuelwood collection, home gardening and the care of small domestic animals.

11 Refers to activities women undertake at the community level, as an extension of their reproductive role, to ensure the provision and maintenance of community resources, such as water, healthcare, education and protection. This is typically voluntary unpaid work and includes activities conducted in women's organizations and community groups.

Table 6 provides guidance on the measures to use to assess the disaster's impact on women's triple roles, the information sources and the baseline information needed for the comparative analysis.

Table 6: Gender-differentiated impact: Baseline, measurements and sources of information

Pre-disaster baseline	Baseline source	Measurement	Measurement source
Impact on productive role	Women's organizations	The number and proportion of women who lost their main livelihood or economic activity (by occupation)	PDNA sector assessments for agriculture, livelihoods and employment, commerce, industry and tourism
Women's economic participation in disaster-affected districts	National gender policies and strategies	The number and proportion of women who lost their employment	
Women's labour-force participation in disaster-affected districts	Gender-specific studies	Estimate of women's income loss	
Impact on reproductive role	Ministry of Gender or Women	Ways in which women's reproductive roles have been affected by the disaster, including (but not limited to) childbearing, raising children, water and fuelwood collection, food preparation and cooking, caring practices	PDNA sector assessments for water and sanitation; and health
Women's reproductive role or domestic responsibilities in disaster-affected districts	National census reports	Ways in which the disaster has affected intra-household relations	
	National or district household surveys	The incidence of gender-based violence in affected areas, compared to the baseline	
	Poverty assessment reports	Ways in which the disaster has affected women's community roles, their cooperatives and other community or women's groups	Field visits, interviews, focus groups, household survey
	Status of women reports		
	Human Development Report		
Impact on community role	Gender Inequality Index		
Women's community work related to shared resources, such as water, health care, education and protection			
Women's organizations, cooperatives and other groups			

2) Access to services, resources and decision-making

Gender relations tend to be culturally-specific and are often characterized by unequal distribution and/or access to services and resources. They are also characterized by unequal distribution and/or access to power and decisions in order to vocalize priorities and needs and use individual potential and capacities.

To measure this subindicator, the analysis will need to consider the disaster's impact on women's access to key services and resources and to decision-making. Table 7 provides guidance on the measures to use, the information sources and the baseline information needed for the comparative analysis.

Table 7: Access to services, resources and decision-making – baseline, measurements and sources of information

Pre-disaster baseline	Baseline source	Measurement	Measurement source
Access to services	Women's organizations	The number of women who lost access to reproductive health, prenatal and postnatal care	PDNA sector assessments for water and sanitation, health, education, gender
Available facilities for reproductive health, prenatal and postnatal care	National gender policies and strategies	The number and/or proportion of girls who lost access to primary education	Field visits, interviews, focus groups
Prevalence of gender-based violence and related protection services	Gender-specific studies Ministry of Gender or Women	The number of women who lost access to sanitation facilities for women and girls, community spaces for women's groups, protection services for women and girls, for example, for treatment of gender-based violence	
Sanitation practices of women and girls	National census reports		
School enrolment and dropout rates, by sex	National or district household surveys		
Practices and norms that regulate the mobility of females and that may prevent access to resources, such as education, employment, credit, housing and land	Poverty assessment reports Status of Women reports Human Development Report		
Access to resources	Gender Inequality Index	The number of women who lost access to:	PDNA sector assessments for housing, water and sanitation, livelihoods and employment
Official and traditional ownership/inheritance practices of land, housing and productive resources		• land • housing • safe drinking water • fuel for cooking • credit/saving schemes • social security systems • safety net programmes	Field visits, interviews, focus groups
Local customs regarding access, control and use of resources: who owns (controls) them and who has access (uses) to them, including land and land tenure patterns by sex			
Local microfinance services			
Local social security systems and safety net programmes			
Access to decision-making		The impact of the disaster on women's organizations and community groups, their participation in local governance, women's customary leadership roles and their participation in ongoing food for work programmes and other humanitarian assistance and livelihood programmes, such as home construction	PDNA sector assessment for governance
Local women's cooperatives and other community groups			Field visits, interviews, focus groups
Level of participation and leadership of women and men in local governance			
Customary institutions and arrangements for decision-making at the local level			

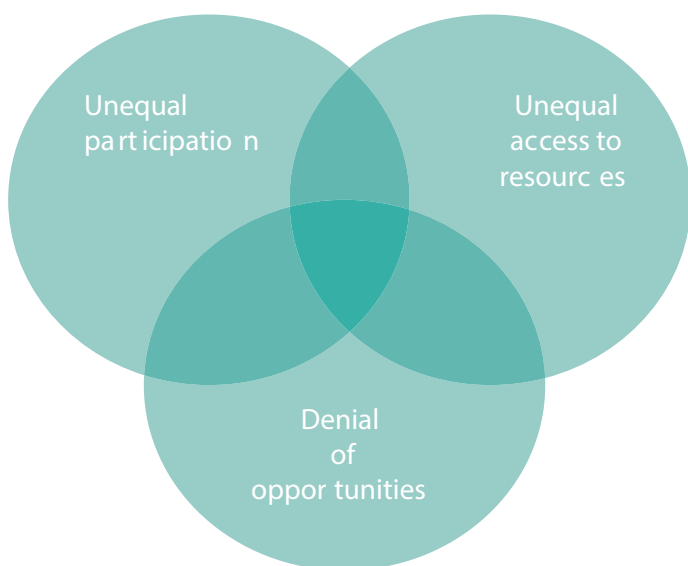
Overall, the findings should identify the impact faced by women and girls as a result of the disaster and in relation to all the relevant spheres (productive, reproductive and community roles and disadvantages in their access to services, resources and decision-making). The results will also indicate if there is a risk that gender inequality may increase. Ultimately, the findings will point to the recovery policies and strategies required to meet the needs of women and girls and to prevent further gender inequalities.

Core indicator 5: Social inclusion

Main dimensions of this indicator

The fifth core indicator considers social inclusion/exclusion of particular disadvantaged groups among the disaster-affected population. The objective is to identify disadvantaged population groups, to assess how they have been further deprived or excluded by the disaster and identify ways to promote their social inclusion in the recovery process. Figure 7 indicates the three subindicators used to measure social inclusion/exclusion.

Figure 7: Core indicator 5: Social inclusion



Unequal access to resources: The first subindicator measures access by disadvantaged groups to basic services and resources, such as education, health care, employment and income.

Unequal participation: The second subindicator measures the participation in political, civic and cultural life of disadvantaged groups, including recovery planning and decision-making.

Denial of opportunities: The third subindicator measures denial of opportunity on the basis of ethnicity, religion, race, caste, sex, age, physical disabilities and other characteristics that should have no bearing on their rights, achievements or well-being.

These subindicators can be used as a reference to identify disadvantaged population groups among the disaster-affected population. Some of the key questions that need to be answered by the analysis include the following:

- Which population groups have been disproportionately affected by the disaster and how?
- Who has unequal access to vital resources and services and why?
- What groups have unequal participation in decision-making?
- What population groups are denied equal opportunities?
- Who are the most disadvantaged and how are they coping with the disaster's impact?

Disasters tend to cause disproportionate harm to vulnerable and disadvantaged individuals and groups and the assessment should identify these populations. It is important to consider that exclusion may also entail limited political participation and impact, such that excluded groups may lack influence over resource allocation and representation in policies and strategies related to the recovery process. The analysis should consider the multiple disadvantages that some individuals may face, considering that many people belong to more than one disadvantaged group. The broad categories of disadvantaged population groups that should be considered during the assessment are as follows:

Class and identity: Certain socio-economic groups are particularly disadvantaged even before disasters, such as the poorest segments of society. People belonging to a particular caste or an ethnic or religious minority may also be among the most disadvantaged groups. They are likely to have homes built with materials that are less resilient to disasters and that are therefore more likely to be destroyed. They are more vulnerable because they are less likely to be able to afford food, water and other consumption items during disasters, or to have access to public services. They may also be excluded from assistance, such as humanitarian aid, recovery activities, safety net programmes and credit.

Livelihood groups: The livelihoods of some population groups may have been disproportionately affected, such as subsistence farmers or pastoralists in drought situations, or informal micro-entrepreneurs in urban populations struck by floods or earthquakes.

Disability: Populations with mental or physical challenges face heightened levels of risk and vulnerability, both during and after disasters. This includes people who have mental or physical disabilities, older people and those suffering from HIV and AIDS. Disasters also create new disabilities and can exacerbate existing patterns of disability. This population group is more likely to be affected by injury, illness or death and to face greater difficulty in accessing public services including relief or recovery assistance. It is therefore important to understand the specific needs and capabilities of different kinds of disabled persons in the post-disaster context and to engage them in all stages of the recovery process. The 2006 Convention on the Rights of Persons with Disabilities calls upon states to take “all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters”.

For pre-disaster baseline information, it may be necessary to consider a variety of sources, given the multiple dimensions of social exclusion. These might include the national population census and some internationally standardized surveys, including labour force surveys, demographic and health surveys, Multiple Indicator Cluster Surveys (MICS) and living standard measurement surveys. Consider the government ministry responsible for disability, as well as national and international non-governmental organizations that specialize in disability, such as Humanity & Inclusion (formerly Handicap International). Each of these sources is designed for a specific purpose and several references will need to be used to obtain a holistic assessment of social exclusion.

Post-disaster information about disadvantaged groups will depend largely on obtaining data that is disaggregated as much as possible by age, ethnic group, race, class or income level, nationality and level of disability. At the start of the PDNA, it will be necessary to agree with the sector leads on obtaining the necessary disaggregated data from sector assessments. Field interviews, focus group discussions and/or household surveys will be an important source of information on disadvantaged groups.

The overall findings for this core indicator should identify the disadvantaged or vulnerable groups among the disaster-affected population and describe the reasons for their being disadvantaged and the disadvantages they face. Ultimately, these populations should be prioritized and targeted in the recovery strategy.



ASSESSING CAPACITIES, RESOURCES AND COPING STRATEGIES

Typically, the affected population will resort to using their internal resources, adaptive capacities and coping strategies to overcome the disaster's impact on their well-being. These resources and capacities, as well as the coping strategies, need to be considered in order to assess the overall human impact.

There are a variety of measures that people adopt in response to the multiple effects of disasters. For example, homelessness, illness or lack of cooking fuel all require different responses by different members of the household. The human impact assessment should therefore identify the strategies of the affected population in relation to each of the five core indicators.

Such strategies may be positive and act as an effective adaptation to the disaster's impact, such as living temporarily with nearby relatives or finding alternative sources of income. Such positive mechanisms that reflect people's own capacity and use of their resources to cope and recover should be identified during the assessment and supported during the recovery process.

However, it is more common for the coping strategies to have a direct or indirect negative effect. For example, the withdrawal of children from school will delay their educational attainment and borrowing to meet basic needs will increase the debt burden of affected families.

Past disaster experiences suggest that there are regular behavioural responses to disasters. As an indicative reference, Table 8 illustrates some examples of the coping strategies that may be adopted by the affected population.

Table 8: Examples of coping strategies

Deprivation	Examples of capacities and resources used to cope with the disaster
Housing	People may move in temporarily with relatives; they might rent a house; they may migrate to urban areas or other districts; they may become displaced and move into temporary shelters or internally displaced person camps.
Water and sanitation	People may need to purchase water, which increases household expenditure and possibly debt; they may move or travel long distances in search of water for human or animal consumption; they may withdraw children from school to assist with water collection; in more severe situations, they may have to drink contaminated water or reduce water consumption.
Education	Parents may be forced to withdraw children from school because they cannot afford school fees or they need their children to assist with household tasks; children may be withdrawn from schools due to migration or displacement; parents may need to borrow money to pay school fees, which increases their debt.
Electricity and cooking fuel	People (typically women and/or children) may need to walk longer distances to fetch cooking fuel; they may resort to wood, charcoal or other sources of fuel for cooking, which can have health and environmental consequences.
Health	Families may need to spend more to treat the exacerbation of an illness or borrow for health care, which increases their debt.
Livelihoods	To cope with the loss of employment and income, households may sell their productive assets (livestock, household items, land, among others); use their savings to buy food, water or other basic items; turn to alternative income sources, such as charcoal production; take on hazardous work and negative forms of labour; withdraw children from school and send them to work; migrate to urban centres or other geographic areas in search of employment; start new livelihoods or learn a new trade.

The human impact is influenced by people's coping strategies, particularly negative coping mechanisms. For instance, the consumption of contaminated water will produce negative health outcomes and distress sales of livestock and other productive assets will deplete the small resource base of poor households, making it more difficult for them to escape poverty.

Ultimately, the human impact results from a combination of the disaster's immediate effects and people's coping strategies. Therefore, the analysis needs to consider the cascading effect. The combined analysis can be both qualitative and quantitative and compare the findings with the baseline or pre-disaster context.

The coping strategies can be best identified through direct field visits, focus group discussions and interviews, as well as through a household survey. Sector teams will likely also identify coping strategies for their respective sectors. Sharing information with sector teams will be a useful way to cross-check and verify findings. Annex 1 includes questions that can be considered during field visits.



THE FINAL HUMAN IMPACT ANALYSIS

Evidence suggests that the impacts of disasters undermine national development gains and can push the poor and most vulnerable deeper into poverty, presenting a major obstacle to the achievement of the Sustainable Development Goals (SDGs). One study found that, on average, floods and drought together are responsible for the extreme poverty of about 25 million people every year.¹² More extreme events resulting from climate change will pose greater challenges in the years ahead. It is estimated that by 2030, as many as 325 million extremely poor people will be living in the 49 most hazard-prone countries, the majority in South Asia and sub-Saharan Africa.¹³ By 2050, hunger and child malnutrition could increase by up to 20 percent, as a result of climate-related disasters.¹⁴ It is therefore necessary to assess if and how the human impact of the disaster can have negative consequences on poverty in the country and its national SDG targets and also to identify the recovery policies and strategies that can help to reduce or mitigate these consequences.

The findings from the five core indicators will form the basis for the final human impact analysis. Collectively, the assessment findings can help to obtain the following three results, as will be discussed in this section:

- 1) a composite picture of all the impacts and deprivations caused by the disaster
- 2) an estimate of the disaster's impact on poverty
- 3) the potential implications on the country's SDGs and targets

As previously noted, the human impact analysis should be led by the government and guided by the ministry or office responsible for national development and/or poverty reduction. The analysis can also benefit from the expertise of the UNDP team in charge of developing the national human development reports. The following sources can provide data and information needed to undertake the final human impact analysis in relation to poverty and the SDGs:

- national human development report
- national development plan or strategy
- national poverty reduction strategy
- World Bank poverty and equity data portal
- national human development index
- national gender inequality index
- national household surveys
- national population census
- Multiple Indicator Cluster Survey (MICS)
- humanitarian situation reports from United Nations agencies

Once the field visits are complete, the PDNA teams will be consolidating, analysing and interpreting all the data collected. This analysis is critical to the success of the overall PDNA, as it converts data and information into credible and compelling evidence which informs the decisions taken by government authorities and the international community regarding the country's recovery.

During this final stage, it will be necessary to cross-check and triangulate data and information with the sector teams to examine inconsistencies and confirm findings on the human impact. Some of the key considerations to be coordinated among the sector teams when processing the PDNA findings include the following:

- identify and agree on the main human impacts that need to be reflected in the sector chapters
- identify common priorities across sectors and geographic areas that address the human impact
- agree on vulnerable population groups that need to be targeted
- discuss and agree on the implications of all sector findings on poverty, food security outcomes, gender equality and social inclusion

Discussions among all sector teams will facilitate a common understanding of the human impact and its potential consequences and will also ensure consistency in the final analysis and findings presented across all sector chapters in the final PDNA report.

¹² Hallegatte, Stephane, et al., *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters* (World Bank, 2017).

¹³ Shepherd, Andrew, et al. *The Geography of Poverty, Disasters and Climate Extremes in 2030*, (ODI, October 2013).

¹⁴ The United Nations World Food Programme, "Eight Facts On Disasters, Hunger and Nutrition", 9 March 2015. Available at: <https://www.wfp.org/stories/8-facts-disasters-hunger-and-nutrition>.

THE COMPOSITE PICTURE OF THE HUMAN IMPACT

One of the key contributions that the human impact assessment can make is to bring together the multiple impacts and deprivations caused by the disaster, as per the assessment results on the five core indicators, and examine the full human impact under a single lens. The findings from the analysis of all impacts and deprivations should be collected and presented in summary form, highlighting the key numbers that reflect the human dimension, as illustrated in the example provided in Figure 8.

Figure 8: Example of a composite picture of the human impact of disasters

Deprivations in living standards	Over 4 million people were displaced and deprived of basic household assets	Inoperable water sources have deprived 9.2 million people of access to clean water	About 2 million livestock have been lost, depriving households of their main asset
Health and education	2.5 million children dropped out of school and are deprived of education	1.2 million households face increased barriers to accessing primary health care services	25,000 people have been affected by the outbreak of measles and 10,500 by diarrhoea
Deprivations in livelihoods	740,000 pastoralists lost their main source of livelihood	1.2 million farmers became unemployed, causing an income loss of \$870 million	200,000 small businesses were affected, causing \$43 million in revenue loss

THE HUMAN IMPACT AND POVERTY

The final human impact analysis can estimate the disaster's impact on poverty. Poverty, however, is complex and has multiple dimensions, manifestations and causes. Poverty encompasses deprivations that relate to human capabilities, including food security and consumption, health, education, rights, voice, security, dignity, income and decent work, among other deprivations. Similarly, disasters can impact poverty in equally complex ways. Consequently, there is no single approach that can capture all the essential aspects of a disaster's impact on poverty. The type of analysis undertaken will largely be influenced by the data and expertise available in the country, and therefore should be flexible and tailored to the national circumstances and needs.

This section presents two options: 1) estimating the impact on multidimensional poverty; and 2) estimating the number of people who may have fallen below the poverty line. A first step is to have an overview of the pre-disaster poverty conditions in the disaster-affected districts and compare these to post-disaster conditions based on the findings of the human impact assessment as a whole. Table 9 presents some of the primary questions.

Table 9: Pre-disaster and post-disaster poverty assessment questions

Pre-disaster poverty conditions	Post-disaster poverty assessment
• What is the country's poverty profile (depending on the statistics available)? • What is the distribution of poverty in the country and in affected districts? • Who are the poor and where do they live?	• How will the disaster affect the pre-existing levels of poverty in affected districts? • What population groups are most at risk of falling into poverty and where do they live? • What are the implications for the national poverty reduction strategy and safety net programmes?

An important element of the analysis is to estimate the implications of social exclusion on poverty. Not only are members of disadvantaged social groups more likely to live in poverty, they also tend to experience deeper poverty than the rest of the population. When disadvantaged groups are disproportionately affected by disasters, they are more likely to remain in poverty over the long term. Unequal access to opportunity and services feeds the vicious cycle of disadvantage and exclusion. Research indicates that certain attributes, such as caste, ethnicity, religion and class, heighten the risk of chronic poverty and of transmitting poverty to the next generation.

As noted earlier, the first core indicator (Living conditions, health and education) is based on the Multidimensional Poverty Index (MPI), adapted to fit the post-disaster context. The assessment findings for this core indicator can therefore serve to estimate the disaster's impact on multidimensional poverty in the country or disaster-affected districts.

Human impacts and deprivations across the three dimensions (standard of living, health and education) should be considered collectively, to reflect the multiple and overlapping deprivations that people face as a result of the disaster. It can therefore reveal the depth of people's non-income deprivations and acute poverty, as it reflects overlapping deprivation of basic needs.

As a starting point, the analysis can first identify individual deprivations based on the assessment findings and then compare the pre-disaster baseline with the post-disaster findings, as shown in the example in Figure 9.

Figure 9: Example of a composite picture of deprivations and estimate of impact on multidimensional poverty

Baseline	Post-disaster estimates on multidimensional poverty
83 per cent of households in the country do not have a dwelling with a finished floor.	About 1.6 million households were deprived of housing, raising the number of households without housing in the country to 87 per cent.
Rural safe drinking water coverage was 61 per cent in 2015/16.	An additional 2.5 million households are deprived of water, reducing the water supply coverage from 61 per cent to 55 per cent in the country's rural areas.
Non-functional rural safe drinking water supply scheme coverage was 11 per cent.	
In the 2014/15 fiscal year, the number of elementary schools (Grade 1–8), were 933,373.	150,000 schools were destroyed, reducing the total number of elementary schools in the country from 933,373 to 783,373.
The proportion of households with a child between the ages of seven and 15 that had a child out of school was 58 per cent in rural areas.	An additional 1.2 million children are now out of school for an estimated 18 months.
According to the latest data, 87 per cent of the population was MPI poor in 2011, which suggests that the country's poverty was already deep-rooted before the disaster. Considering the disaster's impact on multiple deprivations, the number of people in the country facing multidimensional poverty has increased and for many it has deepened.	

Where possible, the analysis should estimate the number of people who became multidimensionally poor and should distinguish between chronic and transitory poverty by estimating the length of time that affected households will face deprivations. The assessment team should work closely with the government ministries or agencies responsible for poverty reduction or social welfare, as their expertise can be drawn upon to make these estimates.

Poverty is also defined in conventional monetary terms, using different international poverty lines such as extreme poverty, which captures those living on less than \$1.90 a day. The findings of core indicator 2 on Livelihoods can help to estimate the disaster's impact on income poverty, particularly to estimate the number of people who may have fallen below the national poverty line or who have fallen into extreme poverty. The analysis and calculation of the estimates should be carried out in coordination with the relevant government ministry. The analysis should attempt to identify the population groups who are at risk of falling into poverty. This can be based on the assessment results of core indicator 5 on Social inclusion.

Case study: The Nepal earthquake and poverty

A PDNA for Nepal found that the 2015 earthquakes affected the livelihoods of about 2.3 million households and 5.6 million workers across 31 districts, resulting in the loss of 94 million work days and 17 billion Nepalese rupees of personal income in the 2015–2016 fiscal year. The agriculture sector was the most severely affected – it was estimated that 49.9 percent of all work days lost occurred in agriculture, followed by the tourism sector, with 31 percent, and commerce and industry, with 20 percent. The destruction of productive assets, such as land, seeds, machineries and working tools, implied a loss of wage income, as did the drop in economic activities.

Overall, the country's poverty rate was around 9.7 percent in the urban affected areas and 26.5 percent in the rural affected areas. Poverty was deeper – that is, those below the poverty line were pushed even further below the poverty line – in rural areas of the affected regions than in other parts of the country. Using a slightly moderate definition of poverty (twice the poverty line) to account for the larger concentration of households that are vulnerable to falling into poverty, 51.7 percent of the population in the urban areas and 66.8 percent in rural areas within the earthquake-affected region were either already poor or at risk of falling into poverty.

It was estimated that the earthquakes could push an additional 2.5 to 3.5 percent of Nepalis below the poverty line.

Considering the significant proportion of the Nepali population that subsisted just above the \$1.25 line but below \$2 prior to the earthquakes, the vulnerability of this group was found to be of serious concern, especially female-headed households and those with a high-dependency rate.

The massive destruction of livelihoods in the affected districts, disruption of basic services and limited access to facilities, including relief, were found to be likely to increase inequality, given that the poorer sections of the population were more severely affected. The untouchable caste, the landless and female-headed households were predicted to face a severe crisis, as their coping capacities and resources were generally very low.

THE HUMAN IMPACT AND THE SUSTAINABLE DEVELOPMENT GOALS

The human impact of disasters may have implications for the country's achievement of the Sustainable Development Goals (SDGs). The final step in the analysis is to consider how the multiple deprivations caused by the disaster and its impact on poverty may affect the achievement of the country's specific SDG targets. The aim is not to quantify or to forecast, but rather to estimate how the national SDGs may be compromised, for example, by gauging the distance to achieving them in terms of time (years), where possible.

Table 10 shows the SDGs that may be most affected by the human impact of disasters and indicates the core indicator that is most relevant to each SDG. The country's specific SDG targets should be the primary reference in the analysis. The country's national development framework or strategy is a second reference that can be used for the analysis. Typically, the SDGs are integrated into these policies and are therefore reflected in national development plans.

Table 10: Relationship between key SDGs and the human impact of disasters

SDG	Human impact core indicator
SDG 1 - No poverty	Estimate of the disaster's impact on the national poverty line and on multidimensional poverty
SDG 2 - Zero hunger	Core indicator 3 - Food security
SDG 3 - Good health and well being	Core indicator 1 - Living conditions, health and education
SDG 4 - Quality education	Core indicator 1 - Living conditions, health and education
SDG 5 - Gender equality	Core indicator 4 - Gender equality
SDG 6 - Clean water and sanitation	Core indicator 1 - Living conditions, health and education
SDG 8 - Decent work and economic growth	Core indicator 2 - Livelihoods
SDG 10 - Reduced inequalities	Core indicator 5 - Social inclusion

Case study: Floods in Pakistan and the effect on achieving universal education

A PDNA conducted in Pakistan following the large-scale floods that struck in 2010 found that the event had direct consequences on the Net Enrolment Ratio for primary education. Firstly, pupils who were attending schools that were completely or partially destroyed no longer had access or had only partial access to learning space and facilities. Secondly, schools that were used as shelters for flood-affected families were equally unavailable. It was estimated that 521,731 children would be prevented from attending school due to the floods.

In 2008–2009, prior to the floods, the Net Enrolment Ratio was 57 percent, and it was anticipated to reach 59.4 percent in 2010. After the floods, it was estimated that the Net Enrolment Ratio would decline to 56.4 percent in 2010, a drop of three percentage points.

Pakistan had aimed to attain 100 percent primary enrolment of children aged five to nine by 2015. Prior to 2010, almost one in two children were out of school, and the target of achieving universal primary education was unlikely to be met. Following the floods, the distance to achieving this target became even greater.

Case study: Drought in Malawi and food security outcomes

Following the dry spells caused by the El Niño phenomenon during the winter agricultural season (from October 2015 to March 2016), the results of the Malawi Vulnerability Assessment Committee in June 2016 indicated that about 6.5 million people in the country would not be able to meet their food requirements for the 2016–2017 consumption season. With 6.5 million people facing food insecurity, Malawi's food insecure population increased by 14 percent.

The unavailability of food and rising prices against people's diminishing purchasing power made the situation even more critical for Malawi's vulnerable communities. Even during non-crisis periods, a primary driver of food insecurity in Malawi is the inability of people to access food due to poverty. According to the latest data, over 50 percent of the population lived below the poverty line, with 25 percent living below the food poverty line. The vulnerability of these latter ultrapoor, especially female-headed households, was a serious concern.



THE HUMAN IMPACT RECOVERY STRATEGY

The results of the PDNA are translated by the sector teams into recovery needs and priorities. Recovery interventions are developed for all sectors and are included in the recovery strategy, along with the time-frame for their implementation. The interventions are designed for short-term, medium-term and long-term recovery time-frames.

Sector teams should include priority recovery interventions that address the human impact in their respective sectors, and these should be reflected in the relevant sector chapters of the final PDNA report. It is important to discuss and achieve consensus among sector teams on the most appropriate recovery interventions. These interventions can be programmes, projects or policies that address priority needs and support human recovery in a sustainable manner. They reflect what is implemented and are significant in terms of what they ultimately *lead* to – human development outcomes.

Priority target population groups should also be identified jointly with the sector team leaders, based on the disadvantaged groups identified in the analysis of core indicators 4 and 5 (Gender equality and Social inclusion).

In addition to the sector-specific recovery interventions identified, the human impact assessment can also identify recovery strategies that fall outside the sectoral domains. This human impact recovery strategy should outline the ways in which the recovery process should line up with and support the country's national development plans, poverty reduction strategy and its objectives for achieving the Sustainable Development Goals and targets. Wherever possible, it should permit the alignment of the human recovery process with the broader strategic development objectives of national governments.

As with all PDNA sectors, the overall findings of the human impact assessment should be written into a chapter to be included in the final PDNA report. It is important for the government to be part of the writing process and to approve the findings and recommendations. A template is included in Annex 2 to help guide the write-up and structure of the human impact chapter and to ensure consistency.



ANNEXES

ANNEX 1: GUIDE TO INTERVIEWS AND HOUSEHOLD SURVEYS

This brief guide includes a set of questions that can be used during field visits. It has been designed to be flexible, and therefore it may be used to guide interviews, focus group discussions and/or household surveys. The guide should also be adapted to the particular context of the country, disaster and the PDNA, selecting the sections and questions that are most relevant.

A set of questions is included for each of the five core indicators used in the human impact assessment, as per these guidelines. As previously noted, most of the data and information required for the human impact assessment should be provided by the relevant PDNA sector teams and should be coordinated at the start of the PDNA. Therefore, the questions included here serve to complement the assessment, especially the qualitative analysis, as well as to verify and triangulate findings.

There are some exceptions in which the information needed for the human impact analysis may only be obtained through interviews, focus group discussions and/or household surveys. The table below indicates which information is required for each indicator.

Core indicator	Information required
Core Indicator 1: Living conditions, health and education	Identify the type of energy source used for cooking before and after the disaster Identify alternative sources of drinking water used, who is responsible for fetching the water and the time and distance involved
Core Indicator 3: Food security	Identify the coping behaviours associated with household food insecurity
All core indicators	Identify the coping strategies of the disaster-affected population

Core indicator 1: Living conditions, health and education

Housing

- 1) Did you and your family/household lose your home?
- 2) Was the home destroyed, severely damaged or partially damaged?
- 3) Did your family lose any household items due to the disaster?
- 4) If so, which household items were lost in the disaster?
 - appliances (fridge, stove, television, etc.)
 - furniture
 - cooking supplies
 - transport (vehicle, bicycle, motorcycle, etc.)

Energy and cooking fuel

- 1) Before the disaster, what type of energy source did your household mainly use for cooking?
 - alcohol/ethanol
 - gasoline/diesel
 - kerosene/paraffin
 - coal/lignite
 - charcoal
 - wood
 - crop residue/grass/straw/shrubs
 - animal dung/waste
 - processed biomass (pellets)/woodchips
 - garbage/plastic
 - sawdust
 - other (please specify) _____
- 2) Since the disaster, what type of energy source does your household mainly use for cooking? Please select from the list above.
- 3) How do you obtain the energy source that your household is using now, after the disaster?

Water

- 1) Before the disaster, what was the main source of drinking water for your household?
 - piped water
 - tube-well, borehole, dug well
 - water from a spring
 - rainwater collection
 - tanker-truck
 - surface water (river, stream, pond, lake, canal, irrigation)
 - bottled water
 - other (please specify) _____

- 2) Was access to this water source disrupted as a result of the disaster?
- 3) What is the main reason for the disruption?
- 4) Is access to water still disrupted?
- 5) What source of water is the household using now, after the disaster?
- 6) Is this water adequate (sufficient, clean, nearby)?
- 7) How long does it take to go to the water source, get water and come back?
- 8) Are there difficulties in accessing this water source?
- 9) Which household member(s) usually collect(s) the water?

Health

- 1) After the disaster, did any of your household members need medical attention, for any reason?
- 2) If so, which household member(s), and what medical attention did they need?
- 3) Did all members that needed medical attention receive health care? If not, why?
- 4) Were the nearby health care facilities destroyed or damaged by the disaster?
- 5) What alternative health care facilities are available? What is the distance to these facilities?
- 6) Compared with the situation before the disaster, how would you describe your household's access to general health services after the disaster?
 - better
 - same
 - worse
 - don't know

Education

- 1) Before the disaster, were there any children (under 17 years) in the household attending school?
- 2) After the disaster, did these children stop attending school? If so, why?
- 3) How long have they not been attending school since the disaster?
 - number of days
 - number of months
 - still not attending
 - don't know

Core indicator 2: Livelihoods

- 1) Did you or any of your household members lose crops (harvest, stored crops, seeds)?
- 2) Did you or any of your household members own a business before the disaster?
- 3) If so, was the business damaged or lost in the disaster?
- 4) Was the business equipment, stocks or supplies damaged or lost in the disaster?
- 5) Did you or any of your family/household members lose their job because of the disaster?
- 6) Which family/household member(s) lost their job(s)? What type of job(s) was lost? (agriculture, small business, commerce, etc.). How is the household generating income now, after the disaster?
 - new/different job(s) (which member(s) of the household, and what type of job?)
 - the children are now working (the children are now out of school)
 - household members have temporarily/permanently migrated (where to?)
 - receiving assistance from relatives/neighbours
 - begging
- 7) How does your household's income compare now with the income before the disaster?
 - increased
 - the same
 - decreased
 - don't know
- 8) Did your household lose or sell any of the following assets and resources as result of the disaster?
 - farmland
 - farm equipment (tractor, tools, other farm equipment)
 - livestock (camels, cattle, goats, pigs, chickens, etc.)
 - seed stock
 - savings, (cash, gold, jewellery, etc.)
 - credit or loans

Core indicator 3: Food security

Below is a list of the typical coping behaviours associated with food insecurity, which can be used as a reference and adapted to local circumstances. The behaviours are listed by category in general order of increasing severity.

Coping strategies/behaviours	Frequency Number of days out of the past seven (Use numbers 0–7 to answer number of days)
Dietary change	
Rely on less preferred and less expensive foods	
Consume less varied food	
Increase short-term household food availability	
Borrow food from friends or relatives	
Purchase food on credit	
Depend on assistance from outside the household	
Use part of savings to purchase food	
Reduce spending on health or education to purchase food	
Skip a loan payment	
Gather wild food, hunt or harvest immature crops	
Consume seed stock held for next season	
Decrease the number of people to feed	
Send children to eat with relatives or neighbours	
Send household members to beg	
Rationing	
Limit meal portion sizes	
Restrict consumption by adults in order for small children to eat	
Feed working members of the household at the expense of non-working members	
Ration money and purchase prepared foods	
Reduce the number of meals consumed in a day	
Refrain from eating for a day or more	

Core indicator 4: Gender equality

The questions below for the field assessment on gender equality may be used in a household survey or in focus group discussions with women. The latter is more likely to allow women to express their needs and priorities. The decision on the most appropriate information collection method should be informed by the local context including culture, customary practices and other considerations.

Women's employment and economic activities

- 1) What paid employment and/or economic activities did women typically do before the disaster?
 - formal or informal employment
 - farming (crops and livestock raising)
 - microenterprises
 - market sales
 - other (please specify) _____
- 2) How have women's employment and/or economic activities been affected by the disaster?
- 3) If any, what new paid jobs do women now have after the disaster?
- 4) What new businesses are women involved in after the disaster?
- 5) Has women's income increased, decreased or remained the same since the disaster?

Women's reproductive and community role

- 1) How has the disaster affected the collection of water by women/girls?
- 2) How has the disaster affected the collection of fuel for cooking by women/girls?
- 3) How has the disaster affected women's access to sanitation facilities?
- 4) How has the disaster affected intra-household relations, including gender roles and gender-based violence?
- 5) Were there women's groups or cooperatives before the disaster?
- 6) If so, how have these groups been affected by the disaster?

Access to services, resources and decision-making

- 1) How has the disaster affected women's access to general health care, reproductive health, prenatal and postnatal care?
- 2) Did childcare centres exist before the disaster? If so, how have they been affected by the disaster?
- 3) How has the disaster affected the enrolment of girls in schools?

- 1) Were there protection services before the disaster (for example, for treatment of gender-based violence)? If so, how have these services been affected by the disaster?
- 2) How has the disaster affected women's access to:
 - land and housing
 - credit, saving schemes and other microfinance services
 - social security systems, safety net programmes, relief and/or recovery assistance
- 3) How has the disaster affected women's access to decision-making?
 - participation in local governance
 - participation in local relief or recovery committees

Core indicator 5: Social inclusion

To assess the ways that disadvantaged groups have been impacted by the disaster and ascertain their particular disaster recovery needs, it is best to form focus groups organized by specific disadvantaged group (for example, a group for a specific ethnicity or people with disabilities) or, where appropriate, form mixed focus groups.

The discussion should consider the following questions:

- 1) How has the disaster affected their living conditions (housing, household assets, electricity, water, sanitation)?
- 2) How has the disaster affected their access to basic services, such as health care and education?
- 3) How have their livelihoods been affected (employment, farming, microenterprises, etc.)?
- 4) How are they coping with the disaster's impact on their living conditions, access to services and their loss of livelihoods and income?
- 5) Are they receiving humanitarian and/or recovery assistance from the government or international community?
- 6) If so, what assistance have they received and how frequently?
- 7) Is the assistance provided fair and equitable for all people affected in the community? If not, why; and how can it be improved?
- 8) What are the most important or priority needs to recover from the disaster?

Capacities, resources and coping strategies

In addition to coping with reduced access to food, people resort to a variety of strategies to manage the multiple consequences of disasters. The loss of housing may force people to move in with relatives or to migrate to urban areas or other districts, while the increase in expenditure to meet basic needs may force families to withdraw children from school. This section provides a sample list of typical strategies that can be used as a checklist, but these should be adapted to reflect local circumstances. Interviews should include women, girls, boys and men.

Coping strategies

- Spending household savings
- Borrowing to meet basic needs
- Reducing spending on education (withdrawing children from school)
- Reducing spending on non-essential consumption items
- Selling assets such as livestock
- Relying on in-kind or cash support from relatives or community members
- Receiving increased remittances from relatives
- Accessing government relief assistance
- Accessing local, national or international humanitarian aid
- Resuming economic activities
- Taking on informal or casual work
- Taking on hazardous work (forced work, sex work, drug trafficking, etc.)
- Child labour
- Diversifying sources of livelihoods/income among family members
- Taking out (formal or informal) loans (moneylenders, bank, microfinance, cooperative, etc.)
- Borrowing in-kind (for example, from local shops for food)
- Sending family members to look for work outside of the affected areas
- Migrating to urban areas
- Moving to displacement camps
- Selling or mortgaging land
- Other (please specify)_____

Humanitarian and recovery assistance

Where required and feasible, the interviews or surveys may include questions related to people's access to humanitarian and/or recovery assistance from the government or the international community.

- 1) Has your household or anyone in your household received assistance in the past 30 days?
- 2) When was the last time your household or anyone in your household received assistance?
- 3) What assistance has your household received?
 - food (for how many people and how many days?)
 - water (for how many people and how many days?)
 - other non-food household items
 - cash vouchers
 - loans
 - food for work programme
 - agricultural inputs (seeds, tools, etc.)
 - tent or plastic sheets
 - building materials for house repair or construction
 - other (please specify)_____
- 1) Is the assistance provided enough to meet the needs of everyone in the household/family?
- 2) Is the assistance provided fair and equitable for all people affected in the community? If not, why; and how can it be improved?
- 3) Is there a grievance redress mechanism to address the bottlenecks identified during the distribution of assistance?

Recovery priorities of the household and community (please rank your first five priorities)

What are the most important or priority needs to recover from the disaster?

- housing
- health care
- access to water
- schools for children
- food and/or water
- seeds and tools to resume farming
- cash vouchers
- loans to resume business operations
- restoring basic infrastructure (roads, bridges, etc.)
- protection against insecurity, violence, etc.
- restoring electricity
- other (please specify)_____

Role of the community in recovery

- 1) Are there existing community-based organizations, such as women's groups, youth groups or other groups, that can participate in the design, implementation and monitoring of recovery?
- 2) If so, what role do you see these organizations playing in recovery?
 - provision of labour
 - information management
 - monitoring progress of recovery
 - contracting reconstruction work
 - undertaking reconstruction of community infrastructure
- 3) Is the community-based organization representative of all households, ethnic groups, women and people with special needs?
- 4) What are the non-governmental organizations active in the area and what is their area of expertise? How could they assist in the recovery process? Please specify their areas of work.

ANNEX 2: SAMPLE TEMPLATE FOR THE HUMAN IMPACT CHAPTER REPORT

Summary

A summary of all final findings and recovery recommendations

Deprivations in living conditions, health and education

Deprivations in living conditions

housing
electricity
water and sanitation
cooking fuel

Health and education

Morbidity rate
Mortality rate
Malnutrition rate
Increased barriers to accessing essential health services
Access to education

Summary table of deprivations in numbers

Livelihoods

Impact on livelihoods (all occupations)

Impact on income

Impact on productive assets and resources

Food security

Impact on food availability, access and utilization

Food coping behaviours

Gender equality

Social inclusion

Most affected or vulnerable geographic areas

Disadvantaged vulnerable population groups

Summary table of disadvantaged groups by category

Class and identity	Livelihood groups	Disability

Capacities, resources and coping strategies

Composite picture of all impacts and deprivations

Impact on poverty

The human impact and the Sustainable Development Goals

Recovery strategy and final recommendations



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