

# SOUTHWEST MONSOON SEASON

## Figure Analysis – Displacement Related to Disasters

Glide N° FL-2019-000084-IND, FL-2019-000079-BGD, FL-2019-000081-MMR

### CONTEXTUAL INFORMATION

#### **The disaster event: The 2019 monsoon in India, Bangladesh, Sri Lanka and Myanmar**

The South Asia monsoon is a recurrent meteorological phenomenon. It originates in the fluctuation of the position of the sun in relation to the earth, which causes a change in the position of the region receiving maximum heat on the earth's surface. It also results from differences in the [temperature of the land and the ocean](#). This, in turn, causes a reversal of winds, accompanied by [changes in temperature, pressure, wind, cloudiness and rain](#).

The South Asia monsoon occurs between June and September and is technically known as the south-west monsoon. It is crucial for replenishing freshwater supplies but generates [flooding that can be fatal](#). After a slow start, the South Asia southwest monsoon experienced its latest retreat on [record](#). In [Sri Lanka](#), it arrived in early June, about 10 days later than its normal onset, and generated below normal rainfall. This delay and change in the monsoon patterns were the result of the combination of a mild [El Niño \(when the Eastern Indian Ocean warms\) with a positive Indian Ocean Dipole](#) (when the Indian Ocean cools down). Major flooding events were, however, reported in the last week of September 2019. In India, [the monsoon set in over Kerala](#) on 8 June 2019, as opposed to the normal date of 1 June. It did not withdraw from the country [as a whole until 16 October](#), which coincided with the arrival of north-east monsoon rains. During this time period, it generated above normal seasonal rainfall, at 110% of its long period average, [the highest seasonal rainfall since 1994](#). It also caused the second highest rainfall for the month of September after 1917. Altogether, 560 extreme rainfall events were recorded in India during the [2019 south-west monsoon](#). In Bangladesh, the monsoon season officially started on 17 June, but most flooding was triggered after 7 July, when monsoon rain and water triggered inundations in low lying areas in the north and the north-eastern part of the country. The government of Myanmar issued the [first flood warning on 10 July](#). Beyond flooding, the monsoon also generated disasters such as landslides. In Myanmar, a landslide in Mon state on 9 August [left 75 people dead and buried at least 25 homes in mud](#).

## Displacements linked to the Southwest Monsoon season

Table 1: Summary of internal displacement for Southwest Monsoon season

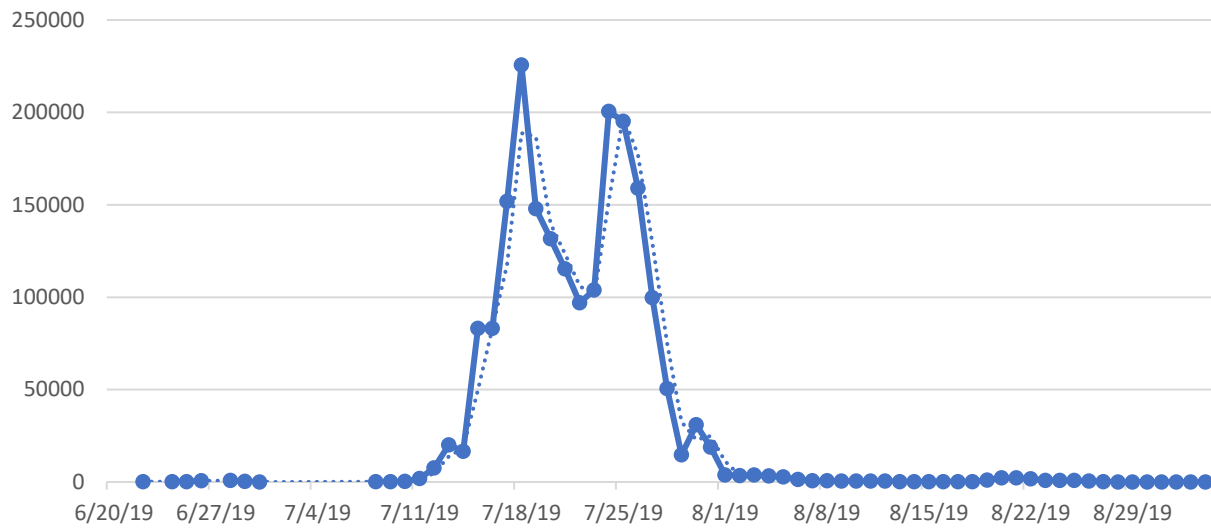
Monsoon	India	Bangladesh	Myanmar	Sri Lanka	TOTAL
New displacements <sup>1</sup>	2,618,143	307,391	231,202	50,638	3,207,374
Estimated IDPs as of 31 December 2019 <sup>2</sup>	590,254	8,000	N/A	N/A	598,254
Houses destroyed <sup>3</sup>	29,909	34,731	375	1,769	66,784
People pre-emptively evacuated before the event <sup>4</sup>	N/A	N/A	N/A	N/A	N/A
People officially sheltered after the event <sup>5</sup>	2,485,534	N/A	N/A	49,410	2,534,944

**Notes**

<sup>1</sup> This corresponds to new instances of internal displacement related to the disaster event  
<sup>2</sup> This corresponds to the total number of individuals living in a situation of internal displacement as of 31 December 2019 as a result of the disaster event  
<sup>3</sup> This corresponds to the number of houses destroyed by the disaster event  
<sup>4</sup> This corresponds to the number of people that have been detected as pre-emptively evacuated before the disaster event  
<sup>5</sup> This corresponds to the total number of people that have been sheltered following the event

IDMC's estimate of new displacements triggered by the south-west monsoon includes more than 2.5 million displacements in India, more than 300,000 forced movements in Bangladesh, more than 231,000 evacuations in Myanmar, and more than 49,000 relocations to safe places in Sri Lanka. These figures are conservative and may exclude an unknown number of displacements to host families in all affected countries. Comprehensive data on the total number of people still displaced due to the South Asia monsoon as of December 2019 is lacking. IDMC, however, estimates that, at a minimum, 8,000 people displaced by riverbank erosion in Kurigram, Bogura and Tangail districts of Bangladesh are still displaced, as [they permanently lost their homes during the monsoon](#). IDMC's estimate of the number of houses destroyed because of monsoon-related disasters in this region is based on the most reliable data available and excludes houses reported as "damaged" or "partially destroyed".

Fig 1. Trends of people living in a situation of internal displacement in Assam state, India, in 2019 following the event (Source: Assam State Disaster Management Authority)



The above chart illustrates the temporal trend in displacement in Assam state in India during the monsoon peak in July and August, as reported by the Assam State Disaster Management Authority (ASDMA). It includes only movements to relief camps set up by the state government and may therefore underestimate the total number remaining displaced after the disaster. It still illustrates, however, a commonly occurring tendency during the monsoon, namely that sudden increases in heavy rain and flooding leads to spikes in displacement, which subsequently subsides when the rainwater and flooding retreat. This graph also demonstrates how our methodology for estimating displacement records movements rather than people, as the same people might have been displaced, returned, and then re-displaced when flooding intensified again.

## DATA SOURCES AND METHODOLOGY

IDMC's displacement data on the monsoon is based on data published by national authorities, NGO consortiums, and the International Federation of Red Cross and Red Crescent Societies (IFRC). The main data sources are the National Disaster Management Authority (NDMA)/National Emergency Response Centre (NERC) (India), the Needs Assessment Working Group (Bangladesh), the IFRC/Department of Disaster Management (DDM) (Myanmar), and the Disaster Management Centre (Sri Lanka). The analysis is based on time-series data that has been collected based on regular reports by the relevant sources, as well as triangulation based on media reports, throughout the monsoon. Of about 2,540 facts recorded in IDMC's database, each representing an internal displacement update for a particular location and time, [2,544 as of 16 December, excluding Sri Lanka], about (2,278 – 21 = 2,257 for India; 194– 2 = 192 for Bangladesh, and 71-13 = 58 for Myanmar, excluding Sri Lanka), 2,507 facts were used to triangulate IDMC's recommended figures.

Our stock estimation in 2019: Providers of disaster displacement data tend not to include information about when, how and for how long people were displaced. One of the main gaps and challenges in accurately estimating the number of IDPs is the lack of measurement of return flows. Nor does data tend to be collected on people who have achieved durable solutions by integrating locally or resettling elsewhere in the country.

Our year-end estimate is based on time series data and housing destruction data for specific disaster events, as well as aggregated figures about the number of people displaced by disasters recorded by governments and other stakeholders. (more information on - <http://www.internal-displacement.org/sites/default/files/2020-GRID-methodology.pdf>)

### **Main caveats and monitoring challenges**

IDMC's estimation for the monsoon is likely to be conservative. That is because it is primarily based on evacuations and movements to relief camps and shelters. "Invisible" displacements to host families may not show up in the data. In general, media sources tend to quote high displacement estimates during the monsoon. Without further evidence or explanations as to the basis for those estimates, IDMC relies on figures reported by national authorities, NGO consortiums, and IFRC. This methodology is less prone to producing inflated numbers. It does, however, run the risk of underestimating displacements that do not end up in official shelters.

In the case of India, IDMC used housing destruction data to estimate displacement figures for states for which no movements to relief camps or shelters were reported. Housing destruction figures, however, may both underestimate and overestimate the number of new displacements as they may include houses that are not habitual places of residence, and as the total number of households living in each destroyed house varies. IDMC's estimation in this regard assumes that, on average, one destroyed house leads to the displacement of at least one household.

In the case of Bangladesh, the figures only cover displacement that took place in July as no displacements were reported in August and September. Given that the monsoon lasted until September, it is also possible that IDMC's estimation excludes an unknown number of forced movements that took place later during the monsoon season.

In the case of Sri Lanka, IDMC's figures include displacements reported as a result of small-scale events that took place during the monsoon season. The decision to count these movements within the 2019 monsoon was taken in order to ensure consistency with the methodology used for India, Myanmar and Bangladesh. Displacement data that is disaggregated by individual disasters that took place during the monsoon season is unavailable for those countries.

Country	New displacements	Estimation of the Total number of IDPs	Number of houses destroyed
India	2,618,143		29,909

The National Disaster Management Authority (NDMA)/National Emergency Response Centre (NERC) were the main data sources for the final displacement estimates for India. The NDMA and NERC publish data on housing destruction and displacements to relief camps based on reports submitted by the State Disaster Management Authorities (SDMAs). IDMC's figures represent the sum of the cumulative new

displacement reported by NDMA/NERC by the end of the monsoon, coupled with media reports for states not covered by NDMA/NERC. These media reports generally cite the SDMAs as their source.

NERC reports on two main metrics: figures “as of” the last 24 hours, and cumulative displacement figures for the entire monsoon. There is apparently little consistency in the reporting on the “as of” figures. These sometimes appear to represent the total number newly displaced during the last 24 hours, and at other times, the total number displaced “as of” the date of reporting, including people still displaced as a result of earlier monsoon-related disasters. This poses a problem for reliability.

It was not possible to use time-series data for the monsoon to estimate total number of movements in India. That methodology is unreliable because of inconsistencies in how time-series displacement data is reported in the country.

In cases where SDMAs made unexplained revisions to the number of displacements associated with the monsoon, IDMC as a rule uses figures reported in the final monsoon reports. For some states, IDMC was unable to identify housing destruction figures, as the SDMA only reported on “damaged” or “partially destroyed” housing. This makes it likely that our housing destruction figures exclude houses that were destroyed but were reported as damaged or partially destroyed.

Country	New displacements	Estimation of the Total number of IDPs	Number of houses destroyed
<b>Bangladesh</b>	307,391	8,000	34,731

**In Bangladesh**, the main data source is the Needs Assessment Working Group (NAWG). Its data on the monsoon was also endorsed by the UN Country Team. IDMC’s figure is equal to the total estimated number of displacements reported in the NAWG’s final report on the monsoon. As per the available documentation, NAWG’s data is based on an inter-agency joint needs assessment during the monsoon conducted in two phases. In the initial phase of the response, 28 districts were identified as affected based on data analysis of bulletins released by the government of Bangladesh, a literature review, and primary data-collection through joint needs assessment in priority areas. In their follow-up report, NAWG surveyed six severely affected districts. IDMC identifies NAWG’s estimation as the most reliable because of its extensive documentation of the figures and its transparent explanation of the methodology. NAWG, however, cites limitations such as time constraints, data unavailability and data representativeness. IDMC considers it likely that NAWG’s estimation may not have detected and included some displacements because of the general lack of a comprehensive information infrastructure for reporting and verifying displacements in Bangladesh during the monsoon season.

Country	New displacements	Estimation of the Total number of IDPs	Number of houses destroyed
<b>Myanmar</b>	231,202	XXX	375

**In Myanmar**, the main primary source on displacement as a result of the monsoon season is the government’s Department of Disaster Management (DDM). Its figures include evacuations and relocations to temporary shelters as well as to the homes of relatives. DDM’s data is not publicly available, and it has not shared its data with IDMC. IDMC’s estimation is thus based on IFRC’s account of the total number of displacements reported by DDM as of August 2019. The reliance on a secondary

source may diminish reliability. IDMC collected triangulation data published by IFRC, media sources, the Humanitarian Office of the European Commission (ECHO), the ASEAN Disaster Information Network (ADInet), and ACAPS. IDMC considers the housing destruction estimation likely to be an underestimate but has not been able to identify any more comprehensive records of the housing destruction resulting from the monsoon.

Country	New displacements	Estimation of the Total number of IDPs	Number of houses destroyed
Sri Lanka	50,638		1,769

In Sri Lanka, the national Disaster Management Centre (DMC) is the main source of information for internally displaced people (IDPs). The system produces a daily report of people sheltered, houses destroyed, and other valuable information related to natural disasters by region, province and district. One challenge that IDMC faces in the use of this data is that it is difficult to know which events are related to a particular disaster. In order to analyse their data in the most coherent and efficient way, IDMC assumes that all rains, floods, landslides, storms, high winds and coastal erosion are related to the monsoon if they occur during that time of the year. Sri Lanka's climate is characterized by four seasons. Between the south-west monsoon (May to September) and the north-east monsoon (December to February), two inter-monsoon seasons last from March to April and from October to December. During the inter-monsoon seasons, thunderstorms are common. During monsoon seasons, the DMC also publishes special reports when major events occur. These reports are then used as triangulation or as complementary figures to the daily reports, depending on the precision and coverage of the information available in the special report. IDMC uses the number of houses fully damaged for triangulation purposes except if no evacuated people are being reported. In that case, the number of houses fully damaged is used as a proxy for new displacement. The recurrence of the daily reports enables IDMC to record time series of displacement cases. The consistency of this continuous reporting on people displaced after one specific event, however, needs to be confirmed with the DMC in order for IDMC to have full confidence in its analysis of the time series.