



# Joint Rapid Needs Assessment

# Maharashtra Flood 2021

August 09<sup>th</sup>, 2021



**Joint Rapid Needs Assessment Report**  
Maharashtra Flood 2021

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## Acknowledgement

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However, we would like to acknowledge, with deep gratitude, the guidance, cooperation and support extended from Action Against Hunger, ADRA, Alert Citizen Forum, Anubhav Pratishthan Trust, Catholic Relief Services, Center for Youth Development and Activities (CYDA), Divya Swapn Foundation, Doctors For You, Dr. Ambedkar Sheti Vikas Va Sanshodhan Sanstha (ASVSS), Hunnarshala, Need Vikas Sansthan, Samata Pratishthan, Unnati, URMEE, World Vision India, Yashwant Rao Chavan School of Social Work (YCSSW), RISE and Yuva for collecting real time information, providing valuable inputs and coordinating the assessment process.

And, above all, the communities of affected areas of Districts Kolhapur, Ratnagiri, Raigad, Sangli, Satara and Sindhudurg, who, even amidst the adversities took out time and patiently provided answers to all the questions put to them, without any reservations.

**Maharashtra PECOnet, Sphere India and RedR India**

**09<sup>th</sup> August, 2021**

## Foreword

This assessment would not have been possible without the cooperation and constant support of NGO, INGO partners, volunteers, MahaPeconet Platform and district and state officials from Government of Maharashtra. While the team is indebted to all of them, exigencies of space and time constraints limit us from naming each one. However, the team would like to acknowledge, with deep gratitude, the guidance, cooperation, space and support extended by Principal Secretary, R&R, Director of State Disaster Management Authority and District Administrations of Raigad, Ratnagiri, Sangli, Kolhapur, Sindhudurg and Satara.

The team is also especially thankful to all the PRI members, ASHA, Anganwadi, Health and Sanitation workers and community leaders who helped us gain better understanding of the situation. And, above all, the communities of Raigad, Ratnagiri, Sangli, Kolhapur, Sindhudurg and Satara, who, keeping aside their own problems, gave us a patient hearing and endeavored to answer all the questions put to them, without any reservations. A special note of acknowledgement to SPHERE India, Red R India and MahaPeconet Platform Secretariat for all the back end technical support and all the esteemed writers for drafting all the chapters with such extensive details. This report is dedicated to all the affected families who were resilient, offered us warm hospitality and taught us to believe that there is always a better tomorrow.



Ms Rajeshwari Chandrasekar

Chief of Field Office, UNICEF Maharashtra

9th August, 2020, Mumbai



## About JRNA and Disclaimer

As per Sphere India and MahaPeconet Standard Operating Procedures, adapted to address the COVID 19 pandemic scenario prevailing in Maharashtra, a Joint Rapid Needs Assessment (JRNA) was conducted across the flood affected Kolhapur, Ratnagiri, Raigad, Satara, Sangli and Sindhudurg districts of the state; data collection was conducted through secondary sources, field visits, personal interviews, observations, focus group discussions and information provided by local CBOs. The organizations engaged in relief have also shared their observation notes to incorporate in the report. Also, on ground information was collected using smart phones through data collection mobile application and collated by core team taking due consent from the villagers. The aim was to gather information on Humanitarian Response initiatives as well as recovery needs, collate and analyse the findings, and disseminate the information to the State, National and International level agencies,. This was truly an initial experience of a Multi Disaster with COVID 19 as a pandemic plus severe floods, landslide which has driven thousands of families to relocate and spend days and nights under tarpaulins. However, the Humanitarian Response activities need to be seen with a different lens than the conventional approach of Disaster Management activities.

### **Disclaimer**

*The interpretations, data, views and opinions expressed in this report are collected from various sources including Government led institutions, line departments, field assessments by 85 volunteers and team members deployed by the Alert Citizen Forum, Center for Youth Development and Activities (CYDA), Divya Swapn Foundation, Dr. Ambedkar Sheti Vikas Va Sanshodhan Sanstha (ASVSS), Need Vikas Sansthan, Samata Pratishthan, URMEE, Yashwant Rao Chavan School of Social Work (YCSSW) and the Organizations who took initiative in Humanitarian Assistance activities and from secondary media sources. It does not necessarily carry the views and opinions of Sphere India, RedR India or MahaPeconet (State level platform for agencies working in COVID-19 response, risk reduction and humanitarian response/ recovery work and to promote GO-UN-NGO coordination in the state) any humanitarian organisation as a collective directly or indirectly. It is interpreted only for assessment purpose.*

### **Note**

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## Abbreviations

ANM's	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
BEO	Block Education Officer
COVID-19	Coronavirus Disease of 2019
DDMA	District Disaster Management Authority
FNS	Food & Nutrition Security
GoM	Government of Maharashtra
GP	Gram Panchayat
ICDS	Integrated Child Development Services
ICMR	The Indian Council of Medical Research
IEC	Information Education Communication
IYCF	Infant Young Child Feeding
JRNA	Joint Rapid Needs Assessment
MahaPeconet	Maharashtra Partnership Entrepreneurship Ownership Network
MAM	Medium Acute Malnutrition
MHM	Menstrual Hygiene Management
MNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NDMA	National Disaster Management Authority
NFHS	National Family Health Survey
NFI's	Non-food Items
NGO's	Non-Government Organisations
ORS	Oral Rehydration Solutions
SDMA	State Disaster Management Authority
SMC	School Management Committee
PDS	Public Distribution System
SAM	Severe Acute Malnutrition
SOP's	Standard Operating Procedures
WASH	Water Sanitation and Hygiene

# 1. Executive Summary

## 1. Background:

Multi-hazard proneness of Maharashtra coupled with extreme climate events are frequently affecting the people of Western Maharashtra and the Konkan region. This is evident from the 2019 Floods followed by untimely rains in November 2019, Nisarg cyclone 2020 and Cyclone Tauktae 2021 and recent unprecedented heavy rains in July 2021.

The recent torrential rainfall, which lashed Maharashtra from 22<sup>nd</sup> of July, caused severe localized damage and hardship in 11 out of its 35 districts. Of these, the most affected were the seven districts of Raigad, Ratnagiri, Sindhudurg, Satara, Sangli, Kolhapur and Mumbai, which witnessed 12 landslides over 14 hours claiming over 180 lives as on the last report received on 2<sup>nd</sup> August 2021. The situation in the six districts (excluding Mumbai) affected more than 1,035 villages and about 12,00,000 persons, including 4,00,000 children. The additional point of concern is that, all these six districts were reporting high caseloads of COVID 19 with 10,737 in Sangli, 10,701 in Kolhapur, 7,210 in Satara, 2,610 in Ratnagiri, 2,560 Raigad and 2,270 active cases in Sindhudurg (as on 22<sup>nd</sup> July 2021).

Maharashtra PECOnet Members, UNICEF-Maharashtra, Sphere India and RedR India and development partners conducted a Joint Rapid Need Assessment (JRNA) with the field support from PRIs, local organizations and volunteers and various line Departments of the Government. 25 villages and 946 households were taken as the sample of most affected community from the six affected districts for this assessment.

## 2. Key Findings of the JRNA:

### 1. Shelter, Settlements and Non-Food Items:

- Damage in terms of houses being inundated or completely washed away ranges from 91% in Raigad, 64% in Sindhudurg, 23% in Ratnagiri, 18% in Kolhapur, 11% in Satara and 5% in Sangli. Partial damages to houses was reported highest in Sangli (62%), followed by 26% in Sindhudurg, 22% in Satara, 20% in Ratnagiri, 13% in Kolhapur and 3% in Raigad
- All the relief camps visited had access to food but about 50% of them faced shortage of drinking water. About 50% of the camps were universally accessible to the survey team. 48% of the camps visited followed CAB but did not have adequate provisions for masks and sanitizers. 83% of the camps also did not have adequate provisions of bleaching powder, mosquito repellants/nets or facilities for solid waste management. 67% of the camps did not have adequate provisions for hygiene items like soap, toothpaste or sanitary napkins. Non-availability of assistive devices was also stated as a concern in those 67% of the camps.

## 2. Water, Sanitation and Hygiene (WASH):

### Drinking Water:

Non-availability of potable water was seen as a major concern across all districts led by Raigad (100%) followed by Sindhudurg (88%), Satara (85%), Kolhapur (80%), Ratnagiri (77%) and Sangli (44%). 40% reported contamination of their water sources. 49% reported damages to their water supply infrastructure.

- **Sanitation:** 30% respondents informed damage to the toilets. Open air defecation practices increased in Raigad by 93% and Sangli by 23% while Satara and Kolhapur showed an increase in use of community toilets ranging from 55% to 70%

### 2. Health Sector:

- In the affected area 33% people were reported physically injured, while 23% were suffering from water borne and communicable diseases. 16% were suffering from mental health trauma. 10% were suffering from malaria. 5% were pregnant women requiring pre and ante- natal care. In 16 of the 25 villages surveyed, it was reported that the disaster has impacted the COVID 19 vaccination process.

## 3. Food Security, Nutrition and Livelihoods:

- 71% reported non-availability of adequate food; 60% insufficient money for purchasing food.; 58% had no cooking facilities; 71% no access to utensils. 19 villages reported significant changes in the food consumption patterns. 11 villages reported that there is no extra effort taken for providing special nutritive diets for pregnant women and lactating mothers and children
- 68% markets were not functioning and 18% people had lost their ration cards/ ID cards.
- There is extensive loss in crops and agricultural lands with Raigad reporting 100% loss and other districts 70-80% losses. Sindhudurg reported the least with 22% loss to crops. Fisheries sector has also reported about 37% losses in Kolhapur and 8 % loss in Sangli. The other major losses reported are of livestock and assets.
- Daily wage agricultural labourers and artisans are the most vulnerable and the hardest hit in all the districts surveyed. This is due to a combination of Flood impacts and Covid restrictions.

### 4. Education Sector:

Infrastructural damages to schools have been highest in Raigad (90%), followed by Sangli (50%) and Kolhapur. Study materials, Boards, computers etc. have also been damaged. As access to schools were anyway limited due to Covid restrictions, these damages matter only to the extent of online education being affected. However, with the current decision of the GoM to reopen schools by mid-August, the Dept of Education will have to move fast to repair the damages as well as to sanitise the buildings which have been used as Relief Camps.

## 5. Protection Sector:

The concerns flagged in the sector of protection were:

- lack of privacy for women and adolescent girls especially bathing spaces
- lack of adequate lighting in the Relief Camps and damaged houses
- Separation of Family members, albeit temporary
- Relief Camps not disable friendly
- Compromised security due to damaged housing

Although no untoward incidents have been reported till date from the affected areas, these are concerns that increase the vulnerabilities of the already vulnerable. With the Covid restrictions, loss of livelihoods and displacement due to floods, there are also possibilities of abuse, trafficking and child labour.

## 3. Recommendations

**While detailed sector wise recommendations are explained in each section in this document key recommendations from this JRNA are:**

- There is need for permanent flood relief and Cyclone shelters with a shelter management protocol considering these events are becoming frequent and in future the likelihood of such events is also going to increase
- Immediate assessment of landslide prone zones of Western Ghats and Sahyadri belt with restoration and rehabilitation plan
- Relief operation coordinated by district administration and through GO-NGO coordination center as per the order of Disaster Management Unit, Maharashtra government on 30<sup>th</sup> June 2021, for the affected population catering to the immediate needs of survival, wellbeing, safety and security with special reference to the sectors of Shelter (In camps and villages), Water Sanitation Hygiene, Health, Food Security Nutrition, Education and Protection.
- Special precautions in terms of increased testing, tracing, tracking of COVID 19 cases for prevention of infection and bulk distribution of masks, sanitizers to the affected communities.
- Special attention to the immediate needs of safety, security, dignity and wellbeing of women, children and adolescents during the relief operation.
- Establish state level experts' group from government departments, civil society organisations and academic institutions in architecture and engineering for designing disaster resilient housing infrastructure models considering multi-hazard profile, geography, geology and ecology of the worst affected districts.
- Strengthening Gram Panchayat level capacities to coordinate and monitor the rehabilitation work taken up by service providers and NGOs and Gram Panchayat based Disaster Management Plan
- Establish policy guidance and comprehensive plan on relocation of frequently affected flood prone communities and communities at risk of landslides in western Ghats.
- Establish mechanisms for multi sector damage and needs assessment and recovery planning at DDMA to ensure convergence of various schemes and opportunities of private partnerships for build back better.
- Establish policy guidance for eco-friendly mitigation measures in flood and landslide prone areas with special reference to mainstreaming of disaster risk reduction in departmental developmental planning.

## Background:

Starting from 22<sup>nd</sup> July torrential rainfall, resulted into multiple landslides and floods across 11 districts in Maharashtra including Raigad, Ratnagiri, Sindhudurg, Satara, Sangli, Kolhapur, Pune, Thane, Mumbai Suburban, Wardha and Akola. The secondary data sources available in public domain indicates that Raigad, Ratnagiri, Sindhudurg, Satara, Sangli, Kolhapur, Mumbai were the seven worst affected districts with major incidences of landslides, floods affecting urban, peri-urban and rural areas. These seven districts witnessed 12 landslides across 14 hours claiming over 180 lives.

The situation in the six districts (excluding Mumbai) affected more than 1,035 villages and almost 4,29,840 persons including 1,28,952 children who took shelter in temporary or makeshift camps. Across the six districts 1.2 million people including 0.4 million children have been affected directly. It was observed on the day of evacuation that most of families in affected areas preferred to take shelter with their relatives due to COVID 19 risk considering all these districts are still having highest positivity rate and caseloads of Maharashtra. The table below indicates the impact of floods and landslides in worst affected six districts<sup>1</sup>.

TABLE 1 DAMAGE DATA OF AFFECTED DISTRICTS

District	Villages affected	Persons evacuated	Camps	Inmates in government camps
Satara	416	49,149	29	2902
Kolhapur	411	1,62,564	216	40,688
Sangali	113	2,11,808	26	1820
Raigad	70	2555	14	155
Ratnagiri	25	2493	68	1712
Sindhudurg		1271		
Total	1,035	4,29,840	353	47,277

Source: SDMA, GoM

**Covid 19 situation:** All these six districts were reporting high caseload of COVID 19 on 22<sup>nd</sup> July with 10,737 in Sangli, 10,701 in Kolhapur, 7,210 in Satara, 2,610 in Ratnagiri, 2,560 Raigad and 2,270 Sindhudurg<sup>2</sup>. The process of emergency evacuation, people's mass

<sup>1</sup> State Emergency Operation Centre Disaster Management Unit MAHARASHTRA Flood/Heavy Rainfall report (As on 02.08.2021 till 1100 HRS)

<sup>2</sup> Integrated Disease Surveillance Programme (IDSP), Public Health Department, Maharashtra COVID-19 Related Updates Media Bulletin 22<sup>nd</sup> July 2021

movement within 24 hours and taking shelter in camps has put them at the risk of COVID 19 exposure.

**Floods:** Torrential rainfall in various parts of the state since 22<sup>nd</sup> July coinciding with high tides and also discharge from dams is seen as the cause of floods in Maharashtra this year, however it is also important to note the changing climate patterns with unprecedented rains in short period of time putting communities at the risk of recurring floods.

Kolhapur, Sangli and Satara were affected by massive floods in August 2019, followed by untimely rains which continued till November 2019. The relief and recovery was interrupted by the assembly election and formation of government till December 2019. Further COVID-19 lockdown starting from 14<sup>th</sup> March, 2021, flood affected communities especially landless and most vulnerable families who lost the opportunity and assistance for recovery and rehabilitation. These floods of 2021 has further aggravated the situation of these vulnerable families due floods and COVID 19 situation. Hence, this flood was different and had greater impact than any other floods in the state. The information in public domain also indicates recurring small to medium scale floods in Mahad, Chiplun and Patan towns and rural areas of Raigad, Ratangiri and Sindhudurg respectively of Konkan region as well, which were severely affected in 2021 floods.

#### **Landslides:**

Landslides history of Maharashtra indicates that in 2005, Maharashtra experienced 17 landslides in 24 hours leaving 200 persons dead in Mahad block of Raigad district. Another massive landslide near Pune at Malin village in 2014, killed atleast 156 people. This year Maharashtra witnessed two major landslides one in Raigad district at Taliye and another in Satara district at Mirgoan claiming more than 100 lives. According to retired professor of Savitribai Phule, Pune University's Geology Department Dr. Satish Thigale, heavy rainfall in short periods of time, cracks at the top of the hills and human interference in the contours of the hills are the three causes of landslides in Sahyadri. The data in public domain indicates that there are 103 villages in Raigad district with the risk landslides.

Increased climate risk and multi-hazard proneness in Konkan and Western Maharashtra is resulting in recurring disasters. Amid the heavy caseload of COVID 19 and the livelihood stresses due to continual COVID 19 restrictions, the heavy rainfall on 22<sup>nd</sup> July 2021 resulted in multiple incidences of floods and landslide claiming 215 lives, affecting approx. 12,00,000 men, women and children with loss of livelihood and damage to housing. This Joint Rapid Needs Assessment presents the needs of most vulnerable with special reference to life saving sectors.



## 2. Methodology:

This Joint Rapid Need Assessment in flood affected areas of Maharashtra has been conducted to identify the urgent, mid-term and long-term needs of affected community based on Food & Nutrition, Health, Water, Sanitation and Hygiene (WASH), Education Shelter, Livelihood and Protection, and to flag out the vulnerability of affected community to access the basic services and entitlements.

The JRNA involved joint efforts from Maharashtra PECOnet Secretariat and Network Members, UNICEF field office for Maharashtra, Sphere India and RedR India with the field support from organizations; Alert Citizen Forum, Center for Youth Development and Activities (CYDA), Divya Swapn Foundation, Dr. Ambedkar Sheti Vikas Va Sanshodhan Sanstha (ASVSS), Need Vikas Sansthan, Samata Pratishthan, URMEE, Yashwant Rao Chavan School of Social Work (YCSSW), and Technical Support from Action Against Hunger, ADRA, Anubhav Pratishthan Trust, Catholic Relief Services, Doctors For You, Hunnarshala, Unnati, World Vision India and Yuva, along with PRI Members, Government led institutions, line departments providing support and necessary information & data.

During JRNA, urgent needs of affected communities have been identified through direct data collection from the field, government's damage assessment reports, pre-disaster information from respective line departments, and secondary data from various sources, media reports and discussions with grassroots functionaries.

Data was collected based on the indicators of the specific tools/questionnaires used during the interviews/ discussions.

The methodology was based on:

- a) Structured one-to-one interviews with affected households (ensuring prioritizing of random households from most affected villages giving equal representation to all sections of the local community).
- b) Structured village level information gathering from most affected villages based on Food & Nutrition, Health, WASH, Shelter, Education, Livelihood, Protection and accessibility of community towards basic services and entitlements.
- c) Structured Relief Camp level information gathering from relocated families living in either relief shelters established by the Government or set-up informally by locals, based on safety, Food & Nutrition, Health, WASH, Shelter, Education, Livelihood, Protection and accessibility of community towards basic services and entitlements.
- d) Structured Block level information gathered in prescribed questionnaire for better clarity about disruption in services and initiatives taken for revival of services at Blocks level.
- e) The organizations who are engaged in relief operation in this area have also shared their observations to add quality information in the report.
- f) Brief discussions with Gram Panchayat Members, local CSOs & NGOs who had pre-disaster existence in the area and also assisted communities with relief post disaster.
- g) Individual interviews with mixed group of community members to capture more qualitative information.
- h) Secondary data to examine the observation and facts.

## Sampling:

Out of all affected villages and households, 25 villages and 946 households were taken as sample of most affected community from the affected districts and have been assessed and documented based on the instruments/tools/questionnaires.

Secondary data analysis based on information disseminated by government departments, media reports, reports from other national or local organization, information provided from local CBOs also has added the quality and authenticity to this need assessment process through opportunity to investigate questions using large-scale data sets that are often inclusive of under-represented groups.

Accordingly, the total number of households in the surveyed villages is 23,836, out of which 9,786 households were affected. 52% of the surveyed villages/community were accessible and the remaining were not.

For more information, please see annexure one on primary data collection method.

## 4. Findings and Recommendations of Joint Rapid Needs Assessment:

This section presents the sector wise finding from the Joint Rapid Needs Assessment. Each sector data analysis explains the diverse nature of impact on communities due to pre-existing vulnerabilities, geography and demography, emphasizing different nature of needs in different areas.

### 1. Shelter, Settlement and Nonfood Items:

#### 1. Overview:

The multiple incidences of unprecedented rains, floods and landslides impacted shelter sector severely putting more than 12,00,000 people at the situation temporary displacement. With the diverse topography and demography of the affected areas the nature of village settlements and housing typology is also different in each district.



FIGURE 1 SETTLEMENTS INUNDATED BY FLOOD WATER

- **Satara District:** Patan block of Satara district is prone to multiple hazards including floods, landslides and also has a history of earthquakes. Patan town was also affected this times as most of the villages are located in areas adjacent to Koyana dam and the river was in full spate. It is also important to note that most of these villages were affected in 2019 floods as well. Other villages located in hills and on the Satara-Chiplun road faced threat to their houses due to heavy rains. The housing typology in this area is mostly Kuccha and Semi Kuccha material. People in this area prefer cement sheets as primary roofing material due to heavy rains.
- **Sangali and Kolhapur Districts:** Panchaganga and Krishna are the two major rivers flowing from these two districts that receive water from tributaries and dams in upper ridge. In case of heavy rains in upper ridge the areas adjacent to the riverbanks are at often risk of flooding. The areas have history of major floods in 2005 and 2019. This area is traditionally known as prosperous area of Sugarcane farming and Sugar factories in Maharashtra. It is important to note that the most vulnerable group in the area is laborers working in sugarcane farms. They are landless and solely dependent on daily wages. Houses of these farm laborers are located in the low-lying areas on the periphery of the main villages. Most of their houses are kuccha or Semi Kachha and even with partial submergence they are not suitable for habitation. Along with these farm laborers there are other vulnerable groups residing in low lying peripheral areas, with crowded neighborhoods. These vulnerable groups include Dalits, De-notified tribes and minorities who earn their livelihood either from daily wages or from subsistence entrepreneurship.
- **Raigad, Ratnagiri and Sindhudurg Districts:** These three districts in Konkan region are located in between Sahyadri range of Western Ghats on western side and Arabian Sea on eastern side. Thus the areas are prone to multiple hazards including flash floods, landslides and sea erosion. In the flood and landslide affected areas in these districts people mostly depend on rain fed paddy farming. Raigad district has **11.58% tribal population. More than 80% of them are Katkaris.** Katkaris were historically forest dwellers now mostly residing in small hamlets near hills and working as farm laborers and they seasonally migrate. Being stressed due to socio-economic deprivation, the houses in the tribal areas are mostly kuccha. The Mahad town of Raigad district and the villages near Savitri river are at the risk of frequent floods. The housing in these areas are kuccha, Semi kuccha or Kuchha houses extended / repaired with bricks and cement technology. The Telekhol river floods in Sindhudurg district resulted in inundation of the houses and in Ratanagiri district Vashishthi river flooding caused major damage housing in Chiplun town and in the villages on the bank. This rapid need assessment of shelter sector inquired into immediate shelter situation of affected families with temporary displacement, nature of damage to the housing and needs for immediate Non Food Items.

## 2. Assessment Findings

### Post Disaster Shelter Situation:

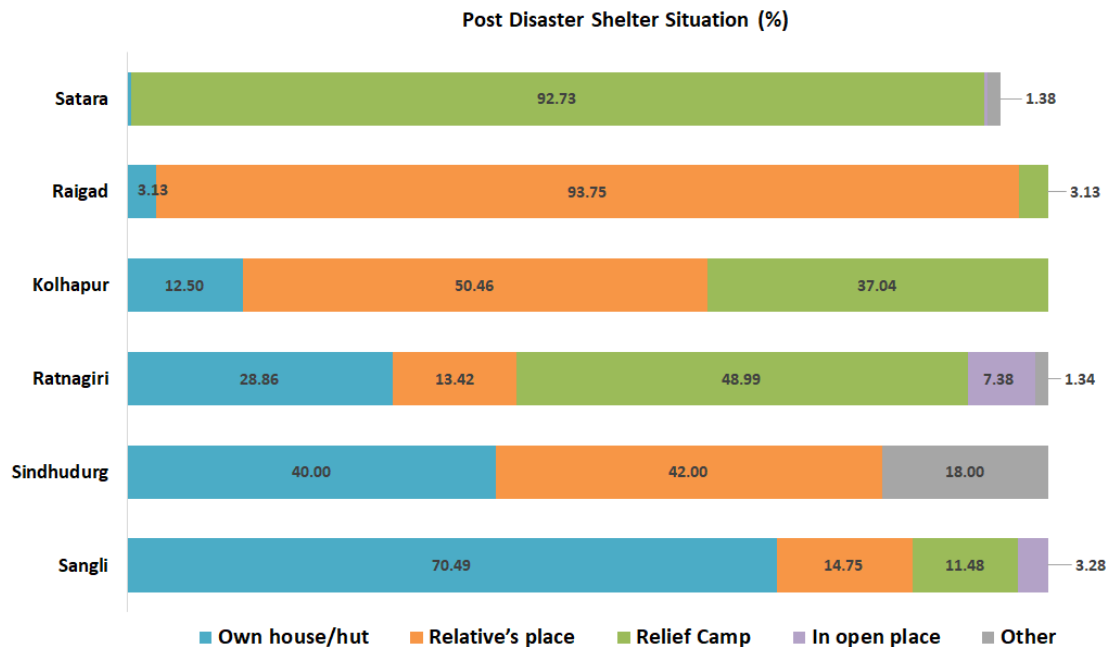


FIGURE 2 POST DISASTER SHELTER SITUATION

### The data collected from respondents covered in the survey indicates that

- Almost 93% of the affected families covered in the survey in Satara district preferred to take shelter in relief camps as their houses are fully or partially damaged either due to inundation with flood water or landslide/mudslide.
- In Raigad district 94% of the affected families covered in survey preferred to take shelter with relatives.
- In Kolhapur district 50% of the affected families covered in the survey preferred to take shelter with relatives while 37% took shelter in relief camps and 13% stayed back in their own houses.
- In Ratnagiri district 48% took shelter in relief camps, 13% of the affected families preferred to take shelter with relatives while and 29% stayed back in their own houses.
- In Sindhudurg district, 42% took shelter at relatives and 40% preferred to stay back in their own house/hut and 18% stay in other places.
- In Sangli almost 70% of the families covered in the survey informed that they preferred to stay back in their own houses while almost 15% of the families preferred to take shelter with relatives and 11% took shelter in the relief camps.
- A small % of the families ranging from 1% to 3% took shelter in open places in Sangli, Ratnagiri and Satara.

## Nature of Damage to Shelter:

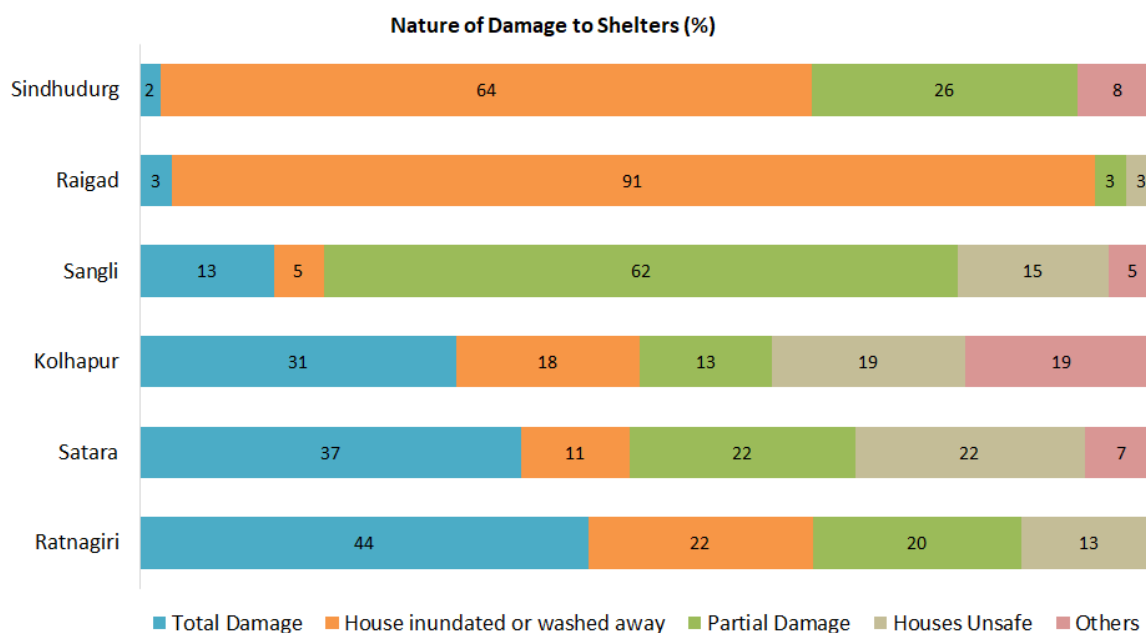


FIGURE 3 NATURE OF DAMAGE TO SHELTERS

### The data collected from respondents covered in the survey indicates that

- Almost 64% houses in were inundated damaging non-food items and livelihood assets in Sindhudurg district with 26% of houses partially damaged.
- In Raigad district 91% of the houses were inundated damaging non food items and livelihood assets.
- In Sangli the respondents informed that 62% of the houses were partially damaged, 15% of the houses were unsafe to live and 13% total damage to the houses.
- In Kolhapur, 31% shelters were fully damaged, 18% shelters were inundated or washed away in water, 13% shelters were partially damaged and 19% shelters were unsafe.
- In Satara district, 37% shelters were fully damaged, 11% shelters were inundated or washed away in water, 22% shelters were partially damaged and 22% shelters were unsafe to live.
- In Ratnagiri district 44 % shelters were fully damaged, 22% shelters were inundated or washed away in water, 20% shelters were partially damaged and 13% shelters were unsafe to live.

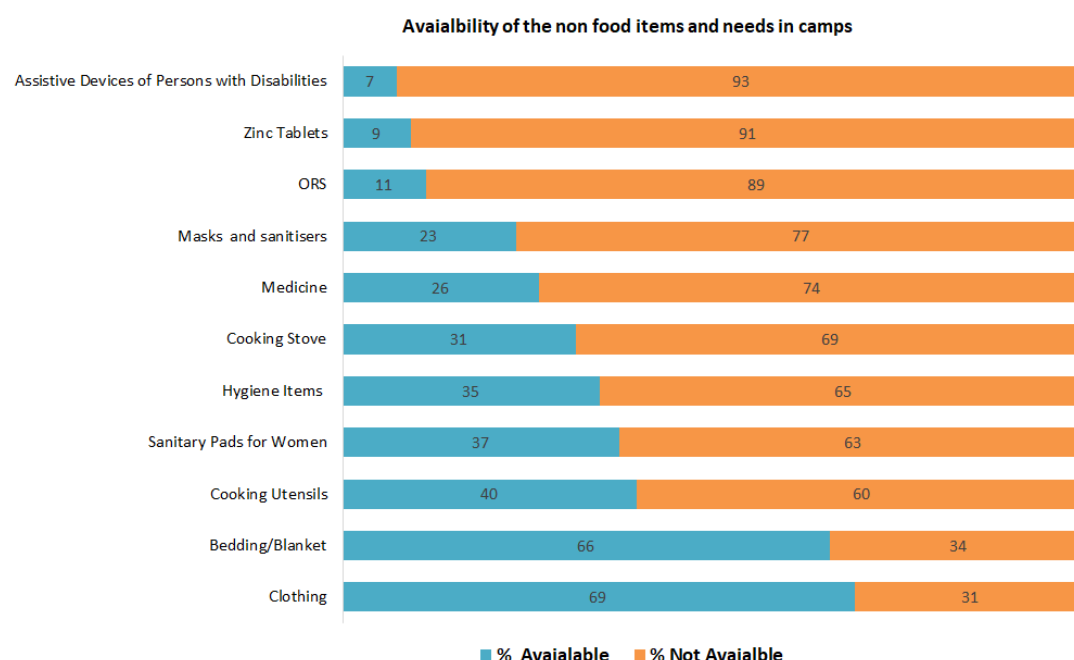
### Situation in relief camps:

A total of six relief camp were visited to understand the situation of facilities at the relief camps. A total of 946 respondents were interviewed for the data collection. Preliminary findings with special reference to COVID 19 precautions at the camp sites, gender considerations and accessibility to the special attention groups indicates that:

- 48% of the camps adhere to COVID protocols, 22% do not and 30% have no information of the protocols.
- 50% of the camps are accessible to people with disabilities, transgenders, SC and STs, 4% are not accessible and 46% has no information on the issues of accessibility to special attention groups.

- It was also found that 100% of the camps had food available however 50% camps didn't have drinking water facility, masks, sanitizers.
- 67% of the camps didn't make provisions of sanitary napkins and 83% reported inadequate facilities of bedding, mosquito repellent/net, bleaching powder, close lid dustbin.

### Availability of Non Food Items and Needs in the camps:



**FIGURE 4 AVAILABILITY OF THE NON-FOOD ITEMS AND NEEDS IN CAMPUS**

### The critical needs of the inmates in the relief camps assessed are:

- Almost 65% of the inmates informed that they have inadequate hygiene items including soaps, toothpaste, toothbrush, comb, etc.
- Almost 63% of the women respondents expressed the needs of sanitary pads for menstrual hygiene.
- 60% of the inmates indicated the needs of cooking utensils while 69% expressed the need for cooking stove.
- 77% of the inmates covered in this survey expressed the need for masks and sanitizers.
- Almost 91% of the inmates indicated need for zinc tablets and 89% expressed need for ORS in case of Diarrheal infections.
- 34% of the inmates indicated the need for bedding while 31% indicated the need for clothes.
- Considering critical needs of disabled persons non-availability of assistive devices in camps was expressed as a major concern by 91% of the respondents.

### 3. Recommendations:

#### **Short term for immediate response:**

1. Since all the districts affected are carrying high caseloads of COVID 19, immediate provision of masks, sanitizer bottles or sanitizer stands for the prevention of COVID 19 risks becomes highest priority need for the persons taking shelter in relief camps.
2. Immediate provision of non-food items catering to the needs maintaining personal hygiene and hand washing practices to prevent water borne and water wash diseases in the camp situation.
3. Adequate provision of sanitary pads for women and adolescents for maintaining menstrual hygiene.
4. With the total damage of 44% houses in Ratnagiri, 37% in Satara, 31% in Kolhapur, 13% in Sangli it is important to identify safe sites and establish transitional shelters for the affected families in order to ensure that the affected families returning from camps or relatives, avail safe shelters till the rehabilitation and repair of unsafe houses is completed.
5. Considering shelter sector at the core of all other sectors of WASH, Health, Food Security Nutrition, Education and Child Protection it is important to address needs of all the sectors while planning for early recovery and transitional shelters.
6. As per the government orders on establishing GO-NGO coordination centres at district level of coordinated actions for response, and recovery planning these GO-NGO coordination centres should be established in these six worst affected districts on priority basis immediately.
7. Conduct study of the landslide prone areas with special reference to geology and climate change for the identification of landslide risks.

#### **Medium term recommendations for recovery:**

1. Construction of permanent shelters in safe zones
2. Establish mechanisms for shelter damage and needs assessment and recovery planning in order to converge various schemes catering to housing and utilising opportunities of private partnerships for planned shelter repair and rehabilitation of damaged houses.
3. Establish state level experts' group from government departments, civil society organisations and academic institutions in architecture and engineering for designing disaster resilient housing models considering multi-hazard profile, geography, geology and ecology of the worst affected districts.
4. Strengthening Gram Panchayat level capacities to coordinate and monitor the rehabilitation work taken up by service providers and NGOs.
5. Establish district level GO-NGO coordination mechanisms for the timely implementation of rehabilitation of affected families in coordinated manner as per the owner driven approach and disaster resilience technologies.
6. Establish policy guidance and comprehensive plan on relocation of frequently affected flood prone communities and communities at risk of landslides in western Ghats.

#### **Long term recommendations for disaster risk reduction and sustainable development:**

1. Gram Panchayats to take up measures for environment protection, resilient housing ensuring prevention of the impact of hazards in future.
2. As per the mandate of Disaster Management Act 2005, District Disaster Management Authorities in all the affected districts should establish guidance and monitoring of departmental plans ensuring convergence of the schemes towards resilient housing.



3. Gram Panchayats to ensure that every new house constructed is constructed in safe area and with disaster resilient technology

## 2. Water Sanitation and Hygiene

### 1. Overview

Maharashtra, with a population of about 114 million people, is the second-most populous state in India. About 55% (60 million) people live in 28,813 GPs, spread across the 34 rural districts in the state.<sup>3</sup> Providing basic facilities, including sanitation, has been a priority of the state for since long and several efforts were made in the past to promote sanitation. These include the state's programs like Sant Gadge Baba Swachata Abhiyan, which was adopted by the Government of India as Nirmal Gram Puraskar. Due to these efforts, the state has made rapid progress in the field of rural sanitation, especially during the last decade. The state is also a forerunner in the number of villages that were declared open defecation-free after third-party verification. Owing to the vast size of the state and also socio-economic variations across districts, there are variations in sanitation coverage. Water Sanitation and Hygiene (WASH) remains the sector of concern for all the communities during and post-disaster stages because WASH covers the most important factors of human life. This year as the widespread rainfall caused flooding in parts of Maharashtra, the major concern for the affected population remains to be the access to safe/clean drinking water and sanitation facilities. 80% of people in the affected areas have been reporting non-availability of safe drinking water and are pushed to use contaminated water for drinking and washing purposes. The major source of drinking water for the people of Maharashtra remains to be groundwater either through a pipeline or directly from handpumps and tube wells which are largely impacted and inundated in the floodwater. It is also reported that people have been practicing open defecation due to dysfunctional and inundated public toilets. The fecal wastes have been mixing with the flood water in many places and around relief camps as well. In camps and village-level shelter spaces, there are no handwashing facilities available with soap and water storage remains a major challenge. Apart from liquid wastes, solid wastes (such as plastic, garbage, furniture, toys, tyres, etc) have been seen floating in rivers and floodwaters across all the affected districts of Maharashtra causing blockage and hindering the flow of water.

### 2. Assessment Findings

#### **Drinking water:**

- 79% of the surveyed mentioned the non-availability of safe drinking with 49% loss of water supply infrastructure.
- More specifically 80% respondents from Kolhapur, 100% from Raigad, 76% from Ratnagiri, 44% from Sangli, 85% from Satara, and 88% from Sindhudurg stated non-availability of safe drinking water.

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<sup>3</sup> <https://sujal-swachhsangraha.gov.in/node/1719>

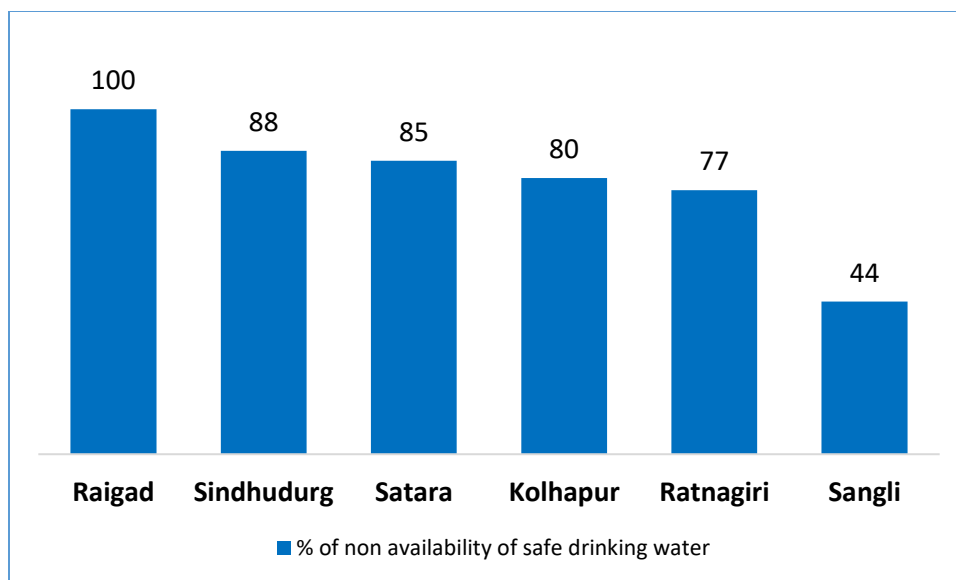


FIGURE 5 NON-AVAILABILITY OF SAFE DRINKING WATER

- Respondents informed have access to water facilities. for most vulnerable groups i.e. 78% for people with disabilities, 91% of SC, 53% of ST, and 90% of Minorities
- 40% of the surveyed mentioned that the water source is contaminated or at risk of contamination.

#### Sanitation:

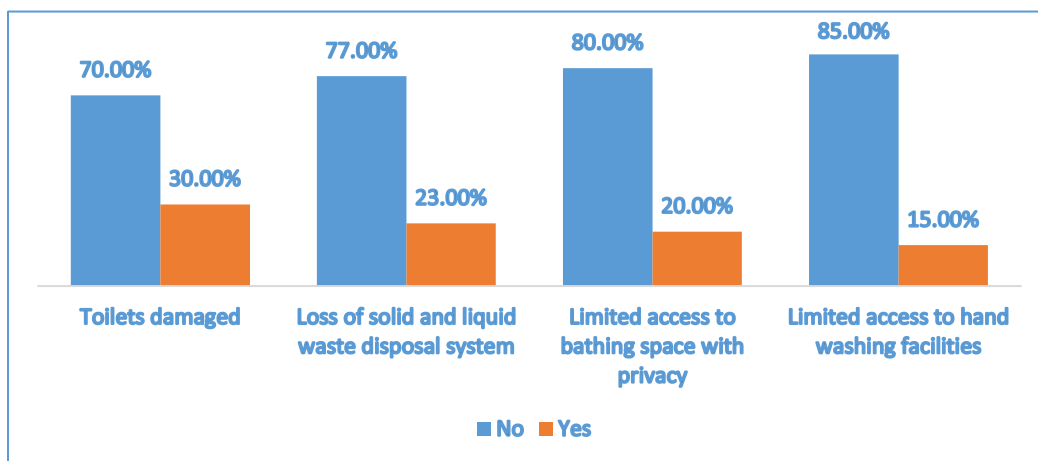


FIGURE 6 SANITATION

- 23% of the respondents informed the loss of solid & liquid waste disposal system, 30% respondents informed damage to the toilets, 20% informed limited access to bathing space with privacy, and 15% informed limited access to handwashing facilities.

## Waste disposal practices in post flood situation:

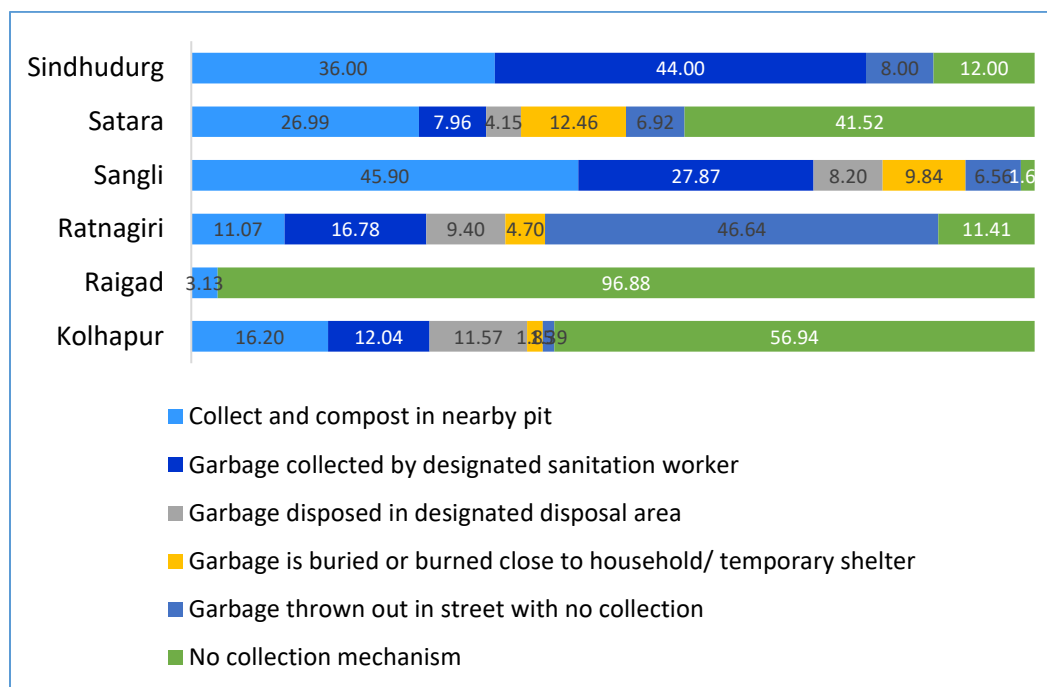


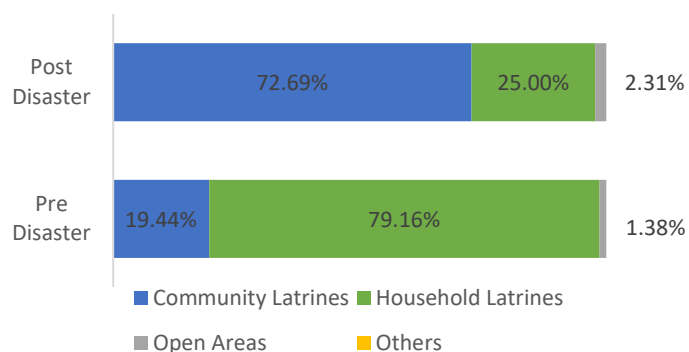
FIGURE 7 WASTE DISPOSAL MECHANISM

- In Sindhudurg, 44% of the surveyed households dispose off their garbage which is collected by designated sanitation worker, 36% collect and compost it in a nearby pit, 12% has no garbage collection mechanism and 8% throw their garbage out in the street with no collection facility.
- In Satara, 42% has no garbage collection mechanism, 27% collect and compost it in a nearby pit, 12% bury their garbage or burn it close to their household/ temporary shelter, for 8% garbage is collected by designated sanitation worker, 7% throw their garbage out in the street with no collection facility and 4% dispose it in the designated disposal area.
- In Sangli, 46% collect and compost it in a nearby pit, for 28%, it is collected by designated sanitation worker, nearly 10% bury their garbage or burn it close to their household/ temporary shelter, 8% dispose it in designated disposal area, about 7% throw their garbage out in the street with no collection facility and some 2% has no garbage collection mechanism.
- In Ratnagiri, 47% throw their garbage out in the street with no collection facility, for 17% garbage is collected by designated sanitation worker, 11% have no garbage collection mechanism, another 11% collect and compost it in a nearby pit, some 9% dispose it in designated disposal area and the rest 5% bury their garbage or burn it close to their household/ temporary shelter.
- In Raigad, 97% has no garbage collection mechanism and the rest 3% collect and compost it in a nearby pit.
- In Kolhapur, 57% has no garbage collection mechanism, 16% collect and compost it in a nearby pit, for 12% it is collected by designated sanitation worker, nearly 12% dispose it in designated disposal area, while nearly 2% bury their garbage or burn it close to their

household/ temporary shelter and over 1% throw their garbage out in the street with no collection facility.

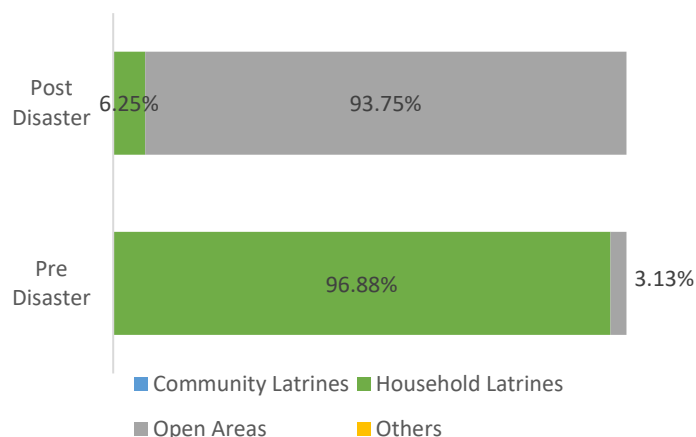
### District wise change in defecation practices in post flood situation:

#### Kolhapur:



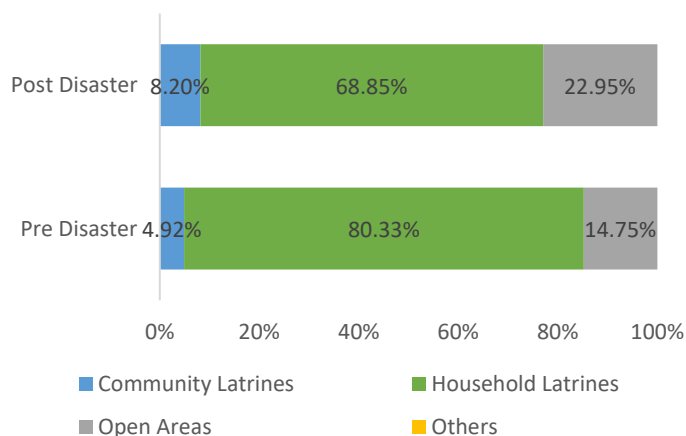
Almost 53% point increase in the usage of community toilets and 54% point of reduction of household toilets indicates the damage to the household toilet and increased burden on community toilets may result into filling up of safety tanks soon.

#### Raigad:



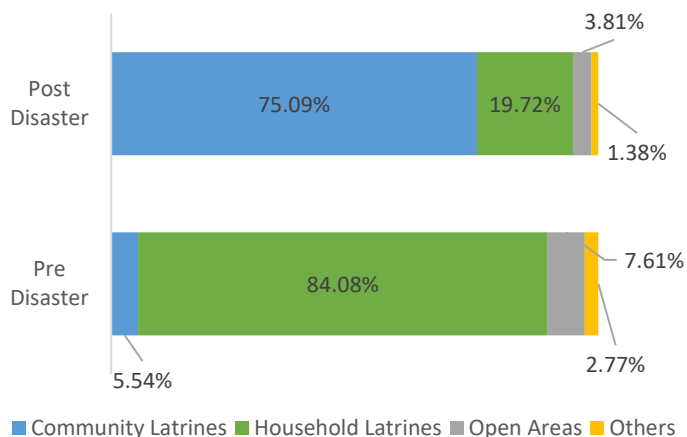
Almost 90% point of the reduction in usage of household latrines and 90% point of the increase in open defecation indicates major damage to household latrine and the risk of water borne diseases.

#### Sangli



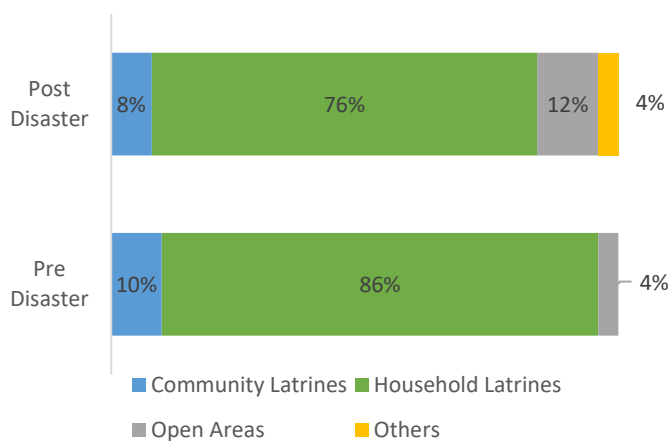
Almost 12% point of the reduction in usage of household latrines and 8% of the increase in open defecation indicates major damage to household latrine and the risk of water borne diseases.

## Satara



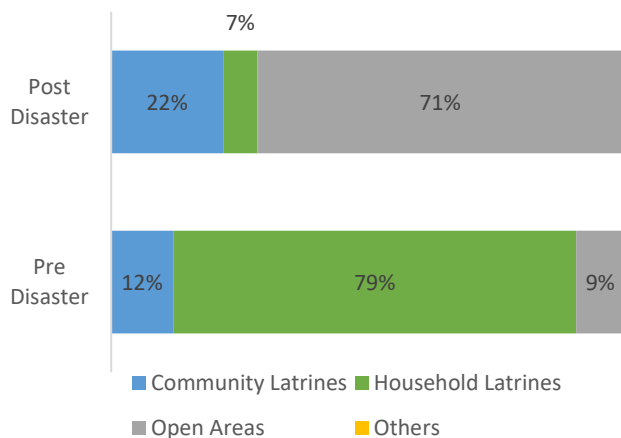
Almost 70% point increase in the usage of community toilets and 65% point of reduction of household toilets indicates the damage to the household toilet and increased burden on community toilets may result into filling up of safety tanks soon.

## Sindhudurg



Almost 10% point of the reduction in usage of household latrines and 8% point of the increase in open defecation indicates major damage to household latrine and the risk of water borne diseases.

## Ratnagiri:



Almost 72% point of the reduction in usage of household latrines and 62% point of the increase in open defecation indicates major damage to household latrine and the risk of water borne diseases.

To summarize the trend in post flood situation of defecation practices indicates that usage of the household level toilets has decreased significantly either resulting into increase burden on community toilets or open defecations and increased exposure to water borne diseases.

### Hygiene:

**Hand Washing:** 50% of the surveyed villages regularly washed hands during all critical times, 33% washed only after defecation and the rest 17% washed only occasionally.

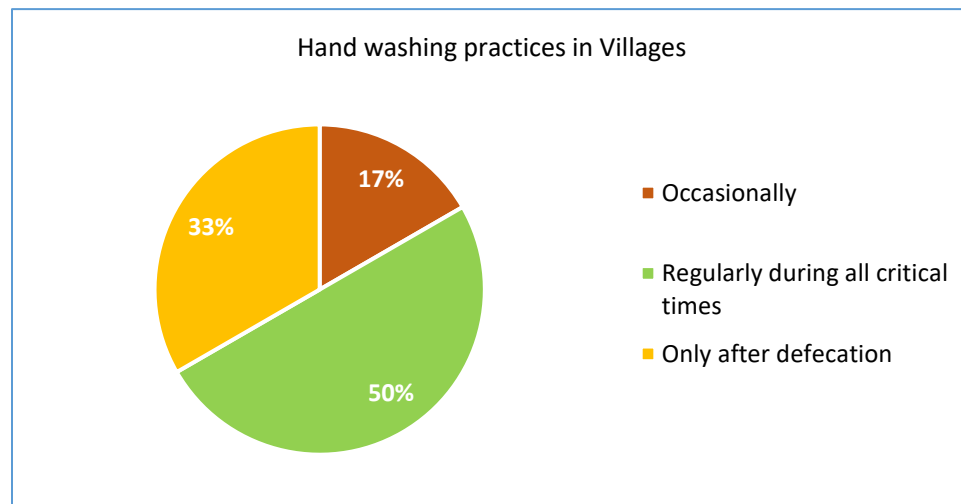


FIGURE 8 HAND WASHING PRACTICES IN VILLAGES

**The difficulty in managing the menstrual hygiene:** In post-disaster situation 47% women and adolescent girls faced privacy concerns, 68% faced unavailability of water and soap for washing and cleaning, 43% faced unavailability of pads/material, and 33% were hesitant to dispose of the pads/clothes. 11% mentioned they faced no difficulty while 9% didn't give any response.

### 3. Recommendations:

#### Immediate Support Required:

##### Sanitation:

1. Ensure sanitization (Disinfection) of the flood affected areas and relief camps twice every day using spraying machines.
2. Ensure cleaning of all the available latrines thrice every day in the flood affected areas and relief camps
3. Remove debris and solid waste from public spaces and road and ensure safe disposal of the same.
4. Dusting of the wet areas using bleaching powder with the support from health department.
5. Safe disposal of animal carcasses, in the deep pit and spraying vinegar before covering it by soil.
6. Safe disposal of damaged food grains due to floods in the deep pit and covering it by soil.
7. Cleaning of the drainages by removing mud and garbage to ensure adequate flow.
8. Use of Gappi fish or kerosene to ensure vector control measures at the breeding places of stagnant water.

9. If required, ensure fogging of the houses in flood affected areas regularly.
10. Deploy additional sanitation workers / laborers for the immediate sanitization and restoration of facilities as soon as flood water recedes.
11. Schools, Anganawadi, PHCs, Gram Panchayat buildings and other public utilities should be cleaned and sanitized immediately.
12. Ensure segregation and safe disposal of E-waste and other hazardous waste immediately utilizing appropriate methods.
13. Deploy mechanical methods of desludging the choked septic tanks of the community and household latrines using desludging pumps, desludging vans. Safe disposal of the sludge collected from the vans away from water sources. The sludge should be essentially disposed in deep pit (3 meters above water table) with the addition of lime and bleaching powder and cover it by soil.
14. A temporary arrangement of waste disposal and bathing spaces for females should be created on embankments where these affected families have taken shelter.

#### **Drinking water:**

1. Ensure provision of safe drinking water for all, by water chlorination using TCL. In absence of TCL distribute chlorinating agents (Mediclor) for household level water treatment at flood affected communities and relief camps
2. Ensure sufficient storage ( At least 25 kg in air tight bucket/packet) of TCL powder with 33% of chlorine content
3. Ensure drinking water quality monitoring using OT test at flood affected communities and relief camps. It is important to conduct OT tests frequently at all the sites of water treatment, collection and point of use. Gram Panchayat and VWSC to monitor the water quality testing conducted by Village water person (Jal Surakshak).
4. Immediately after water recedes conduct TDS tests.
5. In case of dysfunctional or damaged piped water supply schemes, make provision of alternative water source and water treatment.
6. In case of dysfunctional or damaged piped water supply schemes and absence of alternative water source, make the demand for tanker water. In this situation ensure water treatment of the tanker water before distribution.
7. Provision and promotion of chlorinating agent (Medichlor) and Alum at every household level.
8. Restoration of private and GP owned Water ATMs wherever available ensuring adequate and treated water supply to water ATMs.
9. Ensure chlorination of hand pumps and mechanized pumps before starting water distribution from these facilities after floods.
10. Ensure immediate repair and restoration of the damaged piped water supply schemes. This include desilting of jack well, repair of mechanical parts of pump, repair of damaged valves and pipelines and other necessary operation and maintenance.
11. Launch public awareness campaign on water handling including safe behavior during water collection, water storage, household treatment (boiling) and water consumption. This also includes handwashing with soap at critical times.



**Hygiene:**

1. Hygiene kits including sanitizer, soap, toothbrush, toothpaste, anti-septic liquid, sanitary pads, and detergent should be provided to vulnerable families, to address the needs of women, adolescent girls, and children.
2. PPE kits should be provided to sanitation workers to ensure their health and safety.

**Medium to long term:**

1. Establish mechanisms for WASH damage and needs assessment and recovery planning in order to converge various schemes catering WASH and utilising opportunities of private partnerships for resilient WASH recovery planning.
2. Strengthening Gram Panchayat level capacities to coordinate and monitor the WASH reconstruction work taken up by service providers and NGOs.

**Health Sector****1. Overview**

With the heavy caseloads of COVID 19 in all the six affected district the health systems and the frontline workers were stressed in the pre-flood situation. The heavy rainfall, incidences of landslides and floods added on to the stress on the system. The evacuation of the affected families with inadequate precautions of using masks and maintaining physical distancing has put people at risk of COVID 19 exposure on one hand and risk of other communicable diseases on the other hand. The data in public domain indicates that the affected families started to complain about stomachache and diarrhea after the fourth day of the disaster and on 31<sup>st</sup> July 2021, Raigad collector informed identification of 15 cases of Leptospirosis.

This rapid need assessment inquired into the functionality of health facilities in the post disaster situation and existing risks of communicable diseases in the affected areas.

## 2. Assessment Findings

### Health status of the affected families:

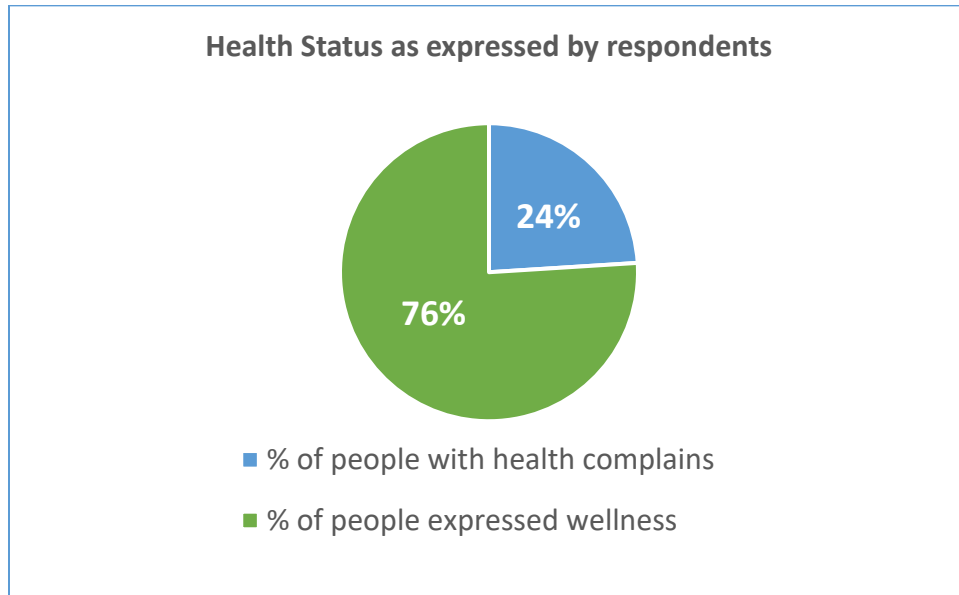


FIGURE 9 HEALTH STATUS AS EXPRESSED BY RESPONDENTS

It was found that 76% expressed wellness with no suffering of ailments, however almost 24% respondents expressed that their family members were facing health issues. Out of 24% of the respondents who expressed health complaints, 49% were suffering from communicable diseases (Diarrhoea/ respiratory/ skin diseases/ Cold Flu), 14% got infected with COVID 19, 18% were going through mental trauma while rest 19% were suffering from other diseases. The graph on the next page depicts the classification of the health complaints.

Nature of health complaints expressed by the respondents.

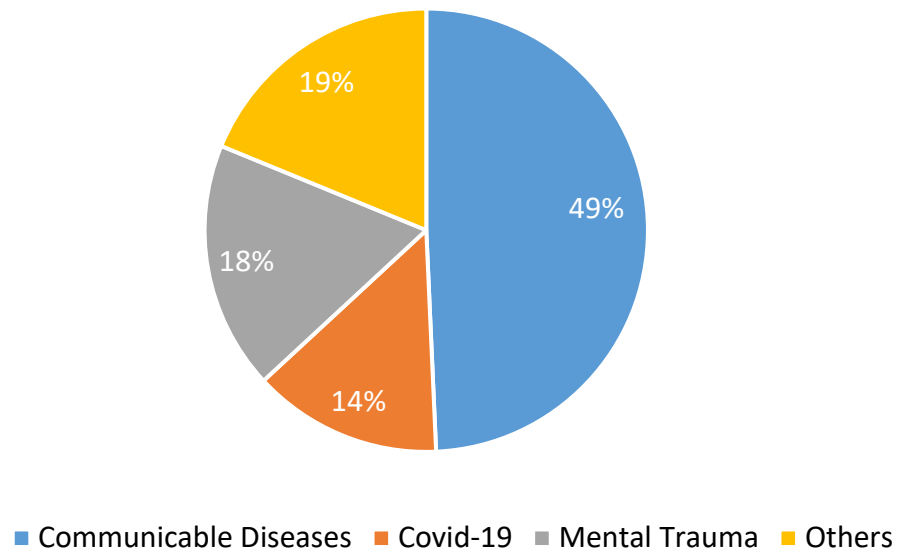


FIGURE 10 HEALTH CONCERNS

#### Access to health care facility:

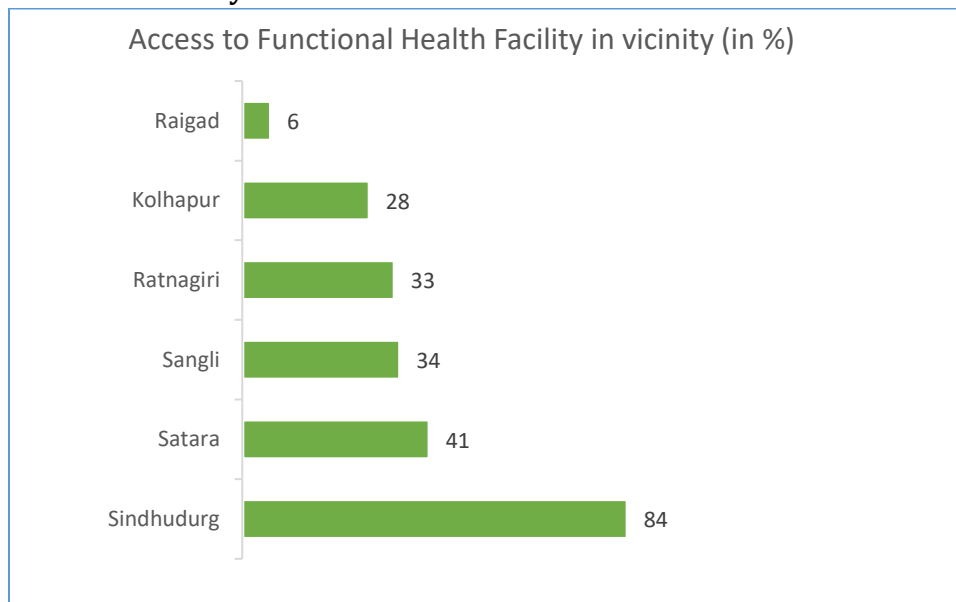


FIGURE 11 ACCESSIBILITY TO HEALTH SERVICES

The data indicates that only 6 % in Raigad district, 28% in Kolhapur 33% in Ratnagiri 34% in Sangli and 41% in Satara affected families have access to functional health facilities. In Sindhudurg almost 84% of the have access to functional health facilities. Overall data of six districts indicates only 36% of health facilities are functional in the vicinity rest 64% are non-functional. It was also found that

- VHND and Health Camp services were not affected by the disaster.
- The services of doctors, medical in charge, village waterman, PHC staff and ASHA workers increased during post-disaster.
- The operations of informal service providers, health sub-centers, ANM workers and Anganwadi centers decreased.
- In flood affected area 33% people were injured, while 23% suffered with water borne and communicable diseases. 16% were suffering from mental health disorders. 10% people in affected area were suffering from malaria. 5% pregnant women required ante-natal care.
- In 16 villages, out of 25 surveyed, it was reported that the disaster has impacted the COVID 19 vaccination process.

### 3. Recommendations:

#### **Immediate:**

1. Administration of oral rehydration therapy (ORT), and adequate awareness and demonstration to the people.
2. Distribution of mask, sanitizers along with better awareness and adherence to CAB (COVID Appropriate Behavior) hygiene needs to be done extensively in relief camps and crowded locations.
3. Promotion and continuation of COVID-19 vaccination.
4. Access to outpatient consultations and other health services must be ensured.
5. Ensure continuity of routine immunization.
6. Awareness on COVID preventive measures like wearing of masks, hand Washing/ cleaning must emphasize regularly. Provision of masks as essential items need to be ensured.
7. To conduct mobile health camps in areas where health services are not reached.
8. Adequate supply of essential medicines and other items to treat affected population should be arranged on priority basis.
9. The services of ASHA, Anganwadi Workers, MPHW, Community task force/volunteers and others should be utilized after proper orientation for COVID-19 screening; preparing list and reporting for immediate needs/support of vulnerable population, cases with COVID-19 symptoms to concerned authorities in the affected areas.
10. Continuum of care to be provided to people with existing co-morbidities, people with TB and NCD's (hypertension, diabetes, cancer etc.).
11. Special care should be given to people with disability, elderly and children in terms of accessibility to health services.
12. Environment cleanliness- focusing on safe disposal of debris of dead animals; village/household cleanliness. Distribution of Bleaching powder, and other disinfectants would be essential with adequate information on usage and its demonstration.
13. Adequate supplies of potable water and halogen tablets would be needed with proper information on usage with demonstration.
14. Pregnant women must be treated with priority; ones which are being relocated to shelter homes should be tracked and provided with ANC and PNC services.

15. Ensure access to institutional delivery and Emergency Obstetric Care. Immunization services for children and ANC/PNC clinics for pregnant women should be prioritized and considered as essential services.
16. The ASHA/ANM/MPHW can be trained for basic health check-up like temperature checking, symptoms of COVID, checking oxygen saturation in the community randomly as risk of infection increase may be high during relief operations as many people come close and from different locations in affected areas. Gram Panchayat can be involved to initiate the awareness at Community Level.
17. Basic Hygiene promotion activities for prevention of water related diseases.
18. Special care of PWD and the aged in terms of their accessibility and medical needs.

#### **Medium term:**

1. Establish mechanisms for Health damage and needs assessment and recovery planning in order to converge various schemes catering Health and utilising opportunities of private partnerships for resilient Health infrastructure.
2. Communication strategy need to be developed for creating massive awareness among communities on Covid19 Appropriate Behaviour and Safe hygiene in general.
3. Inter-sectoral coordination and preparedness need to be strengthened for prevention and control diseases and infections prevailed in affected area and necessary arrangements for provision of health services access.
4. Hygiene promotion should be done using Behaviour Change Communication as a key strategy and continued even after the water level recedes as the health vulnerability would continue.
5. Mental Health could be given priority as this time the stress and mental health issues aggravated with the disaster impact compounded by the ongoing epidemic of COVID-19. Humanitarian aid workers could be trained in core psychological care skills to raise awareness and community support and to refer persons to the primary health care system when necessary.

#### **Long-term/Build back better:**

1. Establish mechanisms for risk assessment with special reference to health infrastructure and services and derive risk reduction plan at district health department plans in coordination with DDMA.
2. Capacity building of the Health professionals are need and to be trained on disaster management.
3. Establishment of Hospital Networking System for referral of emergency cases in future for such disasters.
4. Physical rehabilitation and reconstruction of local health facilities, and/or with the required medical provision of essential equipment and supplies, especially in inaccessible flood affected areas will also be necessary while building back better.

### **3. Food Security, Nutrition and Livelihoods**

#### **1. Overview**

Maharashtra, while economically booming, is burdened with both chronic and acute undernutrition. Indian Council of Medical Research stated that, "Though in NFHS 5 we have reduced infant mortality

and increased immunization coverage, child undernutrition in form of stunting has worsened, even for richer states such as Kerala, Maharashtra and Goa and that's is a worrying trend.”<sup>4</sup>

In Maharashtra, the percentage of children who are stunted increased marginally from 34.4 % (NFHS-4) to 35.2 % (NFHS-5). Similarly, in case of severely wasting increased from 9.4 % to 10.9 % in NFHS-5. Underweight and wasted has not changed (36% and 25.6 % respectively) in both the surveys. Overweight is also 3 percent higher than the NFHS 4 (1.9% to 4.1%). The prevalence of wasting among children under five in the state is 26%, roughly 2.5 million children, or a quarter of all children under five, suffer from wasting and as a result face severe health, development and mortality risks due to acute undernutrition. Nearly one in 6 cases of children affected by wasting across India lives in Maharashtra.

Over the past decade, Maharashtra experienced an impressive 15% decline in stunting among children under 2 years of age between 2005 and 2012 due to the efforts of state nutrition mission.<sup>5</sup>

### **1.1 Child feeding practices and nutritional status of children**

Data of NFHS 5 reflects that children under six months who are exclusively breastfed also increased to 71% (WHO recommended) from the NFHS-4 figure of 56.6%. However, only 9 % children (6-23 months) receiving adequate diet as per the latest data of NFHS 5 which is major concern for all.

### **1.2 Anemia among child, adolescents and adults**

Anemia is a major problem in Maharashtra especially among women and children. As per the NFHS-5, 45.7% pregnant women (15-49 years) are anaemic which is affecting the status of children also. 68.9 % children in the age group of 6-59 months are anaemic which is 15 % higher than the NFHS-4 findings. Similarly, 57.2 % women of 15-19 years are anaemic which is higher than the previous data of NFHS -4 (49.7%).

- <sup>6</sup>Rural areas have the highest percentage of underweight children (40%) followed by stunted (38%) and wasted (26%) respectively. Almost half of the underweight children with (45% stunted and 26% wasted) belong to families with uneducated mothers.
- The major causes are poor awareness and absence of cleanliness and sanitation, poor dietary pattern etc.

### **Situation during Flood and displacement**

The JRNA shows a cause for major concern in the area of Food Security and Nutrition. The families surveyed have little or no food stocks as most of their stocks have been lost or damaged in the flooding. They do not have the financial resources either to purchase food or food materials.

## **2. Assessment Findings**

### **Key Findings:**

- 71% reported unavailability of enough food (This is the total of two questions on lack of food/ inadequate quantity 61%+ 10%)

<sup>4</sup> <https://swachhindia.ndtv.com/nfhs-5-report-highlights-malnutrition-in-children-has-worsened-in-key-states-of-india-experts-say-we-need-to-rethink-our-nutrition-plan-54949/>, NFHS 5 Report Highlights: Malnutrition In Children Has Worsened In Key States Of India, Experts Say We Need To Rethink Our Nutrition Plan, January 05, 2021

<sup>5</sup> UNICEF.2016. Documentation of Rajmata Jajau Mother Child health and nutrition mission in Maharashtra, pushing nutrition agenda forward.

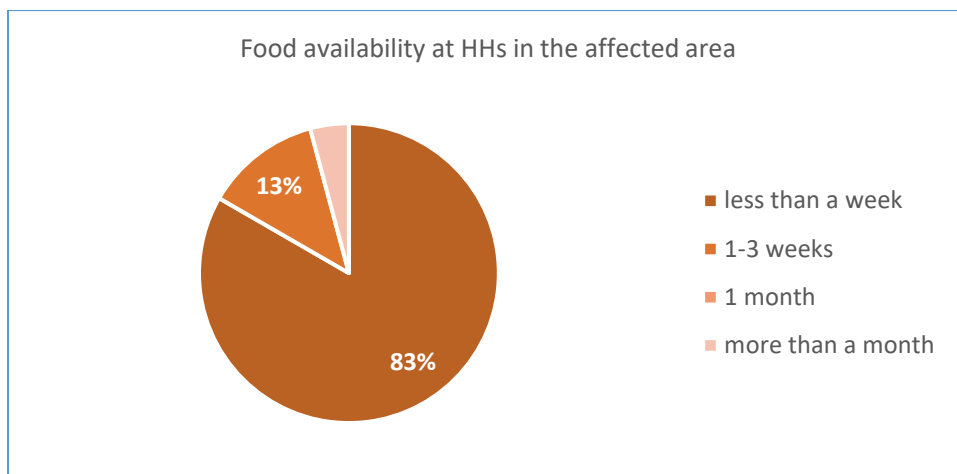
<sup>6</sup> Khadse and Chaurasta, 2020. Nutrition status and inequality among children in different geographical regions of Maharashtra, India, Clinical epidemiology and global health 8 (2020), 128-138.

- 58% had no cooking facilities,
- 71% have no access to utensils for cooking food.
- 60% do not have sufficient money for purchasing food
- 68% markets are not functioning,
- 18% people have lost their ration cards/ ID cards.

There are multiple issues that need to be addressed here. While 71% report lack of food as an issue, lack of utensils and cooking facilities is also a problem that requires to be addressed. Almost 60% of the people surveyed stated lack of financial resources to purchase food or raw materials as an issue.

While these require to be addressed on an urgent basis, the loss of Ration Cards and/or ID cards (about 18%) is an issue that has long term consequences unless addressed immediately.

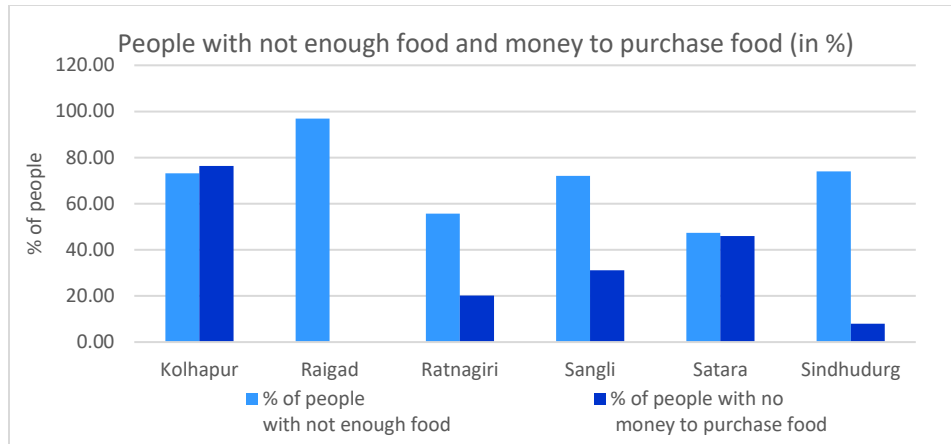
### **Food Stocks available at Household level**



**FIGURE 12 FOOD AVAILABILITY**

- 83% people don't have enough food for even a week to sustain at household level.
- Significant changes in the total amount of food that people are eating since the disaster, on average were reported in 19 villages and
- 11 villages reported that there is no extra effort taken for providing special nutritive diets for pregnant women and lactating mothers and children

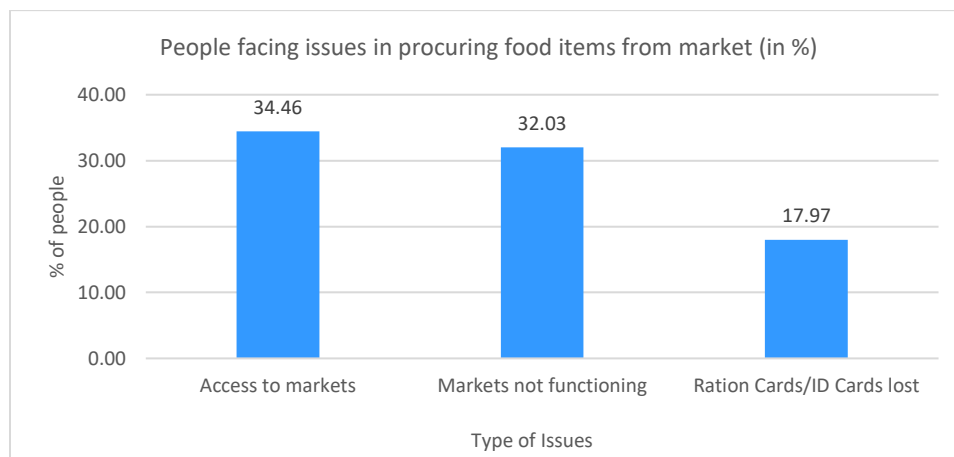




**FIGURE 13 PEOPLE WITHOUT ENOUGH FOOD AND MONEY TO PURCHASE FOOD**

- District-wise data shows that approximately 75% people in Kolhapur do not have enough food and 78% have no money to purchase the same. Whereas, in Raigad, 90% people have unavailability of enough food items. 55% people in Ratnagiri do not have enough food to sustain and 20% of them do not have money to buy it. In Sangli, 75% of people surveyed are running short of food and 30% have no money for the same. Approximately, 75% of people in Sindhudurg do not have enough food and 10% have no money while 50% people in Satara have no access to food and money.
- There is an emergency kind of situation in Raigad with almost 90% of people surveyed, stating lack of food as an issue, while Satara appears to be better off with only about 50% having no food stock. However, almost all 50% who did not have adequate quantities of food in Satara also stated that they do not have the financial resources to purchase the same.
- Interestingly, people in Sindhudurg, Ratnagiri and Sangli did not seem to have a shortage of financial resources to procure food

## Access to Markets



**FIGURE 14 ACCESSIBILITY TO FOOD**

- 34% people have no access to nearest markets.
- 32 % markets are not functioning, and
- 18% people have lost their ration cards and/or their ID cards.

## Access to Public Distribution Systems

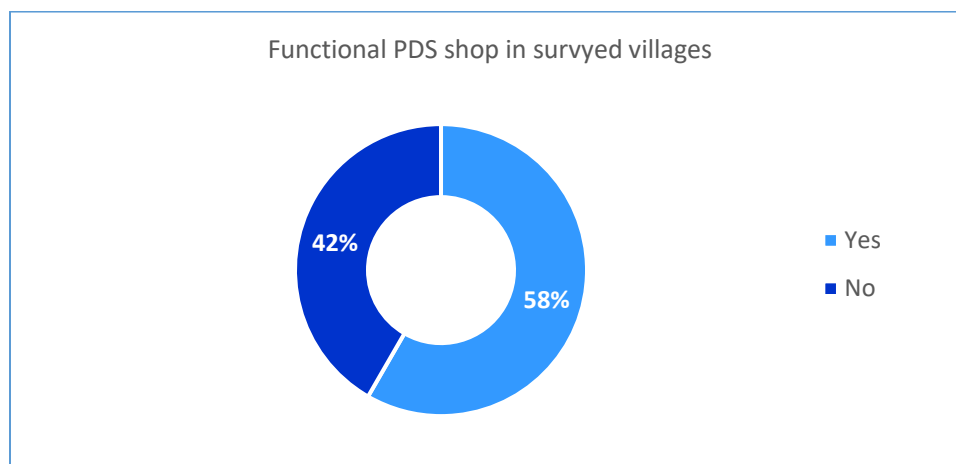


FIGURE 15 FUNCTIONALITY OF PDS

## Livelihoods:

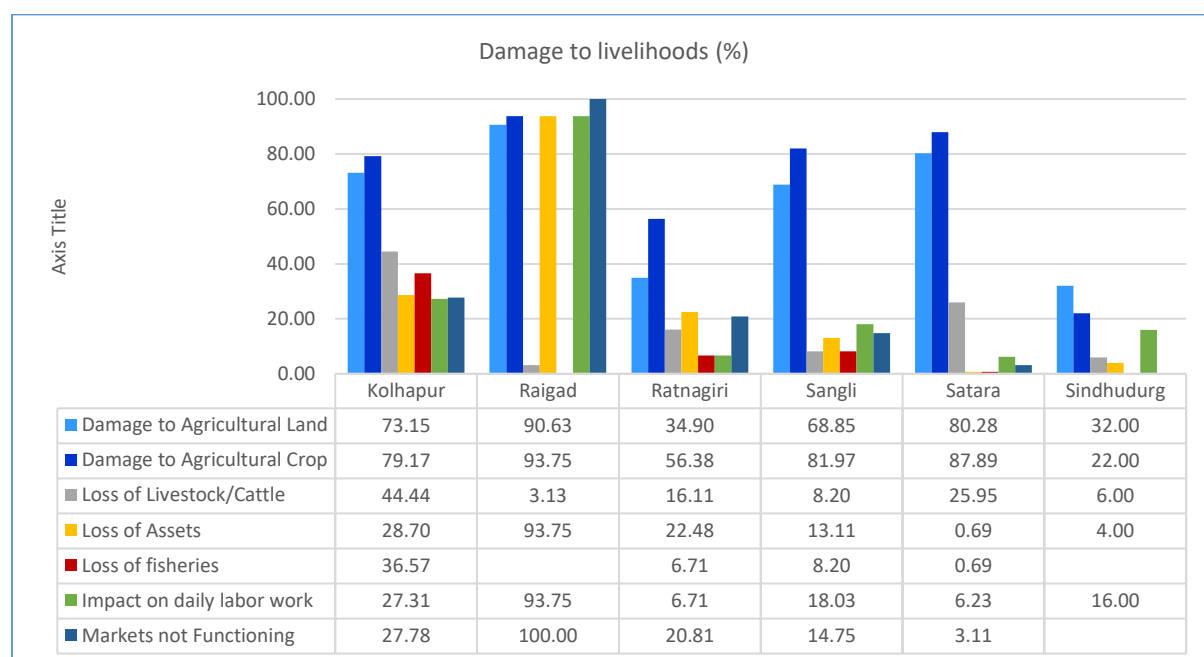


FIGURE 16 DAMAGE TO LIVELIHOODS

- 72% of the surveyed population reported agricultural crop damage and 61% agricultural land damage. Among the affected 33% people have lost their agricultural tools, 24% have lost their livestock and cattle, 15% have no access to fodder, 11% fisheries were lost, 9% of them lost their fishing tools as well and 19% have lost their assets.
- 18% markets are not functioning, and 8% artisans have been affected due to flood.
- 15% of daily labourers are affected whereas 34% of cattle were affected.
- Considering impact in the surveyed districts – More than 75% of agricultural land is damaged, 80% of crop has been damaged, 45% of cattle has been affected, more than 25% assets have been lost, up-to

37% loss is seen in fisheries and 25% impact in daily labour and non-functioning of markets are reported in Kolhapur.

- In Raigad, there is maximum loss of crops i.e 100% and 85% loss of agricultural land. 85% of daily labourers have been affected and have also faced loss of assets.
- In Ratnagiri, 56%% have faced loss in agricultural crop, 35% approximately have faced loss in agricultural land, 22% have lost assets, and 8%% have lost fisheries and also have affected daily labour work.
- 81% of agricultural crops are affected, 68.85% have faced damage in agricultural land. 13.11% have faced loss of assets, 8.20% fisheries were lost and 14.75% markets are non-functional in district of Sangli.
- In Satara 88% have faced damage to agricultural crops, 80% agricultural lands have been damaged, 26% livestock has been lost. 6% daily labours have been affected, 3% markets are not functioning.
- 32% agricultural land, 22% agricultural crop, 6% livestock and cattle, 4% assets and 16% daily labour have been affected in Sindhudurg.

### 3. Recommendations:

#### **Immediate Actions for ensuring Food Security:**

1. Provision of cooked food, through community kitchens, for people in relief camps who have lost their homes and utensils and are unable to cook food
2. Provision of Food Kits (uncooked raw materials) and utensils for people who can return to their homes after cleaning of debris, silt and proper sanitisation
3. Making Public Distribution outlets (ration shops) fully functional, either through repairs or through finding alternate buildings, and ensuring supply of adequate quantities of food grains and other essential supplies
4. Immediately replacing or providing temporary permits for all lost Ration Cards and/or identification papers for the people who have lost them. This can be done through certificates provided by the Local Governance mechanisms
5. Appropriate nutritive kits to be provided for families with children, elderly, pregnant women and lactating mothers

#### **Immediate Actions for Ensuring Nutrition Support**

1. The flood and related destruction might lead to further increase in wasting hence the situation demands efficient and focused ANC and IYCF practices.
2. ICDS may provide home delivery of cooked food for the children, pregnant women and lactating mothers to ensure nutrition security for these vulnerable groups.
3. Take Home Ration (THR) supply to be activated and monitored
4. Self Help Group (SHGs) who were providing meals at AWC and have become nonfunctional have to be mapped and reactivated through needful intervention.
5. Nutrition Rehabilitation Centre (NRC) should be made available in all the districts and services should have proactive services with necessary equipment, medicines, and supplements
6. Focus on improved access and utilisation of essential nutrition interventions: iron and folic acid supplementation for pregnant women, vitamin A and deworming, nutrition education, counselling to improve feeding, and care of children with severe acute malnutrition

#### **Mid-term Actions for Restoring Income generation and livelihoods:**

1. Detailed Household level livelihood assessment with special reference to be conducted with special reference to climate shocks and stresses to ensure convergence of government schemes for systematic recovery.
2. Activating MNREGS, with additional days, in the villages that have been affected.
3. Through MNREGS, providing jobs related to debris cleaning, desilting, cleaning of public places and infrastructure etc to the families that have been affected by the floods, thereby ensuring they have adequate income to procure essentials.
4. Identification of livelihood options contributing to building resilience and ecosystem building. E.g. Plantation on the banks of rivers and slopes.
5. Cash for work for repairing of houses, clearing of debris, road repairing can be promoted.
6. Adequate compensation should be provided to them to meet their damage and further support to restore it.

7. Form livelihood committee at village and plan revolving fund to provide support to affected communities to restart their livelihoods.
8. Veterinary department could ensure seasonal vaccine and veterinary care to the injured and remaining livestock.
9. Engaging of local Artisans with productions through providing raw materials, repairing of tools, market linkages. Engaging Women Self Help Groups in small scale income generation activities (For ex. Mask stitching).
10. Families who lost key earning person either in COVID or in flood and landslides, should be provided special provision to initiate new livelihood.

## Education

### 1. Overview

As per the NFHS V data set, the literacy rate in Maharashtra is 85% amongst women and 93% among men. As per the Ministry of Education, Government of India report Maharashtra's Performance Grading Index (PGI) is Grade L3 with a score of 867/1000, making it to the top 7 most educated states in the country. Maharashtra scores 150/180 in the learning outcome and quality, 76/80 in terms of accessibility to education, 126/150 for school infrastructure, 224/230 for equality in access to education and 299/360 in governance processes in the year 2019-20. This is improvement from 2018-19 where Maharashtra was in level 802/1000, the score was only 700/1000 in the 2017-18. This also shows that the state was able to maintain and improve the quality of education through the pandemic and the lockdown.

However, as per the survey with the students and parents, children do not have seamless access to digital devices which is interrupting their education since pandemic. The distress of online schooling is seen among the children. Accessibility to education is limited due to online schooling, post floods the electronic devices have been damaged and/or loss of electricity has stopped schooling completely in certain affected pockets. Mid-day meals were also not available in the schools which also compromised on nutrition of children, coupled with floods; now nutrition at their homes is also a challenge.

The cascading effects of the pandemic, lockdown and flood in these areas further exacerbated the poor learning outcomes. AWC and schools have been closed since then. The added burden of COVID 19 cases along with the flooding disrupted school routines and inaccessibility to the learning cycle, and led to loss in education days, damage to school infrastructure and education material at home. Further to this, non-availability of vaccine for children aggravates their vulnerability in a current multi-facet disastrous situation. As most of the students do not have access smartphone, laptop, television, the impact on learning is severely impacted. Access to schools is further hampered due to floods as the electronic devices are damaged and/or electricity is not there, especially in the Raigad, Ratnagiri and Sindhudurg districts.

Raigad and Kolhapur are socio-economically and culturally forward districts. As these districts were capital cities in the history, they were run by kings who gave lot of importance to education and hence even today the seriousness of education lies within the culture. Among the economically vulnerable community, though online schooling was a challenge, shared resources were used in Raigad and

Kolhapur and it was reported that over 41 % in Kolhapur and 88% in Raigad students lost this access to online education due to the deluge.

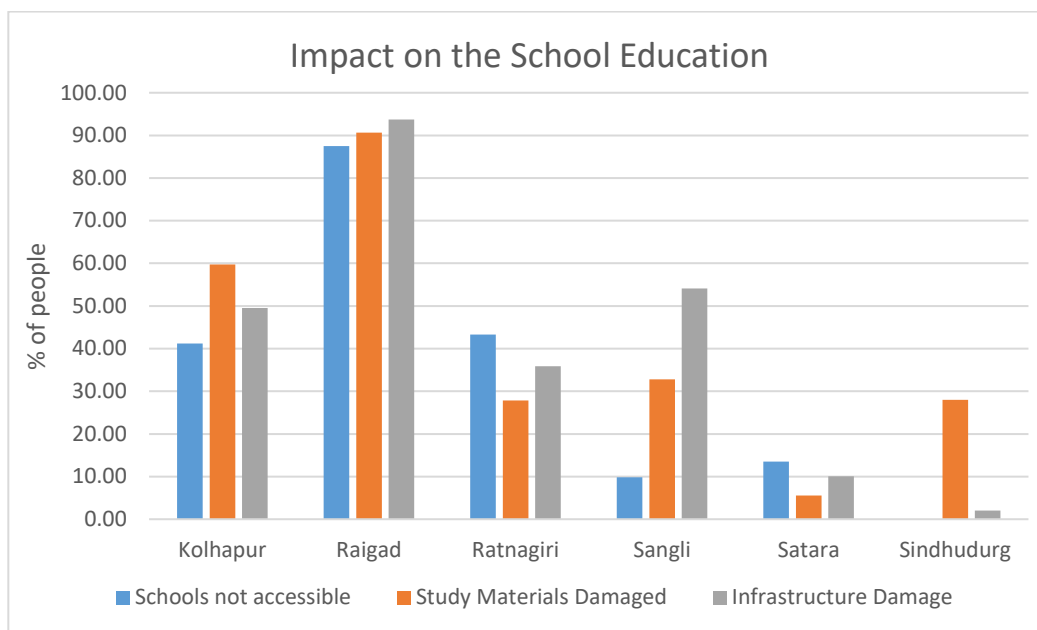


FIGURE 17 IMPACT ON SCHOOL EDUCATION

## 2. Impact

In Raigad urban schools are multi storied budlings which were used as temporary shelters during the floods. Government had taken complete precaution for implementing the CAB+ in the shelters. In the rural areas, it was seen that the access to the school was limited to some 13 % people which was primarily due to online schooling. 91% of study material like books, boards, educational kits have been damaged and 94 % of schools reported damage in the infrastructure.

Similarly, in Ratnagiri district, in the affected inaccessibility to the schools in the urban as well as rural areas is reported to be over 43% and the major cause is disruptions in electricity, damage of computers in community centers and other electronic devices. 28 % of education material is damaged. 36 % of school buildings and other infrastructure is damaged.

In Kolhapur district, it is seen that 41% of school students have no access to the schools. 60 % lack study material and study kits have been damaged and nearly 50% of the school infrastructure is damaged. In Sangli and Satara districts, some 10% and 13% of school students respectively have no access to the schools respectively and they hail from the vulnerable communities. Study Material damages in Sangli and Satara are 38% in Sangli and 6% respectively. 54% of the school infrastructure is damaged in Sangli.

### 3. Recommendations

#### **Short term for immediate response**

1. Recently it has been announced by the Government, that the schools will reopen on the 17<sup>th</sup> of August, 2021. Schools which were used as relief camps must be sanitized and then handed over for reopening.
2. As many schools had water logging, disinfection to prevent outbreak of communicable diseases is also necessary.
3. The school infrastructure such as buildings, toilets, bathrooms, hand wash stations, boards, benches, etc. Education material such as books, sports equipment, art material, etc. must be replaced before the schools reopen.
4. AWCs must be stocked with sufficient basic medicines needed for post flood outbreaks.
5. While restarting the Mid-Day meals kitchens must follow CAB+

#### **Medium term**

1. Water logging has damaged the school buildings and some damages may not be visible. Post a structural audit, retrofitting of the existing school buildings must be done to avoid any immediate risk.
2. These were flashfloods; in case there is a recurrence in the near future, children must be prepared for the same. Using the School Safety Policy of the Union Ministry, capacity building of the children and teachers must be done.
3. In flood affected areas toilets and drinking water supply must be refurbished in a manner that few feet of flood water does not affect the functioning.

#### **Long Term**

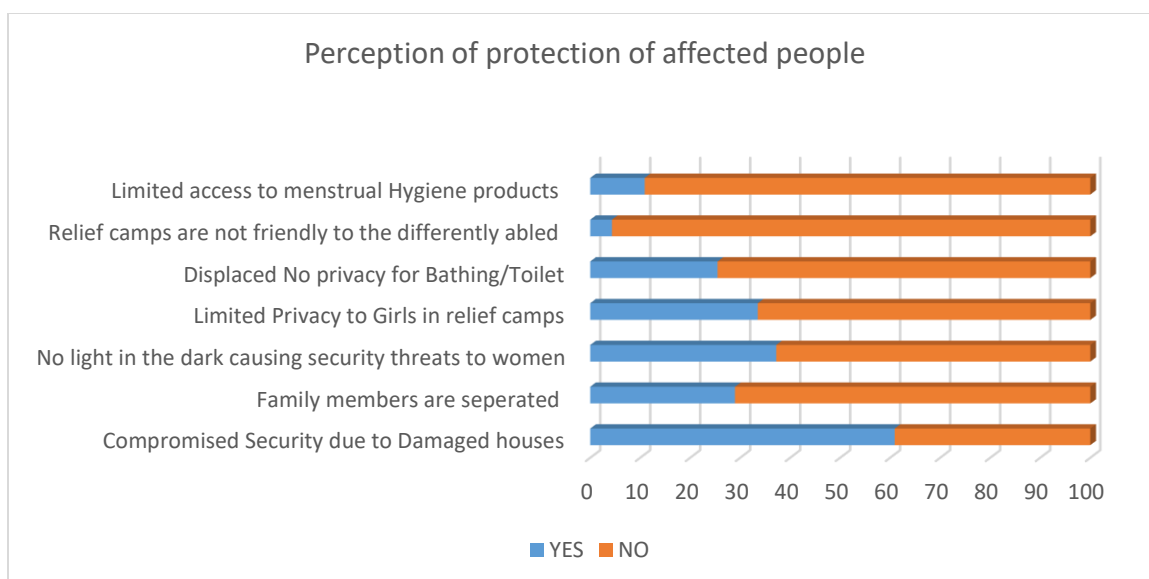
1. All the 6 districts must be surveyed by the Education department and the Revenue Department for the flood risk to the school buildings. All the buildings in the low lying areas and/or around rivers must plan a relocation, so that children have a safe space even during emergencies. At the time Government is planning reopening of the schools, as a part of pre-opening preparations, the stated safety risks need to be accounted for.
2. Underground and flood proof cabling may be ensured in coastal districts and flood affected town in the most affected districts.
3. Disaster preparedness of the authorities and people especially in disaster prone areas. Organizing trainings and capacity building activities for authorities and community.

## 4. Protection

### 1. Overview

The state has been the most affected by the COVID in the last 15 months, and has now been struck with a deadly flood during the unprecedented rains in the monsoon. Children, women and other vulnerable groups like people living with disability, HIV/AIDS, trans-genders are mostly likely to be most affected by any disaster. Relief for shelter, food, water, sanitation and hygiene has been arranged and supplied by government, non-governmental and faith-based organizations. However, protection issues remain an area which generally receives less attention. Women, children and other vulnerable groups become very easy targets of abuse and violence, loss and destruction of houses render them homeless and exposed to ill treatment and abuse by outsiders. Natural disasters like flood coupled with the pandemic had already left millions jobless and loss of livelihood makes the children and women very susceptible to child marriage, child labour and child trafficking to make ends meet. It is very important for the government to identify these children at the earliest and support them. The Central and State governments have come up with schemes for children who lost their parents to COVID. As natural disasters like floods generally lead to impoverished environments, the long-term effect of living in unhealthy and unsafe surrounding is greater on children than adults. Children also become very vulnerable to sexual abuse and domestic violence and psychological problems such as post-traumatic stress disorders and depression impact their physical and mental health. Safeguarding issues are also very crucial as community led groups, humanitarian agencies and government authorities are active during these times to provide relief and support to the people affected and it increases their access and closeness to vulnerable communities. It facilitates access of predators to their victims. It is important for the government to strengthen their child protection structures at the state, district, block and village level for such emergency preparedness. Protection should be a priority before, during and after disasters like floods and pandemic.





**FIGURE 18 PERCEPTION OF PROTECTION OF AFFECTED COMMUNITY**

## 2. Assessment Findings

- Among the surveyed households 61% people have faced security issues due to damaged houses and 29% of the family members have been separated for a short time during the evacuation process. This separation is temporary, however it is creating distress among the family members.
- 37% do not have access to electric supply which is creating an atmosphere of fear at night time.
- 25% have been displaced with no privacy for toilets and bathrooms.
- 11% women have raised major concerns to access menstrual hygiene products.

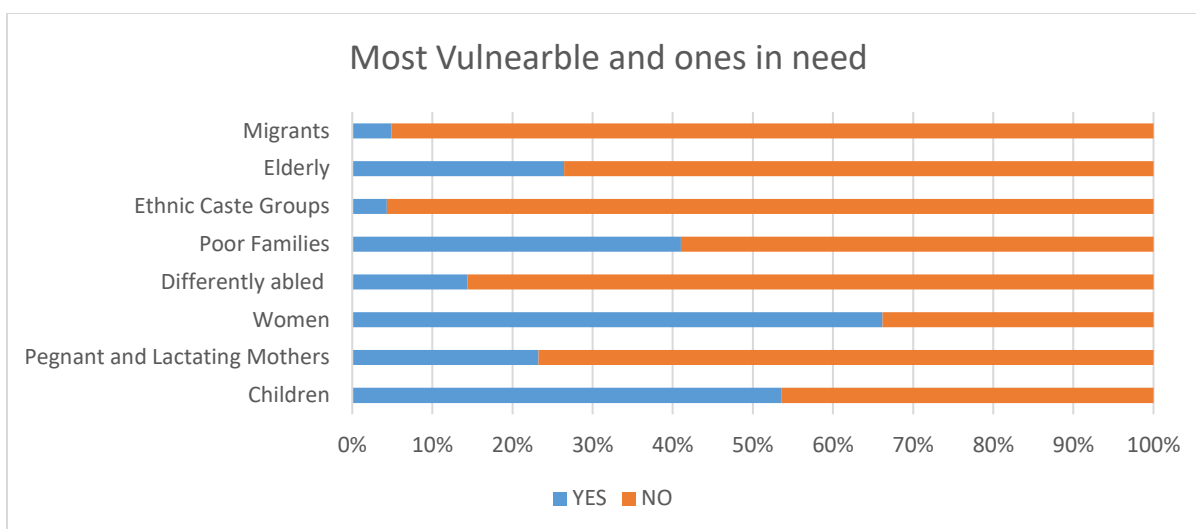


FIGURE 19 MOST VULNERABLE POPULATIONS IN NEED

- The above chart captures the perception of the villagers and Gram Panchayats about the people in need based on the situation in the surveyed villages.
- 54% respondents have mentioned that children need assistance to restore their lives
- 23% of GPs and villagers have said that it is necessary to provide assistance of the pregnant women and lactating mothers and 66 people have said the same for women.
- 14% respondents see the need to provide special assistance to the affected differently abled population and 23% to the elderly population.
- 41% of the economically vulnerable families need immediate assistance as most of their belongings have been damaged

### 3. Recommendations

After studying the Sectoral Findings of Maharashtra, following are the short term/immediate, mid-term and long term recommendations in the area of protection:

#### Immediate

- The state government should activate the already constituted Child Protection Committees especially Village Child Protection Committees (VCPCs). It should be alert on the possible child protection risks in the flood effected areas. Child marriages, violence, psychosocial support are the immediate concerns.
- To identify orphaned children to COVID and floods and provide immediate support of medical treatment, psychosocial support, food, water etc. The children should be kept with their families like extended family and grandparents after proper antecedents check by CWC. Institutionalization should be the last resort. The District Child Protection Unit (DCPU) and Child Welfare Committees (CWCs) should identify

such children and link them to the services of central and state government meant for them, to ensure they remain safe, protected and nurtured in their families.

- Though most of the temporary shelters have been vacated for now, it is necessary to initiate some comforting activities for women, girls and children
- Include adequate sanitary napkins in the relief materials and take the opinion of women, girls and children while planning for disaster preparedness.
- Though shelter camps have separate spaces for the men and women, it must be ensured that families should be able to meet each other frequently. Children below the age of 12 must be allowed with their mothers.
- If required police patrolling or police protection shall be there at the relief camps so that women and girls feel safe.
- Toilets and bathrooms for women and men shall be in completely different areas and shall also have adequate light on the way.
- “One stop relief centres” providing emergency support for medical issues, injuries, sexual and reproductive health, psycho-social support, etc should be established and supported with requisite resources

### **Mid-term**

- Thorough checking of hotels, restaurants, *dhabas*, garages and other possible establishments where children might be employed violating the Child Labour Act.
- Establishing safe learning spaces for children who have lost their homes following all rules of COVID health protocols. Establish Child friendly recreation spaces for children.
- Linking families to livelihood opportunities especially relevant government schemes to ensure that at least one member of household is earning, reducing the chances to some extent of desperate moves of pushing women and children to marriage, trafficking and labour to make ends meet. It will also reduce dropping out of children from schools.

### **Long-term**

- A strong GO-NGO and humanitarian agency collaboration network must be established to ensure soft issues like protection and child care. The Non-Government agencies can be guided by the government and used as an ancillary support.
- Inter departmental coordination should be identified and well mapped in times of emergencies especially in dealing with child protection risks and risks related to women as it is imperative for various line departments like health, protection, education, labour, PRIs to work in close coordination.

## 5. Glossary of terms<sup>7</sup>

**Coping capacity** is the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters. The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during disasters or adverse conditions. Coping capacities contribute to the reduction of disaster risks.

**Capacity development** is the process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals. It is a concept that extends the term of capacity-building to encompass all aspects of creating and sustaining capacity growth over time. It involves learning and various types of training, but also continuous efforts to develop institutions, political awareness, financial resources, technology systems and the wider enabling environment.

**Contingency planning** is a management process that analyses disaster risks and establishes arrangements in advance to enable timely, effective and appropriate responses.

**COVID-19** (Coronavirus disease) is an infectious disease caused by a newly discovered coronavirus.

**COVID appropriate behaviour** refers the preventive behavioural practices against the deadly Coronavirus.

**Disaster** is a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

**Disaster impact** is the total effect, including negative effects (e.g., economic losses) and positive effects (e.g., economic gains), of a hazardous event or a disaster. The term includes economic, human and environmental impacts, and may include death, injuries, disease and other negative effects on human physical, mental and social well-being.

**Disaster risk governance** is the system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy.

**Community-based disaster risk management** promotes the involvement of potentially affected communities in disaster risk management at the local level. This includes community assessments of hazards, vulnerabilities and capacities, and their involvement in planning, implementation, monitoring and evaluation of local action for disaster risk reduction.

**Evacuation** - Moving people and assets temporarily to safer places before, during or after the occurrence of a hazardous event in order to protect them.

**Food & nutrition security** is a condition when all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious food which meets their dietary needs and food preferences for an active and healthy life.

**Hand washing or hand hygiene** is the act of cleaning one's hands with soap and water to remove

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<sup>7</sup> Standard UNISDR and UN definitions

viruses/bacteria/microorganisms, dirt, grease, or other harmful and unwanted substances stuck to the hands. Drying of the washed hands is part of the process as wet and moist hands are more easily recontaminated.

**Menstrual hygiene management** or menstrual health and hygiene refers to access to menstrual hygiene products to absorb or collect the flow of blood during menstruation, privacy to change the materials, and access to facilities to dispose of used menstrual management materials.

**Mitigation** - The lessening or minimizing of the adverse impacts of a hazardous event.

**Pandemic** is an epidemic of an infectious disease that has spread across a large region, for instance multiple continents or worldwide, affecting a substantial number of people.

**Preparedness** - The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

**Prevention** - Activities and measures to avoid existing and new disaster risks.

**Reconstruction** - The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

**Recovery** - The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

**Resilience** - The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

**Vulnerability** - The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

**Water Source** refers such as rivers, streams, lakes, reservoirs, springs, and groundwater etc. that provide water to public drinking water supplies and private wells.

**Water, Sanitation and Hygiene** - WASH is the collective term for Water, Sanitation and Hygiene. Due to their interdependent nature, these three core issues are grouped together to represent a growing sector. While each a separate field of work, each is dependent on the presence of the other. For example, without toilets, water sources become contaminated; without clean water, basic hygiene practices are not possible.

**Nutrition** - Nutrition is the intake of food, considered in relation to the body’s dietary needs. Good nutrition – an adequate, well balanced diet combined with regular physical activity – is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity.

## 6. Annexures

### 1. Data collection method

The primary data collection was done using two tools; namely quantitative and qualitative data collection. Quantitative data collection was completed through a series of household interviews with the people who were directly affected by the floods, village level data collection through PRI members, service providers and grassroot functionaries, and assessment of Relief Camps where affected community were kept after evacuation. Whole quantitative data collection done through KoboCollect Tools by 84 local Volunteers who were properly trained. A team of experts has processed the collected data with data cleaning, analysis and preparation of bar-graph and pie-charts for highlighting the situation and needs based on seven major sectors.

The qualitative data collection was completed through Observation Note provided by organizations involved in JRNA process and relief operation in these areas. Different health facilities, Anganwadi centers, schools were visited to assess the damage and repair and remedial services. Along with the primary data collection, secondary sources of information was used to understand the overall impact of the floods and the Government's response to the various sectoral needs of the flood affected districts. Secondary data collection tools such as government's situation reports, SITREPS (Situation Reports), Secondary Data Analysis Report prepared by Sphere India in March 2021, interaction with MahaPeconet members who had previous experience working in affected areas or involved in relief operation, media stories and review of the other available flood related literature was done. The framework of analysis for the collected information was designed to provide an understanding of the evolving needs of each sector- WASH, Shelter & NFI, Health, Food & Nutrition Security, Livelihoods, Education and Protection and also to emphasize the changing nature of these needs.

### 2. List of JRNA Team Members

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Ms. Prajakta Balaso Dhole	Volunteer		
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Ms. Aishwarya Rajendra Joshi	Coordinator	Mr. Sanjay Anandrao Jadhav	Volunteer
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Ms. Divya Gupta	Sphere India	Mr Anand Ghodke	Unicef Mumbai

### 3. Field Photographs

[Click to view Field Photographs](#)

### 4. JRNA Questionnaire

[Click to view JRNA Tools](#)



5. List of Maharashtra PECONet Members and other local NGOs

[Click to view Members and other local NGOs](#)

6. Flood Situation Reports

[Click to view Sphere India situation reports](#)

7. Secondary Data Review Report

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