



Highlights of World Risk Index 2016 and India NDMP

Natural disasters are major adverse, sudden events caused by environmental factors that injured people and damage property. Earthquakes, windstorms, floods, and disease all strike anywhere on earth, often without warning.

These disasters are worldwide trend. Any disaster can interrupt essential services, such as health care, electricity, water, sewage/garbage removal, transportation and communications. The interruption can seriously affect the health, social and economic networks of local communities and countries. Disasters have a major and long-lasting impact on people long after the immediate effect has been mitigated. Poorly planned relief activities can have a significant negative impact not only on the disaster victims but also on donors and relief agencies.

Although it's not possible to control these disasters as these are totally governed by nature but the risk of loss of life and injury can be mitigated with good evacuation plans, environmental planning and design standards. Storms, earthquakes, floods or droughts only become disasters when residents are unable to sufficiently protect themselves against the dangers. So it is important that countries/localities should prepare the disaster management plan, so that these losses of life can be minimized.

Recently published, World Risk Index 2016 calculated, how vulnerable is your country to natural disasters? It also provides a new list which shows the degree to which countries are threatened by natural catastrophes. The higher a country is ranked, the greater the chance that its inhabitants will die in a natural disaster. **According to the 2016 world risk index** infrastructure is a key factor in the ability to withstand events like hurricanes, earthquakes and tsunamis.

The index assessed the risk of disaster in 171 countries through the combined analysis of natural hazards and societal vulnerabilities. The World Risk Index is intended to give answers to four key questions for each country:

- How likely is an extreme natural event, and will it affect people?
- How vulnerable are people to natural hazards?
- To what extent can societies cope with acute disasters?
- Is a society taking preventive measures to face natural hazards to be reckoned with in the future?

As per the report , following are the top ten highest / lowest risk countries:

Highest Risk Countries	
1	Vanuatu
2	Tonga
3	Philippines
4	Guatemala
5	Bangladesh
6	Solomon Islands
7	Brunei Darussalam
8	Costa Rica
9	Cambodia
10	Papua New Guinea

Lowest Risk Countries	
1	Sweden
2	United Arab Emirates
3	Kiribati
4	Bahrain
5	Iceland
6	Grenada
7	Barbados
8	Saudi Arabia
9	Malta
10	Qatar

The World Risk Index consists of following four components:

- Exposure (to natural hazards),
- Susceptibility,
- Coping capacities and
- Adaptive capacities.

The four components and their combination in the World Risk Index 2016 are explained as follows:

Susceptibility

As in the analyses of previous years, most of the countries with the highest susceptibility are in the Sahel Zone and in the tropical areas of Africa. The only exceptions are Afghanistan, Haiti, Papua New Guinea and East Timor. Haiti is the only country among the top 15 that does not belong to the African continent. In comparison to the previous year, Zimbabwe and Malawi experienced the largest shift. Zimbabwe fell from rank 18, with a value of 55.76 in the previous year, to 13th, with a value of 57.49. This is above all due to a reduction in the share of the population with access to clean water and improved sanitation. With both indicators, approximately three percent of the population is worse off than in the previous year. Furthermore, the share of the undernourished population increased from 31.8 percent to 33.4 percent. In contrast, compared to the previous year, Malawi improved by eight ranks, and occupies rank 18. The main reason for this is its population's access to improved sanitation. In comparison to the previous year, access to clean drinking water increased by five percentage points to 90 percent. The largest negative change was recorded for Lebanon, which worsened by 20 ranks and shifted from the "very low" class to the "medium" class. This is due on the one hand to a reassessment of the data for the population with access to improved sanitation and on the other to an increase in the share of under-15- and over- 65-year-olds in the working population.

The 15 countries with the highest susceptibility worldwide		
Country	Sus. (%)	Rank
Madagascar	65.23	1
Central African Republic	64.68	2
Mozambique	63.24	3
Burundi	63.23	4
Liberia	62.70	5
Haiti	61.81	6
Zambia	61.73	7
Chad	61.07	8
Eritrea	60.97	9
Comoros	58.66	10
Tanzania	58.51	11
Niger	57.72	12
Zimbabwe	57.49	13
Togo	57.36	14
Sierra Leone	57.06	15

Lack of coping capacities

The shifts in rankings of the countries are above all due to alterations in the two “Governance” indicators (“Corruption Perceptions Index” and “Good governance”). Afghanistan replaces Sudan at rank 1, since unlike with Sudan, the “Governance” indicators have worsened. In all 171 countries, the biggest shifts in rankings have been recorded for Syria, Libya, and Mali, which have been assigned to other classes. Syria has worsened by ten ranks owing to the disastrous political situation, which is reflected in the “Governance” indicators.

The 15 countries with the highest lack of coping capacities worldwide		
Countries	Lack of C. C. (%)	Rank
Afghanistan	92.85	1
Sudan.	92.80	2
Haiti	91.24	3
Yemen	91.24	4
Chad.	91.09	5
Central African Republic	90.60	6
Guinea-Bissau.	89.93	7
Guinea	89.73	8
Eritrea	89.47	9
Iraq	189.42	10
Zimbabwe	88.22	11
Nigeria	88.15	12
Uganda	87.99	13
Burundi	87.71	14
Myanmar	87.00	15

Lack of adaptive capacities

The hotspot regions for the lack of adaptive can be found mainly in West Africa and the Sahel Zone as well as in parts of Southeast Asia. The new calculation of the “Environmental Performance Index” 2016 and the updating of a further five indicators have resulted in significant changes in the Top 15 table in comparison to the previous year, and individual indicators do not clearly explain the shifts in rankings. For instance, Eritrea is ranked first and has worsened by eight ranks compared to the previous year. In addition, there are three new countries among the Top 15: Burkina Faso (from rank 25 to rank 15), Djibouti (from rank 16 to rank 3), and Pakistan (from rank 19 to rank 14).

The 15 countries with the highest lack of adaptive capacities worldwide		
Countries	Lack of A. C. (%)	Rank
Eritrea	72.24	1
Central African Republic	69.13	2
Djibouti.	68.11	3
Niger	68.11	4
Afghanistan	67.48	5
Liberia	66.70	6
Chad	66.42	7
Benin	66.06	8
Sierra Leone	65.55	9
Guinea-Bissau	64.38	10
Mali	63.58	11
Guinea	62.70	12
Haiti	62.49	13
Pakistan	62.48	14
Burkina Faso	62.11	15

Vulnerability

Both the map for vulnerability and the Top 15 table show that the countries with the highest vulnerabilities can be found mainly on the African continent. With the exception of Haiti and Afghanistan, all 15 countries with the highest levels of vulnerability are in Africa. Sudan and Zimbabwe are new in the Top-15 table, having moved from rank 17 to rank 14 and from rank 28 to rank 15 respectively. On the other hand, Mali and the Comoros are no longer represented among the top 15, both of them having improved in comparison to the previous year (Mali from rank 13 to 16 and the Comoros from rank 15 to 20). There are other conspicuous examples in the ranking for vulnerability. In comparison to the previous year, Paraguay improved by two ranks, shifting from the class with the “highest vulnerability” to the class with “medium vulnerability”, especially owing to the data updates for its adaptive capacities. In the previous year, Malaysia was at rank 104, and can now be found at rank 99, which has led to a shift to the class with “low vulnerability”.

The 15 countries with the highest vulnerability worldwide

Countries	Vuln. (%)	Rank
Central African Republic	74.80	1
Eritrea	74.23	2
Chad	72.86	3
Afghanistan	72.12	4
Haiti	71.85	5
Liberia	71.54	6
Niger	70.80	7
Sierra Leone	69.69	8
Madagascar	69.52	9
Guinea-Bissau.	68.99	10
Mozambique	68.28	11
Guinea	68.21	12
Burundi	67.98	13
Sudan	67.37	14
Zimbabwe	67.24	15

Exposure to natural hazards

No updated information has been available in this component since World Risk Report 2012 as the data concerned is not updated annually but only at longer intervals because of the small temporal changes in exposure.

Countries	Exp. (%)	Rank
Vanuatu	63.66	1
Tonga	55.27	2
Philippines	52.46	3
Japan	45.91	4
Costa Rica	42.61	5
Brunei Darussalam.	41.10	6
Mauritius	37.35	7
Guatemala	36.30	8
El Salvador	32.60	9
Bangladesh	31.70	10
Chile	30.95	11
Netherlands	30.57	12
Solomon Islands	29.98	13
Fiji	27.71	14
Cambodia	27.65	15

Result of World Risk Index 2016

The World Risk Index 2016 shows that the global hotspots for a high disaster risk lay in Oceania, Southeast Asia, Central America, and the Southern Sahel. Thus countries like the Solomon Islands (ranked 6th), Papua-New Guinea (ranked 10th), and Guinea-Bissau (ranked 15th) are all very strongly exposed to natural hazards and, owing to their poor economic and social situations, particularly vulnerable. The example of Australia demonstrates how a low level of vulnerability can lower disaster risk. The country mitigates its exposure, which is mainly to drought, earthquakes and sea level rise, and thus attains a ranking of 121st from 171 in the World Risk Index. However, the example of Japan shows that a low level of vulnerability cannot fully compensate for extreme exposure. Despite its very low vulnerability, the country is in place 17 in the World Risk Index because of its very high exposure, mainly to earthquakes and floods. In countries like Liberia (ranked 56th), Zambia (ranked 66th) and the Central African Republic (ranked 71st), the situation is the reverse of that in Japan. They are rather weakly exposed to natural hazards but very vulnerable. A total 13 of the 15 countries with the highest vulnerability are situated on the African continent. For these countries in particular, it is true that development helps. Highly developed countries with a low level of exposure do best in the risk assessment. Saudi Arabia (ranked 169th), Malta (ranked 170th) and Qatar (ranked 171st) have the lowest disaster risk. Ranking No.1, the island state of Vanuatu displayed the greatest risk in 2016.

India Position

India ranks 77th on the World Risk Index 2016-- marginally better positioned than Pakistan which is placed 72. The World Risk Report 2015 had positioned India at 78th position and 2014 report had placed India on 73rd rank.

Following are some Major Disasters in India in Last 10 years

S. No.	Name of Event	Year	State & Area	Fatalities
1	Assam floods	2016	Assam	The flooding has affected 1.8 million people, 28 people killed
2	Northeast India earthquake	2016	West of Imphal in the state of Manipur	11 people were killed, 200 others were injured
3	Indian heat wave	2015	Andhra Pradesh	2,500
4	Chennai floods of in the major disasters list.	2015	South India (Tamil Nadu, Puducherry, Andhra Pradesh)	Deaths: 500 plus
5	Floods	2014	Jammu & Kashmir	Death toll: 500 plus
6	Cyclone Hud Hud	2014	Andhra Pradesh & Odisha	21
7	Odisha Floods	2013	Odisha	53
8	Andhra Floods	2013	Andhra Pradesh	23
9	Cyclone Phailin	2013	Odisha and Andhra Pradesh	4,094
10	Floods/Landslides	2013	Uttarakhand and Himachal Pradesh	08
11	Cyclone Mahasen	2013	Tamil Nadu	65
12	Cyclone Nilam	2012	Tamil Nadu	52
13	Uttarakhand Floods	2012	Uttarkashi, Rudraprayag and Bageshwar	---
14	Assam Floods	2012	Assam	47
15	Cyclone Thane	2011	Tamil Nadu, Puducherry	60
16	Sikkim Earthquake	2011	Sikkim, West Bengal, Bihar	45
17	Odisha Floods	2011	19 Districts of Odisha	97 people died (75 in Sikkim)
18	Sikkim Earthquake	2011	North Eastern India with epicenter near Nepal Border and Sikkim	

Source: <http://www.ndma.gov.in/en/disaster-data-statistics.html> (2011- 2014)

National Disaster Management Plan (NDMP)

In June 2016, India Prime minister released its first National Disaster Management Plan (NDMP). This is the first ever national plan prepared in the country. The plan aims to make India disaster resilient and reduces loss of lives.

The plan is based on the four priority themes of the "Sendai Framework," namely: understanding disaster risk, improving disaster risk governance, investing in disaster risk reduction (through structural and non-structural measures) and disaster preparedness, early warning and building back better in the aftermath of a disaster.

Salient features of the plan

The plan covers all phases of disaster management: Prevention, Mitigation, Response and Recovery. It provides for horizontal and vertical integration among all the agencies and departments of the Government. The plan also spells out the roles and responsibilities of all levels of Government right up to Panchayat and Urban local body level in a matrix format. The plan has a regional approach, which will be beneficial not only for disaster management but also for development planning.

NDMP also identifies major activities such as early warning, information dissemination, medical care, fuel, transportation, search and rescue, evacuation, etc. to serve as a checklist for agencies responding to a disaster. It also provides a generalized framework for recovery and offers flexibility to assess a situation and build back better.

To prepare communities to cope with disasters, it emphasizes on a greater need for Information, Education and Communication activities.

National disaster management plan seeks to provide framework and direction to government agencies for prevention, mitigation and management of disaster. The plan aims to make India disaster resilient and significantly reduce the loss of lives and assets.

For further reading please refer:

United nations University-Institute for Environment and Human Security. 2016. World Risk Report <http://weltrisikobericht.de/wp-content/uploads/2016/08/WorldRiskReport2016.pdf>

National Disaster Management Plan (NDMP). 2016

<http://www.ndma.gov.in/images/policyplan/dmplan/National%20Disaster%20Management%20Plan%20May%202016.pdf>