

GOVERNMENT OF INDIA
MINISTRY OF HOME AFFAIRS

LOK SABHA
UNSTARRED QUESTION NO.†1238

TO BE ANSWERED ON THE 3RD MARCH, 2015/PHALGUNA 12, 1936 (SAKA)

CALAMITY PRONE AREAS

†1238. SHRI KAUSHALENDRA KUMAR:

Will the Minister of HOME AFFAIRS be pleased to state:

- (a) the percentage of land prone to natural calamities including earthquakes in the country, State and calamity-wise; and
- (b) the measures taken to deal with the said natural calamities including various projects undertaken and the achievements made therein?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF HOME AFFAIRS
(SHRI KIREN RIJJU)

(a): About 58.6 percent of the landmass of India is prone to earthquakes of moderate to very high intensity. An area over 40 million hectare (12 percent of land) is prone to floods. Out of the 7516 km long coastline close to 5,700 km is prone to cyclone and tsunamis. About 68 per cent of cultivable land is vulnerable to drought. About 15 per cent of our country covering over 0.49 million square kilometers is prone to landslides. The Himalayan and Trans-Himalayan mountains are susceptible to avalanches. State and hazard-wise details are at Annexure-I.

(b): Details of measures taken to deal with natural disasters including projects/studies undertaken are given in Annexure-II

The percentage of land prone to natural calamities in the country

Sl.No.	Type of calamities	State	% of land prone to calamities	Remarks
1.	Earthquake	States in seismic Zones is given in Annexure-I(a)	58.6% of the countries land is affected with different level of severity as EQ Zone II,III,IV and V	Based on NDMA Guidelines- Management of Earthquake-April, 2007
2.	Cyclone	<p>Vulnerable Hazard Zone for Cyclones East Coast:</p> <ul style="list-style-type: none"> •Tamil Nadu, •Andhra Pradesh, •Odisha •West Bengal •Puducherry (UT) <p>West Coast</p> <ul style="list-style-type: none"> • Gujarat • Goa • Maharashtra • Karnataka • Kerala <p>Island</p> <ul style="list-style-type: none"> •Andaman & Nicobar Island • Lakshadweep • Daman & Diu 	<p>About 8% per cent of the Country's areas are vulnerable to cyclone related disasters of various degree.</p> <p>Out of Coastline of 7,516 KM, 5,700 Km are Cyclone prone area.</p>	Based on NDMA Guideline on Management of Cyclone (April, 2008)
3.	Flood	State-Wise details given in Annexure-I(b)	Out of 329 mha, 40 mha is flood prone i.e 12%	Based on RBA assessment as detailed in NDMA Guidelines on Management of Flood (Jan 2008)

Cont.....

4.	Landslide	<p>Highly Affected:</p> <ol style="list-style-type: none"> 1, Arunachal Pradesh, 2, Nagaland, 3, Manipur, 4, Mizoram, 5, Sikkim, 6. West Bengal, 7. Uttarakhand, 8. Himachal Pradesh 9. Jammu & Kashmir <p>Moderately Affected:</p> <ol style="list-style-type: none"> 1. Assam, 2. Meghalaya, 3. Tripura, 4. Maharashtra, 5. Goa, 6. Karnataka, 7. Tamil Nadu, 8. Kerala 9. Puducherry <p>Marginally Affected:</p> <ol style="list-style-type: none"> 1. Jharkhand, 2. Chhattisgarh, 3. Andhra Pradesh, 4. Madhya Pradesh 5. Orissa. <p>Island:</p> <ol style="list-style-type: none"> 1 Anadman & Nicobar 	Landslide affects about 15 % of India covering over 0.49 million square kilometers.	Based on NDMA Guidelines on Management of Landslide & Avalanches (June 2009)
----	-----------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------	------------------------------------------------------------------------------

Cont.....

5.	Drought	Details of States not available.	68 per cent of cultivable land is vulnerable to drought	Based on 1)Disaster Management in India published by Ministry of Home Affairs, Government of India 2)PARLIAMENT OF INDIA (RAJYA SABHA) "Department-Related Parliamentary Standing Committee on Home Affairs" (Report No. 178)
----	---------	----------------------------------	---------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Seismic Zones of India

- Zone-V comprises of entire northeastern India, parts of Jammu and Kashmir, Himachal Pradesh, Uttaranchal, Rann of Kutch in Gujarat, part of North Bihar and Andaman & Nicobar Islands.
- Zone-IV covers remaining parts of Jammu & Kashmir and Himachal Pradesh, Union Territory of Delhi, Sikkim, northern parts of Uttar Pradesh, Bihar and West Bengal, parts of Gujarat and small portions of Maharashtra near the west coast and Rajasthan.
- Zone-III comprises of Kerala, Goa, Lakshadweep islands, remaining parts of Uttar Pradesh, Gujarat and West Bengal, parts of Punjab, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh, Maharashtra, Orissa, Andhra Pradesh, Tamil Nadu and Karnataka.
- Zone-II covers remaining parts of the country.

Flood Affected area in India as assessed by the RBA(Areas in Million ha)

Sl. No.	Name of States/UTs	Geographical Area	Area Liable to Floods as Assessed by RBA	% of Area liable to Flood (Geographical Area of States/ UTs)
(A)	STATES			
1	Andhra Pradesh*	27.51	1.39	5.05
2	Arunachal Pradesh			
3	Assam	7.84	3.15	40.18
4	Bihar*	17.39	* 4.26	24.50
5	Chhattisgarh		-	
6	Delhi (NCT)	0.15	0.05	33.33
7	Goa			
8	Gujarat	19.60	1.39	7.09
9	Haryana	4.42	2.35	53.17
10	Himachal Pradesh	5.57	0.23	4.13
11	Jammu & Kashmir	22.22	0.08	0.36
12	Jharkhand		-	
13	Karnataka	19.18	0.02	0.10
14	Kerala	3.89	0.87	22.37
15	Madhya Pradesh*	44.34	* 0.26	0.59
16	Maharashtra	30.77	0.23	0.75
17	Manipur	2.23	0.08	3.59
18	Meghalaya	2.24	0.02	0.89
19	Mizoram		-	

Cont.....

20	Nagaland		-	
21	Orissa	15.57	1.40	8.99
22	Punjab	5.04	3.70	73.41
23	Rajasthan	34.22	3.26	9.53
24	Sikkim		-	
25	Tamil Nadu	13.01	0.45	3.46
26	Tripura	1.05	0.33	31.43
27	Uttar Pradesh*	29.44	* 7.34	24.93
28	Uttaranchal		-	
29	West Bengal	8.88	2.65	29.84
30	Andaman & Nicobar Islands		-	
31	Chandigarh		-	
32	Dadra & Nagar Haveli		-	
33	Daman & Diu		-	
34	Lakshadweep		-	
35	Pondicherry	0.05	0.01	20.00
	Sub-Total(UTs)		0.10	
	Grand Total		33.52	

* Figures are before the bifurcation of the State.

Cont.....

Area liable to floods as assessed by RBA

(i) Sum of the maxima of flood affected area in a year (from 1953 to 1980 Protected area up to 1978	= 33.52 mha, say 34 mha
(ii) Total protected area up to 1978	= 10 mha
(iii) Deduction for protected area included under flood affected area due to breach / failure of protection	= 4 mha
Area liable to floods = (i) + (ii) - (iii) = 34 + 10 - 4	= 40 mha

1. National Cyclone Risk Mitigation Project (NCRMP):-

NCRMP is being implemented with World Bank assistance in Andhra Pradesh and Odisha in Phase I at a cost of □ 1496.71 crore to reduce the vulnerability of coastal communities to cyclones. The project aims at minimizing the vulnerability to cyclones and making the people disaster resilient. The broad objectives of the project are to upgrade cyclone forecasting, tracking and warning systems, cyclone risk mitigation and capacity building in multi-hazard risk management and to construct multipurpose cyclone shelters (including shelter-cum-godown and approach roads/ bridges to habitations) and embankments. The project is expected to benefit 5.60 lakh people in Odisha and over 5.50 lakh people in Andhra Pradesh. It is expected to help in the protection of 38,296 hectare of land in Odisha and about 12,640 hectare land in Andhra Pradesh.

2. National School Safety Programme:-

'National School Safety Programme' (NSSP) with a total cost of □ 496.71 crore is being implemented as a Centrally Sponsored Scheme. It is a holistic project to promote culture of safety in schools by undertaking Information, Education and Communication activities, promoting non-structural mitigation measures and demonstrative structural retrofitting in some Schools. It covers 8600 schools of 43 Districts of 22 States/UTs, falling in the seismic zones IV&V.

3. National Disaster Management Services Pilot Scheme:-

A Pilot project, National Disaster Management Services (NDMS), has been approved in September, 2014 with a cost of □ 196.71 crore to include strengthening of National Emergency Operation Centre (NEOC) at MHA, Control Room of NDMA, four State Emergency Operation Centres in Telangana (Hyderabad), Uttarakhand (Dehradun), Himachal Pradesh (Shimla), Assam (Guwahati) and ten District Emergency Operation Centres in districts of Khammam and Mehbubnagar (Telangana), Rajkot and Kutch (Gujarat), Rudraprayag and Chamoli (Uttarakhand), Silchar and Barpetta (Assam), Mandi and Kangra (Himachal Pradesh). This project would be implemented by NIC in consultation with the concerned States.

4. Decision Support System for Offsite Nuclear Emergencies:-

Another Pilot project, Decision Support System (DSS), has been approved in September, 2014 with a cost of □ 1
include strengthening of six State Emergency Operation Centres in Uttar Pradesh (Lucknow), Tamil Nadu (Chennai), Gujarat (Gandhi Nagar), Karnataka (Bengaluru), Maharashtra (Mumbai), Rajasthan (Jaipur) and seven District Emergency Operation Centres in districts of Bulandsahar (Uttar Pradesh), Kancheepuram and Tirunelveli (Tamil Nadu), Surat (Gujarat), Uttar Kannada (Karnataka), Thane (Maharashtra) and Chittorgarh (Rajasthan). This project would be implemented by NIC in consultation with the concerned States.

5. National Earthquake Risk Mitigation Project (Preparatory Phase):-

National Earthquake Risk Mitigation Project (Preparatory phase) a Centrally Sponsored Plan Scheme of □ 2
coordination with the State Governments/UTs/ other institutions in 21 States/UTs, which lie in seismic zones IV & V. Major components of the project are adoption and updation of Techno - legal Regime in concerned Cities/ States, institutional strengthening, capacity building of practicing architects, engineers and masons in earthquake resistant constructions and public awareness & sensitization at National level and all vulnerable States.

6. Scheme on preparedness to handle Radiological hazards through Mobile Radiation Detection System (MRDS) in States/UTs:-

NDMA as part of its programme on national level preparedness to cope with Radiological Emergencies, orphan/ unknown radiological sources has decided to equip the surveillance vehicles of identified police stations in more than 50 Capital and metro /other major cities of the country with simple monitoring instruments and personal protective gear. The project called Mobile Radiation Detection Systems (MRDS) has been approved as a Pilot at a total cost of □ 52
in the next plan.

Cont.....

7. Capacity Building and Training initiatives by NDMA:-

Annual calendar of Capacity Building and Training (CBT) Division includes Sensitization workshops for NDMA officers, Theme based conferences/policy workshops, Workshop on Best practices and lessons learnt in disaster response, communications, psychosocial care and coordination, Conference on Risk Resilience, sustainability and business continuity in industrial sector, short seminars through talks by Eminent Domain Experts on various thematic issues on DM, sensitizing the elected representatives about various DM functions, processes and roles. Four sensitization workshops have been held.

Project for capacity building of Central Service Personnel at the Centre of Disaster Management at LBSNAA is being continued during 12th Five Year Plan with
within the basic foundation training courses with regular updates in refresher and orientation programmes.

8. Strengthening of the State Disaster Management Authorities (SDMAs) and District Disaster Management Authorities (DDMAs):-

Government has recently approved a scheme for Strengthening of the State Disaster Management Authorities (SDMAs) and District Disaster Management Authorities (DDMAs) at an estimated expenditure of Rs. 42.51 crore to be implemented during the remaining two years of the 12th Five Year Plan, i.e. 2015-16 and 2016-17.

9. In addition, different Ministries are implementing various schemes, which address the concern of disaster mitigation. Some examples are the works taken up by Ministry of Rural Development under MGNREGA like renovation of tanks, water harvesting structures and strengthening of flood embankments, Scheme of Flood Management Programme of the Ministry of Water Resources and installation of Doppler weather radars of Indian Meteorological Department (IMD) by the Ministry of Earth Sciences.
