

4.2 Asian and ADRC Member Countries and their Disaster Characteristics:

Table 11:

Natural Disasters in Asia and ADRC Member Countries (2003 Summary) (Disaster Type/Country/Disaster Characteristics)					
Country	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Afghanistan	Earthquake	1	1	1,001	
	Flood	8	145	3,750	
Afghanistan Total		9	146	4,751	
Azerbaijan	Flood	1		31,500	
Azerbaijan Total		1		31,500	
Bangladesh	Earthquake	1	2	2,525	
	Extreme Temperature	2	215	0	
	Flood	2	252	550,000	
	Wind Storm	3	58	420	
Bangladesh Total		8	527	552,945	
China P Rep	Drought	2		51,000,000	
	Earthquake	11	311	2,881,973	488,968
	Flood	6	695	152,724,340	8,144,640
	Slides	2	46	0	
	Wild Fires	1		300	
	Wind Storm	5	61	9,480,045	437,938
China P Rep Total		27	1,113	216,086,658	9,071,546
East Timor	Flood	2	3	1,000	
East Timor Total		2	3	1,000	
Hong Kong (China)	Wind Storm	2	4	3,533	
Hong Kong (China) Total		2	4	3,533	
India	Epidemic	1		2,185	
	Extreme Temperature	2	1,610	0	
	Flood	6	735	7,564,545	169,000
	Slides	1	25	0	
	Wind Storm	7	164	531,314	44,000
India Total		17	2,534	8,098,044	213,000

Country	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Indonesia	Drought	1		15,000	
	Earthquake	3	1	3,249	
	Flood	7	266	88,428	
	Slides	4	119	231,328	3,298
Indonesia Total		15	386	338,005	3,298
Iran Islam Rep	Earthquake	5	43,201	113,191	1,021,666
	Flood	1		1,370	838
	Slides	1	20	4	
Iran Islam Rep Total		7	43,221	114,565	1,022,504
Iraq	Epidemic	1		0	
Iraq Total		1		0	
Japan	Earthquake	3	2	21,267	1,207,000
	Flood	1	23	814	7,000
	Wind Storm	2	16	2,400	
Japan Total		6	41	24,481	1,214,000
Kazakhstan	Earthquake	1	3	36,626	
Kazakhstan Total		1	3	36,626	
Korea Rep	Wind Storm	1	130	80,000	5,500,000
Korea Rep Total		1	130	80,000	5,500,000
Kyrgyzstan	Slides	1	38	211	
Kyrgyzstan Total		1	38	211	
Lebanon	Flood	1		0	
Lebanon Total		1		0	
Malaysia	Flood	3	8	18,800	
Malaysia Total		3	8	18,800	
Mongolia	Flood	1	15	1,650	270
Mongolia Total		1	15	1,650	270
Nepal	Extreme Temperature	1	48	0	
	Flood	1	239	59,254	
Nepal Total		2	287	59,254	
Oman	Wind Storm	1	30	0	
Oman Total		1	30	0	

Country	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$ ('000s)
Pakistan	Drought	1		54,000	
	Extreme Temperature	1	200	0	
	Flood	3	266	1,266,243	
	Slides	1	12	0	
	Wind Storm	1	51	2,557	
Pakistan Total		7	529	1,322,800	
Papua New Guinea	Slides	2	13	621	
Papua New Guinea Total		2	13	621	
Philippines	Flood	1		3,500	
	Slides	1	255	217,988	7,000
	Wind Storm	3	85	155,319	30,468
Philippines Total		5	340	376,807	37,468
Russia	Drought	1		1,000,000	
	Earthquake	1	3	1,805	10,600
	Flood	1		600	
	Wild Fires	1		0	
	Wind Storm	1		0	
Russia Total		5	3	1,002,405	10,600
Saudi Arabia	Flood	2	12	13,050	
Saudi Arabia Total		2	12	13,050	
Sri Lanka	Flood	1	235	695,000	29,000
Sri Lanka Total		1	235	695,000	29,000
Taiwan (China)	Wind Storm	1	3	0	
Taiwan (China) Total		1	3	0	
Tajikistan	Epidemic	1		256	
	Flood	1	6	1,755	20,000
	Slides	2	1	6,181	41,000
Tajikistan Total		4	7	8,192	61,000
Thailand	Flood	3	9	107,700	26,400
	Wind Storm	1		5,000	
Thailand Total		4	9	112,700	26,400

Country	DisType	Count of DisNo	Sum of Killed	Sum of TotAff	Sum of Damage US\$('000s)
Viet Nam	Epidemic	1	15	7	
	Flood	3	128	416,823	105,000
	Wind Storm	1		5,018	
Viet Nam Total		5	143	421,848	105,000
Yemen	Flood	1	15	0	
Yemen Total		1	15	0	
Grand Total		143	49,795	229,405,446	17,294,086

Source: ADRC, Japan and CRED-EMDAT, Universite Catholique de Louvain, Brussels, Belgium, 2003

Table 10 shows the effect of various types of natural disasters according to member country and

Table 11 shows the make up of natural disasters within each Asian and ADRC member country.

In **Afghanistan** earthquake and flood made considerable impact on human sufferings.

In **Bangladesh**, earthquake, extreme temperatures, floods, and windstorms occurred and almost all of these disasters caused considerable human suffering and loss of life. The most severe disaster was the flood in 2003. It is known that Bangladesh is a path for cyclones spawned in the Bay of Bengal, making the country prone to hydro-meteorological disasters.

In **China**, almost every type of disaster was recorded, as China encompasses a vast land with a population. The most severe disasters in China in the year 2003 were floods and windstorms followed by earthquake. Also, drought considerably affected the population. For 2003, the largest natural disaster in China in terms of affected population was flood.

East Timor also recorded floods and subsequent human sufferings.

The year 2003 brought the most disaster to **India**, where the most severe flood in Assam, Bihar and West Bengal states affected more than 7 million people. This was one of the most serious disasters in the year 2003. Windstorms also seriously affected the people. India is geographically located in a

natural disaster prone area that is affected by windstorms spawned in the Bay of Bengal and the Arabian Sea, earthquakes caused by active crustal movement in the Himalayan Mountains, floods brought by monsoons, and drought happening in arid and semi arid areas.

Floods, earthquakes, droughts and slides were the disasters that most affected **Indonesia** in the year 2003. These were found to be the most serious disasters in terms of affected population. Since there are seismic belts running through the country, Indonesia is an earthquake prone country. Moreover there are 129 active volcanoes and volcanic eruptions often happen in the country. But 2003 did not record any disasters in relation to volcanic activity. Floods tend to occur along with windstorms in the rainy season in Indonesia.

The worst disaster in 2003 in terms of human loss occurred in **Iran**. The Bam Earthquake destroyed almost entire historical town of Bam and claimed the highest human loss by single disaster in the year 2003. More than 43,000 people died (Ministry of Interior in Iran estimates 26,200 of people killed) and 113,191 people were affected. The economic damage is also huge amounting to 1 billion US\$.

In **Japan**, year 2003 was not good year as previous one in terms of damage. Earthquake in Hokkaido caused more than I billion US\$ damage and affected more than 20,000 people. Floods and windstorms also caused considerable effect on the population.

Most of the natural disasters that occur in **Korea** are characterized as floods in the rainy season and windstorms. The year 2003 also recorded windstorm (Typhoon Maemi) in Korea, and the human suffering and economic loss caused by this were also quite high. Typhoon Maemi caused damage more than 5 billion US\$, which was the highest damage caused by single disaster in the year 2003.

Almost 90% of the land of **Kyrgyz** is covered with mountains that are over 1,000 meters above sea level, and about 40% of the mountains are in alpine areas over 3,000 meters high. The distinctive natural disasters of Kyrgyz are earthquakes accompanied by active crustal deformation; floods caused by

snowmelt and landslides. In 2003, Kyrgyz also recorded slide disasters causing human sufferings.

In **Malaysia**, Floods and landslides caused by rainfall during the monsoon season, and rainstorms triggered by tropical low pressure often recorded. Year 2003 also recorded floods but the human loss and economic damage caused by these disasters was relatively small though the affected population by these disasters is considerably high.

Mongolia is a land locked country in Asia between Russia and China and major disasters are Zud, heavy snowfalls, sandstorms, floods, and so on. In the year 2003, Mongolia recorded floods which caused human suffering and economic damage.

Nepal is located in the Himalayan region where the Indian plate is wedging under the Eurasia plate and depending upon the crustal formation earthquakes frequently occur. Floods, slides, and extreme temperatures also often pose a threat to Nepal. Seen from the Table 11 in the year 2003, Nepal suffered significantly under floods, which caused heavy human loss and made many families *totally* affected which includes homeless, injured and affected.

Pakistan is often hit by drought, extreme temperatures, floods, slides and windstorms. In the year 2003, Pakistan's floods had caused reasonably large amounts of human suffering with more than 1.2 million affected people.

Papua New Guinea is also highly vulnerable to many kinds of natural disasters like earthquakes, tsunamis, volcanic activities, floods, and windstorms. Majority of the natural disasters that occurred in the year 2003 were hydro meteorological disasters with slides in contrast to 2002 and these disasters caused reasonable numbers of *totally* affected people. Human loss from these slides was also high in the Oceania region.

The Philippines is located on the Pacific Rim of Fire, making it vulnerable to natural disasters of both kind hydro meteorological and geo-physical type. As in the previous years, the damage caused by

hydro-meteorological disasters grew in 2003, with quite large populations affected by floods, slides and windstorms. Economic damage by windstorms and slides was also noticeable.

Russia has a vast area of land where disaster affected population and the economic losses are also noticeable. Droughts, earthquake, floods, wildfires and windstorms caused considerably large affected populations in the year 2003. Also, these types of disasters caused noticeable economic losses.

Saudi Arabia also suffered by flood in 2003 causing more than 13,000 people affected.

Sri Lanka is located in the Indian Ocean just south of India and droughts in the dry seasons and windstorms, floods and subsequent landslides in the rainy seasons due to cyclones from the Bay of Bengal are the prime concerns of Sri Lanka. In 2003, Sri Lanka was hit severely by historical flood and landslides. The human loss and the affected population by these were considerably quite high. Number of this affected population was quite high in the region. Economic damage caused by this flood and landslide was also huge as it severely. Such human and economic loss triggered massive international assistance to that country in 2003.

Tajikistan's prime concerns are earthquakes and floods as mountains cover a majority of the land in Tajikistan. As such earthquakes and floods are the major threats to the country. But in 2003, slides and floods occurred in Tajikistan causing human sufferings and economic damages.

Thailand is highly prone to natural disasters because of its location and terrain. The northeastern area is prone to floods and droughts and the south has storms, floods and slides. Thailand was severely hit by these disasters in the year 2003, and population affected by hydro meteorological disasters was quite large.

Vietnam is located in the southeast monsoon climate area and the majority of the annual rainfall is in rainy season, which causes heavy human and economic loss every year. Epidemic, floods and windstorms caused severe human suffering and loss in Vietnam in 2003.

According to the above tables, it can be concluded that majority of ADRC member countries and the countries in the Asian region suffered from hydro-meteorological disasters, which inflicted heavy human and economic loss on society and hindered economic development. Further, the heavy effects of disasters on the population deprived people of socio-economic advancement thus slowing national and regional development. The most severe disasters in the world in 2003 were in the Asian region (Iran, China, Bangladesh, India, Sri Lanka, Thailand, Vietnam and Japan), affecting great number of people in the region. Hence, it is imperative to design and implement proper disaster mitigation and preparedness plans to reduce human and economic loss and human suffering, in order to contribute positively to global sustainable development.