ASIA

Science Technology Status Report

Rajib Shaw On behalf of ASTAAG (Asia Science Technology Academia Advisory Group)

Qualitative Indicators of Science and Technology Contribution to DRR (*Draft*): *Total: 21*

1. Science and Technology in decision making (8)	2. Investment in Science and Technology (6)	3. Link of Science and Technology to people (7)
 1.1 Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR) nodal ministry and/or related ministries 1.2 Presence of Science and Technology group in DRR national platform 1.3 Existence of inter-ministerial discussion/dialogue on science related issues 1.4 Implementation of risk, needs and damage assessment with involvement of Science and Technology group 1.5 Existence of Early Warning system and mechanism with Science and Technology knowledge and tools 1.6 Availability of disaster data/statistics on damage and impacts and its data collection mechanism 1.7 Involvement of Science and Technology group in infrastructure design 1.8 Scientific revision/ updating of regulations, policies and guideline for DRR including building code, disaster response and preparedness plan etc. 	 2.1 Existence of grant support by the national government to researchers in disaster related topics that focus on Science and Technology 2.2 Establishment of disaster related courses in higher-education 2.3 Presence of national research institute and organization for disasters 2.4 Investment/support by the national government in national/international conferences and events on disasters for knowledge sharing 2.5 Support to collaboration with academia and the private sector for developing innovative technical solutions 2.6 Support to collaboration with academia and civil society for developing innovative social solutions 	 3.1 Availability of a hazard map to people, developed based on scientific knowledge 3.2 Scientific validation of indigenous knowledge 3.3 Involvement of Science and Technology group in developing program for evacuation drills 3.4 Availability and participation of Science and Technology group in community discussion as facilitator or advisor/commentator 3.5 Dissemination of science based early warning and forecast to people 3.6 Involvement of Science and Technology group in developing disaster related education curriculum 3.7 Existence of facilities such as museum and events such as expo to disseminate disaster knowledge and deepen understanding on disasters among citizens

Structure and Status

- Foreword 1 page Preface 1 page 3-4 pages Introduction and Overview ٠ 4-5 pages Summary of 1st Asia Sc.-Tech Conference • **Country Status Report** - 10 countries 40 pages (Bangladesh, China, India, Indonesia, Japan, Pakistan, Philippines, Malaysia, Myanmar, Vietnam) + Iran + Mongolia + Thailand + Central Asia (Uzbekistan?) Case study on application of science and technology - 23 case studies 40 pages 11 countries, and a few cross cutting Appendix
- ASTAAG

Total number of pages:

90 – 95 pages

4-5 pages

		Attributes of Science and Technology to Disaster Risk Reduction (DRR)	1	2	3	4	5
	1	Science and Technology in decision making					
	1.1	Presence of Science and Technology advisory group to DRR nodal ministry and	[]]				[]]
BANGLADES	Η	or/related ministries					
Status	1.2	Presence of Science and Technology group in DRR national platform					
Status	1.3	Existence of inter-ministerial discussion/dialogue on science related issues					
Report	1.4	Implementation of risk, needs and damage assessment with involvement of					[]]
1		Science and Technology group					
	1.5	Existence of early warning system and mechanism with Science and Technology					[]]
		knowledge and tools					
	1.6	Availability of disaster data/statistics on damage and impacts and its data					
		collection mechanism					
	1.7	Involvement of Science and Technology group in infrastructure design					
	1.8	Scientific revision/updating of regulations, policies and guidelines for DRR					
		including building codes, disaster response and preparedness plan etc.					
	2	Investment in Science and Technology					
	2.1	Existence of grant support by the national government to researchers in disaster					
		related topics that focus on Science and Technology					
	2.2	Establishment of disaster related courses in higher-education					
	2.3	Presence of national research institutes and organizations for disasters					
	2.4	Investment/support by the national government in national/international					
		conferences and events on disasters for knowledge sharing					
	2.5	Support to collaboration with academia and the private sector for developing					
		innovative technical solutions					
	2.6	Support to collaboration with academia and civil society for developing					
		innovative social solutions					
	3	Link to Science and Technology to people					
	3.1	Availability of a hazard map to people, developed based on scientific knowledge					
	3.2	Scientific validation of indigenous knowledge					
	3.3	Involvement of Science and Technology group in developing program for					
		evacuation drills					
	3.4	Availability and participation of Science and Technology group in community					
		discussion as facilitator or advisor/commentator				.	
	3.5	Dissemination of science based early warning and forecast to people				J	
	3.6	Involvement of Science and Technology group in developing disaster related					
		education curriculum					
	3.7	Existence of facilities such as museum and events such as expo to disseminate					
		disaster knowledge and deepen understanding on disasters among citizens					

CHINA Status Report

	Attributes of Science and Technology to DRR	1	2	3	4	5
1	Science and Technology in decision making	 		1		
	Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR)					
1.1	nodal ministry and/or related ministries	I				
1.2	Presence of Science and Technology group in DRR national platform					
	Existence of inter-ministerial discussion/dialogue on science related issues					
	1.4. Implementation of risk, needs and damage assessment with involvement of Science					
1.4	and Technology group	I				
	Existence of Early Warning system and mechanism with Science and Technology					
1.5	knowledge and tools	I				
	Availability of disaster data/statistics on damage and impacts and its data collection					
1.6	mechanism	I				
	Involvement of Science and Technology group in infrastructure design					
	1.8. Scientific revision/ updating of regulations, policies and guideline for DRR including		[
1.8	building code, disaster response and preparedness plan etc.	I				
2	Investment in Science and Technology					
	Existence of grant support by the national government to researchers in disaster related					
2.1	topics that focus on Science and Technology	I				
	Establishment of disaster related courses in higher-education					
	Presence of national research institute and organization for disasters					
2.3	Investment/support by the national government in national/international conferences					
24	and events on disasters for knowledge sharing	I				
2.9	Support to collaboration with academia and the private sector for developing innovative					
25	technical solutions	I				
2.3	Support to collaboration with academia and civil society for developing innovative social					
26	solutions	I				
2.0	solutions					
3	Link of Science and Technology to people					
	Availability of a hazard map to people, developed based on scientific knowledge					
3.2	Scientific validation of indigenous knowledge					
	Involvement of Science and Technology group in developing program for evacuation	I				
3.3	drills					
	Availability and participation of Science and Technology group in community discussion					
	as facilitator or advisor/commentator					
3.5	Dissemination of science based early warning and forecast to people					
	Involvement of Science and Technology group in developing disaster related education	1				
3.6	curriculum					
	Existence of facilities such as museum and events such as expo to disseminate disaster	1				
3.7	knowledge and deepen understanding on disasters among citizens	I				

INDIA Status Report

Attributes of Science and Technology to DRR	1	2	3	4	5
1 Science and Technology in decision making		1			1
Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR)					
1.1 nodal ministry and/or related ministries	1				
1.2 Presence of Science and Technology group in DRR national platform		1			
1.3 Existence of inter-ministerial discussion/dialogue on science related issues					
1.4. Implementation of risk, needs and damage assessment with involvement of Science			1		
1.4 and Technology group	1				
Existence of Early Warning system and mechanism with Science and Technology	1				
1.5 knowledge and tools					
Availability of disaster data/statistics on damage and impacts and its data collection	1	1			
1.6 mechanism					
1.7 Involvement of Science and Technology group in infrastructure design					
1.8. Scientific revision/ updating of regulations, policies and guideline for DRR including	1	1			
1.8 building code, disaster response and preparedness plan etc.					
2 Investment in Science and Technology					
Existence of grant support by the national government to researchers in disaster related		1			
2.1 topics that focus on Science and Technology					
2.2 Establishment of disaster related courses in higher-education		1			
2.3 Presence of national research institute and organization for disasters		1			
Investment/support by the national government in national/international conferences	1				
2.4 and events on disasters for knowledge sharing					
Support to collaboration with academia and the private sector for developing innovative	1				
2.5 technical solutions					
Support to collaboration with academia and civil society for developing innovative social	1				
2.6 solutions					
3 Link of Science and Technology to people					
3.1 Availability of a hazard map to people, developed based on scientific knowledge		1			
3.2 Scientific validation of indigenous knowledge					
Involvement of Science and Technology group in developing program for evacuation	1				
3.3 drills	I				
Availability and participation of Science and Technology group in community discussion					
3.4 as facilitator or advisor/commentator	I				
3.5 Dissemination of science based early warning and forecast to people					
Involvement of Science and Technology group in developing disaster related education					
3.6 curriculum					
Existence of facilities such as museum and events such as expo to disseminate disaster					
3.7 knowledge and deepen understanding on disasters among citizens					

INDONESIA Status Report

1	Science and Technology in decision making	1	2	3	4	5
1.1	Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR) nodal ministry and/or related ministries					
1.2	Presence of Science and Technology group in DRR national platform					
1.3	Existence of inter-ministerial discussion/dialogue on science related issues					
1.4	Implementation of risk, needs and damage assessment with involvement of Science and Technology group					
1.5	Existence of Early Warning system and mechanism with Science and Technology knowledge and tools					
1.6	Availability of disaster data/statistics on damage and impacts and its data collection mechanism					
1.7	Involvement of Science and Technology group in infrastructure design					
1.8	Scientific revision/ updating of regulations, policies and guideline for DRR including building code, disaster response and preparedness plan etc.					
2	Investment in Science and Technology					
2.1	Existence of grant support by the national government to researchers in disaster related topics that focus on Science and Technology					
2.2	Establishment of disaster related courses in higher-education					
2.3	Presence of national research institute and organization for disasters					
2.4	Investment/support by the national government in national/international conferences and events on disasters for knowledge sharing					
2.5	Support to collaboration with academia and the private sector for developing innovative technical solutions					
2.6	Support to collaboration with academia and civil society for developing innovative social solutions					
3	Link of Science and Technology to people					
3.1	Availability of a hazard map to people, developed based on scientific knowledge					
3.2	Scientific validation of indigenous knowledge					
3.3	Involvement of Science and Technology group in developing program for evacuation drills					
3.4	Availability and participation of Science and Technology group in community discussion as facilitator or advisor/commentator					
3.5	Dissemination of science based early warning and forecast to people					
3.6	Involvement of Science and Technology group in developing disaster related education curriculum					
3.7	Existence of facilities such as museum and events such as expo to disseminate disaster knowledge and deepen understanding on disasters among citizens					

		Attributes of Science and Technology to DRR	1	2	3	4	5
ΙΔΡΔΝ	1	Science and Technology in decision making			•••••••	[
JAPAN	~~~~~~	Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR)		*****	••••••		
<u>.</u>							
Status	1.2	Presence of Science and Technology group in DRR national platform					
	1.3	Existence of inter-ministerial discussion/dialogue on science related issues					
Donont		Implementation of risk, needs and damage assessment with involvement of Science and					
Report	1.4						
•							
	1.5						
					ļ	ļ	
	1.7						
	1.8	building code, disaster response and preparedness plan etc.					
	2		on (DRR) cience and logy llection cluding ster related onferences ginnovative vative social dee cuation odiscussion education				
		1 M		\$ 			
L							
	2.3			÷			
				~			
	2.4						
				~			
	2.5					ļ	
			latform Image: constraint of the second				
	2.6	solutions		*		ļ	
					Į	_	
		The second se		1		ļ	
	3.2						
	1.1 nodal ministry and/or related ministries 1.2 Presence of Science and Technology group in DRR national platform 1.3 Existence of inter-ministerial discussion/dialogue on science related issues						
	3.3						
	~~~~~~~~~~~			*			
	3.5						
	26			10000000			
	5.0						
	37			10000000			
	5.7	knowledge and deepen understanding on disasters allong cluzens		2			

#### MALAYSIA Status Report

	Attribute of Science and Technology to DRR	1	2	3	4	1
1	Science and Technology in decision making		i		i	T
1.1	Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR) nodal		i		1	ľ
	ministry and/or related ministries		İ			
1.2	Presence of Science and Technology group in DRR national platform		ļ — — –			I
1.3	Existence of inter-ministerial discussion / dialogue on science related issues		!			
1.4	Implementation of risk, needs and damage assessment with involvement of Science and Technology				ŗ	T
	group				<u> </u>	
1.5	Existence of Early Warning system and mechanism with Science and Technology knowledge and		T			
	tools		L			
1.6	Availability of disaster data/statistics on damage and impacts and its data collection mechanism					
1.7			I			I
1.8	Scientific revision/updating of regulations, policies and guideline for DRR including building code,		1			I
	disaster response and preparedness plan etc.		<u>i</u>		L	
			<u>i</u>		<u>i</u>	I
2	Investment in Science and Technology		Į		ļ	I
2.1	Existence of grant support by the national government to researchers in disaster related topics that		!			
	focus on Science and Technology		<u>!</u>	L	Į	
2.2	Establishment of disaster related courses in higher-education		!			I
2.3	Presence of national research institute and organization for disasters		I			I
2.4	Investment/support by the national government in national/international conferences and events					
	on disasters for knowledge sharing		<u> </u>			
2.5	Support to collaboration with academia and the private sector for developing innovative technical		1			ł
	solutions		<u>i</u>		L	l
2.6	Support to collaboration with academia and civil society for developing innovative social solutions		ļ		L	Į,
			<u>  </u>		<u>i                                    </u>	l
	Link of Science and Technology to people		<u> </u>		Ļ	Į,
	Availability of hazard map to people, developed based on scientific knowledge				<u> </u>	1
3.2	Scientific validation of indigenous knowledge		<u> </u>		<u>!</u>	1
3.3	Involvement of Science and Technology group in developing program for evacuation drills				<u>!</u>	1
3.4	Availability and participation of Science and Technology group in community discussion ad					
	facilitator or advisor/commentator		<u> </u>		L	
3.5						
3.6	Involvement of Science and Technology group in developing disaster related education curriculum		ļ			l
3.7	Existence of facilities such as museum and events such as expo to disseminate disaster knowledge					
	and deepen understanding on disasters among citizens		1			

		Attributes of Science and Technology to DRR	1	2	3	4	5
	1	Science and Technology in decision making					
MYANMAR		Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR)					
Status	1.1	nodal ministry and/or related ministries					
Status		Presence of Science and Technology group in DRR national platform					
Report	1.3	Existence of inter-ministerial discussion/dialogue on science related issues					
nop or o		Implementation of risk, needs and damage assessment with involvement of Science and					
	1.4	Technology group					
		Existence of Early Warning system and mechanism with Science and Technology					
	1.5	knowledge and tools					
		Availability of disaster data/statistics on damage and impacts and its data collection					
		mechanism					
	1.7	Involvement of Science and Technology group in infrastructure design					
		Scientific revision/ updating of regulations, policies and guideline for DRR including					
	1.8	building code, disaster response and preparedness plan etc.					
	2	Investment in Science and Technology					
		Existence of grant support by the national government to researchers in disaster related					
		topics that focus on Science and Technology					
		Establishment of disaster related courses in higher-education					
	2.3	Presence of national research institute and organization for disasters					
		Investment/support by the national government in national/international conferences					
	2.4	and events on disasters for knowledge sharing					
		Support to collaboration with academia and the private sector for developing innovative					
	2.5	technical solutions		L			
		Support to collaboration with academia and civil society for developing innovative social					
	2.6	solutions					
	3	Link of Science and Technology to people					
		Availability of a hazard map to people, developed based on scientific knowledge					
	3.2	Scientific validation of indigenous knowledge		L			
	1	Involvement of Science and Technology group in developing program for evacuation					
	3.3	drills					
		Availability and participation of Science and Technology group in community discussion					
		as facilitator or advisor/commentator					
	3.5	Dissemination of science based early warning and forecast to people					
		Involvement of Science and Technology group in developing disaster related education					
	3.6	curriculum					
		Existence of facilities such as museum and events such as expo to disseminate disaster					
	3.7	knowledge and deepen understanding on disasters among citizens					

		Attributes of Science and Technology to DRR		1 1	_		1
		(Priority weightage: 1=Low, 5=High)	1	2	3	4	5
PAKISTAN	1	Science and Technology in decision making	-		3	т	
FANISTAN	1.1	Presence of Science and Technology advisory group to Disaster Risk Reduction					
Status	1.1	(DRR) nodal ministry and/or related ministries					
	1.2	Presence of Science and Technology group in DRR national platform					
Report	1.2	Existence of inter-ministerial discussion/dialogue on science related issues					
	1.5	Implementation of risk, needs and damage assessment with involvement of					
	1.4	Science and Technology group					
	1.5	Existence of Early Warning system and mechanism with Science and					
	1.5	Technology knowledge and tools					
	1.6	Availability of disaster data/statistics on damage and impacts and its data					
	1.0	collection mechanism					
	1.7	Involvement of Science and Technology group in infrastructure design					
	1.8	Scientific revision/ updating of regulations, policies and guideline for DRR					
		including building code, disaster response and preparedness plan etc.					
	2	Investment in Science and Technology					
	2.1	Existence of grant support by the national government to researchers in					
		disaster related topics that focus on Science and Technology					
	2.2	Establishment of disaster related courses in higher-education					
	2.3	Presence of national research institute and organization for disasters					
	2.4	Investment/support by the national government in national/international					
		conferences and events on disasters for knowledge sharing					
	2.5	Support to collaboration with academia and the private sector for developing					
		innovative technical solutions					
	2.6	Support to collaboration with academia and civil society for developing					
		innovative social solutions					
	3	Link of Science and Technology to people					
	3.1	Availability of a hazard map to people, developed based on scientific					
		knowledge					
	3.2	Scientific validation of indigenous knowledge					
	3.3	Involvement of Science and Technology group in developing program for					
	-	evacuation drills					
	3.4	Availability and participation of Science and Technology group in community					
	25	discussion as facilitator or advisor/commentator					
	3.5	Dissemination of science based early warning and forecast to people					
	3.6	Involvement of Science and Technology group in developing disaster related education curriculum					
	27						
	3.7	Existence of facilities such as museum and events such as expo to disseminate disaster knowledge and deepen understanding on disasters among citizens					
	L	uisaster knowieuge and deepen understanding on disasters among cluzens		ļ			

PHILIPPINE	S Attributes of Science and Technology to DRR	1	2	3	4	5
Status	1 Science and Technology in decision making					
	Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR)			and the second		
Report	1.1 nodal ministry and/or related ministries					
•	1.2 Presence of Science and Technology group in DRR national platform					
	1.3 Existence of inter-ministerial discussion/dialogue on science related issues					
	1.4. Implementation of risk, needs and damage assessment with involvement of Science					
	1.4 and Technology group			-		_
	Existence of Early Warning system and mechanism with Science and Technology 1.5 knowledge and tools					
	Availability of disaster data/statistics on damage and impacts and its data collection 1.6 mechanism					
	1.7 Involvement of Science and Technology group in infrastructure design					
	1.8. Scientific revision/ updating of regulations, policies and guideline for DRR including 1.8 building code, disaster response and preparedness plan etc.					
	2 Investment in Science and Technology					
	Existence of grant support by the national government to researchers in disaster related 2.1 topics that focus on Science and Technology					
	2.2 Establishment of disaster related courses in higher-education		-			
	2.3 Presence of national research institute and organization for disasters					
	Investment/support by the national government in national/international conferences 2.4 and events on disasters for knowledge sharing					
	Support to collaboration with academia and the private sector for developing innovative 2.5 technical solutions					
	Support to collaboration with academia and civil society for developing innovative social 2.6 solutions					
	3 Link of Science and Technology to people					
	3.1 Availability of a hazard map to people, developed based on scientific knowledge					
	3.2 Scientific validation of indigenous knowledge					
	Involvement of Science and Technology group in developing program for evacuation 3.3 drills					
	Availability and participation of Science and Technology group in community discussion					
	3.4 as facilitator or advisor/commentator					
	3.5 Dissemination of science based early warning and forecast to people		1.0.000			
	Involvement of Science and Technology group in developing disaster related education 3.6 curriculum					
	Existence of facilities such as museum and events such as expo to disseminate disaster 3.7 knowledge and deepen understanding on disasters among citizens					

#### VIETNAM Status Report

	Attributes of Science and Technology to DRR	1	2	3	4	5
1	Science and Technology in decision making					
1.1	Presence of Science and Technology advisory group to Disaster Risk Reduction (DRR) nodal					
	ministry and /or related ministries					
1.2	Presence of Science and Technology in DRR national platform					
1.3	Existence of inter-ministerial discussion/ dialogues on science related issues					
1.4	Implementation of risk, need and damage assessment with involvement of Science and	]				
	Technology group					
1.5	Existence of Early Warning system system and mechanism with Science and Technology					
	knowledge and tool					
1.6	Available of disaster data/statistics on damage and impacts and its data collection					
	mechanism					
1.7	Involvement of Science and Technology group in infrastructure design					
1.8	Scientific revision / updating of regulation, policies and guideline for DRR including building					
	code, disaster response and preparedness plan etc.					
2	Investment in Science and Technology	-				
2.1	Existence of grant support by the national government to researchers in disaster related					
	topic that focus on Science and Technology	j				
2.2	Establishment of disaster related courses in higher education					
2.3	Presence of national research institute and organization for disasters					
2.4	Investment / support by the national government in national/ international conferences					
	and events on disasters for knowledge sharing					
2.5	Support to collaboration with academia and the private sector for developing innovative					
	technical solutions					
3	Link of Science and Technology to people					
3.1	Availability of hazard map to people, developed based on scientific knowledge					
3.2	Scientific validation in indigenous knowledge					
3.3	Involvement of Science and Technology group in developing program for evaluation drills					
3.4	Availability and participation of Science and Technology in community discussion as					
	facilitator or advisor/commentator					
3.5	Dissemination of Science and Technology group in developing disaster related education					
	curriculum					
3.6	Existence of facilities such as museum and events such as expo to disseminate disaster					
	knowledge and deepen understanding on disasters among citizens					

## CASE STUDIES: Application of Sc. and Technology (1)

- 23 case studies
- 11/(12) countries: Bhutan (1), China (1), India (4), Indonesia (2), Japan (4), Mongolia (2), Myanmar (1), Nepal (1), Pakistan (1), Philippines (1) and Thailand (1) + Malaysia (1)
- Cross cutting issues:
  - Cross boundary flood
  - Digital radio
  - Resilient housing and schools
  - River basin ecosystem

## CASE STUDIES: Application of Sc. and Technology (2)

- Hazards: GLOF, EARTHQUAKE, DROUGHT, FLOOD, LANDSLIDE, SALINITY, TSUNAMI, DZUD, TYPHOON
- Sectors: Disaster risk reduction, early warning system, building, climate change, health, education, agriculture, water, communication
- Government, UN and different stakeholders (Regional organization, Civil Society, Academics, Private Sector, Media)
- Missing:
  - Volcano (Philippines or Indonesia?)
  - Forest Fire (Indonesia, Malaysia, India?)
  - Earthquake induced fire (Japan?)