

Progress and Updates of IRDR CHINA

Report on Activities: November – May 2017

IRDR CHINA Established October, 2010



A group photo of the 2nd IRDR CHINA

- Established on October 8, 2010;
- To coordinate disaster scientists/organizations nationwide to address disasters in an integrated approach and support the IRDR Plan.

- Chair: Prof. Guo Huadong
- **40** members from research institutions, universities, media, state agencies...
- **15** nation-wide scientific associations
- **Top experts** in main areas of disaster risk reduction research, atmospheric sciences, economists, public health, psychologists, and policy.
- **Work plan** for 2015-2017

Main activities of IRDR CHINA (November - May 2017)

1

**Strategic Support on DRR
for the “Belt and Road”**

2

**Linking Science & Technology
and Policy in China**

3

Capacity Building for DRR

Satellite View of the Belt and Road

The B&R covers *a vast area* and involves over 60 *countries* and a *population of 4.3 billion*, facing numerous challenges related to *sustainable development*





The Belt and Road Forum (BRF) for International Cooperation opens in Beijing, China, May 14, 2017. A total of **29** heads of state and government leaders are attending the forum. Other delegates include officials, entrepreneurs, financiers and journalists from over **130** countries, and representatives of key international organizations.



Strategic Support: Belt and Road Initiative

"Silk Road Economic Belt"



Nepal Earthquake-2015



Pakistan Floods-2010



Tajikistan Mudslides-2015



Mongolia Wildfire-2010



"Maritime Silk Road"



Disaster risk remains high and is a big challenge for the sustainable development of the "Belt and Road" countries

“Digital Belt And Road (DBAR)” Initiative



一带一路空间认知国际会议

International Conference on Earth Observation for Belt and Road Initiative

2016年5月16日至17日 北京 16-17 May 2016, Beijing

Initiated in EOBAR, be given the fullest support by more than 20 countries

Beijing Declaration on Earth Observation for Belt and Road

May 17, 2016

We, scientists, researchers, academics, engineers, educators and administrators from more than 20 countries, and representatives of international organizations, met in Beijing, China, at the International Symposium on Earth Observation (EO) for Belt and Road (EOBAR), co-hosted by the Division of Earth Sciences of the Chinese Academy of Sciences (CAS) and related ministries, commissions, and international organizations, on 16 and 17 May 2016.

Background

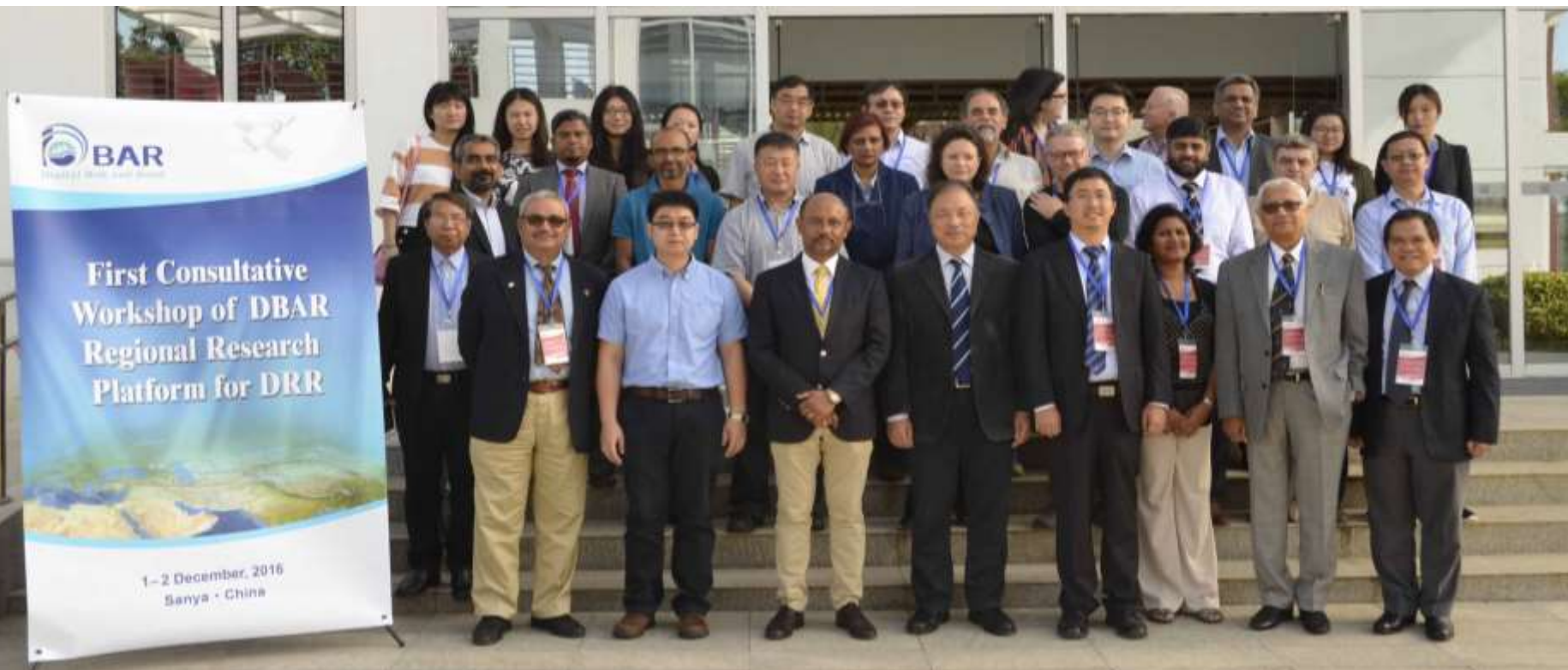
Conceptual Framework of DBAR Initiative



Consultative Workshop Held and DBAR DRR Working Group Formed

50 participants from 18 countries

17 WG members from 13 countries



Specific Objectives

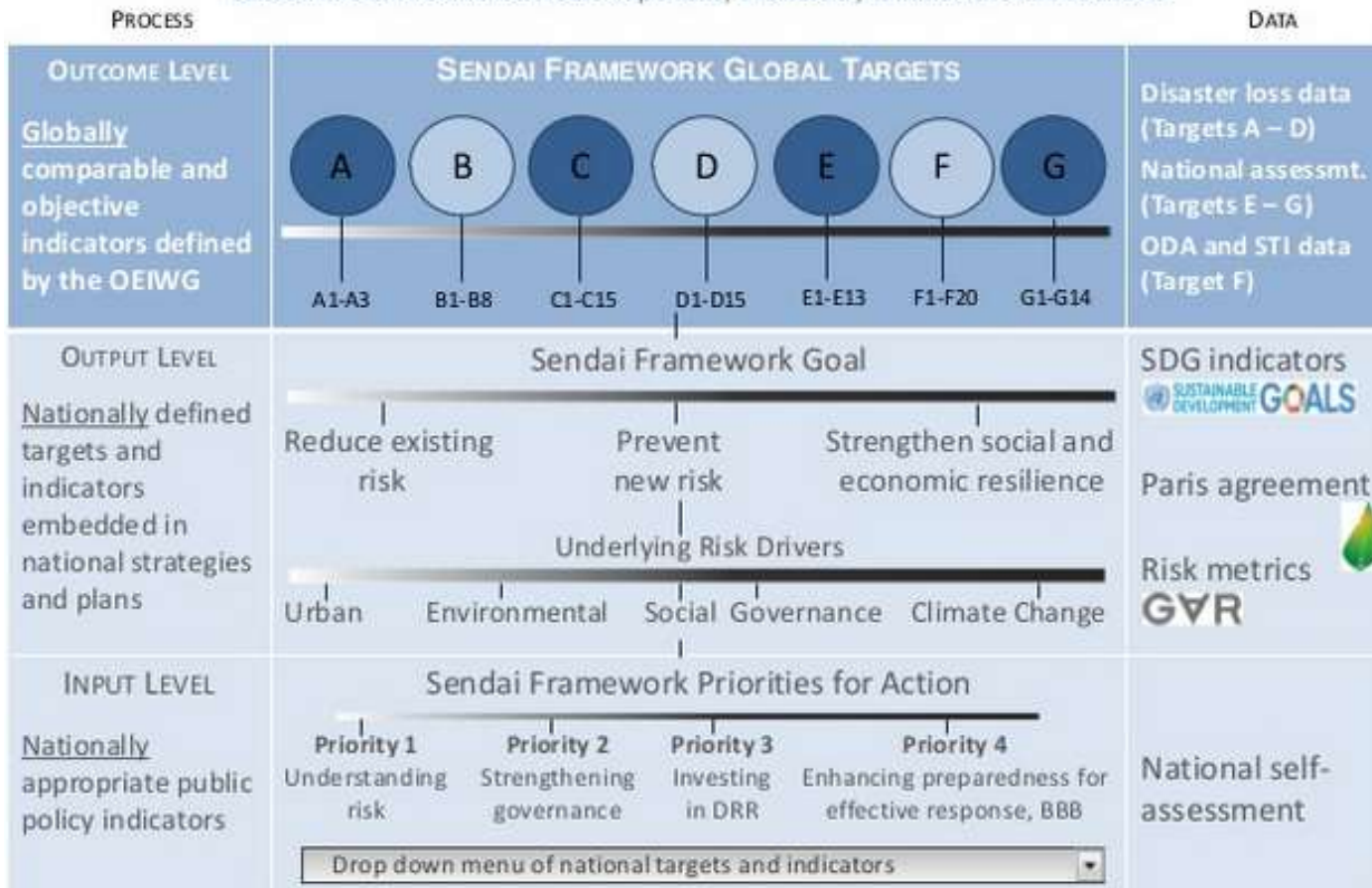
1. To undertake **innovative, implementation oriented research** in the field of DRR through collaboration and partnership
2. To **strengthen national research capacities** to enable informed decision-making in different aspects of disaster risk reduction
3. To foster the **development of young professionals** and researchers through training and capacity building programs

Sendai Framework Indicators in the B&R

Architecture of the Sendai Framework Monitoring System at National Level

Sendai Framework Outcome

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries



Resolution adopted by the General Assembly on 2 February 2017
 T/1574 Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction

Category	Methodology Available	Data Available	Indicator Category
Category I (Global standardized indicators for which a methodology exists, or has been prepared, and for which data are already available in a significant number of countries)	Y	Y	1
Category II (National applications, potential negative to global level) - indicators for which a methodology exists, or has been prepared, but for which data are not easily available	Y	N	2
Category III (Require long term development) - indicators for which a methodology has not yet been developed nor is data easily available	N	N	3

Understanding Digital, Data and Integration

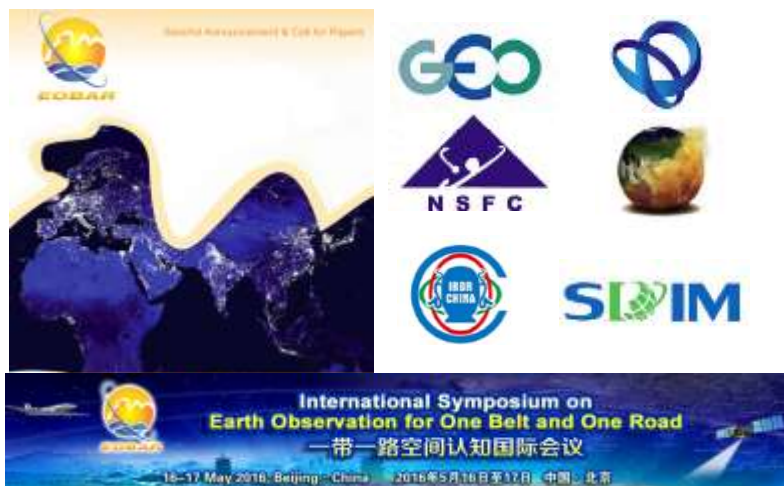
Principles of Integration

- Data integration (Physical and Social)
- Disciplinary integration (Engineering, Social Science, Natural Science and others)
- Regional Integration
- Stakeholder Integration

(All cases under the programme to follow these principles)

Related Activities

The International Symposium on EO for One Belt and One Road



May 16-17, 2016

1st Asian Science and Technology Conference for Disaster Risk Reduction



Aug. 23-24, 2016

DRR Workshop in Digital Earth Summit



July 7-8, 2016

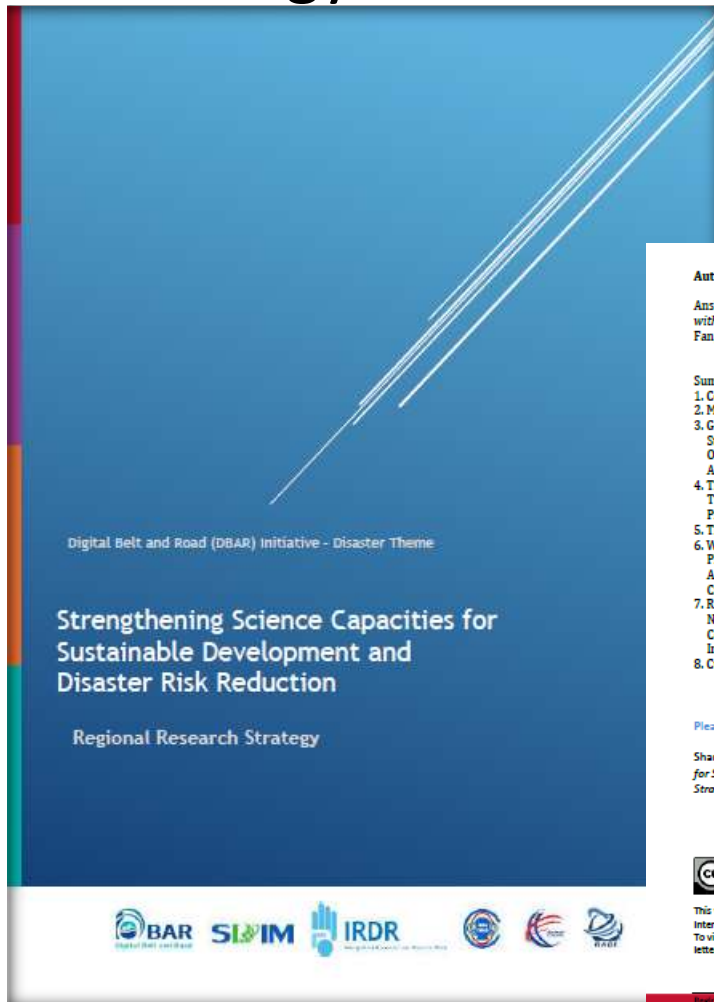
AARSE 2016 in Africa



Oct. 24-28, 2016

Regional Research Strategy

Comprehensive strategy document



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with support from
Fang Lian and Lucy Lu (IRDR)

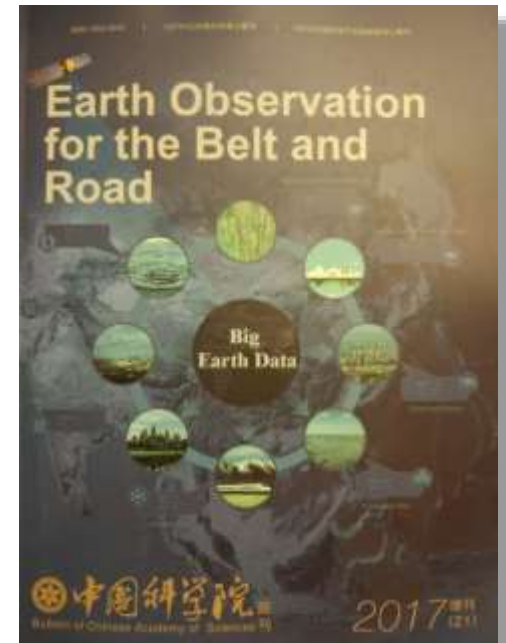
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Please refer this publication as follow:

Sharma A, Shaw R, Chen F, Lian F, Lu L (2017): Strengthening Science Capacities for Sustainable Development and Disaster Risk Reduction: Regional Research Strategy, published by DBAR, IRDR and SDIM, Beijing China, 22 pages.



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Regional Research Initiative

*Showcasing the link between Earth Observation
and Social Vulnerability*

- Integrated Digital and Social Vulnerability Research Programme
- [Bangladesh, Nepal, Pakistan, Sri Lanka](#)
- Based on Common Principles of Integration

Activity Calendar and Outputs

Year 1 (2016-17)	Year 2 (2017-18)	Year 3 (2018-19)
<ul style="list-style-type: none"> ▪ Development of Regional Research Platform ▪ Inception Consultative Workshop ▪ Regional Research Strategy Development ▪ Enhancing Capacities of young researchers 	<ul style="list-style-type: none"> ▪ National Research Strategy Development ▪ Second Consultative Workshop ▪ Enhancing Capacities of young researchers ▪ Specific country based research projects 	<ul style="list-style-type: none"> ▪ Third Consultative Workshop ▪ Enhancing Capacities of young researchers ▪ Specific country based research projects ▪ National Research Platform
<p>Outputs:</p> <ul style="list-style-type: none"> ▪ DBAR Regional Research Platform for DRR ▪ First Consultative Workshop of Regional Research Platform ▪ Regional Research Strategy ▪ Enhanced capacities of young scientists 	<p>Outputs:</p> <ul style="list-style-type: none"> ▪ Second Consultative Workshop of Regional Research Platform ▪ National Research Strategy ▪ Enhanced capacities of young scientists ▪ Country based research project 	<p>Outputs:</p> <ul style="list-style-type: none"> ▪ Third Consultative Workshop of Regional Research Platform ▪ Enhanced capacities of young scientists ▪ Country based research project ▪ National research platform

Action plan of DBAR Disaster Risk Reduction Working Group in 2017



Action plan of DBAR Disaster Risk Reduction Working Group in 2017

Overall

1. Every year, in DBAR DRR WG we will have a common research theme. Based on that, the working group member will contribute to a paper (500-1000 words), and that would be the Research Theme Paper of that year for the DBAR DRR WG.
2. There would be a specific project site in form of a mini-project, where that theme would be applied, and specific research outputs would be developed based on the key findings, which will be compiled in another paper, called Research Application Paper.
3. Essentially, these two sets of research papers would be the key outputs to showcase in the annual DBAR conference and DRR WG meeting.
4. The mini-project mentioned above would be the seed for the future proposal development based on multilateral collaboration.
5. From 2017 to 2018, two DBAR DRR training workshops would be organized for young scientists and researchers.

1. Research Theme Paper:

Spatial data and social vulnerability data

2. Research Application Paper:

Geo-hazards in Pakistan

3. Mini-project:

DRR in Peshawar, Pakistan

4. DRR training workshops:

Sanya, China, 11-15 December 2017

5. 2nd DBAR DRR WG annual meeting

Sanya, China in 11-13 December 2017

Establish a Number of Interdisciplinary Working Groups

WG on Earthquake and Geo-hazard Risk

Co-chairs: CUI Peng and WANG Xiaoqing

WG on Drought and Floods Risk

Co-chairs: CHENG Xiaotao and XIA Jun

WG on Severe Storm Risk

Co-chairs: DUAN Yihong and LI Jianping

WG on Climate Change Driven Disaster Risk

Co-chairs: JIA Gensuo and FENG Qiang

WG on Disaster Risk in Urban Areas

Co-chairs: PAN Jiahua

WG on Assessment of Integrated Research on Disaster Risk in China

Co-chairs: CHEN Fang and XUE Lan

从灾害管理到灾害风险管理
——中国灾害风险综合研究（草稿）

1. 报告的背景和目标
说明灾害风险管理是保障可持续发展目标等目标和公约的关键手段，如全球 60 亿美元的灾害风险管理投资，带来减少灾害风险的收益达到 3600 亿美元（1: 60）-GAR 2015 报告
2. 灾害风险综合研究的意义
灾害风险管理涉及到科学、经济、政策、法律等多方面事宜，灾害风险综合研究是科学实施灾害风险管理的保障
3. 从灾害管理到灾害风险管理，以中国新型城镇化建设为例
-地震与地质灾害风险管理
四点主要内容：新型城镇化建设为何需关注地震与地质灾害风险、中国新型城镇化建设中的地震与地质灾害风险管理涉及到

综合研究

约 1
增 2
委 1
前 1

一、“风暴灾害风险综合研究”重点领域工作组概况

IRDR CHINA 重点领域工作组设计框架
——中国灾害风险综合研究的评估
组长：陈方，副组

IRDR CHINA 重点领域工作组设计框架
——城镇灾害风险综合研究

三、报告大纲
——一带一路灾害风险综合研究战略报告（草稿）

- (1) 报告的背景和目标
- (2) 一带一路灾害风险的宏观情况（包括灾害情况、各国现有主要减灾体制机制、减灾合作情况、减灾对其区域经济的影响等）
- (3) “一带一路”地震与地质灾害风险综合研究关注的重点方向与发展分析
- (4) “一带一路”水旱灾害风险综合研究关注的重点方向与发展分析
- (5) “一带一路”风暴灾害风险综合研究关注的重点方向与发展分析
- (6) “一带一路”气候变化灾害风险综合研究关注的重点方向与发

人口
先
杂
地
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口

Linking Science & Technology and Policy in China

Launch a project for serial strategic and science reports on DRR for “Belt and Road”

2016-DRR strategies in China's new urbanization process



“一带一路”灾害风险综合研究
——中国城镇化进程中的灾害风险及应对策略
(意见征询稿)

本报告综合研究了“一带一路”沿线国家城镇化进程中的灾害风险问题，分析地震与地质灾害、水灾火灾、风暴灾害、气象变化相关灾害对新型城镇化过程的影响，提出中国城镇化进程中的灾害风险应对策略和建议。

二、中国新型城镇化进程中的灾害风险问题

2013年改革开发以来，在快速工业化进程的推动下，中国城镇化水平迅速攀升至56.1%（2015年数据）。城镇人口增加了0.6亿，仅五天就新增的GDP和固定资产投资额占GDP的比例就超过30%。预计到2030年，中国城镇化水平将达70%，城镇人口总数将超过10亿人（联合国开发计划署，2015）。同时，城镇化对全球乃至全球的经济贡献进一步增加。

然而大部分城市位于自然地质条件的多灾带，其中，70%以上的大城市、半数以上的大县、70%以上的工业产值、分布在地震、海洋、洪水、海啸等自然灾害严重的地区，50%以上城市的经济依赖于国家的投资。这些自然地质条件的恶劣灾害风险在迅速累积，城市自然灾害造成或次生灾害损失的总量和比例也在不断上升。在城中气象灾害第一类形成或加重经济损失已接近全国自然总损失的70-80%（高海廷、黄业军，2013，《气候变化杂志》），而造成人员伤亡的灾害总死亡人数一半的地质灾害。其中61%的死亡在城镇。

与西方发达国家城镇化发展主要依靠地理优势和资源优势为驱动力的相比，中国城镇化过程受政策影响较大。自未来15-30年中国城镇化过程自然地理特征：人口主要来源于农村人口向城镇的转移，“城乡空”流动人口与“空巢型”流动人口长期并存，经济主要由第二产业和日增的第三产业驱动，并逐步过度到以第三产业驱动；发展途径以政府主导、市场力量为辅；地区发展差异，经济将向目前的大城市、特大

城市有显著倾斜，以及城镇化与工业化、信息化、城镇化、经济城镇化同步推进。

可以预见的是，城镇化在总带中保持持续高速增长的同时，新形成的城镇与重大基础设施布局以及社会经济体系的产生的“稳定性”，如不加以科学应对，不但会更加复杂、复杂的矛盾，并针对未来发展产生巨大影响。近年来中国面临城市日益增多的自然灾害，已经警示我们需增加对城镇化进程中的灾害风险的科学研究，为此我们编制制定风险评估与科学互动的同时，需全社会认识和应对灾害风险的意识和能力，为企业参与社会风险的治理提供机遇。

总报告将和未来15-30年，中国城镇化过程将面临下列自然地理条件与原有自然条件密切相关的系统性风险：

1. “环境稳定”问题在众多的城市环境中爆发

“环境稳定”是指在一定的时期范围内，人类活动与自然环境发生相互作用，就正和负反馈作用下形成的良性循环的累积，科学认识和应对技术水平的限制，以及社会经济快速发展等多种因素综合作用下的自然变化。自然这种变化过程是复杂的，但其影响会通过不断累积，直至超出环境系统自身恢复能力的阈值，最终以突变形式表现，并伴随与一而足的社会经济不稳定性。近年来几乎每天都会发生各种各样的自然灾害事件，且呈典型的“环境稳定”现象。

2. 大城市生命及其支撑系统日益加强的互锁性和联动性系统性风险

长期以来，部门分割和过去二十多年来城市基础设施于城市快速发展模式所造成的历史问题，使得我国大多数城市生命系统为脆弱、特别是水、气、热、交通等与城市生命线之间互锁和联动性持续统一。如果以城市内接代换的“一带一路安全”的灾害风险提出不改，其一方面，以互联网技术为核心快速形成的物流（如何构建物流）；另一

Linking Science & Technology and Policy

GLOBAL PLATFORM FOR DISASTER RISK REDUCTION - FIFTH SESSION

22-26 May, 2017 | Cancun, Mexico | #MEXICOGP2017 | #SWITCH2SENDAI



UNISDR

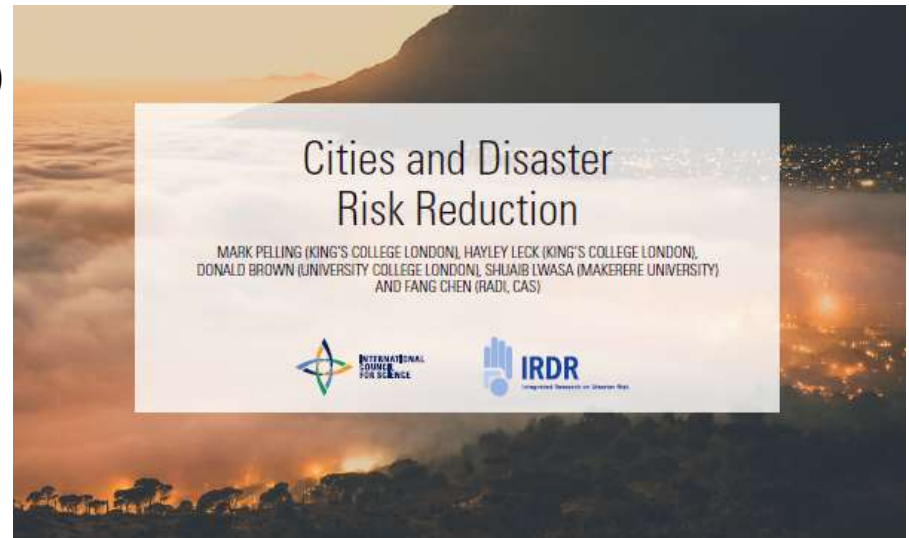
The United Nations Office for Disaster Risk Reduction

Title of the side event

Global Partnership on Space Technology
Applications for Disaster Risk Reduction (GP-STAR)



Policy Brief



POLICY RECOMMENDATIONS

- Urbanization means that the implementation of the Sendai Framework for Disaster Risk Reduction (SFDRR) will depend increasingly on what is done to reduce risk in urban areas, but better data and more action at the local level are required.
- The future challenges facing urban disaster management will be increasingly concentrated in low- and middle-income countries, where most future urban growth is set to occur, but where the capacity to plan and manage rapid urban growth and adapt to emerging hazards (including climate change) is often lacking. Investment here is a priority.
- Smaller cities are increasingly important priorities given their demographic importance and especially weak capacity. Investing in capacity to monitor and manage risk in cities of one million or less inhabitants will likely have the greatest aggregate impact on disaster reduction.

Capacity Building for DRR



International Training Facilities



Training workshop, Sanya(2013)



Training workshop, Beijing(2014)



Training workshop, Kashi(2014)



Training workshop, Qingdao(2015)



Training workshop, Sanya (2015)



International Training Workshop on Strengthening Science Capacities for Sustainable Development and Disaster Risk Reduction

27 November- 3 December, 2016
Sanya, China

Overall Objective: to make the participants aware of the potential of science and technology for various phases of disaster risk management, and to enhance the capacity building for developing countries to tackle disaster issues using advanced technologies.

Participants: Young academicians and researchers in the field of disaster risk reduction; Young practitioners from national/ local governments and civil society organizations.

Financial Assistance: round-trip international airfares, lodging, field tour, local transportation, etc.



International Training Workshop Organized with 20 Participants from 15 Countries





Thank you !