

第一次全国自然灾害综合风险普查总体情况介绍

General Introduction of The First National Survey on Natural Disaster Risks



Co-organized by

◆ WFP Centre of Excellence for Rural Transformation (WFP China COE)

◆ National Disaster Reduction Center of China (NDRCC)



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普查背景 Survey Background

2020年5月31日，中国国务院发出《关于开展第一次全国自然灾害综合风险普查的通知》，定于2020年至2022年开展第一次全国自然灾害综合风险普查工作。

On May 31, 2020, the State Council of China issued the notice on carrying out the 1st National Natural Disaster Comprehensive Risk Survey, which is scheduled to be carried out from 2020 to 2022.



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一、风险普查的内容

Contents of Risk Survey



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1.1 普查目标 Survey Objectives

摸清底数 Find Out the Bottom Line

全面获取中国主要灾害**致灾信息**，重要**承灾体信息**，**历史灾害信息**，掌握各类**灾害隐患情况**，查明区域**抗灾能力和减灾能力**。

We should comprehensively obtain the information on major disasters, important Disaster-bearing objects and historical disasters in China, master the hidden dangers of various disasters, and find out the regional disaster resistance and mitigation capabilities.

掌握规律 Master the Rule

科学评估全国及区域**自然灾害综合风险水平**，预判今后一段时期灾害风险变化趋势和特点，形成全国自然灾害防治区划和防治建议。

The aim are scientific evaluation on the comprehensive risk level of national and regional natural disasters, prediction on the trend and characteristics of disaster risk in the future, and suggestions on the national natural disaster prevention and control division.

技术体系 Technical System

建立自然灾害风险调查与评估的**技术方法体系**、**基础数据库**，**信息化平台**和**工作制度**，建立风险普查数据常态化更新机制。
Establish the technical method system, basic database, information platform and work system of natural disaster risk investigation and assessment, and establish the normalized update mechanism of risk survey data.

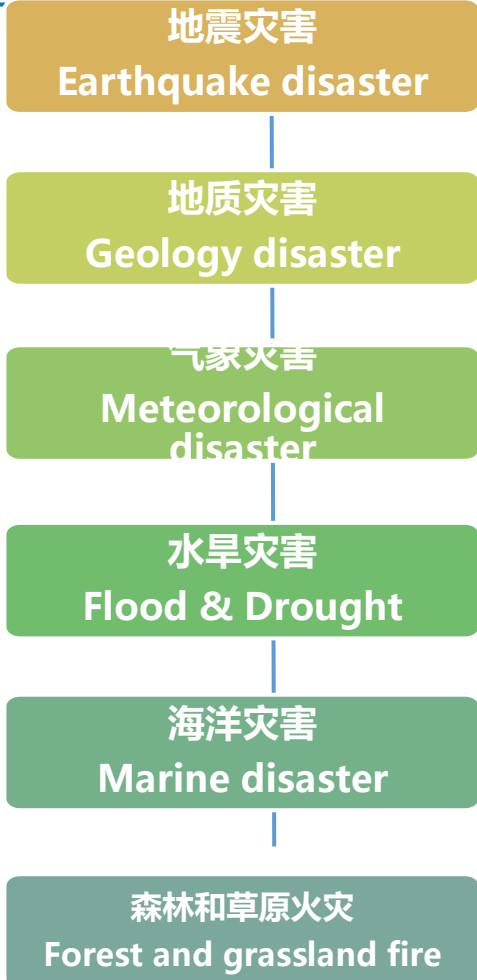


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1.2 普查查什么

Survey on Natural Disaster Risks-What are the Survey Objects?

滑坡、崩塌、泥石流

Landslide, collapse and debris flow

暴雨、干旱、台风、高温、低温、风雹、雪灾、雷电

Rainstorm, drought, typhoon, high temperature, low temperature, wind and hail, snowstorm and lightning
洪水、干旱

Flood and drought

风暴潮、海浪、海啸、海平面上升、海冰

Storm surge, wave, tsunami, sea level rise, sea ice

森林火灾、草原火灾

Forest fire, grassland fire

任务1: Task 1:

全面查明各地**6大类、21小类**自然灾害的致灾危险。

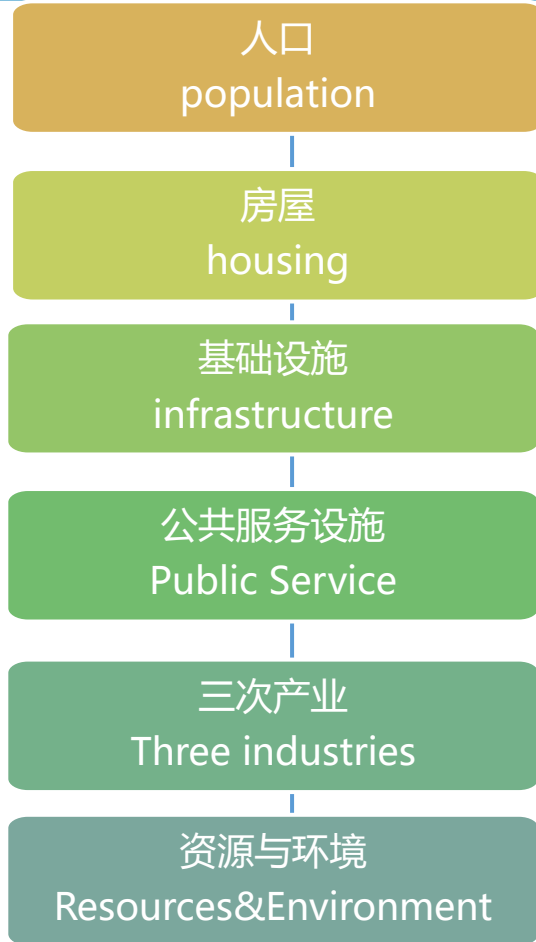
Comprehensively identifying hazard risk of natural disasters in 6 categories and 21 small categories.



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1.2 普查查什么

Survey on Natural Disaster Risks-What are the Survey Objects?

任务2:

Task 2:

掌握遭受自然灾害威胁的人口、房屋、基础设施和经济产业等承灾体情况。

Mastering the situation of population, housing, infrastructure, economic and other disaster-bearing objects threatened by natural disasters.



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1.2 普查查什么 Survey on Natural Disaster Risks-What are the Survey Objects?

任务3: Task 3:

	类型Type	灾害种类Types of Disasters	损失Loss	救灾Disaster Mitigation	范围/频次 Range / Frequency
历史 灾害 调查 History Disaster Investigation	年度自然灾害 (1978-2020) Annual natural disasters (1978-2020)	地震灾害、地质灾害、气象灾害、水旱灾害、海洋灾害、森林和草原火灾。 Earthquake disaster, geological disaster, meteorological disaster, flood and drought disaster, marine disaster, forest and grassland fire.	人员受灾、房屋倒塌、农作物受灾、基础设施损毁、直接经济损失。 Population affected, houses damage, crops damage, Infrastructure damage and direct economic loss.	队伍投入、物资投入、资金投入、救灾成效等。 Team investment, material investment, capital investment, disaster mitigation effect, etc.	县级/历年 County/Year
	重大自然灾害 (1949-2020) Major natural disasters (1949-2020)				县级/历次 County/Frequency

查明1978年以来自然灾害灾情，梳理建国以来发生的特别重大自然灾害案例。

Find out the natural disaster situation since 1978, and sort out the particularly serious natural disaster cases since the founding of the people's Republic of China.



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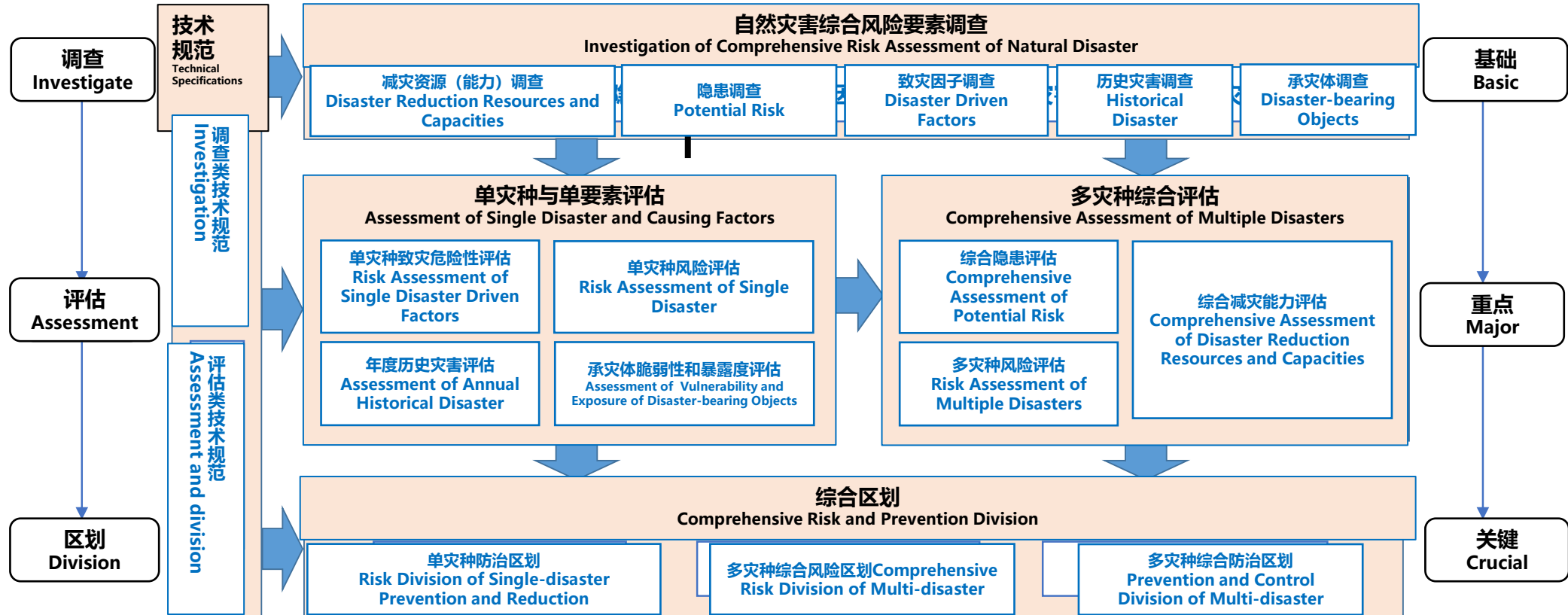
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1.3 普查评什么：开展单灾种、多灾种综合风险评估与区划 Survey on Natural Disaster Risks-How to Make Assessment?

Carry out Risk Assessment of Single Disaster and Comprehensive Assessment of Multiple Disasters



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1.4 普查如何做

Survey on Natural Disaster Risks-What is the Survey Methodology?



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1.5 普查进度安排 Survey Schedule

普查前期准备与全国试点
Pre-preparation and
National pilot survey

2021年5-12月，全面启动全国普查工作。
From May to December 2021, launch
the national survey across the country.

全面调查工作
National survey

评估与区划工作
assessment and division

2020.6-2021.4

- 建立各级普查工作机制。
Establish a general survey mechanism at all levels in 2020.
- 全国120个县区普查试点。
carry out pilot survey in 120 counties (districts) across the country.

2021年下半年至2022年第三季度，完成风险评估与区划工作。
From the second half of 2021 to the third quarter of 2022, complete risk assessment and division tasks.



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二、风险普查的特点和成果

Characteristics and Outcomes of Natural Disaster Risks Survey



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2.1 此次普查有4方面特点

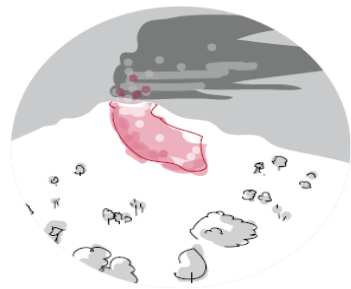
4 Characteristics of Natural Disaster Risks Survey

首次实现在统一的技术体系下开展风险评估与区划工作

This's the first time to carry out risk assessment and division under a unified technical system

组织各相关部门采用统一的灾害风险评估技术框架、风险区划技术框架和综合防治区划技术框架来完成各单灾种的相关工作，在此基础上形成多部门协同完成的综合性成果。

Organize relevant departments to use a unified framework(Risk Assessment, Risk Division and Comprehensive Prevention Division) to complete the work related to each single disaster, and on this basis, draw a comprehensive conclusion completed by multiple departments.



There is no such thing as a natural disaster, only natural hazards



We make choices as to where we inhabit, how we build and what research we do



Risk is the combination of hazard, exposure and vulnerability



Death, loss and damage is the function of the context of hazard, exposure and vulnerability

$$\text{风险} = \frac{\text{致灾 (危险性)} \times \text{承灾体 (暴露、脆弱性)}}{\text{综合减灾能力}}$$

$$\text{Risk} = \frac{\text{Hazard} \times \text{Disaster-bearing Objects (Exposure, Vulnerability)}}{\text{Capacity of Urban Comprehensive Reduction}}$$

2.1 此次普查有4方面特点

4 Characteristics of Natural Disaster Risks Survey

首次实现自然灾害风险要素调查、风险评估、风险区划和综合防治区划等全链条式普查

The first time to identify the whole chain of natural disaster risk investigation, assessment, division and comprehensive prevention and control division.

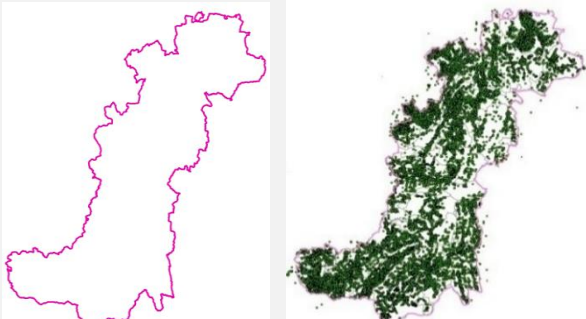
风险要素调查

Risk Factors investigation

基础底图
数据
Basemap
and Spatial
Data

行业部门
数据
Department
Data

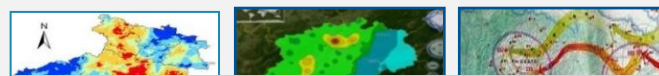
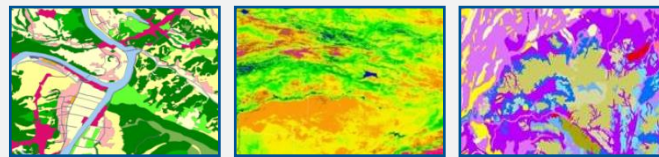
地方调查
数据
Local
Investigation
Data



实现要素灾害属性和空间位置的双调查
Dual-investigation of disaster
attribute and spatial location

风险评估与区划

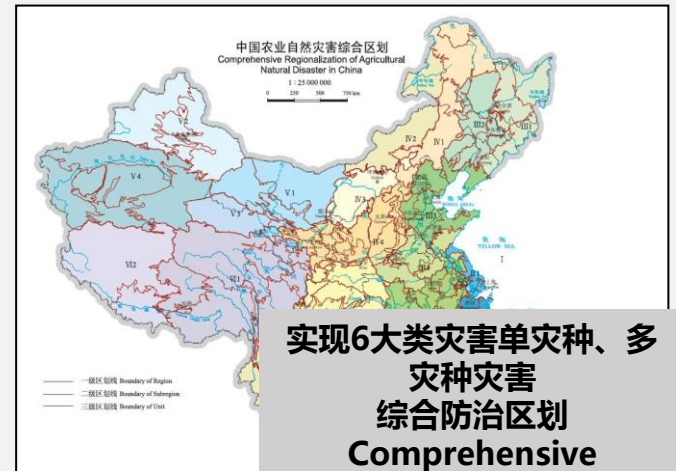
Risk Assessment and Division



实现6大类灾害单灾种、综合灾害
风险评估和风险区划
Risk assessment and division of 6
disasters and comprehensive disasters

综合防治区划

Comprehensive Prevention and Control Division



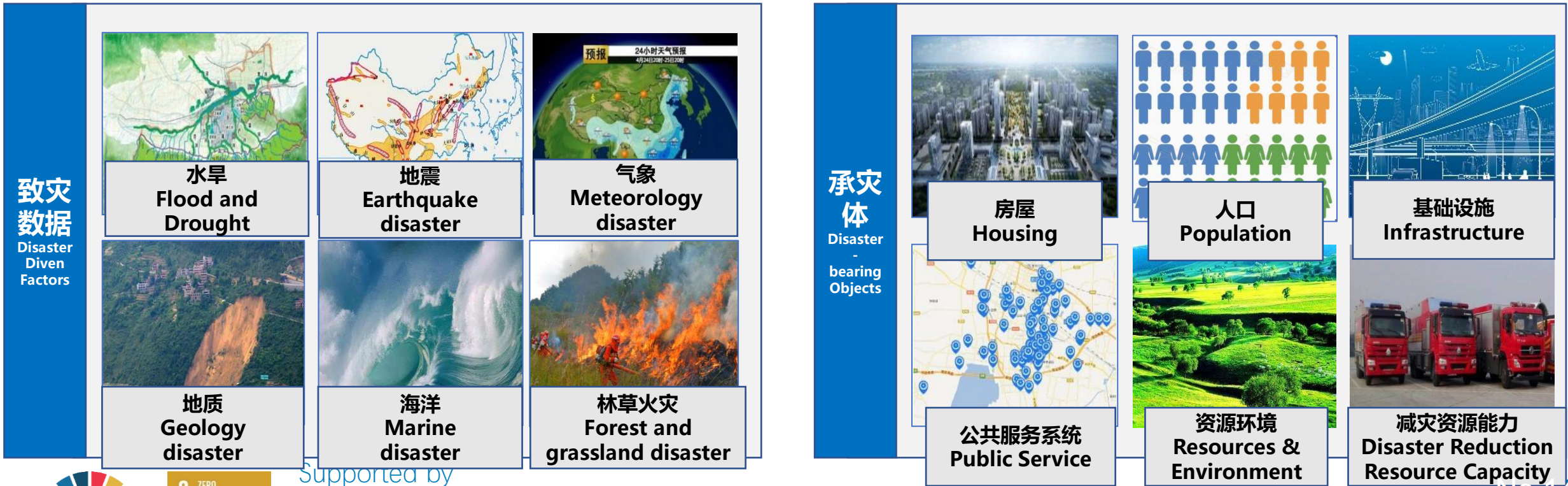
实现6大类灾害单灾种、多
灾种灾害
综合防治区划
Comprehensive
Prevention and Control
Division of 6 disasters
and multiple disasters

2.1 此次普查有4方面特点

4 Characteristics of Natural Disaster Risks Survey

首次实现致灾数据和承灾体数据有机融合

First time to achieve the combination with disaster causing and disaster-bearing objects



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2.1 此次普查有4方面特点 4 Characteristics of Natural Disaster Risks Survey

重点在“综合”，难点也在“综合”，亮点也在综合
Emphasis: Comprehensive, Difficulty: Comprehensive, Eminence: Comprehensive

普查特点 Characteristics



涉及范围广 Broad Coverage

致灾 (6大类灾害)、承灾体 (类型全)、能力 (政府、企业、社会、民众)、隐患、防治区划等。
Disaster(6 major kinds of disaster), Disaster-bearing Objects (all categories), Capability(Gov、Enterprise、Society、People), Hidden danger, Prevention, Division, etc.

参与部门多 Multi-Department

有全国性具体普查任务的部门多，协调难度显而易见。
There are 9 departments (Earthquake Administration) with specific nation survey tasks. Compared with 1~3 in other survey department, the number has increased significantly, and the coordination difficulty is obvious.

协同任务重 Arduous Collaborative Task

组织实施工作各阶段，技术流程各环节。
致灾+承灾，减灾能力→风险→区划→防治区划，很强的上下游关系；统筹难度大，“木桶效应”。
Organize and implement each Stage of the work and each link of the technical process. Disaster-causing + Suffered object of disaster, disaster reduction Capability -> Risk -> Division -> Prevention->Control Prevention, Strong relationships between upstream and downstream; Coordination is difficult, 'Cannikin's law'.

综合难度大 Difficult Task

综合减灾能力调查、重点隐患综合评估、综合风险评估、综合防治区划；
均首次开展。
Comprehensive disaster reduction capability survey, Comprehensive assessment of key hidden dangers, Comprehensive risk assessment, and Comprehensive prevention and control division; All carried out for the first time.

2.2 普查形成4方面成果： 汇交形成89项普查成果

Outcomes of the survey in 4 directions: A total of 89 survey results

序号	数据提供部门	数据成果项	数据对象名称	时间范围	空间范围	空间属性	时间分辨率	空间分辨率	属性指标	比例尺	计量单位
1	01 地震	重点隐患评估/行业与综合风险评估	地震危险性评价图(区分是否考虑场地效应, 4种超越概率 50年63%、50年10%、50年2%、100年1%) (4个等级)	—	全国	栅格/矢量点/矢量面	—	全国 1km、省级 250m	8个指标: 无场地修正的4个概率峰值加速度、经过场地修正的4个概率峰值加速度, 划分4个等级	全国 1:100万; 分省 1:25万	gal (cm/s ²)
2	01 地震	重点隐患评估	房屋建筑、市政设施隐患评估图	2020	全国	矢量	—	单体	房屋及市政设施: 对象编号、场址影响系数、承灾体易损性影响系数、承灾体破坏后果影响系数、地震灾害隐患指数	—	—
3	01 地震	行业和综合区划	防治区划图(抗震加固优先级)	—	全国	栅格	—	1km	优先级排序	全国 1:100万, km网格; 县级 1:5万	—
4	01 地震	行业和综合区划	防治区划图(活动层避让图)	—	全国	矢量面	—	县级行政单元	通用工程类别	1:5万	—
5	01 地震	重点隐患评估	全国活动断层图	—	全国	矢量	—	—	断层名称、最新活动时代	—	—
6	01 地震	历史灾害调查	重大灾害事件(1949-2020年) 一般灾害事件(1990-2020年) 年度灾害情况(1993-2020年)	以地震部门提供为准	全国	表格/文本/矢量(烈度图)	年度/次	县级行政单元	时间、震中、震源深度、震级、受灾人口、死亡人口、直接经济损失、烈度图	—	—
7	01 地震	行业与综合风险评估	不同超越概率地震作用下房屋破坏导致直接经济损失风险评估图及风险区划图(等级划分, 5级)	—	全国	栅格/矢量	—	1km	连续风险值、5级分级结果和风险区划结果	全国不低于 1:100万, 省级不低于 1:25万	—

—
3
—

形成致灾、承灾、减灾能力等全要素调查数据成果、单灾种和多灾种综合风险评估区划成果，总计汇交89项。

A total of 89 results were obtained from the survey data results of all factors such as disaster-causing, disaster-bearing, and disaster-reduction capabilities, as well as single-hazard and multi-hazard comprehensive risk assessment division results.

2.2 普查形成4方面成果：建成全国统一的软件平台

Outcomes of the survey in 4 direction: A national unified platform



推动普查软件系统常态化业务运行，支撑国、省、市、县四级政府开展普查要素数据的动态更新。

Promote the normalized business operation of the survey software system, and support the national, provincial, municipal and county governments to carry out updates of survey element data in time.



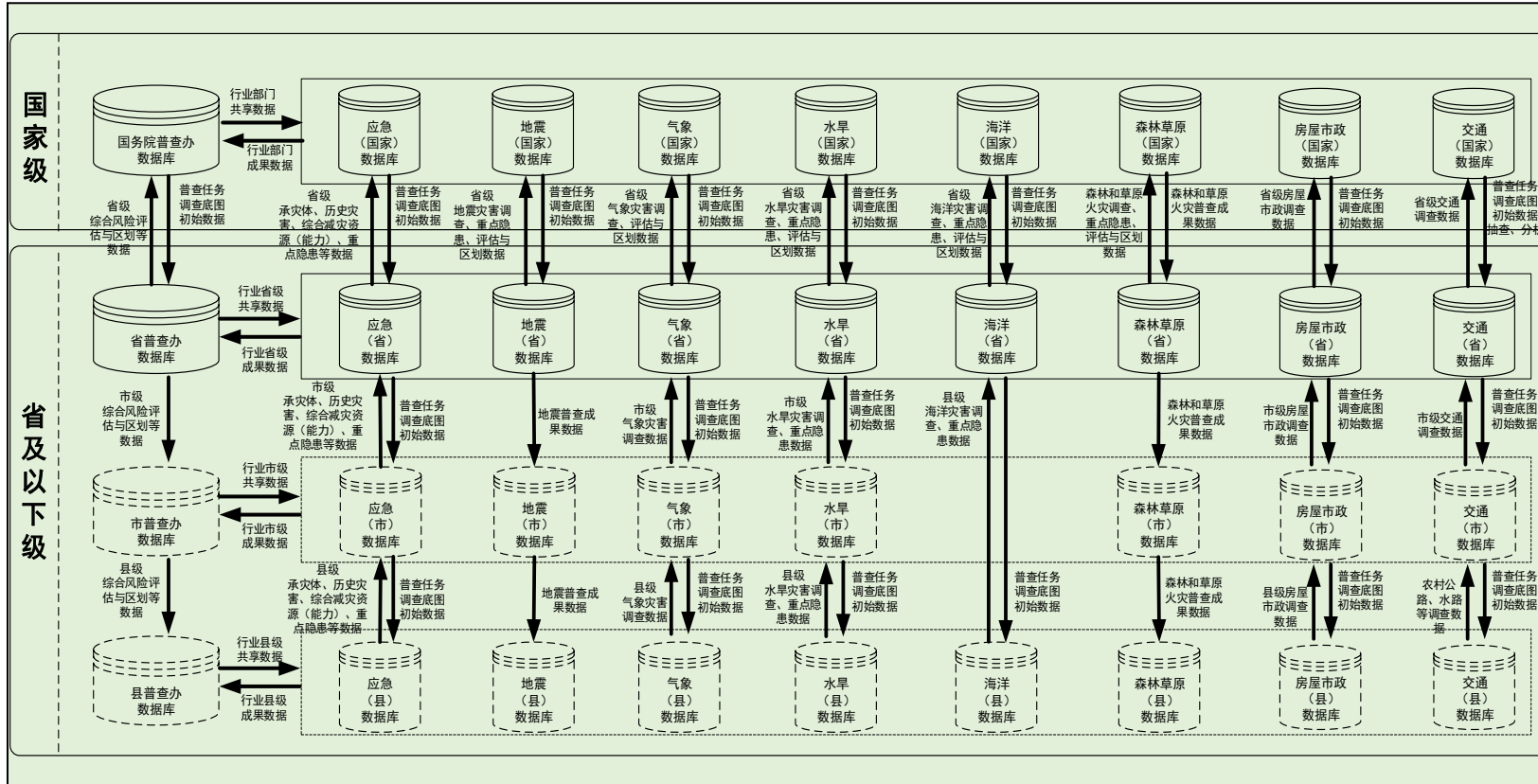
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2.2 普查形成4方面成果：建成分地区、分类型的自然灾害综合风险数据库

Outcomes of the survey in 4 direction: A comprehensive Risk Database of natural disasters by region and type



推动普查成果在各级政府、各行业部门落地，支撑自然灾害应急救援、灾害综合防治等工作。

Promote the implementation of survey in governments at all levels and various industries, and support natural disaster emergency rescue and comprehensive disaster prevention and control.



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2.2 普查形成4方面成果：形成1套技术标准规范

Outcomes of the survey in 4 direction: A technical standard specifications

附件

第一次全国自然灾害综合风险普查调查类技术规范（试点版）清单
(47项, 另发电子版光盘)

序号	技术规范名称	责任部门
A-01	县级1:50 000活动断层分布图编制技术规范(试点版)	中国地震局
A-02	《1:250 000地震构造图编制》指南	
A-03	全国1:100万区域地震构造图编制技术规范	
A-04	场地地震工程地质条件调查技术规范	自然资源部
B-01	地质灾害风险调查评价技术要求(1:50 000)	
C-01	暴雨灾害调查与风险评估技术规范	中国气象局
C-02	冰雹灾害调查与风险评估技术规范	
C-03	大风灾害调查与风险评估技术规范	
C-04	低温灾害调查与风险评估技术规范	
C-05	干旱灾害调查与风险评估技术规范	
C-06	高温灾害调查与风险评估技术规范	
C-07	雷电灾害调查与风险评估技术规范	
C-08	台风灾害调查与风险评估技术规范	
C-09	霜冻灾害调查与风险评估技术规范	
D-01	暴雨频率图编制技术要求	
D-02	中小流域洪水频率图编制技术要求	
D-03	洪水灾害隐患排查技术要求	
D-04	山丘区中小河流洪水淹没图编制技术要求	
D-05	干旱灾害风险调查评估与区划编制技术要求	

— 3 —

附件

第一次全国自然灾害综合风险普查评估与区划类技术规范（试点版）清单
(45项, 另发电子版光盘)

序号	技术规范名称	责任部门
地震-01	地震危险性图编制规范	中国地震局
地震-02	地震灾害风险评估技术及数据规范	
地震-03	建(构)筑物地震灾害隐患等级评定方法	
资源-01	地质灾害风险调查评价技术要求(1:50000)	自然资源部
资源-02	海洋灾害重点隐患调查与评估技术规范-海岸防护	
资源-03	海洋灾害重点隐患调查与评估技术规范-渔港	
资源-04	风暴潮灾害风险评估和区划技术导则	
资源-05	海冰灾害风险评估和区划技术导则	
资源-06	海浪灾害风险评估和区划技术导则	
气象-01	全国气象灾害风险评估技术规范-暴雨	中国气象局
气象-02	全国气象灾害风险评估技术规范-冰雹	
气象-03	全国气象灾害风险评估技术规范-大风	
气象-04	全国气象灾害风险评估技术规范-低温	
气象-05	全国气象灾害风险评估技术规范-干旱	
气象-06	全国气象灾害风险评估技术规范-高温	
气象-07	全国气象灾害风险评估技术规范-雷电	

— 3 —

制订了47项调查类、45项评估区划类普查技术规范，为推动建立全国自然灾害风险防范信息管理业务提供技术支撑。

47 survey and 45 assessment division survey technical specifications have been formulated to provide technical support for promoting the establishment of national natural disaster risk prevention information management.



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