

Adaptation Strategies in China on the Impact of Glacier Melting and Rising Sea Level

UNEP 联合国环境规划署

National Development and Reform
Commission 国家发改委

Ministry of Science & Technology 科技部

Ministry of Environmental Protection 环保部

Chinese Academy of Sciences 中科院

State Oceanic Administration 国家海洋局

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I. Science-Based Knowledge

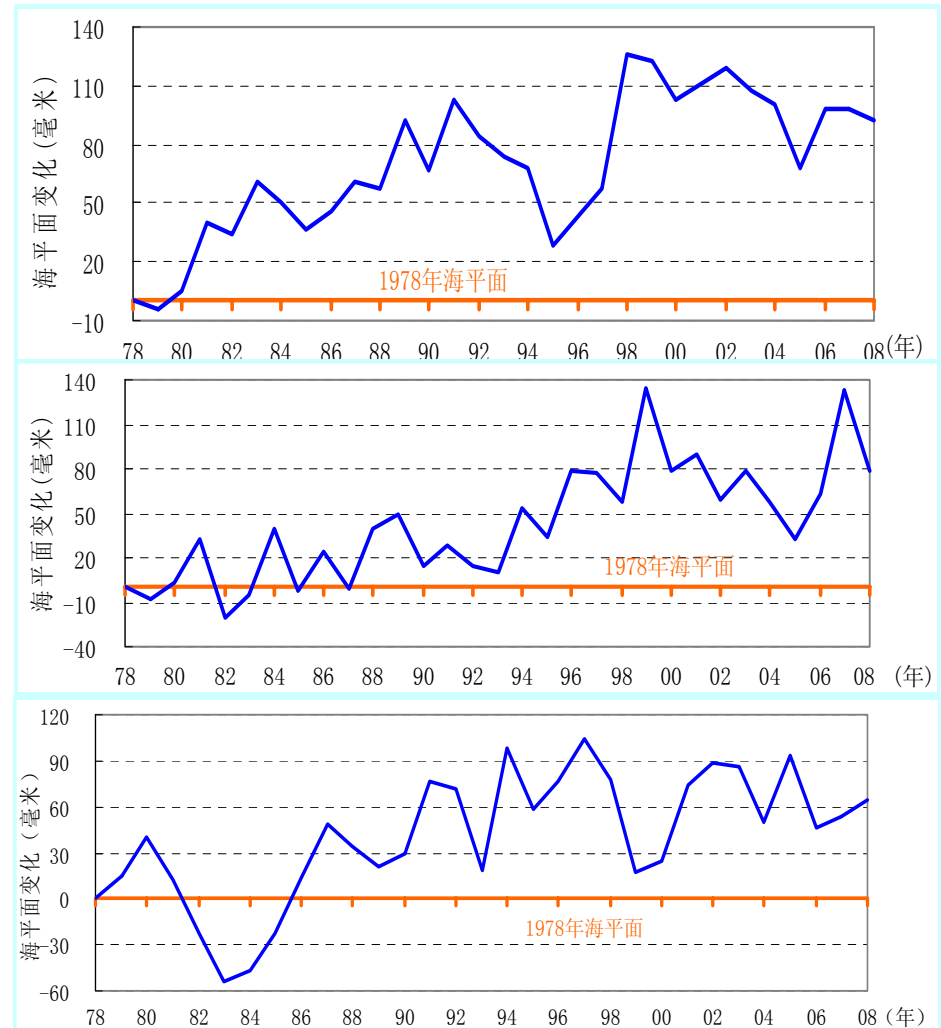
基于科学的知识

Rising sea level of 3 most vulnerable coastal areas (1978-2008): 3个脆弱沿海区域
42% population, 72% GDP

- Yangtze River Delta
长江口三角洲 **104mm**;

- Pearl River Delta
珠江口三角洲 **80mm**;

- Tianjin coastal area
天津沿海 **65mm**.



Major Impacts: Disaster Intensity

主要影响：海洋灾害加剧

- CC+RSL: 气候变化+海平面上升

Short Term: 短期

- Storm surges 风暴潮
- Huge waves 巨浪

Mid & Long Term 中长期

- Saltwater Tides 咸潮

- RSL: 海平面上升

Long Term: 长期

- Coastal Erosion 海岸侵蚀
- Sea water intrusion, soil salinization 海水入侵，土壤盐渍化



天津港 Port of Tianjin, 2009



Coast erosion

Glacier Melting in North-West China: 西北地区冰川融化

- 4% population, 22% land area
- Annual precipitation is <200mm
- 60% glacier area of China
- Less developed

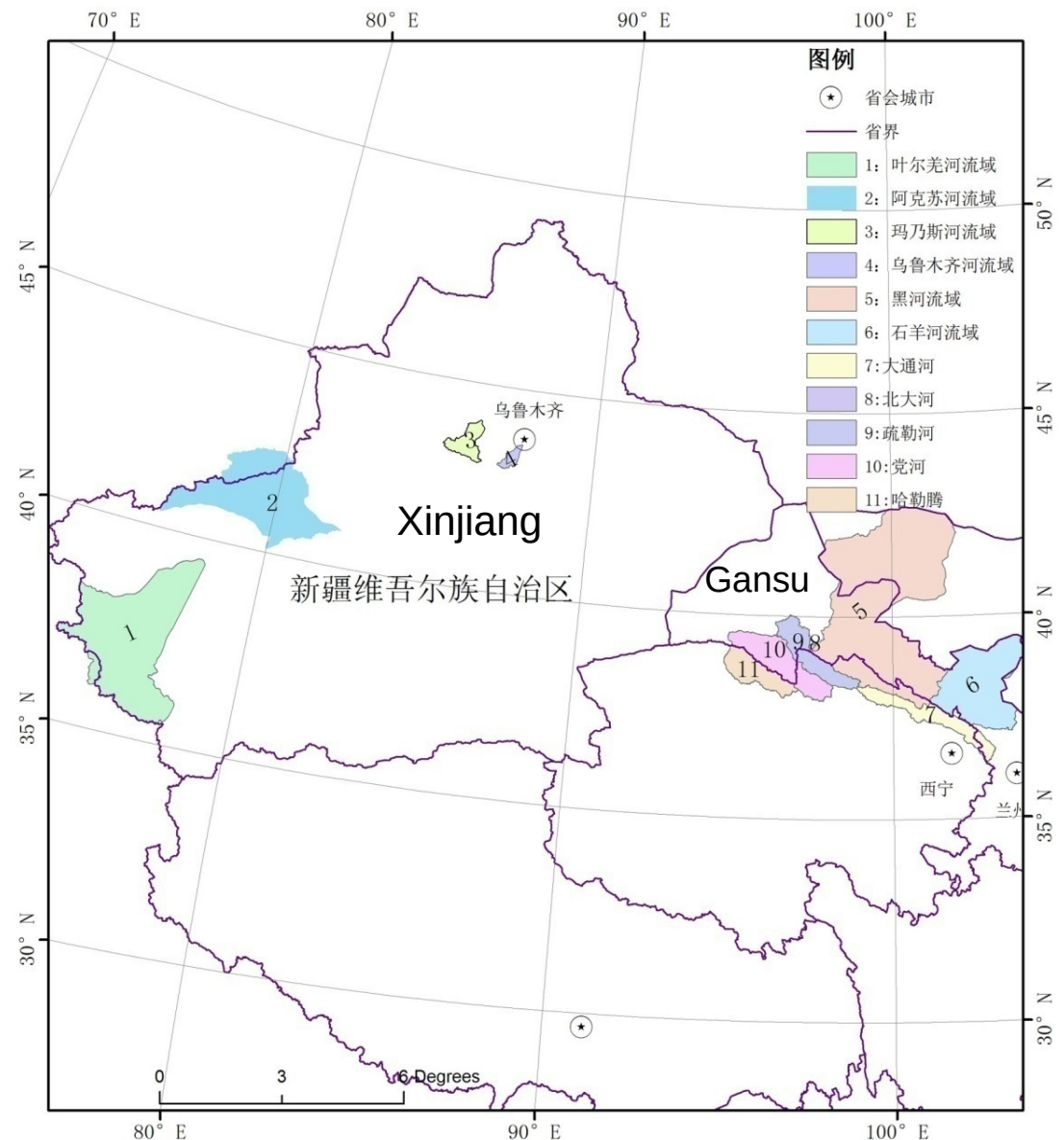


The Impact on River Basins

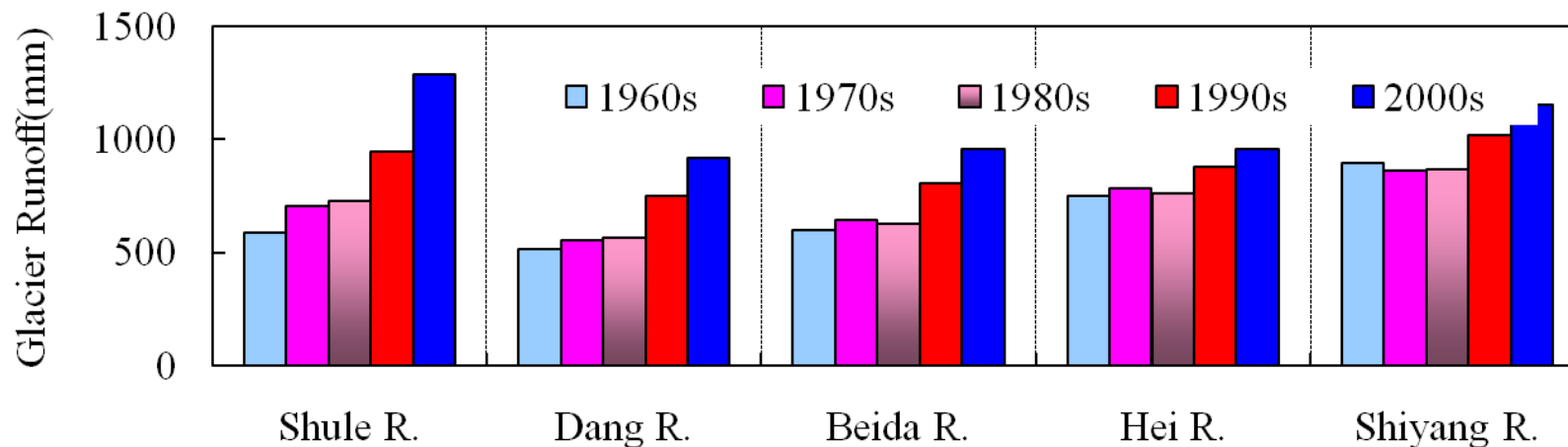
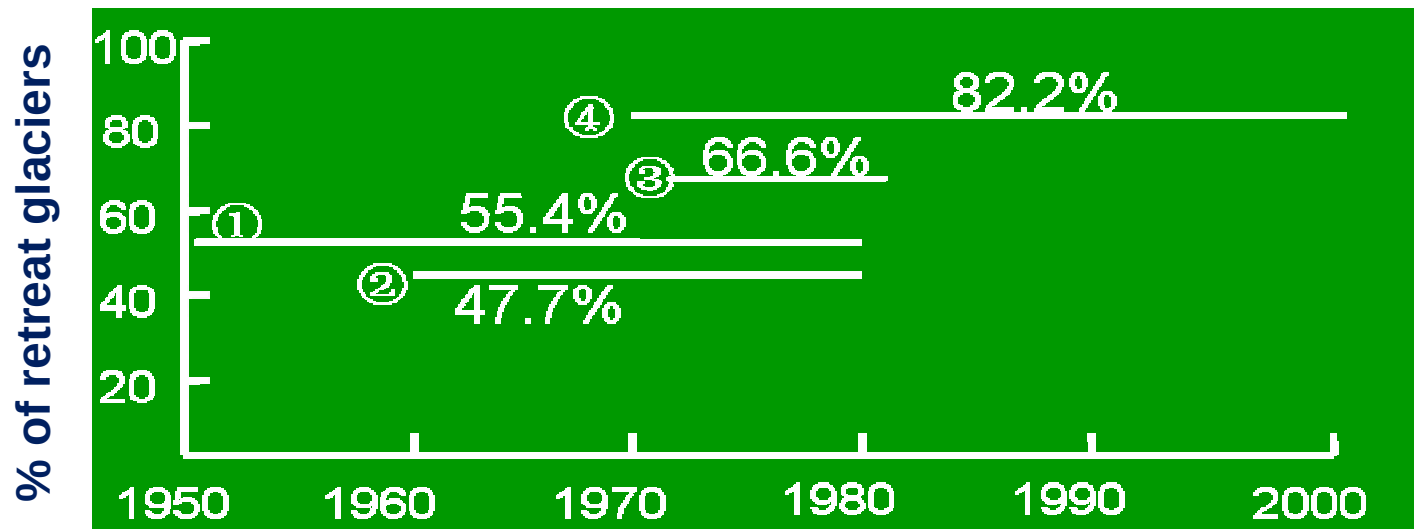
对流域的影响

1. Yarkant 叶尔羌河
2. Aksu 阿克苏河
3. Manas 玛纳斯河
4. Urumqi 乌鲁木齐河
5. Heihe River 黑河

- The estimated annual meltwater runoff amounts to 60.4 billion cubic meters, about 40% in inland North-West China 冰水年径流占西北内陆总量的40%



Major Impacts: Glacier Retreat Intensity & Increase water runoff 主要影响：冰川退后加剧&水径流增加



II. Integrating Climate Change Adaptation into National Strategy & Policy

将气候变化适应纳入国家战略&
政策

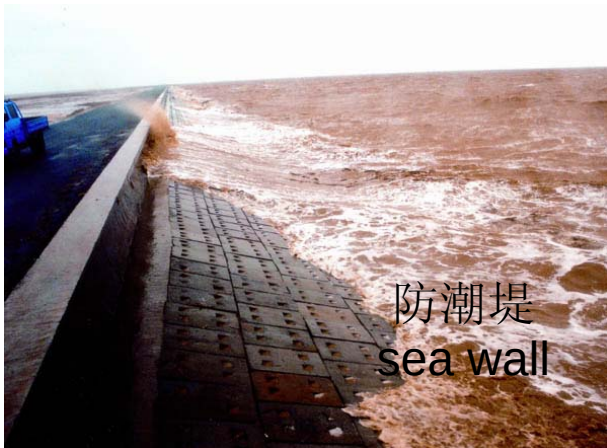
Policy and Action Plan

政策和行动方案

- Formulating national strategies and policies in 12th 5-Year Plan 气候适应国家战略和政策进入十二五
- Formulating provincial strategies and plans 制定省级战略和计划
 - Impact Assessment of Glacier Melting in Himalaya Regions on Social-Economic Development of Northwest Region and Adaptation Strategy 冰川融化对西部地区社会经济影响及适应战略
 - Impact Assessment of Glacier Melting on Social-Economic Development of Gansu and Xinjiang Provinces and Adaptation Strategy 冰川融化对甘肃和新疆省社会经济影响及适应战略
 - Impact Assessment of Rising Sea-Level on Social-Economic Development of Coastal China and Adaptation Strategy 海平面上升对沿海地区
 - Impact Assessment of Rising Sea-Level on Social-Economic Development of Zhejiang & Guangdong and Adaptation Strategy 海平面上升对浙江和广东省的社会经济影响及适应战略

RSL Adaptation Practices措施

- Build new protective measures 修建新的防护措施;
- Seaside wetlands conservation 滨海湿地保护
- Comprehensive treatment to the water channel at the river estuaries 综合治理河口水道
- Control land subsidence 控制地面沉降
- Adjust suburban industrial structure 调整近郊产业结构
- Seawater utilization and desalinization 海水直接利用和淡化
- Enhanced industrial pollutant emission control management and regulations 加强工业排污管理和法规



防潮堤
sea wall



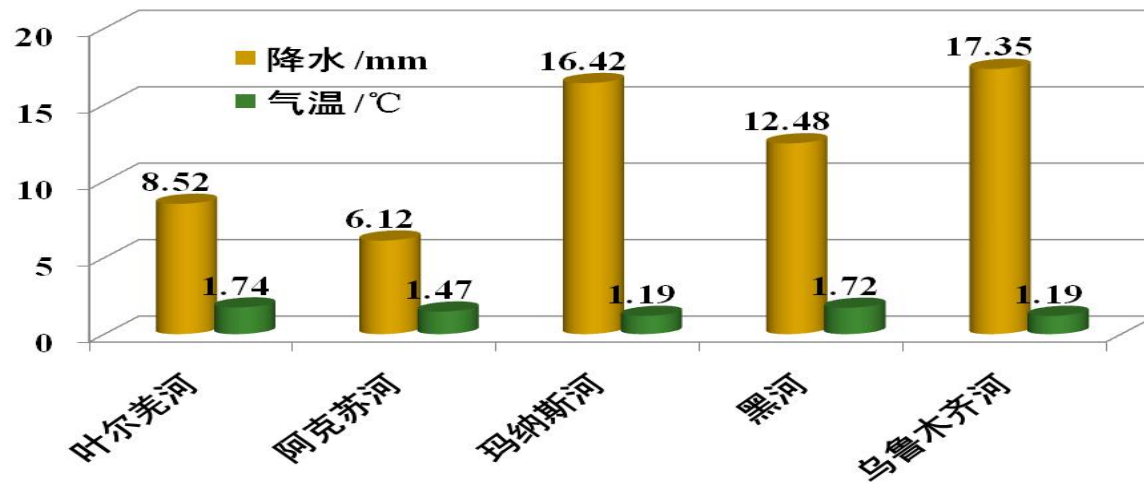
防潮闸
water gate



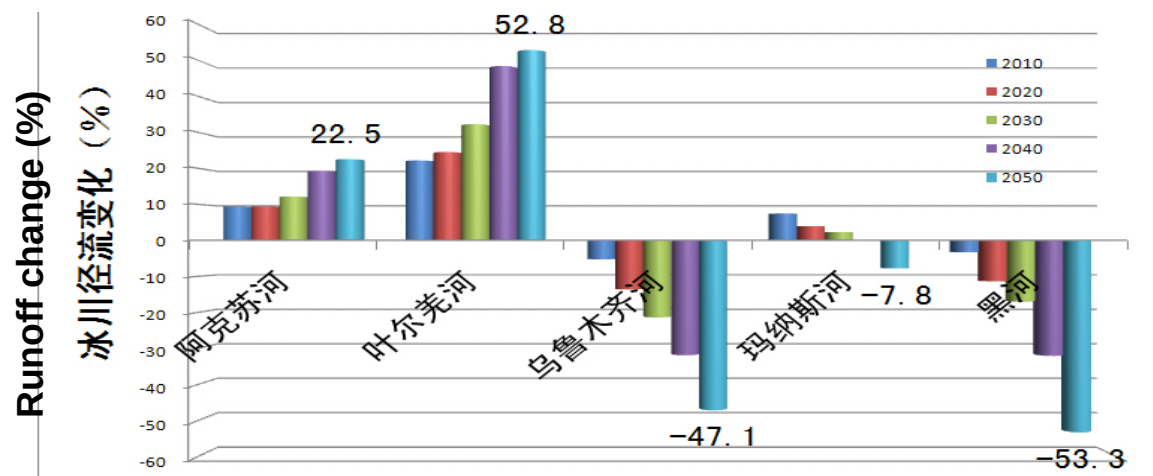
防护林
protective coastal forest

GM Adaptation Practices措施

- Water resource utilization for semi-arid regions 半干旱地区的水资源利用



- Risk assessment 风险评估:
 - Glacier lake, flood, arid 冰湖, 洪水, 干旱
- Glacier water availability & utilization 冰川融水的可用性&利用
 - Agriculture 农业
 - Industry 工业
 - Ecosystem 生态



III. Capacity Building on CC Adaptation in China

适应气候变化的能力建设

- Training workshops on capacity building of Southeast and Northeast Regions for provincial government officers were held, in total >120 officers were trained. 举办区域级政府官员组织能力建设培训，共有120多位学员接受培训
- Training manuals 完成培训手册
- Website on climate change adaptation setup. 搭建气候适应网站

