The Application Of Ecosystem-Based Disaster Risk Reduction For Urban High Temperature Disasters In China

MAO Junjun , BO Mingyang, DAI Daixin *
1.College of Architecture and Urban Planning, Tongji University, Shanghai, China
2.State Key Laboratory of Civil Engineering Disaster Prevention, Tongji University, Shanghai, China
Foundation: Top Discipline Plan of Shanghai University-Class I （22-3-YB-13）
E-mail: 516627658@qq.com

Introduction

China is a country with very serious natural disasters, complex environment, and a variety of natural disasters. With China move towards the construction of ecological civilization, China's urban comprehensive disaster prevention has undergone a transformation from engineering disaster prevention to "adaptation and coexistence". At present, ECO-DRR, as an emerging concept, is still insufficiently researched in China's ecology, climate change, urban design, and other fields. Therefore, we will introduce two practical cases in solving urban high-temperature problems, and analyzes the cases from the perspective of traditional Chinese wisdom and the theory of ECO-DRR. This shall facilitate the international exchange of relevant case research and provides some helpful experience and reference.

Eco-DRR

Ecosystem-based disaster risk reduction is a more sustainable approach to DRR and climate change adaptation (CCA).

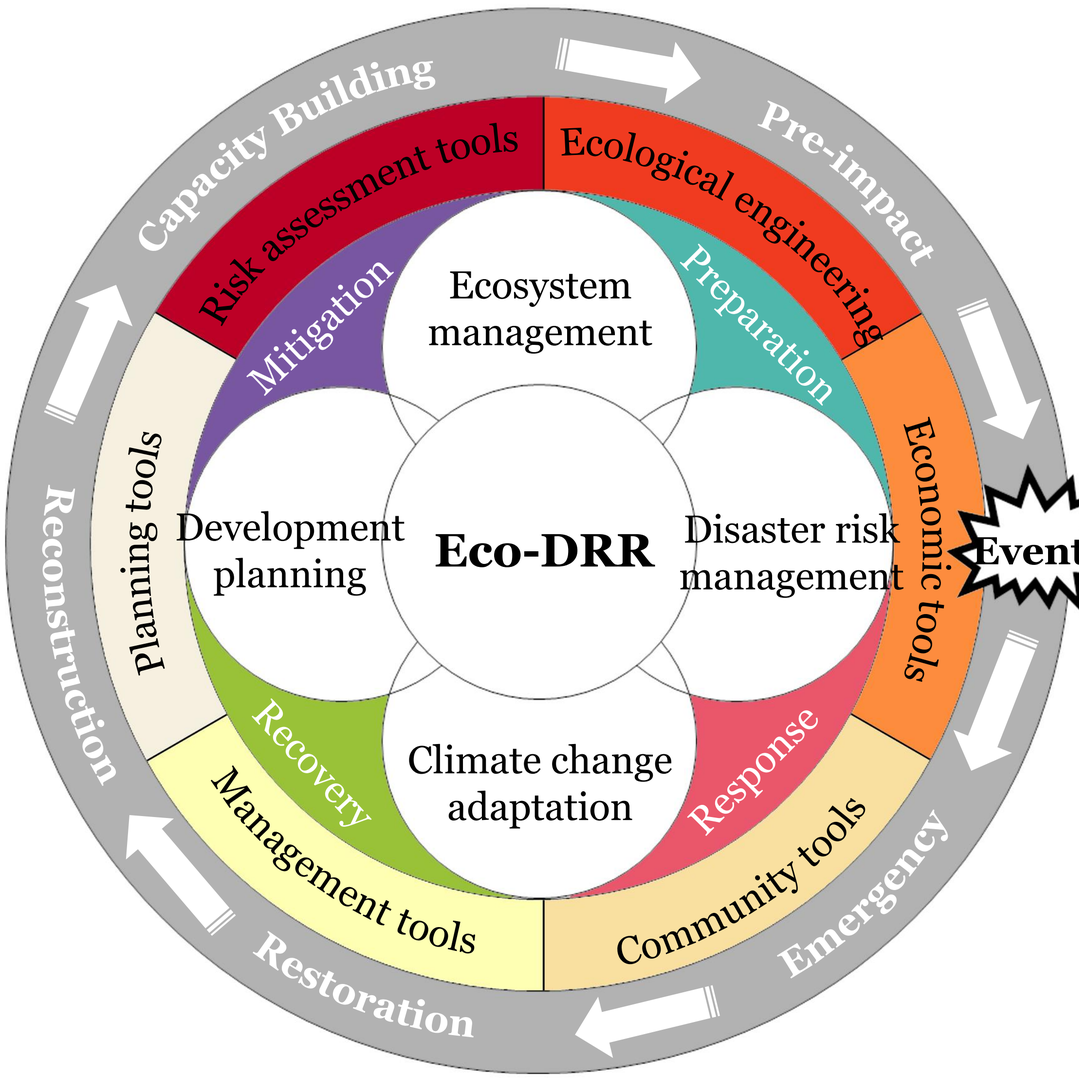

Fig1.Eco-DRR framework

1. Site research	Understand the current situation
2. Core issues	High-risk Disasters
3.Risk assessment	Hazard / Exposure / Vulnerability
4. Approaches	Focus on reducing exposure and vulnerability to hazard impacts
5. Instruments	Select reasonable instruments of different approaches

Fig2.Eco-DRR implementation steps

Planning Approaches	Management Approaches		Formal Process
Spatial Planning	Integrated Coastal Zone Management (ICZM)	Integrated Fire Management (IFM)	Environmental Impact Analysis (EIA)
Land Use Planning	Integrated Water Resource Management (IWRM)	Protected Area Management (PAME)	Strategic Environmental Assessment (SEA)
Urban Planning	Community-based Natural Resource Management (CBNRM)	Sustainable Land Management (SLM)	....

Fig3.Eco-DRR instruments

Case studies

Take Chongqing Municipality and Ruyuan County in China for example, which both suffer from severe high-temperature disasters, to describe how to use Eco-DRR such as high-temperature risk assessment, heat island mitigation, and ventilation corridors to prevent high temperatures.

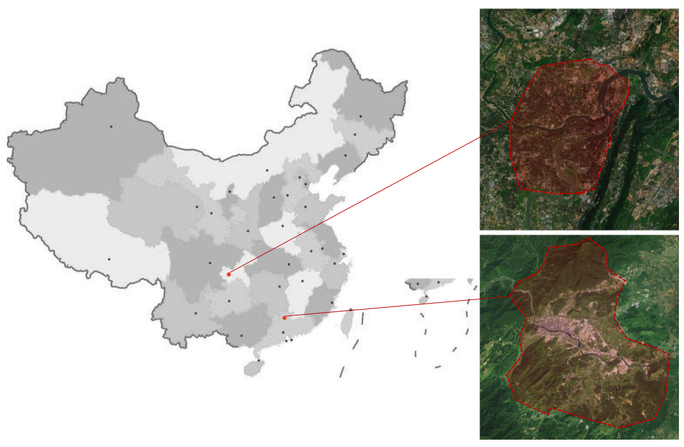

Fig4.Study areas

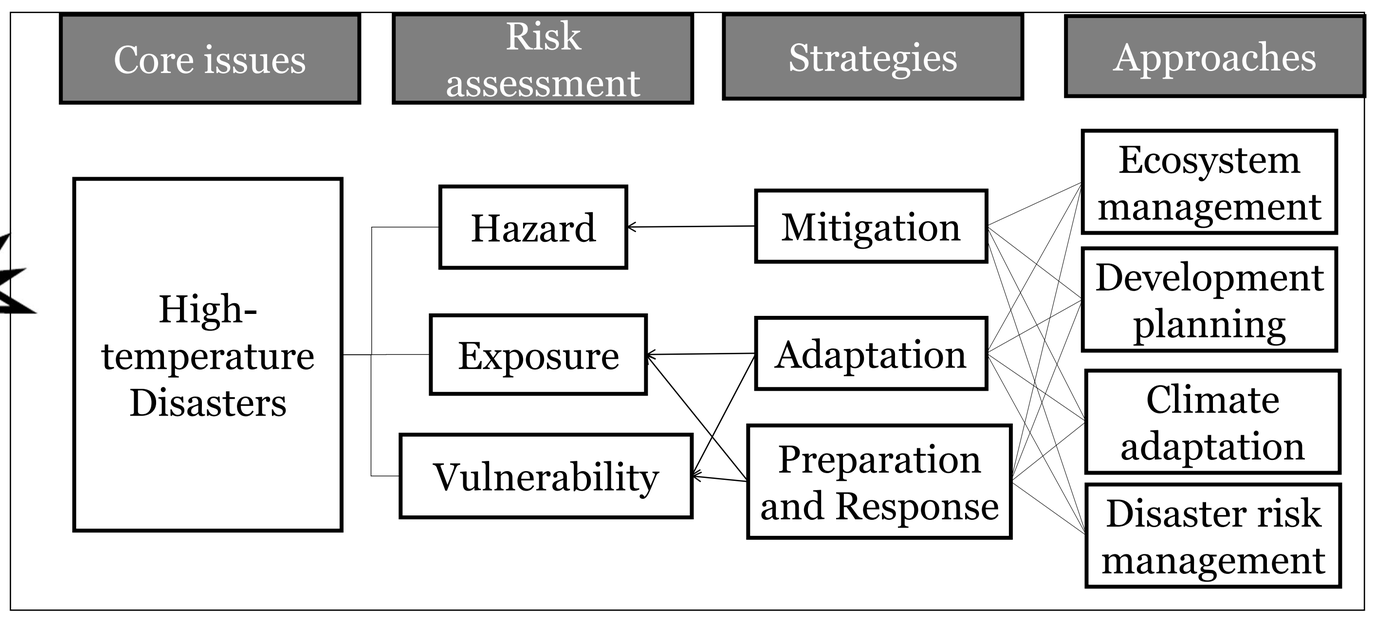

Fig5.Eco-DRR implementation of the case

Compare traditional Chinese wisdom with Eco-DRR

Traditional Chinese wisdom and Eco-DRR have in common in dealing with high-temperature disasters, such as the construction of urban ventilation corridor, building lighting and ventilation, and the use of plants and water。

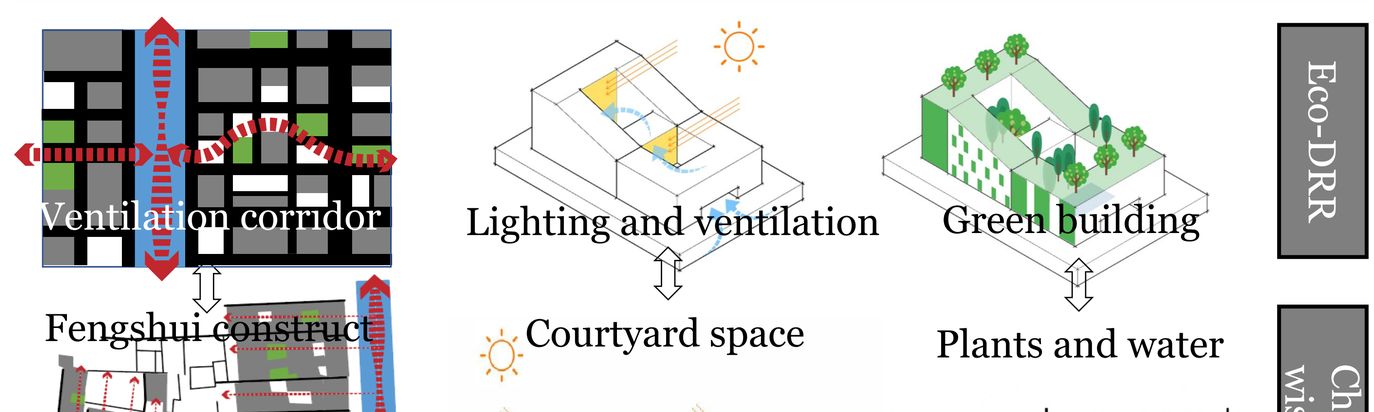

Fig6.Eco-DRR compared with Chinese traditional wisdom

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