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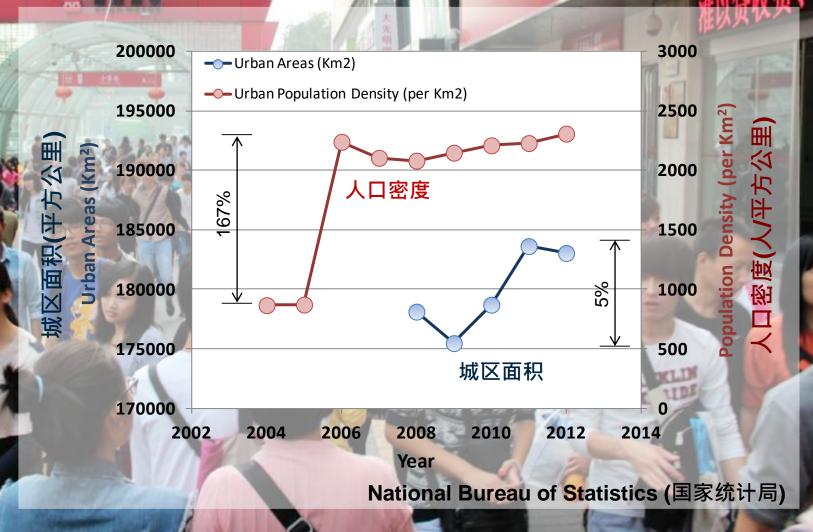


With up to 75% of GDP today coming from the urban areas, the quality and efficiency of Asian cities will determine the region's long-term productivity and overall stability.

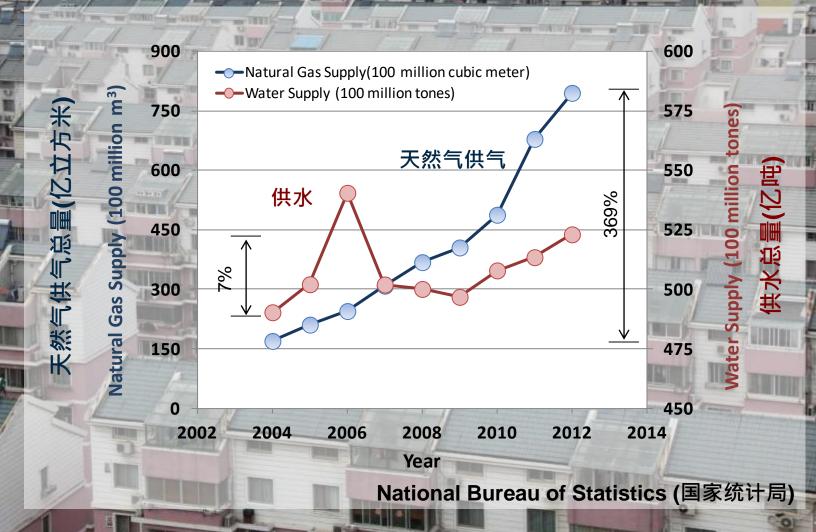
考虑到亚洲城市可产生上至75%的国民生产总值,城市 发展的质量和有效性将决定其区域的长期生产率和整 体稳定性.



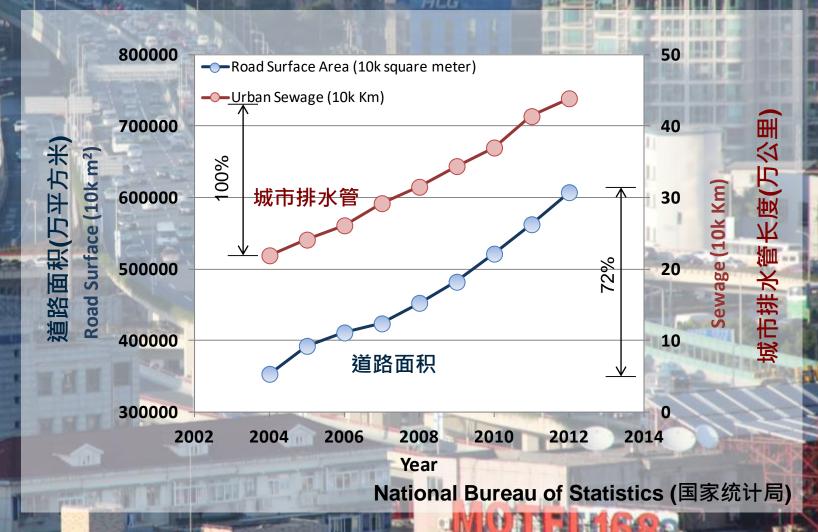
Urbanisation in China 中国的城市化



Urban Energy and Water Consumption 城市能源和水的消耗



Urban Infrastructure Service 城市基础设施







Contents (内容)

- Approaches for policy development
 制定政策规定的一些方法
- Urban development models and scenarios
 城市发展模型和预测
- National climate change and extreme climatic hazard mapping 全国气候变化及其相应极端气候灾害图
- Development of climate response and adaptation policy stances 制定气候应对和适应政策的可能模式
- Policy stances assessment 政策模式的评估
- Conclusions 结论

Questions in Policy Development

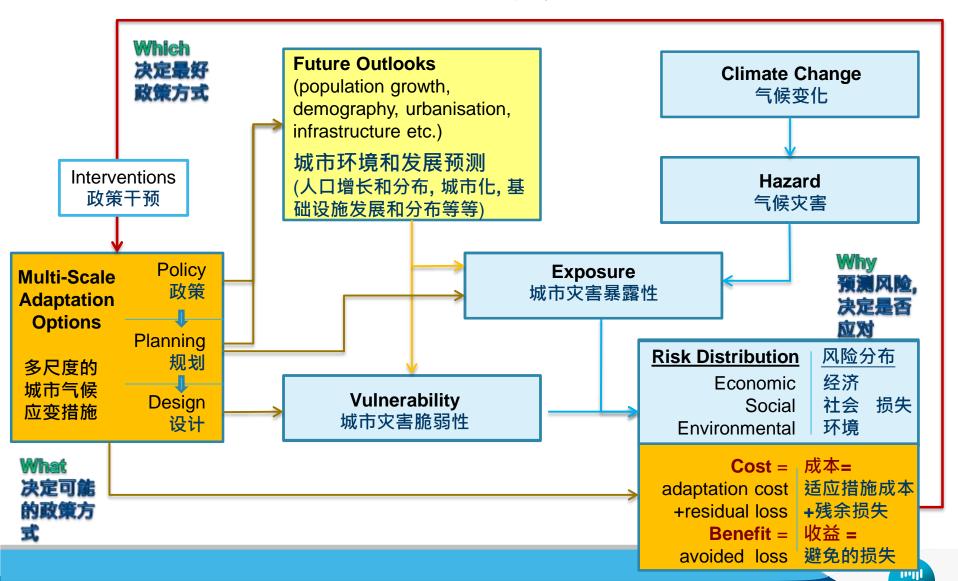
制定政策时所要回答的问题

Analyse potential losses to justify policy actions required (1)to mitigate the losses 需要应对吗? 分析潜在损失来确定是否制定相应政策弥补损失 **ANY ACTION?** Analyse vulnerability at both spatial and temporal scale 2 to identify what the policy targets and where 分析在空间和时间尺度上的薄弱环节来确认政策导向 WHERE TO **INVEST?** Identify what policy options are available to reduce 3 vulnerability at both spatial and temporal scale 在空间和时间尺度上确认可能政策方式来减少薄弱环节 WHAT 有什么选择? **OPTIONS?** Identify which policy option is the best or better (4)considering overall lifecycle costs and benefits **BEST OR** 哪是最好或较 考虑政策周期的整体成本和收益确认最好或较好政策模式 **BETTER** 好的方式? OPTION(S)? Identify policy implementation pathways in terms of (5) feasibility, applicability and robustness including M&E **HOW TO** 考虑政策可行,可用和可靠性,结合监测和评估,制定政策实 如何实行? 施途径



Risk-Management-Based Policy Development Approach

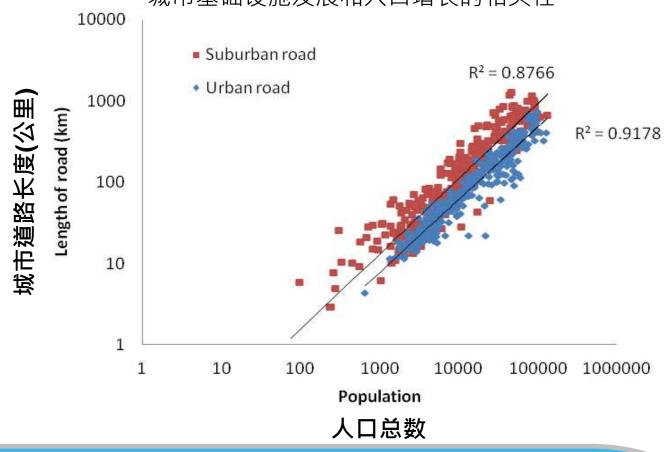
基于风险管理制定城市气候应变政策的方法



Urban Growth Model for Future Scenario Projection

城市增长模型及将来城市发展预测

Correlation between infrastructure development and urban population growth 城市基础设施发展和人口增长的相关性



Source: CSIRO Climate Adaptation Flagship (2014). National responses to current and future hazards to residential housing, CSIRO, Australia Diagram was developed by Tim Bayne



Scenarios of Urban Growth

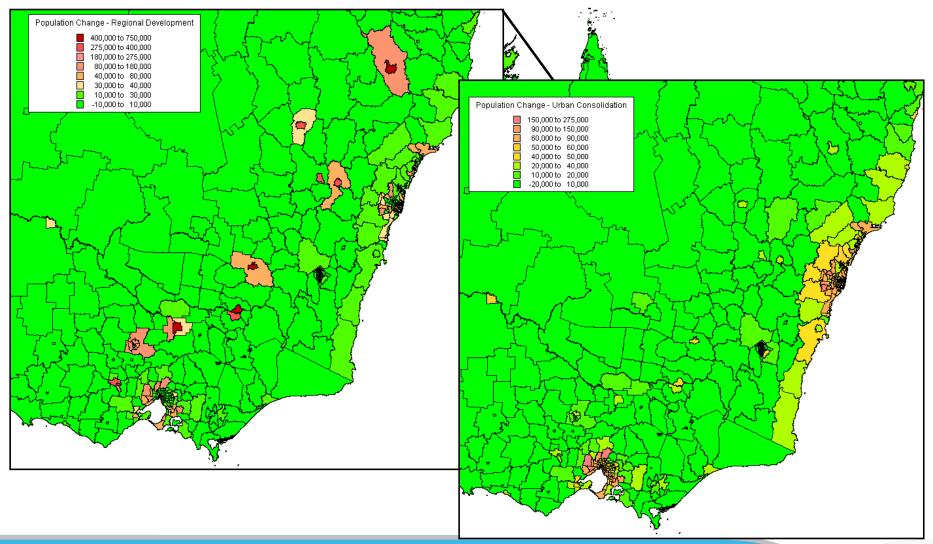
城市发展模式

- The business as usual case to allow population growing until population density reaches specific thresholds, then 'spill' into neighbouring. 基本城市发展模式假设人口在每个城市区域增长到一定程度后人口开始 迁移到相邻城市区域.
- Urban Consolidation (UC) to allow population growing in urban areas until population density reaches 1000 person/ha. 高密度城市发展模式假设人口在每个城市区域可增长至高达每公顷一千
- Inland Regional Development (RD) to allow growing population migrating to the selected inland regional centres.
 - 区域性城市发展模式假设在每个城市区域增长到一定程度后人口开始迁 移到邻近的地区性城市.



Population Distribution – current and future

现在和将来的人口分布

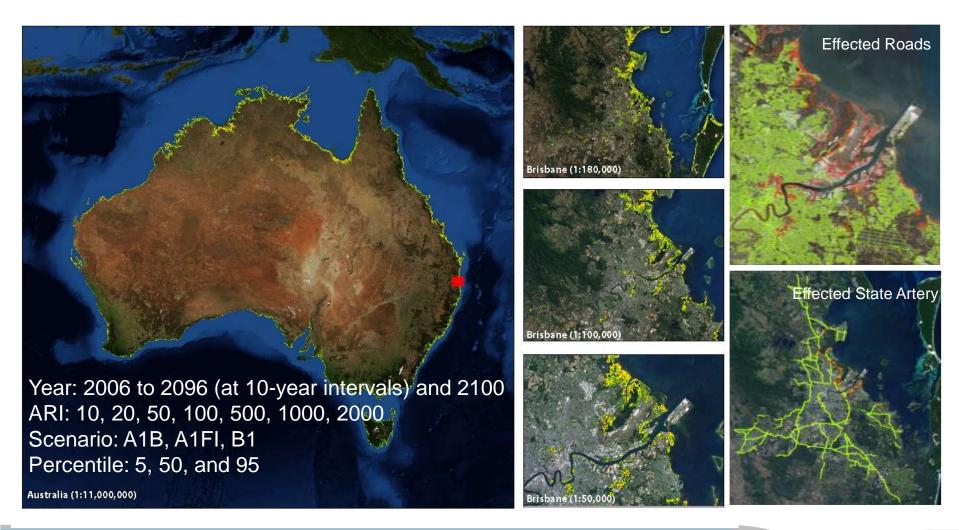


Source: CSIRO Climate Adaptation Flagship (2014). National responses to current and future hazards to residential housing, CSIRO, Australia Maps were developed by Tim Bayne



Coastal Inundation at Multiple Scales and Severity

多尺度和多强度下的全国沿海水灾危害图



ARI: average Recurrence Interval (平均再现周期)

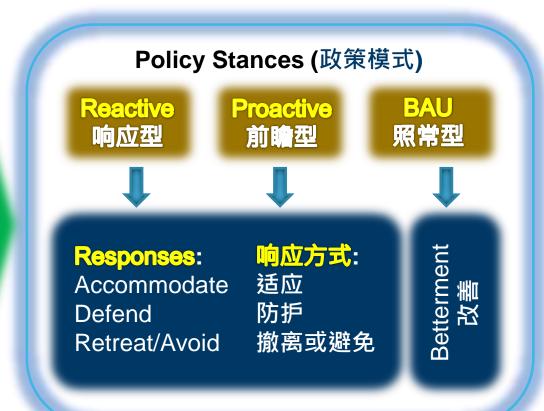


Response and Adaptation Policy Stance

制定气候应对和适应政策的可能模式

Scenarios: 预测

Climate 气候 **Population** 人口 **Urbanisation** 城市化



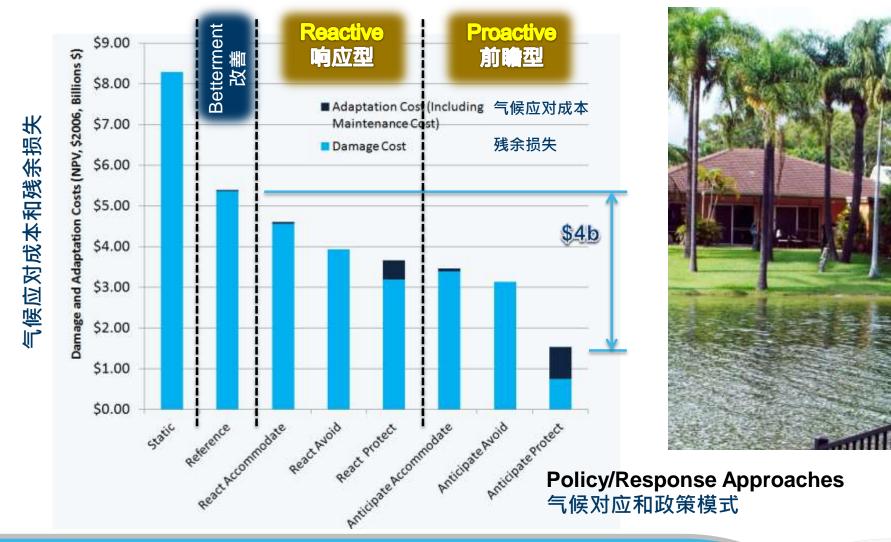
Cost 成本 & **Benefit** 收益

Time and Space (时间和空间)



Total Present Value of Cost for Australian Residential Housing Adapting to Sea Level Rise under Moderate Climate Change Outlook

分析民用住宅应对相对于中等气候变化情况下的海平面上升所引起的总体成本





Total Present Value of Cost for Australian Residential Housing Adapting to Extreme Wind under Moderate Climate Change Outlook

分析民用住宅应对相对于中等气候变化情况下的风灾所引起的总体成本

Applied to new Applied to new and existing assets assets only 同时实施于新老住宅 仅实施于新住宅 300 Damage and adaptation costs (NPV, \$2006 Billions) 气候应对成本和残余损失 气候应对成本 ■Adaptation cost 250 残余损失 ■ Damage 200 150 100 50 Static React **Anticipate** Reference React **Anticipate** Reference



Policy/Response Approaches

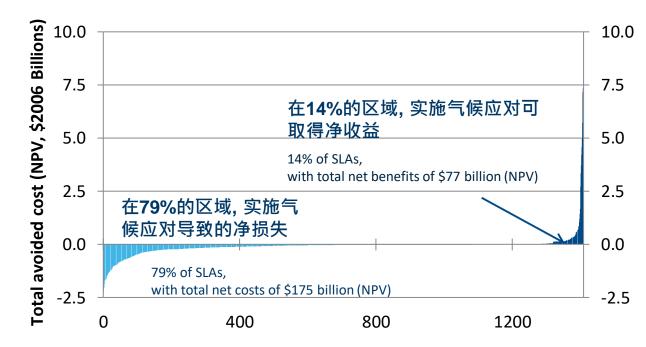
气候对应和政策模式



Geographical Sensitivity in Implementing Adaptation Policies

政策实施的有效性可和地理位置相关



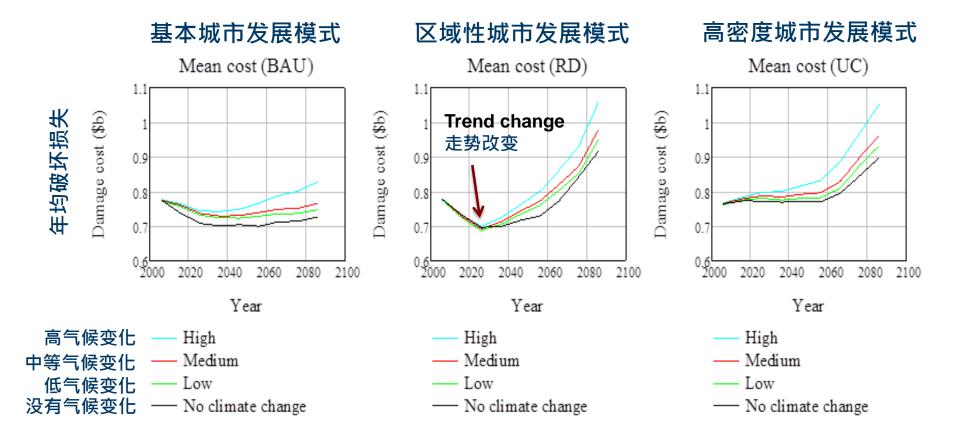


Cumulative Number of SLAs

地理位置



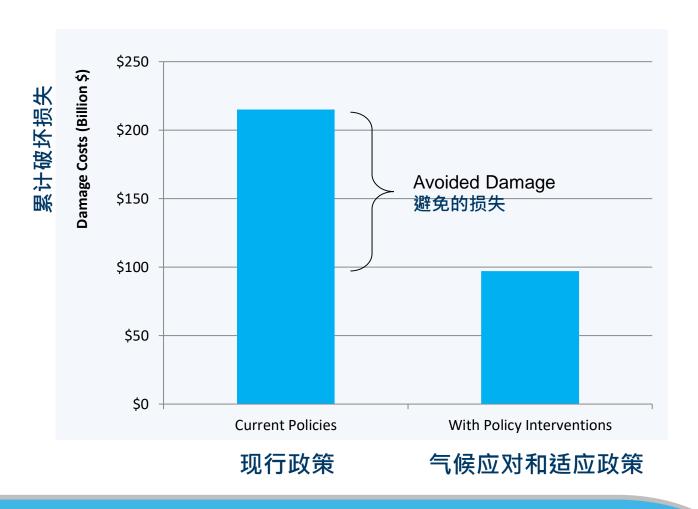
Benefit and Limitation of Existing Planning for Residential Housing to Mitigate Bushfire 现行住宅预防山火的收益和局限之处



Source: CSIRO Climate Adaptation Flagship (2014). National responses to current and future hazards to residential housing, CSIRO, Australia



Benefit to Implement All-Hazard Adaptation 实施全灾害应对和适应的收益





Conclusion (结论)

- Urban policy and planning require a long-term view to consider the implication of climate change and establishment of effective adaptation, eventually leading to great long-term benefits.
 - 城市发展政策和规划需要有考虑气候变化影响和建立有效气候应对的长远 眼光,最后终将获得巨大的长远经济效益.
- Development of climate adaptation policies should be based on risk management and decision-centric approaches, while considering interactions among future urban outlooks in addition to climate leading to impacts on overall risks of cities.
 - 制定城市应对政策需要建立在以决策为导向的风险管理之上,并考虑气候 因素以及其它城市发展因素相互作用导致对整体城市风险的综合影响.
- Implementation of national climate adaptation policy should be thoroughly designed, and its effectiveness could depend on existing policies, climate hazard types, geographical sensitivity.
 - 国家气候应对政策实施需全面考虑,其有效性会依赖于现行政策,气候灾害 的种类,以及区域敏感性.



Climate Adaptation and Sustainable Development

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Leading Research in Climate Adaptation and Sustainable Development