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Climate & Disaster Intelligence Hub

Driving Innovation with Gen AI

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Key Challenges of Understanding Risk

- Limited **data** availability, accuracy and accessibility
- Insufficient (technical) **capacity** and knowledge
- Fragmented risk management **systems**
- **Resource** constraints but need for evidence-base for climate finance



Image Source: Created by OpenAI's ChatGPT DALL-E tool.

The Opportunities using AI

- Limited **data** availability, accuracy and accessibility
- Insufficient (technical) **capacity** and knowledge Transfer
- Fragmented risk management **systems**
- **Resource** constraints but need for evidence-base for climate finance
- Fill data gaps, **complement data** and provide access to information
- Translate complex assessments into **meaningful information** for decision makers and communities
- **Platform** for exchange to streamline information
- **Reduce cost** through automation, new approaches and speed while providing the evidence base for e.g. **more climate finance**



Climate Change
Action Plan



Digital Action
Plan



Disaster Risk
Management
Action Plan

Identify opportunities to scale up climate finance to meet ADB's ambition of \$100 bn climate finance

- **Data Access and Integration** for risk-informed decision making
- **Advanced Analytics and Modelling Tools** for tailored insights and probabilistic scenarios that drive strategic planning and risk management
- **Knowledge Sharing and Learning** facilitating the cross-pollination of ideas and best practices among stakeholders
- **Country Strategy and Project Design Support** ensuring that investments are well-targeted
- **Stakeholder Engagement and Communication** enabling more effective collaboration and coordination among diverse partners and stakeholders

Climate and Disaster Intelligence Hub

- An institution-wide resource center for deeper integration of climate and disaster risk in operations



The Hub’s key objectives to act as an “engine” to:



Enhance
pipeline



Strengthen
Evidence-
Based Insights



Enhance
organisation
efficiency



Stronger
Network



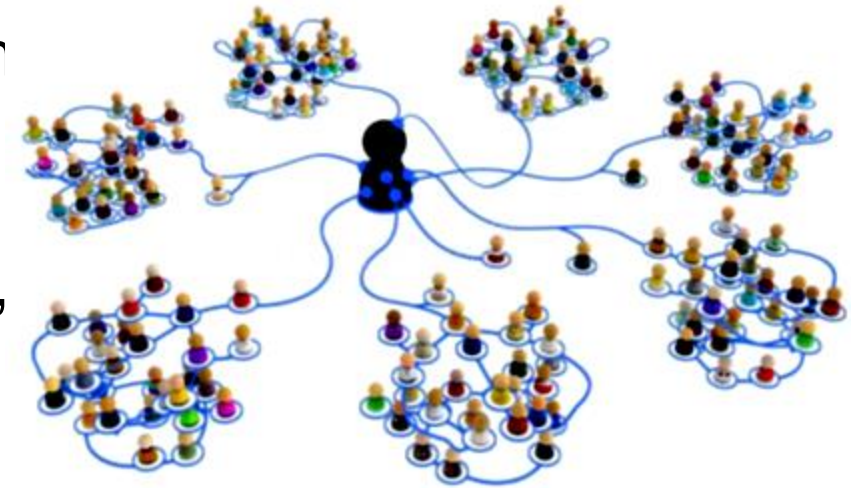
Collaboration

The Hub is underpinned by 2 key principles:

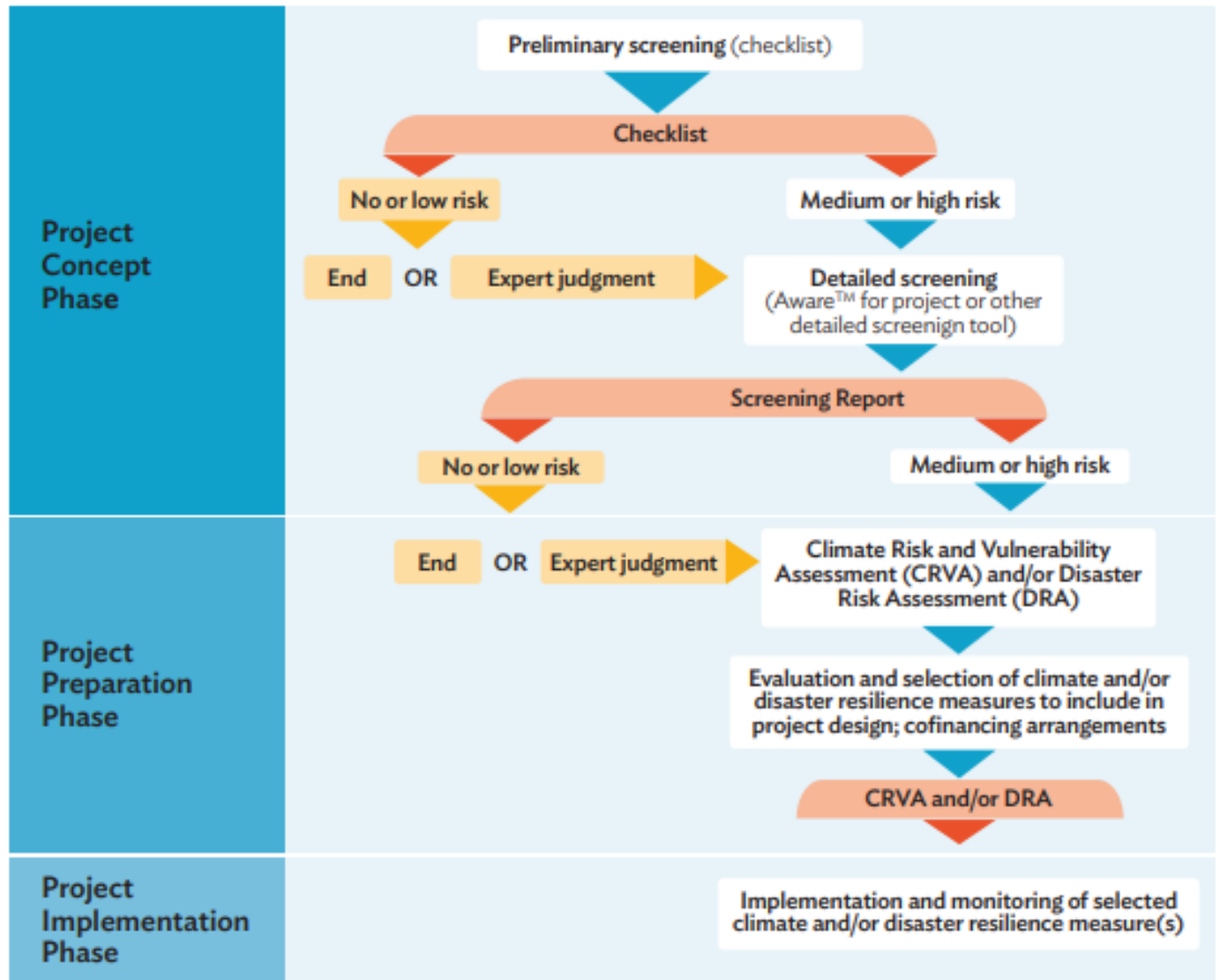
A digital public good, accessible for everyone

Enabled by AI technology

- Collection of primary and secondary **data** sources on potential climate and disaster impact for the relevant geographical area (e.g. specific cities, coastal zones, sub-regions)
- Overlay with data on critical assets; property and other asset value
- Calculation of financial exposure/loss through use of catastrophe **models**
- Identification of resilience investments to reduce risk
- **Visualization** (with/without scenarios) to support decision making



Climate Change & Disaster Risk Management Screening Tool



Source: Adapted from ADB (2014b).

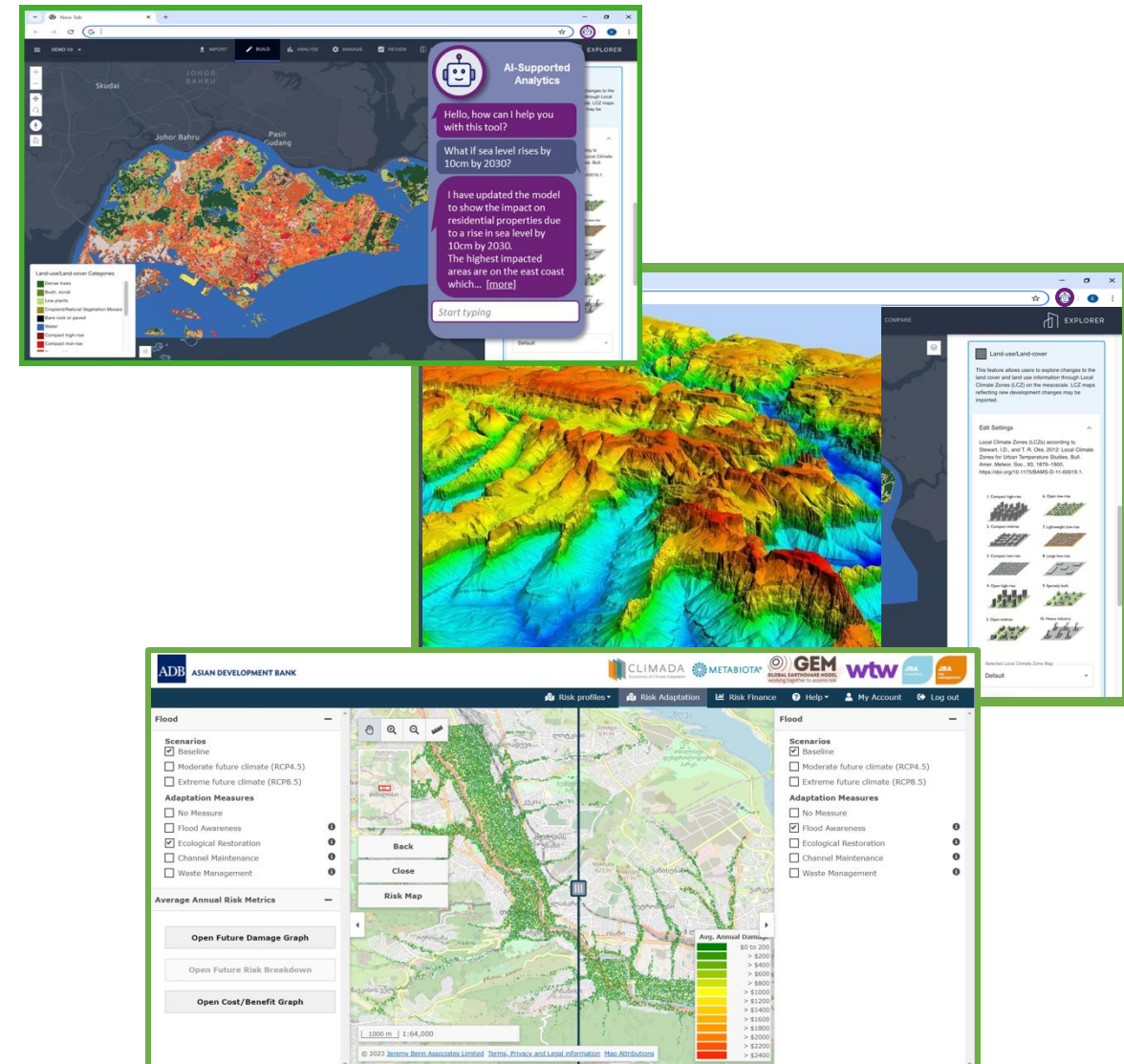
- **Climate and geophysical hazard screening** at the concept development stage
- **Climate risk and adaptation assessment / Disaster risk assessment** prepared for projects at risk
- **Identification and evaluation of adaptation + DRR measures**
- **Monitoring and reporting** of climate risk and adaptation spending

Since 2014

- Need for **high-quality, structured data** to generate accurate results and train AI, however, especially in low-income context, data is scarce, might be outdated or incomplete
 - AI systems excel in pattern recognition but often **lack contextual knowledge** about local environments, social dynamics, and governance structures
 - **Downscaling global models** to local conditions (hazard/exposure/vulnerability) has its own limitations and biases
 - **Lack of transparency** (“black-box”) problematic when decision-makers need clear explanations and high confidence levels to act confidently
- Follow established **data standards** and close data gap first
 - **Data validation** through experts as well as local communities is key
 - Financial exposure needs to be complemented with **assessing broader impact** (access/usability) on critical infrastructure and communities to develop resilient investments
 - clear **communication of limitations** and understanding of uncertainties to make information meaningful for decision makers

Intelligence Hub Pilot phase and Outlook

- **Dynamic Scenario Planning:** Facilitate dynamic scenario planning sessions with clients to identify opportunities for improving local resilience.
 - Digital twin based on MHRA (e.g. Tonga and Cook Islands)
- **Risk Profiles:** Generate analysis outputs tailored to the specific needs and preferences of clients
 - leveraging CAREC tool
- **Data and knowledge system with AI-enabled dashboards:** Risk information with visualization
- **Communication Campaign:** Risk information accessible for non-technical user





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Thank you!



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