FLOOD ADAPT VN

Integrating Ecosystem-based Approaches into Flood Risk Management for Adaptive and Sustainable Urban Development in Central Vietnam

Risk management & climate adaptation approach of FloodAdaptVN

SURE Status Seminar, Berlin

Dominic Sett, United Nations University (UNU-EHS)

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Problem statement

- **Coastal cities** in Central Vietnam (e.g. Hue) are characterized by **high flood risk**, exacerbated by **socio-economic drivers** and **climate change** effects
- Despite meaningful efforts, many **gaps** in research and risk management & adaptation still persist:
  - Strong focus on physical drivers of flood risk
  - Shallow understanding of interconnected risks and cascading impacts
  - Focus on structural solutions
- **Severe impacts** on communities' wellbeing
  - 2020: 243 fatalities, 1.5 mio affected

Sources: Nguyen et al 2021; UN 2020; Haase et al. 2022 [figure]; Linh Nguyen [Photos]

FloodAdapt objectives

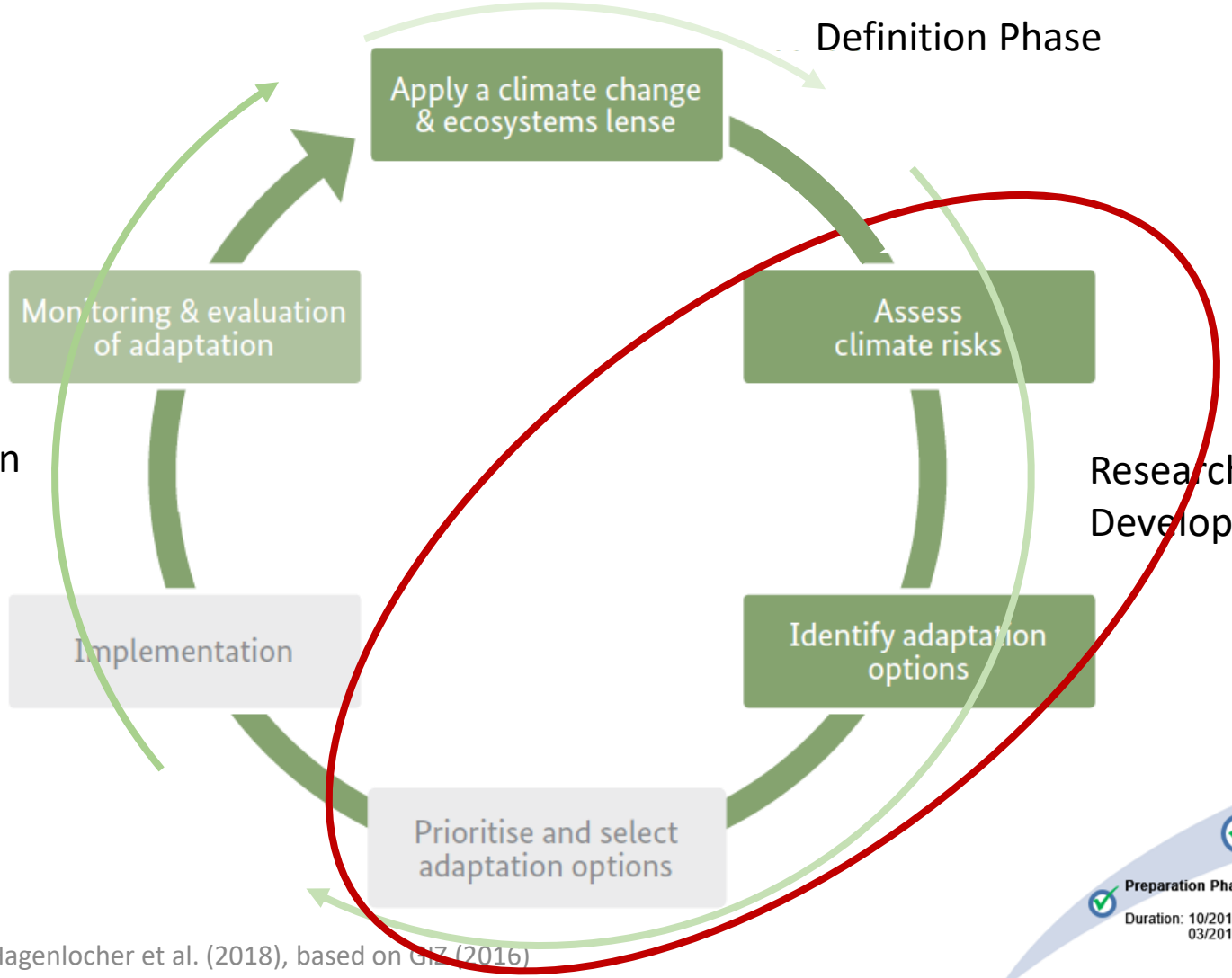
1) Assess and understand **drivers**, **spatial patterns**, and **dynamics** of present-day and future **flood risks**
2) Investigate **entry points** for and **barriers** towards the implementation of risk management and adaptation solutions, particularly **ecosystem-based** adaptation
3) Co-develop **decision support tool** for risk-informed (spatial) planning and prioritizing among different risk management and adaptation measures
4) Foster **capacity development**

FloodAdapt approach

Definition Phase

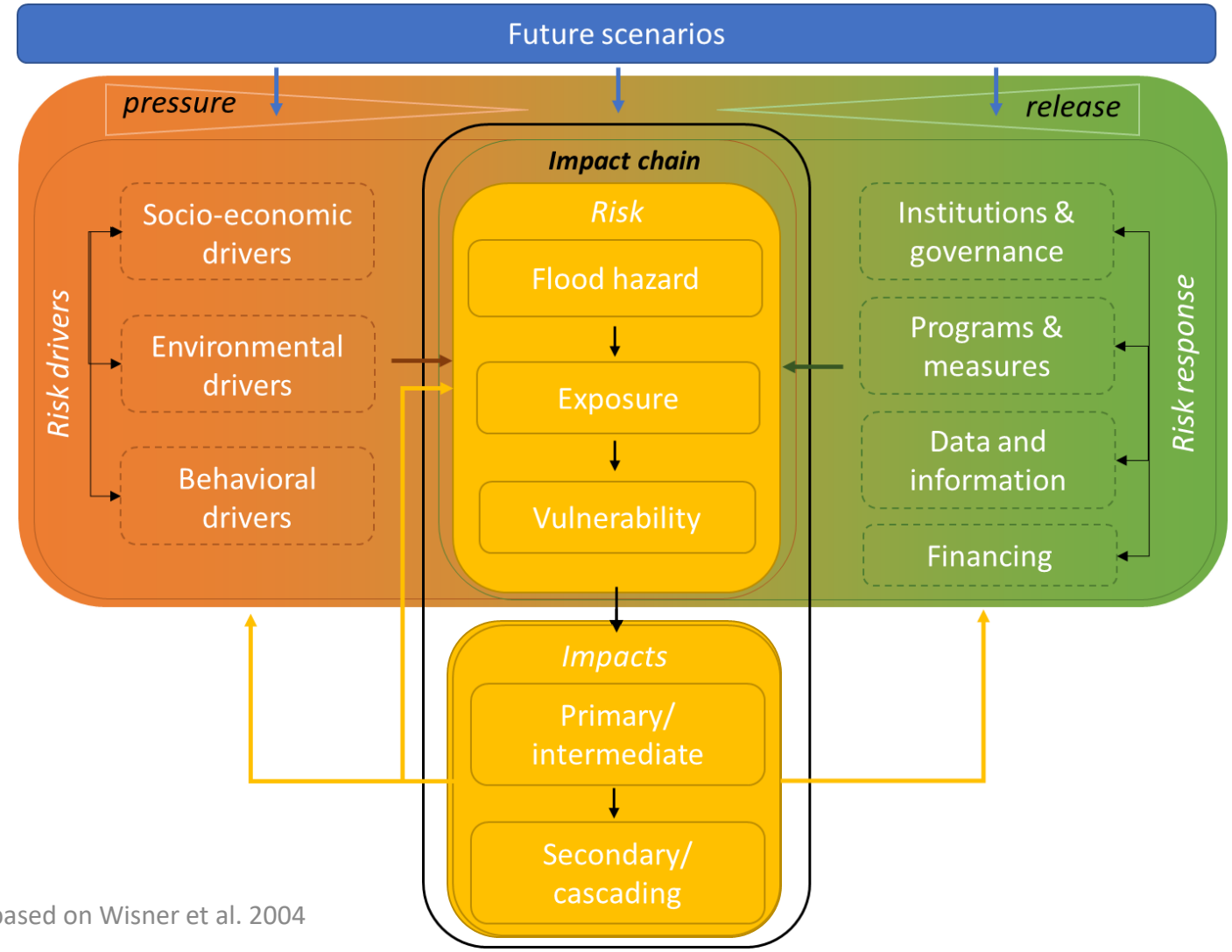
Implementation Phase

Research & Development Phase



Sources: Hagenlocher et al. (2018), based on GIZ (2016)

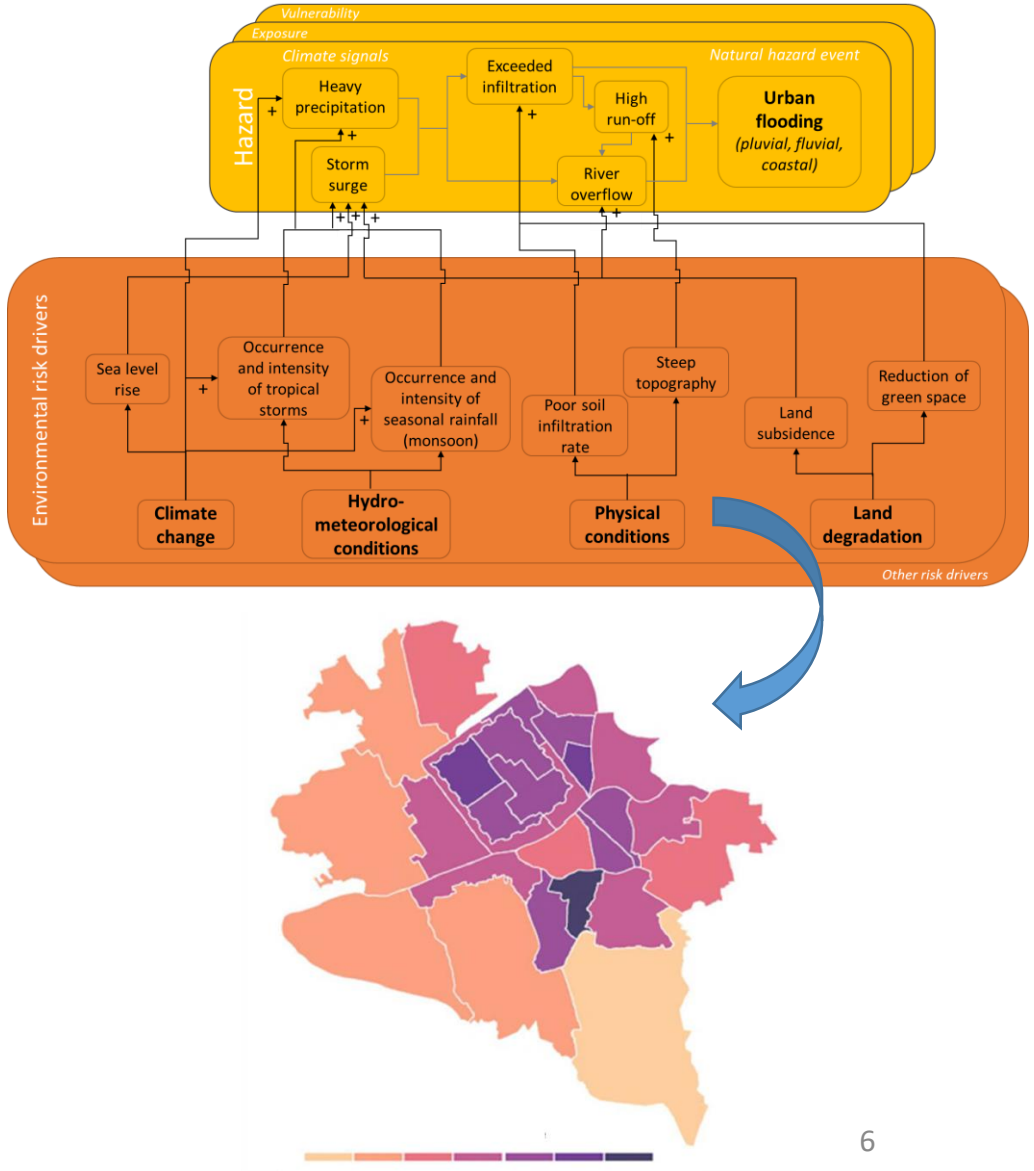
FloodAdapt risk framework



Sources: own figure, partly based on Wisner et al. 2004

I. Risk assessment

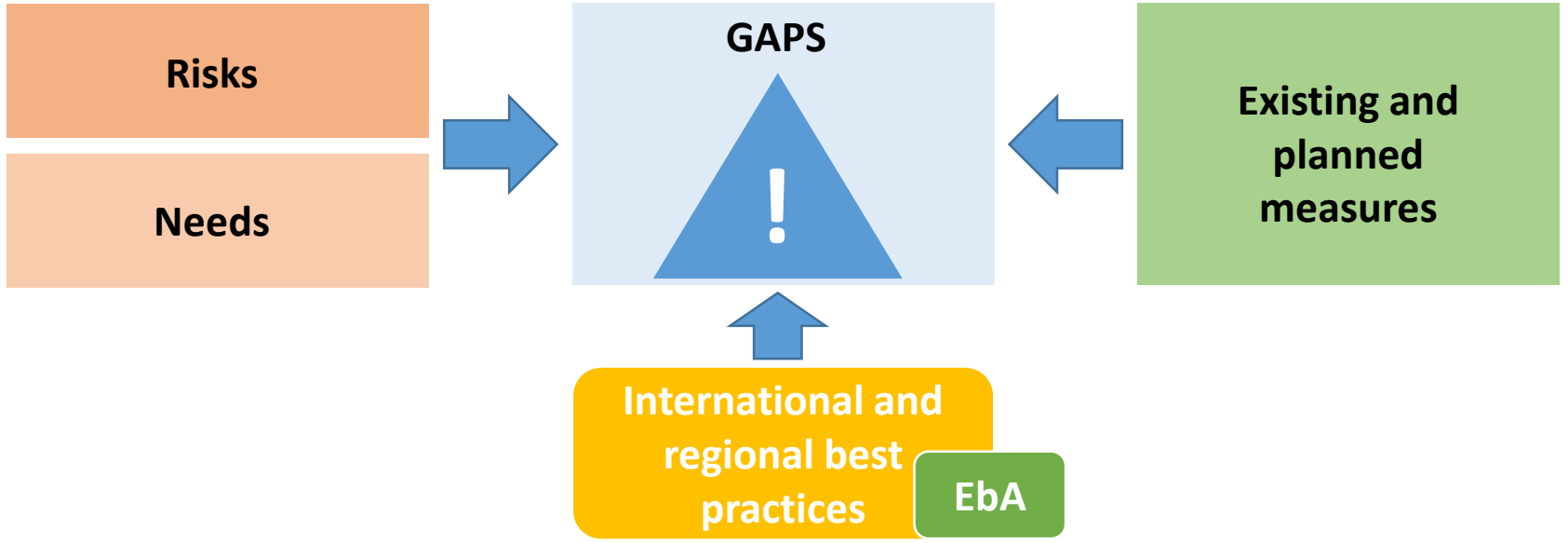
- **Impact chain analysis**
  - Literature review on risk, drivers, response, and impacts
  - Development of impact chains for key risks to highlight interlinkages
  - Discussion of results with VTN stakeholders in workshop and follow-up bilaterals in July
- **Risk index development**
  - Mixed method approach: Flood modelling, asset valuation, vulnerability curves
  - Composite indicator at the sub-province/city scale to identify risk hotspots



Sources: own figure

II. Option identification

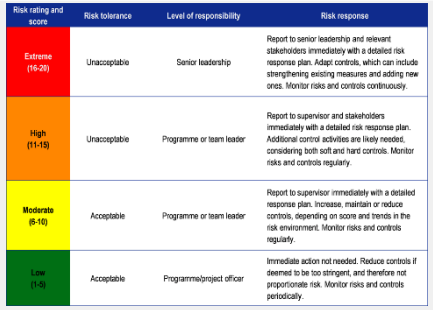
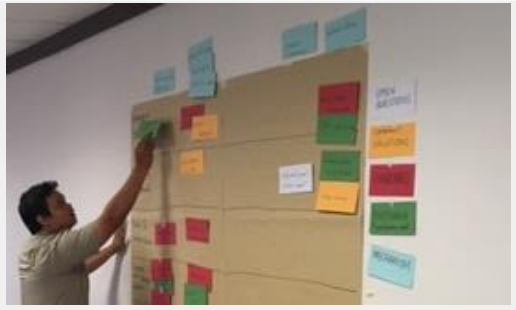
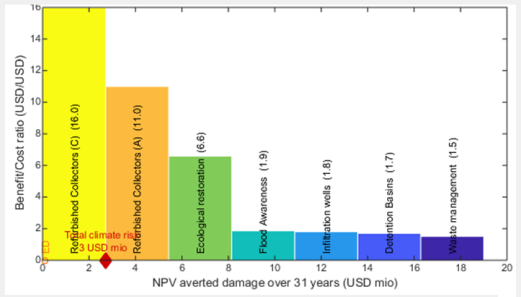
- Starting point: **existing and planned measures**, identified through review of policy documents, literature, interviews and workshops; and **needs and risk** assessment
- Identification of **gaps**
- Selection of additional measures based on **best practices**
- Specific focus on **ecosystem-based** adaptation



Sources: own figure

III. Option assessment

- Several qualitative and quantitative assessment tools (will be) applied to evaluate risk management and adaptation options **before** implementation

Multi-criteria catalogue	Social acceptance assessment	Economics of Climate Adaptation (ECA)	Flood Risk Adaptation Measures & Evaluation (FRAME)
List of criteria for the evaluation of options, derived from literature and policy documents and ranked by VTN stakeholders	Surveys and interviews will be designed to derive households‘ acceptance and stakeholders’ preferences of options	Quantification of benefits of adaptation measures based on modelling of present and future climate risks	Interactive decision-support tool to estimate risk levels based on user-defined parameters
			

Risk rating and score	Risk tolerance	Level of responsibility	Risk response
Extreme (16-20)	Unacceptable	Senior leadership	Report to senior leadership and relevant stakeholders immediately with a detailed risk response plan. Adapt controls, which can include strengthening existing measures and adding new ones. Monitor risks and controls continuously.
High (11-15)	Unacceptable	Programme or team leader	Report to supervisor and stakeholders immediately with a detailed risk response plan. Additional control activities are likely needed, considering both soft and hard controls. Monitor risks and controls regularly.
Moderate (6-10)	Acceptable	Programme or team leader	Report to supervisor immediately with a detailed response plan. Increase, maintain or reduce controls, depending on score and trends in the risk environment. Monitor risks and controls regularly.
Low (1-5)	Acceptable	Programme/project officer	Immediate action not needed. Reduce controls if deemed to be too stringent, and therefore not proportionate risk. Monitor risks and controls periodically.

Summary and outlook

- FloodAdapt will apply **innovative tools** to identify risk management and adaptation options for Hue but also beyond
- **Ownership of VTN agencies**: co-development, capacity building, and development of support tools will increase ownership of project outcomes
- **Acceptance of households**: identification of needs and preferences on household level will help to increase social acceptance of measures and foster individual adaptation
- **Replication** on international level: lessons leant and best practices will be shared through papers, workshops, conferences and presentations to advance future work on flood risk

Thank you.

Cảm ơn.

Dominic Sett
United Nations University - Institute for Environment and Human Security (UNU-EHS)

sett@ehs.unu.edu

www.floodadapt.eoc.dlr.de

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