Climate change, water scarcity and migration in Central Asia

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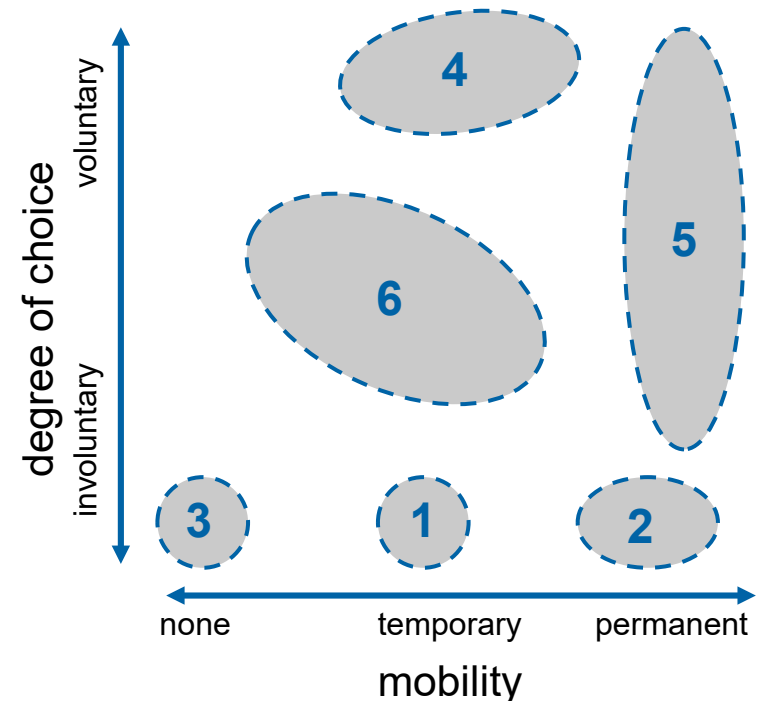University of Vienna, harald.sterly@univie.ac.at

What's the story?

- „Climate migration" is not just about displacement
- What do we know about climate-water-migration in Central Asia?
- Why is the relation between climate change (, water) and migration so complex?
- Can migration also contribute to adaptation?

Climate-(water)-migration nexus: more than *just* displacement

Various **types of mobilities** (by temporal, spatial, choice): e.g.

1. Temporary displacement (through sudden or slow-onset events)

2. semi- / permanent distress migration

3. Involuntary immobility: „trapped populations"

4. Labour migration

5. Relocation & resettlement

6. Changes in mobility of pastoralists

…

What do we know about the climate-water-migration nexus in Central Asia?

"comparatively little"

(little research & data – in contrast to e.g. South Asia, Africa)

- Few empirical studies; one review (Blondin 2019)

More recent global analyses and data that includes Central Asia:
- EACH-FOR project
- Displacement data of the IDMC (Internal Displacement Monitoring Centre)
- Groundswell Report II (Worldbank)

Aspects that make Central Asia special, compared to e.g. South Asia, Africa – with regard to climate-water-migration

- **Role and capabilities of the state** (provider and maintainer of infrastructure, provider of resources, for resettlement)

- Paramount **importance of irrigation** for agriculture → (large and complex) infrastructure, efficiency → technical solutions

- **Heterogeneity of livelihoods**: market-oriented agriculture, small-holder farmers, pastoralists, home-gardening

- Extremely **heterogenous distribution of population**

- Existing (strong) *international* **migration** systems (to Russia, intraregional) – „migration inversion"?

- Partly control of *internal* **migration**

Causal connections between climate change, water, and migration in Central Asia

(Blondin 2019, review)

Gradual climatic changes

- changes in precipitation, temperatures → growing aridity
- melting glaciers
- decreasing water quality

(More and/or more intense) slow and sudden onset events

- droughts
- floods
- landslides
- avalanches

Livelihoods

- decreasing availability and quality of water for agriculture
- household water insecurity
- disrupted services and daily mobility

Wellbeing

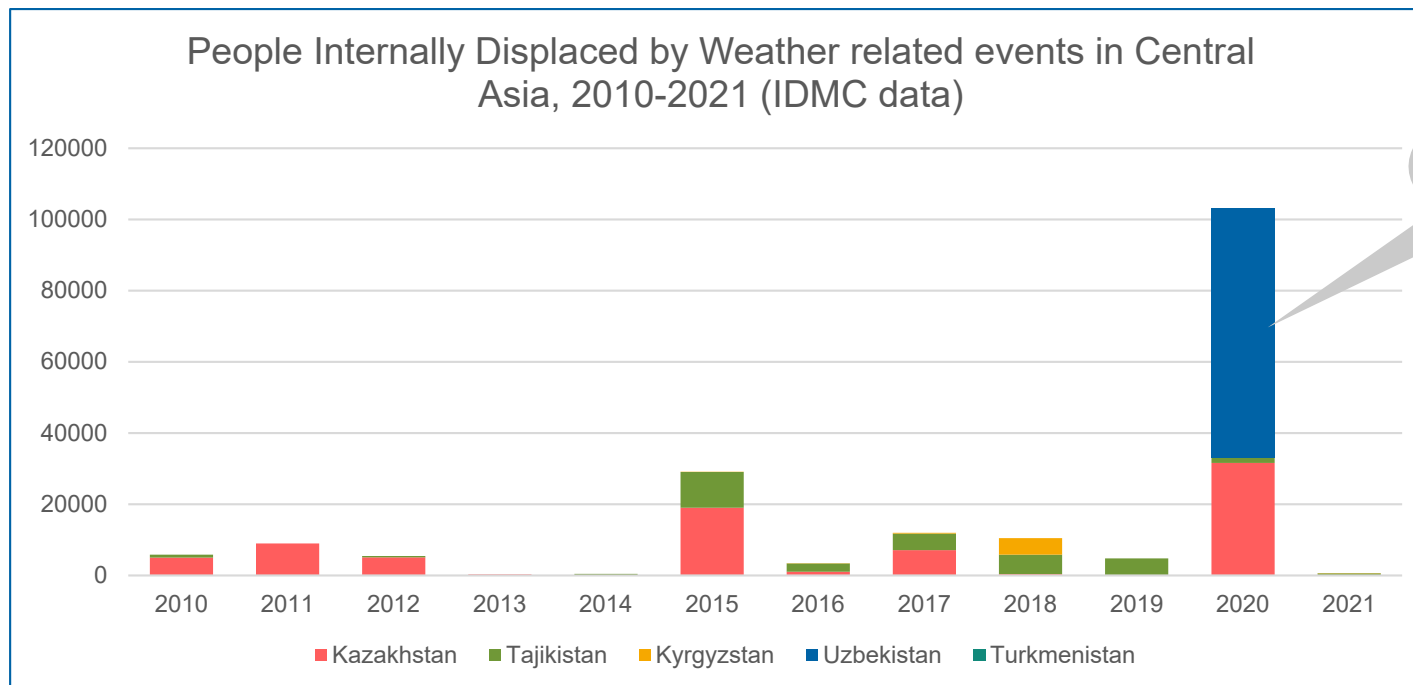- increasing food insecurity
- health risks
- decreased income

displacement, migration, immobility, relocation

No evidence in terms of numbers of climate migrants

No evidence on climate-migration-conflict nexus

Internal Displacement Monitoring Centre (IDMC)

- Most comprehensive data on **internal displacement** (by conflict, and geophysical/weather events)

- Based on **reports** by UN, national and subnational organizations, NGOs, media outlets

- Shows **comparably little internal displacement** due to weather events

- **Limitations**: only sudden onset events (almost no slow onset e.g. droughts, and no gradual shifts); reporting structures, data availability
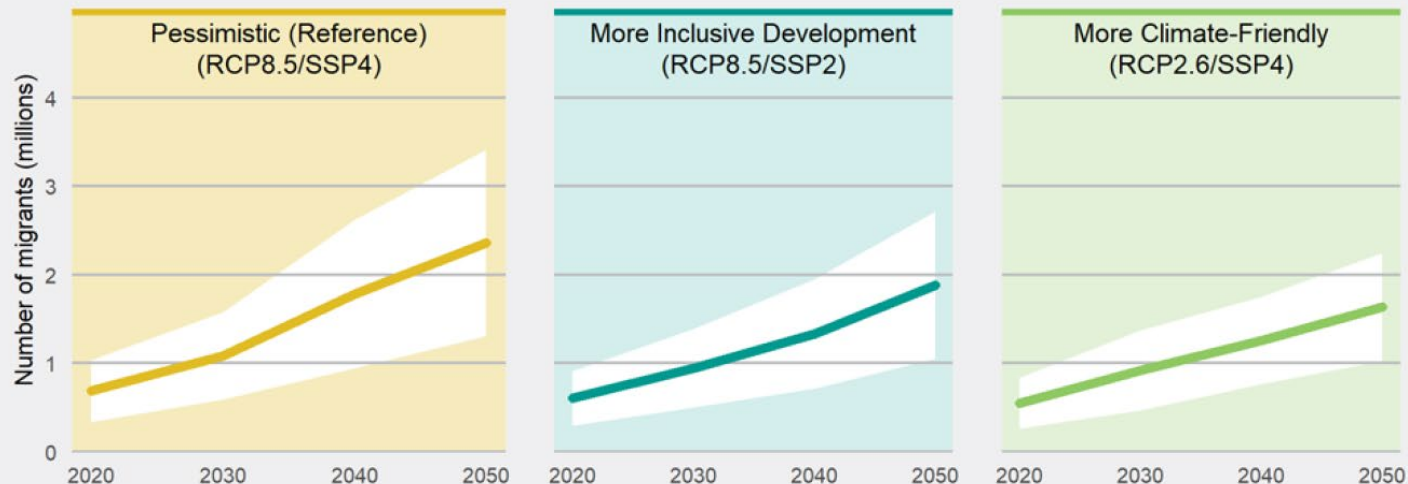
People Internally Displaced by Weather related events in Central Asia, 2010-2021 (IDMC data)

Sardoba dam

Groundswell-Report (Worldbank 2021)

- projected **increase in internal climate migration** in all scenarios, share of climate migration of internal migration 20%-38%, of share of population 0.8-3.4%

Figure 2.30: Projected number of internal climate migrants in Central Asia in three scenarios, 2020–2050
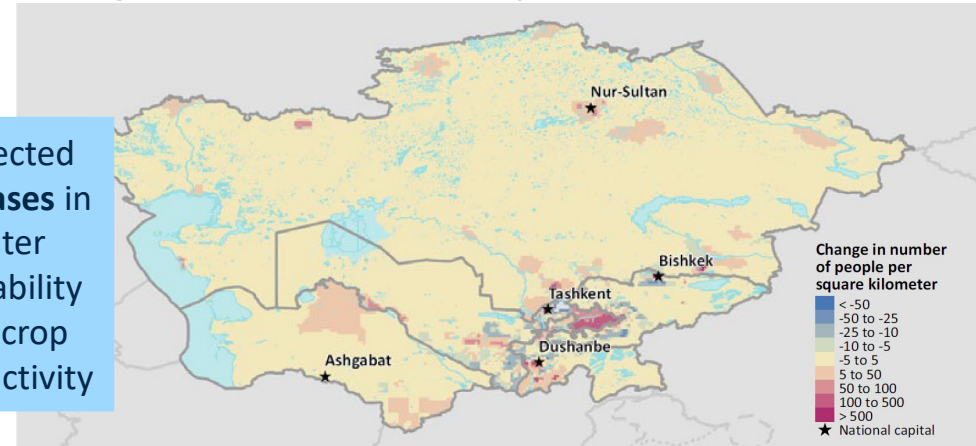
Groundswell-Report

In-migration hotspots:

- Ferghana Valley, Tashkent and surroundings,
- Southern Tajikistan and Dushanbe;
- Karagandy, Nur-Sultan and Kostana, and rainfed croplands in Kazakhstan
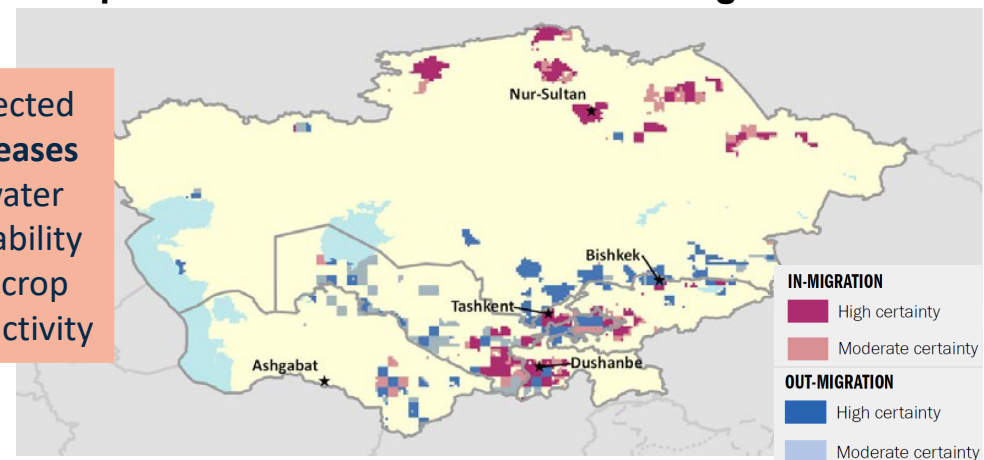
Out-migration hotspots:

- Along southern border of Kazakhstan
- surroundings of Ferghana Valley in Uzbekistan and Tajikistan
- Area around Bishkek, smaller areas of irrigated croplands in East Turkmenistan and Southern Uzbekistan, along Amu Darya River

Change in population density 2010-2050

projected **increases** in water availability and crop productivity

Hotspots of in- and out-ward climate migration 2050

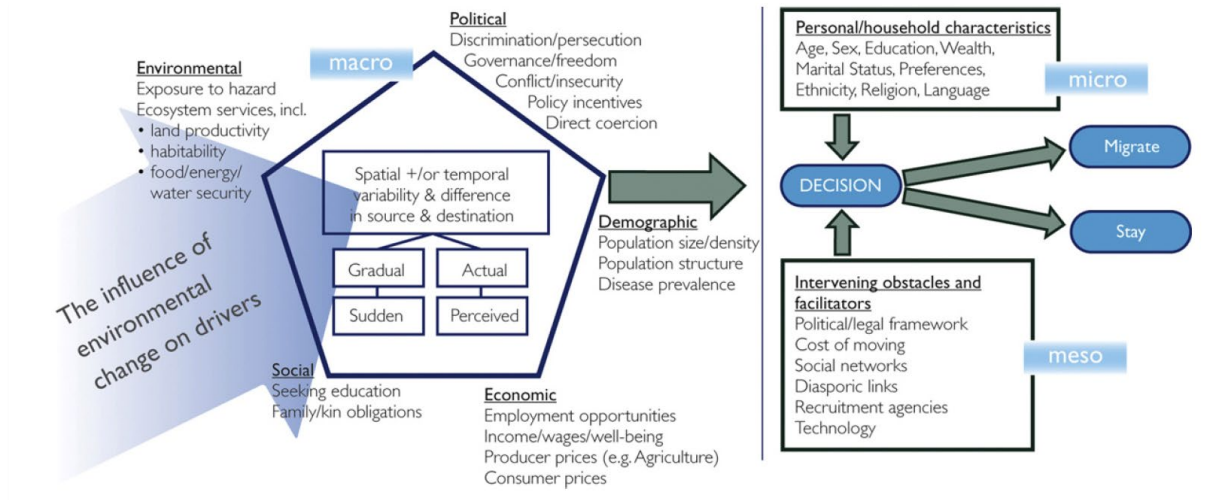projected **decreases** in water availability and crop productivity

Groundswell – limitations & caveats

- Model depends on **agriculture, population and migration data** → not always available in high spatio-temporal resolution

- Several important **processes not covered**: glacier melt & high dependendy on few rivers, water quality changes & salinization, adaptation (irrigation efficiency, crop changes)

- Regionalized and localized **processes represented in a global model**: irrigation ratio in Central Asia vs. Africa; internal migration regimes, international migration systems (migration "inversion")

- Results must be **contextualized** (political and economic history, migration systems, etc.)

→ How **reliable** is the model in projecting migration (changes) in the region?
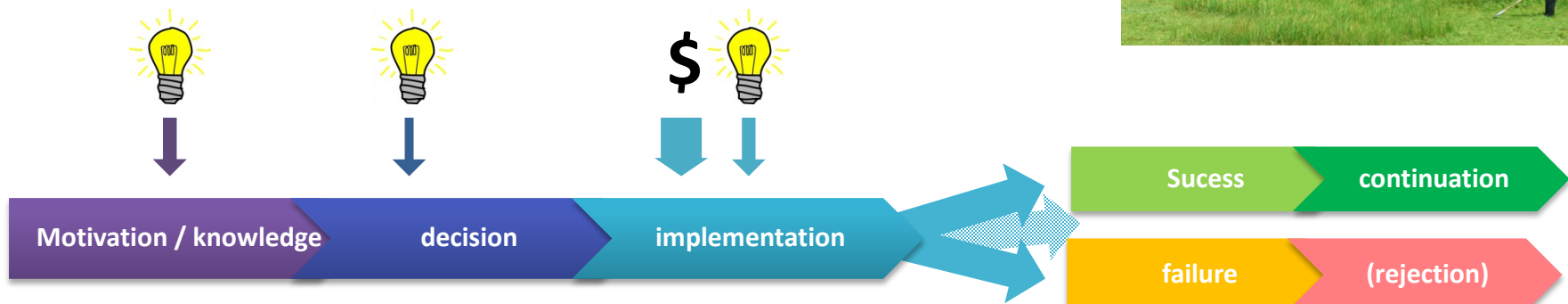
Environmental migration:
Why are things so ~~complicated~~ complex

- **Multi-dimensional** characteristics of environmental migration (distance, duration, seasonality, voluntariness, etc.)

- **Multi-causality** of migration: **[Environmental change]** ←→ social, cultural, ecological, economic, political systems ←→ **[Migration]**

- **Historical conditionality** of migration systems

- **"Bounded rationality:** local interpretations are the real basis for migration decisions.

- Effectiveness of **discourses, policies**
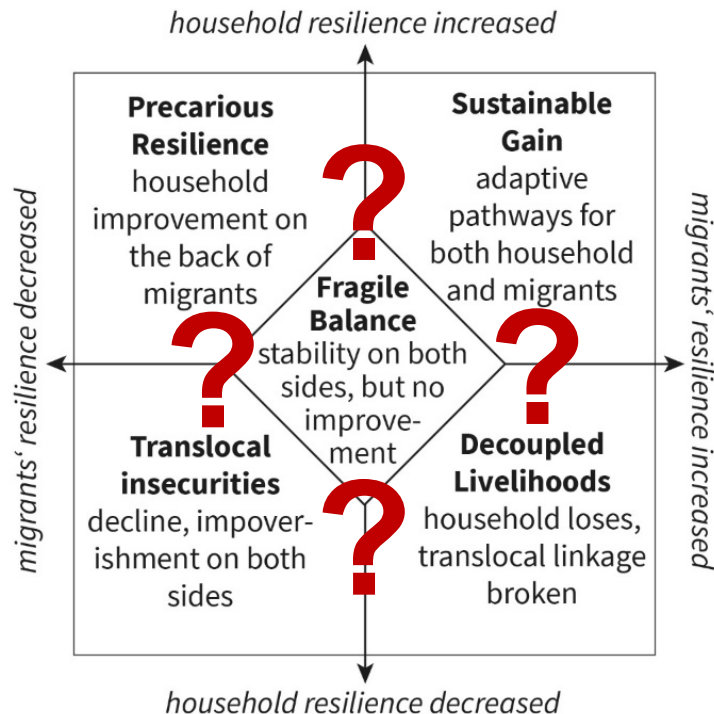
Source: Black et al. (2011)

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Migration can contribute to adaptation – an example from rural Thailand

- Thailand: dense **institutional landscape** (agricultural change mostly driven by market / state)

- But also **strong cases for labour migration influence** on agricultural adaptation / innovation:
  - New **rice planting** techniques, **drip irrigation** (explicitly for CC adaptation)
  - **Organic farming** + sustainable land use practices
  - General: **financial remittance** enable investments (adaptation = change = risk), **social remittances** provide knowledge, skills, motivation

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| Motivation / knowledge | decision | implementation |

Sucess continuation

failure (rejection)

(sources: TransRe project)

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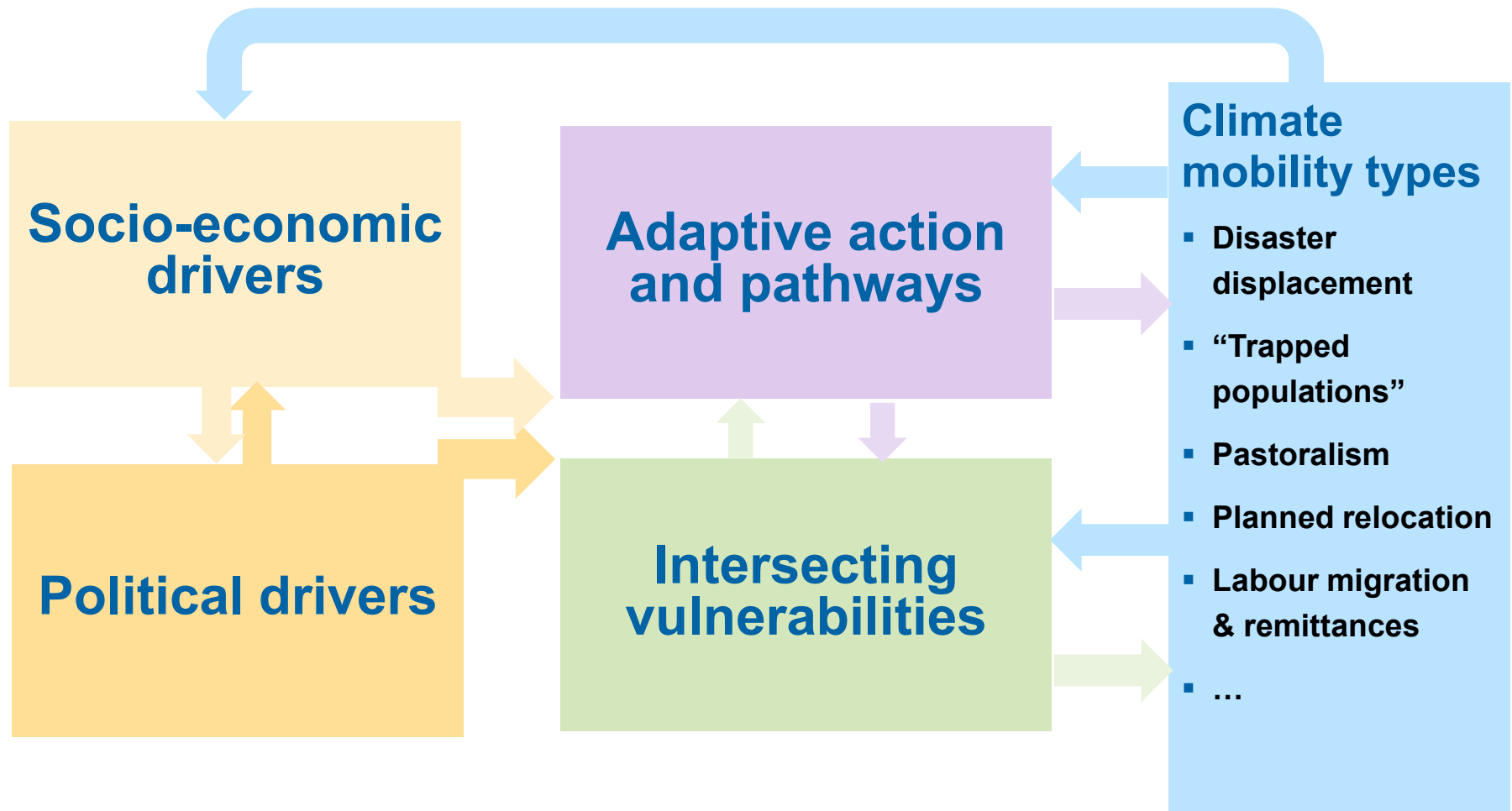# „Does migration contribute to Adaptation (/ Vulnerability / Resilience?"

Let's slighty reframe this question: **In how far** [degree, dimensions], **how** [causality], **under what conditions** [context], **and for whom** [intersectional differences, scale] do different types of mobility contribute to vulnerability // adaptation // resilience?

Influencing factors:

- Characteristics and situation of migrants **and** households at origin

- Structural aspects of communities of origin **and** destination

- Relations: ability to move, send money and goods, communicate; quality of relations **between** origin and destination

- **„Mode"** of mobility (change): voluntariness, plannedness

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Climate [water] migration ⬅➡ vulnerability, adaptation, resilience

Socio-economic drivers

Political drivers

Adaptive action and pathways

Intersecting vulnerabilities

Climate mobility types

- **Disaster displacement**
- **"Trapped populations"**
- **Pastoralism**
- **Planned relocation**
- **Labour migration & remittances**
- **...**

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Draft by Sterly/Uni Vienna, based on IOM and UNFCCC materials

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Take aways (I)

- **Need for research and data** on climate-water-migration nexus in Central Asia

- **Important topics for research**:
  - Incidence, patterns and trends of **different climate-(water-)mobility types** and their **outcomes** (e.g. labour mobility, seasonal domestic migration, etc.)
  - Relationships between environmental and social **processes** – compounding, cascading effects, **tipping points** (e.g. when gradual environmental change triggers quick and/or irreversible social change)
  - Potential of migration to **increase adaptive capacity** and reduce vulnerability

- Need for **true transdisciplinary research** – embed and couple research with policy processes, practitioners and civil societies needs

Take aways (II)

- Seek and find **solutions** for the climate-water-mobility-nexus:
  - How to **avoid displacement** and involuntary **immobility** – and how to minimize negative effects if they happen?
  - How to **enable migration** and small scale mobility, and shape them in a way to increase "migration/mobility success"
  - How to support people to „**make most" out of labour migration** and remittances (financial, skills, motivations) for adaptation?
- Include migration and mobility aspects in climate change **adaptation planning**, and in sectoral plans (water, agriculture, regional/territorial development)
- Increase **awareness** of the topic among policymakers and relevant stakeholders

Thank you very much for your attention

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References

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- IDMC (Internal Displacement Monitoring Center) (2022): http://www.internal-displacement.org

- Worldbank (2021): (Clement, Viviane; Rigaud, Kanta Kumari; de Sherbinin, Alex; Jones, Bryan; Adamo, Susana; Schewe, Jacob; Sadiq, Nian; Shabahat, Elham. 2021. Groundswell Part 2 : Acting on Internal Climate Migration. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/36248)

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Climate change – water – conflict in Central Asia

Factors to think of:

- water strongly managed (storage, distribution, usage),
- state actors of key importance,
- relatively high management capacity of states

- ~~Climate → water → migration → conflict~~
- climate→ (interstate) water conflict → migration/displacement