Promoting climate resilient development within SDC programs in East and Southern Africa

8-12 September 2014, Nairobi, Kenya

Identification & selection of adaptation measures

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Framing questions

Adaptation of who/what, to what hazards, with respect to what impacts?

- What mechanisms/processes lead from hazards to impacts?
- What factors make people vulnerable / resilient in these contexts?
- How can these factors be addressed through adaptation measures?

⇨ *Theory of change*

What timescales are we dealing with?

- Short timescales – addressing existing / emerging hazards?
- Long-timescales – planning under uncertainty, using scenarios?
- Both?

What type of adaptation are we pursuing?

- Deficit, incremental, transformational, combination?
- 'Hard' or 'soft'

What are the barriers to adaptation?

- Resources, capacities, policy, environmental

Some key criteria

- Feasibility - are the proposed options realistic?
  - What is the benefit to cost ratio?
  - How soon could they be implemented - timescales?
- Efficacy - will they work?
  - Sound evidence / theory of change?
  - Are they robust with envelope of uncertainty?
  - Enabling environment - can they be implemented successfully?
- Acceptability - Will people agree to them?
  - Will there be winners & losers? Legitimacy, equity?
- Risks - are they sustainable?
  - Could they be maladaptive in the long-term?
  - If so, are plans in place to monitor & revise options?
  - To what extent are impacts of adaptation irreversible? Flexibility?

See UKCIP Evaluation of Adaptation Options http://www.ukcip.org.uk/wizard/wizard-4/4-2/

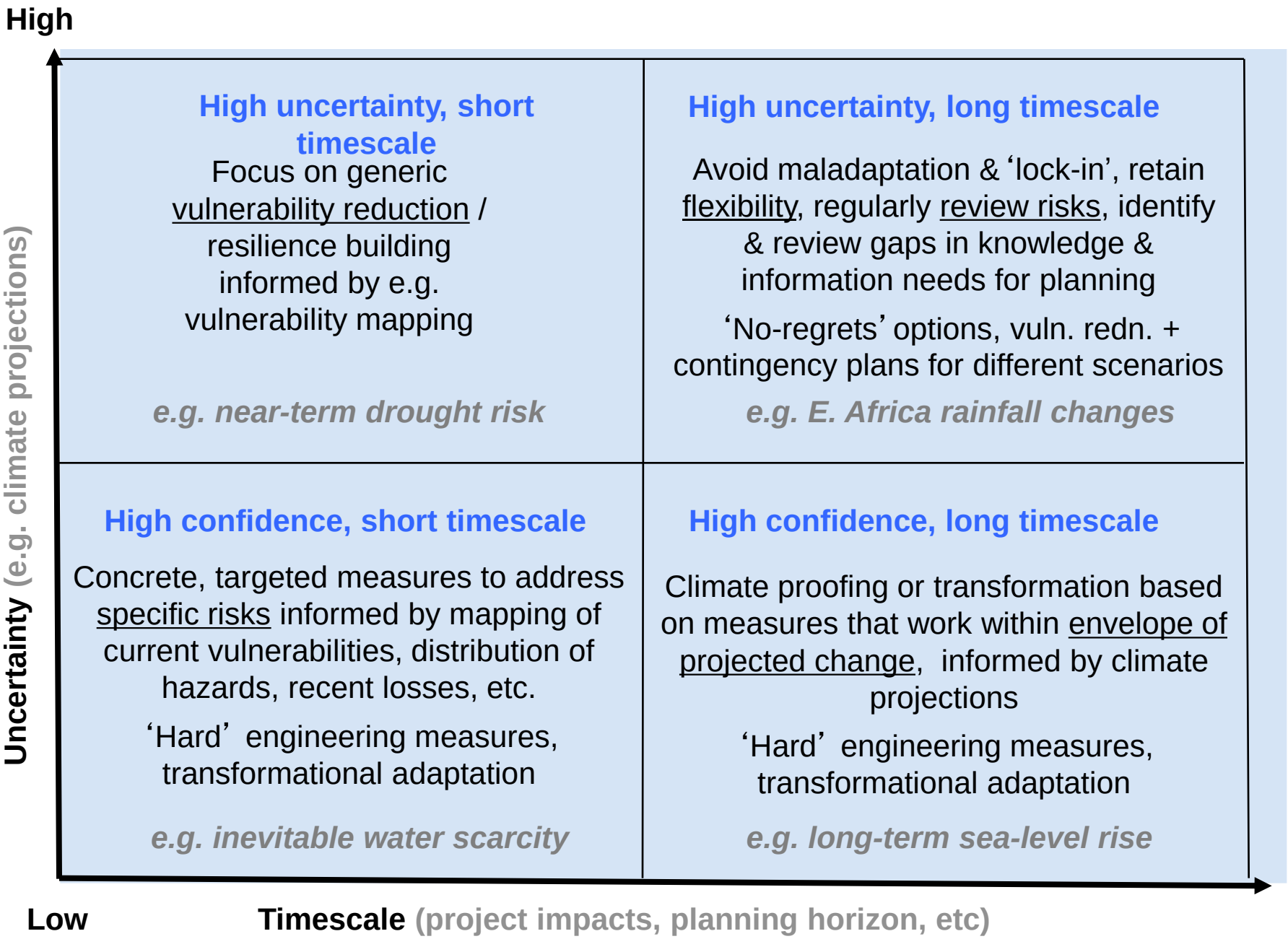
‘Soft’ or ‘hard’ adaptation?

	Institutions Government, business, other	**Sectors** Including infrastructure	**Local communities** Livelihoods, local production systems, etc	**Socio-ecological systems** Ecosystems, settlements
Capacity building Awareness, knowledge, expertise, management	Awareness raising, knowledge management	Technical training	Knowledge sharing, improved access to resources	Improved management regimes, information
Strategy development	National action plans	Sector strategies	Community adaptation initiatives	Natural resource management plans, urban/coastal planning
Resilience building Systems, strategies, diversity, flexibility	Mainstreaming CC into planning	Mainstreaming, diversification, resource efficiency	Livelihood diversification, soil & water conservation	Reduce ecological stresses, better DRM
Specific ‘hard’ measures To address specific risks	Managing supply chains, adapting products & services	Climate proofing infrastructure, location changes	Drought-resistant crops, new water storage	Species relocation, runoff management, phased relocation

Short-term vs long term goals

Goal	Deliver immediate development benefits	Focus on longer-term planning
Approach	General vulnerability reduction to address (variety of) current/emerging risks	Targeted actions tailored to address particular longer-term risks
Informed by	Understanding of drivers of current vulnerability (adaptation deficit)	Understanding of potential future climatic evolution (proofing/transformation)
	Adaptation deficit – incremental adaptation	Incremental - transformational adaptation

Timescales & uncertainty – an idealised representation



Phased approaches

- In reality adaptation will involve both short-term & longer-term responses, against a range of uncertainties
- Mix of options, from generalised vulnerability reduction to highly targeted adaptation
- Good practice will involve
  - **Flexibility:** build on, rather than replace, past adaptation actions; avoid lock-in
  - **'No/low-regrets' options:** deliver benefits under range of future scenarios
  - **Sequencing strategies:** "no-regrets" options are taken earlier, and more inflexible measures delayed in anticipation of better climate change information; regular monitoring and review

‘Low-regret’ adaptation options & uncertainty in climate projections

‘Low-regret’ options

“**those [options] where moderate levels of investment increase the capacity to cope with future climate risks.**

Typically, these involve over-specifying components in new builds or refurbishment projects. For instance, installing larger diameter drains at the time of construction or refurbishment is likely to be a relatively low-cost option compared to having to increase specification at a later date due to increases in rainfall intensity.”

World Bank GFDRR

“Planning for climate change requires a move away from a “predict-then-act” approach and towards a “no-regret” approach.

The latter calls for an understanding of drivers of vulnerability and investments in resilience that would be justifiable under a wide range of climate scenarios or even in the absence of climate change. The “no-regret” approach does not depend on detailed climate projections.”

ADB 2014: Climate Change & Rural Communities in the Greater Mekong Subregion.

‘Low-regret’ options

Practical, cost-effective options that deliver the required adaptation … minimise risks associated with implementation even in the face of … uncertainties

- Actions …[for]… building adaptive capacity as part of an overall adaptive strategy;
- Avoiding building in high-risk areas (e.g. floodplains) when locating or relocating;
- Reducing leakage from water utility infrastructure;
- Building/designing property and buildings to minimise over-heating in summer months;
- Reducing consequences of flooding through use of water-resistant materials for floors, walls & fixtures, and siting of electrical controls, cables & appliances higher than normal;
- Introducing multiple season recreation facilities.

UKCIP

‘Win-win’ options

Measures that minimise climate risks or exploit potential opportunities but also have other social, environmental or economic benefits - include measures introduced primarily for reasons other than addressing climate risks, but also deliver desired adaptation benefits

•Flood management that includes creating or re-establishing flood plains which increase flood management capacity and support biodiversity and habitat conservation objectives;
•Improving preparedness and contingency planning to deal with risks (including climate);
•Improving the cooling capacity of building through increased shading and/or alternative less energy intensive cooling strategies;
•Green roofs and green walls which have multiple benefits in terms of reducing building temperature and rainfall runoff from buildings, and increased green spaces within urban areas, but also reduces energy use for both heating and cooling.

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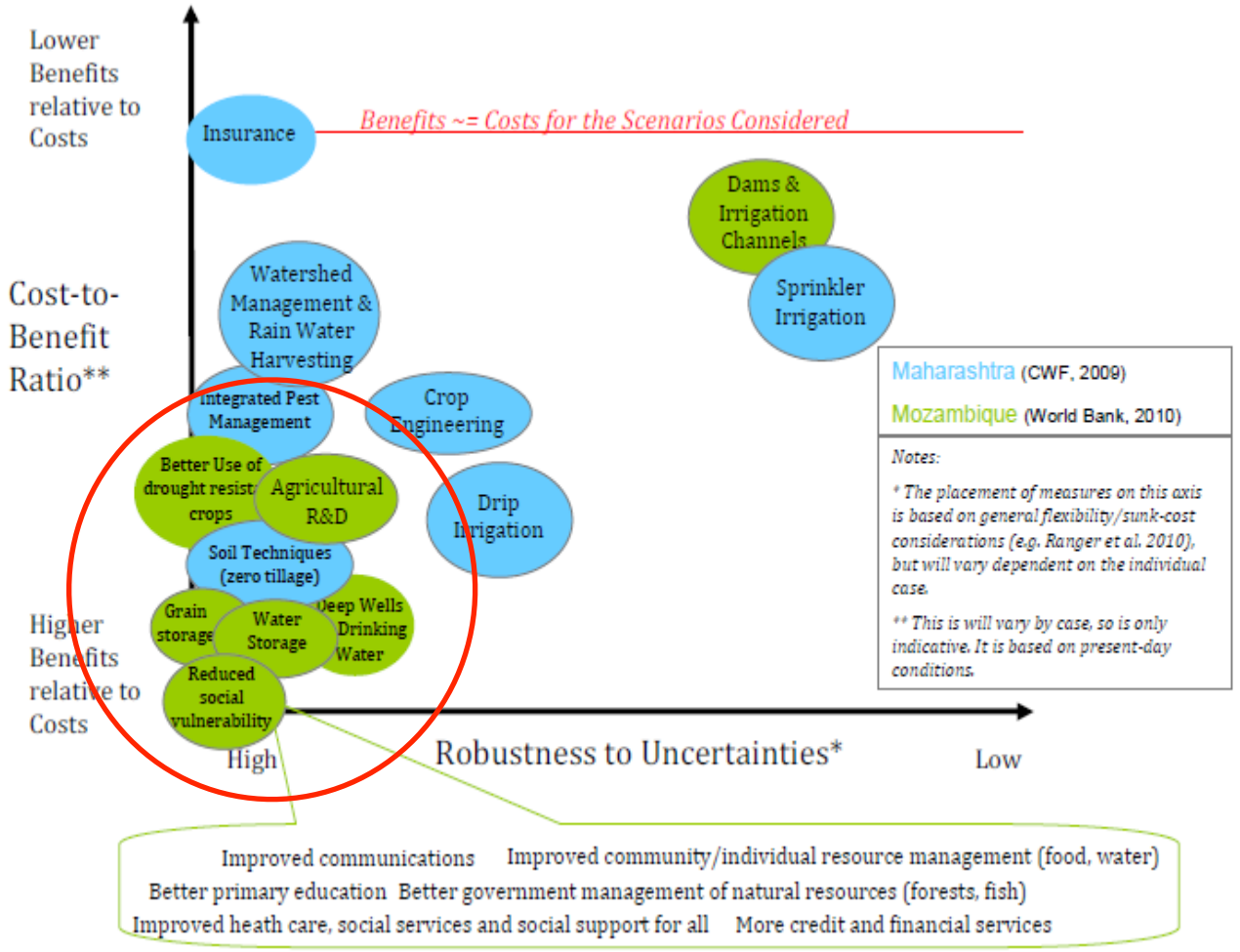
Example: Agricultural Adaptation in Maharashtra and Mozambique

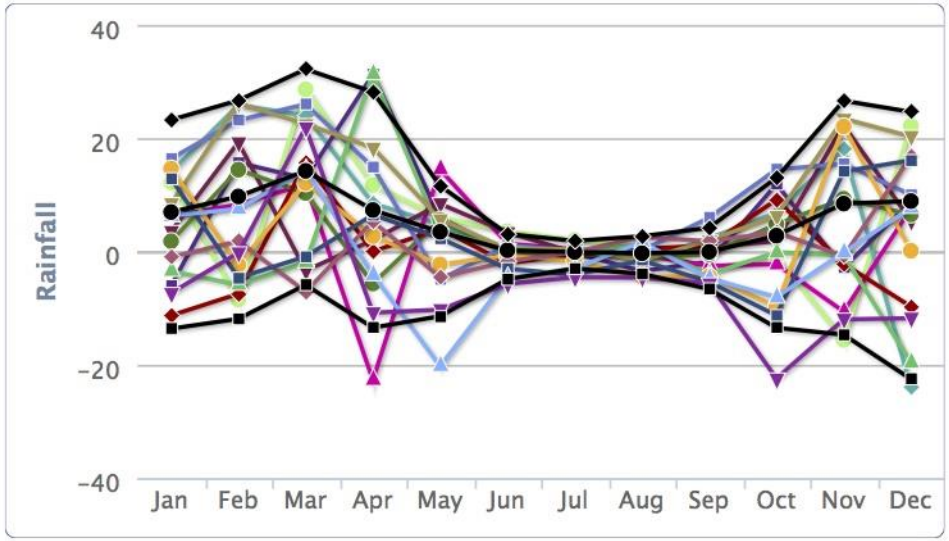
"no" and "low" regrets options



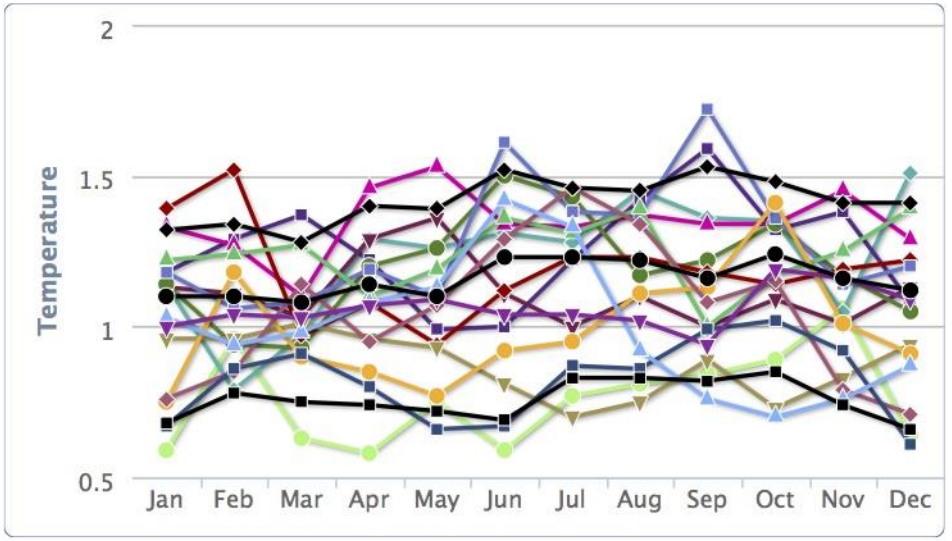
Ranger and Garbett-Shiels, 2011

Envelopes of uncertainty for climate projections

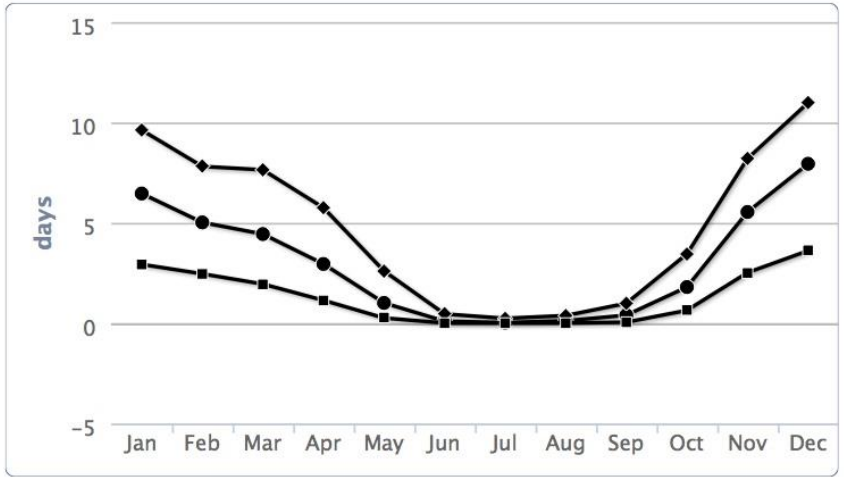
PROJECTED CHANGE IN RAINFALL
FOR TANZANIA FROM 2020 TO 2039.



PROJECTED CHANGE IN TEMPERATURE
FOR TANZANIA FROM 2020 TO 2039.



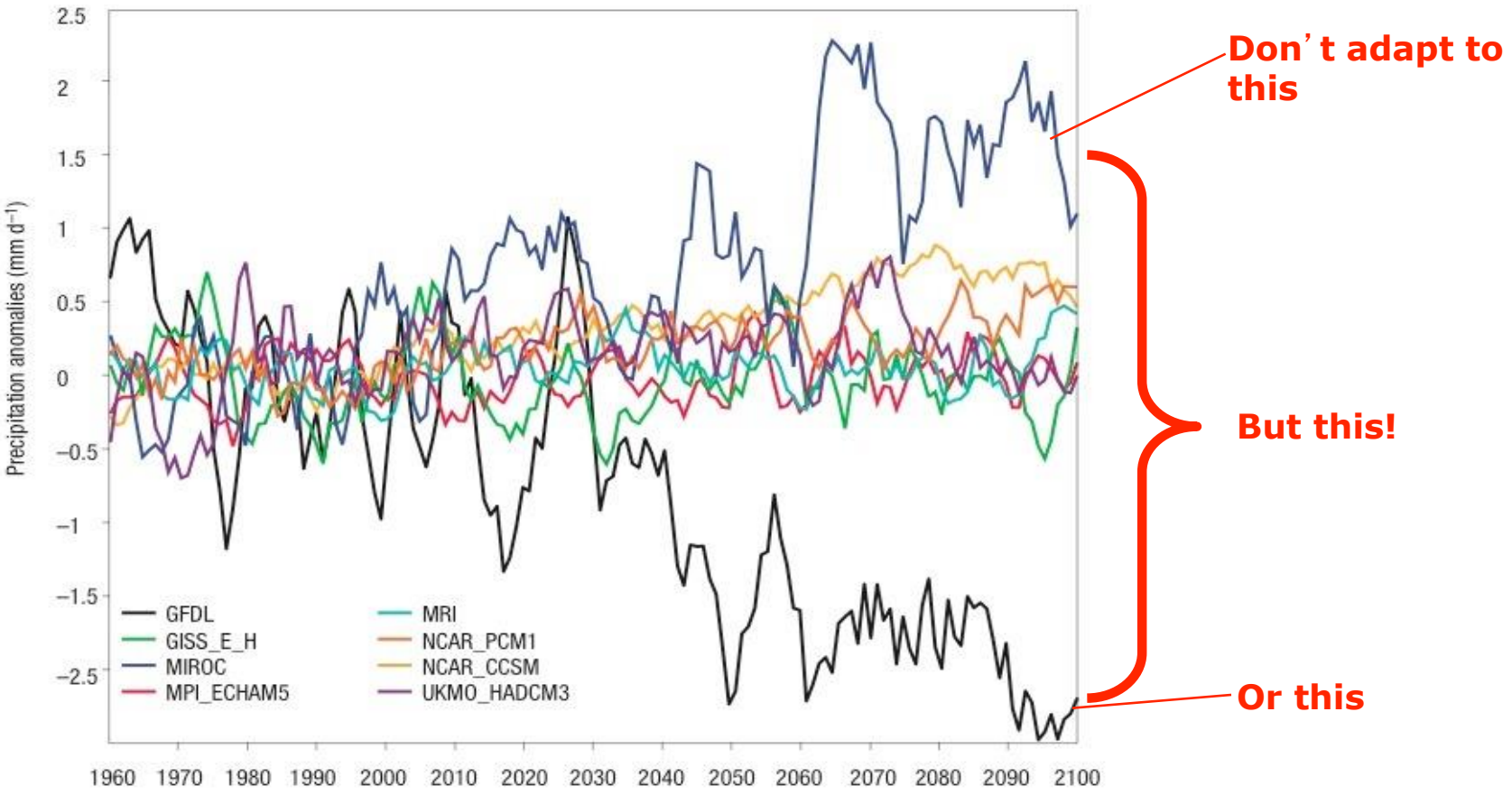
DAYS WITH HEAVY RAIN
FOR TANZANIA FROM 2020 TO 2039.



Projected changes in monthly average rainfall, temperature, and number of days with heavy rainfall, for the Tanzania for 2020-39, from a range of different models.

Graphics generated using World Bank Climate Change Knowledge Portal: http://sdwebx.worldbank.org/climateportal/index.cfm

Identifying win-win options can be challenging



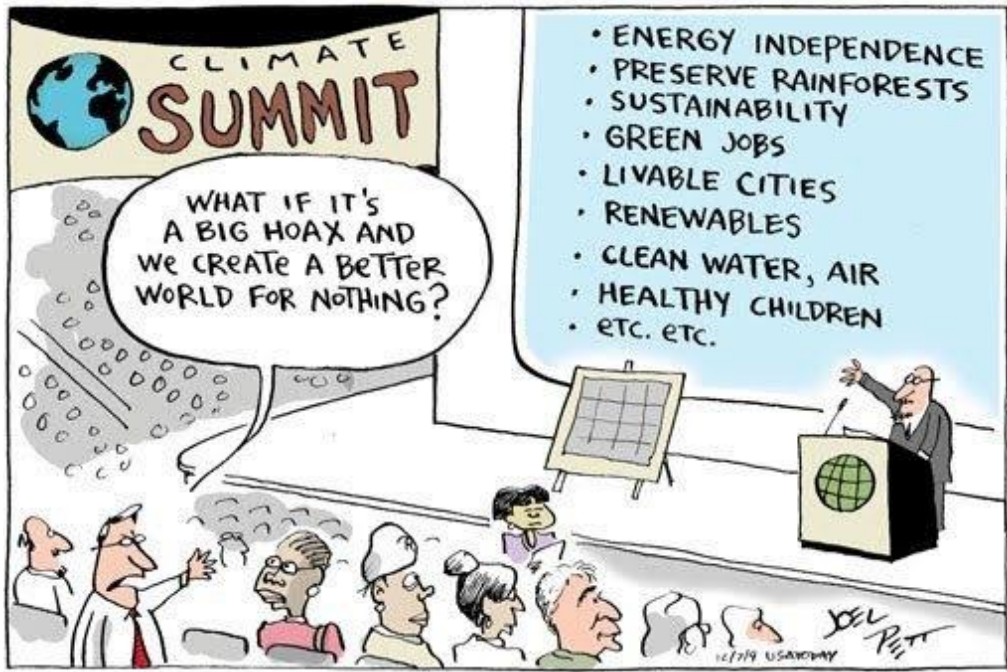
Simulated rainfall changes (anomalies) over the Sahel from 1960-2100 in 8 global climate models. Note a number of regional models suggest wetter conditions. Models also suggest different responses in eastern/central Sahel and western Sahel

From Cook, 2008, Nature Geoscience 1: 647

Barriers to adaptation

- Limited understanding of risks & need for adaptation
- Lack of supportive policies, standards, regulations
- Lack of availability to appropriate resources (expertise, technology, etc)
- Prohibitive costs
- Real or perceived conflicts/opposition to action
- Short-term nature of decision making
- Lack of acceptance of need to adapt related to perceptions of uncertainty
- Lack of confidence in measures
- Lack of buy-in / acceptance of risks

For more detailed discussion see UKCIP Identifying Adaptation Options: http://www.ukcip.org.uk/wordpress/wp-content/PDFs/ID_Adapt_options.pdf

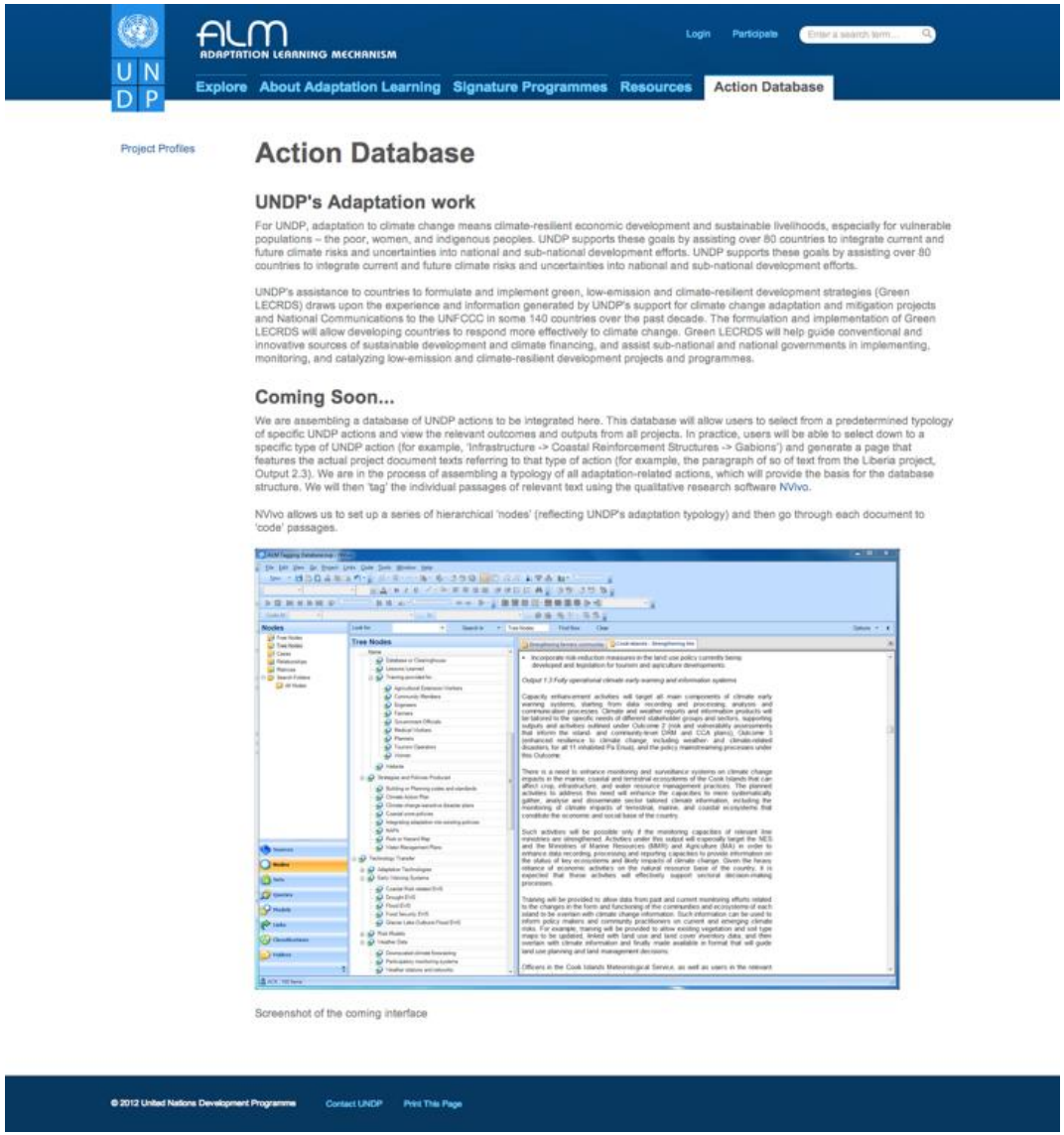


Adaptation Learning Mechanism

- http://www.undp-alm.org/

- **UNDP's knowledge sharing platform on country-led programmes and projects financed by:**
  - **LDCF**
  - **SCCF**
  - **AF**
  - **Bilateral donors**
  - **Decentralised cooperation supported by Territorial Approach to Climate Change (TACC) project.**

UNDP-ALM Action Database



http://www.undp-alm.org/action-database

- Forthcoming database of UNDP actions
- Select from typology of actions and view the relevant outcomes and outputs from all relevant projects.
- Generate page featuring relevant project document texts
- e.g. 'Infrastructure -> Coastal Reinforcement Structures -> Gabions'

CI:GRASP Adaptation Project Database

http://adamcat.pik-potsdam.de/QueryAdaptationDB

ci grasp

The Climate Impacts: Global and Regional Adaptation Support Platform

ci:grasp 2.0 - module demonstrator

Home | About | Background | Impact chains | Stimuli | Impacts | Adaptation | Cities | Transition | Contribute

you are here: home >> adaptation project database

Search the ci:grasp adaptation project database

project context:

thematic context: Coast
stimulus: Sea-Level rise
impact: - I don't care for that -
location: Asia: Philippines

problem solving capacity and reversibility:

problem solving coverage: - I don't care for that -
reversibility: - I don't care for that -

Text

project classification:

project type: - I don't care for that -
project status: - I don't care for that -
spatial scale: - I don't care for that -
effect emergence: - I don't care for that -
effect persistence: - I don't care for that -

free text search:

search term:

hits: 4 projects meet your criteria.

Your search result:

project title	continent	country	type	scale
Adaptation to Coastal Erosion - bulkheads and revetments	Asia	Philippines	building / installing structure	local
Adaptation to Coastal Erosion - relocation	Asia	Philippines	relocation	local
Community-Based Disaster Management Project in Priority Environmentally Critical Areas in the Davao River Watershed	Asia	Philippines	training	local
Conserving Biological Diversity	Asia	Philippines	training	national