



Climate Change and Integrated Water Resource Management in the Mekong Basin

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Main themes

1. Can we see CC impacts in the Mekong region?
2. Can we predict future reliably?
3. Climate change impacts in the Mekong Region
4. What is the right context and methodology for climate change studies?
5. How to adapt to CC?
6. Largest knowledge and action gaps
7. Role of the MRC

Can we see CC impacts already?

Unambiguous climate change evidence doesn't exist for the Mekong:

1. Long climatological and hydrological cycles and high variability characterise Mekong conditions
2. Erroneous approach to data analysis has sometimes led to wrong conclusions

(MRC/ Peter Adamson)

Can we predict future reliably?

No:

- Uncertainties in climatological models – aerosol chemistry, methane storages and releases, glacier melting, heat storage and transport in oceans, precipitation patterns and magnitude, unknown feedback mechanisms etc.
- Uncertainties in downscaling climate change from global models to Mekong region - highly variable terrain and land/sea interaction
- Differences in processing, correcting and interpreting climate model data

But: Climate modelling gives scope of possible and probable future changes

Possible climate change impacts in the Mekong Region

- Increased spatial and temporal rainfall variability → increased floods and droughts
- Decreased dry season flow impacting fisheries, water quality, salinity intrusion, water use etc.
- Changes in groundwater levels having impact on irrigation and dry season base flow
- Destruction of forests
- Changing conditions for crops

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- Increased watershed erosion and sediment load due to more intense rainfall
- Early melting of snow and vanishing of glaciers – decrease of the dry season flow
- Vanishing of mangrove leading to increased erosion and vulnerability to storms and flooding
- Sea level rise threatening Delta – flooding and salinity increase

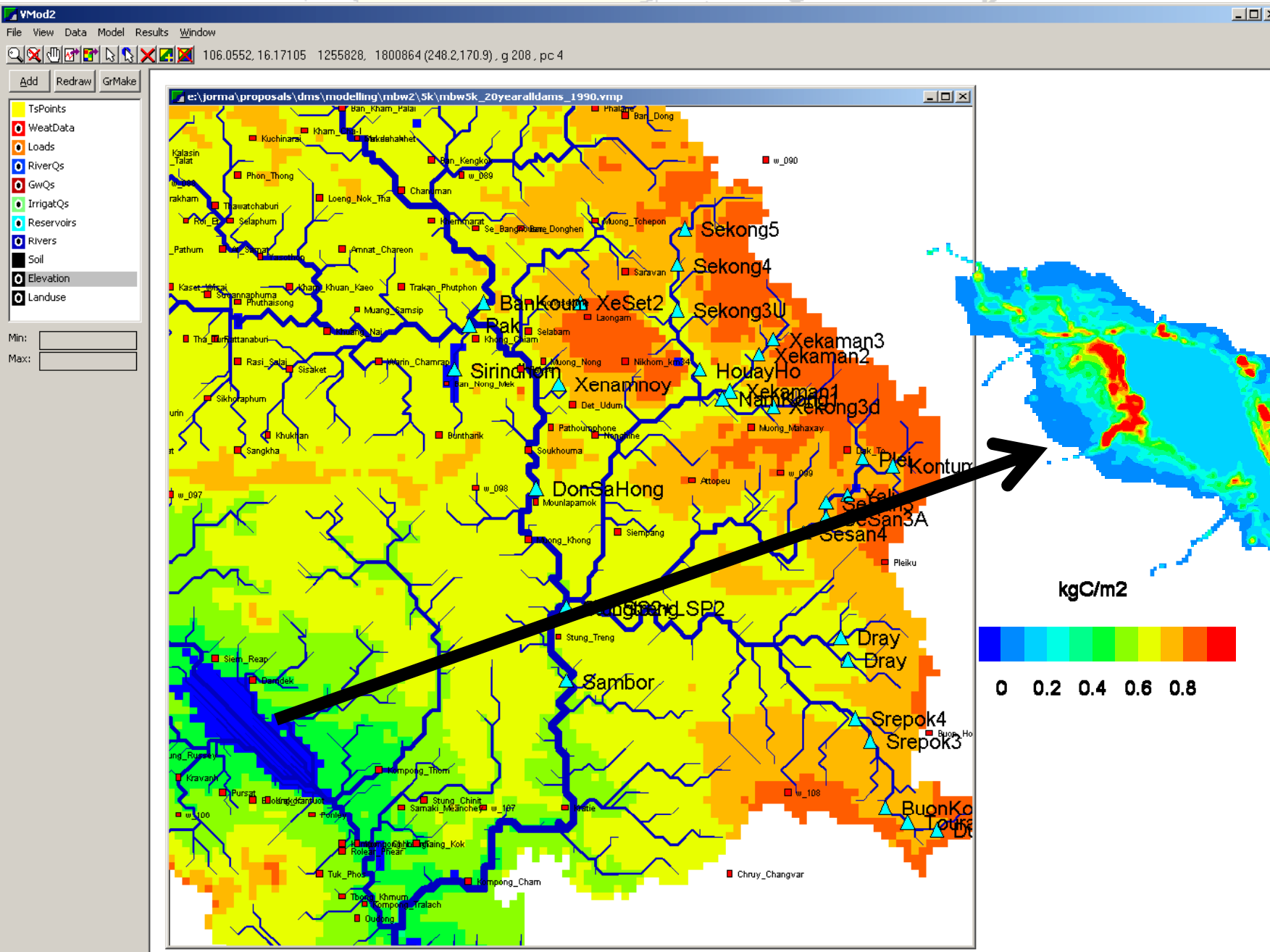
The poor who are directly dependent on the natural resources are most vulnerable for the CC

CC context

- CC as an isolated phenomenon has relatively little practical value or interest for the countries
- The countries have more acute issues related to development of hydropower, agriculture, aquaculture, forestry, fisheries etc.
- CC makes more sense when it is studied as part of these development issues; for instance (i) building of hydropower dams should take into account possible future use of the dams for flood protection and irrigation and (ii) adaptation of new agricultural practices should consider their sustainability in future changing conditions

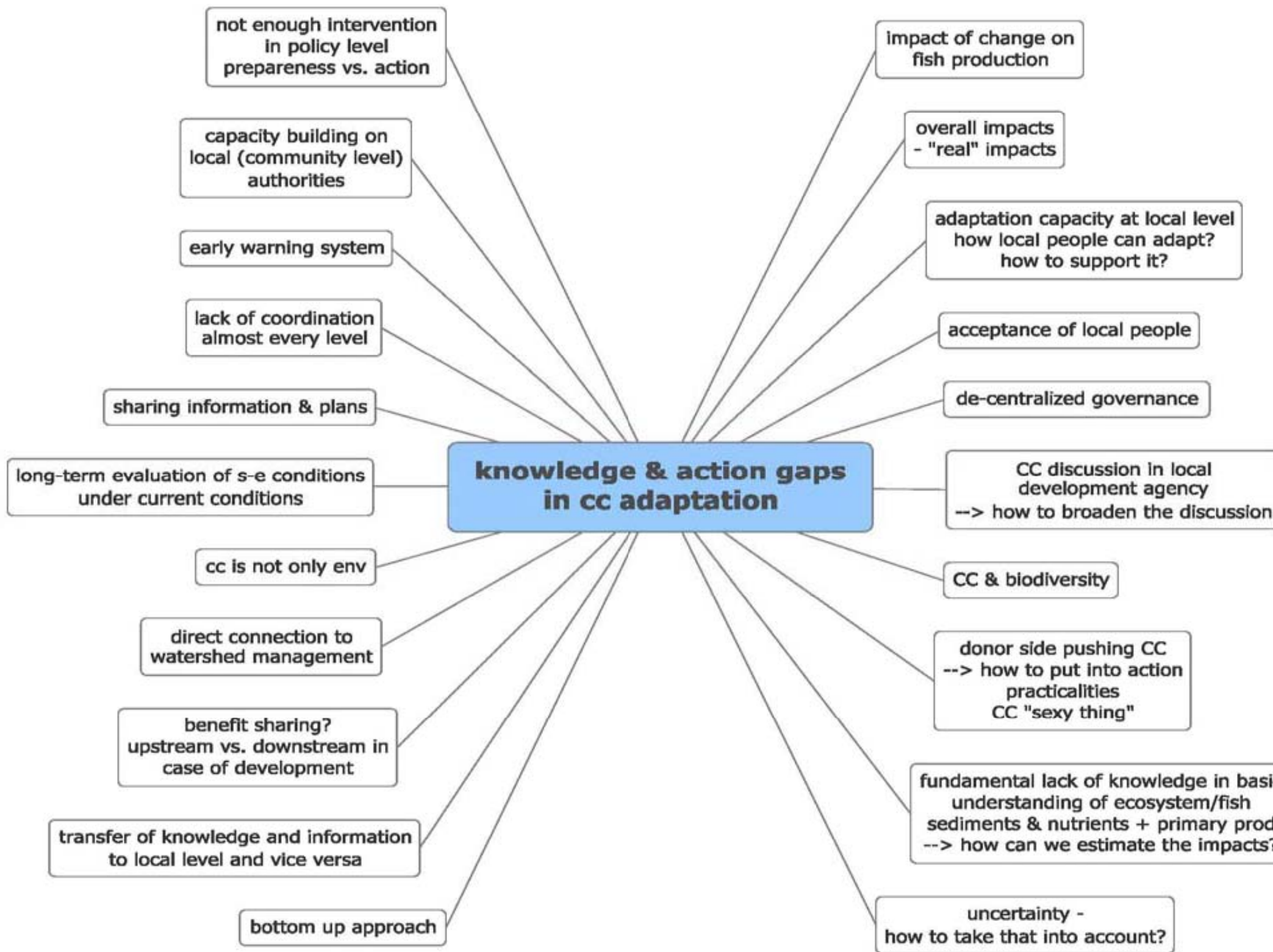
1. Integrating the main basin processes including hydrology, hydrodynamics, sediments, water quality and aquatic and terrestrial productivity
2. Integrating watersheds, river systems, lakes, reservoirs, floodplains and coastal areas
3. Integrating water resources utilisation (hydropower, irrigation)
4. Integrating other human interventions such as flood control and land use changes
5. Integrating socio-economic data with the environmental one
6. Global and local scales: basin wide impacts are felt cumulatively on the local scale

MRC IWRM Model



How to adapt to CC?

- The best ways to build adaptation capacity at the local level are essentially the same as needed e.g. in poverty reduction and sustainable development
- Should focus on supporting local livelihoods, with a specific focus on the poorest and most vulnerable groups
- Climate change should be increasingly considered as a developmental issue and not just an environmental one



Role of the MRC

Goals of the MRC Strategic Plan are relevant for the CC study and adaptation:

1. Coordinated and sustainable development benefiting poor
2. Effective regional cooperation
3. Basin-wide environmental monitoring and impact assessment
4. Strengthening stakeholder water resources management capacity

Role of the MRC as information and knowledge based organisation

- Improved understanding of Mekong processes through monitoring, modelling and research
- Impact assessment and planning using modelling tools and expert work
- Information dissemination through capacity building and increased country and stakeholder involvement
- Provision of data, tools, information and knowledge

MRC EP Climate Change Adaptation Initiative



Thank You!