Climate Risk Assessment at The Community Level: THE PYANJ RIVER BASIN

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Asian Development Bank

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OUTLINE

- The Pyanj's River Basin
- Objective and approach
- Identified priority
- Outcome of the process

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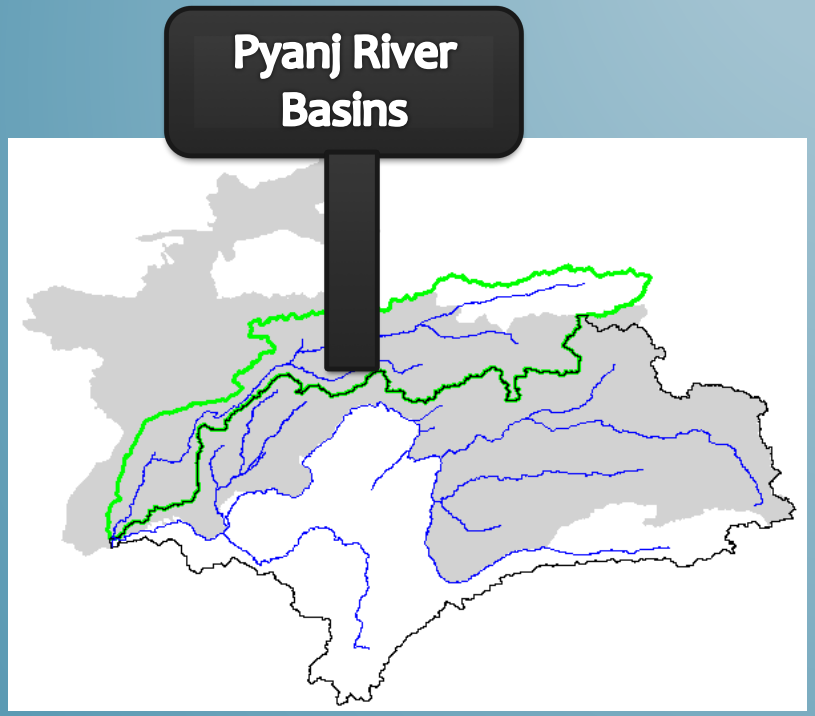
PROJECT AREA



- The largest of five principal basins
- Population of 1.27 million
- Bread basket of Tajikistan
- Range of altitude (from 300-350 m to more than 7000 m)
- High exposure (over 360 climate-induced disasters reported in the the last two decades)
- Limited institutional capacity

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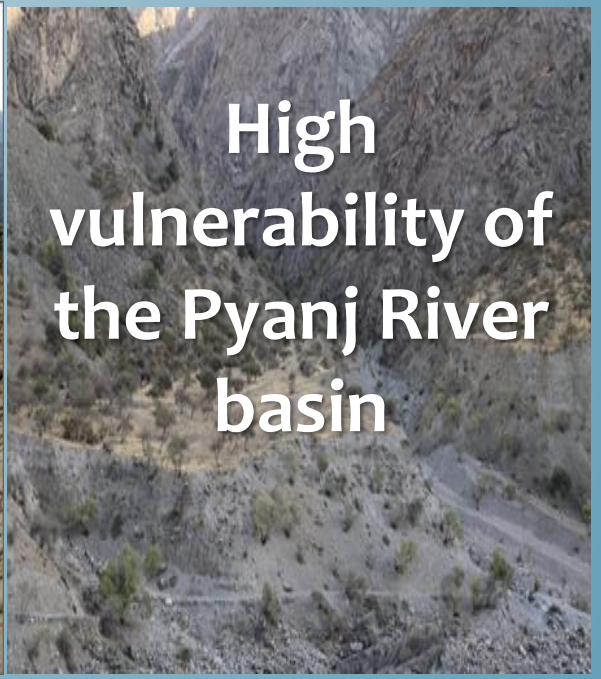
WHERE DID IT ALL START



- Development solutions for today that can last beyond tomorrow

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OBJECTIVES

- Understand the impacts of climate change on communities, assets and ecosystems
- Understand critical thresholds
- Identify priority adaptation investments

APPROACH

- Combine science with community based vulnerability assessment

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METHOD

- Climate data
  - Historical data
  - Climate change projections (air temperature, precipitation, evapo-transpiration, runoff and river flow up to 2100)
- Community-based vulnerability assessment
- Community-based adaptation planning
- Iterative process

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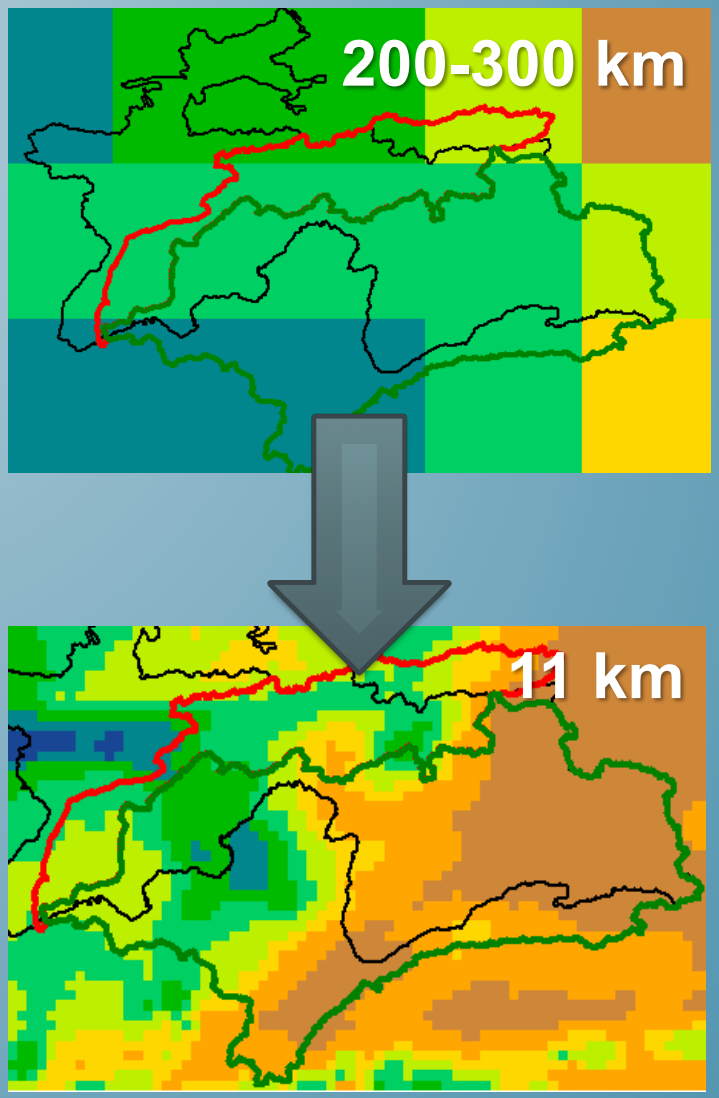
HYDRO-CLIMATE MODELING

- Statistical Downscaling of 12 Global Climate Models up to 2100
- Projections of temperature, daily runoff (mm) and flow (m^3/s) up to 2100



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CLIMATE CHANGE RISKS

Higher Temperature

Less snowmelt

Glacier retreat

Glacier lake outburst

Reduced water quality and quantity

Irrigation

Land management

Water supply

More rain

Flash floods

Damage to people, assets and ecosystems

Flood management

Land management

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COMMUNITY BASED VULNERABILITY ASSESSMENT

- 115 communities
  - women organizations
  - water committees
  - disaster preparedness committees
  - local leaders
- Field assessments and site visits

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RANKED LIST OF PRIORITY INTERVENTION

- Priority Index = product of the Community Risk, Benefits and Adaptive indices
  - Benefits Sub-index measured intervention's potential scope or scale of impact
  - Risk Sub-Index measured the vulnerability to climate related hazards and adaptive capacity
  - Adaptation Sub-Index measured the intervention's contribution to adaptation

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CLIMATE RISK AND VULNERABILITY ASSESSMENT

- Change risk indices 1980-2010, 2010-2040, 2040-2070, 2070-2099
- Seven categories (from 'Extremely High' to 'Extremely Low')
- 3 climate hazards (mudflows, floods, droughts)
- 3 sectors (population, agriculture
- Transport)

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COMMS TOOLS

- Translation of climate change information into actionable advice
- Communication tools
  - posters, brochures, community board bulletins, community meetings, conversations between scientists and communities, site visits
- Secretariat for provision of information

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FINDINGS

- Access to water as key issue (too little or too much)
  - A catalogue of priority interventions
- Limited capacity to cope with droughts, floods and mudslides
- Need to diversify livelihoods
- Crucial role of women

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ADAPTATION PRIORITIES

- Climate change resilient Infrastructure in 59 villages
  - Water supply
  - Irrigation systems
  - Flood protection & early warning systems
  - Disaster management committees

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ADAPTATION PRIORITIES

- Provision of knowledge & finance
  - Community information centers
  - Finance
    - Microcredits for climate resilient farming practices, and economic diversification
    - Provision of bank deposit
  - Feasibility of weather based insurance

SOME LESSONS LEARNED

- Climate data need to be translated into useful information that can be understood by different audiences and users
- Local knowledge provides insight in experienced risks, perceived priorities, management approaches and responses that have been tested for long periods of time
- The role of women and vulnerable groups is crucial in identifying priority adaptation needs

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THANK YOU

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Project details available at:

http://www.adb.org/projects/documents/building-climate-resilience-pyanj-river-basin-project-rrp

Watch a video on the making of the project at http://www.adb.org/news/videos/meeting-climate-challenge

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