Initiating Climate Change Adaptation in Rural Kyrgyzstan: Methods and Findings

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Need and Motivation for CCA

- Farmers: In our program areas, farmers' frequently commented that changes in the weather were impacting their livelihoods
- Lack of CC information: Little information about existing climate change trends and impacts in rural Kyrgyzstan
- Impact on natural resources: CC trends and impacts are key drivers in local resource availability and condition, and in determining appropriate SLM practices
- Kyrgyzstan is the third most vulnerable country to climate change of 28 countries in Europe and Central Asia (Fay et al. 2010)

MSDSP KG CCA Programme

I. Generate Locally Relevant, Science Based Climate Change Information

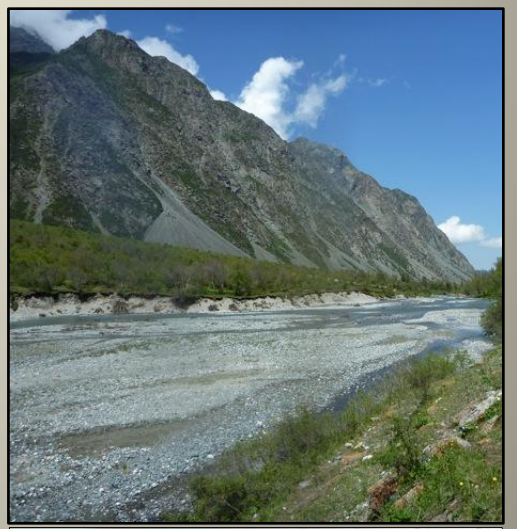
- Step 1. District-Level CC Analysis
- Step 2. Village CC Resilience Assessments

II. Share Climate Change Information

- Step 3. Community Information Sessions
- Step 4. Produce and Distribute CCA Media and Materials
- Step 5. Engage Stakeholders

III. Put Climate Change Information to Use

- Step 6. Community Adaptation Planning
- Step 7. Implementing Adaptation Projects and Activities



Kara Kulja, Osh

Phase I. Generate Locally Relevant, Science Based CC Information

Objective & Methods

<u>Objective</u>

- To collect locally relevant, science based CC information for use in community adaptation planning and action

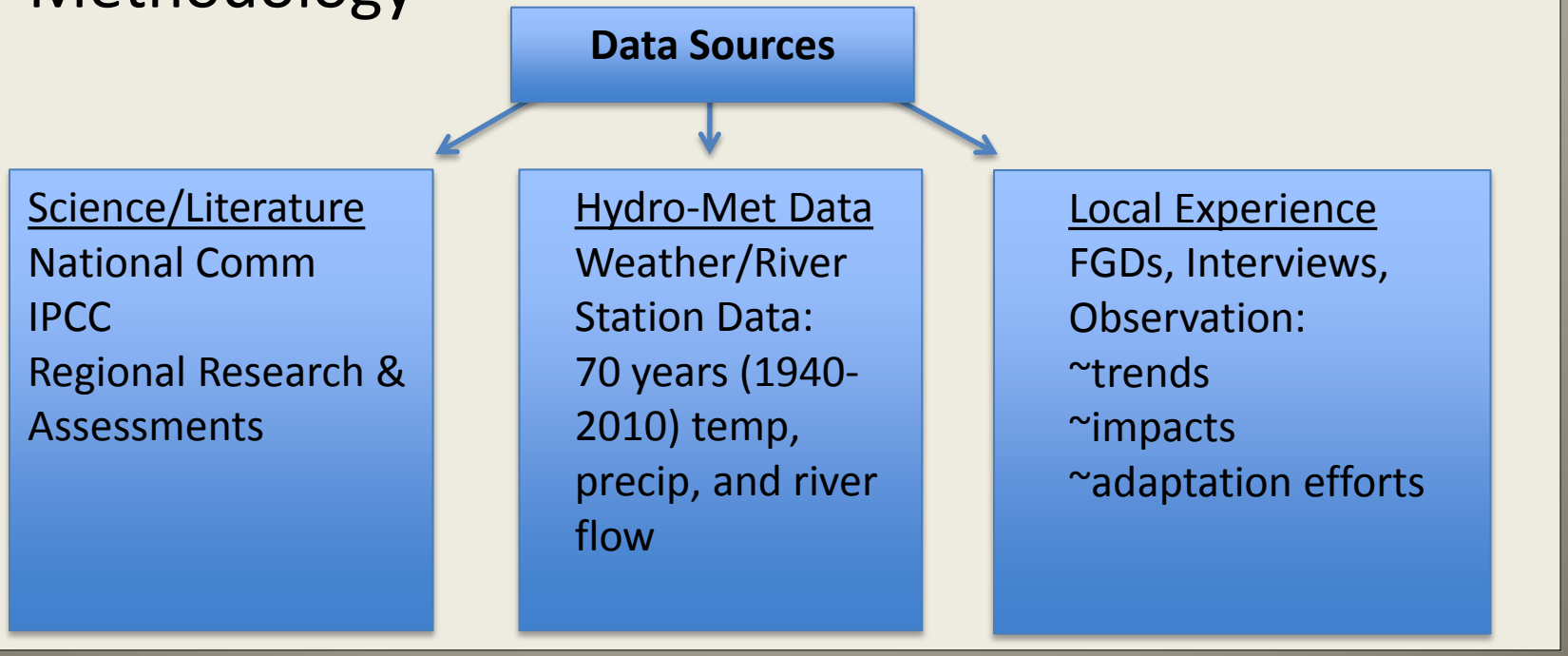
<u>Methods</u>

- District CC analysis
- Village CC resilience assessments

District CC Analysis

- Are rural communities in Kara Kulja experiencing CC trends and associated impacts?
- What are best practices for adaptation in Kara Kulja?

Methodology



Key Findings: CC Trends

Data Source	Precipitation	Temperature	Wind	River flow
Local Experience (Kara Kulja)	↑ heavy precipitation	↑*	↑ More variable direction and timing	↑
Hydro-Met Data (Kara Kulja and Uzgen stations)	↓summer/fall ↑winter/spring Overall increase of 12mm (1940-2010)	↑ 1.1°C (1960-2010)	No info	↑ 5.95 m^3/s Tar 9.45 m^3/s Kara Kulja (1940-2010)
Climate Science (IPCC, National Comms)	↑ heavy precipitation ↓ summer ↑ winter -3% precipitation (2000- 2100)	↑ ~3.7°C (2000-2100)	↑	↑before 2030 ↓ after 2030

* Also, unseasonal weather and abrupt change of seasons

Key Findings: Existing Adaptation

Drying/Drought

- Change grazing practices to access remote pastures (Kyzyl Zhar)
- Switch to more drought resistant crops, i.e. from wheat to barley (Kenesh)
- Increase perennial fodder cultivation (Kashka Zhol, Kara Kulja)
- Use tax law to receive tax exemption when crops are lost or damaged by drought (Kyzyl Zhar, Kashka Zhol, Oi Tal, and Alaikuu)
- Change to water efficient irrigation practices (Kashka Zhol)
- Ayil Okmotu does not collect rent for AO lands during drought (Kashka Zhol)
- Increase reliance on credit and dependency on remittances (all)
- Sell livestock to buy hay (all)

Wind

- Plant wind breaks (Kara Kulja)
- Secure roofs (Chalma)

Heavy Snow

- Increase fodder production and storage for longer winters (Kapchegai)

Key Findings: Existing Adaptation

- Mainly behavioral adaptation measures with some some financial and institutional measures
- No informational or technological measures
- Future adaptation should build on existing measures and local expertise

Form	Examples for Future Adaptation
Informational	Access to climate change information; improved weather forecasting
Technological	Water efficient irrigation system; drought resistant crop varieties
Behavioural	Shift the crop calendar according to new conditions; Relocate outside hazard areas
Financial	Improve access to insurance, credit, and/or savings
Institutional	Establish early warning and emergency response systems; Utilize appropriate land zoning and building standards

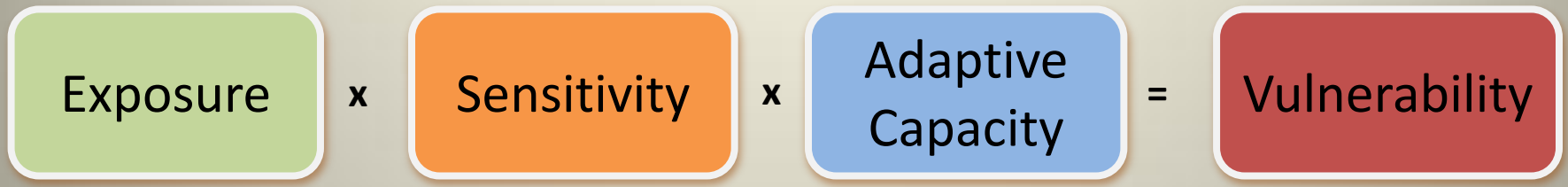
2. Village CC resilience assessments

- Are rural communities in Kara Kulja vulnerable to CC?
- Are key resources resilient to CC trends and impacts?

Methodology

- FGDs, interviews, mapping, observation
  - Vulnerability assessment
    - Exposure, sensitivity, adaptive capacity
  - Key resource resilience
  - GPS and site examination

Vulnerability



- Exposure: The nature and degree to which a system is exposed to significant climate variations
- Sensitivity: The degree to which a system is affected, either positively or negatively, by climate-related factors
- Adaptive Capacity: The ability of a system to adjust to climate change impacts, to moderate potential damages, to take advantage of opportunities, or to cope with the consequences

Key Findings: Vulnerability in Kara Kulja

Exposure

- ↑ temperature >global projections
- ↑ intensity of heavy precipitation events
- ↑ wind
- ↑ weather and seasonal variability

Sensitivity

- Agriculture highly vulnerable to CC
- Negative impacts realized-drying/drought, flood, wind/rain storms, erosion
- Positive impacts not realized-growing season, carbon fertilization

Adaptive Capacity

Resources:
Natural
Human
Social
Physical
Financial

Positive and negative resource attributes

Resilience of Key Resources in Kara Kulja

- Community Identified Key Resources
- Examine Resilience of Key Resources

Management

Uses & Users

Disturbance Regime

Factors Driving Change

Key Findings: Resource Resilience

Community Identified Key Resources: Water, Pasture, Cultivated Lands, Hay, Livestock

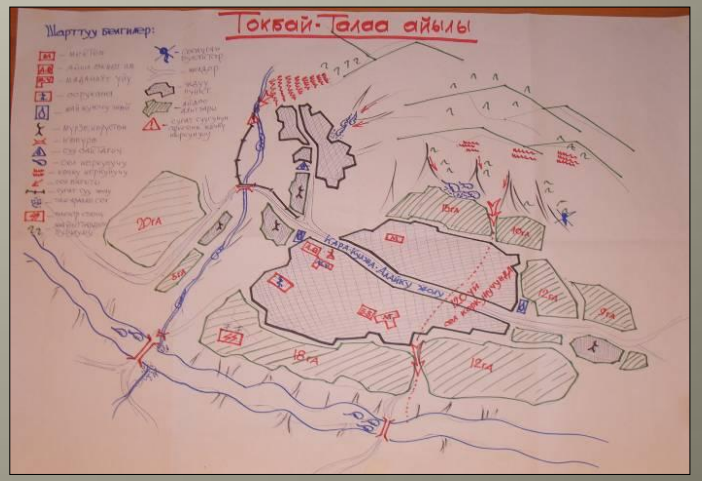
Example for Pasture Resilience

Positive attributes

- Cooperation between village council and local government on resource management
- People value pasture and have a desire to conserve them
- Pasture committees are established

Negative attributes

- National law in place but not well implemented at a local level
- Increasing livestock numbers & demand on pastures
- Increasing livestock disease
- Increasing wind/water erosion and landslide damage resulting from climate trends & poor management



Thank You

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