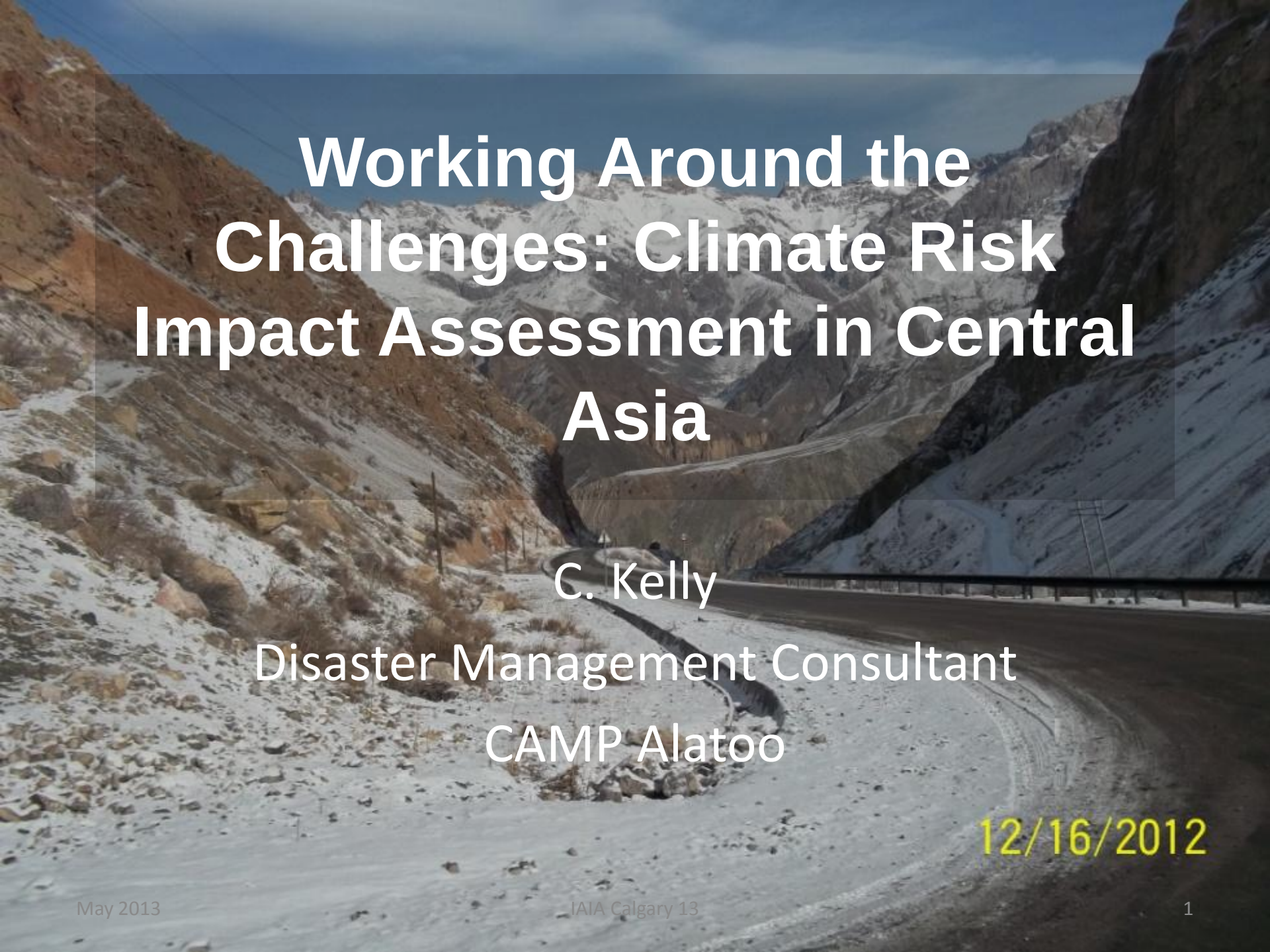

Working Around the Challenges: Climate Risk Impact Assessment in Central Asia

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Central Asia

Sources: World Administartive Divisions/UNDP, GRUMP/ Colombia University, UNEP

Conception: UNDP

Central Asia Climate Risk Assessment

- Develop a process to assess climate risks
- Process usable in all five countries
- Use existing data and capacities
- Focus on high impact topics
- Results from below the national level
- Balance short and long term risk
- Risk assessment frameworks exist, but
  - Downscaling a challenge
  - Different concepts, approaches and terminology
  - Process rather than impact focus

Climate Risk Assessment Guide – Central Asia

1. Assess correlation between climate-related impacts and historical climate conditions
2. Define impacts of climate events in terms of damage
3. Define the impacts of climate events on livelihoods
4. Define the risk of climate events
5. Define possible future damage, livelihoods and risk outcomes
6. Define the perceptions of those at risk of climate hazards and their willingness to address these risks

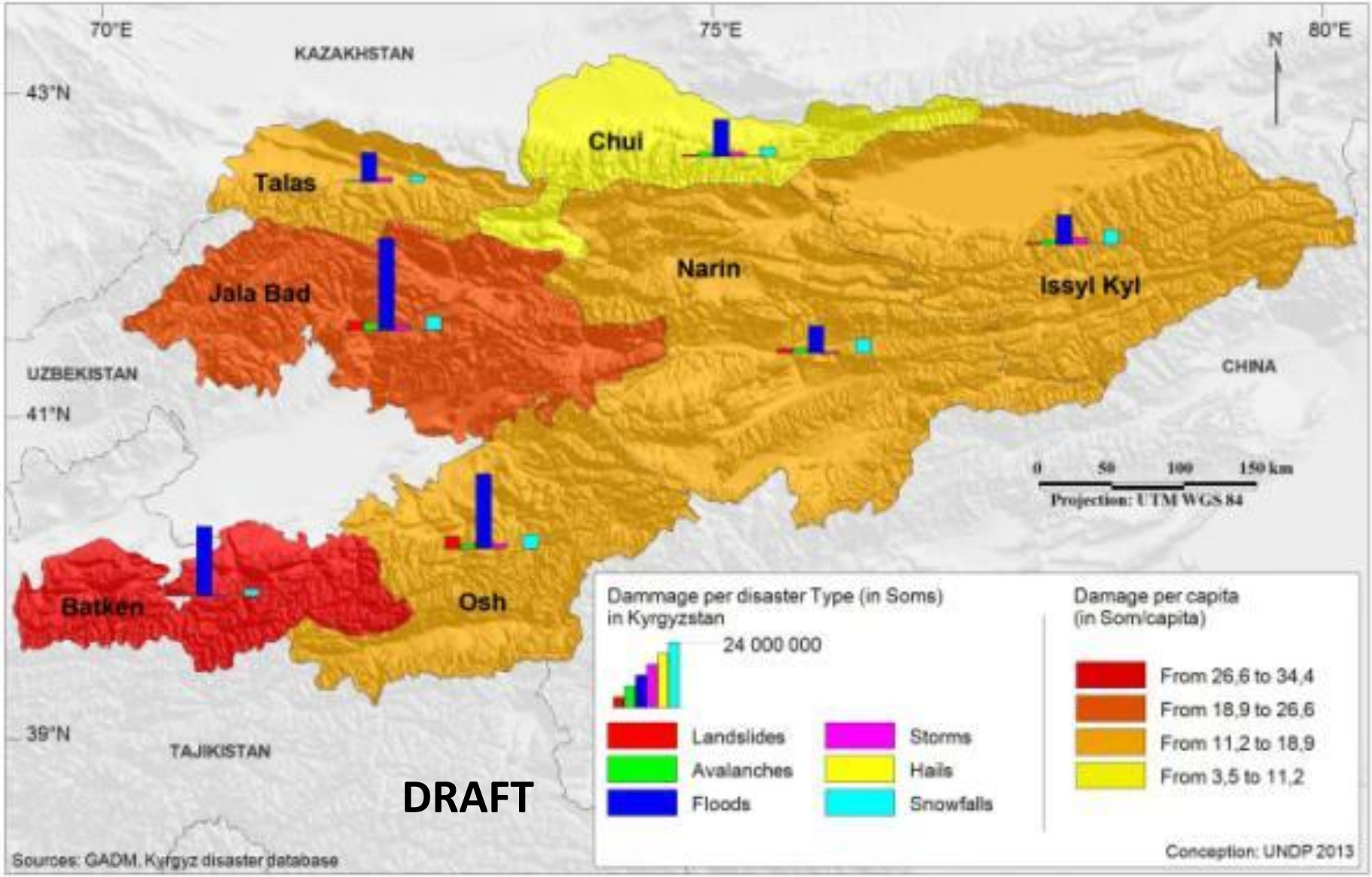
Defining Risk

- Used the R = H, V formulation; more in line with “SREX” than *climate change adaptation* formulation
- Used “past is prologue” approach: past data to indicate future impacts
- Detail at Oblast (Province) level
- Considered climate-related disasters and climate impact on agriculture (major source of livelihoods in region)

Climate-Related Disasters

- 10 years of data on disasters; but there were "*issues*"
- Correlation between precipitation and events: not clear
- Oblast-level estimates of damage per capita per year for each event type

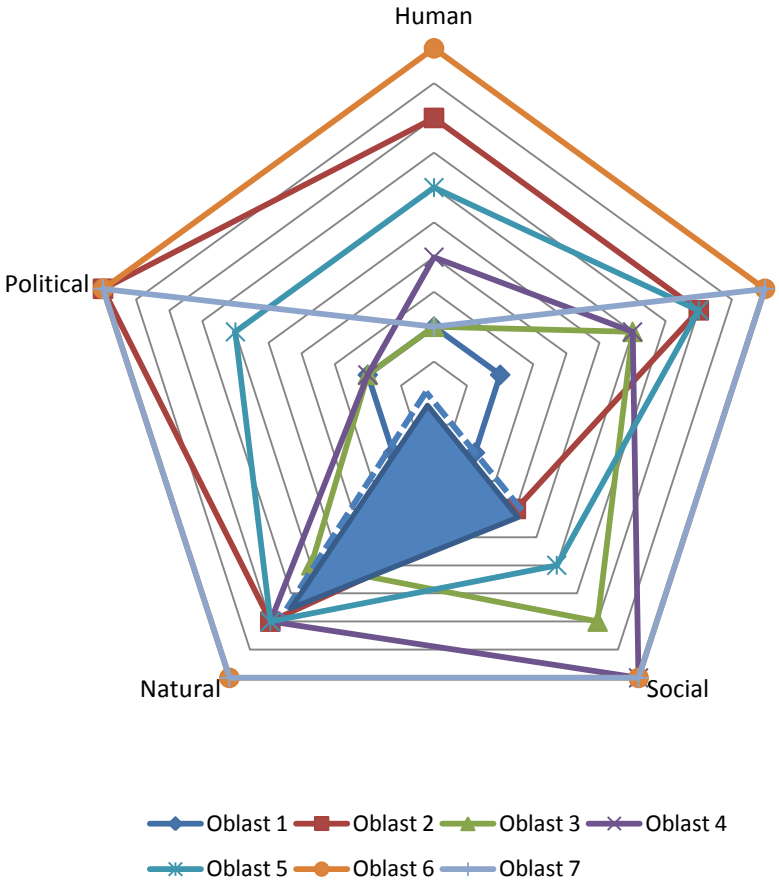
Repartition of damages caused by disasters in Kyrgyzstan (2001-2011, except 2005)



- Lacked uniform, complete data sets on livelihoods across all five countries
- Used a Delphi approach to rank impact

Livelihoods Impacts

Type of Capital	Level of Vulnerability Outcome in Relation to At Risk Populations				
	Insignificant (1)	***Low (2)***	***Medium (3)***	***High (4)***	***Extreme (5)***
Human	No negative outcome on health.	Temporary negative outcome on health	Limited, short term negative outcome health; few deaths.	Extensive negative outcome on health;	Significant negative health outcomes and deaths.
Financial	No loss income or financial assets	Temporary loss of work.	Loss of work for several months.	Significant loss of work.	Near total loss of income and financial assets
Social	No need for reliance on social network for support.	Occasional reliance on social network for support.	Heavy reliance on social network for support, for 1-3 months.	More than a year reliance on social network for support.	Total reliance on social network for basic needs.
Natural	No damage to natural resources.	Temporary reduced access to natural resources needed to meet basic needs.	Reduced access to natural resources for 3-4 months needed to meet normal needs.	Extended reduced access to natural resources needed to meet normal needs.	No access to natural resources
Political	Full government engagement in response to event.	Minor gaps in government response.	Some government assistance but significant unmet needs.	Very limited response to event.	No government response to event.



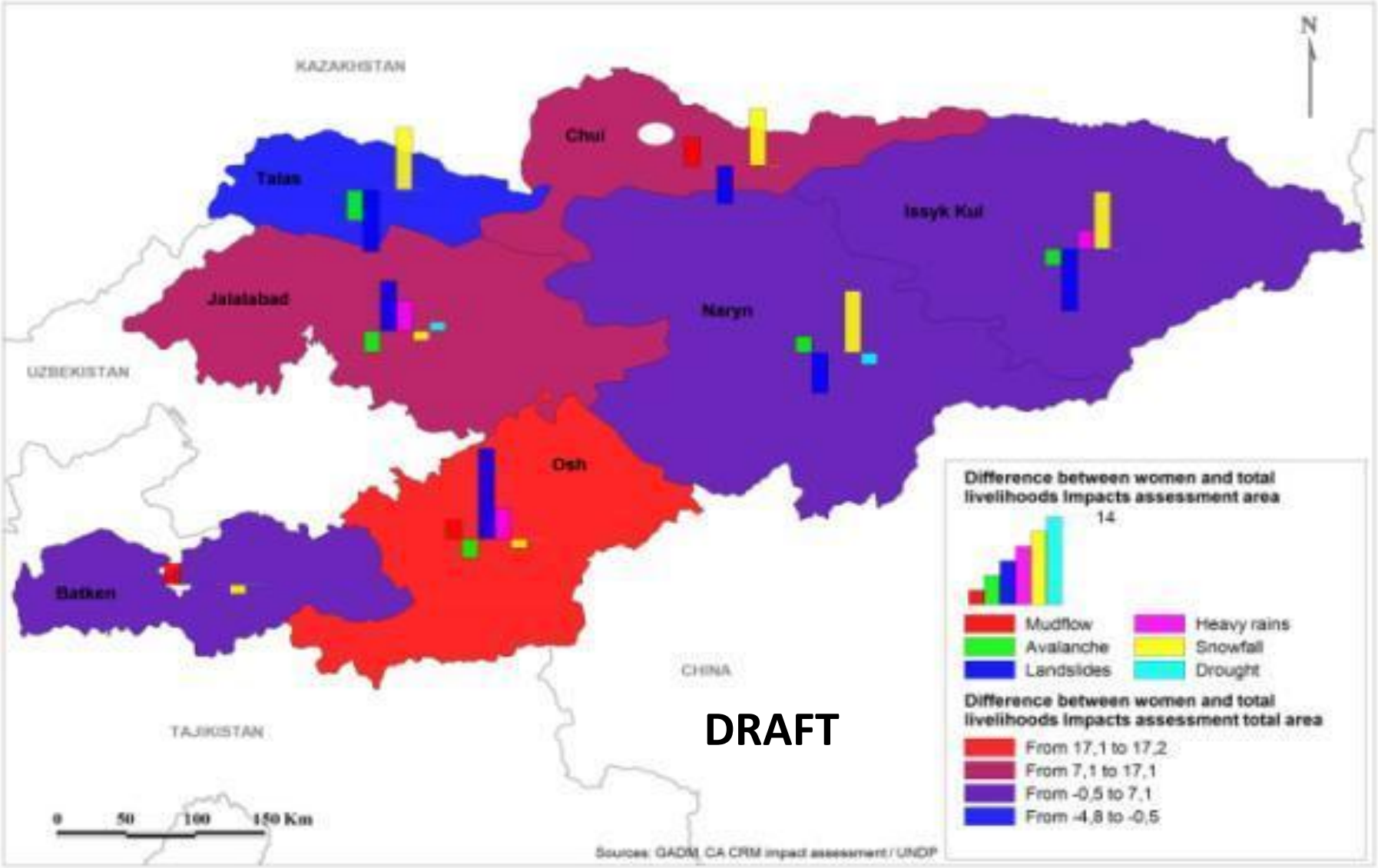
$$S = \frac{1}{2} \cdot a \cdot b \cdot \sin\alpha$$

Area of each triangle in the pentagon

Then

The areas are added together to provide an overall score for all triangles in the pentagon

Livelihoods impacts assessment area (derived from Delphi-based assessment of impacts) in Kyrgyzstan

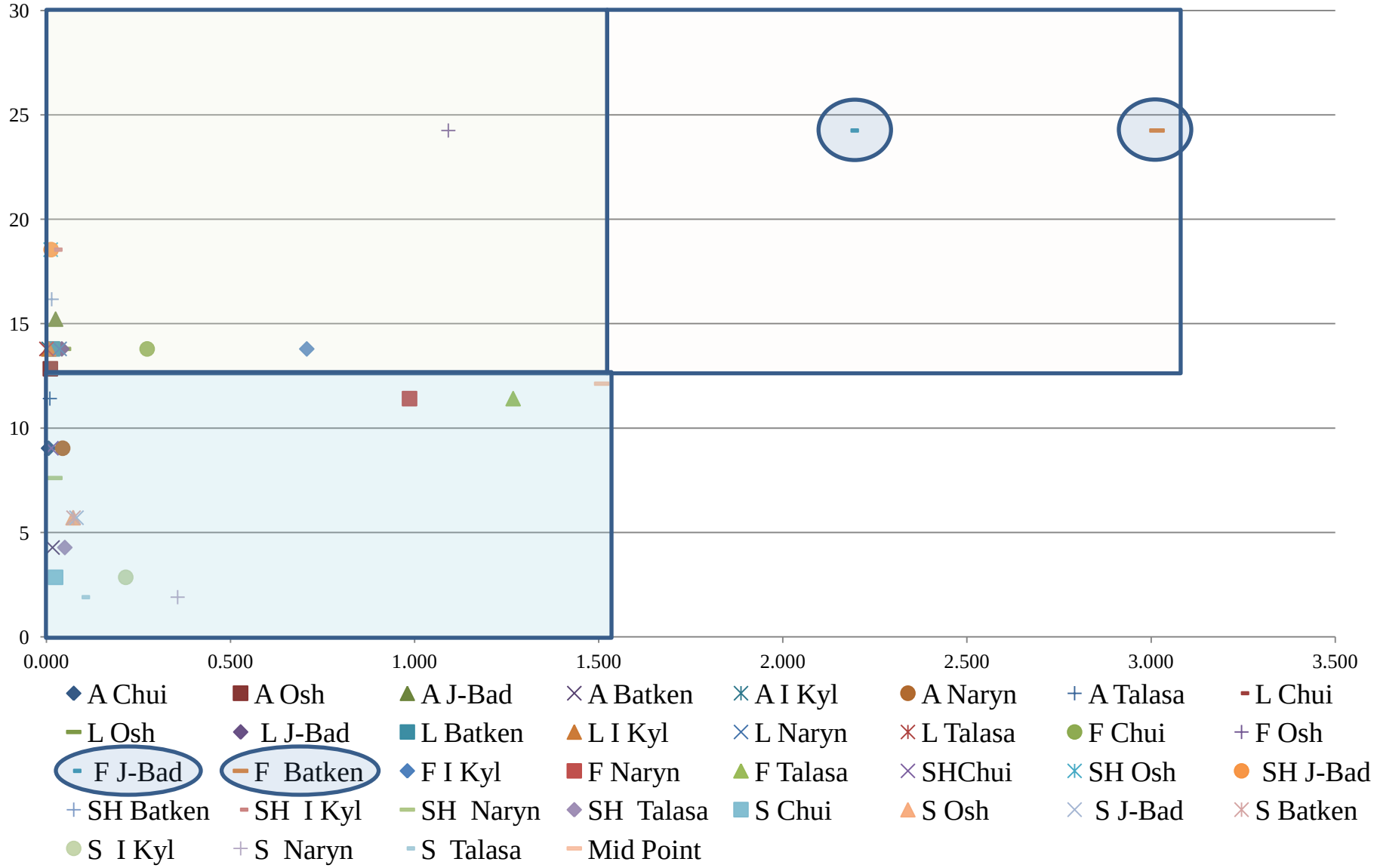


Stating Risk

- Had planned to calculate the ratio between per capita year damage and livelihood impact score
- Works if events are the in the same order of magnitude - didn't in this case due to flooding
- Shifted to a scatter diagram – less numeric but clear none the less

Risk Comparison - By Risk and Oblast

Left Scale: Livelihood Score, Bottom Scale: $ Damage/Capita/Year



Conclusions

- Low cost approaches can work where there is limited data
- Results not perfect and need further refinement
- Sufficient for risk prioritization
- Transparent (relatively) simple process which can be replicated
- Further work needed on other climate impacts
- Differences between CCA and DRA approaches remain

Working Around the Challenges: Climate Risk Impact Assessment in Central Asia

Central Asia Climate Risk Assessment Team

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Photo: S. Erokhin