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UNIVERSITY OF CENTRAL ASIA  
GRADUATE SCHOOL OF DEVELOPMENT  
Mountain Societies Research Institute



The  
Federal Government

Event organized with support from the  
Government of Germany

Proceedings of the

# **Silk Roads Conference**

Anticipating Social and Environmental Impacts  
of China's Belt & Road Initiative  
in the Mountains of Central Asia

26 October 2018, Bishkek, Kyrgyz Republic



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# Silk Roads Conference

Anticipating social and environmental impacts  
of China's Belt & Road Initiative  
in the mountains of Central Asia

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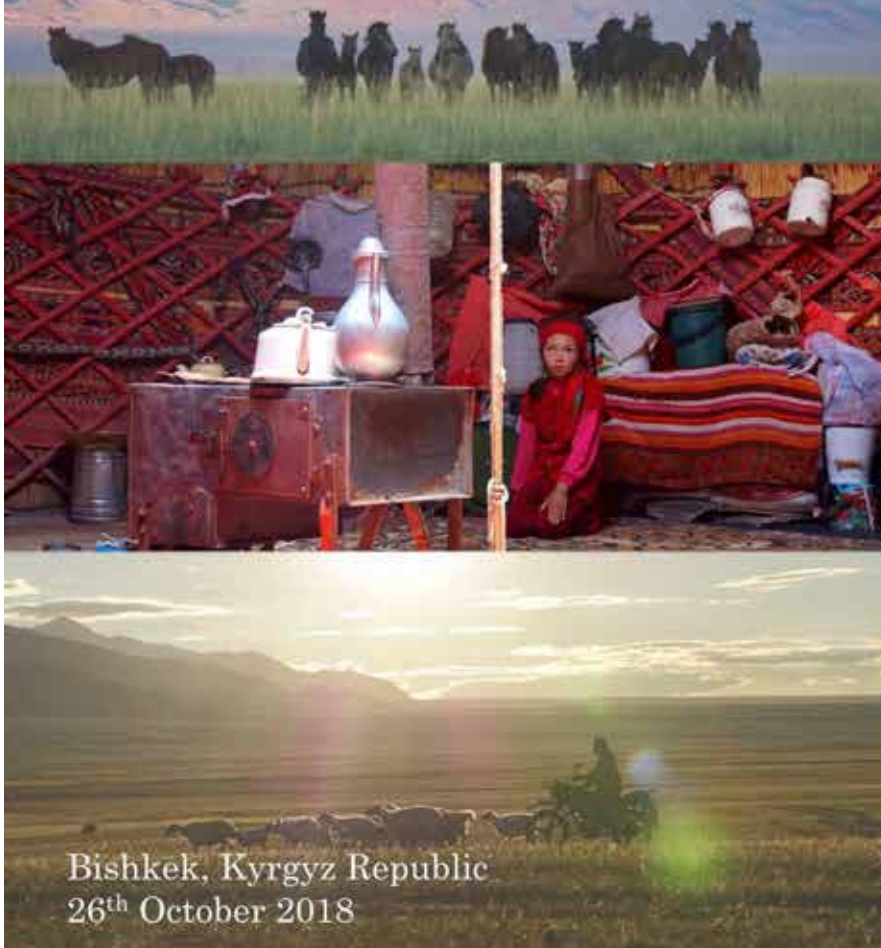
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UNIVERSITY OF CENTRAL ASIA  
GRADUATE SCHOOL OF DEVELOPMENT  
Mountain Societies Research Institute

# Silk Roads Conference

Anticipating social and environmental impacts  
of China's Belt & Road Initiative  
in the mountains of Central Asia



Bishkek, Kyrgyz Republic  
26<sup>th</sup> October 2018

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The  
Federal Government

Event organized with support from the  
Government of Germany

## Foreword

China's flagship global enterprise known as the 'Belt & Road Initiative' (BRI) is well and truly underway. Emerging further as an economic powerhouse while still based on a strong labour economy, in recent years China has begun to expand its horizons and now reaches further to the west than ever before in modern times. Through the BRI's massive foreign investment in infrastructure and industry, along both land and sea routes, China is rapidly becoming the world's foremost driver of international connectivity and globalization, in a time when other traditional powers may be pursuing alternative options for foreign engagement and partnerships.

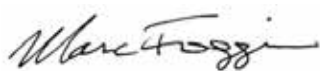
Initiated in 2013, the multi-faceted effects of BRI are beginning to reveal themselves. Along the land route through Central Asia and the Middle East into Europe, initial characterization and trends include rapidly evolving development trajectories, as roads, railways, and pipelines plough through mountains, deserts, forests and wetlands between China and Europe. Meanwhile, along the sea routes, the ports linking China to Africa and Europe are growing in number and catalyzing secondary developments on land as well. However, there are still many unknowns. The scale of the BRI makes the study and 'decoding the myths' surrounding this massive enterprise into its component parts and concrete plans for development, both figuratively and literally, an urgent priority.

Considering the huge range of societies, sectors, landscapes and ecosystems through which the BRI traverses, projects must be grounded in their specific natural and sociopolitical geographies, taking into account all contextual social and environmental factors that could enable, constrain, or be impacted by the projects. In the current global development arena, informed and guided by the widely endorsed Sustainable Development Goals (SDGs), China's BRI has a major role to play. Achieving the SDGs through the Initiative is, in fact, essential for its long term success, for delivering on its stated ambition to bring "great benefit to all peoples around the world." This can only be achieved through equitable, inclusive, environmentally friendly and financially secure investments.

*The Silk Roads Conference*, hosted by the Mountain Societies Research Institute (MSRI) of the University of Central Asia, follows on from the inaugural *Silk Roads in the Mountains Central Asia* workshop held in Dushanbe, Tajikistan in October 2017, both expanding its scope in Central Asia and also drawing on recent experiences from Africa and Southeast Asia. Altogether, nearly 40 academics and development practitioners working across China, Central and West Asia, Europe and Africa convened to discuss emerging issues associated with China's Belt & Road Initiative. What do we already know of existing projects? Where, who, and what sectors are being impacted? And, how could the Initiative bring about more positive transformations in these sectors towards sustainable mountain development?

The University of Central Asia was delighted to host the conference, and wishes to thank all the participants, especially session chairs and presenters, who facilitated meaningful discussion and whose insights were gladly received. We also are incredibly grateful to the Federal Government of Germany, whose generous contribution enabled this event and thus helped both to consolidate and disseminate the findings and outcomes from the conference. Special thanks also is hereby extended to all the MSRI team, whose work prior to, during, and following this one-day special conference made it a success.

Sincerely,



## About Mountain Societies Research Institute (MSRI), University of Central Asia (UCA)

The Mountain Societies Research Institute operates at the interface of academia and development. It envisages a future in which local communities, government, development practitioners, policy makers, and the private sector collaborate in the generation of interdisciplinary knowledge and its application for sustainable development in the mountains of Central Asia and beyond.

MSRI's primary concern is the quality of life and wellbeing of the people and communities residing in the mountains of Central Asia, and the major drivers and factors affecting their livelihoods, economies, and environments.

MSRI has five key objectives:

- To generate knowledge on mountain societies through original scientific research
- To serve as a knowledge hub for scholars, development practitioners, and policy-makers
- To enhance regional capacity to conduct research relevant for mountain societies
- To inform policy and practice through engagement with key development partners
- To disseminate knowledge amongst the full range of mountain stakeholders



Major research themes include:

- Natural resources management and sustainable food systems
- Social dynamics and transformations, including resilience
- Mountain livelihoods, alternative incomes, poverty, equity
- Mountain hazards and disaster risk management
- Ecosystem services and conservation of biodiversity

Cross-cutting themes:

- Adaptation to climate change in mountain regions
- Local and regional disparities in socioeconomic development
- Assessing the Sustainable Development Goals in Central Asia

**For more information:**

<https://msri.ucentralasia.org/>



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# The Silk Roads Conference

26 October 2018

Hosted by the Mountain Societies Research Institute, University of Central Asia  
With support from the Federal Government of Germany

China's Belt and Road Initiative (BRI) will connect communities, countries and economies in unheralded scope and scale. Over three trillion dollars of investment in more than 60 countries in the form of roads, railways, pipelines and other infrastructure projects will transform the economies of the BRI partner countries. However, such transformations also carry great environmental and social challenges. Ensuring the BRI can positively contribute to sustainable development will be contingent on mitigating negative impacts, promoting inclusive development, facilitating resilience and adaptive capacity to modern drivers of change, identifying and promoting responsible financial structures, and encouraging adoption of landscape-level and transboundary approaches to all of these challenges.

Addressing the above issues must be built on solid understanding of contexts and plans, formulated through interdisciplinary processes. Whilst there is growing recognition in certain sectors and 'partner countries' about environmental and social implications of BRI, there is still much to do towards more fully understanding and mitigating the challenges. This workshop aimed to consider the likely impacts and potential opportunities for social and economic development and the conservation of biodiversity associated with the Belt & Road Initiative, and the policy avenues that could be leveraged to maximize positive development and environmental outcomes.

Building on the inaugural '*Silk Roads in the Mountains of Central Asia: Ancient Routes and Modern Challenges in Times of Global Change*' conference held in Dushanbe, Tajikistan in October 2017, this one-day meeting encouraged interdisciplinary discussion, comparing and contrasting varied impacts of the BRI in different geographical contexts, including Africa and Asia, as well as between disciplines, to generate an enhanced, grounded *shared understanding* of the environmental, socio-cultural and development dimensions in Central Asian countries and regions targeted for BRI investments.



Event organized with support from the  
Government of Germany

The Silk Roads Conference aimed specifically to address the following issues, in the context of current understanding of the Belt & Road Initiative:

- Conservation and sustainable use of biodiversity
- Economic assessments and international trade
- Hazards affecting and affected by linear infrastructure
- Impacts on adaptation and mitigation of climate change
- National frameworks of partner countries for environmental protection
- Integrated agro-ecosystems and medicinal and aromatic plants
- Transboundary cooperation and networks of protected areas (PAs)
- Protecting Indigenous and Community Conserved Territories and Areas (ICCAs)
- Development policy recommendations

Workshop outcomes have included:

- Better understanding of current trends and dynamics in “Belt & Road” projects, including spatially explicit review of the BRI’s impacts on key biodiversity areas (KBAs)
- Broadly agreed priorities for further research in Central Asian partner countries
- Greater awareness of the mechanisms through which sustainable development goals may be strengthened along the Belt & Road Initiative routes
- Strengthened partnerships between researchers and development practitioners.

Outline for the day:

| Activity         | Theme                                                                                              | Chair                                       |
|------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------|
| Session 1        | What we know: Overview of the Belt & Road Initiative                                               | Dr. Roy Sidle                               |
| Session 2        | Social and environmental impacts, challenges and opportunities                                     | Dr. Marc Foggin                             |
| Session 3        | Role of ‘protected areas’ in regional landscapes                                                   | Mr. Ashiq Khan                              |
| Special workshop | “Identifying areas and sectors of special concern in Central Asia, and mechanisms to address them” | Mr. Matthew Emslie-Smith & Dr. Alice Hughes |
| Session 4        | Lessons learned & policy recommendations                                                           | Mr. Wali Modaqiq                            |

## Session 1: What we know- Overview of the Belt & Road Initiative

**Chair:** Dr. Roy Sidle

**Presentation:**

Dr. Yuri Badenkov,  
Senior Research Scientist, Institute of Geography, Russian Academy of Sciences

*"Economic vs. ecological corridors in Central Asia in the emerging Belt & Road context"*

Key points:

1. Economic and ecological corridors exist in key transboundary mountain regions of High Asia.
2. IUCN Connectivity Conservation approach can be furthered in the context of BRI.
3. B&R Field Research Stations approach was announced by Chinese delegation in Irkutsk, to be conceptually aligned with MAB Biosphere Reserve and recommended to target transboundary regions of the Altai, Tien Shan and Pamir mountain ranges.



### 3 Themes

1. Economic and ecological corridors in key transboundary mountain regions of High Asia
2. IUCN Connectivity Conservation approach in context of B&R impact and local socio-ecological systems response
3. B&R Field Research Stations. Chinese proposal 2018.

#### Xi on "BRI: Not China's solo but inspiring chorus" Xinhua, 2015

One Belt, One Road: With the Silk Road Initiative, China Aims to Build a Global Infrastructure Network

Projects completed and planned: December 2015

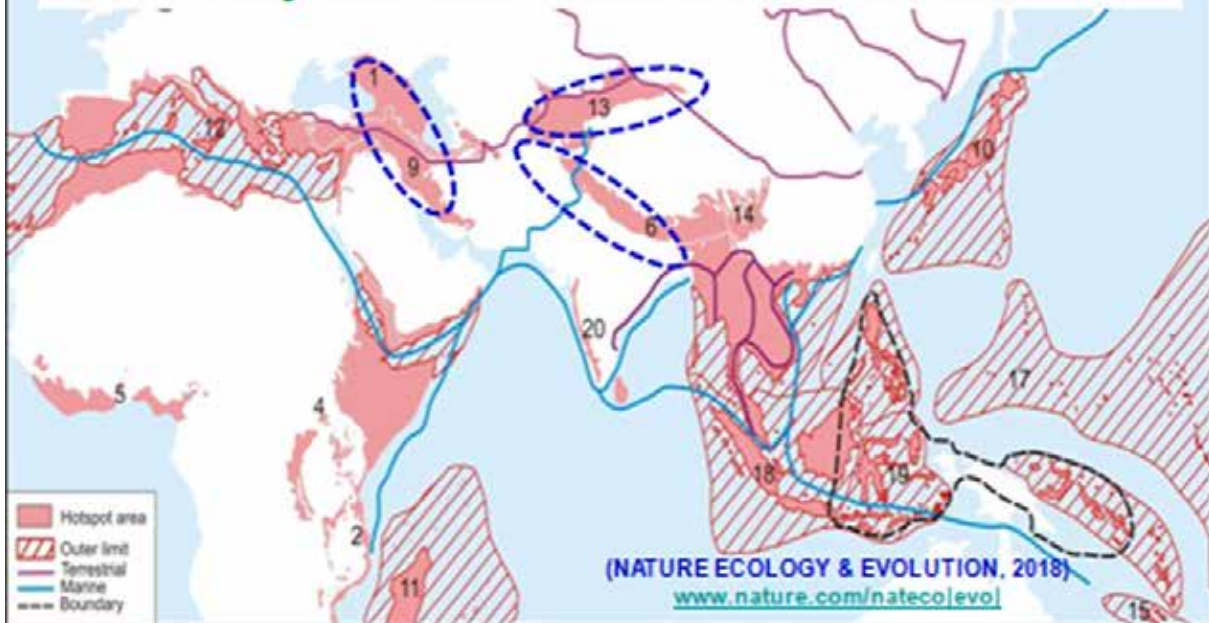


## “Infrastructure connectivity a priority in Belt and Road Initiative”

Xinhua, 2015

IUCN (2018):

*“Biodiversity conservation should be a core value of BRI”*



**Biodiversity connectivity conservation mega-corridors: regional response to Global Change (IUCN)**



The Human Footprint – Source: Wildlife Conservation Society, [www.wcs.org](http://www.wcs.org)

## What is connectivity conservation?

Large-scale  
natural landscapes

Keeping the bush **intact**

Letting animals  
**move and survive**

**Interlinking** protected areas

**Restoring** landscapes

Involving many  
**people**

Across many **tenures**

© Graem Worboys, IUCN

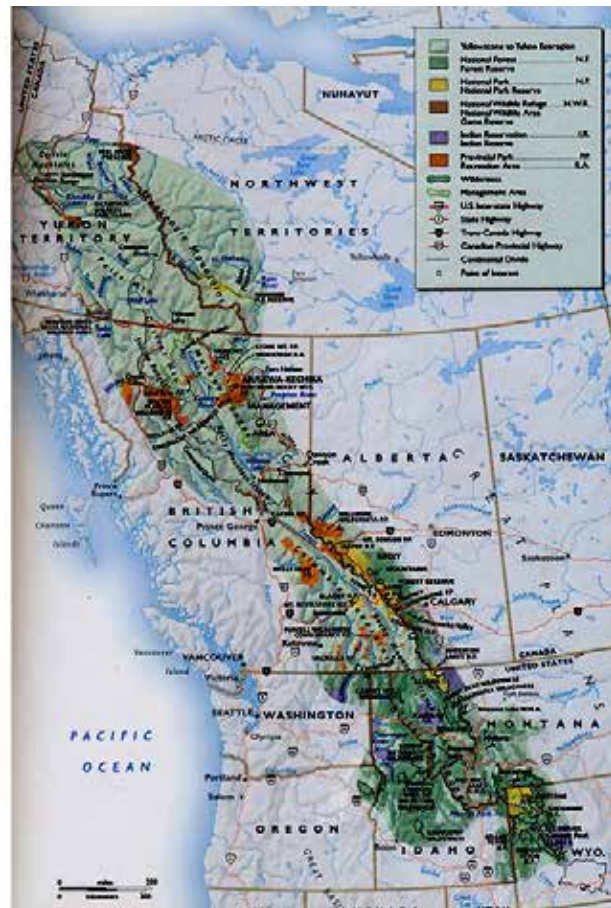
## USA Y2Y

### Yellowstone to Yukon

- Length: 3207 km's
- Width: 202-805 km's
- Average height: 1,067 metres

#### Landcover:

- 1.5% bare rock
- 18.9% tundra
- 59% forested
- 13.5% shrublands
- 4.5% grasslands
- 2.6% agricultural



## Australia

#### Green:

Protected Areas

#### Yellow:

Indicative A2A corridor

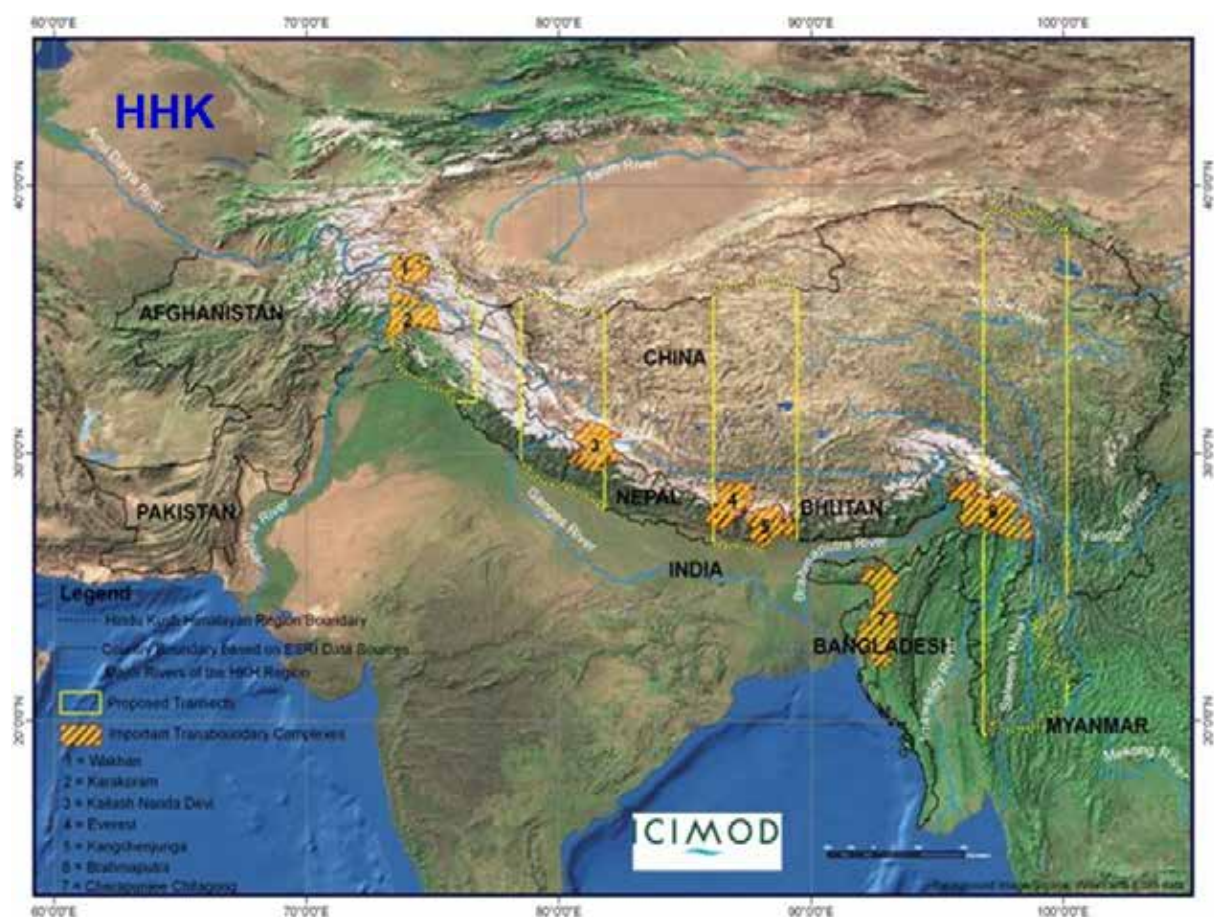
#### Black Line:

Great Dividing Range

#### Red Line:

Great Escarpment of Eastern Australia

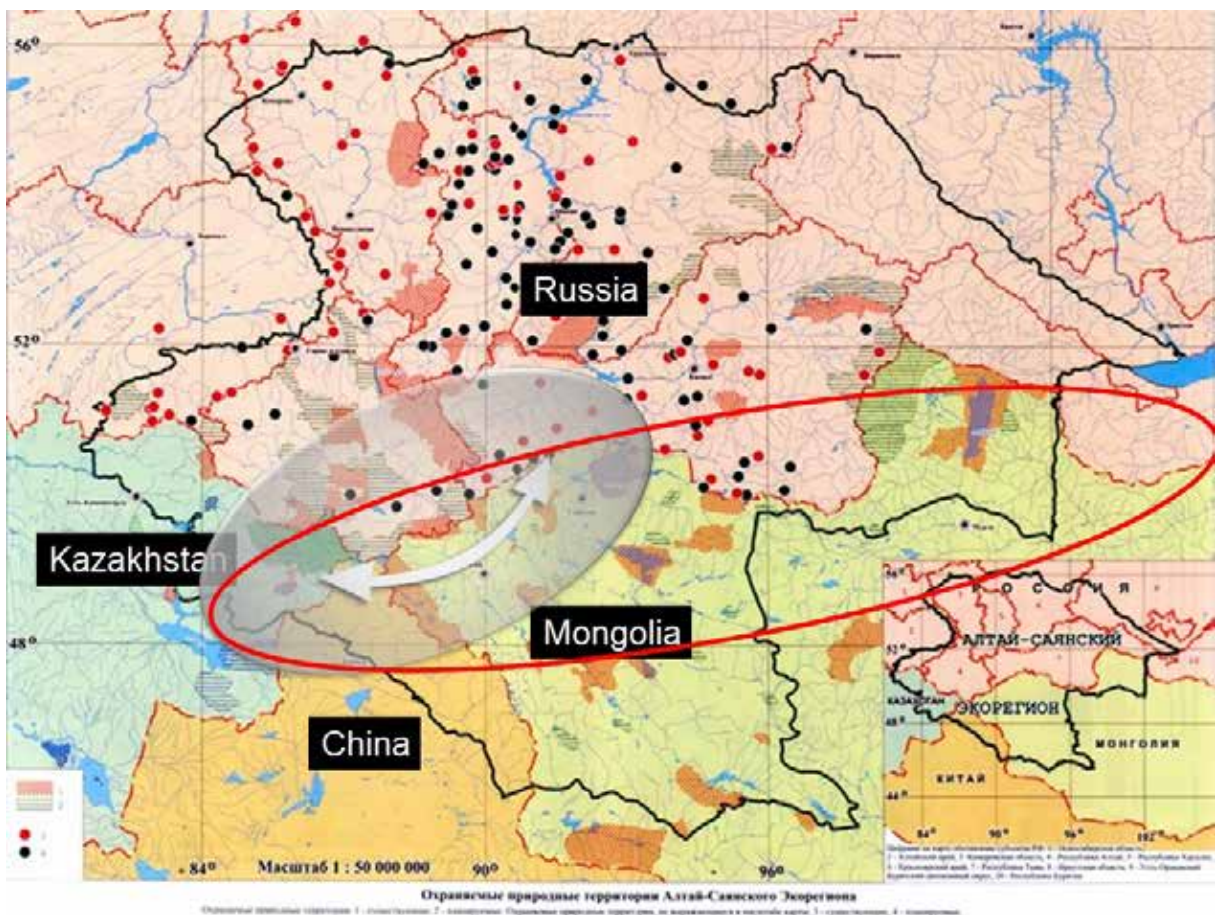




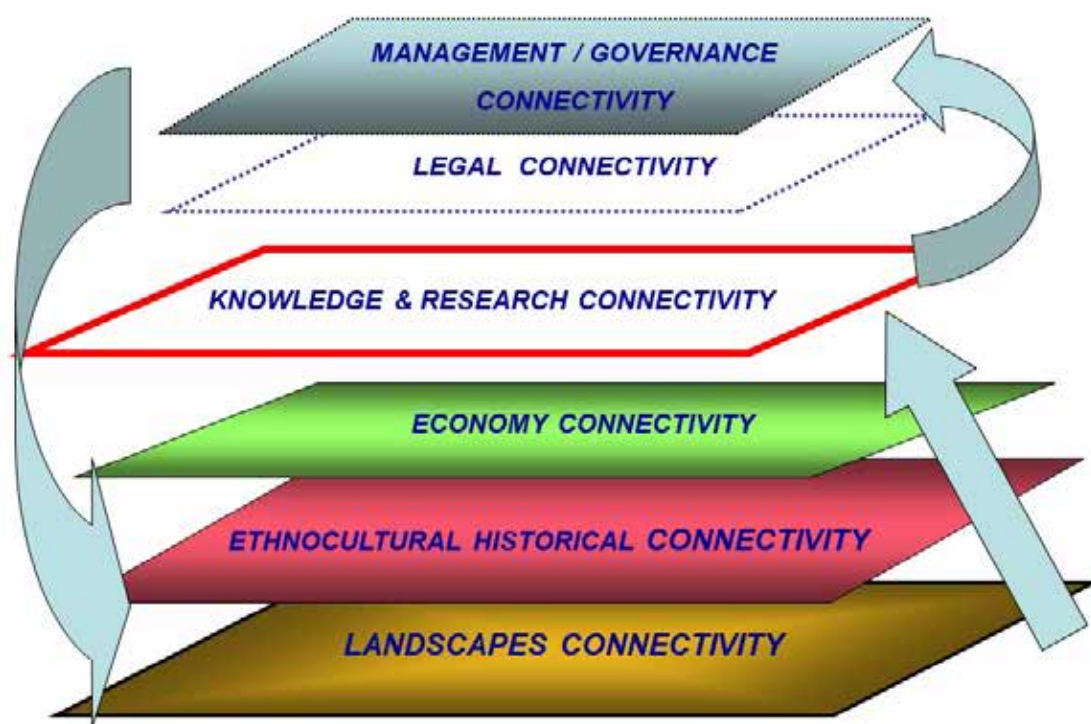
## Altai-Sayan-Baikal mega-corridor of connectivity conservation

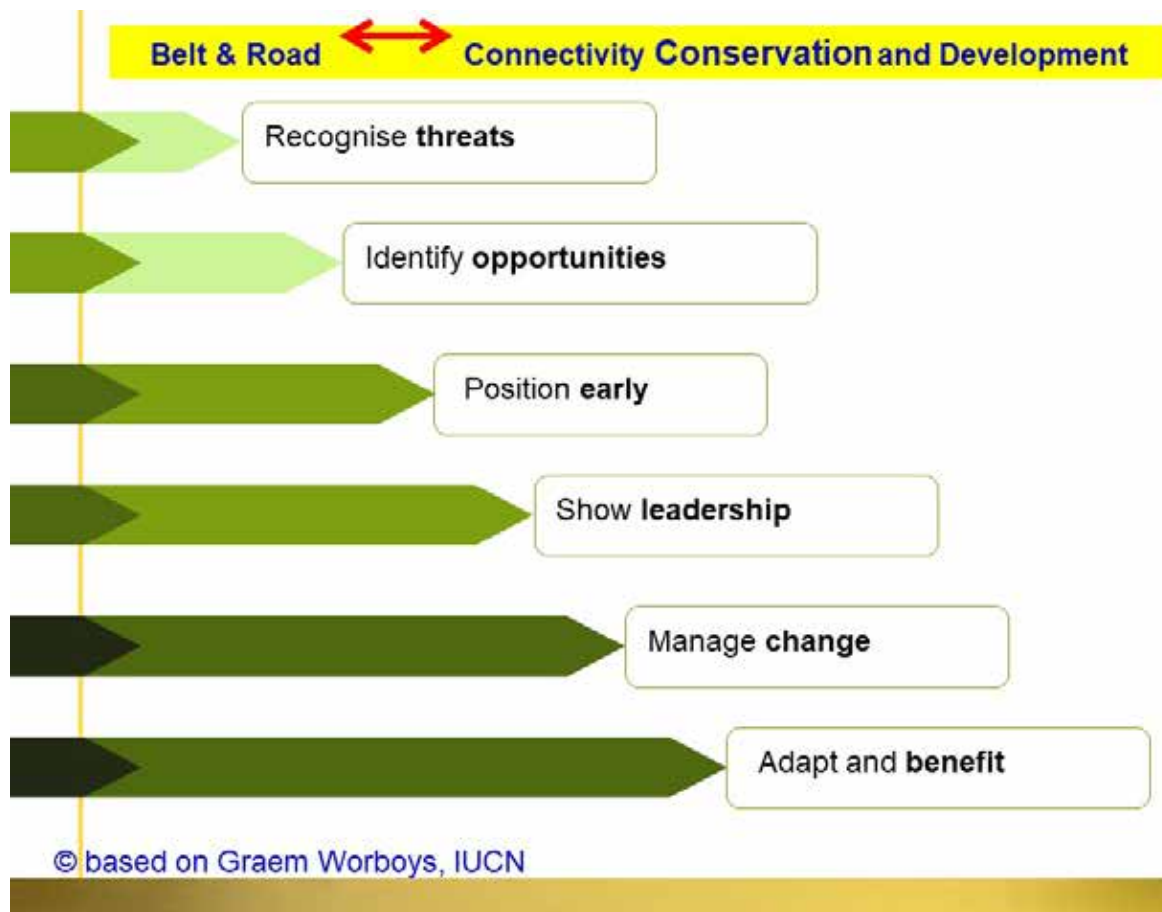


по Ю.П.Баденков, Г.Ворбойз, И.Н.Ротанова, Т.В.Яшина, 2010



## CONNECTIVITY CONSERVATION & DEVELOPMENT APPROACH for TRANSBOUNDARY MOUNTAIN REGIONS





## 1996 Continental economic bridge Xinjiang-Siberia pre-Silk road initiative First call.

Лю Цзань-фу, Гу Цзя-юй;  
Раздумья о вопросе  
транснационального освоения  
Восточно среднеазиатской  
экономической зоны

Altai transboundary knot



## Строительство Евразийского континентального моста (ж/д)

Road-guide in Kosh-Agach Town (Altai Republic)  
July, 2000:

MONGOLIA



⇒ CHINA

2000



## Silk Road tourism. Altai 2018

China Friendly



Туристическая ассоциация  
«Мир без границ»

Профессиональное объединение  
в сфере российско-китайского туризма

## **Belt & Road Field Stations approach: research – monitoring - development**

- **B&R Field Research Stations approach was announced in Irkutsk by Chinese delegation** (“China – Mongolia – Russia Economic Corridor Conference”, 2018)
- B&R FRS should be conceptually linked with UNESCO MAB World Biosphere Reserves Network for research and monitoring of B&R impact on social-ecological systems and development
- 3 mountain transboundary regions of High Asia could be recommended as key areas for transdisciplinary research and monitoring of B&R implementation and development – **Altai, Pamirs, Tien-Shan,**

### **China Action Plan for UNESCO MAB BR 2015 - 2025**



**In June of 2017, China's action plan submitted to the 29th MAB international coordination meeting**

© Li Fujia

## 2. Strategy Objective

(1) Integrate the MAB reserves protection into national and regional development strategies actively, support mutually and achieve win-win development

(2) promote the sustainable development and the residents welfare improvement of the surrounding area

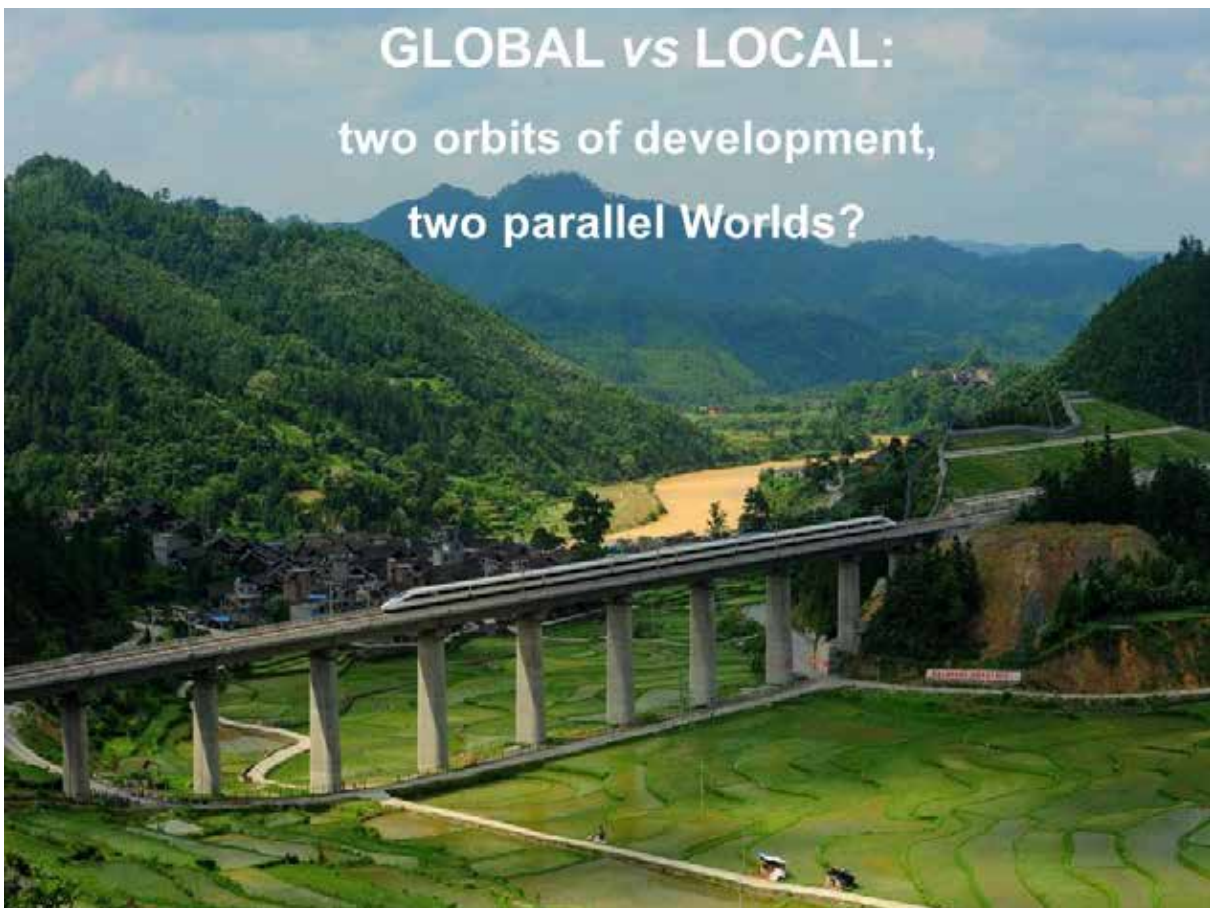
(3) Continued improve the ecosystem service function of the world biosphere reserve network and efficient utilization of resources;

(4) Data and information sharing and scientific utilization of the world biosphere reserve network;

© Li Fujia

## GLOBAL vs LOCAL:

two orbits of development,  
two parallel Worlds?



## Presentation:

Dr. Roman Mogilevskii,

Associate Director, Institute of Public Policy & Administration, University of Central Asia

*"Economic assessment of current and potential future Belt & Road projects in the Kyrgyz Republic"*

Key points:

1. China has become the main international creditor of the Kyrgyz Republic in just a few years, and there is little room for further borrowing.
2. Despite infrastructure development in recent years, there has been no significant increase in trade with China.
3. Foreign Direct Investments in the future should take into account environmental, secondary infrastructure development considerations, and debt sustainability.



What does Belt and Road Initiative (BRI) cover?

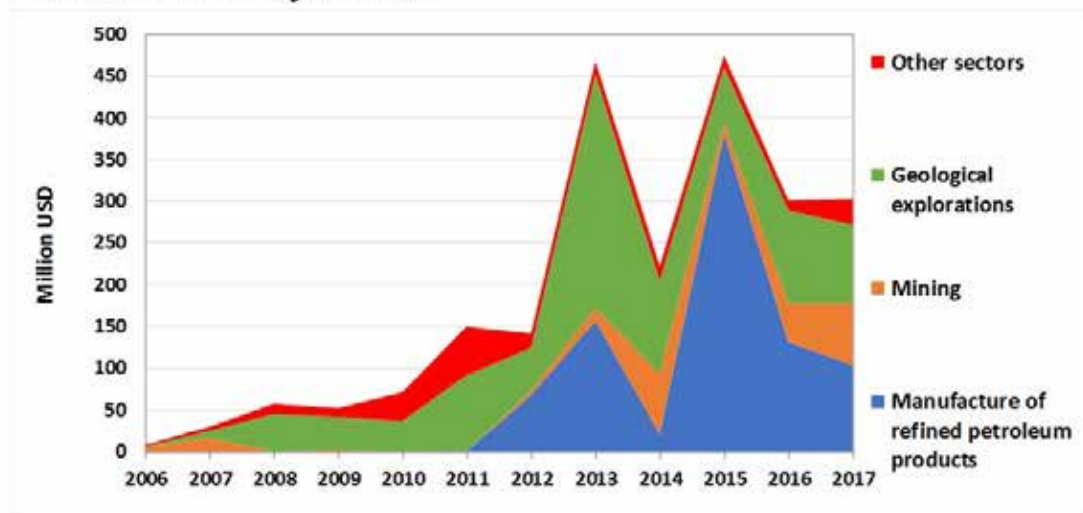
- All Chinese-Kyrgyz economic development projects included
  - public infrastructure
  - foreign direct investments
  - last 10-12 years
- Different types of impact
  - output and employment
  - government revenue
  - trade
  - external debt
- Future projects and their qualitative assessment

## Public Infrastructure Projects

- Automobile roads, energy projects, urban development
- 12 loan/grant agreements with total costs of USD2.2 billion (of which USD2.1 billion in loans)
- Concessional terms (typical repayment period of 20 years, grace period of 5-11 years, interest rate 2.5%)
- Key [internal and international transit roads](#) (USD1.1 billion)
- The roads are parts of CAREC corridors
- Electricity transmission line Datka-Kemin and substation Datka, Bishkek Heat and Power Plant (USD1.0 billion)
- Street network in Bishkek (USD0.1 billion)
- Transit natural gas pipeline (FDI)

## FDI Projects

- For 2006-2017, the cumulative gross Chinese FDI inflow was equal to USD2.3 billion – 25-50% of total FDI to Kyrgyzstan equivalent to 2-7% of the country's GDP
- Chinese FDI by sector



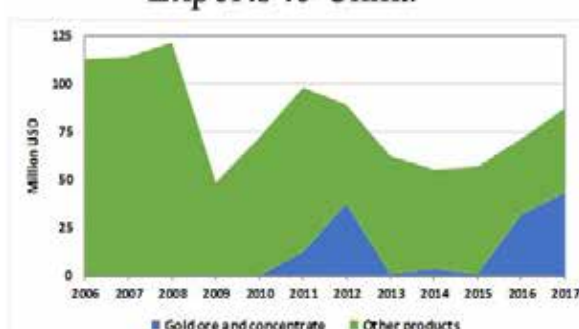
## Effects of BRI Projects

- Total inflow of resources for 2011-2017 – USD4.1 billion (7-8% GDP per annum)
- Average GDP growth rate up from 4.2% (2000-2010) to 4.8% (2011-2017)
- Impact on GDP is larger than on domestic demand
- Increase in employment – several thousand jobs or 0.1-0.3% of total employment
- Contribution to the government revenue – KGS3.7 billion in 2017 (USD53 million or 2.5% of total government revenue)
- Two thirds of these taxes paid by the oil refinery Zhongda

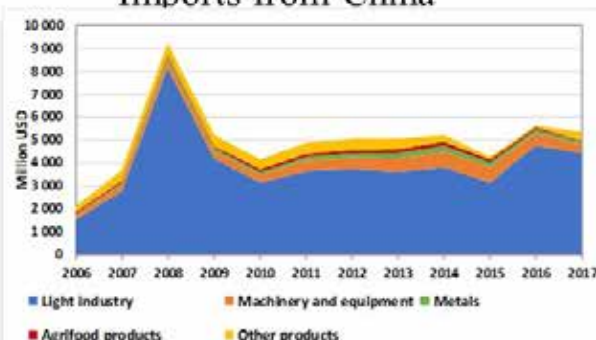
## Effects of BRI Projects (2)

- Exports of gold concentrate and oil products (2-3% of total exports of goods); export response on FDI – USD0.05-0.1 per USD1 invested
- Imports of machinery and equipment (6-10% of total imports of goods); import response on FDI – USD0.9 per USD1 invested
- No traceable impact of improved road infrastructure on trade with China

Exports to China



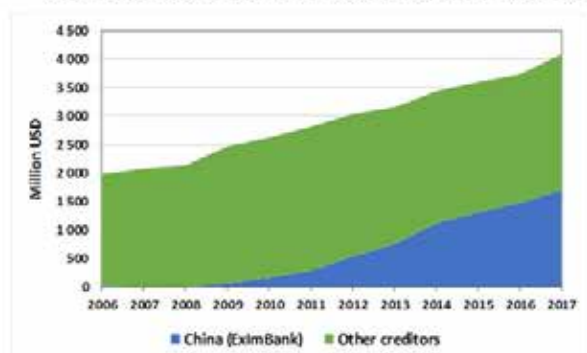
Imports from China



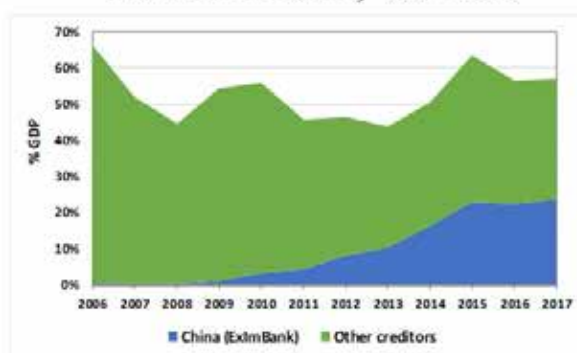
## Effects of BRI Projects (3)

- In just few years, China has become main creditor of Kyrgyzstan
- Room for further borrowing is limited

External debt's nominal value



External debt, % GDP



## Potential BRI Activities in the Future

- Railroad China-Kyrgyzstan-Uzbekistan – debt sustainability risks
- Automobile transit via Kyrgyzstan – assessing potential benefits
- Infrastructure maintenance – budget spending or user fees
- FDI projects
  - relationships with local population
  - mining: setting taxation right
  - agricultural exports to China and elsewhere:
    - (a) veterinary and phytosanitary issues, (b) insufficient market knowledge, (c) no access of the Kyrgyz tracks to China, (d) economies of scale, (e) no land ownership for foreigners

## Potential BRI Activities in the Future (2)

- FDI projects
  - manufacturing: a) unit labor costs of 77.1% of GDP per employed in China vs. 95.6% in Kyrgyzstan; b) transport flow asymmetry; c) modern technologies; d) environmental impacts
  - tourism: environmental concerns
- Regional development: secondary infrastructure
- Debt sustainability: concessions, FDI into infrastructure projects

## Road Projects in Kyrgyzstan

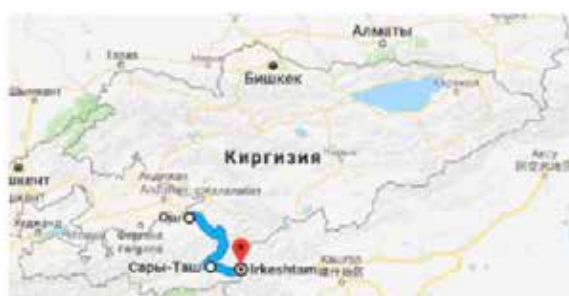
Bishkek-Naryn-Torugart



Alternative road North-South



Osh-Sarytash-Irkeshtam



Osh-Batken-Isfana



Roman Mogilevskii, Institute of Public Policy and Administration, UCA

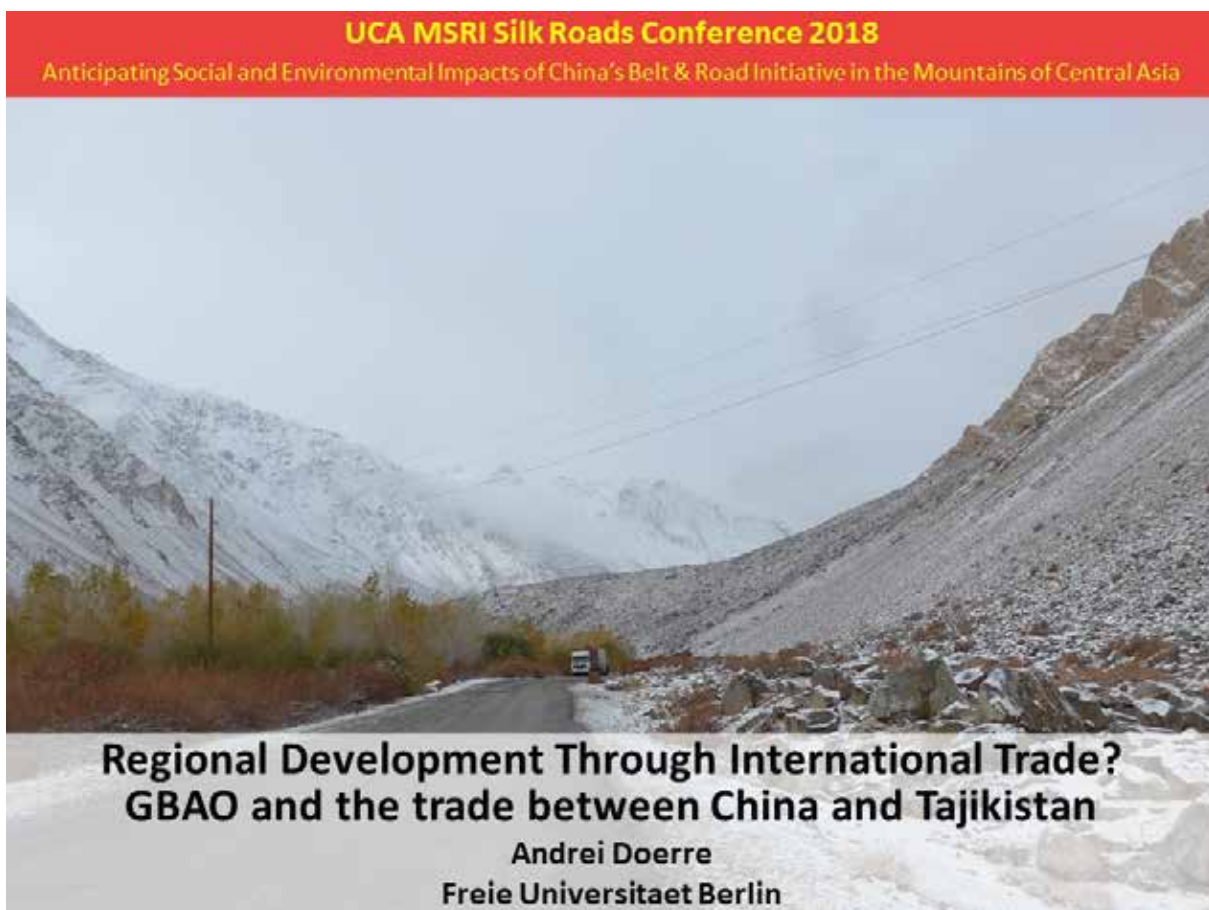
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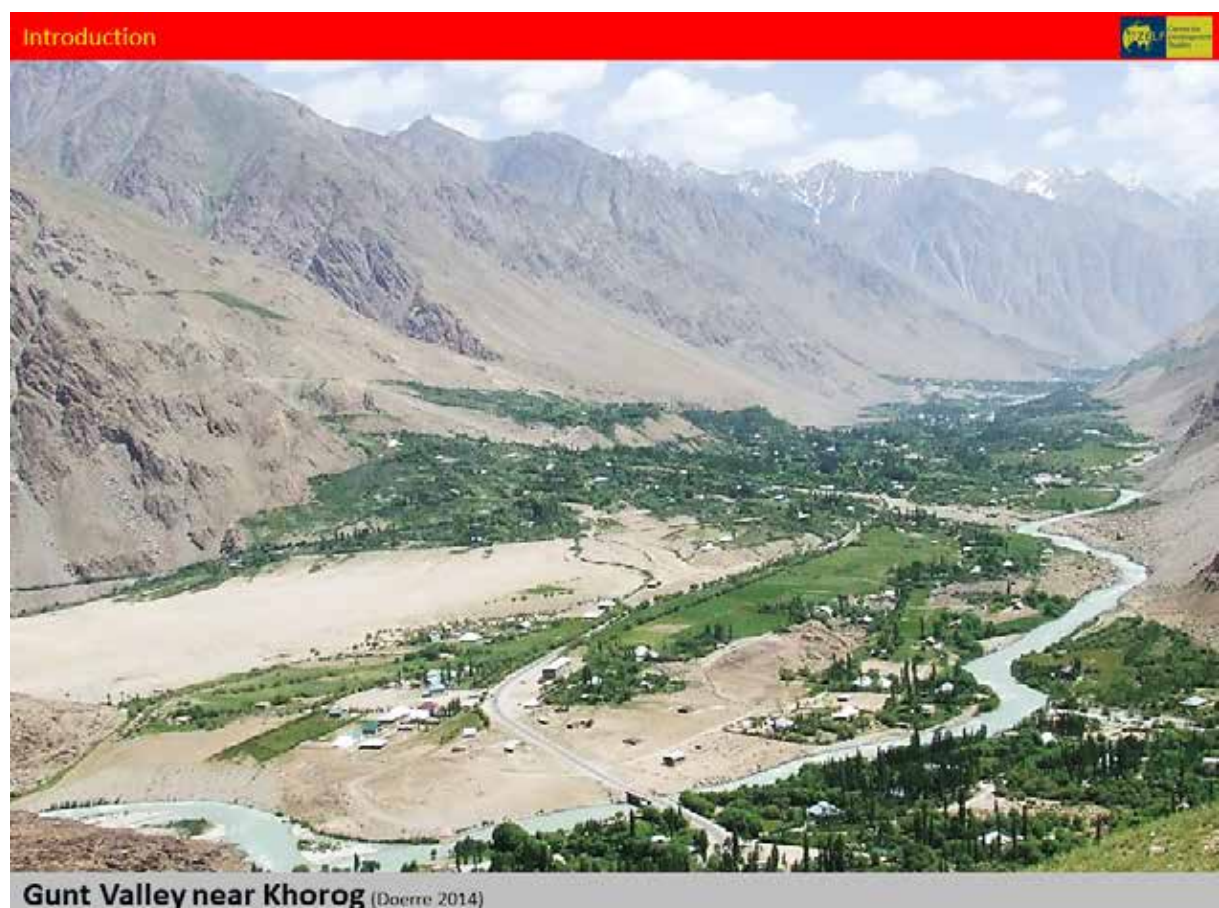
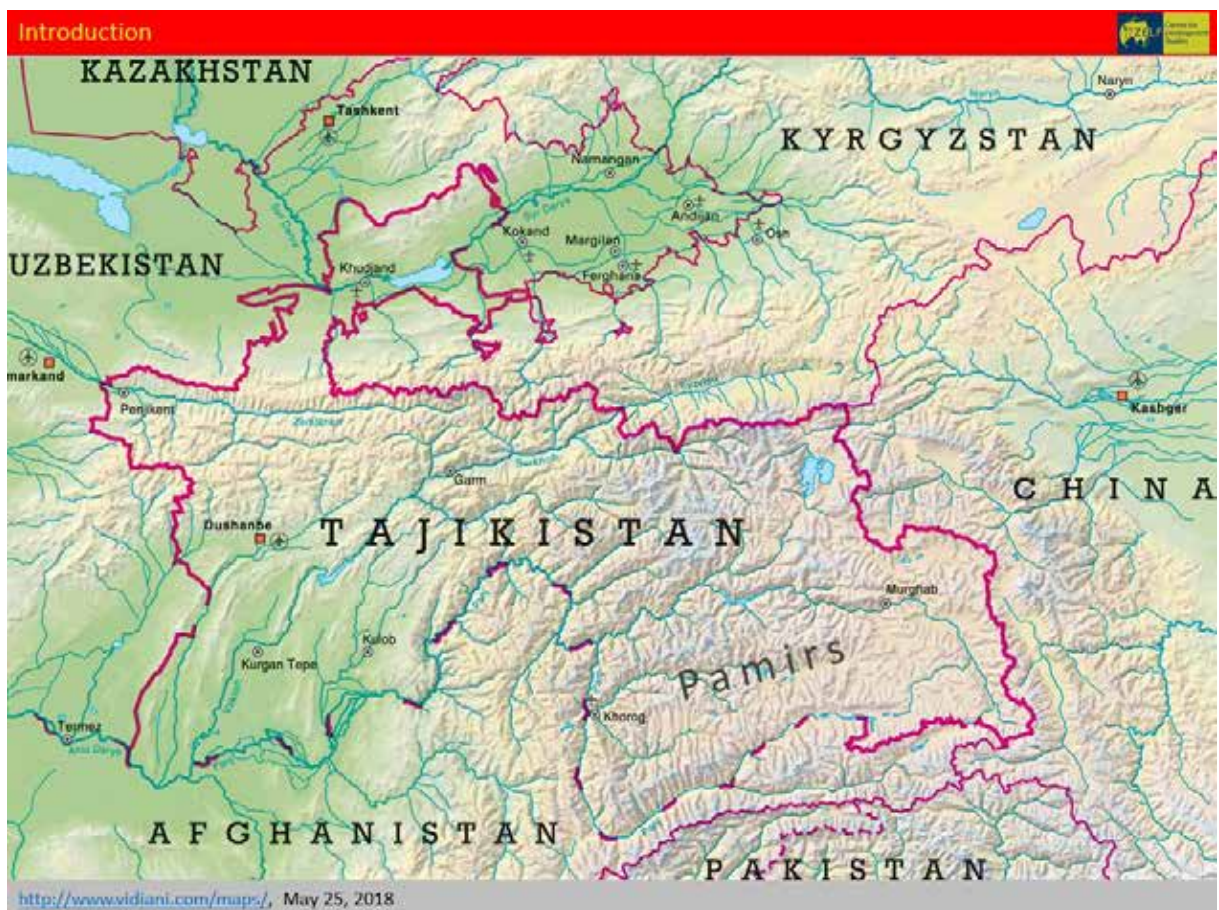
Dr. Andrei Dörre,  
Researcher, Department of Geography, Free University of Berlin

*"Regional development through international trade? GBAO and the trade between China and Tajikistan"*

Key points:

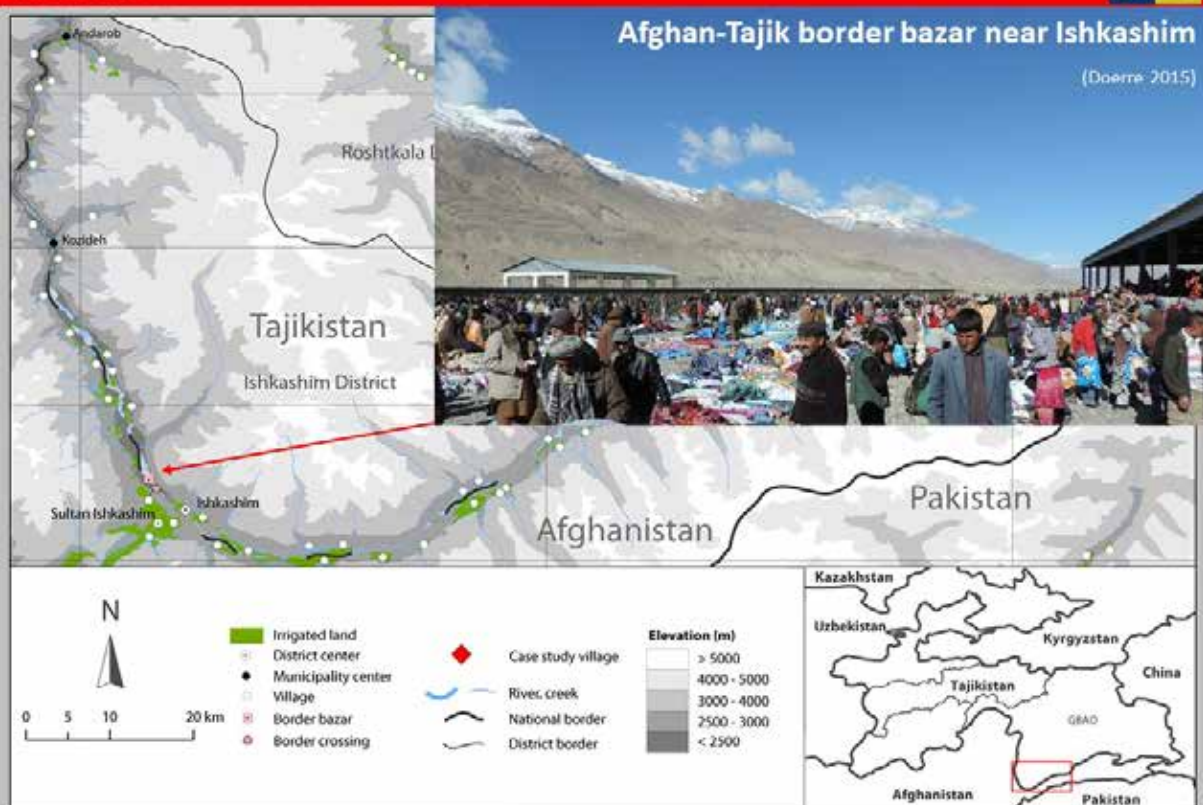
1. Gorno Badakhshan Autonomous Oblast (GBAO), Tajikistan is not well integrated into the national/international markets.
2. While prices in GBAO are above the national average, the regional purchasing power is lower.
3. To date, the transport business has not led to development or to wealth creation in GBAO.
4. Trading is mainly done with goods imported by third parties from the capital.







Difficult passage on the highway M41 connecting GBAO with Dushanbe (Doerre 2018)



Draft: Doerre 2018



## Latest development of average prices for selected food products

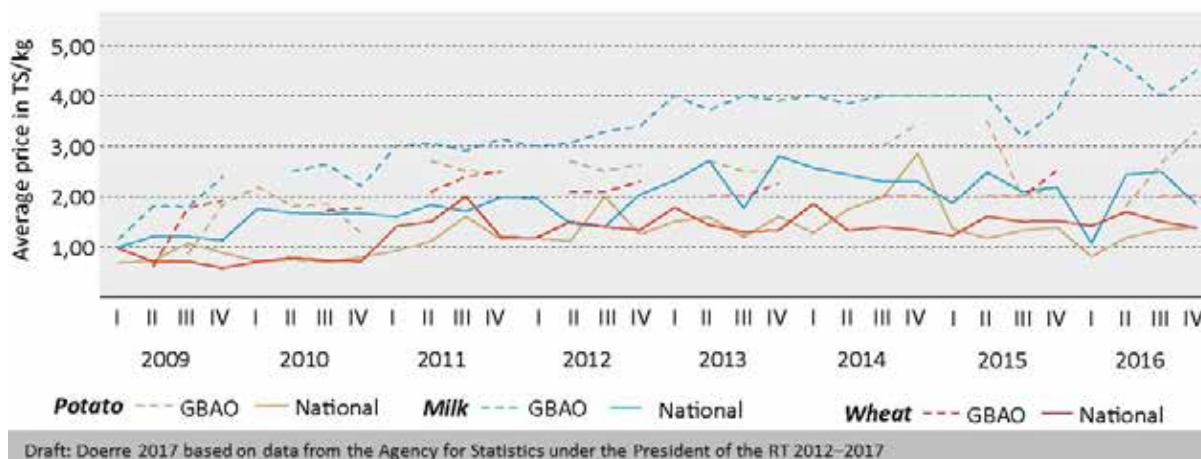
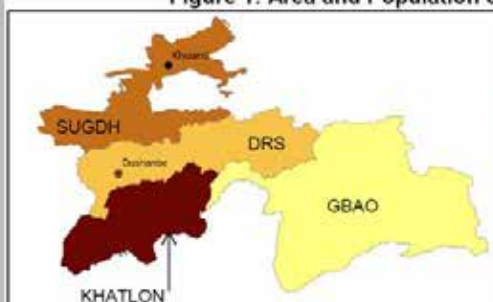


Figure 1: Area and Population of the Regions of Tajikistan

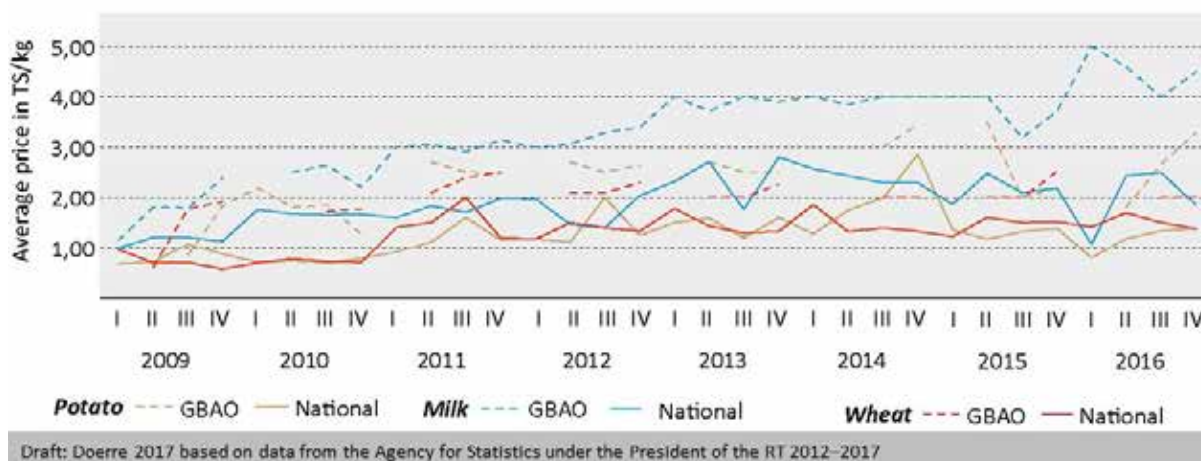


| Regions      | Population <sup>a</sup><br>(‘000) | Area<br>(‘000 km <sup>2</sup> ) | Poverty<br>Rate<br>(%) |
|--------------|-----------------------------------|---------------------------------|------------------------|
| Dushanbe     | 775.8                             | 0.1                             | 19.16                  |
| GBAO         | 212.1                             | 64.1                            | 51.53                  |
| DRS          | 1,874.0                           | 28.6                            | 45.56                  |
| Sugdh        | 2,400.6                           | 25.2                            | 23.93                  |
| Khatlon      | 2,898.6                           | 24.6                            | 39.24                  |
| <b>Total</b> | <b>8,161.1</b>                    | <b>142.6</b>                    | <b>35.6</b>            |

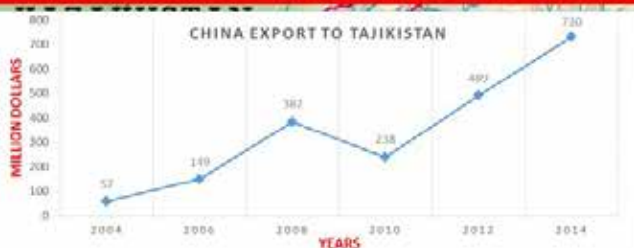
<sup>a</sup> As of December 2013.

Source: ADB 2016

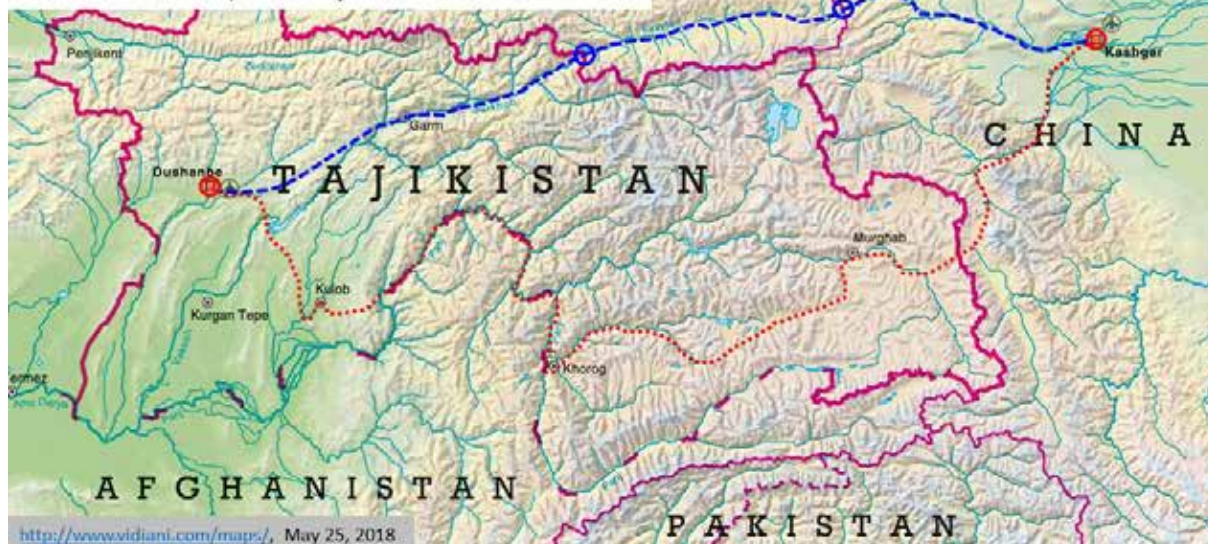
## Latest development of average prices for selected food products



## Transport corridors for Chinese-Tajik trade through GBAO

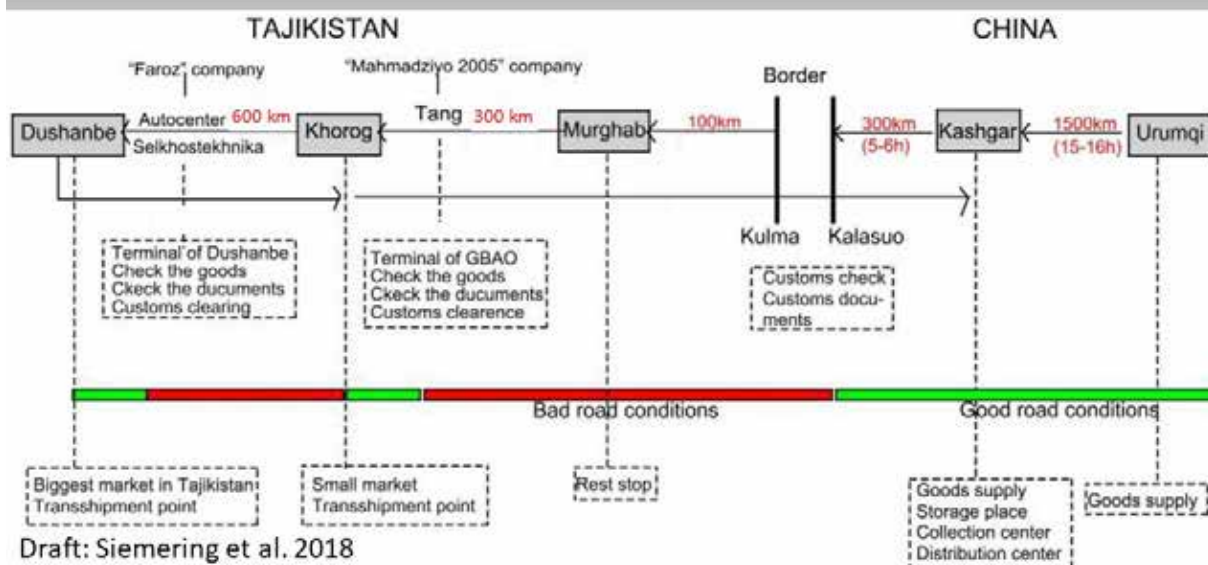


Draft: Mirzoshoev 2015 based on Customs Service under the Government of the Republic of Tajikistan 2015



## Transport corridors for Chinese-Tajik trade through GBAO

### Itinerary of the imported goods in the cargo trucks





<https://adventuresofilnicki.com/golma-pass/>, 25.10.2018

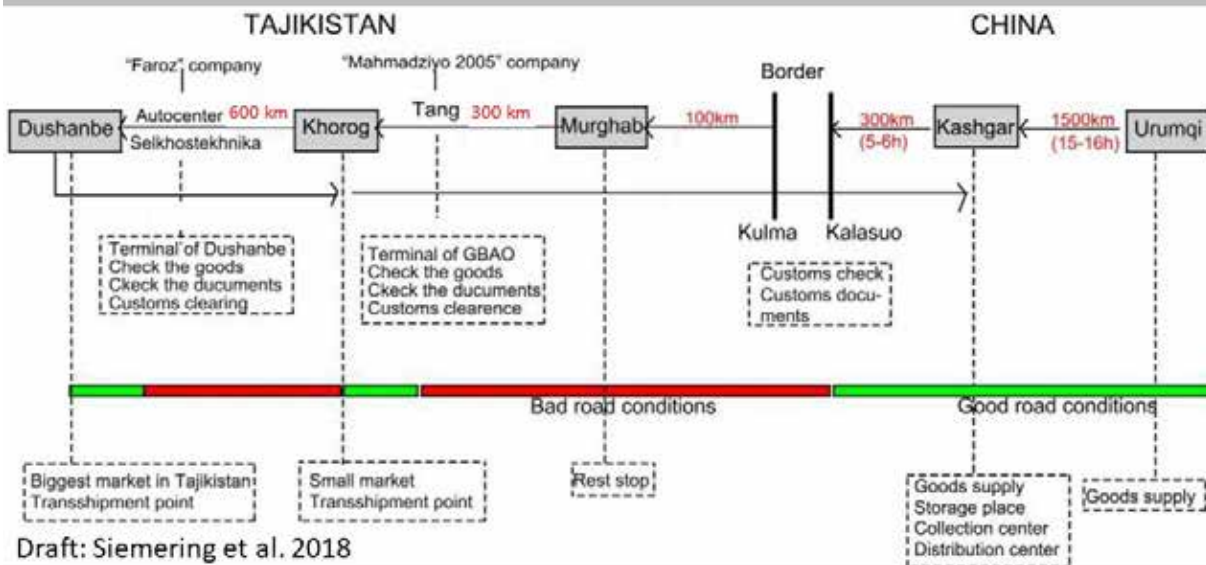
### Old rest stop and transshipment point near Tang Village



Photographs: Siemering 2018; Doerre 2018

## Transport corridors for Chinese-Tajik trade through GBAO

### Itinerary of the imported goods in the cargo trucks



### First observations and conclusions

- Few newly developed service facilities along the transport corridor;
- Drivers minimize service-related expenditures on the way;
- Khorog Town is used mainly as a thoroughfare;
- Largest share of profit from transport business is made by external actors

## Trade with Chinese products in GBAO

- Economies of scale
- Small market in terms of limited demand and low purchasing power
- More extended networks
- Maladministration of border and customs clearance (corruption) in connection with informal agreements with gatekeepers and decision makers  
-> reproduction of power asymmetries and consolidation of economic stratification?

Price of selected consumer goods in Khorog and Dushanbe, June 2015 (Mirzoshoev 2015)

|          | Electric Kettle   | TV set                | Shovel            |
|----------|-------------------|-----------------------|-------------------|
| Khorog   | 45 TS (7.20 US\$) | 1950 TS (311.50 US\$) | 24 TS (3.80 US\$) |
| Dushanbe | 40 TS (6.40 US\$) | 1260 TS (201.30 US\$) | 10 TS (1.6 US\$)  |



So-called Tangen Minibuses: means for public city transport, and regional low distance mobility



Source: <https://www.advantouccom/img/tajikistan/khorog/khorog5.jpg>, 22.10.2018

## References

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Customs Service under the Government of the Republic of Tajikistan (2015): Statistics of Foreign Trade of the Republic of Tajikistan.

[http://www.customs.tj/index.php?option=com\\_content&view=category&layout=blog&id=49&Itemid=49&lang=en](http://www.customs.tj/index.php?option=com_content&view=category&layout=blog&id=49&Itemid=49&lang=en); accessed April 4, 2015

Haughton G. & D. Counsell (2004): Regions, Spatial Strategies and Sustainable Development. London/Seaford: Routledge.

Mirzoshoev M. (2015): Price Discrepancy: Why Are the Prices of Chinese Products Higher in Khorog Than in Dushanbe? (unpublished research paper).

Siemering S., Yang Y. & Kh. Safarmamadova (2018): International Trade: Khorog as a Transit Station between China & Dushanbe (Presentation at the Workshop "Aspects of Regional Development in Khorog, Tajikistan", July 25, 2018). Khorog

Storper M. (1997): The Regional World. Territorial Development in a Global Economy. London: Guilford.

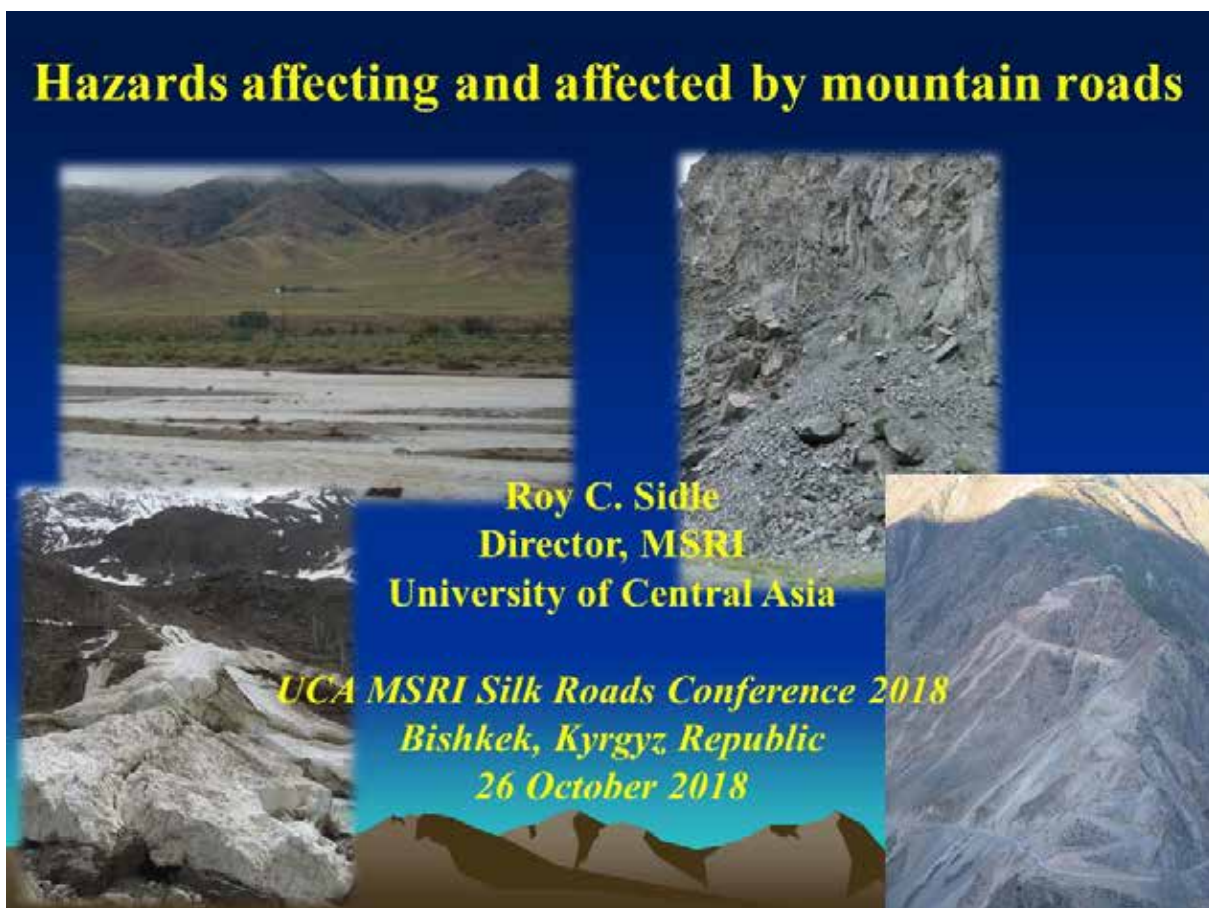
## Presentation:

Prof. Roy Sidle,  
Director, Mountain Societies Research Institute, University of Central Asia

*"Hazards affecting and affected by mountain roads"*

Key points:

1. Mountain roads serve important functions, but nevertheless are vulnerable to many hazards and exacerbate some of these hazards.
2. Roads can also exacerbate or predispose hillslopes to hazards.
3. Roads alter water pathways, and thus can...
  - a. Increase landslides and debris flows
  - b. Initiate rockfalls and rock slides
  - c. Augment storm runoff and flooding



## Mountain roads serve important functions:

- Long-distance transport of materials/supplies and people
- Travel corridors for local people
- Logging roads in managed forests
- Maintenance and access to croplands and rangelands
- Emergency evacuation routes and military access
- Access to recreation areas
- Access to hydropower, mining and oil exploration sites

◆ *Nevertheless mountain roads are vulnerable to many hazards and exacerbate some of these hazards, including:*

- *Landslides and debris flows*
- *Snow avalanches*
- *Rockfall*
- *Flooding*



Natural hazards **impact roads** when they are in the hazard path, but they can also **exacerbate or predispose hillslopes to hazards** due to excavation, construction & vegetation clearing



***The Unpleasant Truth – Roads alter water pathways (both surface and subsurface) in mountain ecosystems and thus have the potential to:***

- *Increase landslides and debris flows*
- *Initiate rockfalls and rock slides*
- *Augment storm runoff and thus flooding*



**1. Snow avalanches pose frequent hazards along roads, but roads are typically not a factor in initiating these**



**2. Flooding impacts road systems, but roads can also exacerbate flood peaks**



## Mountain roads and landslides/rockfall

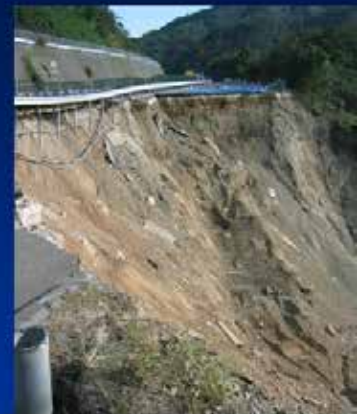


The largest anthropogenic source of landslide sediment per unit area in mountainous terrain

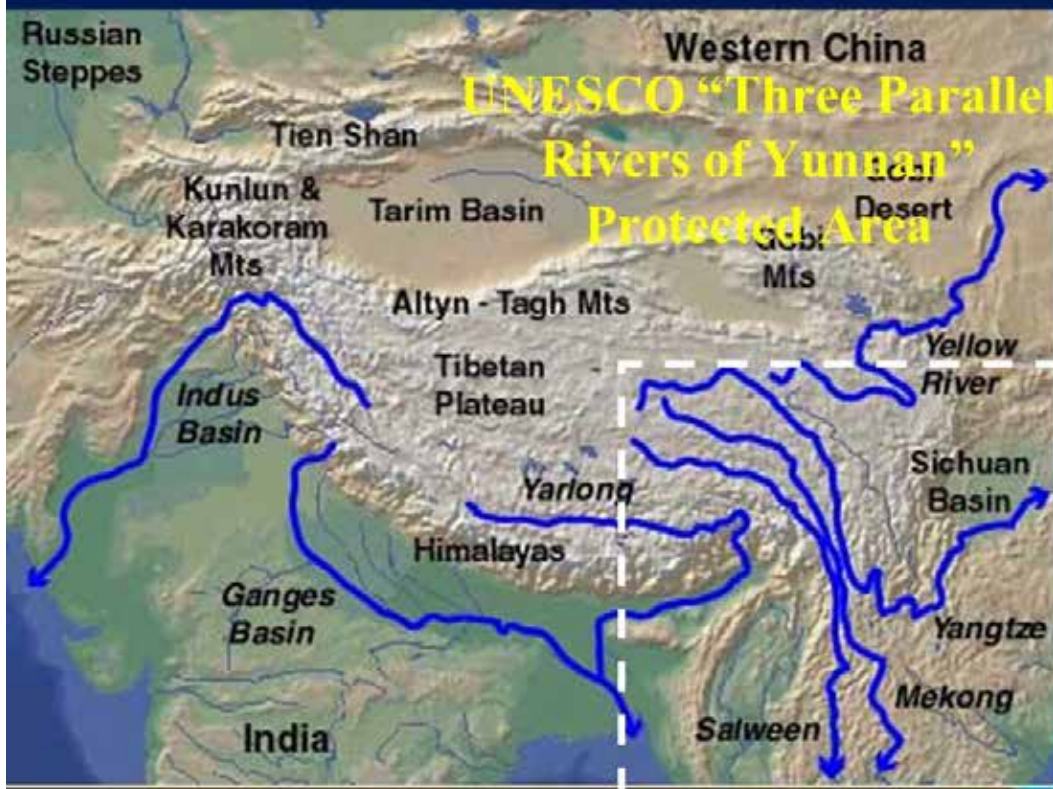


## Mountain roads decrease slope stability in several ways:

- **Undercutting** steep slopes and thus **removing support** on the downslope side
- **Overloading** slopes with **fill** materials
- **Oversteepening** both the cut and fill slope materials
- **Concentrating road drainage** onto unstable sites below the road



## Salween, Mekong, and Jingsha (tributary to Yangtze) River Systems

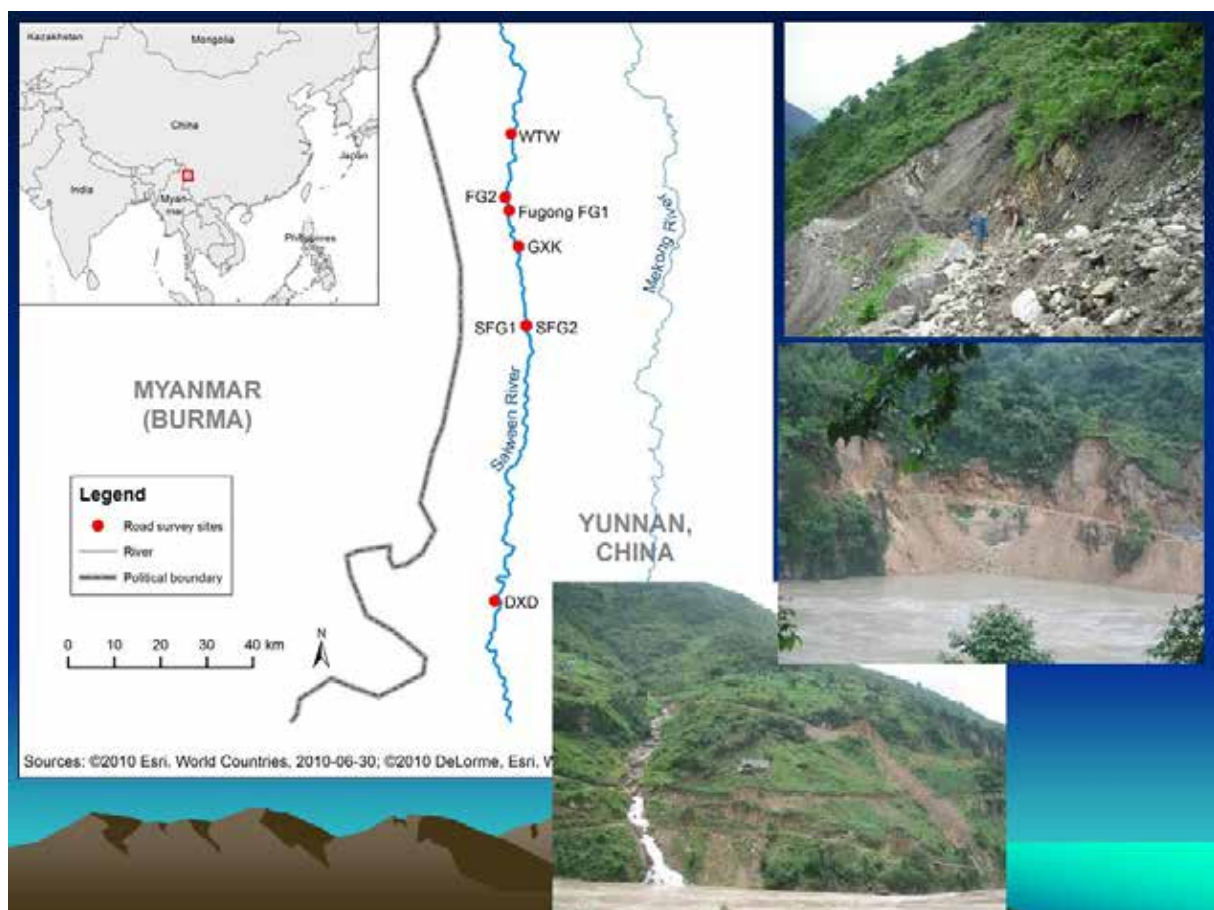
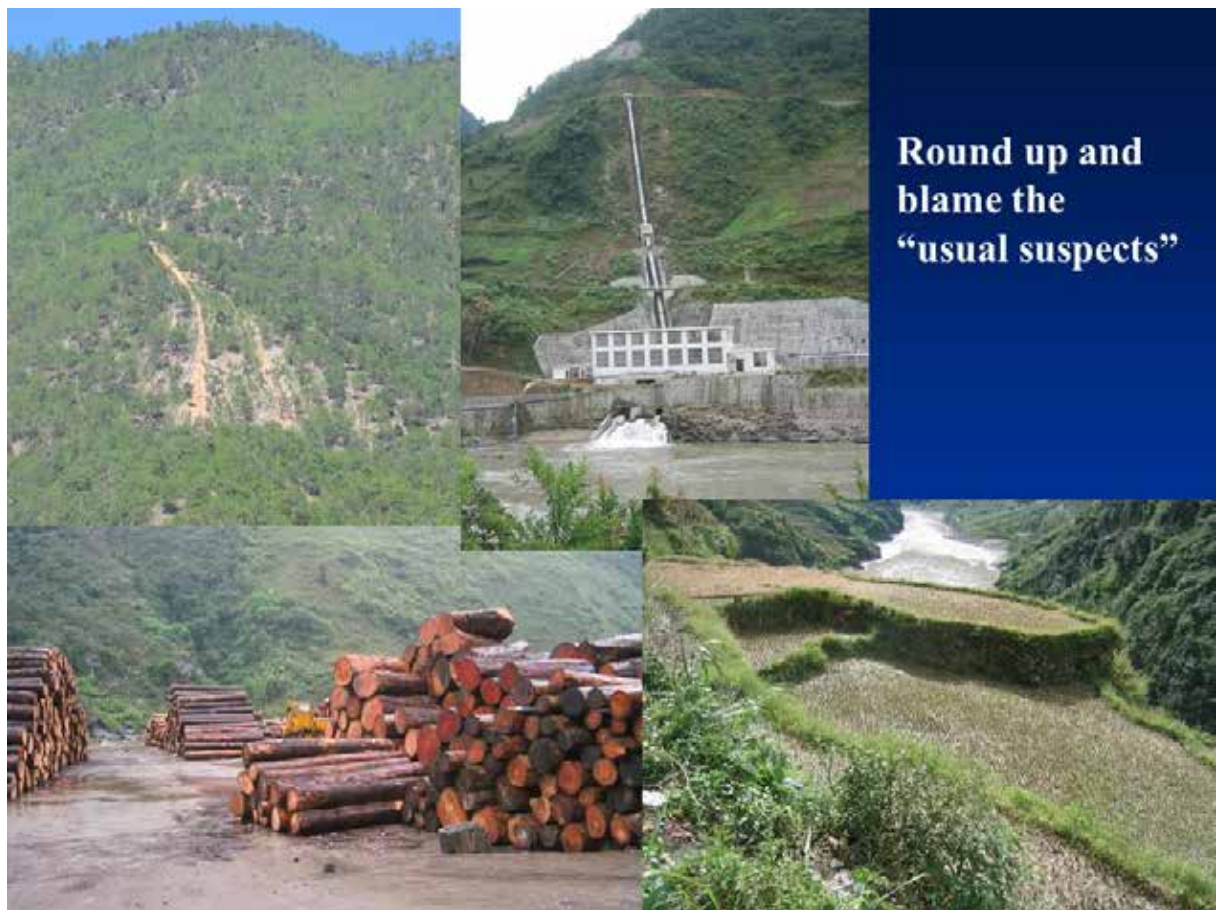


### What appear to be the prevailing environmental issues related to degradation of these river systems?

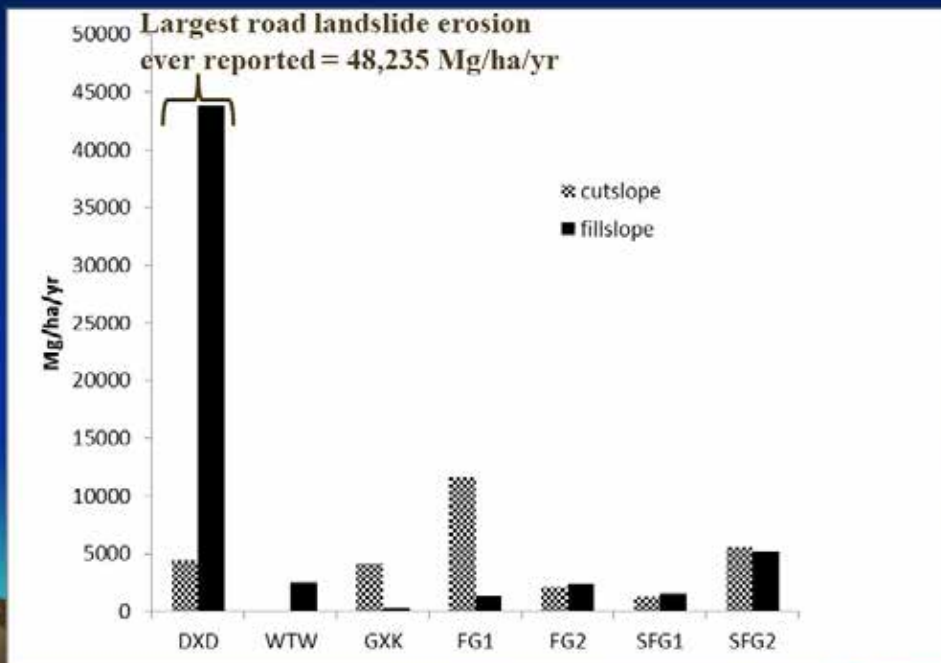
- Construction of hydropower dams
- “Deforestation”
- Unsustainable agricultural practices on hillslopes

*But roads and trails are almost never mentioned*





**About 3-times more cutslope landslides occurred overall, but their average mass was only 25% that of fillslope failures**



**Downstream impacts on water quality and sedimentation are significant**



## Session 2: Social and environmental impacts, challenges and opportunities of the Belt & Road Initiative

**Chair:** Dr. Marc Foggin

**Presentation:**

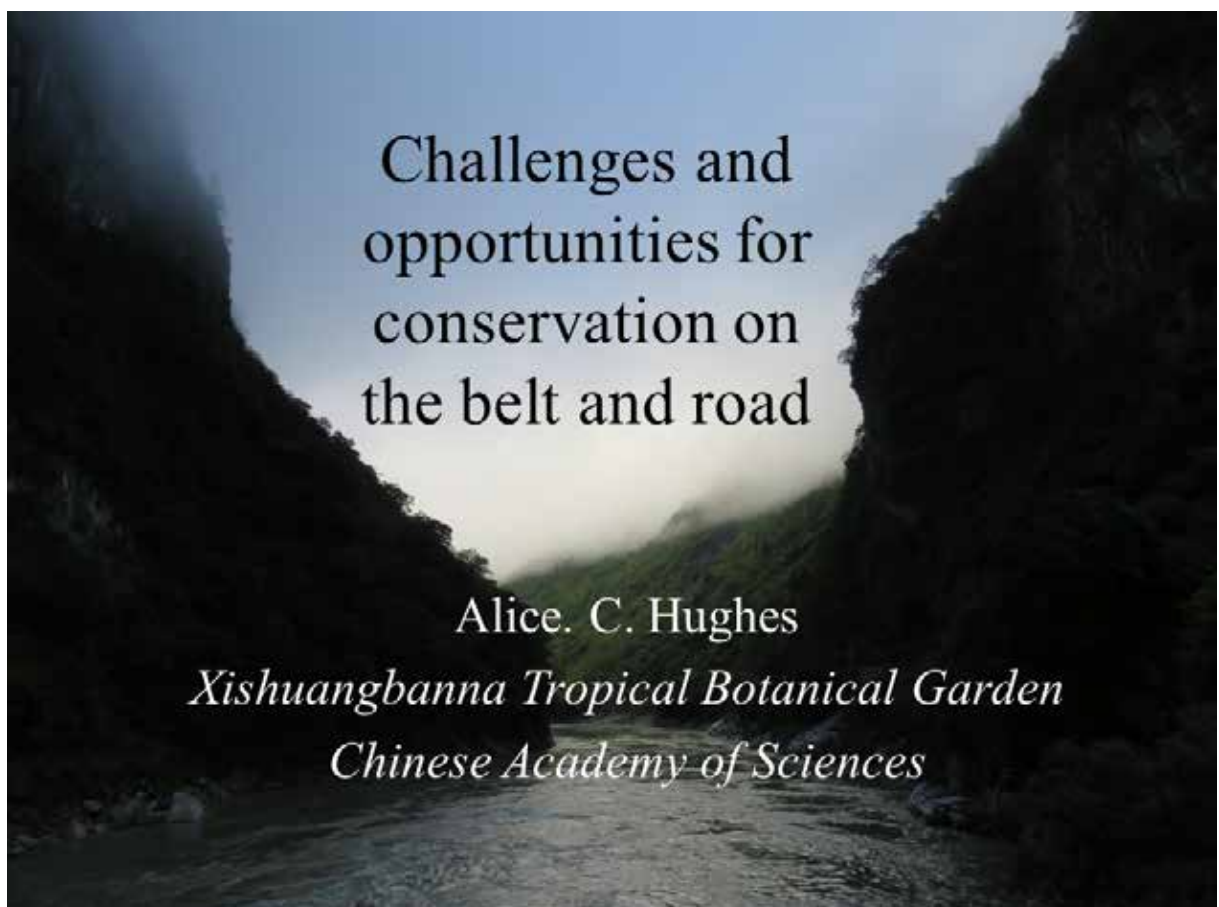
Dr. Alice Hughes,

Assistant Professor, Centre for Integrative Conservation, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Science

*"Understanding and minimizing the environmental impacts of the Belt & Road Initiative"*

Key points:

1. Understanding what the risks are, and how to mitigate them through constructive dialogue and engagement is essential.
2. Deforestation, mining, and increased wildlife trafficking are issues which may be exacerbated by the BRI.
3. Infrastructure construction should be avoided through KBAs, especially in intact ecosystems, and proper environmental impacts assessments should be present in all projects.
4. Pre-existing financial mechanisms and agreements such as the Convention on Biological Diversity should be leveraged to achieve biodiversity conservation along BRI routes.



# Current status of the belt and road

- Over 10,000 projects funded
- Despite cancellations in some regions the BRI is going to proceed
- We need to understand **what** the risks are, and
- **How** to mitigate them
- Alarmism & Hyperbole only prevents constructive dialogue & engagement

## Biodiversity & the belt and Road

- Over 7000 projects have already been funded in 2017 alone
- Economic development without strict procedure for impact assessment will further fragment forests across the region
- Increased connectivity will facilitate the transport of timber and may further exacerbate logging
- Without strict customs at **all** borders new infrastructure may act as express freight for valuable wildlife
- Increase access to diverse regions may mean these areas are vulnerable to exploitation

## Deforestation along the route

- Railways, 22% of forest fell within 50 km with 24.5% of this area is forested, and 5.7% of national deforestation.
- 2.1% of the area within 50 km of a proposed rail route was lost over 2001-20017, accounting for 1.41% of deforestation overall, 7.9% of mean national deforestation.
- 32% of the deforestation within 50 km fell in 14 km of Roads, despite only having 25% of the tree coverage.
- Rail; 21.7% of deforestation within the 50 km buffer was within 14 km, as only 11.7% of forest cover.
- In total, 36.4% of all forest was lost between 2001-2016

## Patterns and problems

- Centres of diversity and threat along the route vary by taxa
- No single solution exists for areas which should be avoided to avoid risks to all species
- Instead over-arching solutions should aim to prevent the construction through intact forest, and areas of noted diversity
- EIAs also need to be instigated with international oversight

# Biodiversity & the belt and Road

- China releases 25% of global Emissions
- To offset emissions forest corridors should follow the course of the road across tropical regions
- By elevating the road forest fragmentation and access to forests will be reduced
- Limestone used for cement should come from surface mining in low diversity regions
- Areas along the route of the road should have standardized Environmental impact assessments to avoid vulnerable regions

## Other issues

1. Border security: preventing new routes being conduits of trade
2. Legislating against local projects in key sites for diversity in the vicinity of the route
3. Power generation and dam development
4. Over-exploitation of formerly inaccessible ecosystems
5. The spread of disease, invasive species and even fire along the route

# OBOR Choices

- Though environmental protection guidelines have been drafted for the OBOR they do not include many key issues

## **Sustainable OBOR**

1. Energy generation and resources to build the OBOR must be sourced sustainably
2. Carbon release should be offset by afforestation along the route
3. Key sites and fragile ecosystems should be protected
4. Partnership agreements and guarantees which state key criteria should be developed to prevent unsustainable use and implement EIAs
5. Tight screening and controls will be needed across the route

## **Unsustainable OBOR**

1. Continued reliance on fossil fuel & increased emissions. Diverse ecosystems-cement
2. Further fragmentation and forest loss along the route
3. Fragile ecosystems developed, or exposed to unsustainable use
4. Few protocols to prevent the development or destruction of diverse ecosystems
5. Increased trafficking of wildlife along the route

# Mechanisms

- Rather than protesting and preventing constructive dialogue instruments which facilitate sustainable development are needed
- Financial mechanisms (i.e. pressure banks to require standard EIAs to approve loans)
- Use pre-existing agreements –i.e. CBD
- International infrastructure should also be treated like embodied emissions when it comes to diversity loss-attribution mechanisms are needed

# Scanning issues

- The issues are complex and require a holistic exploration
- We intend to use the scanning method to explore the potential issues associated with the BRI
- We aim to “*Identify future headaches and possible solutions to those headaches*”
- We call for your inputs and interest in understanding potential associated issues with the BRI
- Focus on environmental *issues that are beginning to emerge and whose impact is uncertain: Horizon Scanning*
- We will also include **known issues**, because we want to create a comprehensive reference

## Horizon Scanning Methodology

1. Assemble Core Group of 25-30 authors
2. Create Long List of issues
  1. each Author consults with 10-20 collaborators and the literature. Target >500 individuals total
  2. Authors identify candidate issues: each is one paragraph with references. Target 150-200 issues total (5-8 issues per author)
3. Vote on Short List of issues
4. Publish Final List

Alice C. Hughes  
*Ach\_conservation2@Hotmail.com*  
Douglas Yu: *dougwyu@mac.com*

**Presentation:**

Dr. Muhammad Zafar Khan,  
Assistant Professor of Environmental Sciences, Karakoram International University

*"Environmental perspectives of the Belt & Road Initiative in high mountain ecosystems of Northern Pakistan"*

Key points:

1. Improved connectivity, trade liberalization, advances in communication and transportation, and creation of trans-border supply chains is a game changer for environmental conservation in the China-Pakistan Economic Corridor (CPEC).
2. Protected areas cover over 60% of the total land surface of Gilgit-Baltistan, within which there are a number of endangered species and ecosystems.
3. BRI associated potential threats to wildlife could be habitat fragmentation, illegal hunting, pollution, invasive species, and disruption of watershed hydrology.
4. However, BRI can bring increased ecological connectivity through increased financing, protected area networks, and academic exchanges, which can be implemented through the "Belt & Road Ecological and Environmental Cooperation Plan."



## BRI and prospects of environmental conservation in high altitude mountainous landscapes

Zafar Khan, PhD  
KIU

Fusion of multiple developments in global, regional and local contexts.... through improved connectivity, trade liberalization, advances in communication and transportation, infrastructure and creation of trans-border supply chains

**Game changer**

<https://www.pc.gov.pk/web/cpec>



Ecological..... concerns and comforts... **Green Economic Transformation.....**



**Highly diverse, yet a fragile mountain ecosystem...**

With amazing array of biological diversity



- 54 species of mammals
- +230 species of birds
- 23 species of reptiles
- 6 species of amphibians



**+800 species of wild plants, including rare and highly valued medicinal herbs**



## Protected Areas

- 5 National Parks
- 41 Community-controlled hunting areas or community-managed protected areas
- Spanning over more 60% of the total land surface of Gilgit-Baltistan (GB P& WD), while the National PA coverage of Pakistan is 10% (worldbank.org).

# Consideration....species



Himalayan ibex on KKH, 2018, © Saleem Khan

# Consideration....habitats



# Comforts.....

- The Belt and Road Ecological and Environmental Cooperation Plan
- Ecological connectivity.....wildlife crossing or corridors/networking of PAs
- More investments....conservation financing (Park entry fee, ecotourism)
- More partnerships.....academic collaborations

# Way forward

Good Science in support of:

- Long-term ecological monitoring
- Collaborative Research

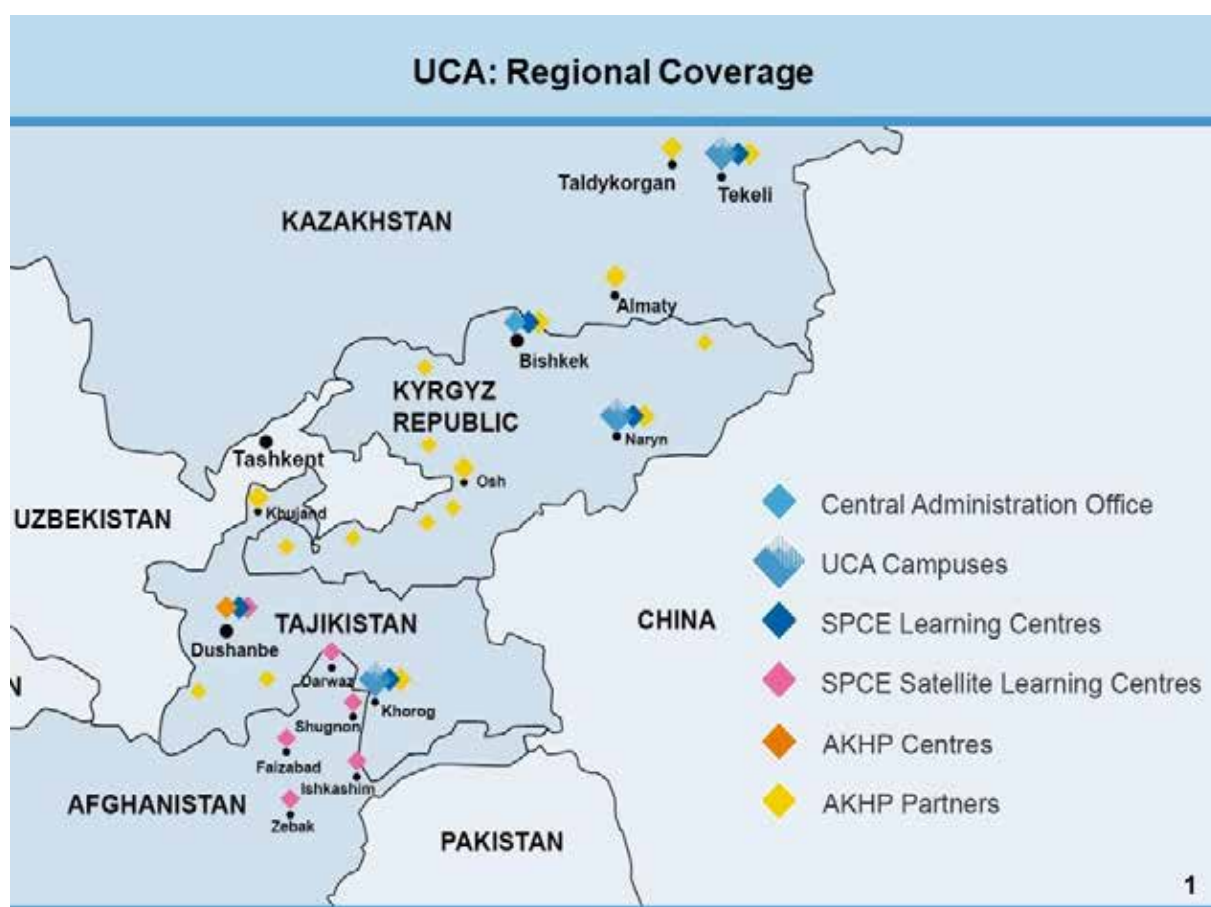
## Presentation:

Mr. Dastanbui Mamadsaidov,  
Project Manager, University Town Development Program, University of Central Asia

*"UCA initiatives in town development planning in two 'campus towns', Naryn, Kyrgyz Republic and Khorog, Tajikistan. "*

## Key points:

1. UCA is partnering with local government and sister Aga Khan Development Network (AKDN) agencies to develop the host mountain towns into vibrant university communities while boosting local economies.
2. Current projects include medical centres, a public park, strengthening road and water infrastructure to the broader region in Naryn, Kyrgyzstan. Whilst in Khorog, UCA has invested in transport infrastructure, including roads, paving and street lighting, and has improved early childhood education in the town by setting up two kindergartens and a training centre for early childhood educators building schools.
3. UCA continues to identify the potential for new initiatives, activities, enhanced impact and possible new directions in University Town Development.



## Naryn Town, Kyrgyz Republic



## UCA Naryn Overall Masterplan



## UCA Naryn Campus Phase I



## Khorog Town, Tajikistan



## UCA Khorog Phase I Masterplan



6

## UCA Khorog Campus Phase I



## Tekeli Town, Kazakhstan



## Tekeli Campus – Overall Masterplan



## Presentation:

Dr. Joana Roque De Pinho  
Postdoctoral Researcher, Centre of International Studies,  
ISCTE University Institute of Lisbon

### *"Environmental and social impacts of infrastructure development in East Africa"*

#### Key points:

1. Many mega-projects are underway within development corridors in Africa, focused on mineral and oil extraction, along with auxiliary infrastructure developments; including Kenya's Standard Gauge Railway project, the largest post-independence project.
2. East African savannah ecosystems and local livelihoods are highly vulnerable to habitat fragmentation from linear infrastructure, especially due to the importance of mobility for both migratory wildlife and livestock.
3. Independent EIAs and free, prior and informed consent (FPIC) from local communities is necessary to reduce social and environmental impacts.
4. New linear infrastructure should be located where costs are smaller, in highly settled areas with high agricultural potential, and built with mitigating infrastructure to avoid ecosystem fragmentation.



# Global infrastructure expansion

## Africa

Foreign investment frenzy

Economic growth

Mega-projects: natural resources extraction, transportation, energy

Variety of proponents



## "China in Africa"

Non-interference policy

"Resources for infrastructure"

Access natural resources too remote or risky for West



## Benefits for African countries

Chinese expertise & products more adapted to African realities

Loans:

- Interesting interest rates
- Long repayment periods
- Can repay in resources
- "No strings attached" contracts

Chinese contractors' speed & efficiency

## Risks for African countries & communities

"No interference" policy – also in environmental standards

Environmentally sensitive sectors + impactful infrastructure

Remote & ecologically fragile regions

Countries with weak governance

China's domestic environmental policies => export their problems

Dependence on Chinese technology, knowledge & labor => social problems

## Biggest road expansion in history

### Positive impacts

Improve rural livelihoods

Access to markets, fertilizers, new technologies, health, education



## Roads

### Negative impacts

Deforestation & habitat disruption

Land degradation

Landscape fragmentation

Restrict wildlife movement

Spread of diseases

Road killings

Illegal activities

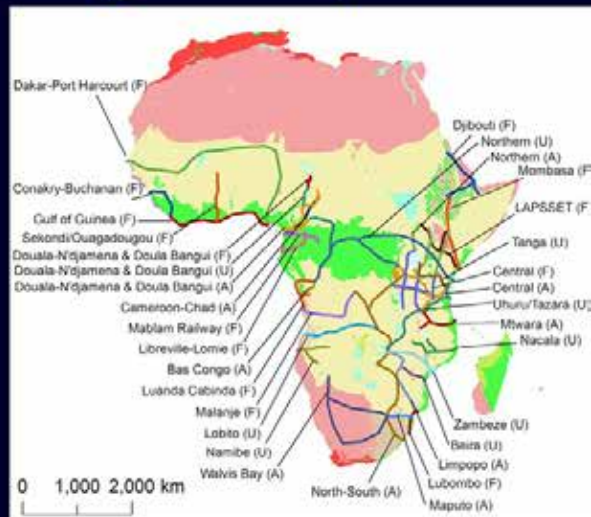


# Development Corridors in Africa

Laurance et al. (2015). Estimating the environmental costs of Africa's massive "development corridors". Current Biology 25, 3202-3208.

## Assessed 33 planned/existing "development corridors"

Roads – railways –  
pipelines – ports  
For agricultural production,  
mineral exports, economic  
integration



## Findings

### Desirable development corridor



Settled land with low productivity



Settled, highly productive land

### Undesirable development corridor



Intact, high-value habitat



Settled land but high environmental costs

5 "promising  
corridors"

22 "marginal"  
corridors

Need stringent  
regulation, law  
enforcement, mitigation  
& offset strategies

(includes LAPSET &  
Northern corridor)

6 "inadvisable"

## East African savanna ecosystems

### Sensitive to infrastructure development

Drylands

Animal mobility is crucial

Non-equilibrial ecosystems

Temporal & spatial variability in water & resources for animals & people

Restrictions to animal movements => land degradation, ecosystem collapse

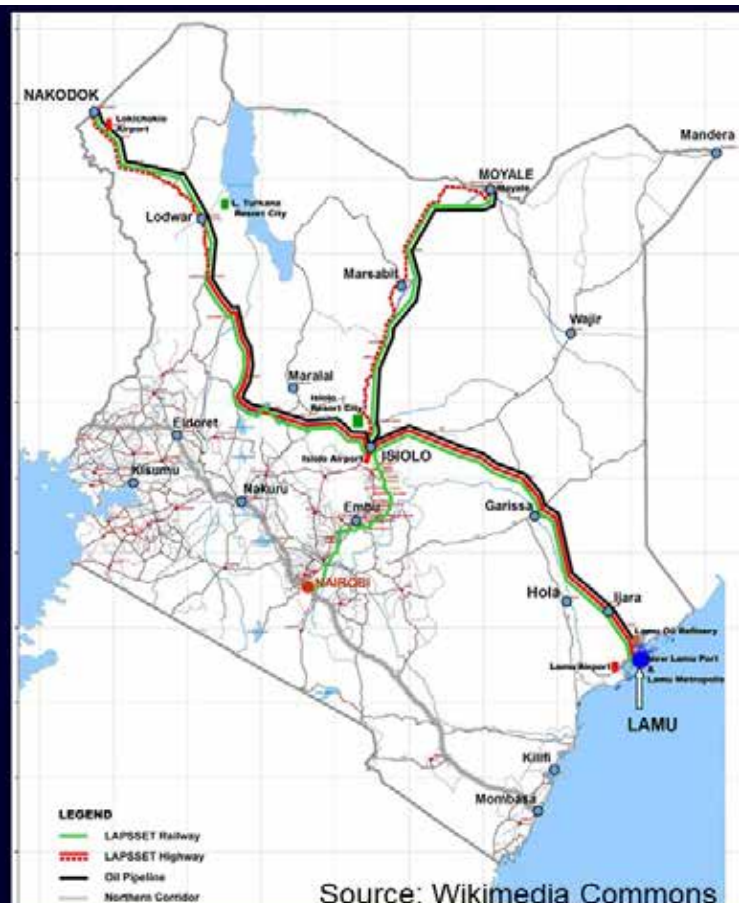
Undergoing massive changes

### Project #1: The LAPSSET Corridor

The Lamu Port  
South Sudan  
Ethiopia corridor

Public-private  
partnership (PPP)  
Kenya/South  
Sudan/Ethiopia

Port  
Oil pipeline &  
refinery  
Road & railway  
Resorts, airports



# Official narrative

## Kenya Vision 2030

Anticipated benefits

Enhance regional trade & logistics

Unlock S. Sudan & Ethiopia

Marginalized northern Kenya: the new frontier

# The problems

Project launched *before* Environmental Impact Assessment

Non-independent EIA

Lack of information & transparency

No longer needed for Ethiopia

Expensive

Massive environmental & social costs

## Impacts on coastal communities & biodiversity

Degrading mangroves, sea grass, coral reefs  
& fishing livelihoods

Port construction => eviction & landlessness

No compensation

Land speculation

Unclear land rights & ethnic/political  
violence

AFRICATECH

MAY 4, 2018 / 3:19 AM / 6 MONTHS AGO

### Kenyan fishermen win millions for loss of rights to new port

Kevin Mwanza

4 MIN READ



## Impacts on Northern Kenya's pastoralists

Unmet expectations

No promised jobs in oil industry

Concerns about livestock movements

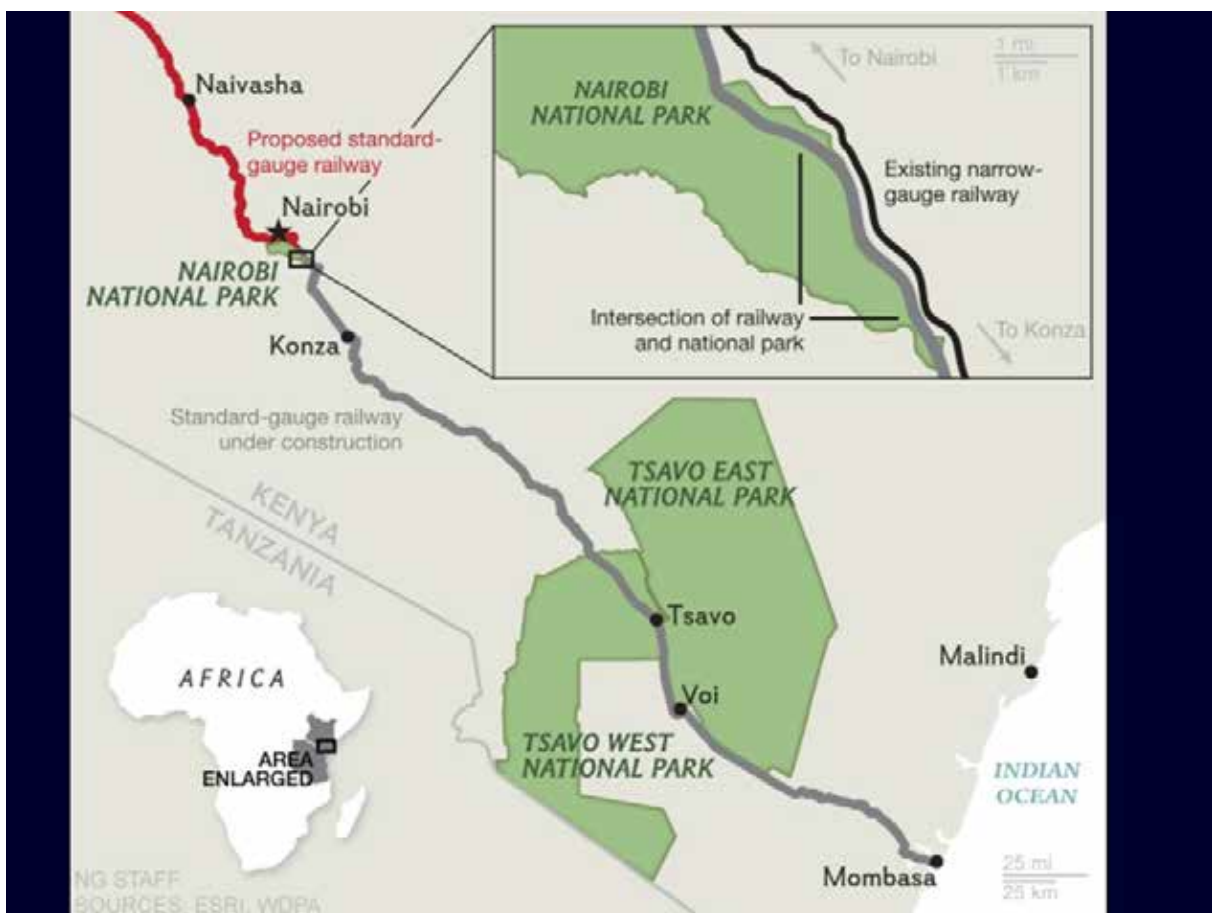
Airport construction => landlessness

Loss of grazing areas



## Project #2: The Northern Corridor

### BRI project – to connect East African countries



## Unfolding environmental impacts



Tsavo Conservation Area: largest elephant population (12,000)

### Animal Mortality



## Northern Corridor social impacts

Noise pollution

Wetland destruction, stream blocking =>  
impacts on communities

Sanitation problems

Poor payment & ill-treatment of staff

Workers' strike



## Some lessons

Consultation with local communities

Information & transparency

Independent EIAs

### **Location of new roads**

Where costs smaller

Highly settled areas

With highest agricultural potential

Avoid ecosystem fragmentation

With mitigating infrastructure



**Presentation:**

Mr. Wali Modaqiq,  
Freelance National Consultant, Afghanistan

*"Status and development of environmental framework in Afghanistan"*

Key points:

1. Afghanistan has well developed national frameworks, strategies and action plans for environmental conservation.
2. However, there is currently a high dependency on international experts for conducting environmental and social impacts (ESIA) studies in major projects.
3. Implementing environmental policy in the social and conflict contexts of Afghanistan remain extremely challenging.



## Afghanistan Environmental Legal Framework

- Article 15 of the constitution
  - Environment Law Approved by the National assembly in January 2007
  - Land Management Law, Forest Management Law, Wildlife Management and Hunting Law (Draft) and Seeds Law
  - PAs (Interim), ESIA, Waste Management, Air Quality procedures
  - 14 Multilateral environmental agreements

## Chapters covered by Environment Law

- General Provisions
- Functions and Powers
- Management of Activities affecting the Environment
- Integrated Pollution Control
- Environmental considerations relevant to water resource conservation and management
- **Biodiversity and natural resource conservation and management**
- Environmental information, education, training and research
- Compliance and enforcement
- Miscellaneous orders

## Institutions Map

- National Environmental Protection Agency (NEPA) is the leading national institution to ensure the implementation of Environment Law 2007
- Central Office in Kabul and provincial offices in all 34 provinces of Afghanistan
- **Coordination Mechanisms:**
  - National Environmental Advisory Council
  - High Council of Land, Water and Environment
  - Committee for Environmental Coordination (central and provincial level)
  - High Commission on Air Pollution
  - High Level Commission on Environmental Inspection
  - National Committee on Climate Change
  - Afghanistan Wildlife Executive Committee

## National Frameworks, strategies and action plans for environment

- Environment Strategy-ANDS (2008-2013)
- Afghanistan National Peace and Development Framework (ANPDF)
- National Biodiversity Strategy and Action Plan (NBSAP)
- National Climate Change Strategy and Action Plan (NCCSAP)
- National Environmental Education and Outreach Strategy
- Natural Resources Management National Strategy

## Global Frameworks

- Sustainable Development Goals (SDGs)
- United Nations Framework Convention on Climate Change (1992)
- Kyoto Protocol (1997)
- Paris Agreement (2016)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Convention on Biodiversity and the Cartagena Protocol on Biosafety
- Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES
- United Nations Convention on Migratory Species CMS
- Minamata Negotiations on Mercury
- Montreal Protocol on Substances that Deplete the Ozone Layer
- Stockholm Convention on Persistent Organic Pollutants

## Action Plans

- National Environmental Action Plan (NEAP)
- National Protected Areas System Plan (NPASP)
- National Snow leopard Landscape Plan (NSLEP)
- National Biodiversity Strategy and Action Plan (NBSAP)
- List of Afghanistan's Protected Species (Red List)
- Air Pollution Prevention Action Plan (Big cities)
- National Implementation Plan (NIP) for POPs

## Environmental Impact Assessments and Strategic Environmental Assessments

- Interim EIA Regulation and EIA Administrative Guideline introduced in 2008-to initiate the mainstreaming of environment into development projects
- New comprehensive ESIA Regulation replaced the EIA Regulation to make the procedures more effective, efficient and transparent
- Strategic Environment Assessment is not a Priority for the Govt.

- ESIA Board of Experts constituted to make the evaluation system more transparent and independent
- Experts from Government Ministries and Universities involved in the Board
- High dependency on international experts for conducting ESIA studies in major projects
- Challenge of preparing national capacity (experts to conduct studies) to produce quality ESIA reports

## Session 3: Role of 'protected areas' in regional landscapes

**Chair:** Mr. Ashiq Khan

**Presentation:**

Dr. Aziz Ali Khan,  
Research Fellow, University of Central Asia

*"The Contribution of Indigenous Knowledge of medicinal and aromatic plants and their Management to biodiversity conservation and social/community resilience in the mountains of Central Asia"*

Key points:

1. Indigenous knowledge contributes to biodiversity conservation and natural resource management – in support of the rural livelihoods in the Pamir Region.
2. Knowledge on herbal medicine and remedies has diminished in recent years and is primarily restricted to aging local healers. Reduced accessibility and availability of medicinal and aromatic plants (MAPs) to the local communities may ultimately lead to diminishing knowledge on herbal remedies and practices.
3. Degradation of MAPs has occurred due to overexploitation for export, exacerbated by lack of regulations for conservation of MAPs and by competing land use strategies including intensive livestock grazing and shifting cultivation.



Preliminary Findings of Ph.D. Research on:  
**"The Contribution of Indigenous Knowledge of Medicinal  
and Aromatic Plants and Their Management to  
Biodiversity Conservation in the Pamir Region of Tajik  
and Afghan Badakhshan"**

Presented By: Aziz Ali, Ph.D. Candidate, Philipps Universität  
Marburg, Germany



## INTRODUCTION TO THE PAMIR REGION

- ❖ The Pamir Region lies at the junction of Asia's great mountain ranges – the Hindu Kush, Karakoram & Tian Shan
- ❖ Catchment of many important international rivers, Oxus River, Tarim River and Indus River, thus has great conservation value
- ❖ For millennia, the region has been an important corridor through which many influential ethnic groups migrated across Eurasia, between east to west and north to south
- ❖ The connectivity and affinity exhibited in the Pamir mountain region offers diverse habitats to a wide array of unique species
- ❖ Medicinal and Aromatic Plants (MAPs) play a vital role in local food security, maintenance of human health, and ecological services e.g. watershed protection
- ❖ The long tradition of using such plants is in jeopardy, mostly due to anthropogenic stresses



## RATIONALE FOR RESEARCH STUDY

### Issue

- Indigenous knowledge on herbal medicine and remedies has diminished;
- Restricted to local healers and transfer to younger generations virtually non-existent
- Medicinal plant population declining from natural habitat



### Consequences

- Risk of losing important cultural heritage
- Loss of biodiversity
- Negative impact on livelihoods, production systems and
- Negative impact on health of local communities



### Opportunities

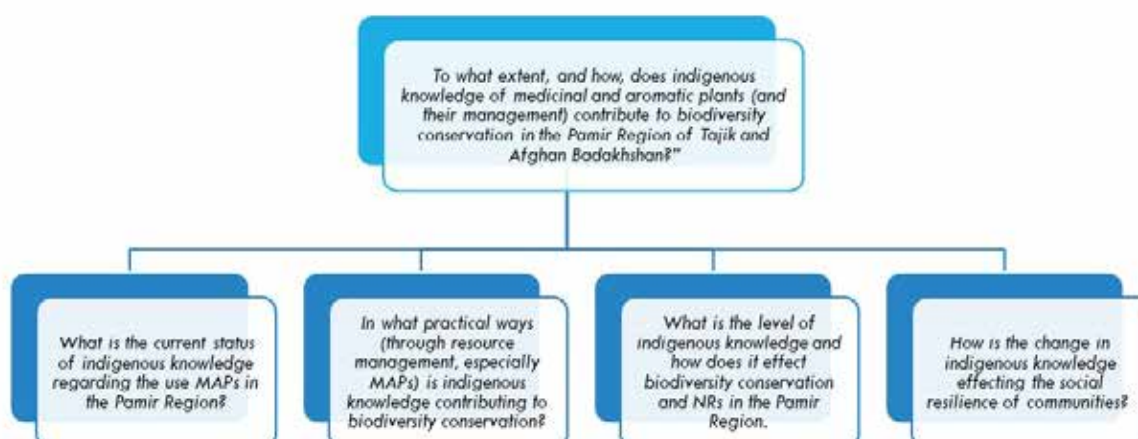
- Study & document indigenous knowledge systems
- Assess & Understand how indigenous knowledge contributes to biodiversity conservation
- Belt and Road initiative and New Markets

## KEY OBJECTIVES OF THE RESEARCH STUDY

1. To investigate and explore **the contribution of farmers' and herders' indigenous knowledge to biodiversity conservation** in the Pamir region of Tajik and Afghan Badakhshan.
2. To assess **the contribution of medicinal and aromatic plants to local food and health systems** in the Pamir region.
3. To **explore and document traditional knowledge** critical to Pamir region for conservation, adaptation and resilience of these communities.
4. To explore the **most valuable and marketable medicinal plant species** for conservation and promotion for local income generation.



## RESEARCH QUESTIONS



## RESEARCH METHODOLOGY & APPROACH

This research moves forward current scholarly debates around the future roles and importance of medicinal plants and associated knowledge (conservation, ecological, therapeutic and economic) and threats to the biodiversity with the following approach and methodology:

- ❖ *General literature review about the traditional use of medicinal plants in Badakhshan and else where*
- ❖ Qualitative and quantitative methods to collect data in the study area
- ❖ A structured questionnaire designed as investigation tool

## RESEARCH METHODOLOGY & APPROACH CONTD...

- ❖ Focus group discussions (FGDs) held to assess biodiversity conservation efforts.
- ❖ Key informant interviews (KIIs) conducted as triangulation and confirmation of the collected information.
- ❖ Individual interviews conducted with government personnel associated with resource management.

# RESEARCH FINDINGS

## OVERVIEW

- ❖ 280 individual respondents - 56 % women - revealed that in Gorno-Badakhshan, local residents use 92 different species of plants belonging to 34 families and 60 genera. Among this number, 25 species are included in the official Pharmacopeia of the former USSR (State Pharmacopeia of USSR, 1990)
- ❖ 95 MAP species were listed; Ephedra, Rosehips, Ferula (stinking gum), Ziziphora, Capparis (Caper), Hippophae (seabuckthorn), Mentha (mint), Ribes (Black currant), Nepeta (cat mint), Glycyrrhiza (licorice), Peganum (harmala), Achillea (yarrow), Barberis (barberry) and Bunium persicum (Black cumin) were the most common
- ❖ Responses between Afghanistan and Tajikistan remained relatively consistent

## RESEARCH QUESTION 1

WHAT IS THE CURRENT STATUS OF INDIGENOUS KNOWLEDGE REGARDING THE USE OF MAPS IN THE PAMIR REGION?

All 95 plants were listed as having medicinal value with treatment for ailments including:

- ❖ abdominal pain
- ❖ anemia
- ❖ blood pressure
- ❖ broken bones
- ❖ common cold
- ❖ dandruff
- ❖ diabetes
- ❖ diarrhea
- ❖ eczema
- ❖ fever
- ❖ git
- ❖ gynecological issues
- ❖ indigestion
- ❖ Inflammation
- ❖ cystitis
- ❖ liver aches
- ❖ malaria
- ❖ pancreatic pain
- ❖ toothaches

In both Badakhshans:

- ❖ 37% of plants are used for treatment of cardiovascular system
- ❖ 30% for digestive systems
- ❖ 22.8% for musculoskeletal problems
- ❖ 16% for female diseases such as colpitis, vaginitis, menorrhagia (hypermenorrhea) and metrorrhagia (polymenorrhea)
- ❖ 15% for skin diseases such as exzema, quinque edema, erysipelas, furunculosis, and carbuncle
- ❖ 14% for the urogenital system

## RESEARCH QUESTION 1

WHAT IS THE CURRENT STATUS OF INDIGENOUS KNOWLEDGE REGARDING THE USE OF MAPS IN THE PAMIR REGION?

- ❖ 68 plants were listed as being used for food including for juices, jams, salads, soups, teas, as well as spices
- ❖ 89 plants were sold mostly in local markets with the flower, fruit/seed of the plant being the most valuable part
- ❖ 60 varieties were grown within the surrounding vicinities of households/farms
- ❖ Over 50 varieties were listed as growing in farms, fields, mountain areas, and local forests
- ❖ 16 species are used in ethno-veterinary medicines such as injuries, tumor, menorrhagia, indisposition, sensory apparatus.



## RESEARCH QUESTION 2

IN WHAT PRACTICAL WAYS IS INDIGENOUS KNOWLEDGE CONTRIBUTING TO BIODIVERSITY CONSERVATION?

- ❖ 46% of responses indicated that 50 species of plants have decreased over the last 10 years
- ❖ 89% of responses indicated that the factors contributing to the conservation of plants are:
  - ❖ Education on indigenous knowledge of plants
  - ❖ The usage of plants for medication
  - ❖ The usage of plants for food
  - ❖ Culture and traditions



## RESEARCH QUESTION 3

WHAT IS THE LEVEL OF INDIGENOUS KNOWLEDGE AND HOW DOES IT EFFECT BIODIVERSITY CONSERVATION AND NRS IN PAMIR REGION?

| 10 Years Ago                                                                                        | 2017-18                                                                                               |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 40% village members <b>knew about</b> medicinal and aromatic plants                                 | > 60% village members <b>knew about</b> medicinal and aromatic plants                                 |
| 40% of their fellow village members <b>used</b> medicinal and aromatic plants                       | > 60% of their fellow village members <b>used</b> medicinal and aromatic plants                       |
| 40% of their fellow village members <b>knew about conservation</b> of medicinal and aromatic plants | > 60% of their fellow village members <b>knew about conservation</b> of medicinal and aromatic plants |

## RESEARCH QUESTION 3

WHAT IS THE LEVEL OF INDIGENOUS KNOWLEDGE AND HOW DOES IT EFFECT BIODIVERSITY CONSERVATION AND NRS IN PAMIR REGION?

100% of respondents felt that knowledge of medical plants increasing with improvement in education

- ❖ 100% of respondents felt the use of medicinal plants for various human ailment increasing
- ❖ 88% of respondents felt that the main visible change regarding the conservation methods was the increased use of medicinal and aromatic plants.

Thus retention of indigenous knowledge of medicinal plants is important for biodiversity conservation.



## RANKING OF THE COUNTRIES IMPORTING MAPS FROM AFGHANISTAN

| Country                           | Value of MAP imported | Percentage |
|-----------------------------------|-----------------------|------------|
| India                             | \$ 72.58 million      | 47%        |
| Iran                              | \$ 20.117 million     | 13%        |
| Pakistan                          | \$ 20.116 million     | 13%        |
| China                             | \$ 3.925 million      | 3%         |
| Europe, USA, Australia, and Japan | \$ 2.011 million      | 1%         |
| Europe                            | \$ 0.898 million      | 0.6%       |
| Tajikistan                        | \$ 0.427 million      | 0.3%       |

Source: Islamic Republic of Afghanistan, Ministry of Commerce and Industry, Export Promotion Agency, 2015.

## VALUE OF EXPORTED MAPS WHICH WERE REPORTED AS GROWING IN BADAKHSHAN

| MAP growing in Badakhshan<br>(not exclusively) | Value in Million USD | Percentage of the<br>total of exported<br>MAP | Average price<br>per kg in USD |
|------------------------------------------------|----------------------|-----------------------------------------------|--------------------------------|
| Liquorice ( <i>Glycyrrhiza glabra</i> )        | \$ 25.133            | 16%                                           | \$ 3                           |
| Asafoetida ( <i>Ferula asafoetida</i> )        | \$ 20.161            | 13%                                           | \$ 65                          |
| Black cumin ( <i>Bunium persicum</i> )         | \$ 4.098             | 3%                                            | \$ 2                           |
| Saffron ( <i>Crocus sativa</i> )               | \$ 3.281             | 2%                                            | \$ 1,543                       |
| Espanol ( <i>Peganum harmala</i> L.)           | \$ 2.003             | 1%                                            | \$ 0.6                         |
| <b>Total</b>                                   | <b>\$ 54.678</b>     | <b>35%</b>                                    |                                |

Source: Islamic Republic of Afghanistan, Ministry of Commerce and Industry, Export Promotion Agency, 2015.

## MAJOR REASONS FOR DEPLETION OF MEDICINAL PLANTS

- ❖ Lack of awareness among the communities regarding the importance of MAPs for their livelihoods and sustenance.
- ❖ No clear government policy for the conservation and management of non timber forest products (NTFPs)
- ❖ Overexploitation and unsustainable harvesting of medicinal plants by the local dwellers
- ❖ Removal of vegetative cover from the mountain slopes for fuel and fodder purposes
- ❖ Climate change/Prolong drought coupled with desiccating winds in high altitude pastures and rangelands
- ❖ Over grazing of pastures and rangelands by local residents as well as nomads



## INTERVIEW WITH LOCAL HERBALISTS/HEALERS



## HERBALIST DR. SHIRINBEK AVJ ISHKASHIM TAJIK BADAKHSHAN AND XELION MARKET DUSHANBE



## MAPS BUSINESS /TRADE IN CITY AND VILLAGE



## Presentation:

Ms. Tatjana Yashina,  
Deputy Director, Katunskiy Biosphere Reserve, Russia

*"Transboundary cooperation of protected areas in Central Asia- an adaptive response to the BRI"*

### Key points:

1. Potential adaptive responses for biodiversity conservation include:
  - a. increasing capacities of existing protected areas (PAs)
  - b. establishment of internationally designated PAs
  - c. promotion of transboundary PAs and conservation projects
2. The 'Great Altai' Transboundary Reserve was officially recognized by UNESCO in 2017.
3. The reserve should comply with obligations under international UNESCO designation, including reporting standards, joint intergovernmental coordination, integration of conservation and science, and adopting sustainable development models with participatory management approaches that involve all stakeholders. Thus it could be considered as a model for adaptation of transboundary mountain regions to the Belt and Road Initiative.
4. The International Alliance of Protected Areas (IAPA), run by China, could serve as a platform and driving force for increasing capacities of protected areas along the Belt and Road corridor.

Министерство природных ресурсов и экологии Российской Федерации



# Transboundary Cooperation for Nature Conservation – an Adaptive Response to the BRI?

## Outlook from the UNESCO Transboundary Biosphere Reserve "Great Altai"



Tatjana Yashina,  
Deputy Director of the Katunskiy Biosphere  
Reserve

*Silk Roads in the Mountains of Central Asia - 2. Bishkek, October, 26, 2018*

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## Some Potential Adaptive Responses For Biodiversity Conservation at local and regional levels

Increasing capacities of existing protected areas

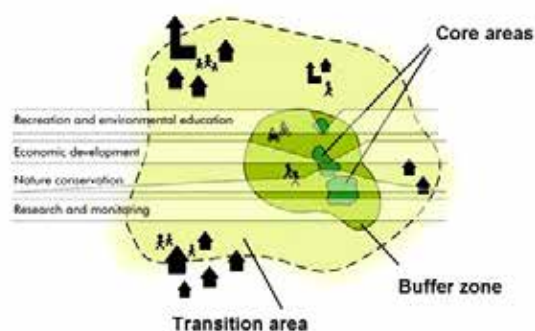
Establishment of internationally-designated PAs

Promotion of transboundary conservation projects and protected areas



## UNESCO Biosphere Reserves

- **'Science for Sustainability support sites'** – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.
- Three interconnected functions: conservation, development and logistic support;



- 686 biosphere reserves in 122 countries

- Kazakhstan: 10 BRs
- Kyrgyzstan: 2 BRs
- Turkmenistan: 1 BR
- Uzbekistan: 1 BR
- China: 34 BRs

- 20 transboundary BRs (1 in Asia – Great Altai)





## Transboundary Cooperation on the Altai region



Dr. Yuri Badenkov, RAS

**1998:** announcement of the idea to establish TBR between Russian, Kazakhstan, Mongolia and China and to launch the Altai Convention in order to provide coordinated regional policy for protection and sustainable development of the mountain areas.



Vassily Manyshv,  
Government of the Altai Republic

### PROTOCOL OF INTENTIONS

Considering the importance of implementing Chapter 13 of Agenda 21 (Rio de Janeiro, 1992), and considering that we must resolve the problems of sustainable development of mountain regions together;

On the initiative of the government of the Altai Republic, the representatives of governmental institutions of China, Kazakhstan, Mongolia and the Russian Federation (hereinafter the four countries) participating in the Second International Conference on Strategic Considerations in the Development of Central Asia (Urumqi, China) have discussed the need to adopt an intergovernmental Altai Mountain Areas Convention on Sustainable Development („Altai Convention“).

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- 2004: site-level cooperation between **Katunskiy Biosphere Reserve** (Russia) and **Katon-Karagaitskiy National Park** (Kazakhstan) was established
- 2011: official intergovernmental agreement between two states on the establishment of the international **transboundary reserve “Altai”** on the basis of these two protected areas

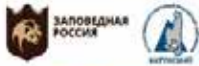


Руководители Катунского заповедника и Катон-Карагайского национального парка на переговорах о сотрудничестве. Фото Т. Яшиной



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## 2013: Joint Management Commission of the TR "Altai"



Фото: П. Белая

- Members: representatives of the federal Ministry of Nature Resources and Ecology (RU), Ministry of agriculture (KZ), regional authorities, MAB Committee (RU), NGOs, PA managers + external consultants if required
- Parties agreed that they will continue efforts to establish the UNESCO Transboundary Biosphere Reserve.
- Joint Commission was proposed as a tool to coordinate all TBR activities.

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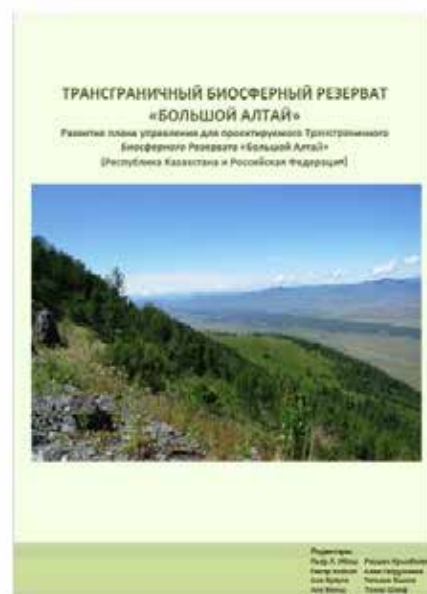


## Development of the management plan of the TBR

- Based on methodology of *Conservation Open Standards*
- Consultative process involving different stakeholders
- The management plan officially approved by the Joint Commission



Фото: Т. Динина

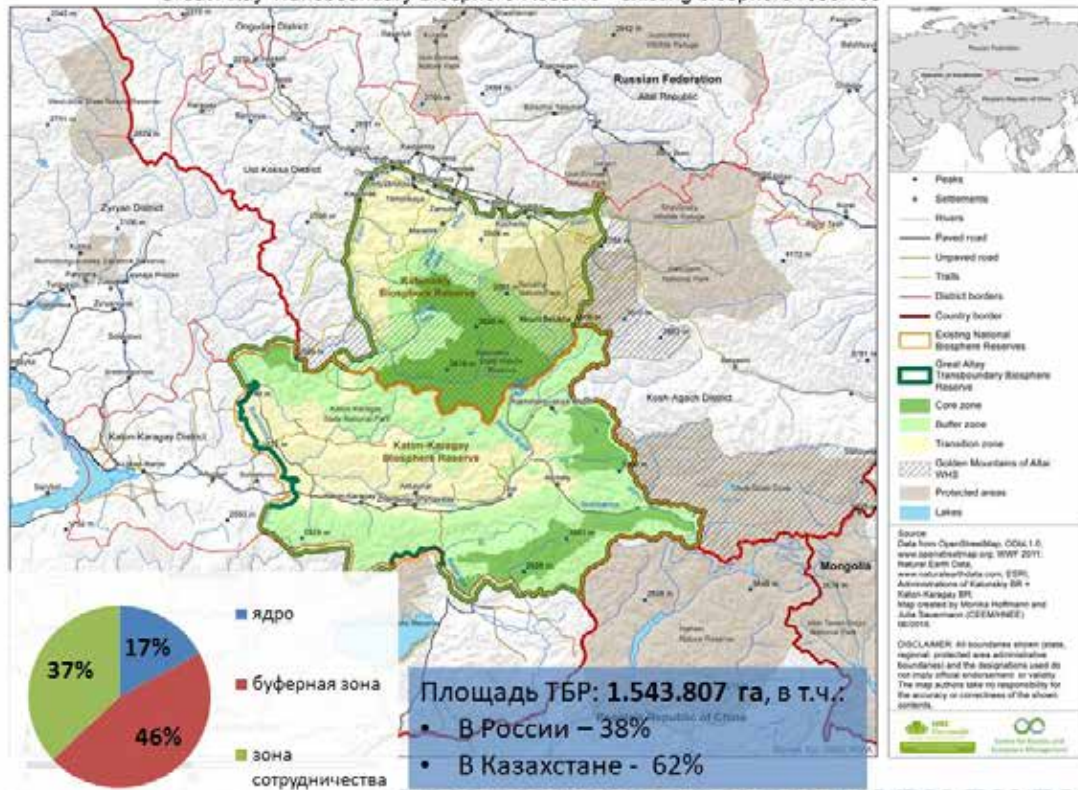


Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

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## Great Altay Transboundary Biosphere Reserve - existing biosphere reserves



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## Daily activities of the TBR



Annual international fire fighting trainings



joint patrolling of the border zone



use of the anti-poaching technologies

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## Transboundary fire prevention and fighting



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## Joint research and monitoring of endangered and migrating species



© Катон-Карагайский ГНПП, 2015



Фото ирбиса с регистраторов Катон-Карагайского парка

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ЗАПОВЕДНАЯ  
РОССИЯ



## Joint studies of climate change and responses of mountain environments



One of 25 model mountain BRs to  
tackle climate change under UNESCO  
GLOCHAMORE project



Use of international monitoring  
protocols for combined monitoring of  
climate and ecosystem change



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ЗАПОВЕДНАЯ  
РОССИЯ



## Ecological education of local communities



- More than 10 000 participants annually



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## Alternative livelihoods for local communities

- **Goal:** to support local people in raising income from development of ecological and rural tourism as an alternative for poaching and unsustainable land use practices

Financial support of microenterprises (interest-free microcredits)

Trainings (business planning, touristic guides, mini-hotel and camping running, financial management etc)

Assisted promotion of the good and services (special web site, catalogues at touristic fairs)



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## Results over 5 years

- 255 business-plans ready to implement,
- 165 families received financial support,
- More then 600 new jobs are created (including 113 all-year)
- Through trainings 150 people received education (and relevant university-issued diplomas) in various aspects of tourism



### UNESCO feedback

#### *Katunsky Biosphere Reserve (Russian Federation)*

*The Advisory Committee welcomed this first periodic review report for this biosphere reserve designated in 2000. It noted with satisfaction the implemented changes especially in the field of participative management and coordination of the biosphere reserve through establishment of multi-stakeholder Public Council of Katunskiy Biosphere Reserve. The work focusing on sustainable development and helping with creation of alternative sources of income for local communities and for reduction of the human impact on the environment was also noted with high satisfaction and could serve as a model for other biosphere reserves.*

Фото: Т. Яшина

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## International Alliance of Protected Areas

- Methodological support
- Annual meetings and trainings
- Potential platform for cooperation under BRI



## International Forum “Nature Without Borders” Republic of Altai, Russia, September 2018 RESOLUTION

- 60+ participants from Russia, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Belarus and Lithuania.
- Call for activization of the international cooperation of the research institutions, protected areas, UNESCO Biosphere Reserves, NGOs and other stakeholders in the frames of the BRI for conservation of natural and cultural diversity and sustainable development of local communities,
- Regular field schools for the protected areas staff for the Central Asia states – members of the CIS to increase capacities of existing protected areas



## Presentation:

Dr. Ghulam Ali,  
Programme Coordinator, Hindu Kush Karakoram Pamir Transboundary Landscape,  
ICIMOD

*"Introduction to the recently established BameDuniya Network of protected areas"*

### Key points:

1. The Bam-e-Duniya Protected Area Network, spanning the mountains of Central Asia (including Afghanistan, China, Pakistan, Tajikistan) was launched in September 2018.
2. The network aims to promote conservation and development with socio-economic and ecological resilience in protected areas, with particular focus on harmonizing policies and management approaches, and on facilitating the sharing of scientific data and knowledge, good practices, as well as on mutual learning to improve connectivity of biological corridors.



International Centre for Integrated Mountain Development - ICIMOD



## An Introduction to Bam-E-Dunya Network (BDN)

↓

**"Roof of the World"**

A newly established forum in Hindu kush Karakoram Pamir Landscape - HKPL

By: Ghulam Ali

# International Centre for Integrated Mountain Development – ICIMOD

## Mission

To enable sustainable and resilient mountain development for improved and equitable livelihoods through knowledge and regional cooperation

- *Inter-governmental non-political international organization*
- *Mountain learning, knowledge and enabling centre*
- *Promote regional cooperation*
- *Build capacities*
- *Link research with policy and practice*

ICIMOD

FOR MOUNTAINS AND PEOPLE



## Iconic species....

ICIMOD



## The living rhythms

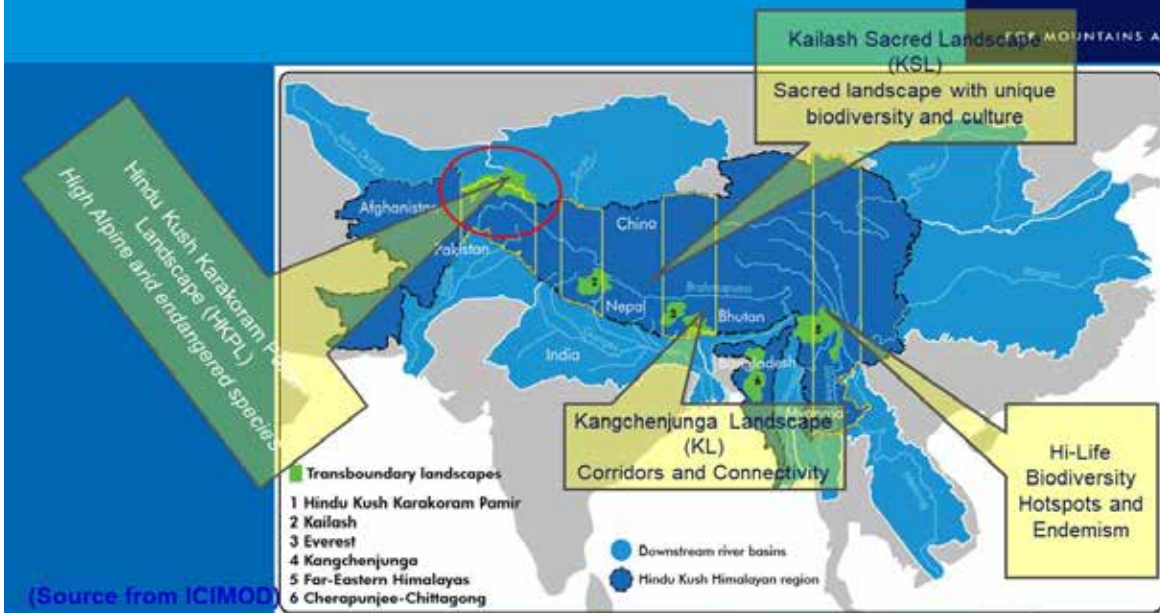
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## Landscapes in Hindukush Himalaya HKH region

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## Hindu Kush Karakoram Pamir Landscape - HKPL

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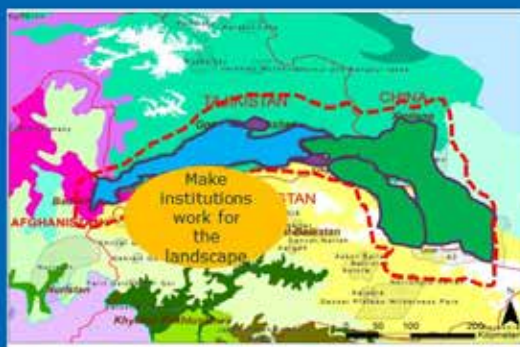
### Importance

Social

Ecological

Economic

Geographic



SEEING THE LANDSCAPE AS A WHOLE!

Taxkorgan Nature Reserve (TNR)

Khunjerab National Park (KNP)

Wakhan National Park (WNP)

Broghil National Park (BNP)

Qurumbar National Park (QNP)

Zorkul Nature Reserve (ZNR)

## Uniqueness's of HKPL

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- Highest mountain ranges – Hindu Kush, Karakoram and Himalaya
- Convergence of several important biogeographical regions and linkages with globally important biodiversity hotspots
- Cold desert ecosystem with unique floral and faunal biodiversity, including the endangered species like snow leopard, Marco and blue Polo sheep
- Source of three major Asian rivers Amu Darya, Tarim, and Indus
- Nine indigenous ethnic groups with strong cultural and socioeconomic ties
- Six protected areas in the landscape (1 in Afghanistan, 1 in China, 3 in Pakistan, and 1 in Tajikistan)

### Percentage of PAs in HKPL



### Key Features of the HKPL



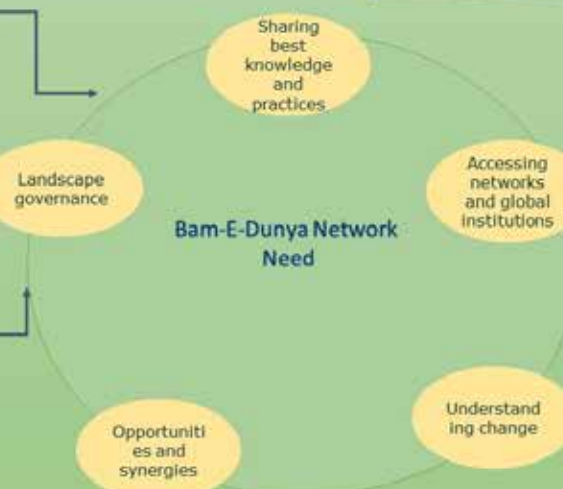
## Context of Bam-e-Dunya Network

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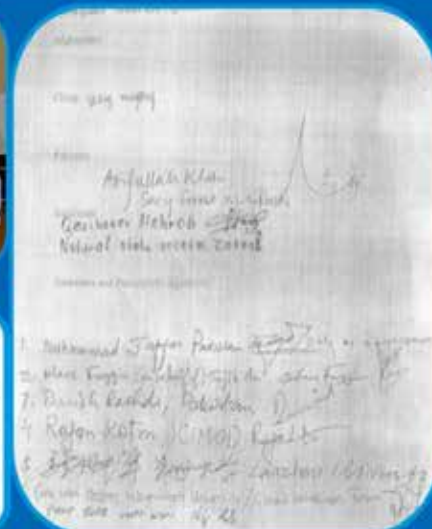
- Sustaining the unique biodiversity and ecosystem
- Adapting change – conservation vs development
- Local people livelihoods and their level of participation
- Human-wildlife and conflict



# Highlights from Lanzhou, China

ICIMOD

FOR MOUNTAINS AND PEOPLE



- Agreed to Affirmed to have common platform across ICIMOD, protected area with the main purpose to bring sharing of data (within natural laws), knowledge, best practices, methodologies and frameworks, and common opportunities.
- Agreed to encourage a closer exchange on technical knowledge sharing, in particular, governance and management of protected areas.
  - Agreed to arrange joint events (seminars, conferences, workshops), exchange visits, cultural exchange studies and publications of common publications, scientific documentation of indigenous knowledge and potential serving as a repository of knowledge and collaboration on Protected Areas.
  - Agreed to access to international research and networks related to mountain biodiversity, landscapes and ecosystems management promoting exchange and cooperation for advancing conservation science, policies and practices.
  - Continuously identify and propose to joint opportunities and challenges related to conservation and development by organizing seminars, workshops, conferences and plans on Protected Areas.
  - Commitment to facilitate technology transfer and capacity building of Protected Areas professionals, communities and other relevant stakeholders.
- Agreed to promote sustainable development with potential development partners.

## Purpose, activities and focus

ICIMOD

FOR MOUNTAINS AND PEOPLE

### Purpose - collectively identified by the participants in plenary:

"To promote conservation and development with socio-economic and ecological resilience in PA with the particular focus on, harmonizing policies and management approaches; facilitate sharing of variety of scientific data, good practices and mutual learning to improve connectivity of biological corridors".

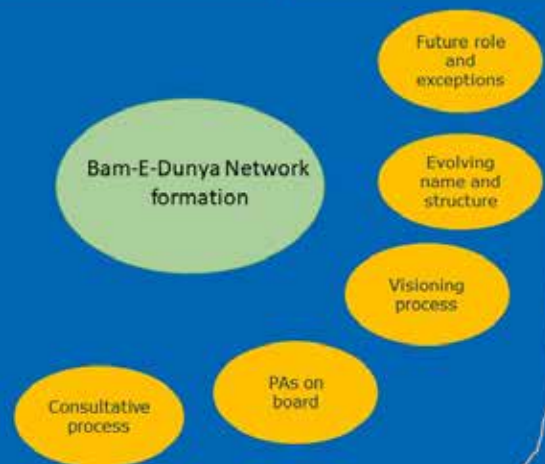
- Strengthen PAs;
- Promote Advocacy for PAs in the region;
- Improve Ecosystem conservation plans;
- Promote landscape management;
- Strengthen cross border collaboration;
- Harmonizing policies and frameworks;
- Corridor connectivity;
- Promote collective and mutual learnings;
- Increase Resilience to social shock/response to challenges;
- Develop safeguards to mitigate large scale development through strategic and environmental Assessment/valuations;
- Sharing of scientific Data and good practices;
- Facilitate Large scale as well as scoping study/joint researches;
- Social responsibility/investment;
- Clear role of government;
- Include private sector;
- Promote Tourism sustainability/local products value chain;

## Process flow of formation of Bam-E-Dunya

ICIMOD

FOR MOUNTAINS AND PEOPLE

- Consultative workshop
- Engagement of international expertise and institutions
- Participatory and engaging
- People, biodiversity and ecosystem as center of agenda



| Structures                                                                                                                                                                                                   | Commilments                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Afghanislan                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                             |
| PA management department                                                                                                                                                                                     | Liaison Unit mobilization of budget and resources                                                                                                                                                                                                                                                                           |
| Wildlife executive committee (MAIL-NEPA-Universities)                                                                                                                                                        | Scientific/technical back stop                                                                                                                                                                                                                                                                                              |
| Wakhan – Pamir Association                                                                                                                                                                                   | Local governance support, data collection and advocacy                                                                                                                                                                                                                                                                      |
| NGO, INGO and Private Sector                                                                                                                                                                                 | Alignment of their Development Plan with Park Management Plan                                                                                                                                                                                                                                                               |
| Local community to community                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                             |
| China                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                             |
| Taxkorgan Nature Reserve                                                                                                                                                                                     | Experimental base                                                                                                                                                                                                                                                                                                           |
| Local Governments                                                                                                                                                                                            | <ul style="list-style-type: none"><li>• Communication with local government;</li><li>• organize field surveys;</li><li>• decision making</li></ul>                                                                                                                                                                          |
| Kashi University                                                                                                                                                                                             | Scientific papers                                                                                                                                                                                                                                                                                                           |
| Xinjiang Institute of Ecology and Geography, CAS                                                                                                                                                             | <ul style="list-style-type: none"><li>• Recommendations making equipment available</li><li>• Data/knowledge sharing</li></ul>                                                                                                                                                                                               |
| Pakistan                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                             |
| Establishment of " green Bell Green Roads" secretariat                                                                                                                                                       | <ul style="list-style-type: none"><li>• Data Sharing and sharing of Best practices</li><li>• Policies revisions and recommendations</li><li>• Revamping legislation and recommendations</li><li>• Facilitation to Regional Research activities</li><li>• Exchange experts from Forestry &amp; Wildlife Department</li></ul> |
| Administrative Body                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"><li>• Members from LA/PA of GB and KP</li><li>• Concerned Department secretaries/rep</li><li>• Member from Cabinet Committee on Environment and CC</li></ul>               |                                                                                                                                                                                                                                                                                                                             |
| Technical Committee                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"><li>• Head of concerned Departments</li><li>• Rep from local communities</li><li>• Rep from local Civil Societies</li><li>• Rep of Research Institution/Academia</li></ul> |                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                             |
| Tajikistan                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                             |
| Zorkul Nature Reserve                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                             |
| UCA                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                             |

## Significance of the Network

Play the role of catalyst in harmonizing conservation with development

ICIMOD

FOR MOUNTAINS AND PEOPLE

Connecting landscapes along the silk Route



inclusive regional integration

Regional Co-operation:

Harmonizing standards,  
frameworks & policies

Strengthening Capacity

Transfer of Knowledge

Trade and Tourism

Research and Development

Conservation and Development

Connecting landscape

Inclusive & regional integration



## Way forward for BDN

ICIMOD

FOR MOUNTAINS AND PEOPLE

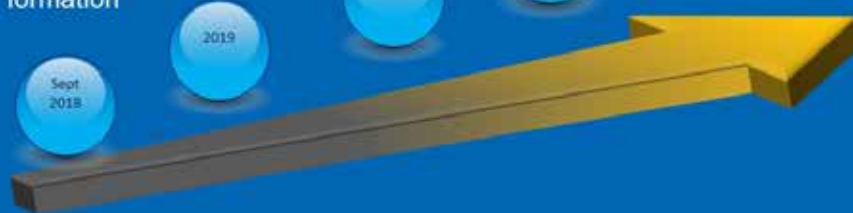
Independently  
sustaining its  
activities

Sustained system  
in network

Strengthening  
capacities

Initial joint  
activities

Network  
formation



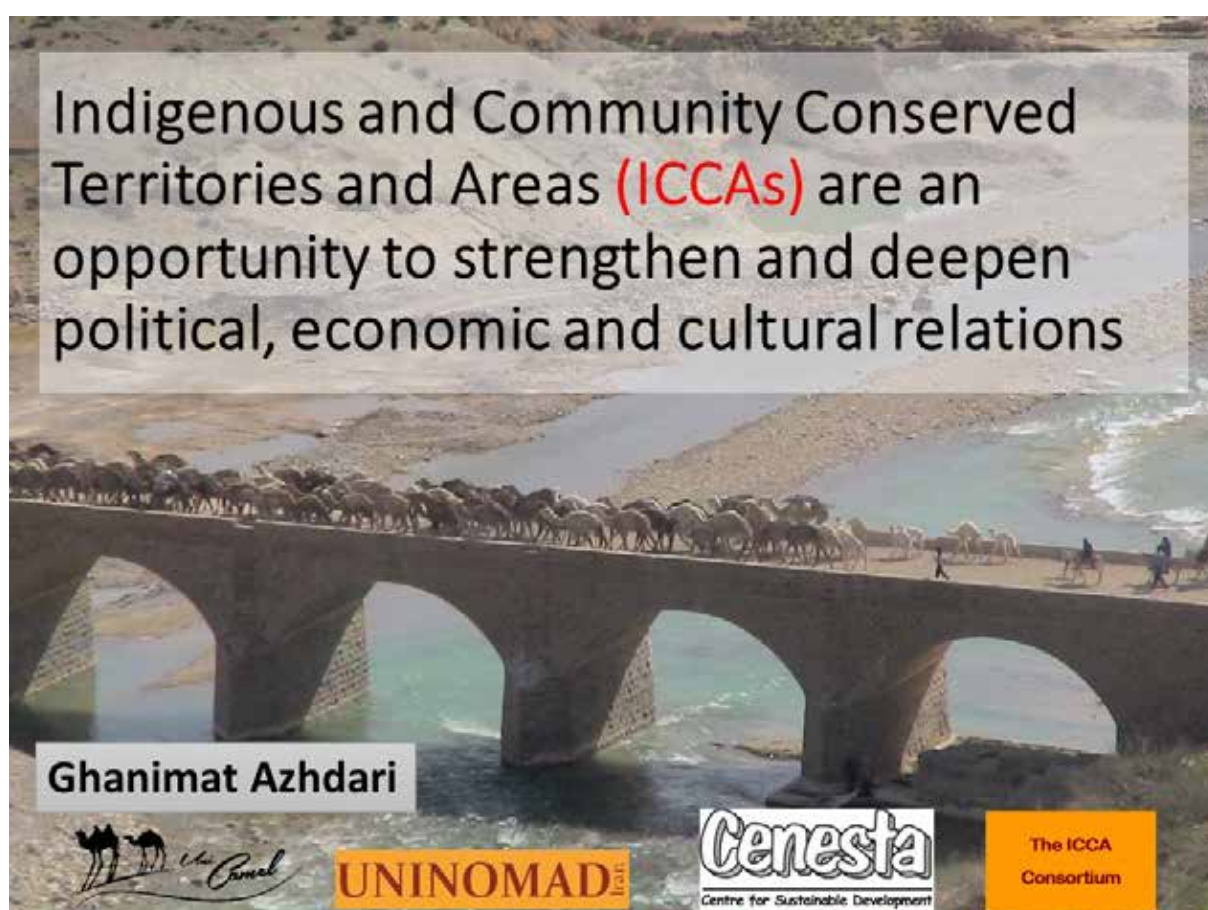
## Presentation:

Ms. Ghanimat Azhdari,  
Senior Expert, Cenesta & council member, ICCA Consortium

*"Indigenous and Community Conserved Territories and Areas (ICCAs) are an opportunity to strengthen and deepen political, economic and cultural relations"*

### Key points:

1. Indigenous people and local communities are often effective custodians of biodiversity in their ICCAs-territories of life.
2. China's BRI will bring about both threats and opportunities for ICCAs in Iran. Threats such as economic dependency for IPs/LCs and compromised food sovereignty.
3. Cultural transformation associated with greater connectivity has the potential to disrupt ICCAs and would be helpful for transboundary ICCAs which are located in two or more political borders of the countries.



“ICCAs” is an abbreviation for:  
indigenous peoples’ and community  
conserved territories and areas



or the  
“jewels”, the  
“heart”, the  
“seeds” ...



...of bio-cultural  
diversity around  
the world!

ICCAs are found in all world regions, span all types  
of ecosystems and cultures, have thousands of  
local names and are extremely diverse...



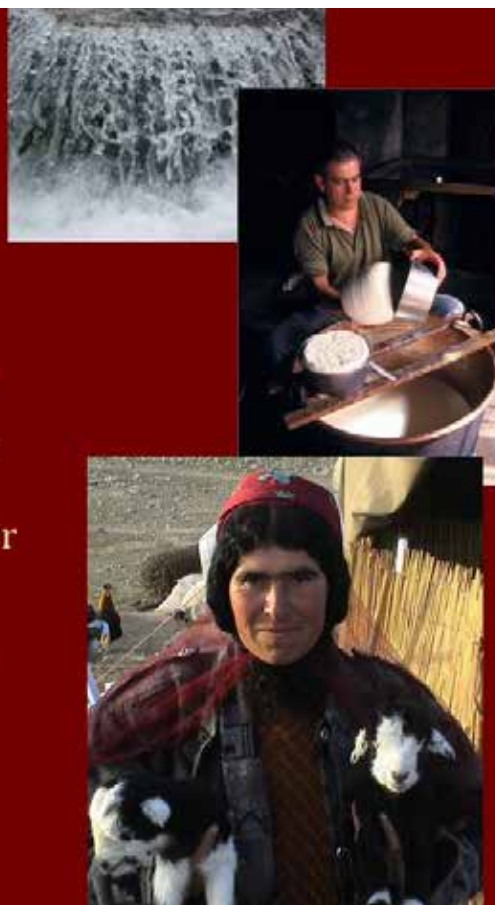
ICCAs are successful examples of collective decision-making about nature... the oldest form of "conservation" on earth... closely related to peoples' livelihoods, culture and identity...



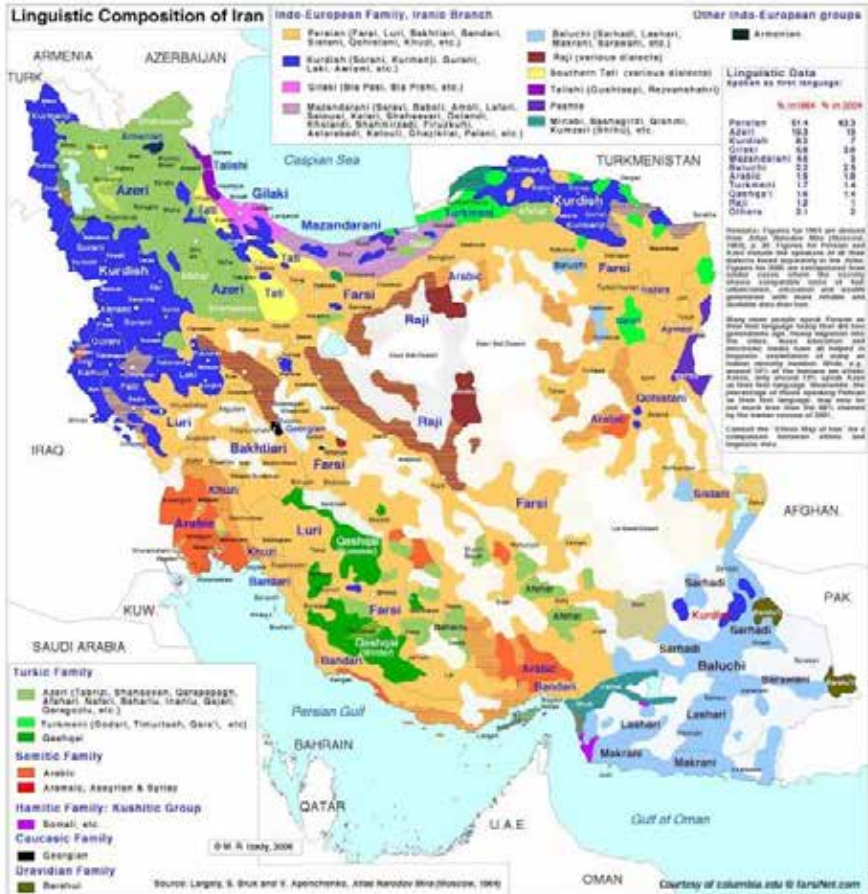
ICCAs conserve nature  
but also secure  
livelihoods... in unique  
ways for unique contexts...

- they encompass a huge range of ecosystems, habitats, species and genetic resources, maintain ecosystem functions and provide biodiversity connectivity in the landscape/seascape
- they secure energy, food, water, fodder and income for millions of people
- their coverage has been estimated at 23% of terrestrial areas- i.e., much larger than the coverage of formal protected areas (13%)...

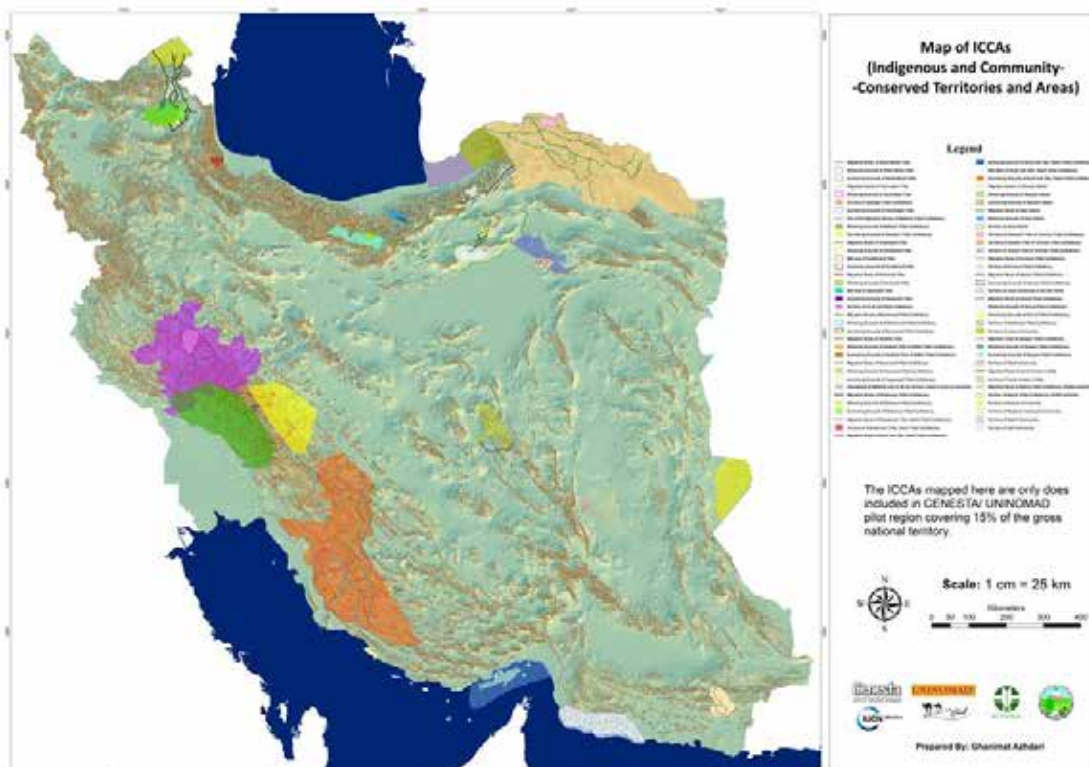
& probably more if we include defined + disrupted + desired ICCAs

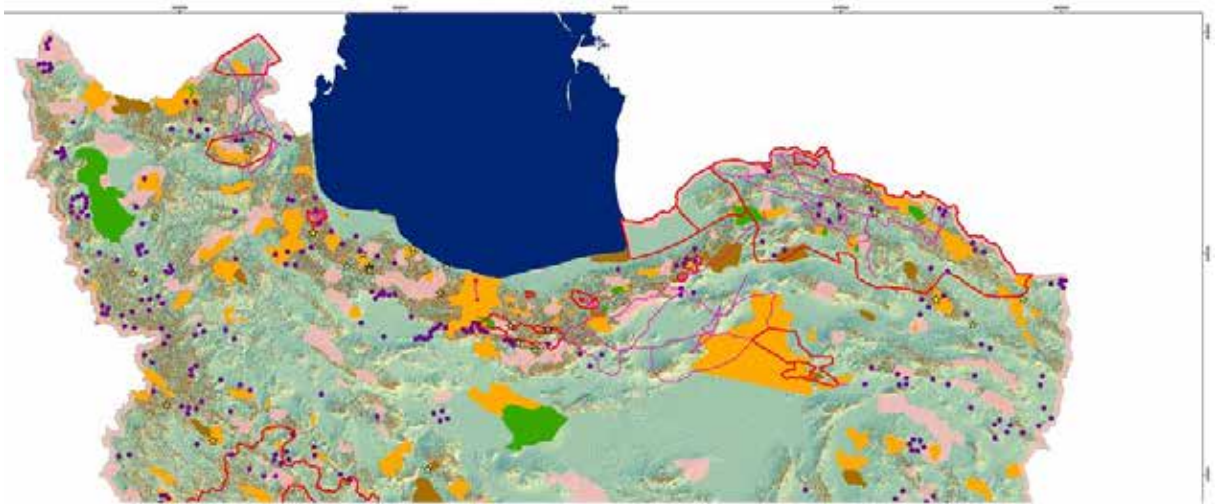


# Ethno-linguistic Diversity of Iran

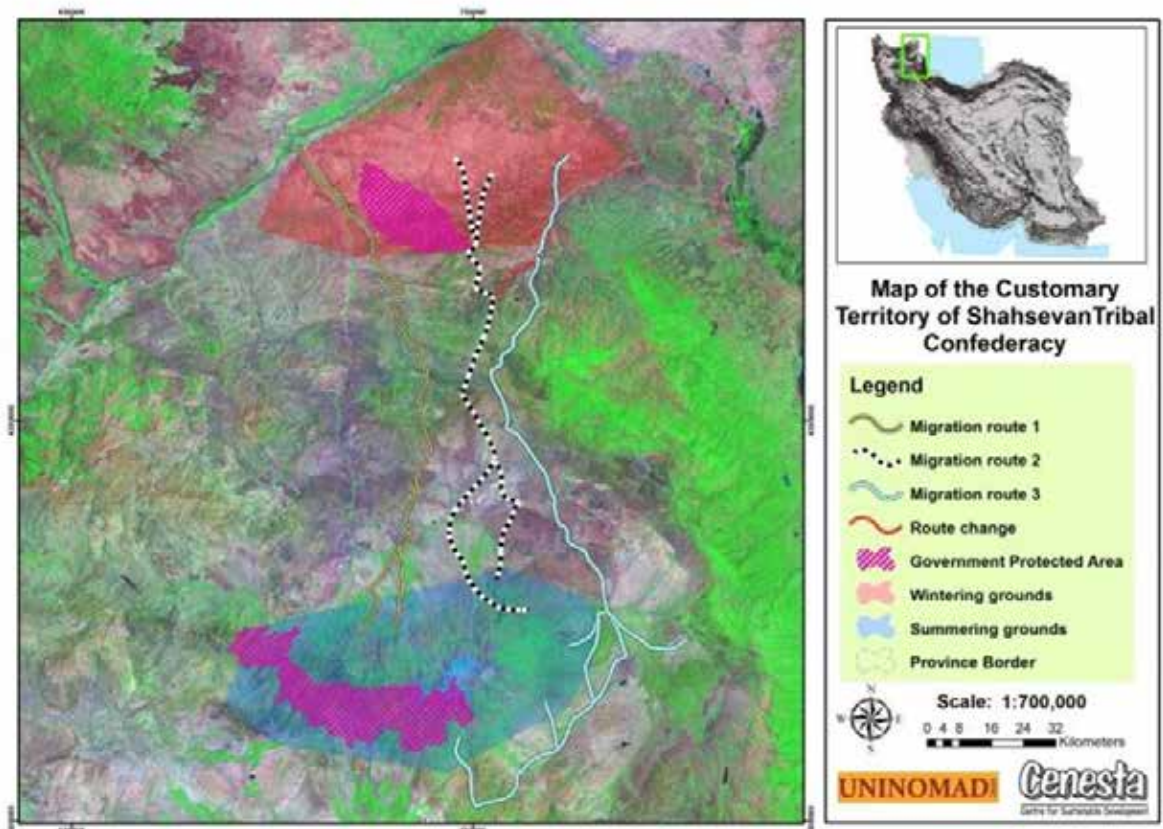


## Cenesta's Pilot ICCAs





Social and ecological hotspots in Iran overlapped with BRI



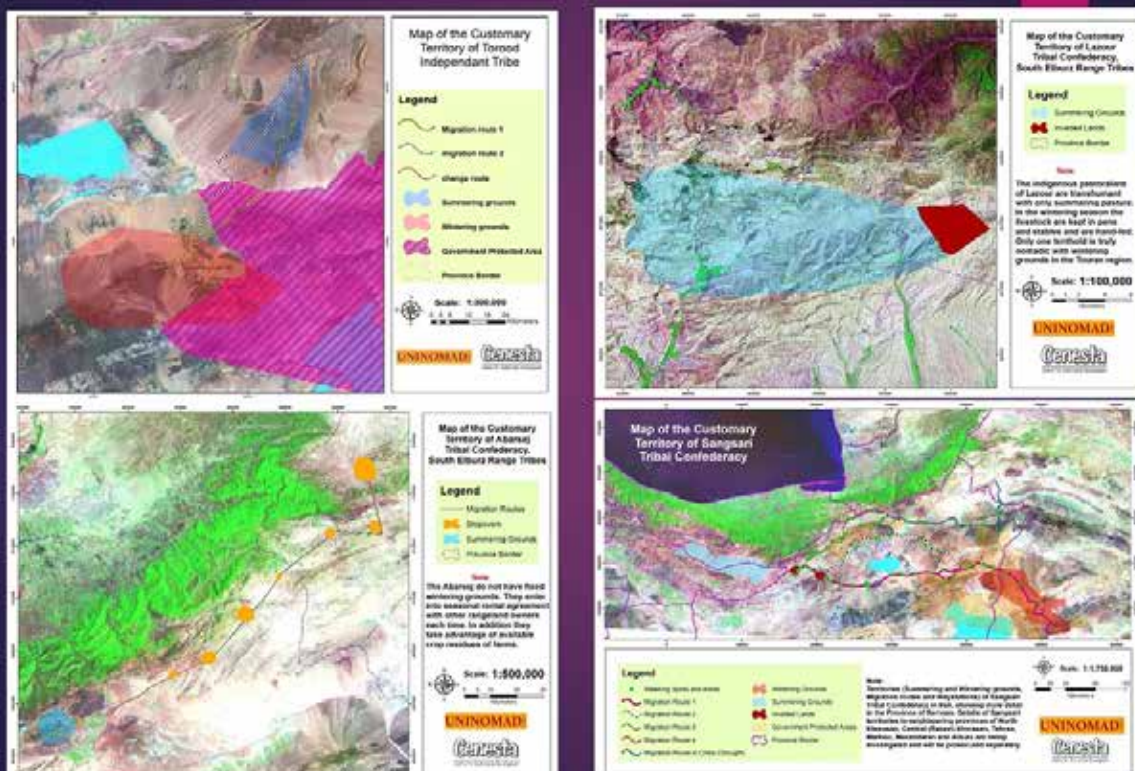
# CASPIAN HYRCANIAN MIXED FORESTS



Mammal species: 98  
Bird species: 296

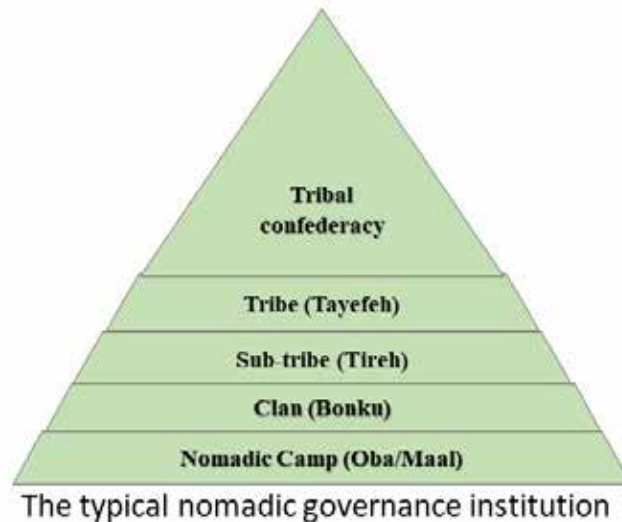
Communities:  
Talesh Tribal Confederacy  
Galesh Independent Tribes

## Communities' territories in the south side of Alborz Mountain



# Governance

- Nomadic pastoralist lifestyle and migration for conservation and sustainable use
- Governance exerted by IPs/LCs
- Nearly the whole country used to be covered by ICCAs except for pure deserts.
- 59% of national territory is under nomadic governance (director of ONPI)



# Livelihoods and economic



## Solutions

- Recognition of ICCAs and their Governance institutions;
- Free Prior and Informed Consent (FPIC);
- Intellectual property rights (Indigenous knowledge about Natural Resources);
- Promoting transboundary conservation;
- Promoting peace parks especially for the communities that their territory is located in two countries.



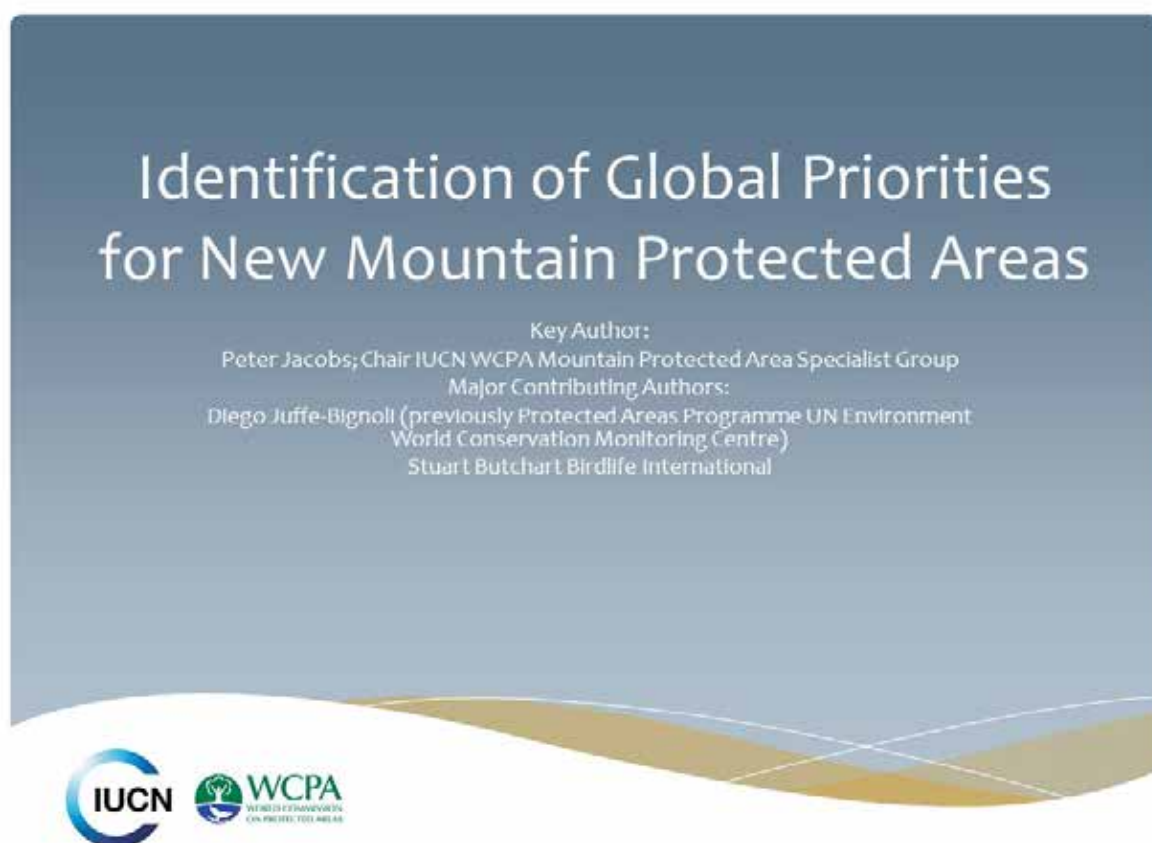
## Presentation:

Mr. Sonigitu Ekpe,  
National Focal Point (Nigeria), IUCN-WCPA

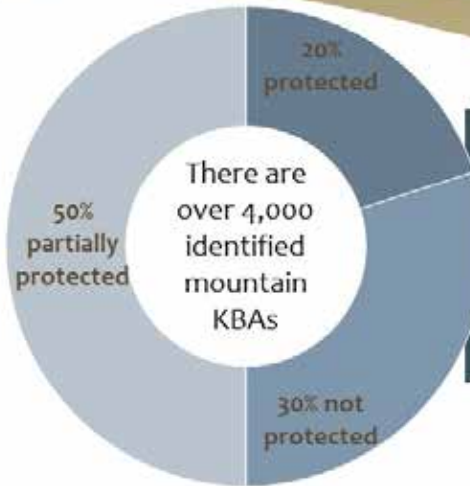
*"Identification of global priorities for new mountain protected areas"*

Key points:

1. IUCN's work program has categorized key biodiversity and protected areas.
2. The current project to identify global priorities for establishment of new mountain PAs has noted inadequately protected key biodiversity areas (KBAs) and areas where the WCPA Mountains Specialist Group should build strategic partnerships and focus its outreach and advocacy.
3. Future work will classify key biodiversity areas based on their contributions to human society.
4. Promote sustainable consumption and production of citizens' participation in the circular economy, this shall foster better protection of Protected Areas.



# Mountain KBAs



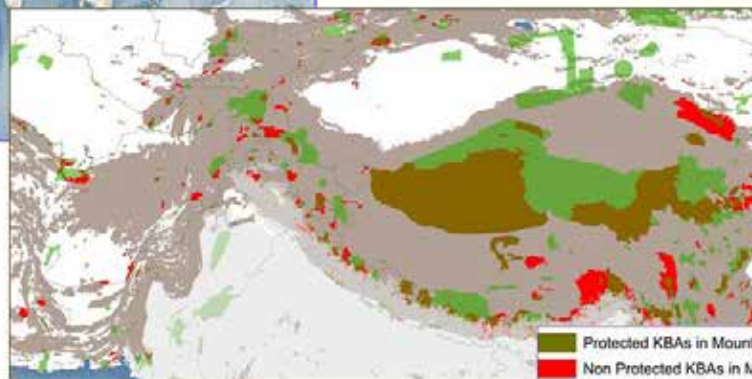
## KEY BIODIVERSITY AREAS CONTAIN:

- threatened biodiversity
- geographically restricted biodiversity
- biodiversity through outstanding ecological integrity
- outstanding biological processes

IUCN criteria 2016



# Protected & Non Protected Mountain KBAs



- Protected KBAs in Mountains
- Non Protected KBAs in Mountains
- Terrestrial protected areas
- Coastal protected areas
- Mountains

## Central Asia Mountain KBAs & Proportion Covered by PA's

### Kyrgyzstan

|                               |     |
|-------------------------------|-----|
| * Son-Kul Lake                | 1.0 |
| * Lake Chatyr-Kul             | 0.9 |
| * Gorge Tash-Rabat            | 0.0 |
| * Karkyra Valley              | 0.0 |
| * Eastern Alai                | 0.0 |
| * Western Alai, Kok-Suu river | 0.0 |



1.0 is fully protected, locations in red have no protection

## Central Asia Mountain KBAs & Proportion Covered by PA's

### Kazakhstan

|                            |     |
|----------------------------|-----|
| * Big Almaty Gorge         | 0.0 |
| * Aksu-Dzhabagly SNR       | 0.6 |
| * Chokpak Pass             | 0.0 |
| * Upper Charyn             | 0.0 |
| * Assy Plateau             | 1.0 |
| * Toraygyr Ridge           | 0.0 |
| * Altyn-Emel National Park | 0.7 |
| * Cherdoyak                | 0.0 |
| * Almaty State NR          | 1.0 |
| * Markakol State NR        | 0.9 |
| * Arkaly Mountains         | 0.0 |
| * Karabas Mountains        | 0.0 |
| * Paradise Valley mountain | 0.0 |
| * Zhagalbayly, Tuyemoynak  | 0.0 |
| * Kenshektau Mountains     | 0.0 |
| * Manyrak Mountains        | 0.3 |

### Uzbekistan

|                               |     |
|-------------------------------|-----|
| * Mount Aktau                 | 0.0 |
| * Bashkizylsay                | 1.0 |
| * Angren Plateau              | 0.0 |
| * Nuratau Range               | 0.6 |
| * Dzhum-Dzhum                 | 0.0 |
| * Kurama Mountain Range       | 0.0 |
| * Chatkal Mountains BR        | 1.0 |
| * Sarmysh Nature Park         | 0.0 |
| * Pulatkhan Gorge             | 1.0 |
| * Oygaing River Valley        | 1.0 |
| * Darasay Gorge               | 0.0 |
| * Sherabad River              | 0.0 |
| * South-west Gizzar Foothills | 0.0 |
| * Gissar State Nature Reserve | 0.6 |

## Central Asia Mountain KBAs & Proportion Covered by PA's

### Turkmenistan

|                       |     |
|-----------------------|-----|
| * Koytendag           | 0.7 |
| * Sumbar              | 0.2 |
| * Dushakerekdag       | 0.0 |
| * Gurykhovudan        | 0.2 |
| * Kurtusuv - Khovudan | 0.4 |
| * Badhyz              | 0.4 |
| * Garachop            | 0.0 |
| * Uly Balkan          | 0.0 |
| * Kurendag - Garagoz  | 0.0 |

### Afganistan

|                           |     |
|---------------------------|-----|
| * Big Pamir               | 0.9 |
| * Small Pamir             | 0.0 |
| * Salang Kotal            | 0.0 |
| * Pech and Waygal valleys | 0.0 |
| * Bande Amir              | 1.0 |
| * Safed Koh               | 0.0 |
| * Dashte Nawar            | 0.0 |
| * Paghman Mountains       | 0.0 |

## Central Asia Mountain KBAs & Proportion Covered by PA's

### Tajikistan

|                                         |     |                                     |     |
|-----------------------------------------|-----|-------------------------------------|-----|
| * Zorkul Nature Reserve (Lake Victoria) | 0.1 | * Aktash massif                     | 0.2 |
| * Karakul lake and mountains            | 1.0 | * Mogoltau massif                   | 0.0 |
| * Rangkul valley                        | 0.0 | * Dangara massif                    | 0.0 |
| * Kayrakkum Reservoir                   | 0.4 | * Kulikalon Lakes                   | 0.0 |
| * Dzhavshangoz                          | 0.0 | * Ishkashim                         | 0.0 |
| * Kondara Gorge                         | 0.0 | * Dashtidjum                        | 0.5 |
| * Iskanderkul lake and mountains        | 0.5 | * Kattasay and Daganasay Reservoirs | 0.0 |
| * Drumkul Lake                          | 0.0 | * Sarazm                            |     |

# Project Aim

## Identify:

- \* Inadequately protected KBAs within the world's mountains that are *priorities* for promoting protected area status
- \* Priority areas for the WCPA Mountains Specialist Group to establish partners and focus advocacy

4 step process proposed



## Step 1 Determine inadequately protected KBAs from mountain database

Mountain KBA more than 80% protected?

YES

No further action for Mountains SG for now, however management effectiveness evaluation may be prudent  
**Category L**

NO

Mountain KBA more than 50% but less than 80% protected?

YES

Reserve list for consideration in later stages of project.  
**Category K**

NO

List of inadequately protected Mountain KBA's (2000 sites)  
**Category J**

Data from WCMC and Birdlife Australia database of Key Biodiversity Areas

Step 2



4 Step Process

## Step 2 Identify countries with inadequate protection of mountain KBAs to focus advocacy

Mountain KBAs less than 50% protected but in unstable areas or no effective system of Protected Area Governance?

YES

No further consideration by Mountains SG unless circumstances change  
**Category I**

NO

Mountain KBAs less than 50% protected but no Mountain SG connection to assess?

YES

Engage members that can evaluate these countries; otherwise no further action  
**Category H**

NO

Step 3

4 Step Process

## Step 2 Identify countries with inadequate protection of mountain KBAs to focus advocacy



NO

Mountain KBAs less than 50% protected: is it IUCN priority area, hot spot or GEF HDI classified?

YES

Second priority Mountain KBA's for further evaluation by Mountains SG Regional Representatives  
**Category G**

Mountain KBAs in first priority countries for further evaluation by Mountains SG Regional Representatives  
**Category F**

Step 3

4 Step Process

### Step 3 Regional assessments Categories G & F by in country/region experts to verify protection status

OECM\* in place to adequately protect Mountain KBAs or Mountain KBAs not threatened?

YES

NO

No further action by Mountains SG:  
**Category E**

List of first and second priority Mountain KBAs for advocacy by Mountains SG for their protection:  
**Categories C & D**

\*OECM Other effective conservation measure

Step 4

4 Step Process

### Step 4 Regional Ranking: 7 core questions

0-2 points depending on answer: No (0), Somewhat (1), Definitely (2)

1. Does the KBA contain iconic species?
2. Would protection of the KBA contribute to disaster risk reduction?
3. Does the KBA provide connectivity conservation and/or corridor opportunities?
4. Would protection of the KBA contribute to peace building through transboundary initiatives?
5. Does the KBA contain Ecotourism values that may further support advocacy for their protection?
6. Would local mountain communities benefit from enhanced ecosystem services that protection of the KBA would provide?
7. Is the KBA in an area vulnerable to climate change and/or contribute to nature based solutions for climate change through refugia values?

4 Step Process

## Step 4 Regional assessments by in country/region experts to rank and prioritize Mountains KBAs for action

**First priority list** ranked in order of priority for advocacy based on importance in contributing to the wider values of the protected area network by application of criteria:  
**Category A**

**Second priority list** ranked in order of priority for advocacy based on importance in contributing to the wider values of the protected area network by application of criteria:  
**Category B**



### 4 Step Process

## Summary & Conclusion

- \* 17% of Mountain areas are protected globally, however there are many high value mountain areas not adequately protected
- \* **Key Biodiversity Areas** (KBAs) are one way of identifying values and inadequately protected areas
- \* There are often **complex reasons** why some areas are not protected
- \* **Local knowledge** is crucial in assessing priorities and verifying data
- \* This **draft process** aims to identify key priorities for advocacy by IUCN WCPA Mountain Specialist Group

## Session 4: Lessons Learned & Policy Recommendations

**Chair:** Mr. Wali Modaqiq

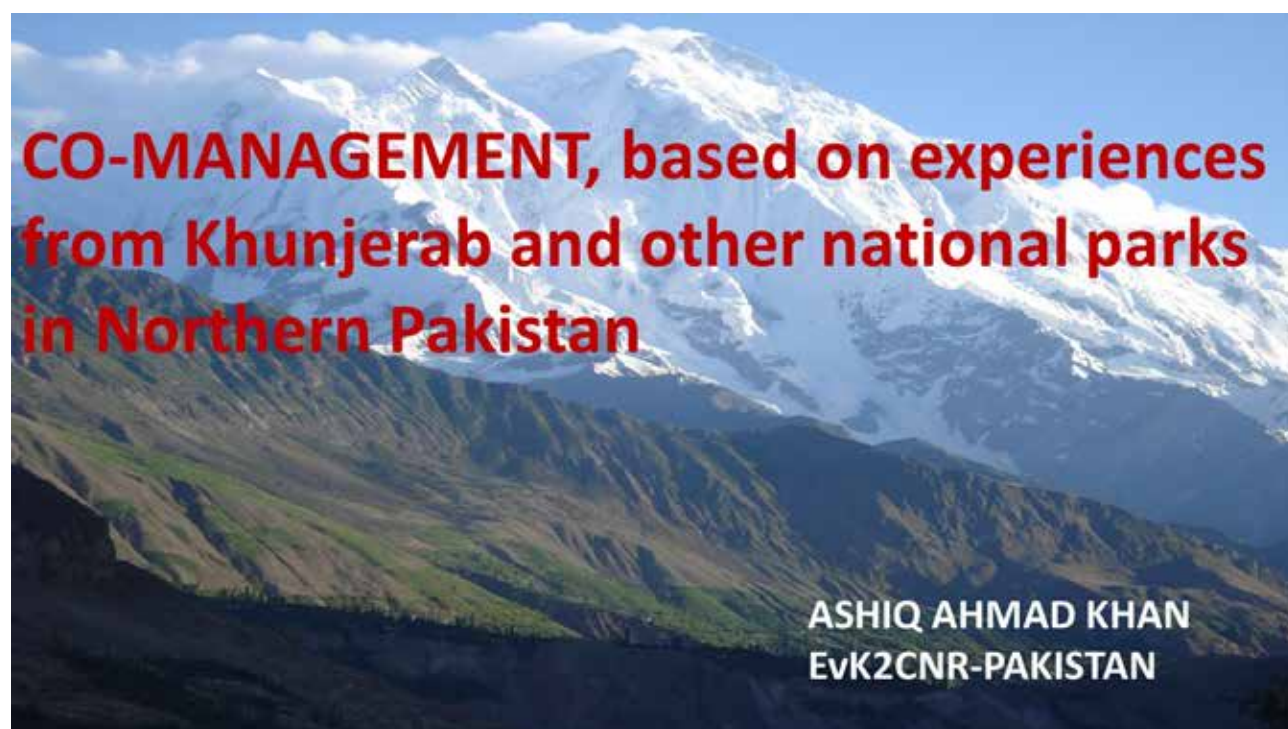
**Presentation:**

Mr. Ashiq Khan,  
IUCN WCPA Regional Representative (South Asia)

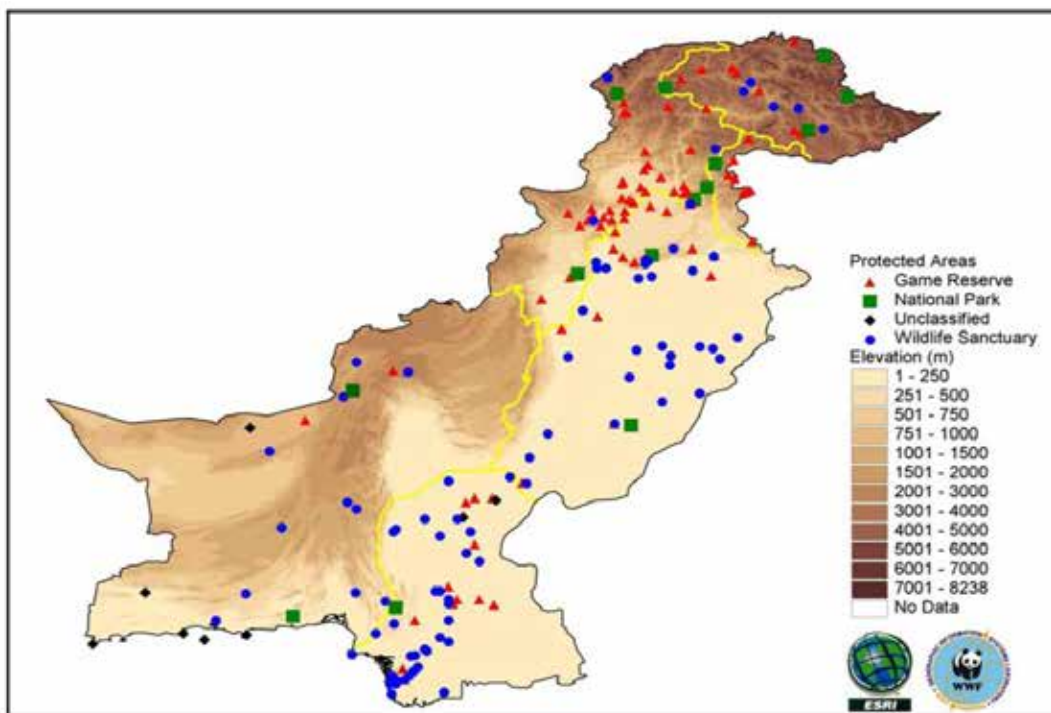
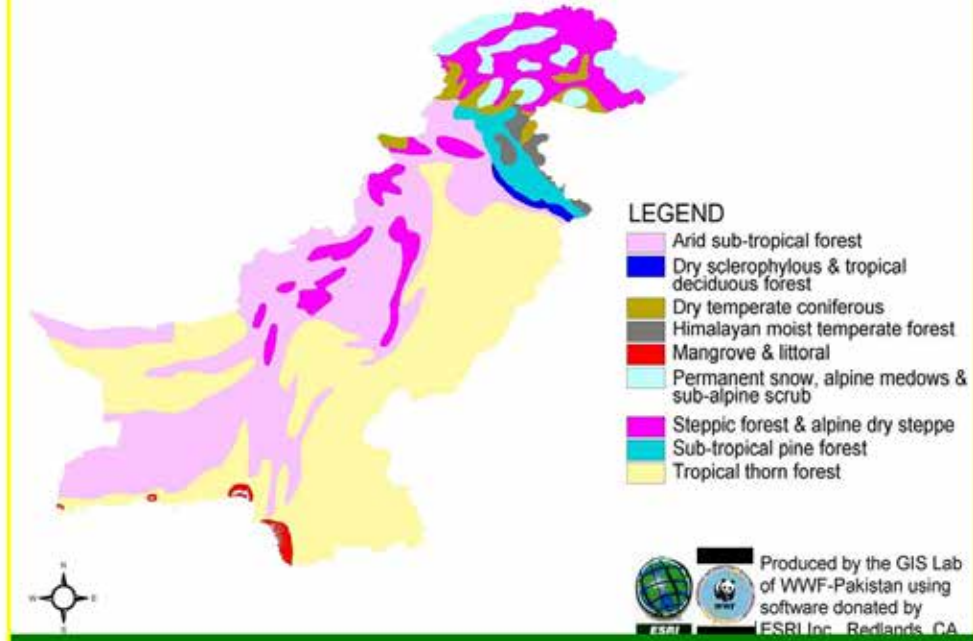
*"Lessons in Co-management, based on experiences from Khunjerab and other national parks in Northern Pakistan"*

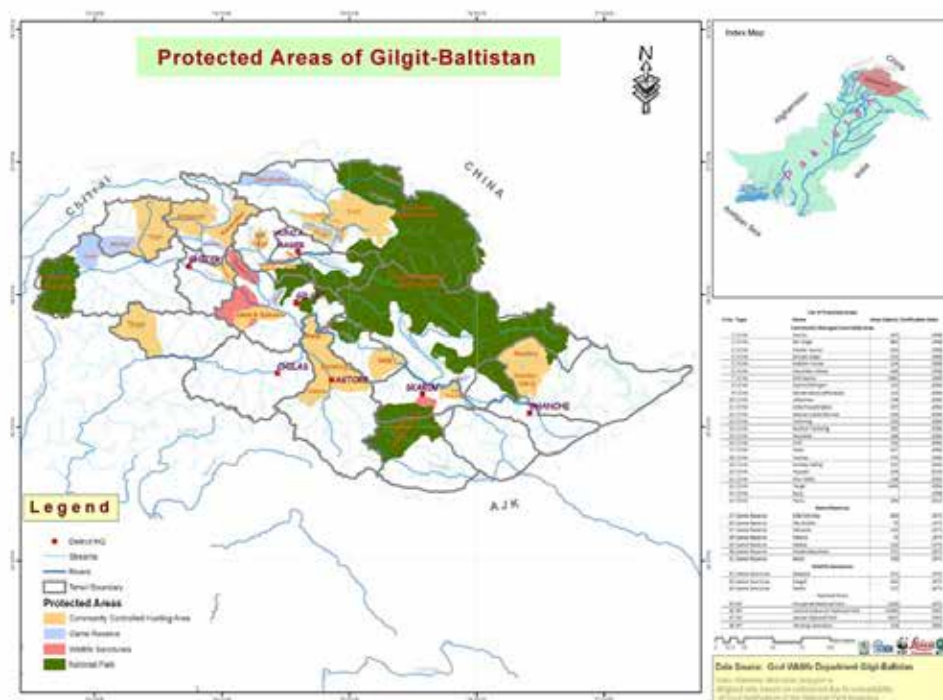
Key points:

1. Community co-management of protected areas for conservation of biodiversity in Pakistan operates under agreed partnership arrangements between the government and custodian communities.
2. Historically, lack of social considerations, not technical, have led to management gaps in Pakistani National Parks.
3. Long-term, adaptive and context specific partnerships with local communities, which respect and foster customary rights and traditions, are essential for successful co-management of protected areas.



## Eco-regions of Pakistan





## EXISTING CATEGORIES OF NATURAL RESOURCE MANAGEMENT IN PAKISTAN

1. Exclusive management of Natural Resources by the Government under statutory laws
2. Management of Forests on private lands where forests are owned by people but managed by Government
3. Co-management of Natural Resources under an agreed partnership between government and custodian community

# Existing nomenclature of Protected Areas in Northern Pakistan

National Parks(Statuary laws)

Wildlife Sanctuaries (Statuary laws)

Protected Forests(Statuary Laws)

Game Reserves (statuary laws + customary practices)

Community managed/Conservation areas (Co-management)

## MANAGEMENT RESPONSIBILITY OF NATIONAL PARKS IN PAKISTAN

***Creation and management of National Parks is the exclusive right and responsibility of respective provincial/Federal governments under the Wildlife Protection Rules 1975 and subsequent amendments***

## MAJOR GAPS IN THE CREATION AND SUBSEQUENT MANAGEMENT OF NPS IN THE SOCIAL PERSPECTIVES (NOT TECHNICAL)

❖ Majority of the sites under National Parks remained occupied by people, centuries before these were decreed as National Parks

❖ People were neither:

- Consulted for their consent
- nor Compensated for their existing rights and concessions
- nor made aware about their future roles in these

*The Results are obvious*

# NO ENDING CONFLICTS

- ❑ Absolute resistance to the management planning with subsequent implementation of rules that had to stop certain activities by the stakeholders

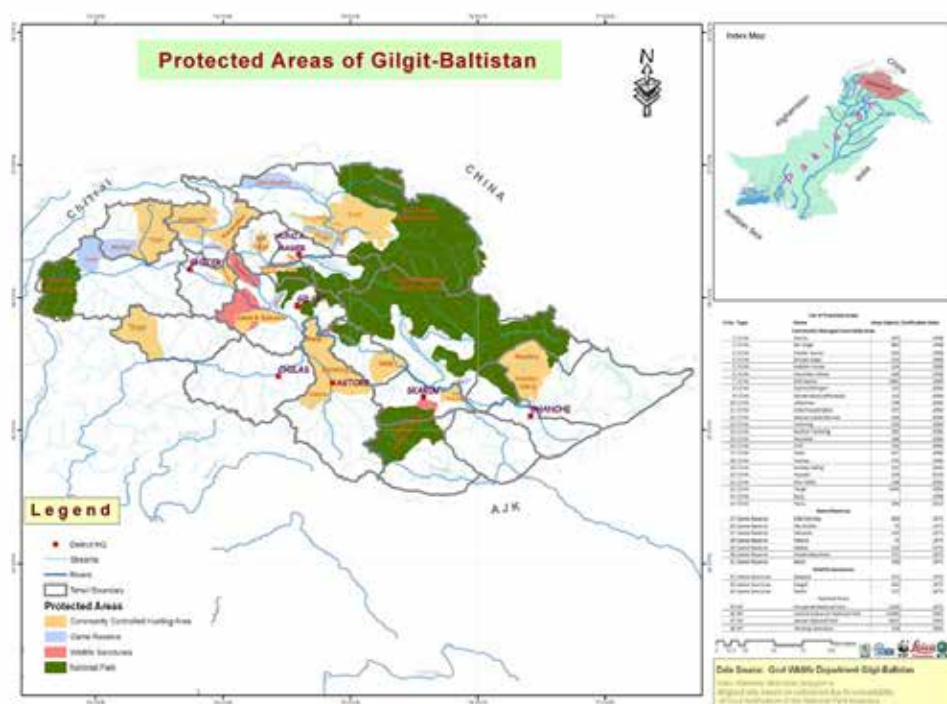
(The level of resistance and demands being dependent upon the level of unity and organizational strength of the respective community)

*With this back ground....*

## NATIONAL PARKS AND OTHER PROTECTED AREAS OF THE NORTHERN PAKISTAN



# KHUNJERAB(Khunjerav) NATIONAL PARK (KNP)-A CLASSIC EXAMPLE OF CONFLICTS AND SURVIVAL THROUGH CO-MANAGEMENT



## A BRIEF HISTORY OF THE CONFLICT

- ❑ Although decreed in 1975, the custodian community didn't accept KNP as a National Park primarily because they could only see the loss of their grazing rights AND no benefits at all.
- Being well organized and united, the custodian community did not only strongly opposed the existence of a National Park over their grazing lands but even challenged it in the court of law.
- Realizing the fatal impacts of this conflict on other National Parks, I volunteered to mediate in between and put the possible solution of a co-management approach for the mutual agreement of stakeholders.

- The proposed agreement was a combination of incentives and disincentives. Where as the people accepted the responsibly of protecting wildlife and their habitats, they had access to lion share of the revenue from tax on entry to the park; and community conservation model(trophy hunting) in the buffer of KNP that I had already established in another valley for protecting Ibex and Snow leopards.
- This was agreed after a series of consultations with both the Government and community
- Based on the agreement, a management plan was formulated that was the first example of co-management in Pakistan. The plan was approved by the Federal Government in 1996.
- As of to-day, out of the total 96 actions, prescribed by the plan for KNP, 17 % have totally been done, 45 %partially done, while 39% are yet to be done

## MAJOR LESSONS

- ❖ In populous countries like Pakistan, creating and managing protected areas shall remain an uphill journey till combined with livelihood options and opportunities also
- ❖ Whatever is possible to be protected today, may not be that easy tomorrow
- ❖ Out of the available options, co-management is more appropriate, specially on candidate sites that are burdened with the traditional rights and concessions of uses.

- ❖ Irrespective of the degree of success of a co-management initiative, results may get diluted over time if regular contacts with custodian community are not maintained.
- ❖ There is no single recipe to make a co-management initiative rather successful, needful modifications are essential in the approach to address different situations arising from different social responses of the custodian community

**ashiqahmad@gmail.com**

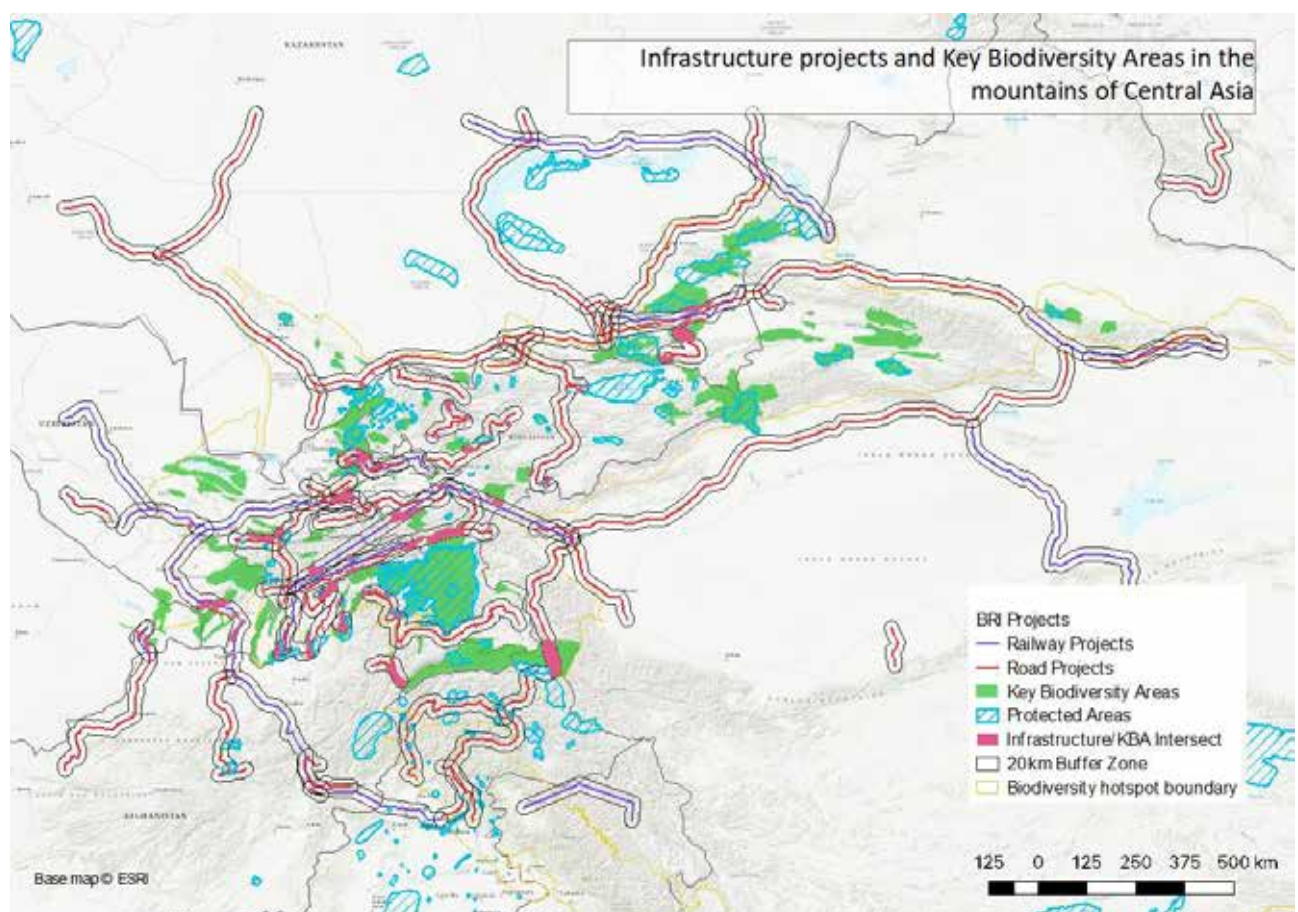
## SPECIAL WORKSHOP

Identifying areas and sectors of special concern in Central Asia, and mechanisms to address them

**Chairs:** Dr. Alice Hughes & Mr. Matthew Emslie-Smith

A participatory workshop was held as part of the conference, in which key issues related to the themes of the conference were discussed – centered around the three following key questions (see below). Representatives from each sub-group subsequently presented main outcomes back to the larger group.

1. What are the existing mechanisms and potential opportunities to better align BRI projects with national SDGs?
2. How can BRI enhance human and natural capital in its partner countries, especially in rural areas away from urban/ economic centres?
3. How do we identify priorities for mitigating environmental damage from BRI projects?



1. What are the existing mechanisms and potential opportunities to better align BRI projects with national SDGs?

- Mandate for national governmental SIAs & EIAs related to BRI projects
- Encourage accountability and transparency for international investments within partner countries
- Encourage research on environmental and social risks and opportunities, building research dialogue and partnerships with Chinese research institutions
- Ensure key stakeholders create value added projects that leverage BRI assets in regions

2. How can BRI enhance human and natural capital in its partner countries, especially in rural areas away from urban/ economic centres?

- Participatory consultative approaches to project implementation which allow local communities to engage in dialogue
- Human capital- connectivity, reinvestment into public services, especially education
- Natural capital- Compensation for ecosystem services

3. How do we identify priorities for mitigating environmental damage from BRI projects?

- Identify key knowledge gaps
- Use existing data to identify key areas of sensitivity
- Generate system flow and dependency analysis frameworks for each stage of project implementation
- Overlay different layers of impacts and requirements



# Annexes

## 1. Workshop Participants

|    | Name                  | Affiliation                                                          | Country of work | Email                                  |
|----|-----------------------|----------------------------------------------------------------------|-----------------|----------------------------------------|
| 1  | Marc Foggin           | UCA                                                                  | Multiple        | marc.foggin@ucentralasia.org           |
| 2  | Matthew Emslie-Smith  | UCA                                                                  | Multiple        | matthew.emslie-smith@ucentralasia.org  |
| 3  | Roy Sidle             | UCA                                                                  | Multiple        | roy.sidle@ucentralasia.org             |
| 4  | Alma Uzbekova         | UCA                                                                  | Multiple        | alma.uzbekova@ucentralasia.org         |
| 5  | Murodbek Laljebaev    | UCA                                                                  | Multiple        | murodbek.laljebaev@ucentralasia.org    |
| 6  | Michell Hackwelder    | UCA                                                                  | Multiple        | michell.hackwelder@ucentralasia.org    |
| 7  | Shabnam Lutafali      | UCA                                                                  | Multiple        | shabnam.lutafali@ucentralasia.org      |
| 8  | Roman Mogilevskii     | UCA                                                                  | Multiple        | roman.mogilevskii@ucentralasia.org     |
| 9  | Sameer Dossa          | UCA                                                                  | Multiple        | sameer.dossa@ucentralasia.org          |
| 10 | Dastanbui Mamadsaidov | UCA                                                                  | Multiple        | dastanbui.mamadsaidov@ucentralasia.org |
| 11 | Aziz Ali Khan         | UCA                                                                  | Multiple        | azizali.khan@ucentralasia.org          |
| 12 | Arslan Milashev       | MSDSP KG                                                             | Kyrgyzstan      | arslanbek.milashev@akdn.org            |
| 13 | Manoj Rai             | AKF                                                                  | Multiple        | manoj.raai@akdn.org                    |
| 14 | Krista Verver         | AKF                                                                  | Tajikistan      | krista.verver@akdn.org                 |
| 15 | Mark Whitton          | AKF                                                                  | Multiple        | mark.whitton@akdn.org                  |
| 16 | Hoda Mroue            | AKF                                                                  | Afghanistan     | Hoda.Mroue@akdn.org                    |
| 17 | Taylor Marlow         | AKAH                                                                 | Afghanistan     | taylor.marlow@akdn.org                 |
| 18 | Irene Hofstetter      | AKF                                                                  | Afghanistan     | Irene.Hofstetter@akdn.org              |
| 19 | Altaaf Hasham         | AKDN                                                                 | Multiple        | altaaf.hasham@akdn.org                 |
| 20 | Alice Hughes          | Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences | China           | ach_conservation2@hotmail.com          |
| 21 | Ghanimat Azhdari      | Cenesta                                                              | Iran            | ghanimat@cenesta.org                   |
| 22 | Muhammad Zafar Khan   | Karakoram International University                                   | Pakistan        | zafar.khan@kiu.edu.pk                  |
| 23 | Yuri Badenkoy         | Altai University                                                     | Russia          | yubaden@mail.ru                        |
| 24 | Andrei Dorre          | Free University Berlin                                               | Germany         | adoerre@zedat.fu-berlin.de             |
| 25 | Joana Roque De Pinho  | ISCTE Institute University of Lisbon                                 | Portugal        | roquedepinho.joana@gmail.com           |
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UNIVERSITY OF CENTRAL ASIA  
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# MSRI Brief

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## Conservation Geopolitics: Envisioning the future of the 'Belt & Road Initiative' in the Mountains of Central Asia

**Advancing development in environmentally sound ways in mountain areas of Central Asia in the context of emerging investments and opportunities**

**Conserving biodiversity** is increasingly seen as a fundamental prerequisite to build, sustain and strengthen communities, societies and nations. Biodiversity refers to the diversity of all species and ecosystems. It includes agro-biodiversity, that is, the diversity of all parts of the ecosystem that provide food for local populations and for more distant downstream urban centres. Further, in remote mountain areas, diverse **cultural heritages** also are often present. With their traditional knowledge, livelihood practices, and distinct sense of identity, cultural heritage is often integrally connected to local ecosystems and biological diversity.

The *Mountains of Central Asia* are widely recognized as a global **biodiversity hotspot**. Due to the particular suite of geophysical and biotic factors characteristic of mountains, encompassing diverse habitats and climatic conditions over short distances, a huge variety of wildlife species and microhabitats are found here, many of which occur nowhere else. These include migratory and transboundary species such as snow leopard and argali as well as native fruit trees and unique crop varieties and livestock breeds.

**Mainstreaming biodiversity conservation** across key sectors in national and regional development programming is one of the most important measures taken to ensure **sustainable mountain development**.

### KEY MESSAGES

- China's BRI is potentially the most significant infrastructure development programme this century, spanning over 70 countries with investments estimated at over US\$3 trillion. Since its commencement in 2013, US\$200 billion has already been invested in over 200 BRI projects
- Development in BRI partner countries (including Central Asia) is contingent on local geographic constraints (e.g., resources, historic pathways, etc.) as well as subject to suitable policies
- To date, the BRI focuses mainly on economic development and building transport infrastructure. However, there is increasing recognition that social and environmental elements of development need to be addressed
- Sustainable development goals could be promoted through BRI – most beneficially if the explicit mission of BRI were expanded and made to align with partner countries' SDG commitments
- Embracing opportunities to strengthen conservation and resilience in water-rich mountain regions would benefit all of the BRI geopolitical partners

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