One Health in Action: Balancing Livelihoods, Livestock, and Ecosystem Health in Central Asia

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WCS Temperate Asia Region

Founded in

1895

Conserves habitat for

~50%

of Earth's biodiversity

350+

protected areas WCS helped create since our founding

WCS works in

50+

countries

4,000+

scientists, conservationists, animal experts, and other dedicated staff

400+

peer-reviewed scientific publications each year

205

Indigenous community partners

2,000+

local community partners

30X30

Partnering with governments, communities, and others to protect 30% of the planet by 2030

Where we work

Mountains of Central Asia Biodiversity Hotspot

860,000 km^2
70 million people
6,700 species of fauna and flora
>1,500 species of endemic plants

Threats on biodiversity in Central Asia

OVERHARVESTING AND ILLEGAL TRADE: wild ungulates, reptiles, birds, plants.

INFRASTRUCTURE DEVELOPMENT AND EXTRACTIVE INDUSTRIES: fences, roads, railways, powerlines.

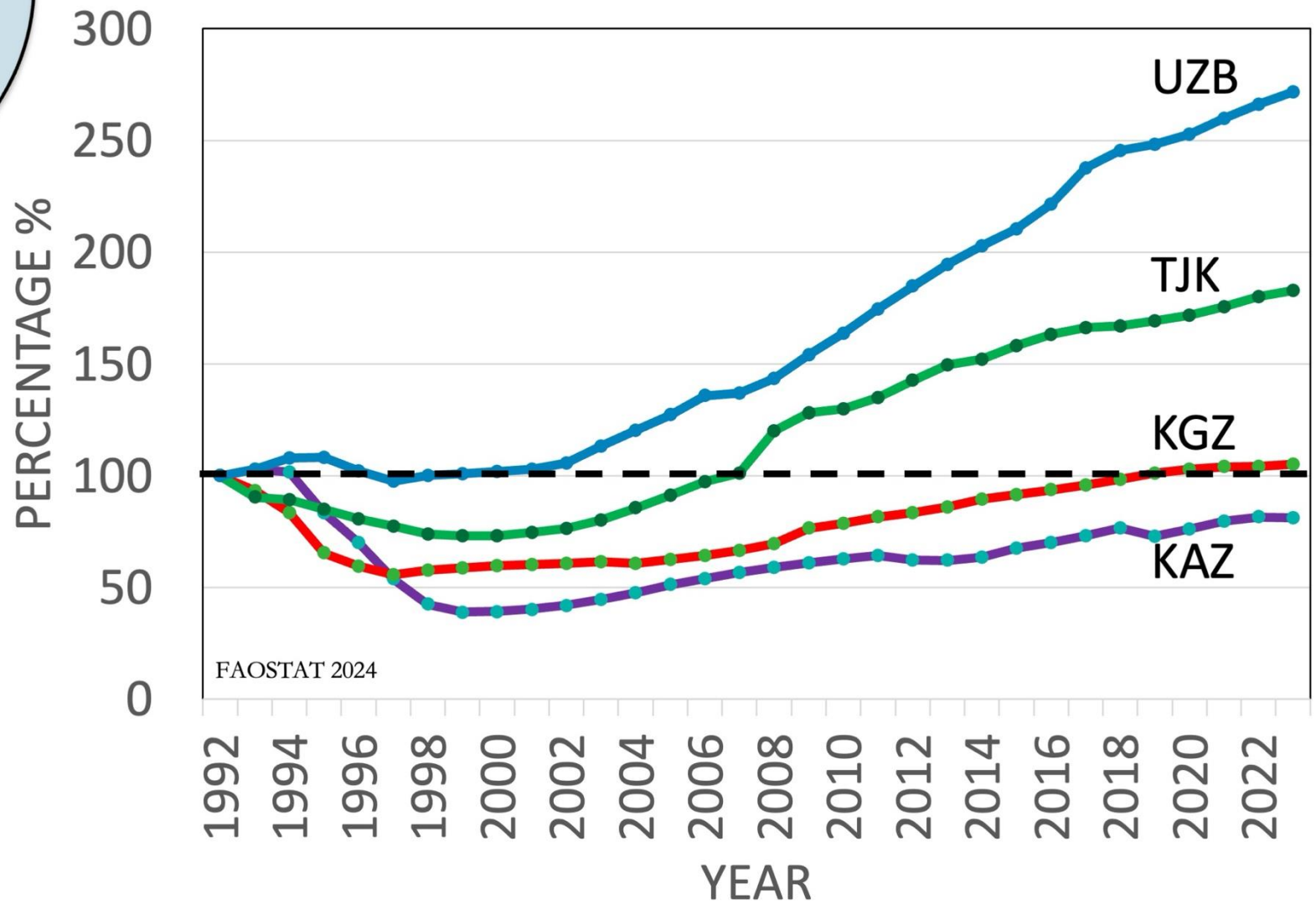
HUMAN-WILDLIFE CONFLICT: Affects carnivores, scavengers, alien species or disease control.

ANIMAL DISEASES: mass die off events, spillage from domestic animals, increase risk of extinction.

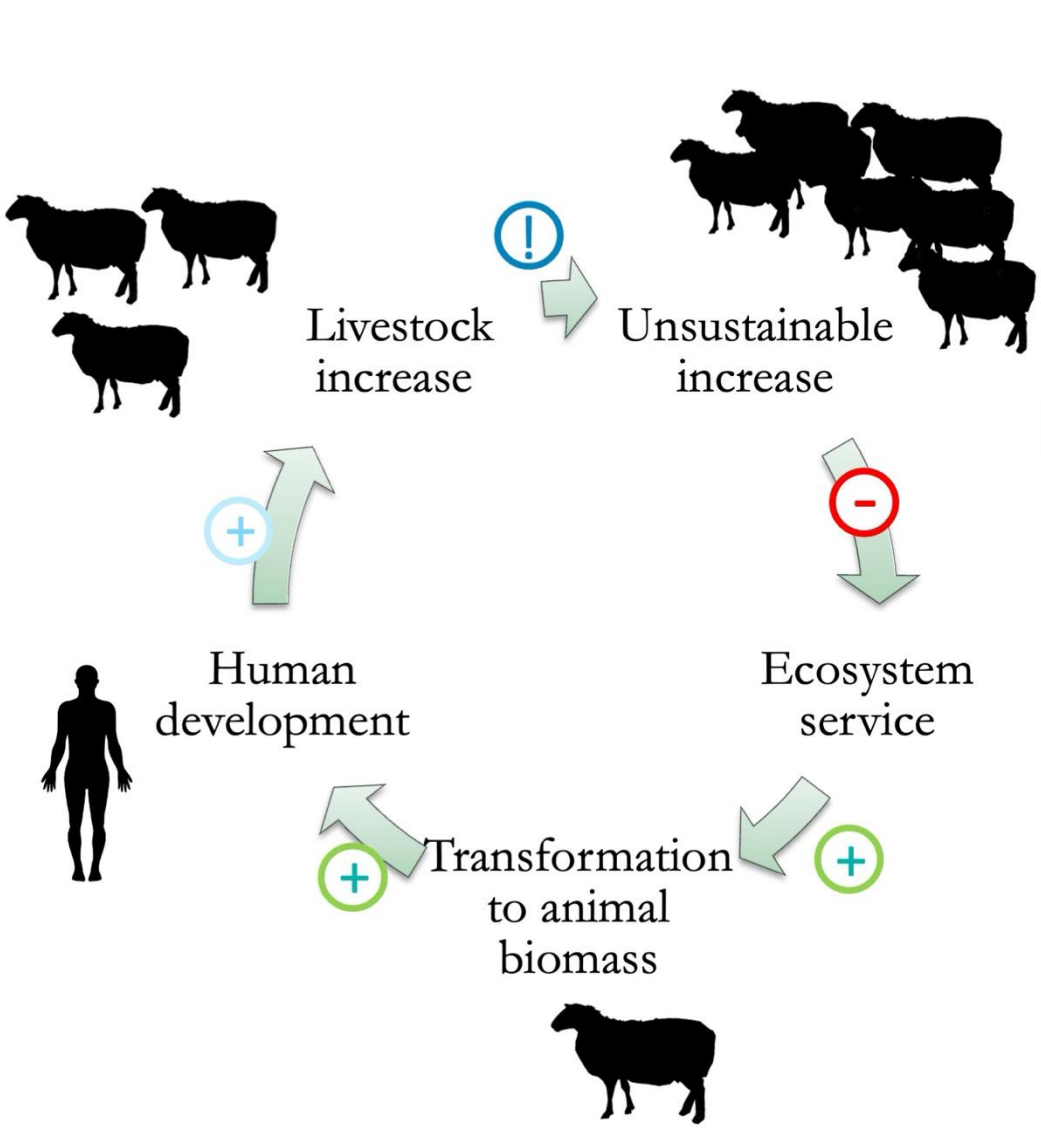
CLIMATE CHANGE: A multiplier on all other threats, glacier melting, water shortage, wildfires.

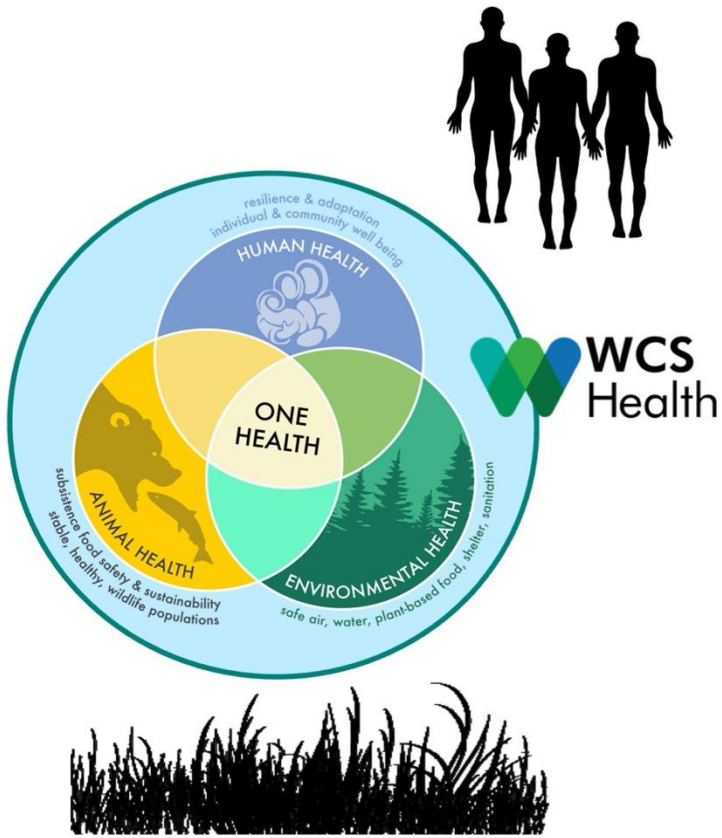
+90M LU

Livestock increase in Central Asia (1992-2023)



Livestock, development, and One Health

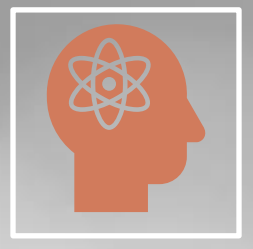




Constraints on One Health (OH) development in Central Asia

Capacity: Low attractiveness, trainer's gap, rigid systems, no curriculum in OH, no centralized formal training systems.

Policy, legislation, and governance: Existing legislation but lack of implementation. Limited institutionalization of OH across health sectors. Governance to be strengthened.



Knowledge and awareness: Lack of solid cross-sectoral data sharing, no baseline, sometimes apathy or opposition between health agencies.

Motivation: Affects mainly public health sector, resulting from low salaries, indifferent management, erratic decision making, low transparency.

Context	Response
1 **Biodiversity:** • May increase hazard of EID. • May decrease the risk of zoonotic pathogen spillover.	1 **Biodiversity:** • Target key biodiversity areas. • Prioritize nature integrity.
2 **Economic development:** • Environment and especially biodiversity conservation are seldom prioritized.	2 **Economic development:** • Integrate conservation and development. • Support alternative options.
3 **Health system governance:** • Weak strategic policy framework. • Ineffective oversight. • Weak accountability.	3 **Health system governance:** • Work « bottom-up ». • Support local governance systems.

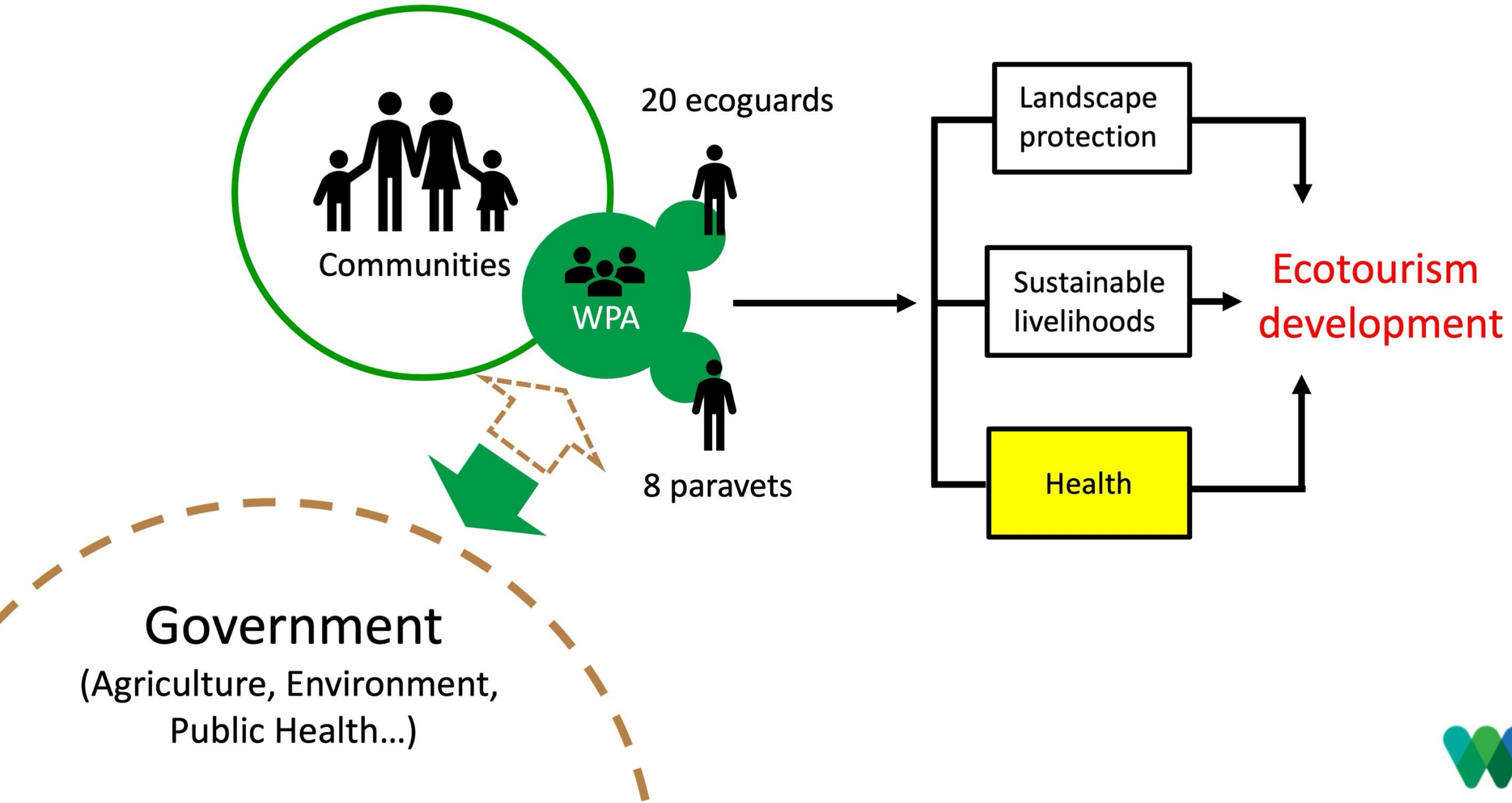
KAZAKHSTAN
MONGOLIA
Balkhash Lake
Alakol Lake
UZBEKISTAN
Tashkent
Bishkek
Issyk-Kul Lake
Aydarkul Lake
KYRGYZSTAN
CHINA
Dushanbe
TAJIKISTAN
TKM
AFGHANISTAN
KAZ08
KAZ12
KAZ13
KAZ16
KAZ18
KGZ10
KGZ05
KGZ04
KGZ23
KGZ20
UZB04
UZB05
UZB06
UZB24
UZB30
TKM01
TKM02
TJK21
TJK24
TJK23
TJK29
TJK31
AFG01
CHI13
CHI06
CHI05
CHI07
CHI03

CEPF priority KBAs

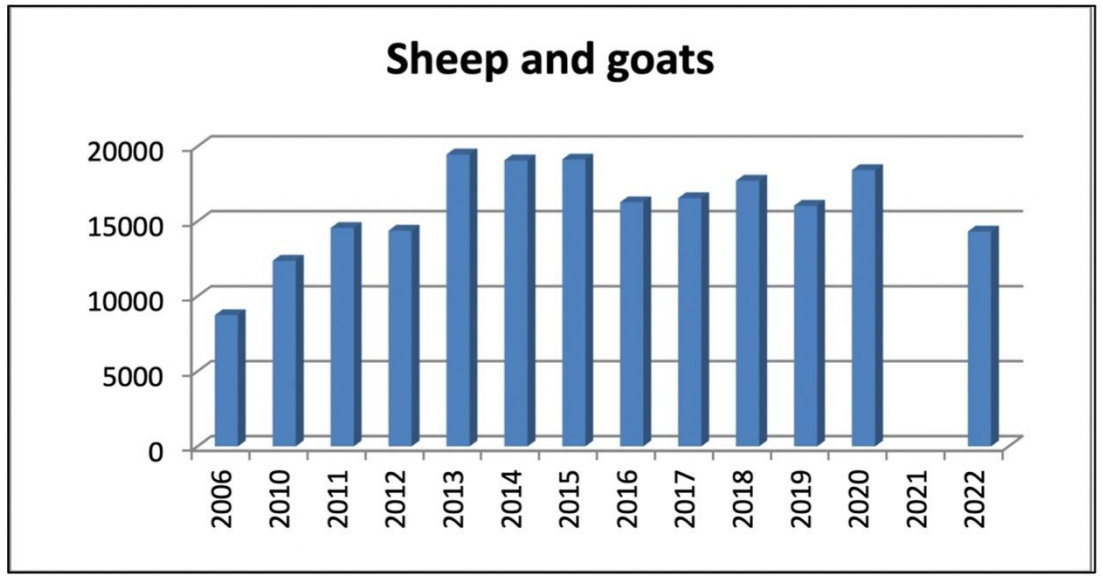
Selected Key Biodiversity Areas

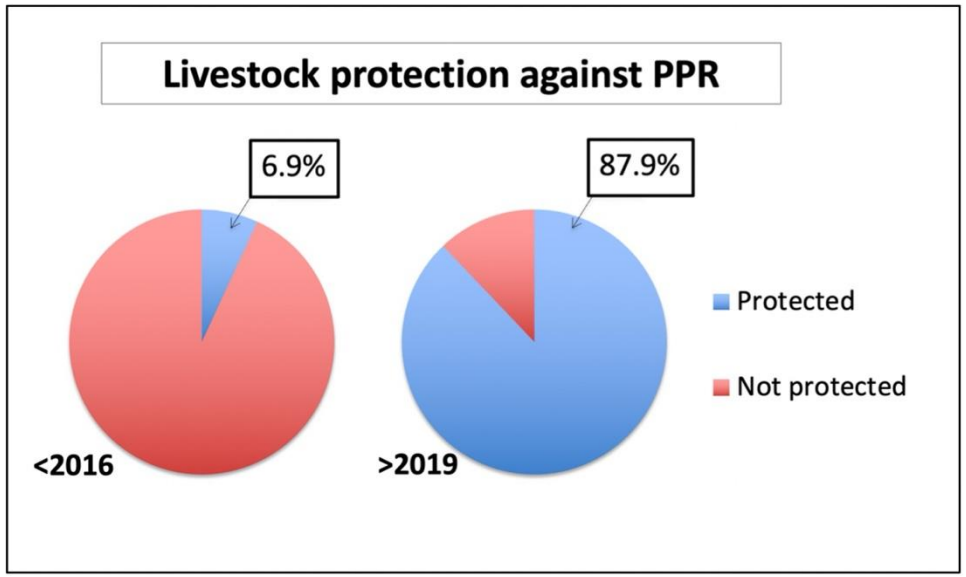
Hotspot boundary

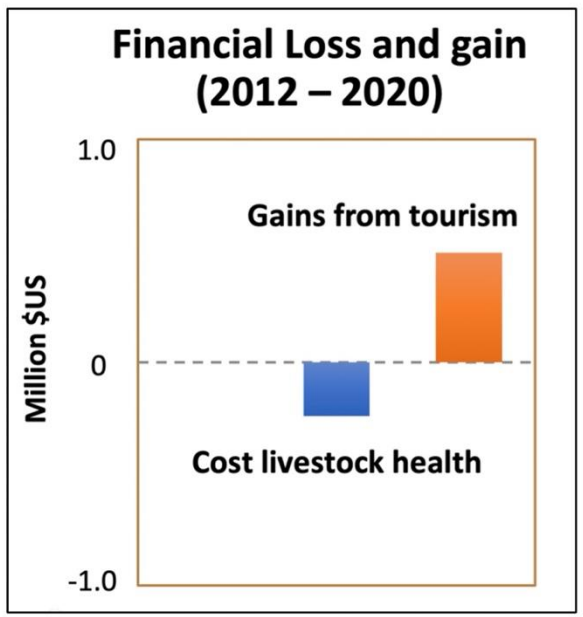
KBA Wakhan, Afghanistan

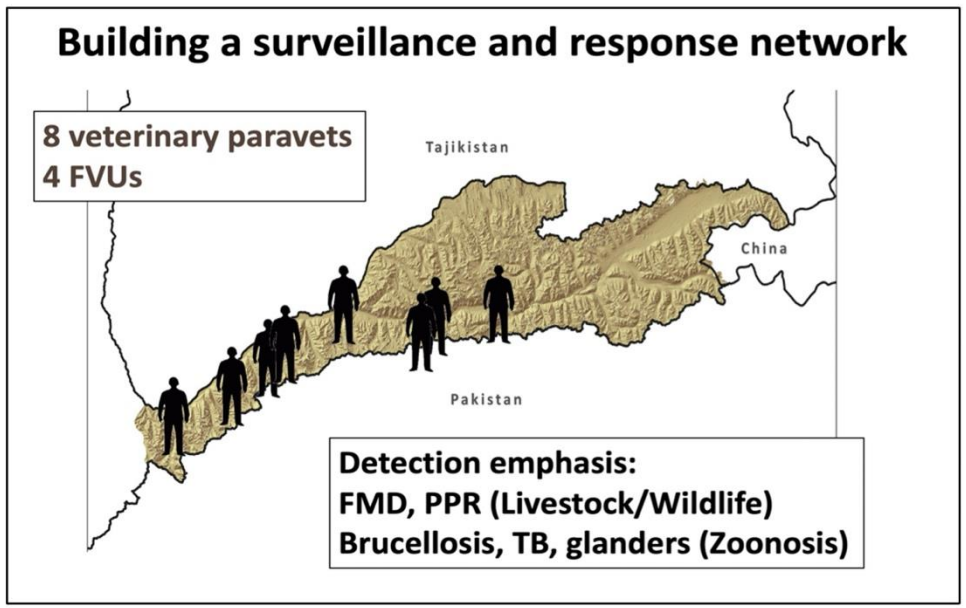

Communities
20 ecoguards
WPA
8 paravets
Landscape protection
Sustainable livelihoods
Health
Ecotourism development
Government
(Agriculture, Environment, Public Health…)

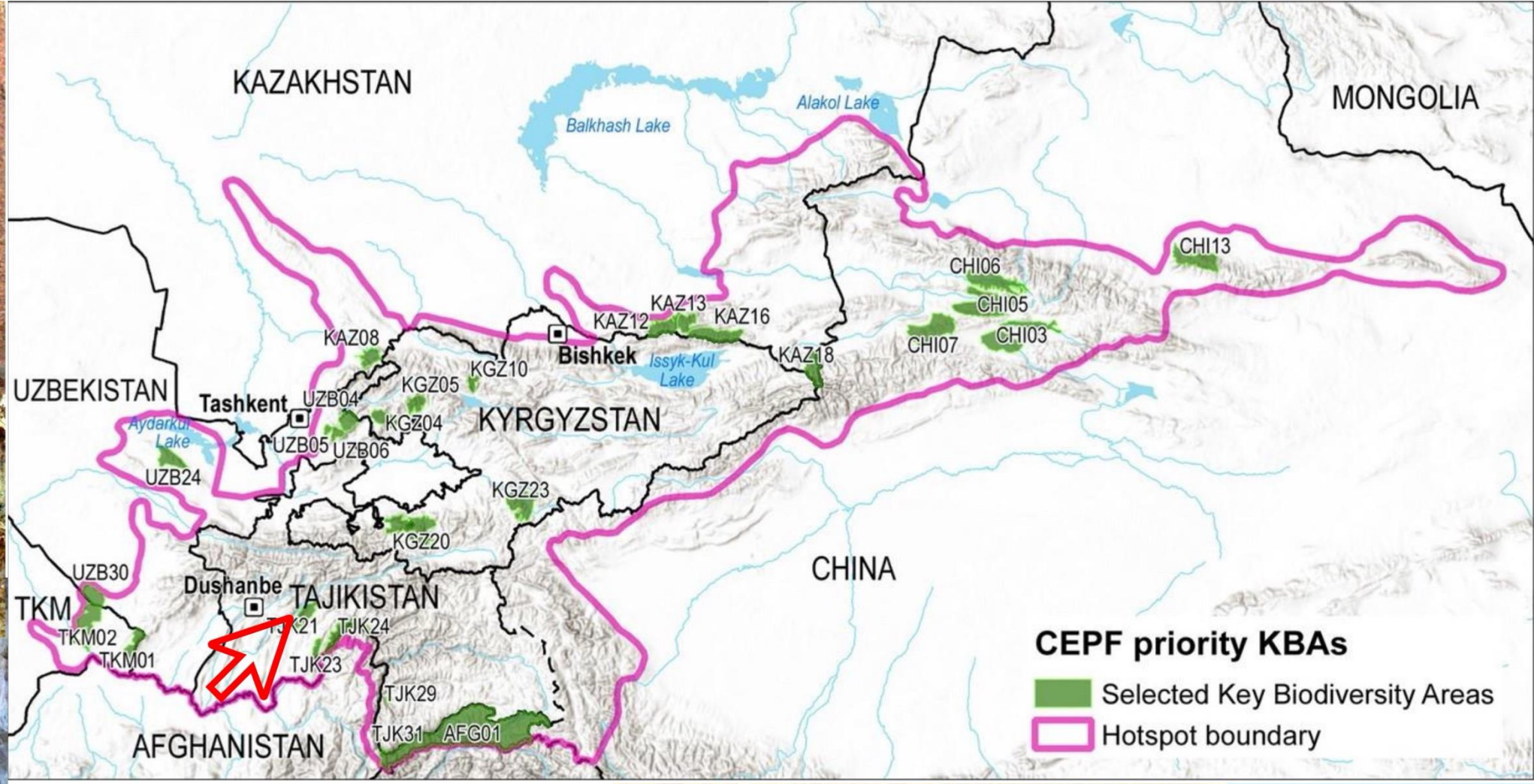
Main results:



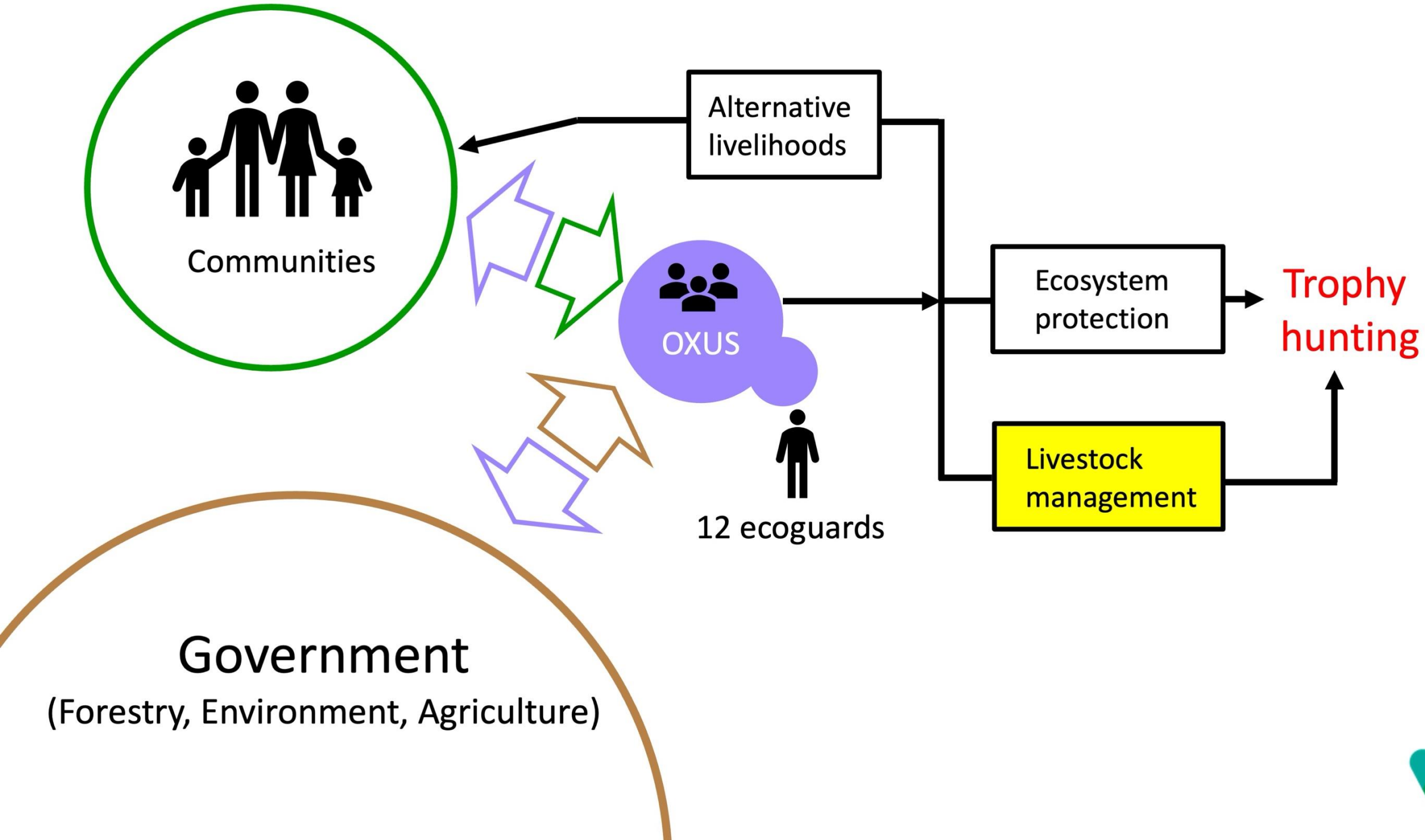




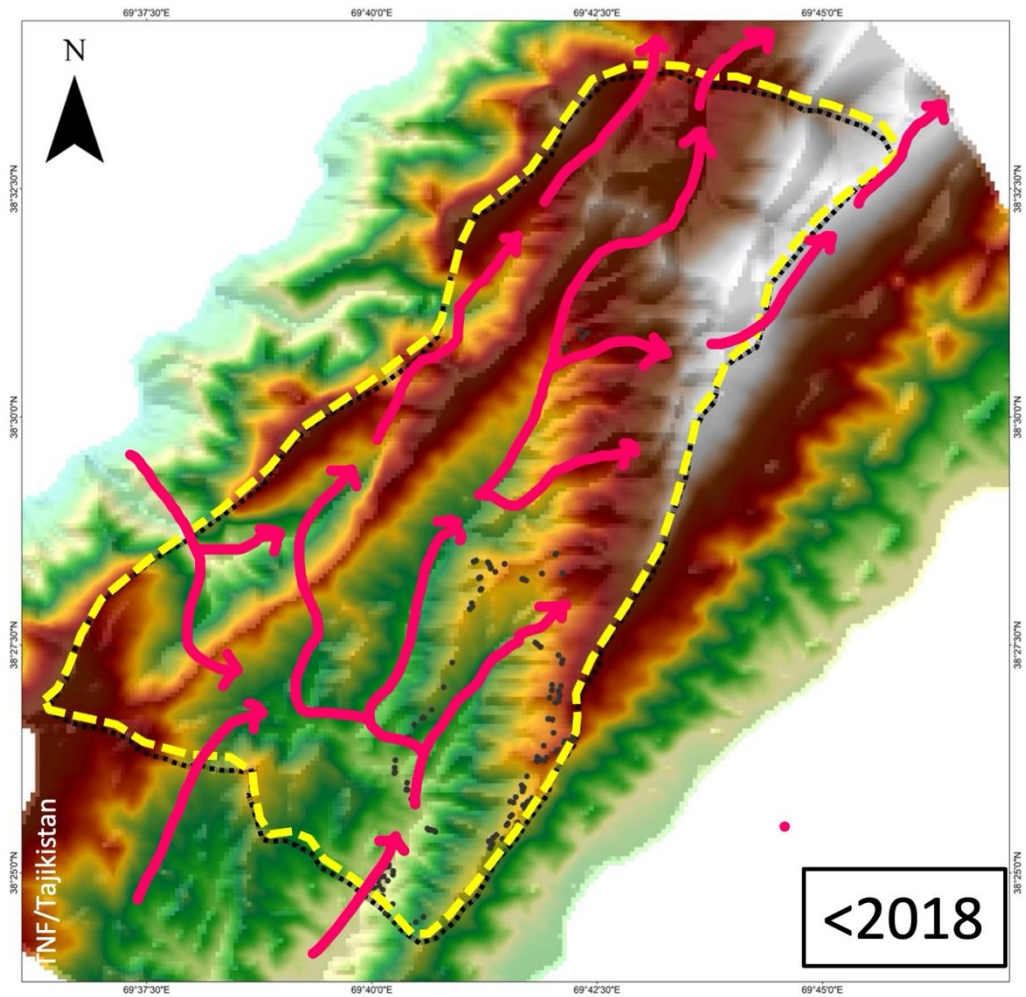


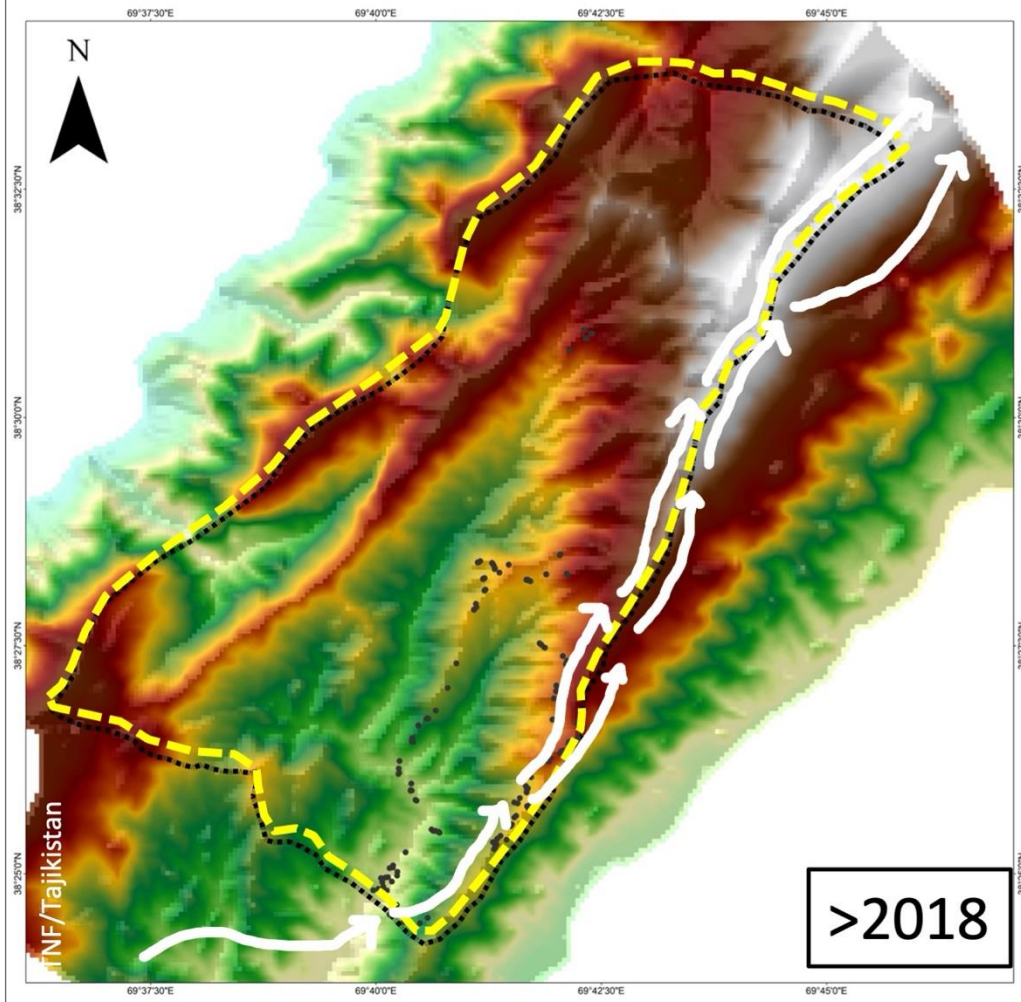


KBA Baljuvon, Tajikistan

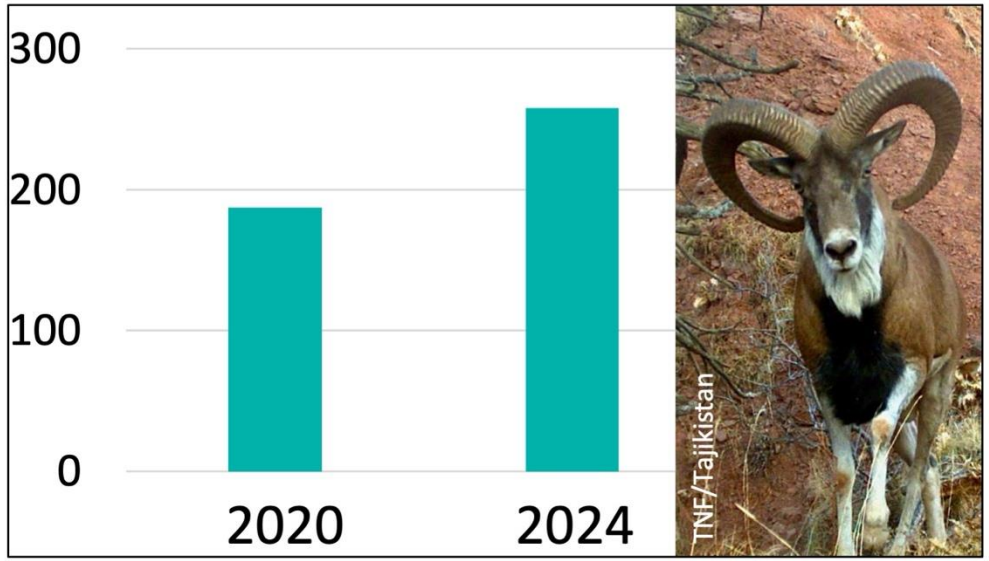

Communities
Alternative livelihoods
OXUS
12 ecoguards
Ecosystem protection
Livestock management
Trophy hunting
Government
(Forestry, Environment, Agriculture)

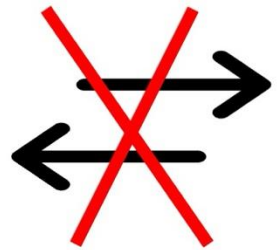
Main results: Livestock transhumance patterns modified ⇨ rangeland restored + wildlife/livestock interface reduced ⇨ enhanced sanitary control of livestock





Main results





Lessons learned from Central Asia:

Bottom-up approaches enable One Health action when the public institution is failing.

One Health actions become more effective when linked to positive socio-economic development for people.

By gaining visibility, the One Health approach supports biodiversity conservation actions.

Conclusion: What does success look like?

When people in the most valuable natural areas proactively engage in REDUCING BIODIVERSITY LOSS, thereby directly or indirectly reducing the risk of the spread of pathogens.