



A TALE OF TWO RIVERS

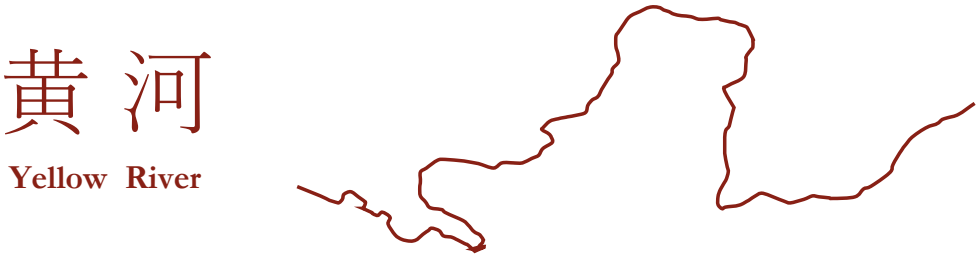
The revival of hydrological cycles towards a new Yellow River Origin national reserve

Yuqian Su | 5571499

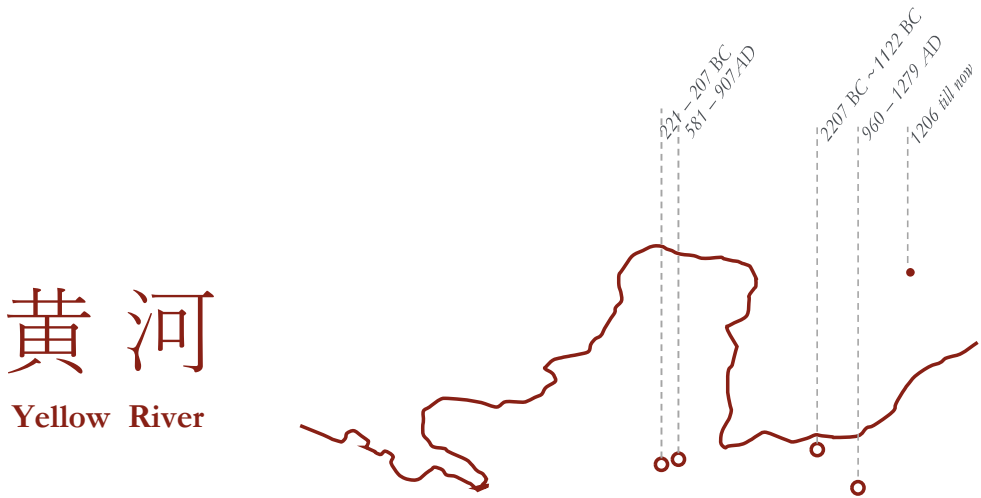
Transitional Territory Graduation Studio

Mentor: Nikos Katsikis, Francesca Rizzetto

P5 Presentation 21/06/2023

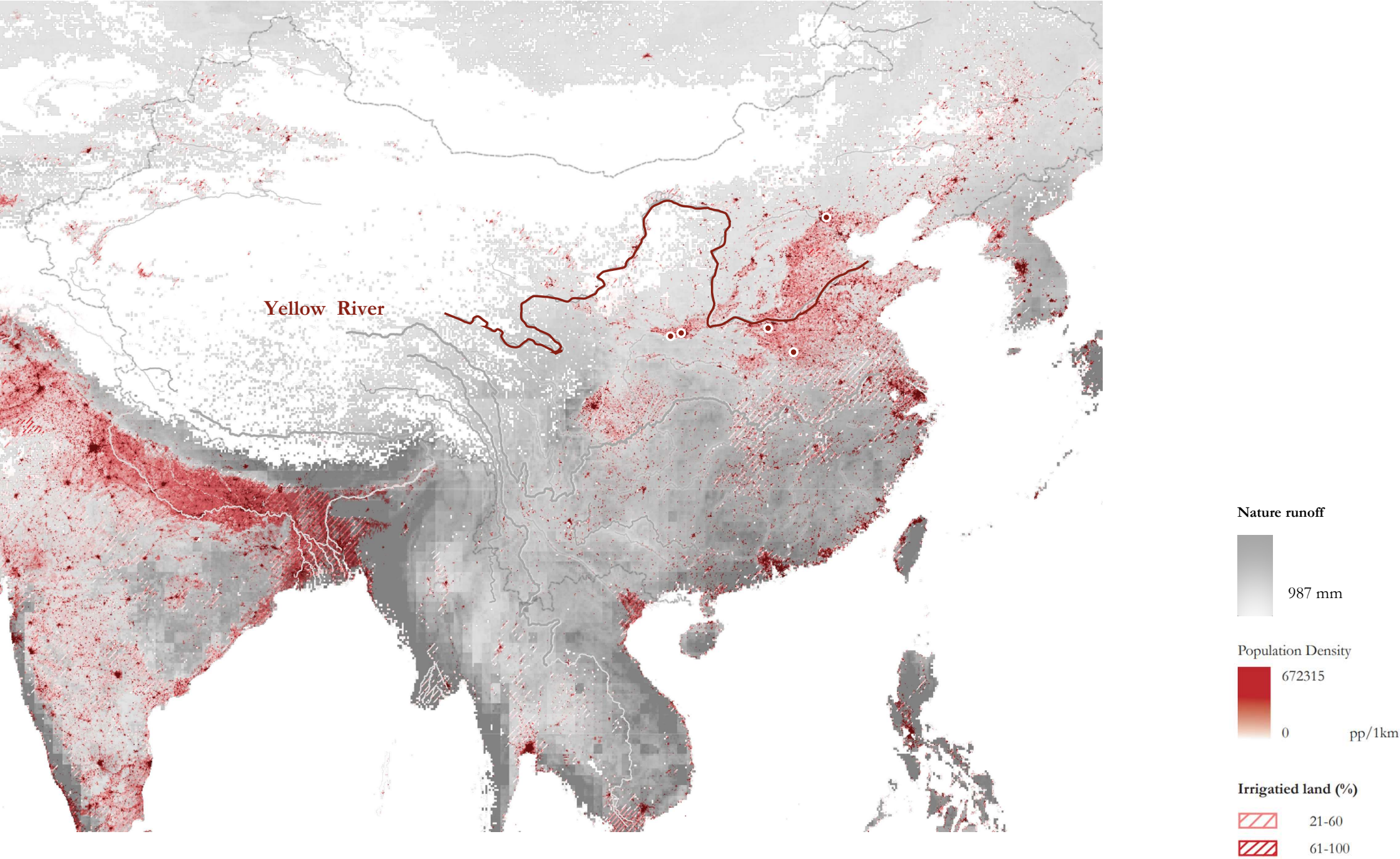


CONTEXT/
YELLOW RIVER



History of the capital of each dynasty geographical location (Ages of Great Unities)

CONTEXT/
YELLOW RIVER



Yellow river is feeding millions of people with only 2% of the national water resources.

CONTEXT/
WATER SCARCITY



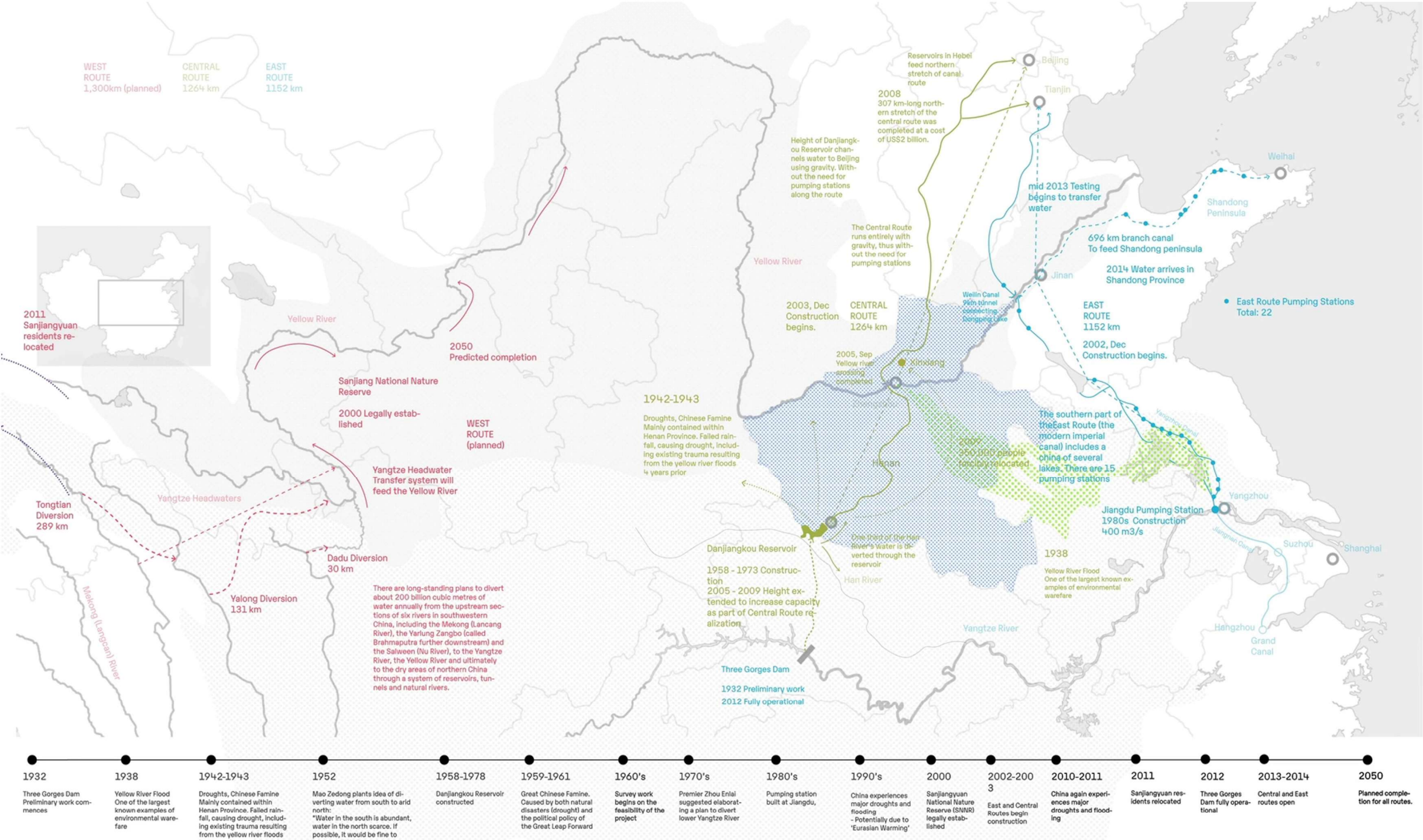
In 2007, the Yellow river dried up: for 277 days it failed to reach the sea

CONTEXT/
WATER SCARCITY



The source of Yellow River is also facing the drying up of crucial wetlands and pastures

CONTEXT/
WATER ENGIN



South-North water transfer project is the world`s largest water diversion project that brings water in Yangtze river to the north to feed the region`s water

PROBLEM FIELD/ SECURE WATER

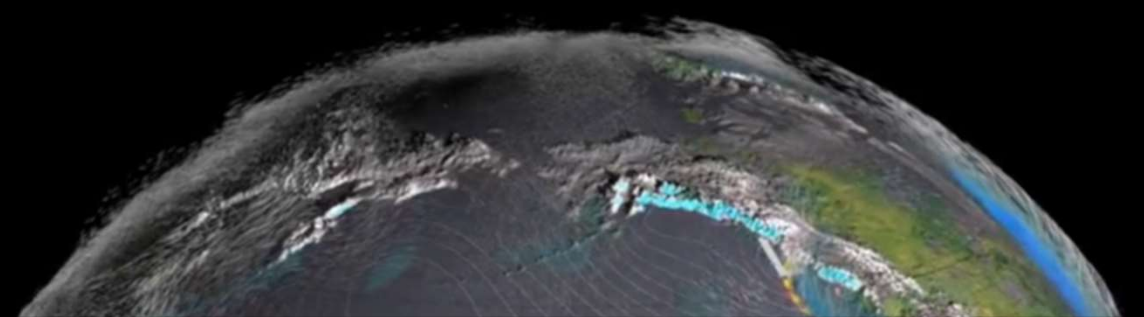
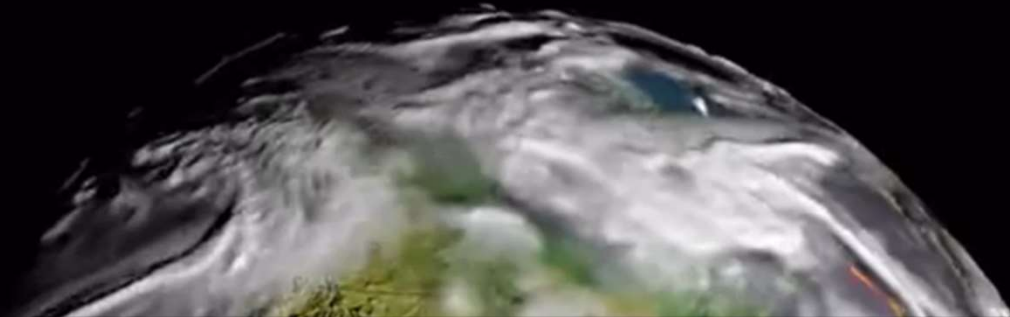
1 Atmospheric geo-engineering generate more rain

China's 'Sky River' Will Be The Biggest Artificial Rain Experiment Ever



PROBLEM FIELD/ SECURE WATER

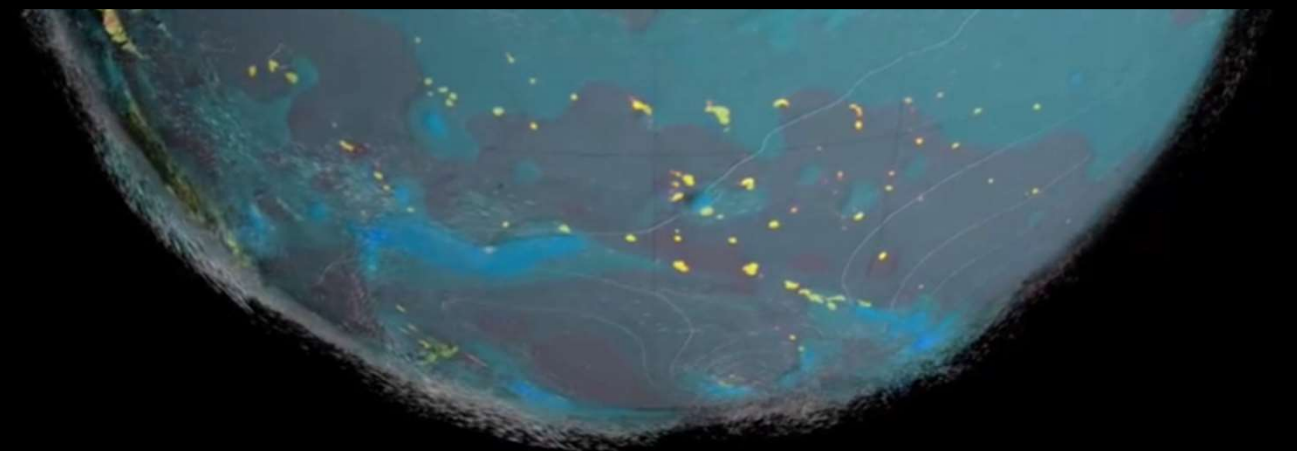
1 Atmospheric geo-engineering generate more rain



SKY RIVER

Atmospheric river

“it`s a long, narrow, and transient corridor of strong horizontal water vapor channel that transport water and energy around the globe”



PROBLEM FIELD/ SECURE WATER

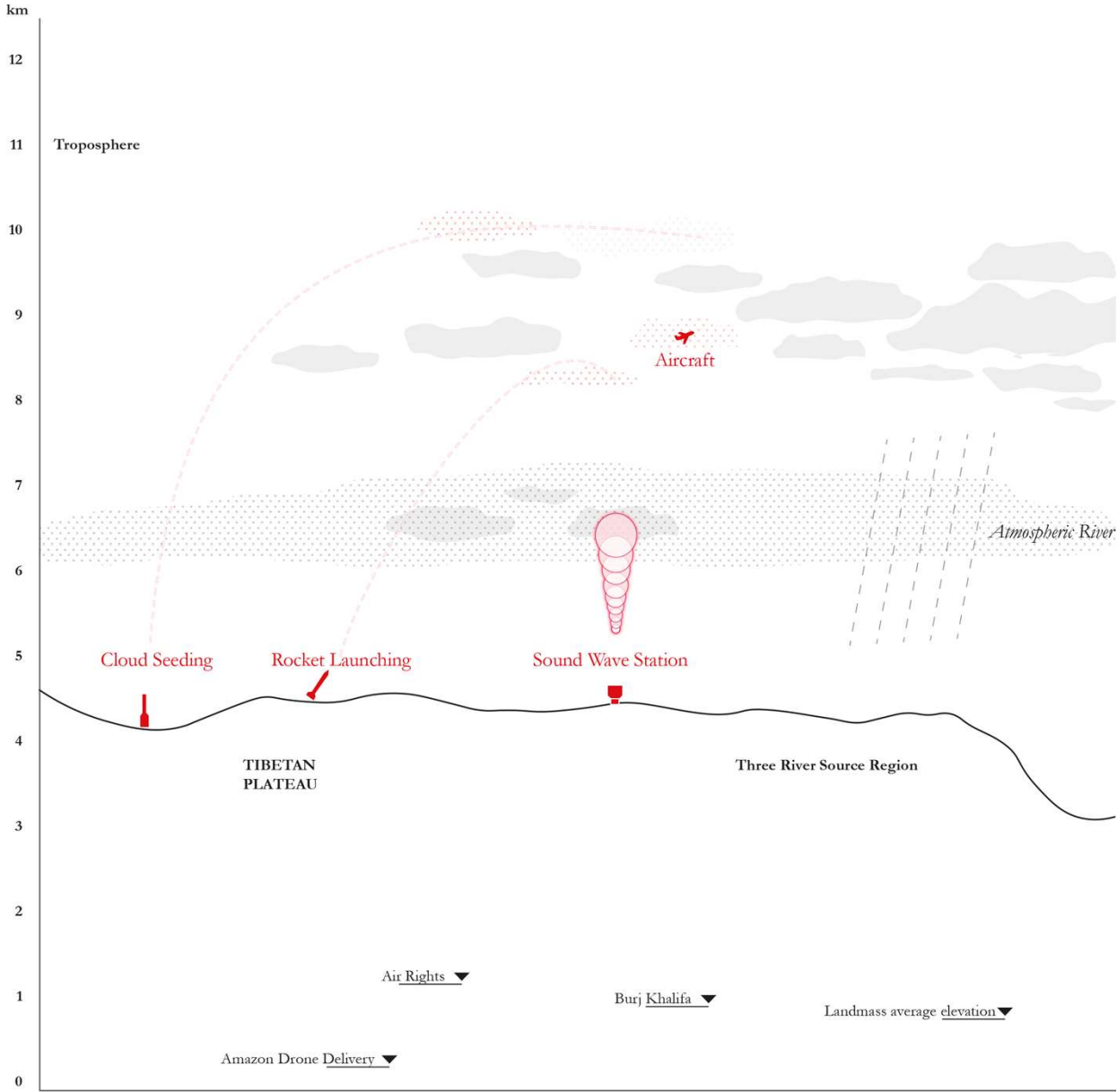
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SKY RIVER



PROBLEM FIELD/ SECURE WATER

1 Atmospheric geo-engineering generate more rain

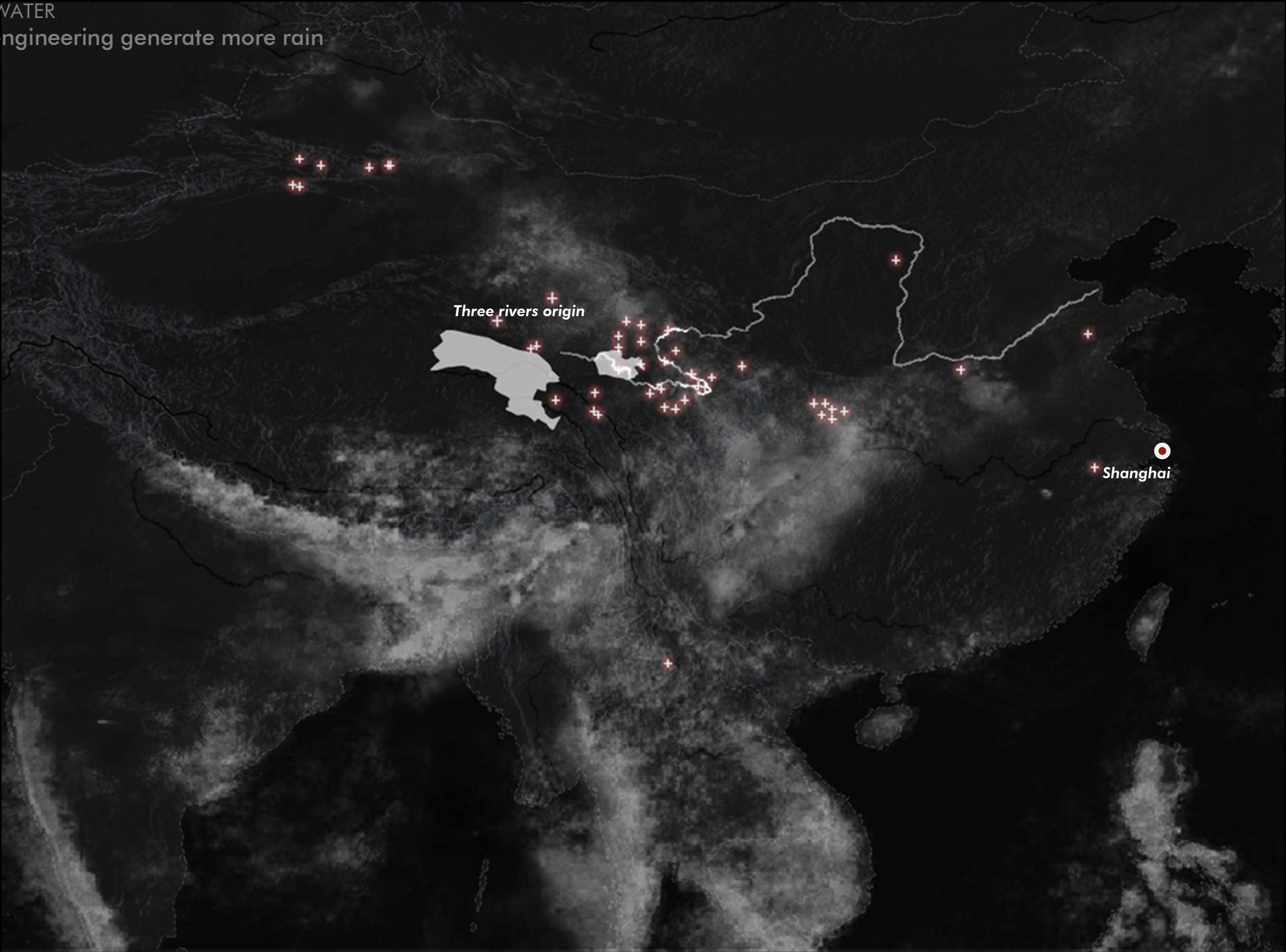


PROBLEM FIELD/ SECURE WATER

1 Atmospheric geo-engineering generate more rain



PROBLEM FIELD/ SECURE WATER
1 Atmospheric geo-engineering generate more rain



PROBLEM FIELD/ SECURE WATER



PROBLEM FIELD/ SECURE WATER



The only link between these 2 places, are rivers. Through the rivers flowing from 4000 meters latitude plateau, they help to secure the national water safety and ensure its flowing.

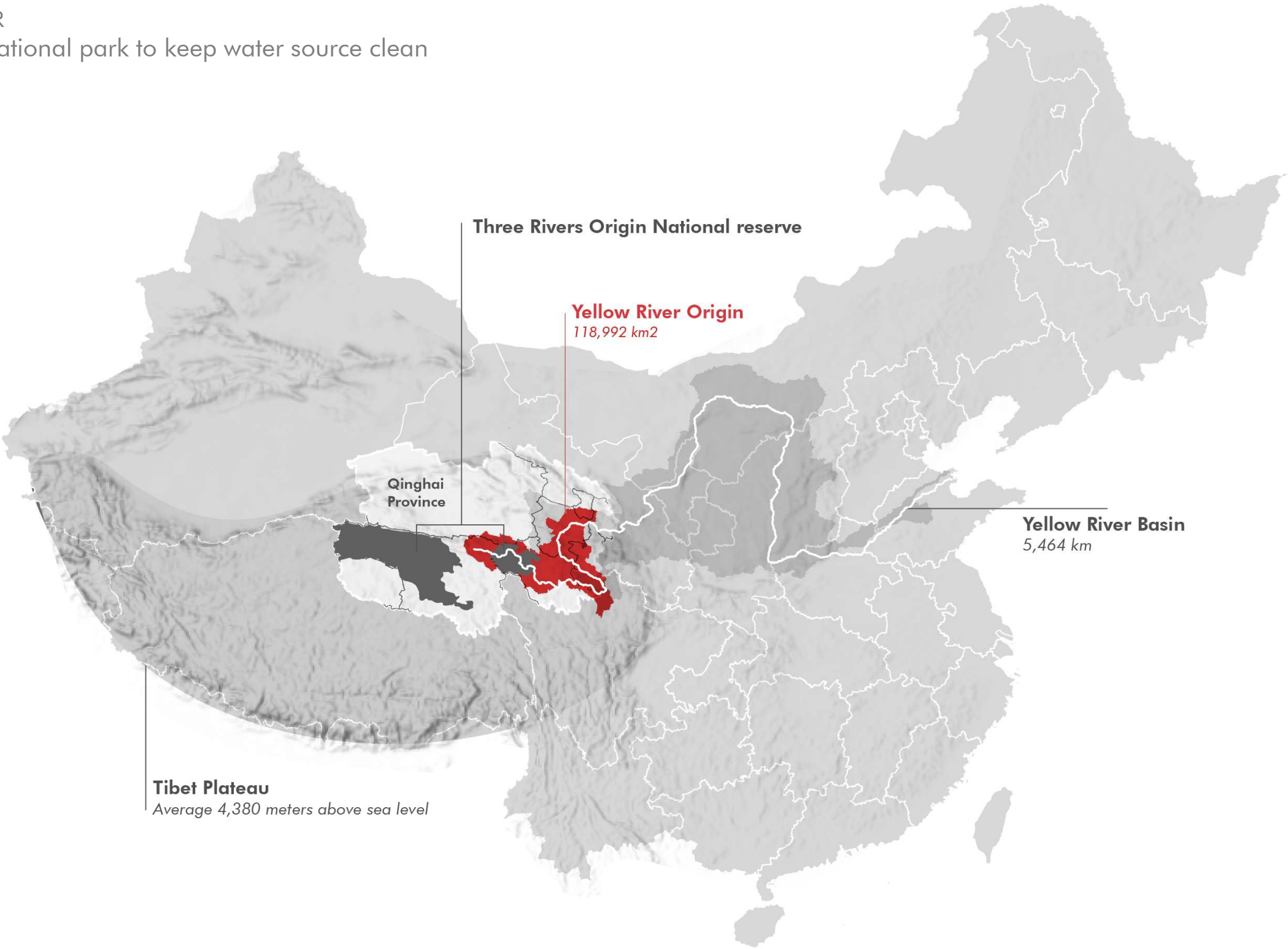
PROBLEM FIELD/ SECURE WATER

2 An exclusive and fixed national park to keep water source clean



PROBLEM FIELD/ SECURE WATER

2 An exclusive and fixed national park to keep water source clean



PROBLEM FIELD/ SECURE WATER

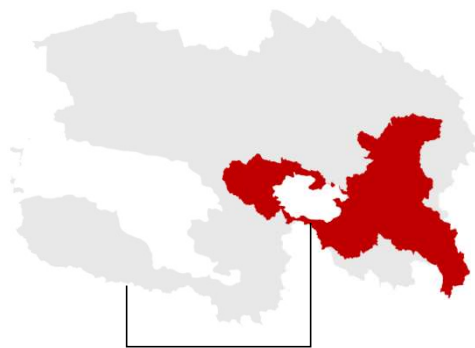
2 An exclusive and fixed national park to keep water source clean

NETHERLANDS



41,850 km²
17.53 million
508 per km²

THREE RIVERS ORIGIN
NATIONAL PARK

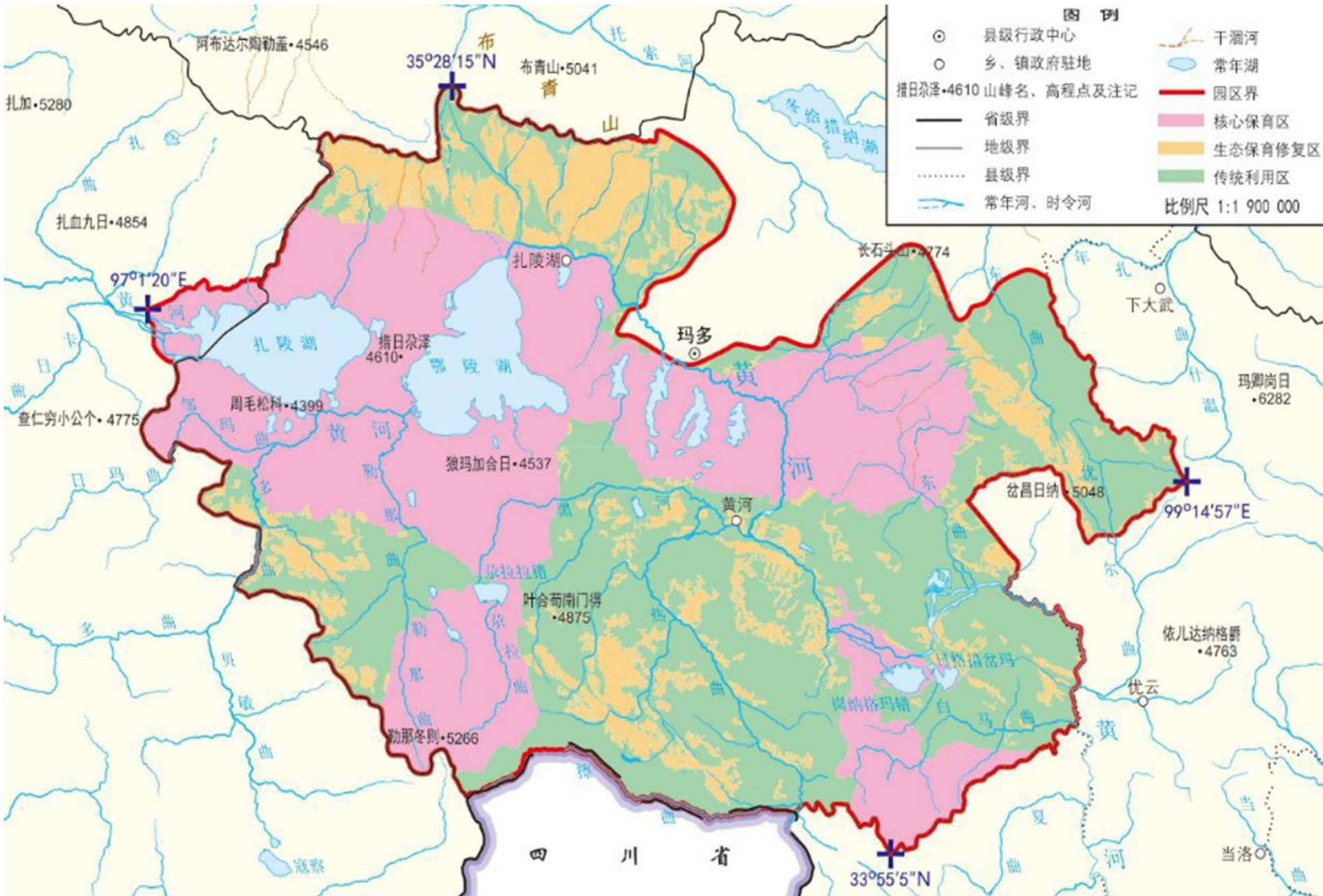


123,100 km²
5.6 million
2.6 per km²

118,000 km²
20-50 grazing animals per family
3,3 person/km²

PROBLEM FIELD/ SECURE WATER

2 An exclusive and fixed national park to keep water source clean



- Core protected area**
Human activity includes grazing is prohibited
Includes eco-migration of the villages
Only open to scientific research, investigation, monitoring
- Ecological Conservation Area**
Human activity includes grazing is prohibited
Partially Includes eco-migration of villages
- Traditional Use Zone**
Human activity includes grazing partially prohibited
Can be approached by visitors

PROBLEM FIELD/
PROBLEM STATEMENT

External imposition

Dominance position over nature

SKY RIVER PLAN

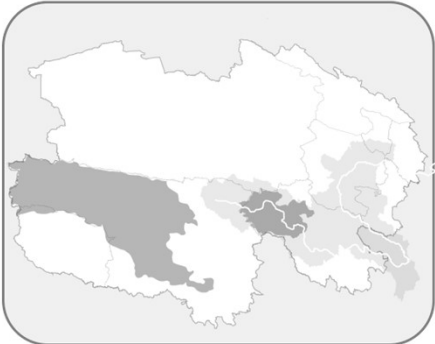


By 2018
500 Stoves
are installed in the slope regions of
Tibet, Xinjiang and other areas.
Affect the areas of more than
1600,000 km²
Increase precipitation by
320 Million m³
Alleviate the shortage of water resources in the Yellow
River and some inland rivers.

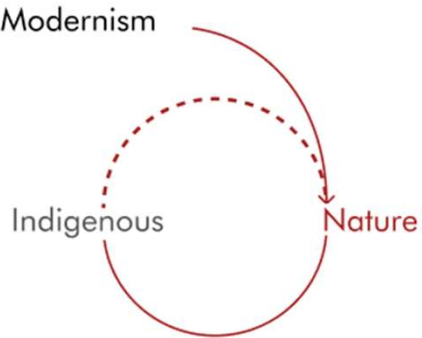
Internal separation

*Denial of the interdependency between
indigenous and nature*

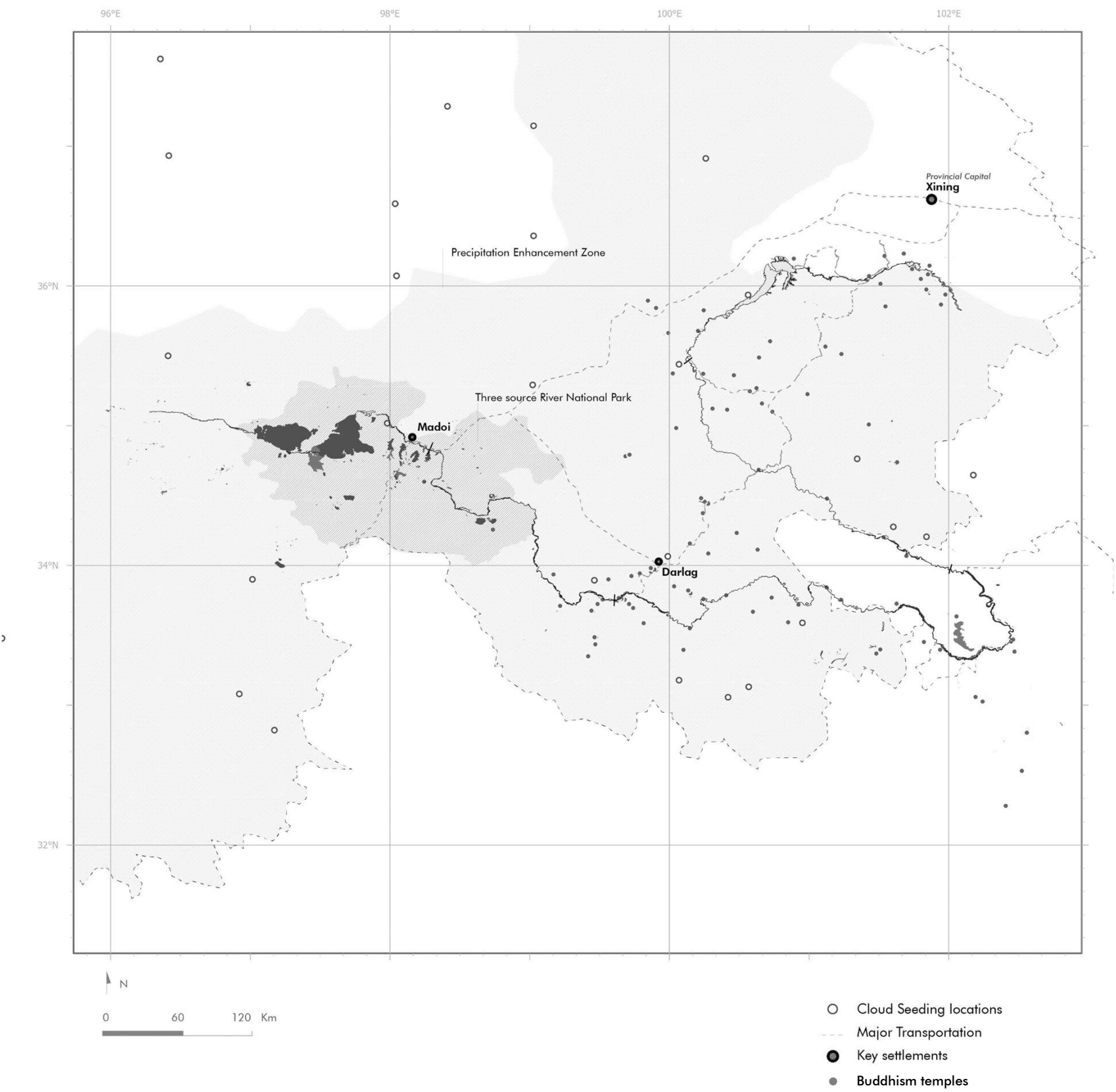
THREE-RIVER SOURCE NATIONAL NATURE RESERVE



Launched in 2020
Covers an area of
120,000 km²
In the core protected area, human activity includes
grazing is prohibited, includes eco-migration of the
villages. Only open to scientific research,
investigation, monitoring.
Alleviate the shortage of water resources in the Yellow
River and some inland rivers.



PROBLEM FIELD/
MAPPING





(N.d.). *RSS*. Retrieved May 20, 2023, from <https://www.thisispaper.com/mag/dyal-thak-kin-coedel>.





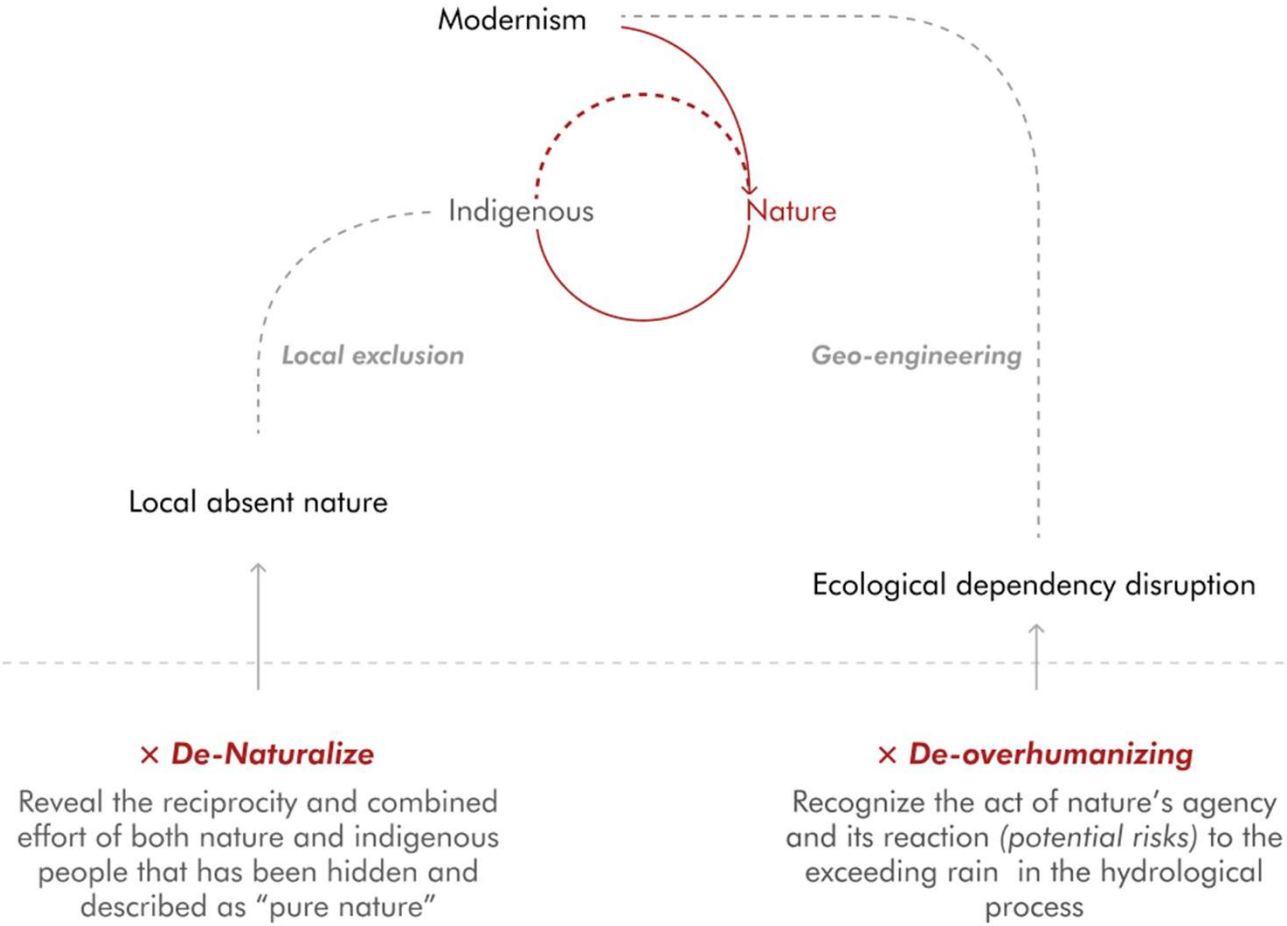




PROBLEM FIELD/



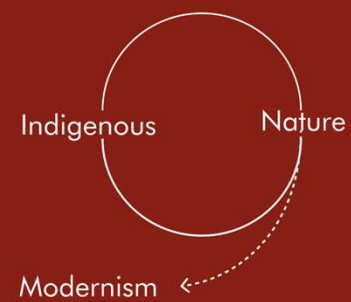
RESEARCH/
PROPOSITION



Lao Tzu

Great virtue is like water.

It nourishes and benefits all things, yet it doesn't contend with any. It even flows where men turn their noses and the light does not reach.



VISION/

Nature-people park

My project serves as the negotiation process that gradually brings the land back to its people, respecting their traditional knowledge and engaging local cultures towards a national reserve of their own instead of restricted zoning land use.

The goal is to build a resilient ecosystem, dynamically maintain its unity and actively sustain its vibrancy that can deal with the future hydrological cycle in multi-scale



External imposition

Dominance position over nature

SKY RIVER PLAN



Disagree, but the project will proceed in one form or another

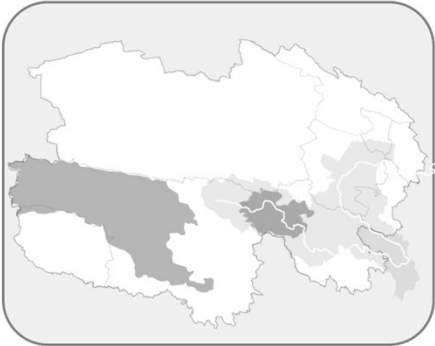
Not to eliminate the project, but use local power to fight against future risks even if they are still there

to foresee the risks

Internal separation

Denial of the interdependency between indigenous and nature

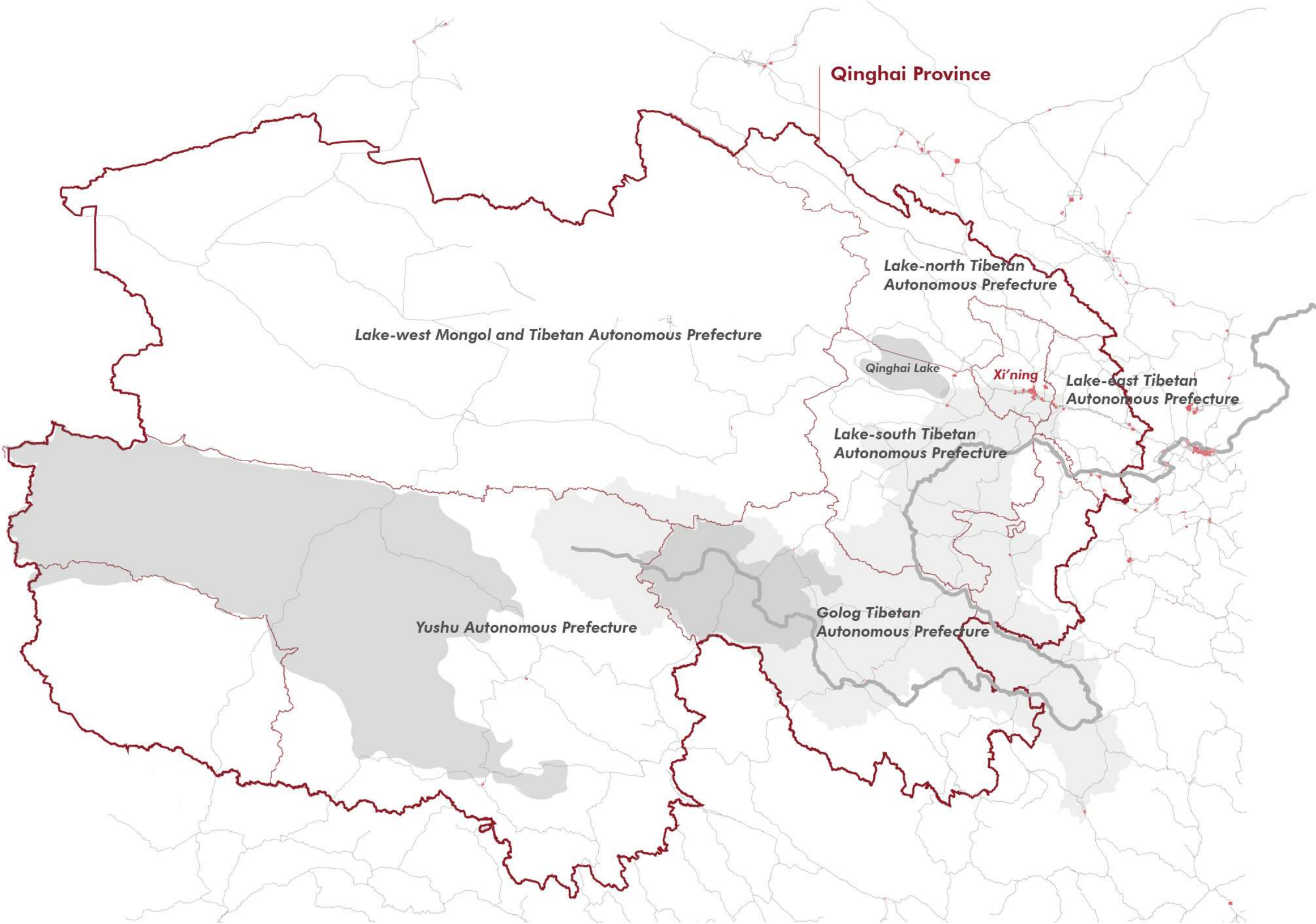
THREE-RIVER SOURCE NATIONAL NATURE RESERVE



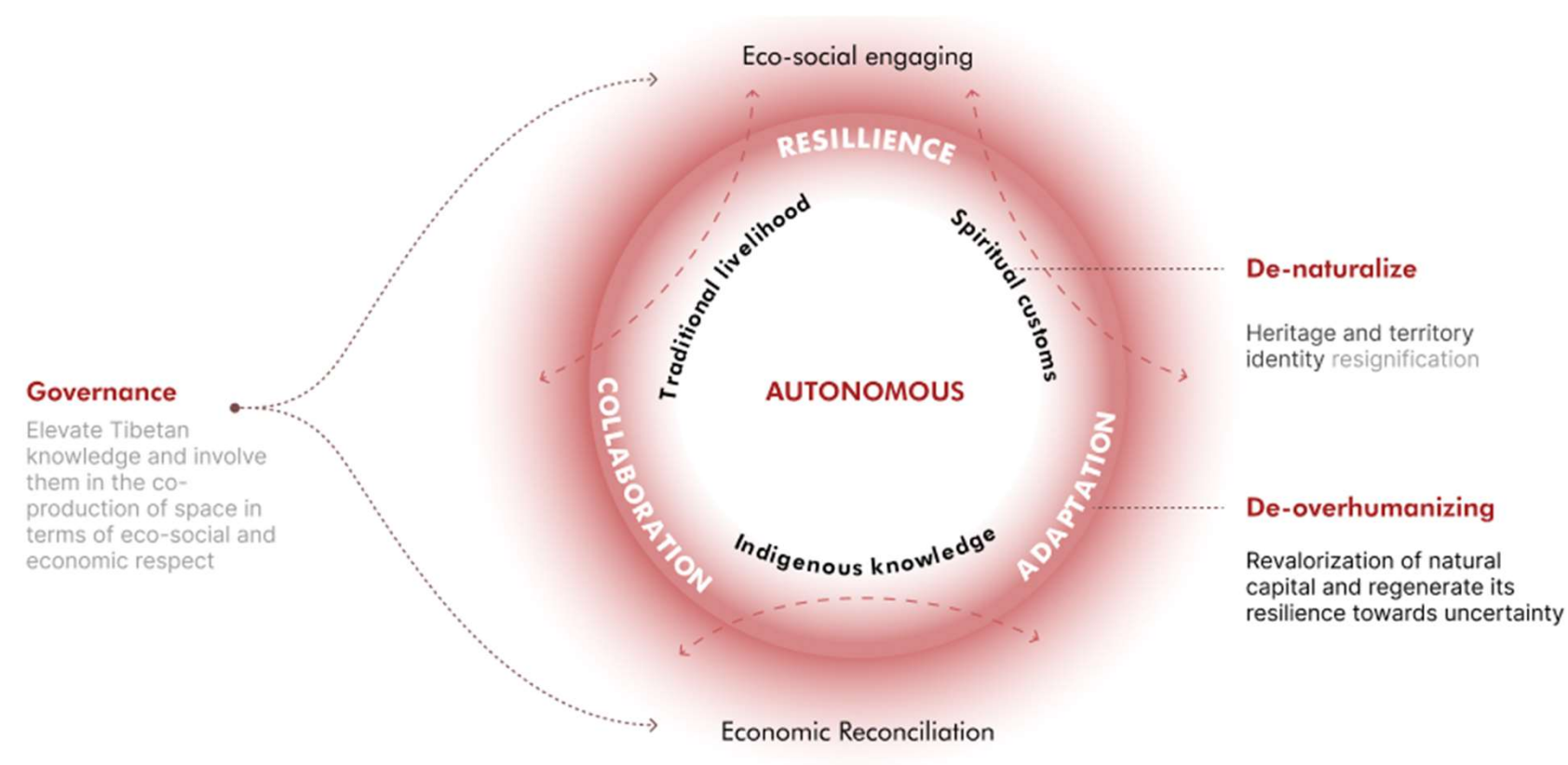
*Partially agree
The area has high value to be preserved*

*Opportunity towards
a new national park paradigm
Expand the extent of national reserve*

A new paradigm



RESEARCH/
CONCEPTUAL FRAMEWROK



Emphasized on building local minority`s autonomy with the rethink of what nature means to us and moving away from an anthropocentric view that positions humans as separate from and dominant over nature, towards a more interconnected understanding.

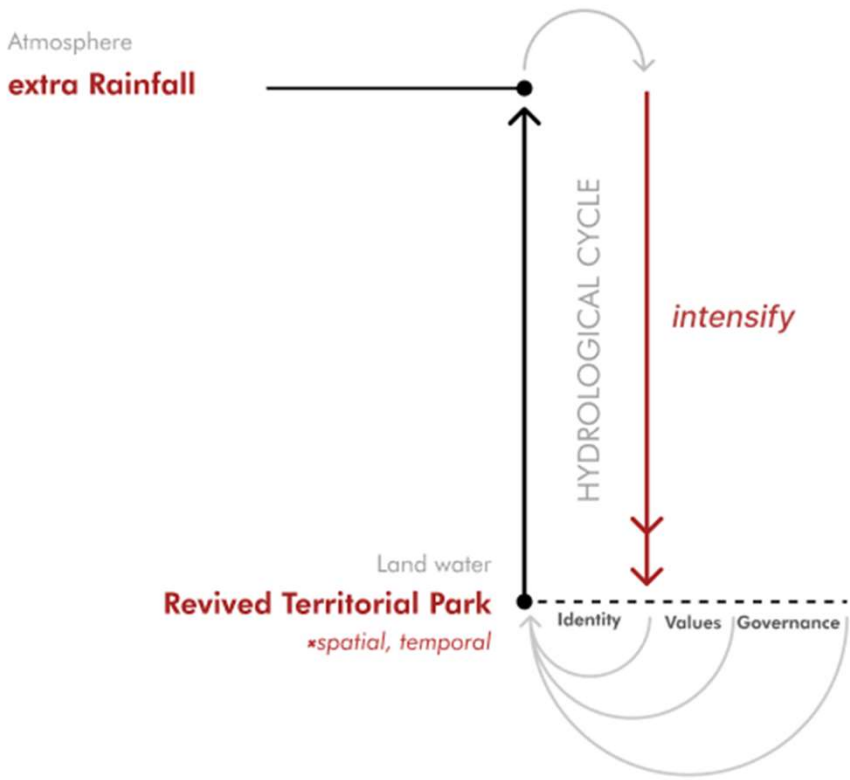


SYSTEMATIC ANALYSIS/
PROPOSITIONS

Disagree, but the project will proceed,
thus needs to **foresee the risks**

Disagree, but an opportunity towards
a new national park paradigm

Future hydrological patterns

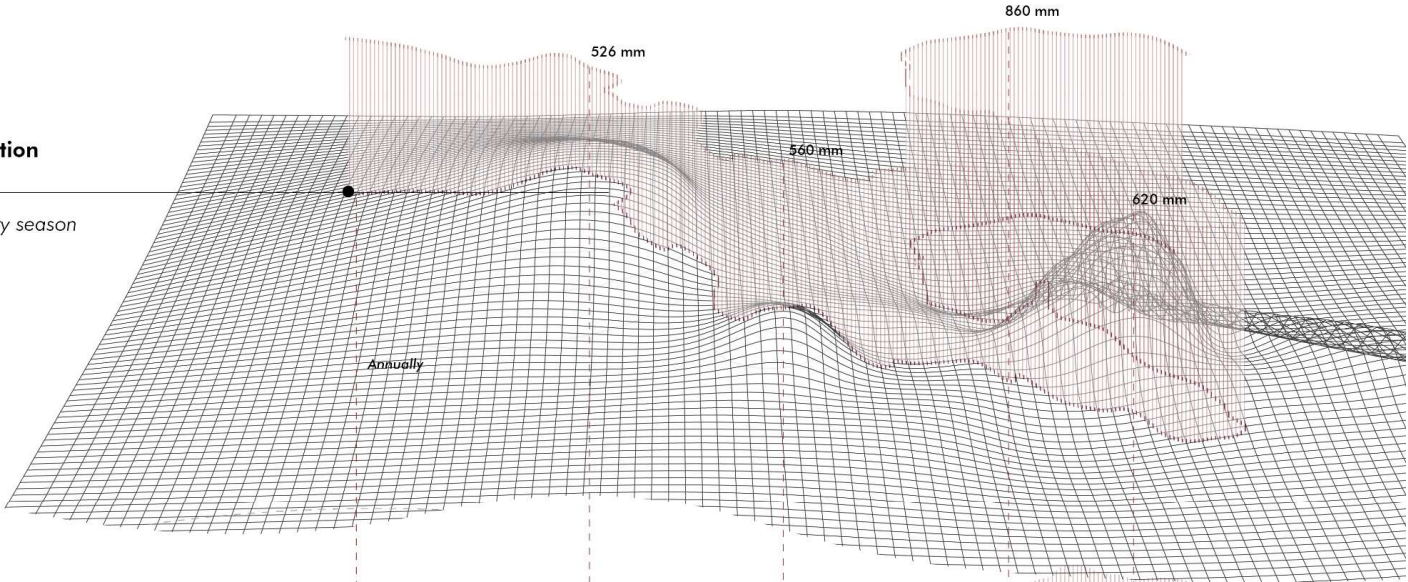


SYSTEMATIC ANALYSIS/
RAINFALL PATTERN

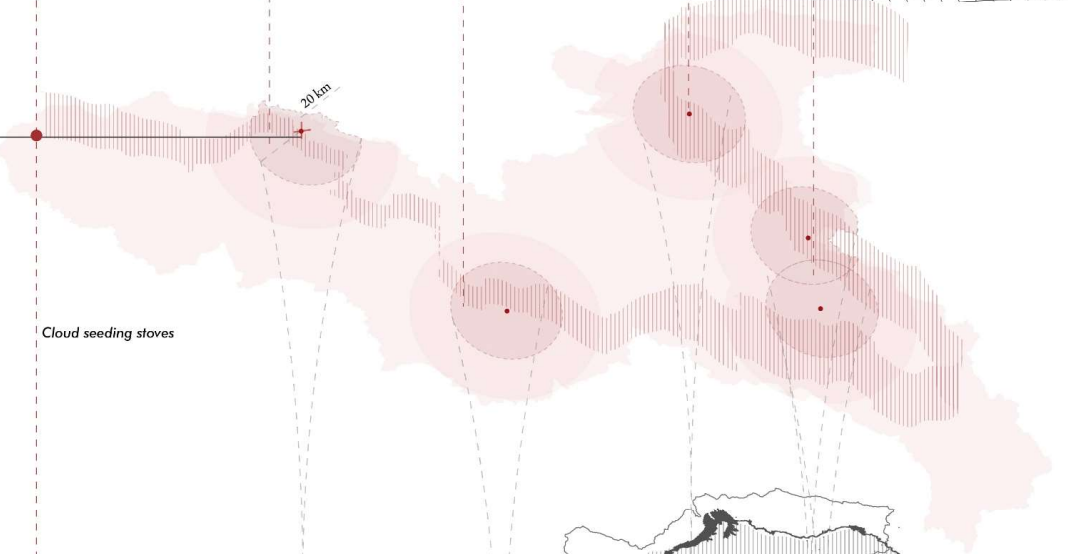
SEASONAL SPATIAL UNEVEN

Future hydrological patterns

Future rainfall pattern prediction (wet season)
There will be hardly any rain in dry season

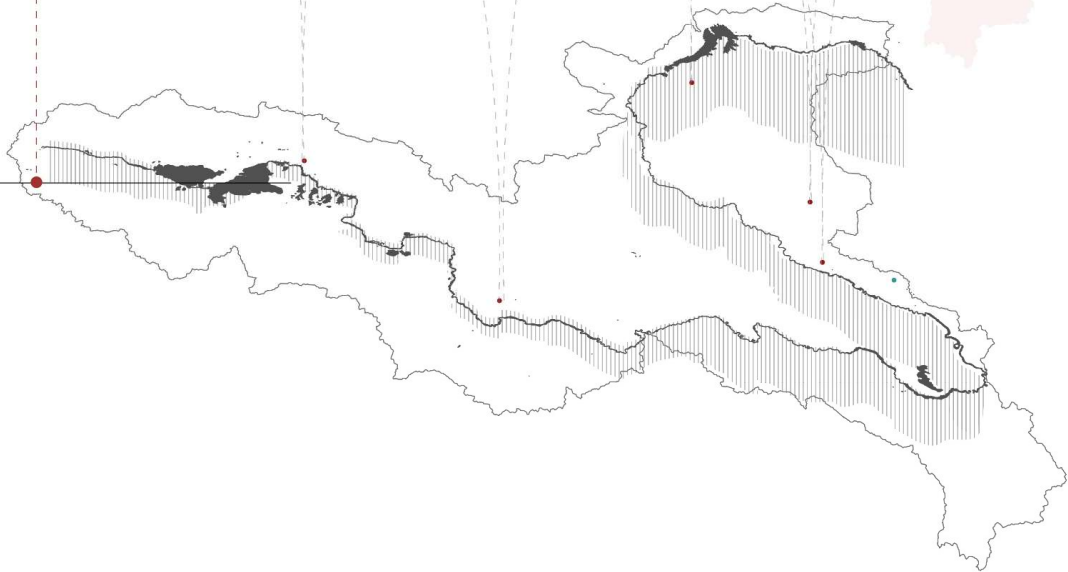


Rainfall potential (rainfall storage)
Calculated based on the percentage of atmospheric water resources that are not converted to rain and the amount of precipitation at each location to show how much rain will be potentially available in the future

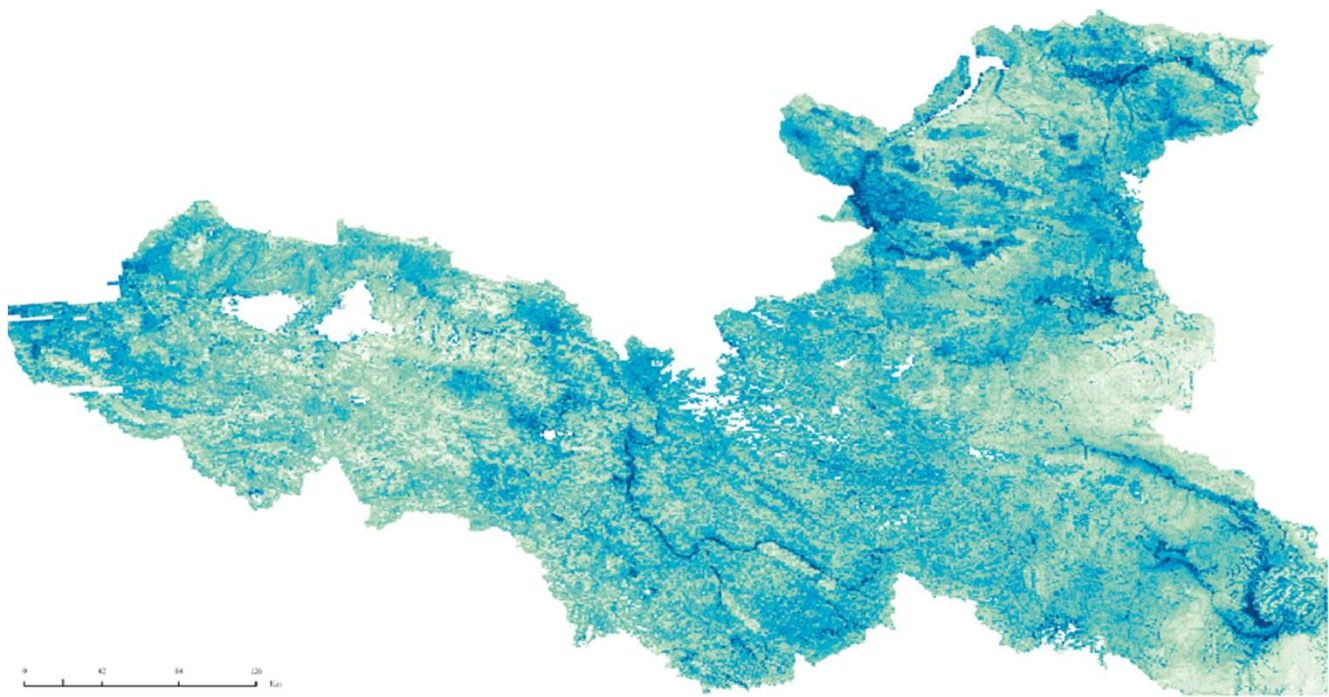


Cloud seeding stoves

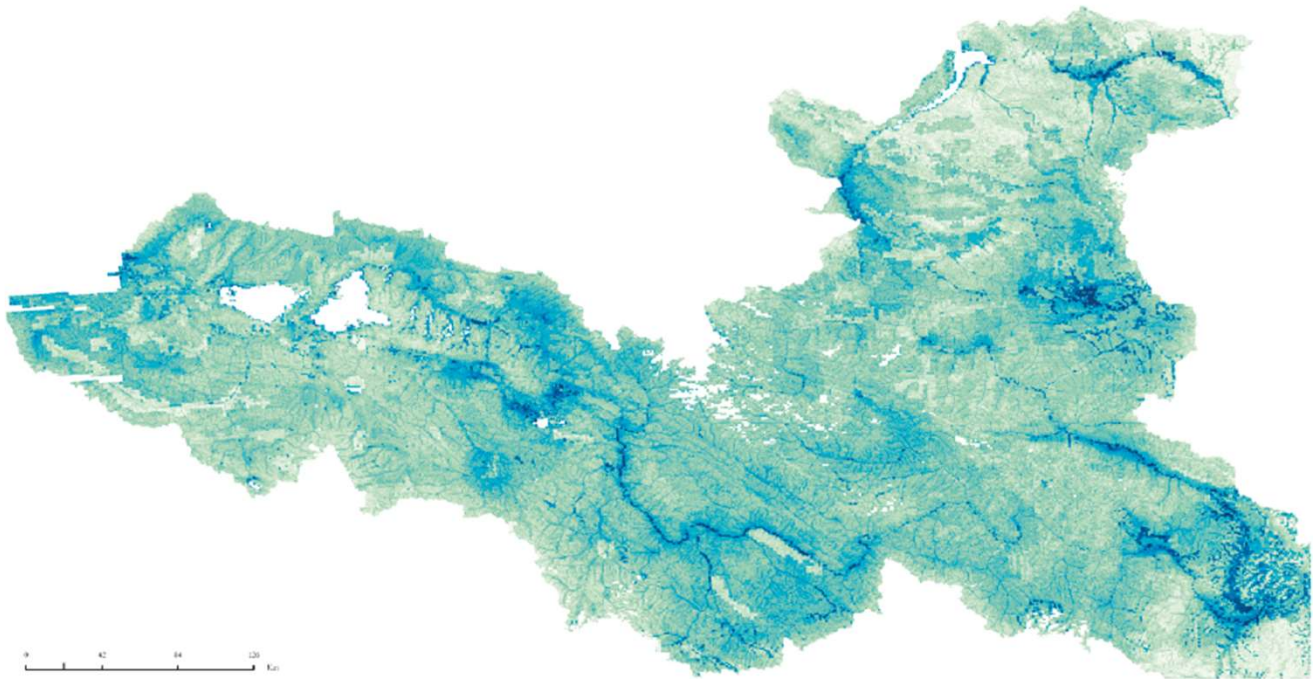
Original rainfall pattern



SYSTEMATIC ANALYSIS/
WETLAND RISKS



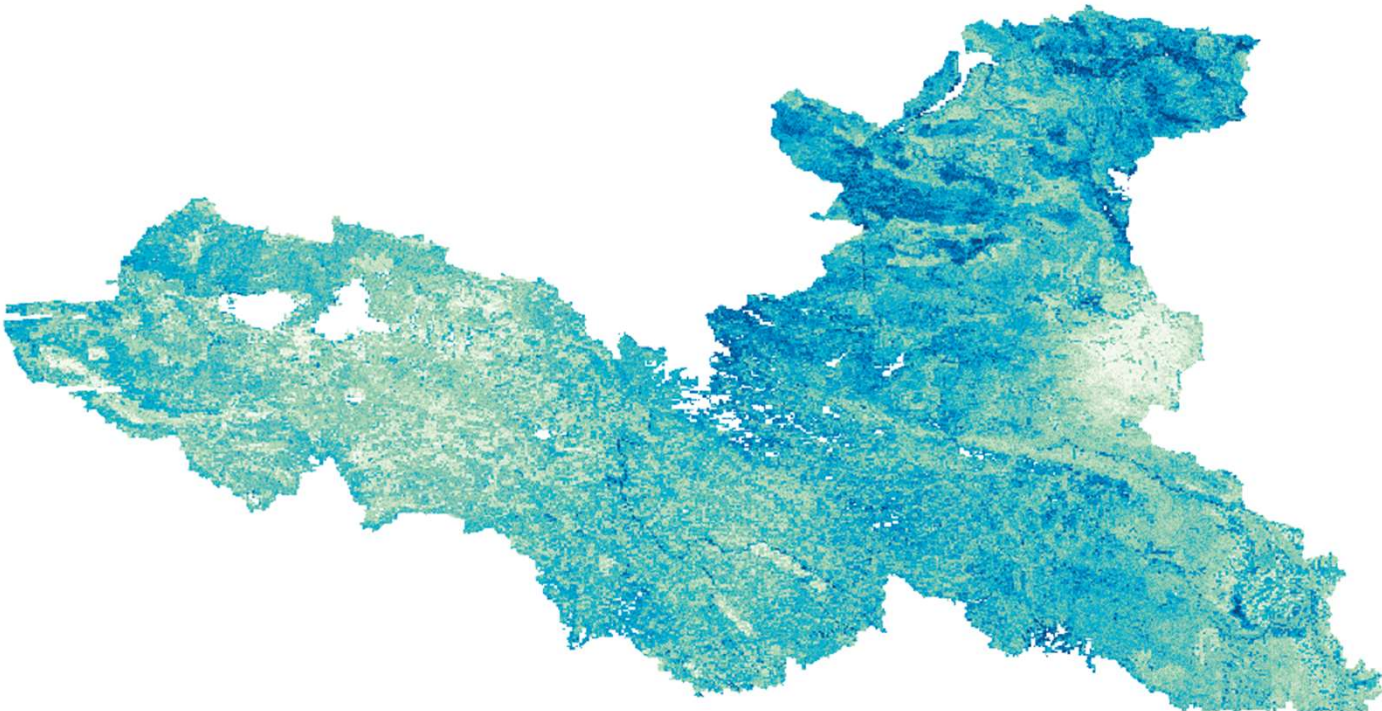
Risk of wetland in summer



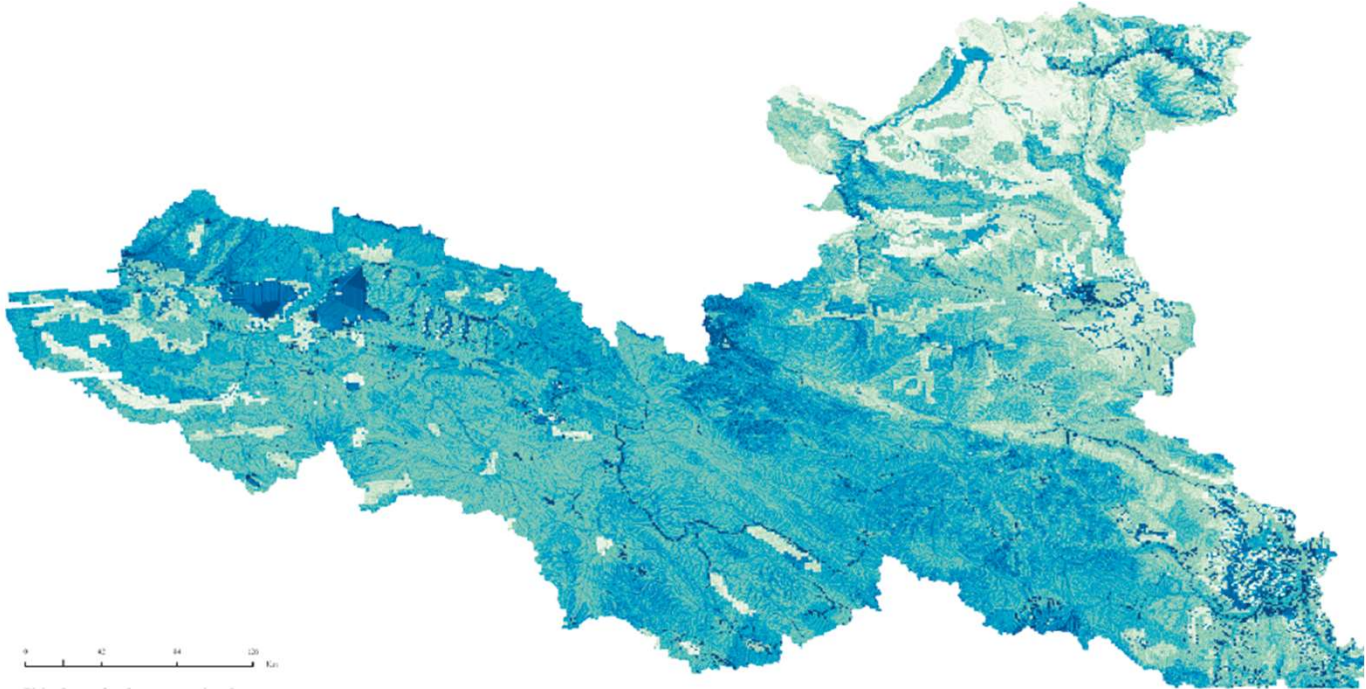
Risk of wetland in winter



SYSTEMATIC ANALYSIS/
GRASSLAND RISKS



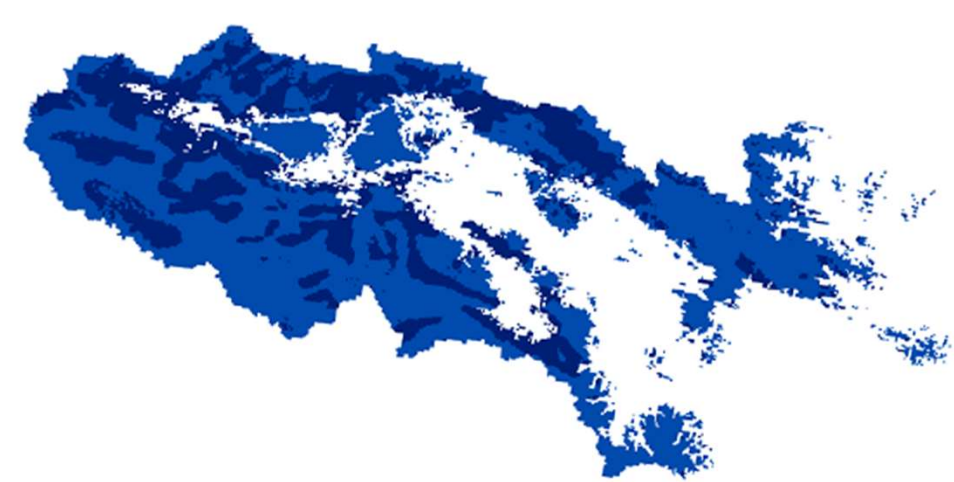
Risk of grassland in summer



Risk of grassland in winter



SYSTEMATIC ANALYSIS/
PERMAFROST RISKS



Risk of permafrost in summer



SYSTEMATIC ANALYSIS/
HIGH-RISK ZONES



These eco-dynamics are important for me to develop future hydrological strategies and restructuring management and preservation strategies towards a new national park paradigm.

High risk zones in summer

High risk zones in winter

SYSTEMATIC ANALYSIS/
PROJECT FRAMING

Disagree, but an opportunity towards a new national park paradigm Disagree, but the project will proceed, thus needs to foresee the risks

De-naturalize

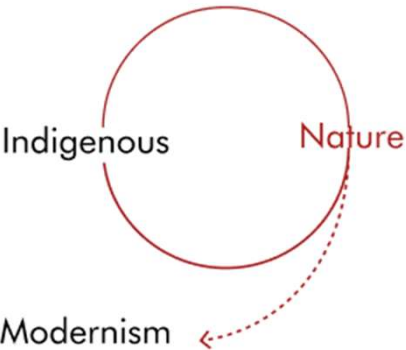
De-overhumanizing

Nature-based **Multi-scalar system**

Identify the **risks**

How to care for the land?

Design for who to care?



How to care for the land?



Prayer flags are seen at Dokha Compa, the sole Tibetan monastery in the Yellow River nature reserve, in Madoi country Tibetan Autonomous Prefecture, Qinghai province, China August 31, 2019. REUTERS/Ryan Woo

RESPECTING WATERSHEDS ECOLOGY/
WATERSHEDS ECO-UNIT

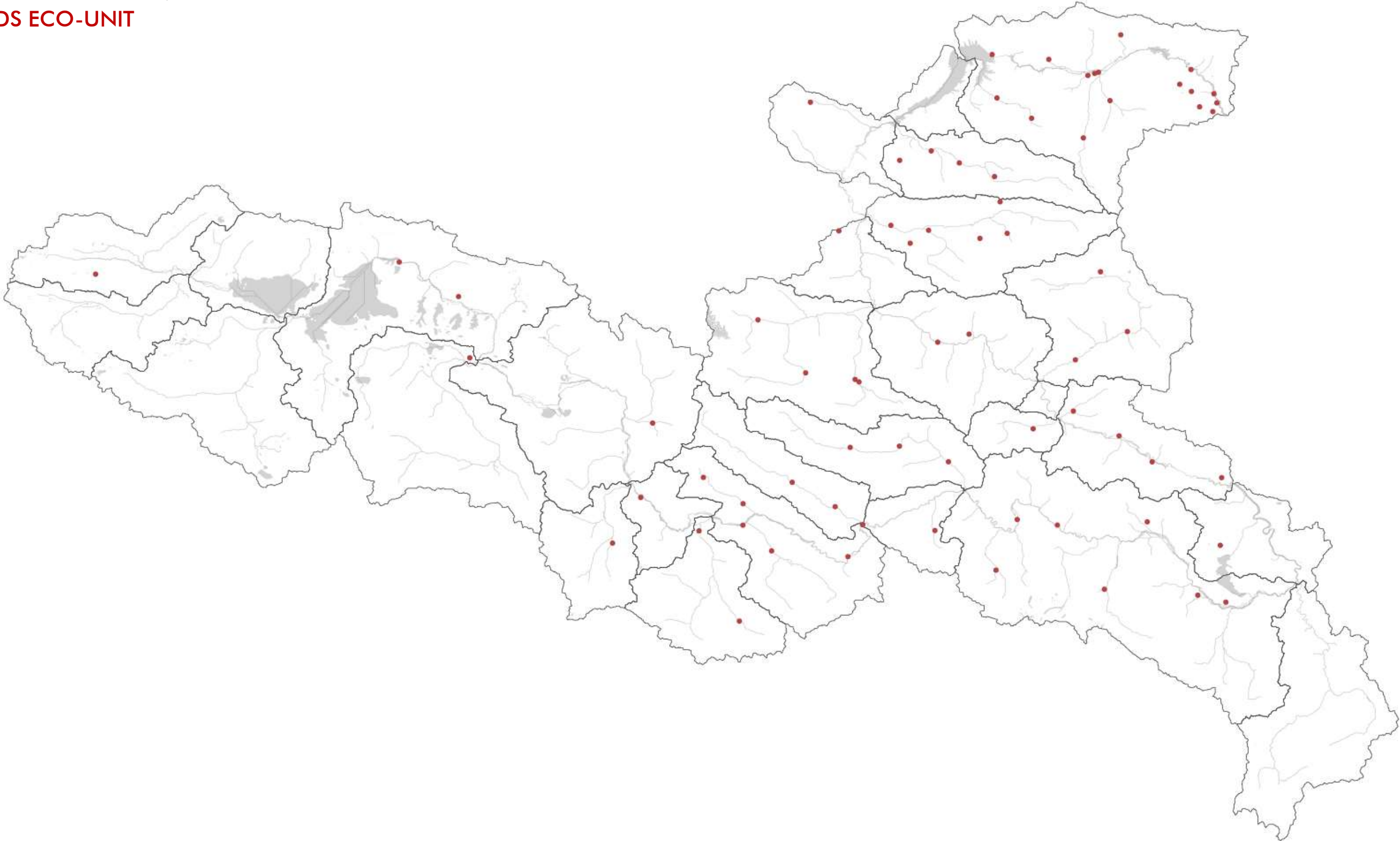


Local herdsman and yaks: follow water and grass

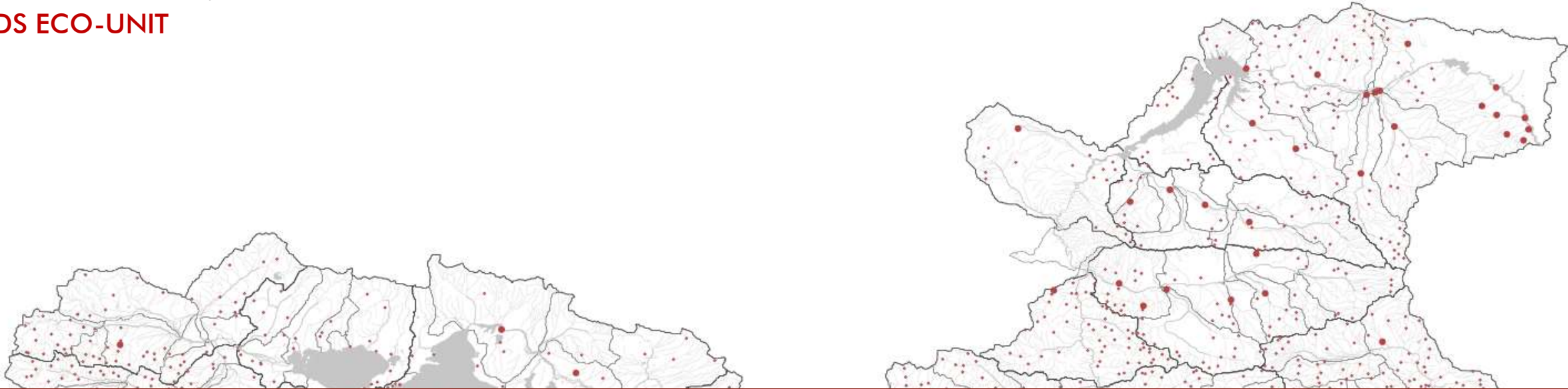
RESPECTING WATERSHEDS ECOLOGY/
WATERSHEDS ECO-UNIT



RESPECTING WATERSHEDS ECOLOGY/
WATERSHEDS ECO-UNIT

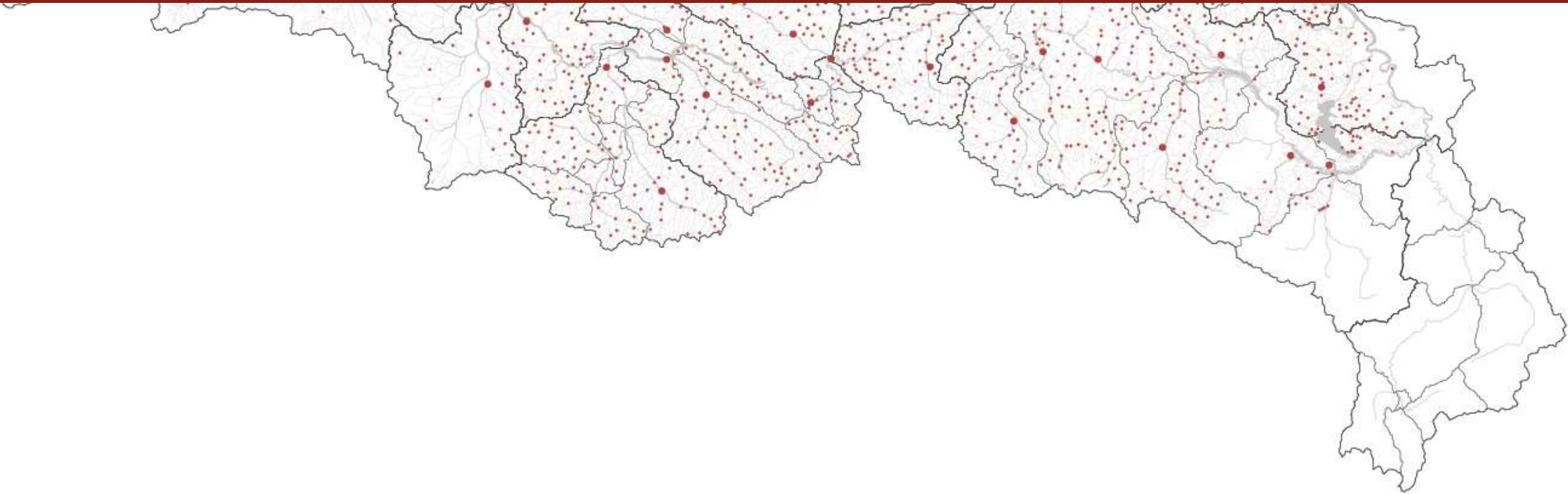


RESPECTING WATERSHEDS ECOLOGY/
WATERSHEDS ECO-UNIT



Nourish the land

respecting watersheds ecology

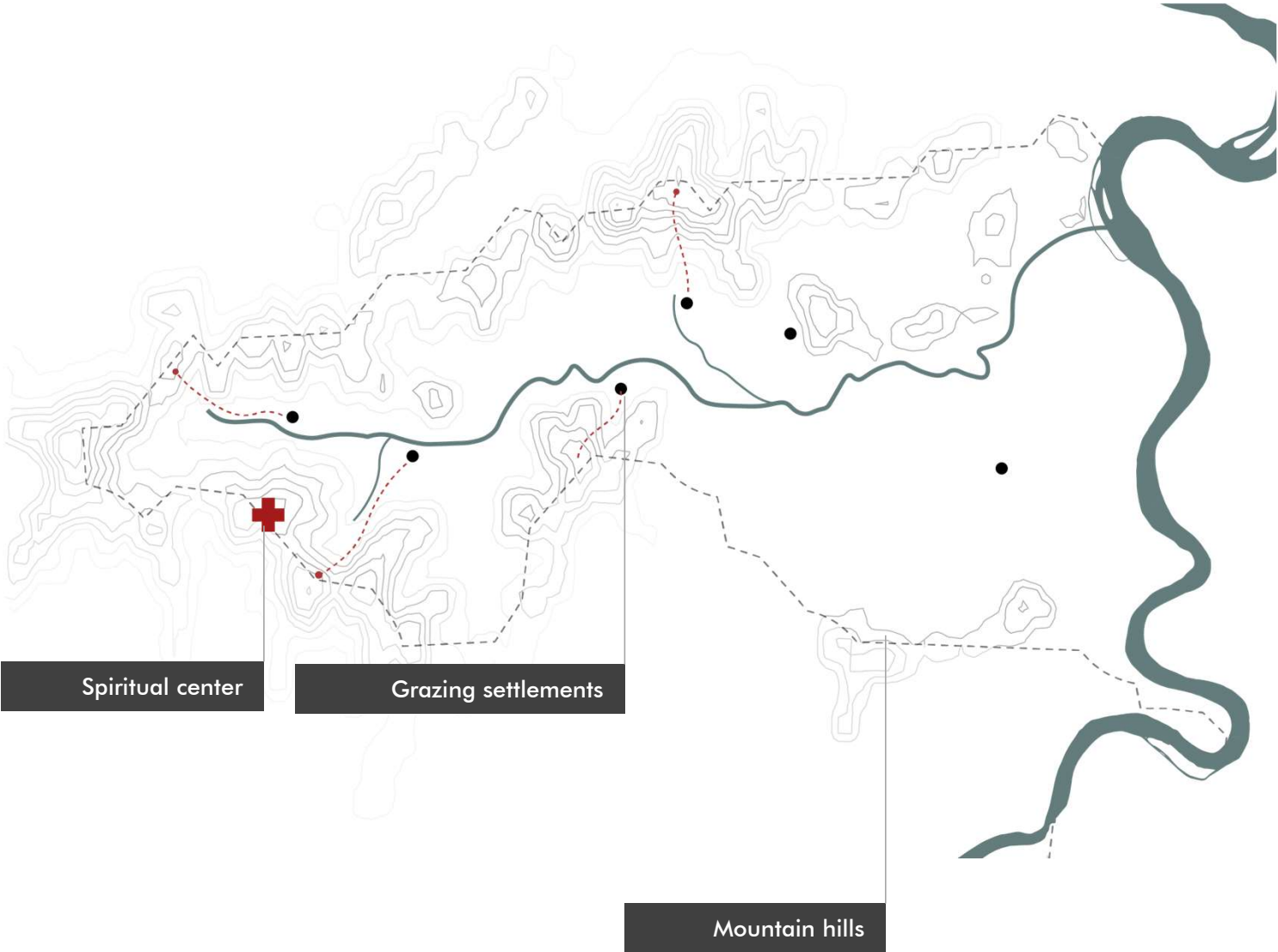


REGAIN OWNERSHIP/

INDEGENOUS ECO-UNIT

1. Establish watershed-based unit

Align with natural ecological boundaries

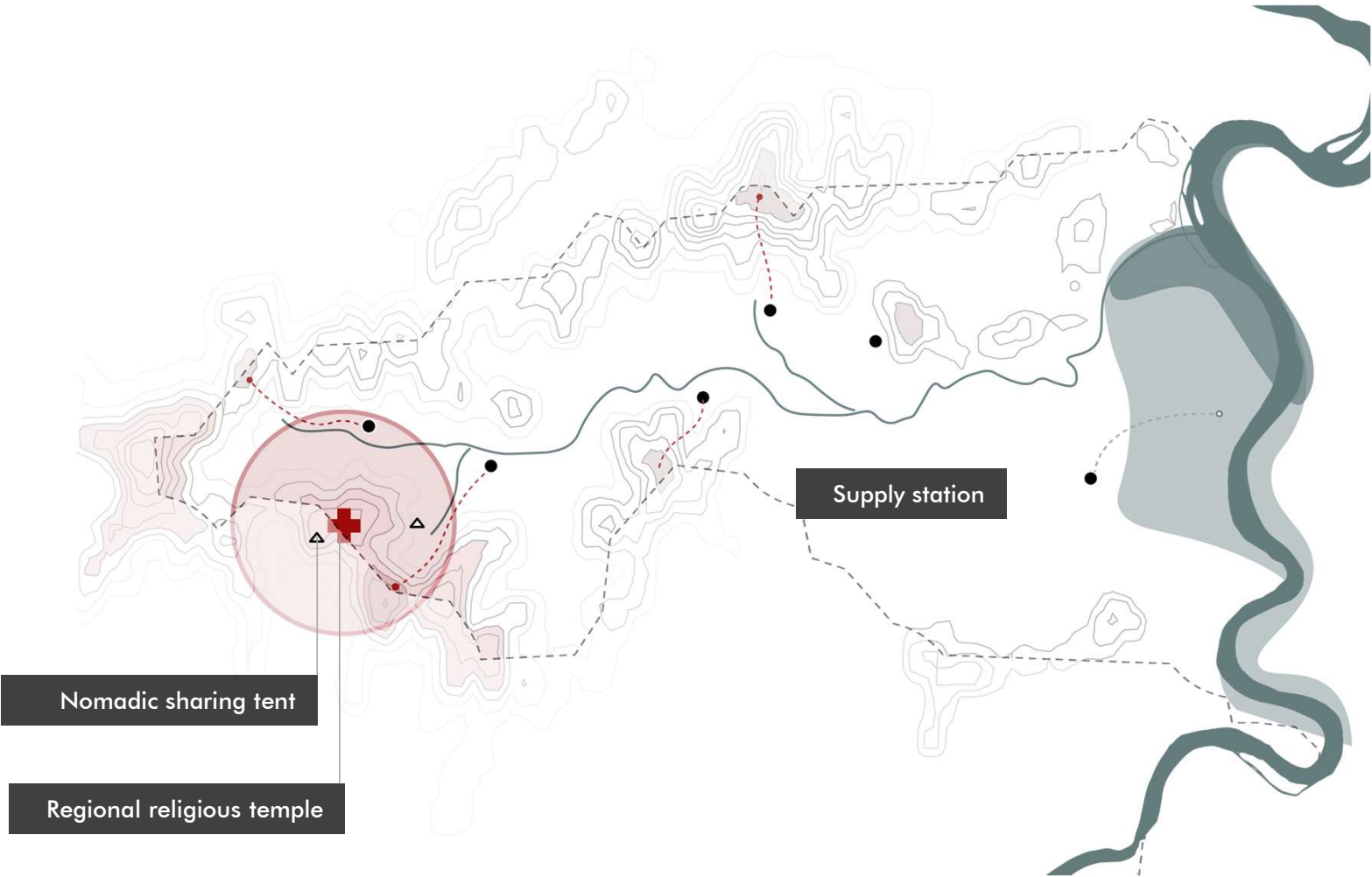


REGAIN OWNERSHIP/

INDEGENOUS ECO-UNIT

2. Embed indigenous oriented programs

Programs × watersheds



REGAIN OWNERSHIP/

INDEGENOUS ECO-UNIT

3. Rainwater storage & purification system

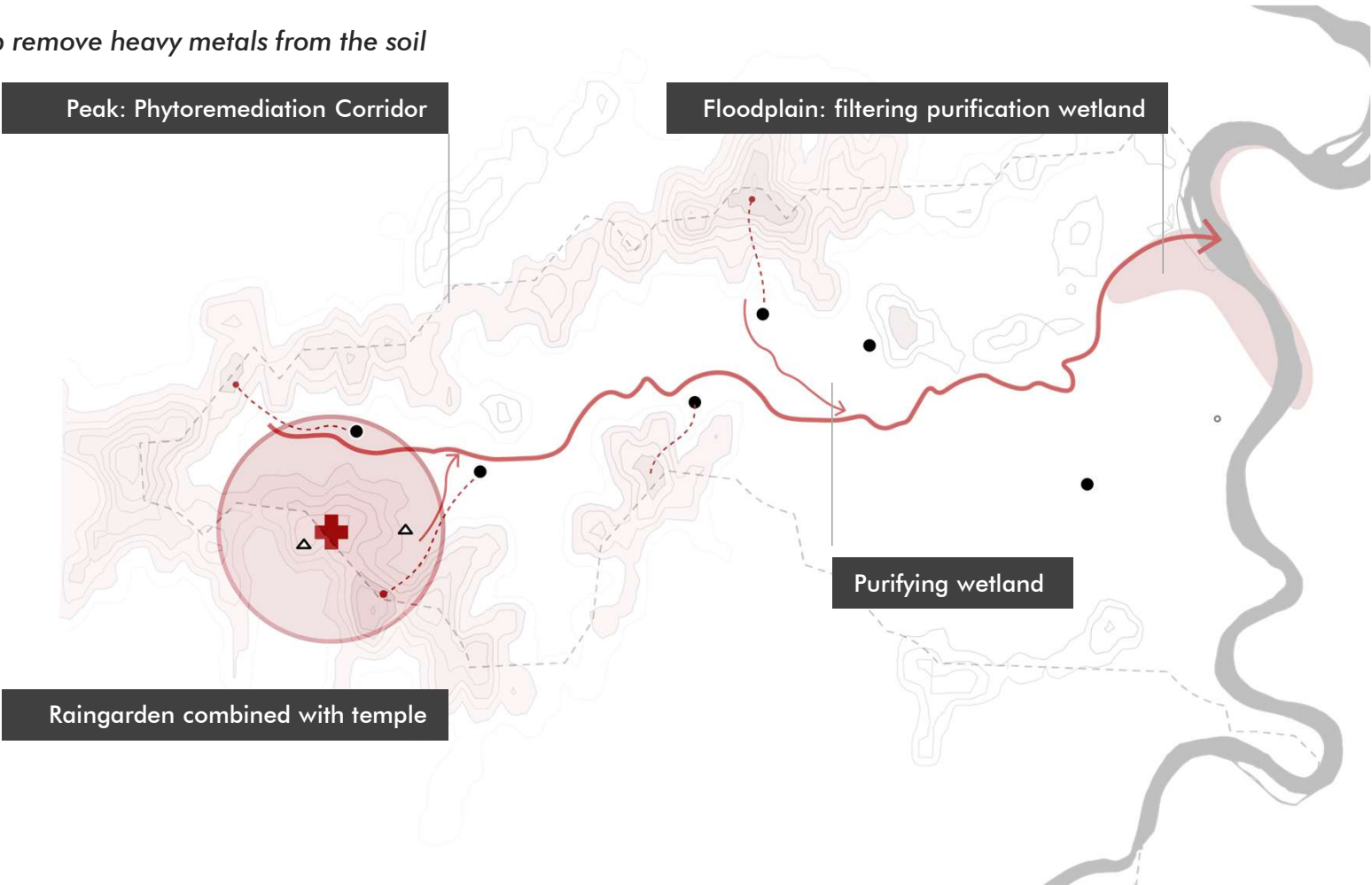
Purification of Rainfall in watershed:

Peak: Phytoremediation->

Valley ->

Floodplain: artificial flood plain work as filtering purification wetland

Grow in alpine regions and help remove heavy metals from the soil



REGAIN OWNERSHIP/

INDEGENOUS ECO-UNIT

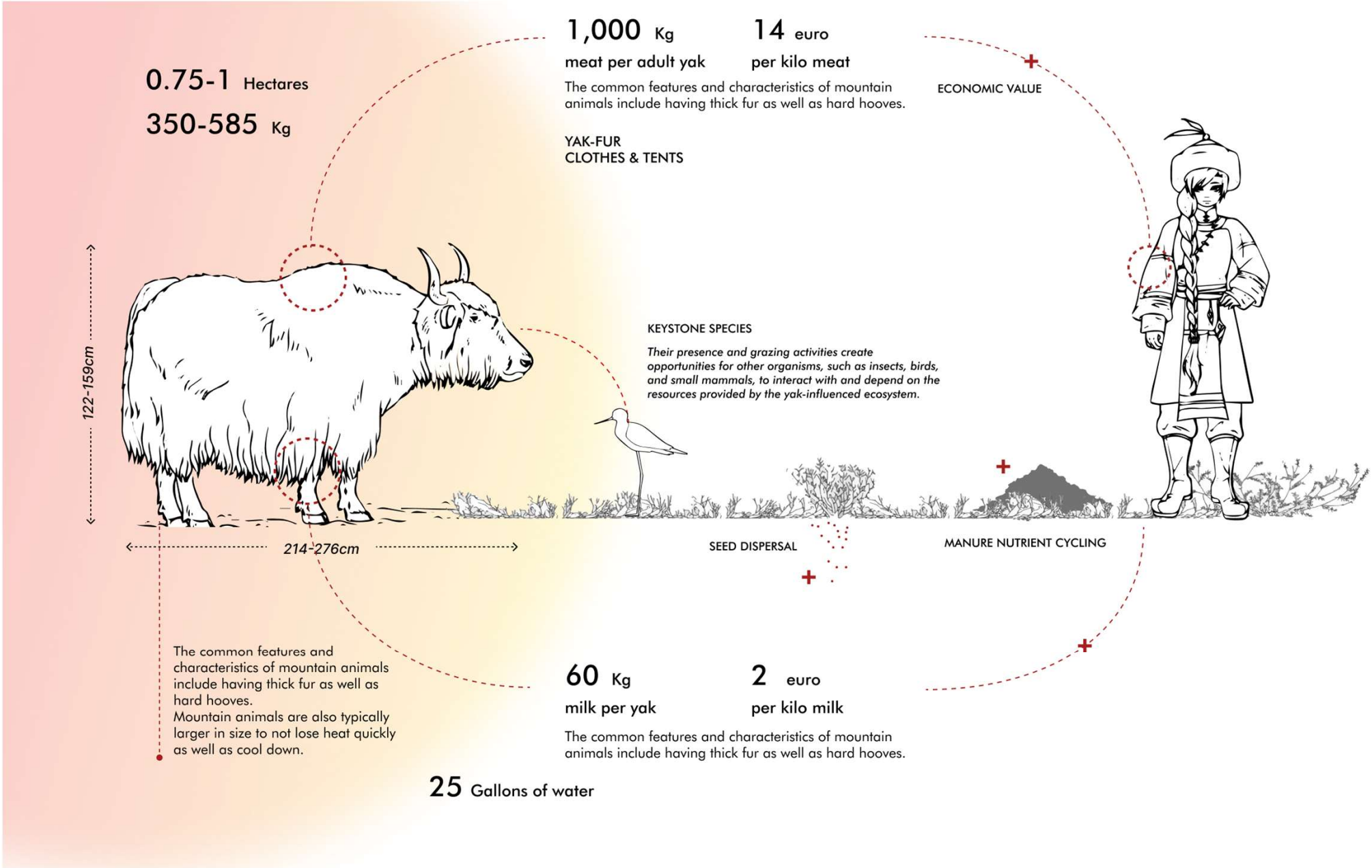
Watershed-based planning takes into account
the interconnectedness of ecosystems and recognizes the importance of maintaining
these natural systems

Design for who to care?

Grazing as landscape tool
Valuing indigenous actions



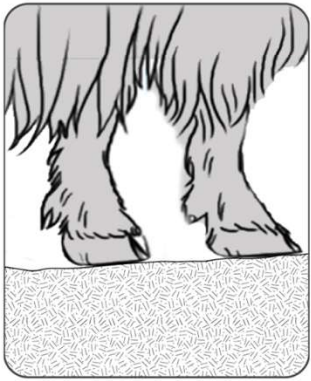
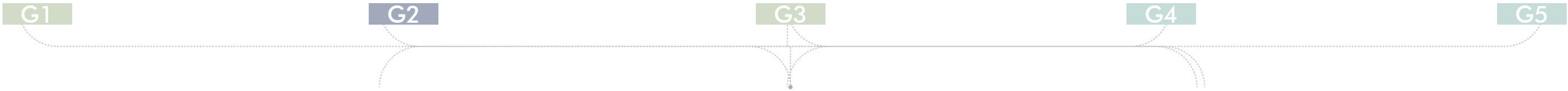
CARE FOR LAND/
GRAZING AS TERRAFORMING ACTIONS



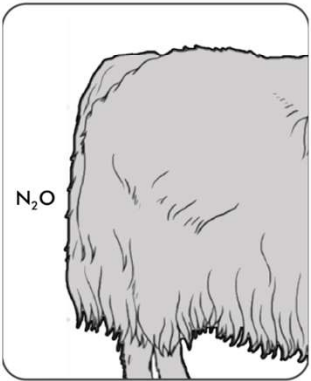
CARE FOR LAND/
GRAZING AS TERRAFORMING ACTIONS



Permafrost Anti-thawing grazing Integrating Crop-livestock Production Maintaining grassland diversity Lowering flooding risk Integrating Wetland vegetation-livestock restoration



Movement & Compression



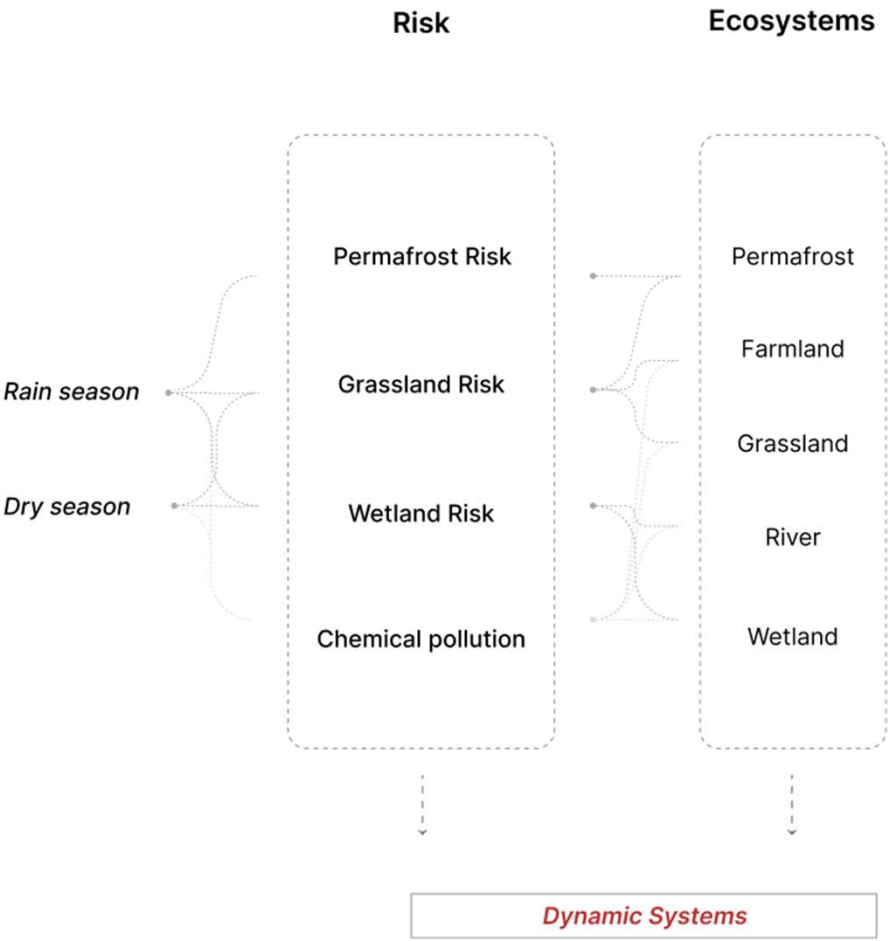
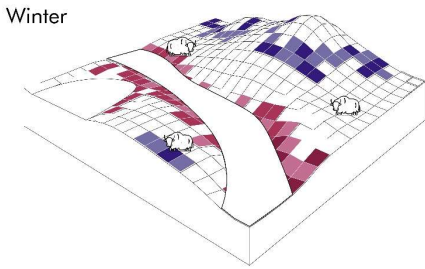
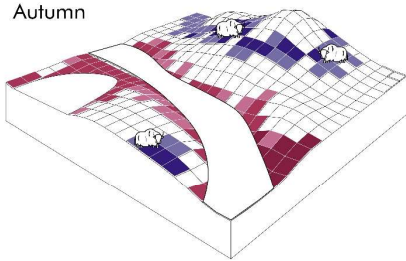
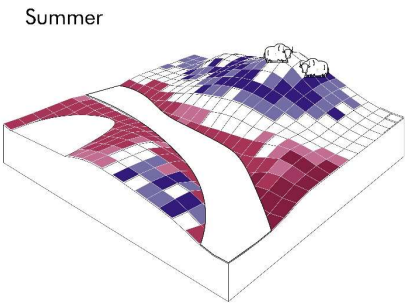
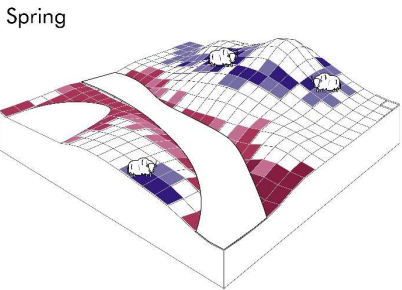
Fertilize vegetation/crops



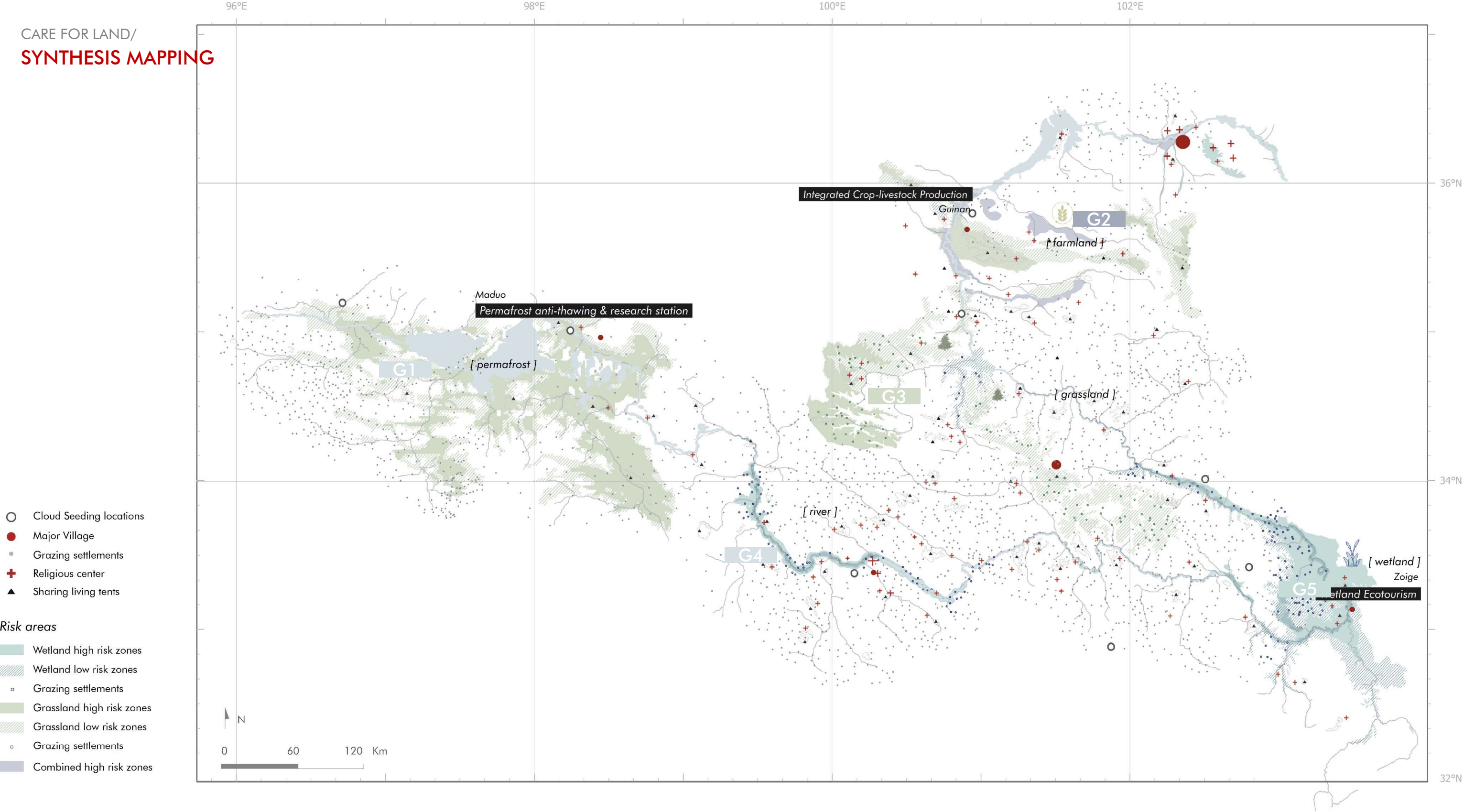
Grazing ability

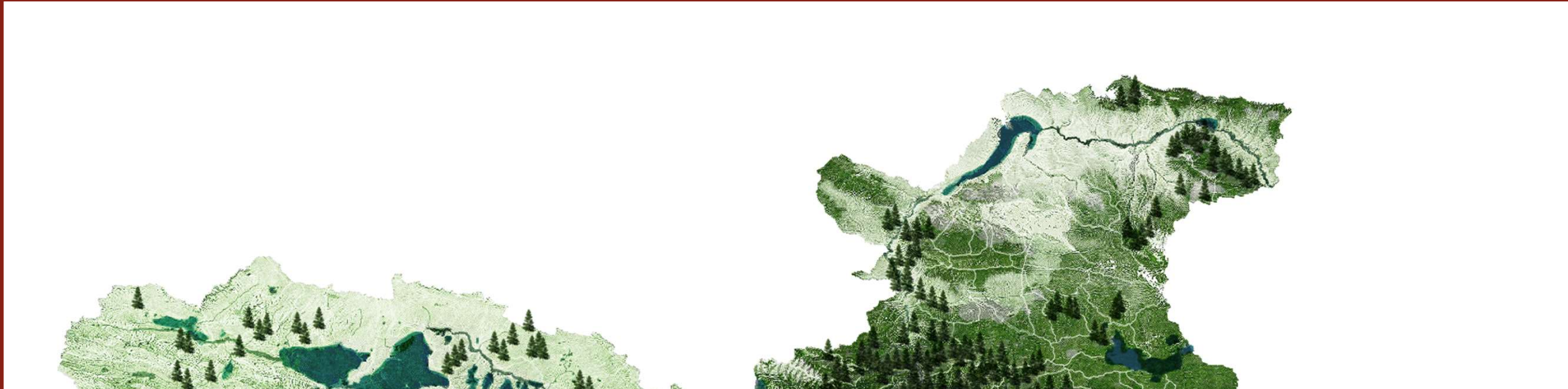
Yak ecology

CARE FOR LAND/
HOW TO APPLY

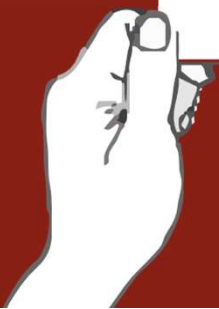
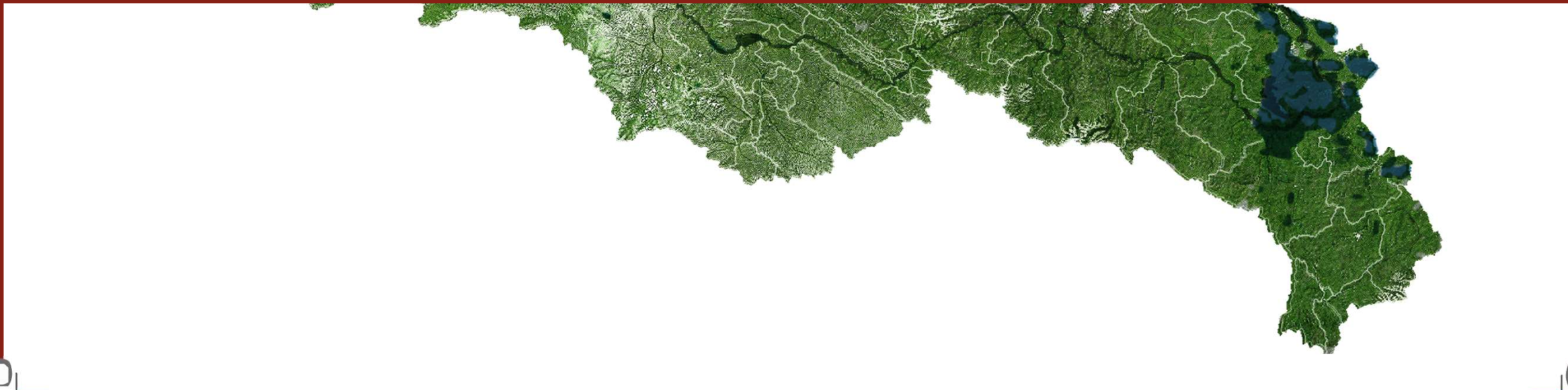


CARE FOR LAND/
SYNTHESIS MAPPING





NEW SANJIANGYUAN NATIONAL PARK



風原



Welcome to the Sanjiangyuan Three Rivers origin National Park!

This meticulously designed national park is a manifestation to our commitment to conservation, sustainable practices, and the celebration of indigenous wisdom.

Embark on an unforgettable journey through pristine landscapes, lush ecosystems, and cultural heritage, as you witness the seamless integration of nature's wonders and human stewardship.

Experience the transformation power of nature and join us in our mission to preserve, protect, and inspire for generations to come. Welcome to Sanjiangyuan Three Rivers origin National Park, where beauty meets purpose.

The origin

三江源

曲什安



若尔盖



玛雅

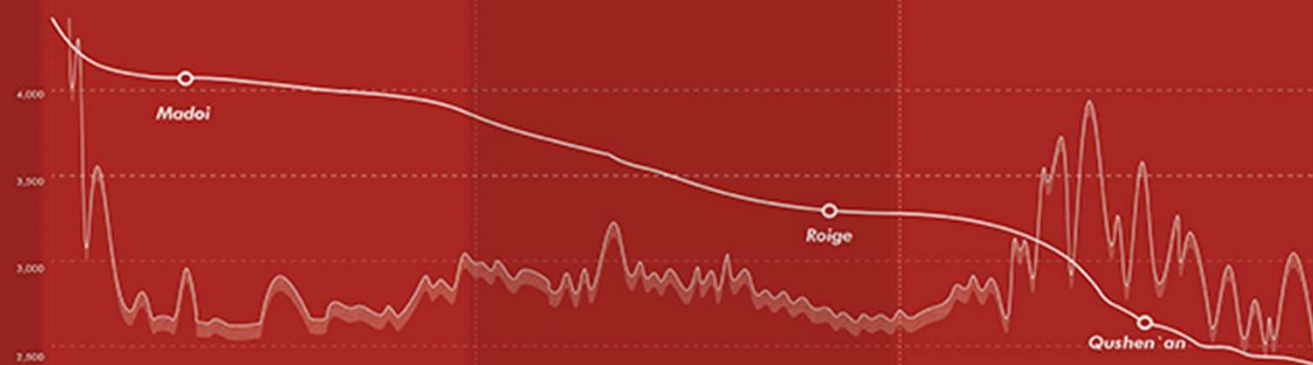


RIVER

三



Mountains hold an indispensable role in the lives of the Tibetan people, with reverence for these majestic peaks deeply ingrained in their traditions. As Buddhism spread across the Tibetan region, the fascination with snow-capped mountains became intertwined with the local culture, blending seamlessly with other cultural elements. "Transcending Mountains" refers to a prominent religious practice in Tibetan areas, drawing devout believers from near and far, particularly during the Year of the Horse in the Tibetan calendar. This sacred pilgrimage embodies the spiritual devotion and cultural heritage of the Tibetan people.



Yellow River Birthplace

Madoi, where the Yellow River is born, the first county town in the upper reaches of the Yellow River, is adorned with a topography of 5,849 lakes, earning its esteemed title as the "County of a Thousand Lakes." The sky's touch awakens here with a realm of holy mountains at 4,000 meters high that cause sickness for most visitors, but itself stands in ethereal grace.

Place where yaks like

Roige wetlands are situated within the Qinghai-Tibet Plateau, is a pristine and expansive high-altitude wetland ecosystem conservation area. It is recognized as the world's largest and most well-preserved plateau peat bog, representing one of the most pristine and precious ecological regions on Earth.

The Cyan River

Roige wetlands are situated within the Qinghai-Tibet Plateau, is a pristine and expansive high-altitude wetland ecosystem conservation area. It is recognized as the world's largest and most well-preserved plateau peat bog, representing one of the most pristine and precious ecological regions on Earth.

原
GRASSLAND







Roige Wetland Ecosystem

SITE 1/ ZOIGE WETLAND ECOSYSTEM

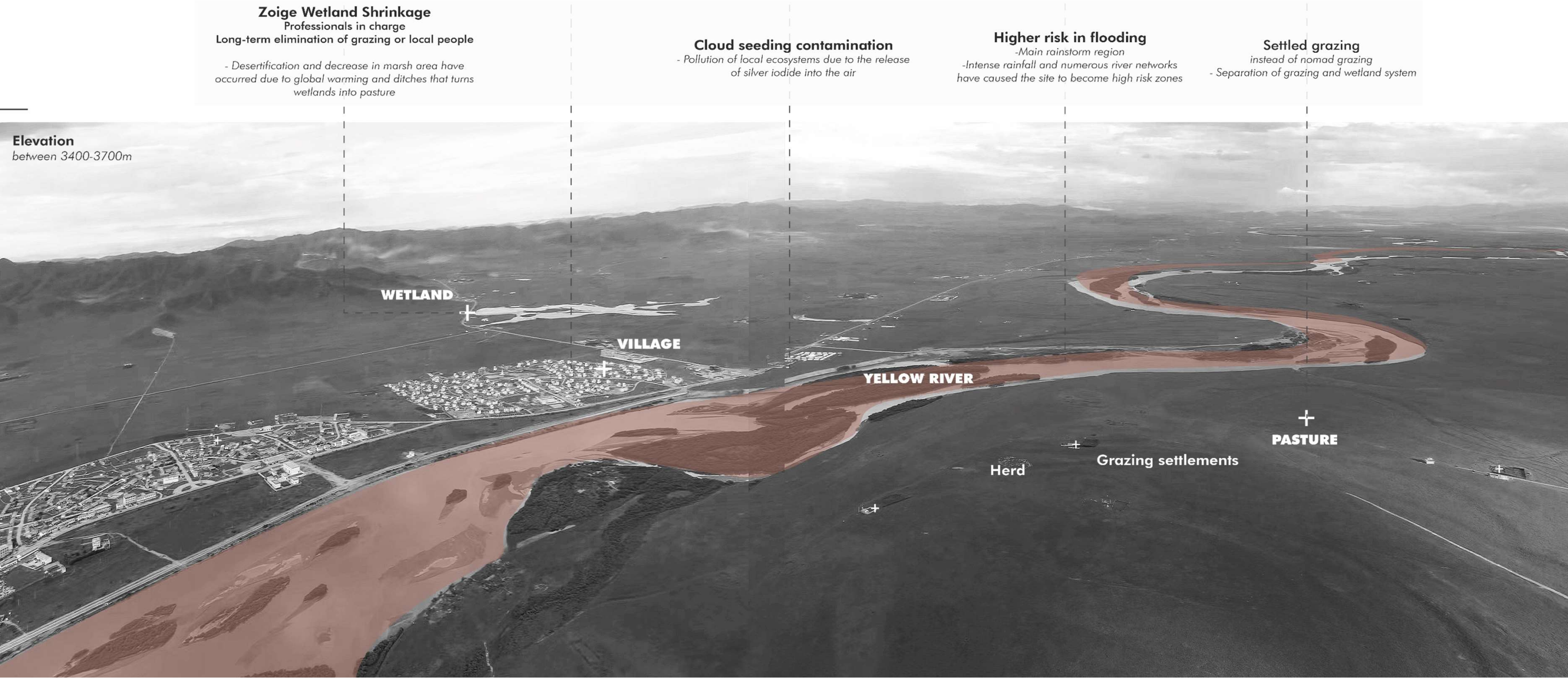


SITE 1/ ZOIGE WETLAND ECOSYSTEM



SITE I/ ZOIGE WETLAND ECOSYSTEM

CURRENT SITUATION



SITE 1/ ZOIGE WETLAND ECOSYSTEM
PHASED PLANNING



SITE I/ ZOIGE WETLAND ECOSYSTEM
MASTERPLAN



FILTER WETLAND

PHYTO-PURIFICATION

FILTERING FLOODPLAIN

GRAZING DITCHES

TENTS

PARK INFRASTRUCTURE

ZOIGE
WETLAND RECOVERY ZONE



SITE 1/ ZOIGE WETLAND ECOSYSTEM

BIRD VIEW



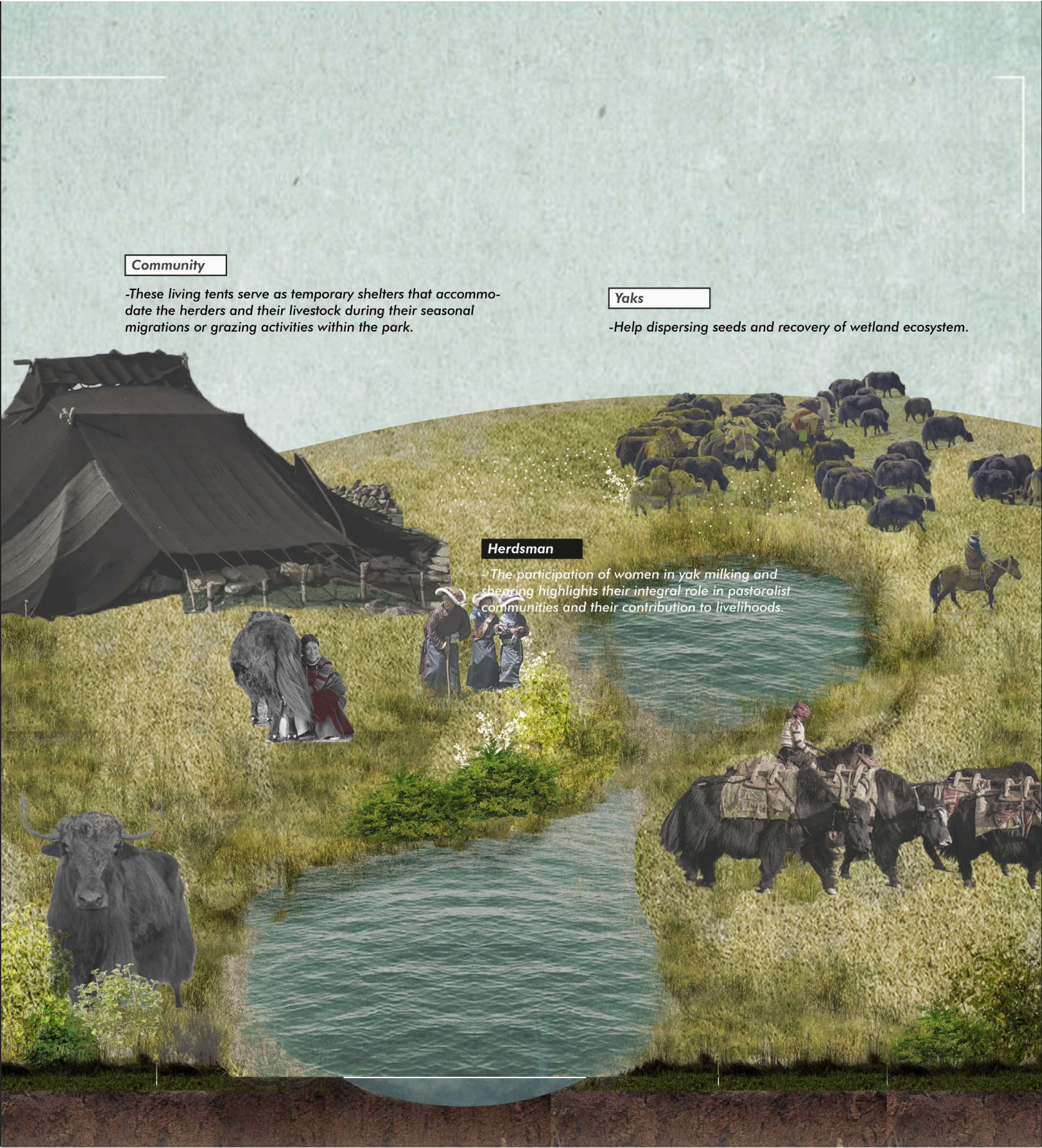
SITE 1/ ZOIGE WETLAND ECOSYSTEM

BIRD VIEW



SITE I/ ZOIGE WETLAND ECOSYSTEM
CURRENT-2020





Community

-These living tents serve as temporary shelters that accommodate the herders and their livestock during their seasonal migrations or grazing activities within the park.

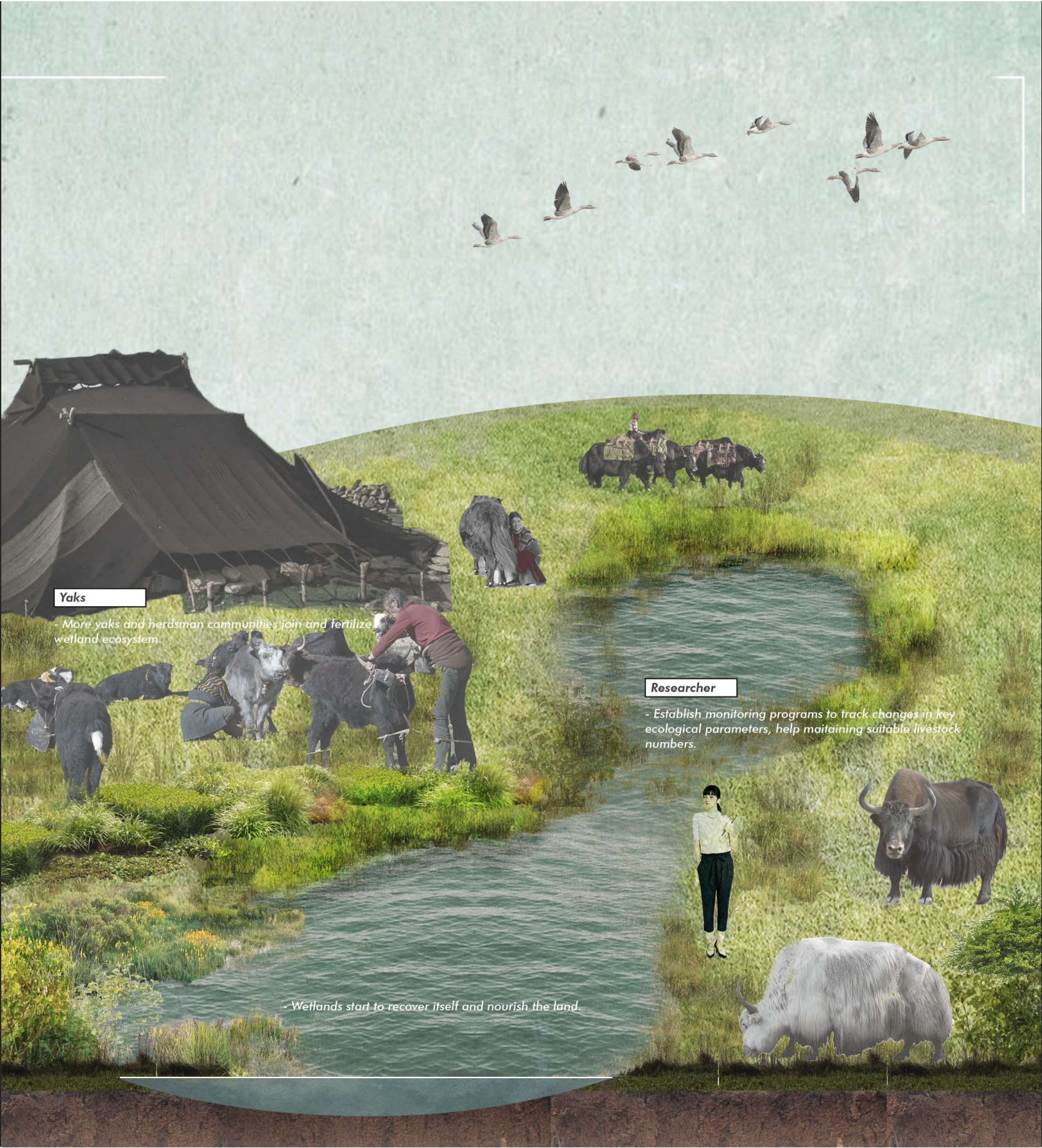
Yaks

-Help dispersing seeds and recovery of wetland ecosystem.

Herdsman

-The participation of women in yak milking and shearing highlights their integral role in pastoralist communities and their contribution to livelihoods.

SITE I/ ZOIGE WETLAND ECOSYSTEM
RECOVERY 2030-2035

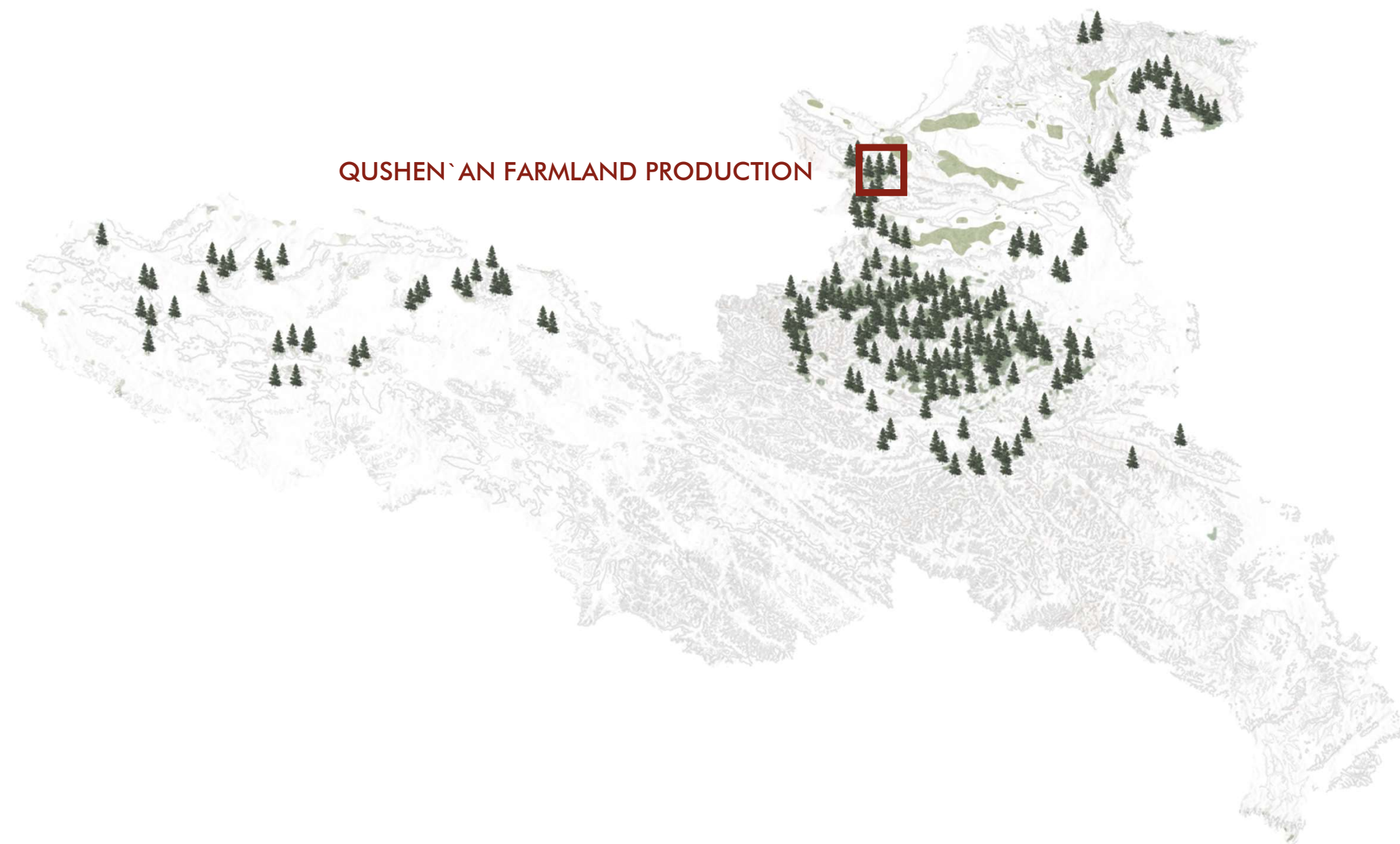


SITE I/ ZOIGE WETLAND ECOSYSTEM
RECIPROCITY 2035-2040



SITE I/ ZOIGE WETLAND ECOSYSTEM





QUSHEN'AN FARMLAND PRODUCTION

SITE II/ FARMLAND PRODUCTION ECOSYSTEM

Dokangema monastery at Yellow River

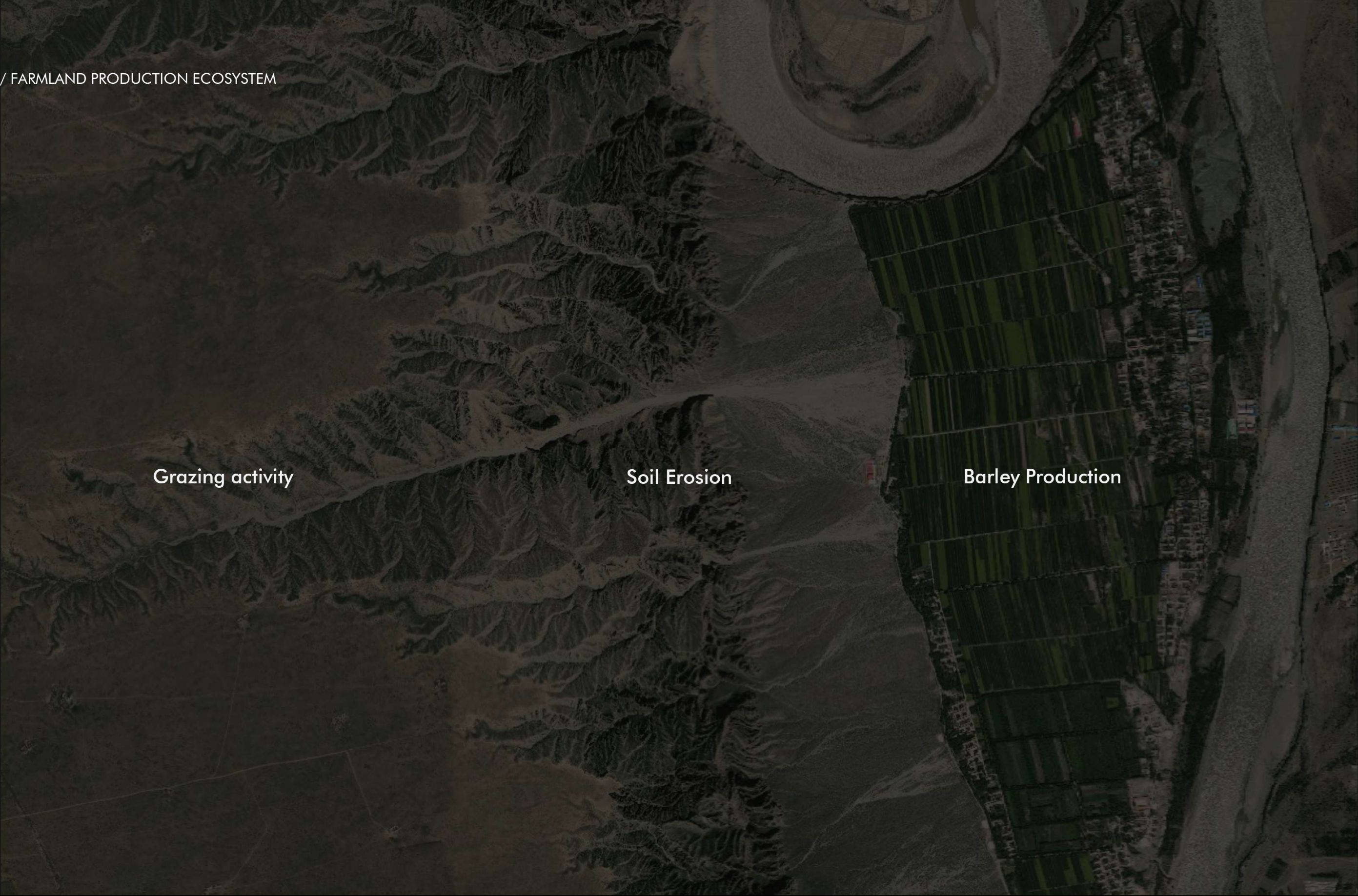


SITE II/ FARMLAND PRODUCTION ECOSYSTEM

Grazing activity

Soil Erosion

Barley Production

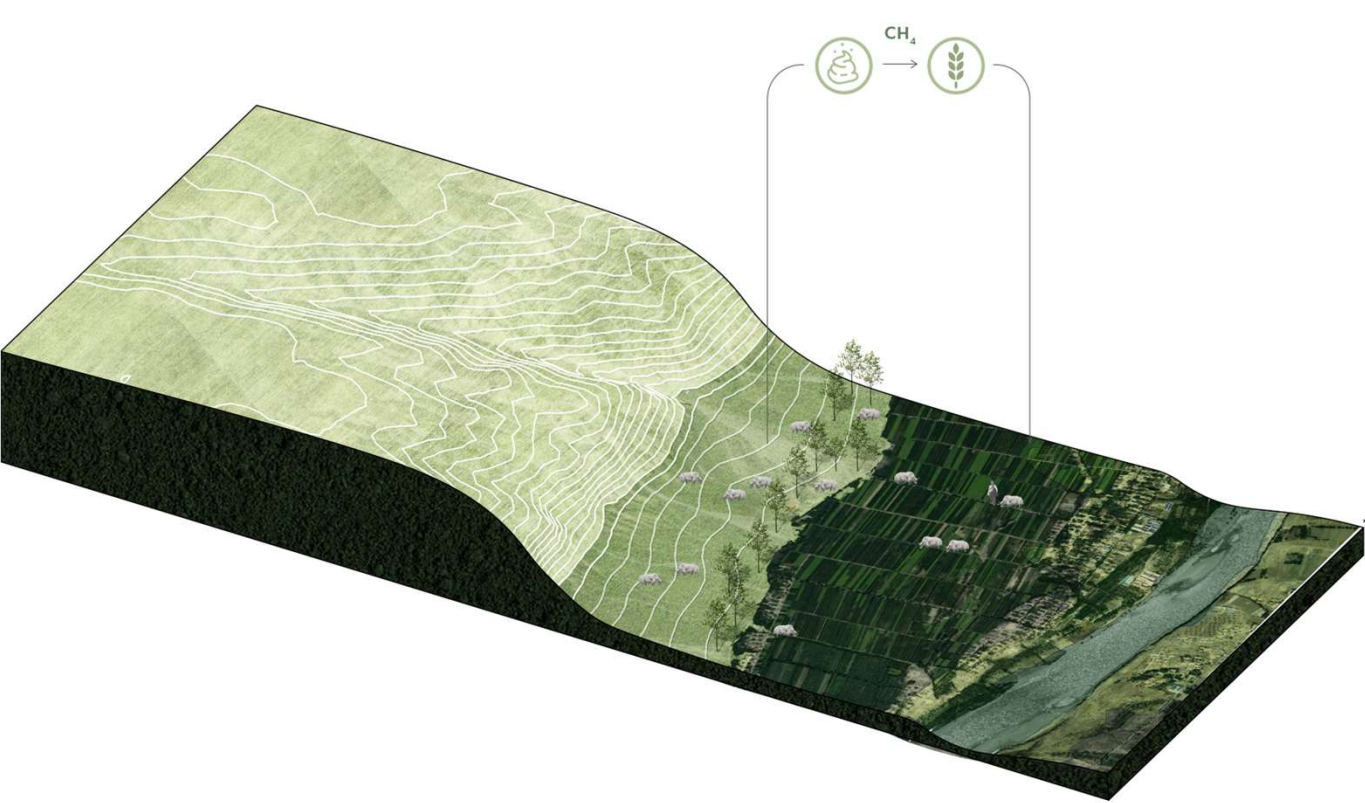


SITE II/ FARMLAND PRODUCTION ECOSYSTEM
INTEGRATING CROP-LIVESTOCK PRODUCTION



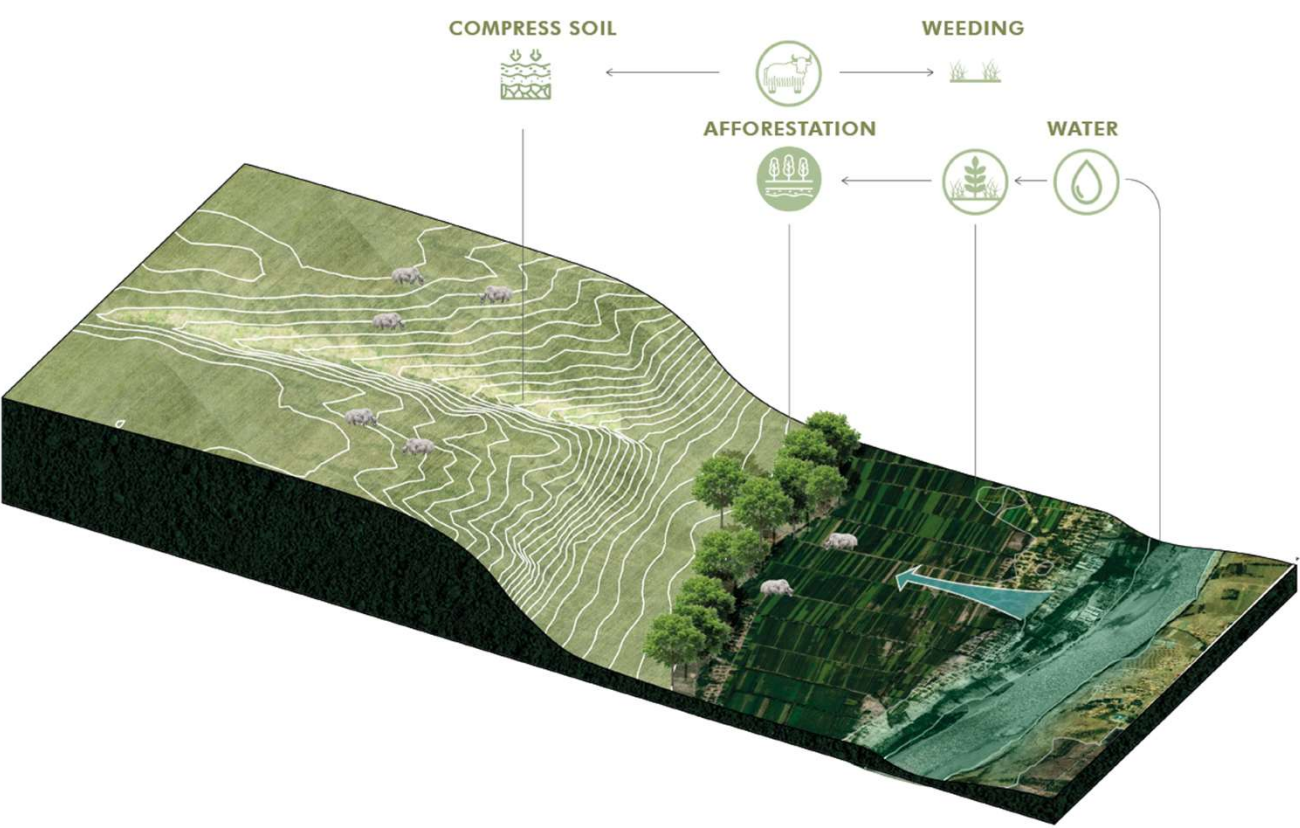
SITE II/ FARMLAND PRODUCTION ECOSYSTEM

SEASONAL CROP-LIVESTOCK PRODUCTION



SPRING

The animal manure will be used to fertilize the plantation of barley as well as afforestation.

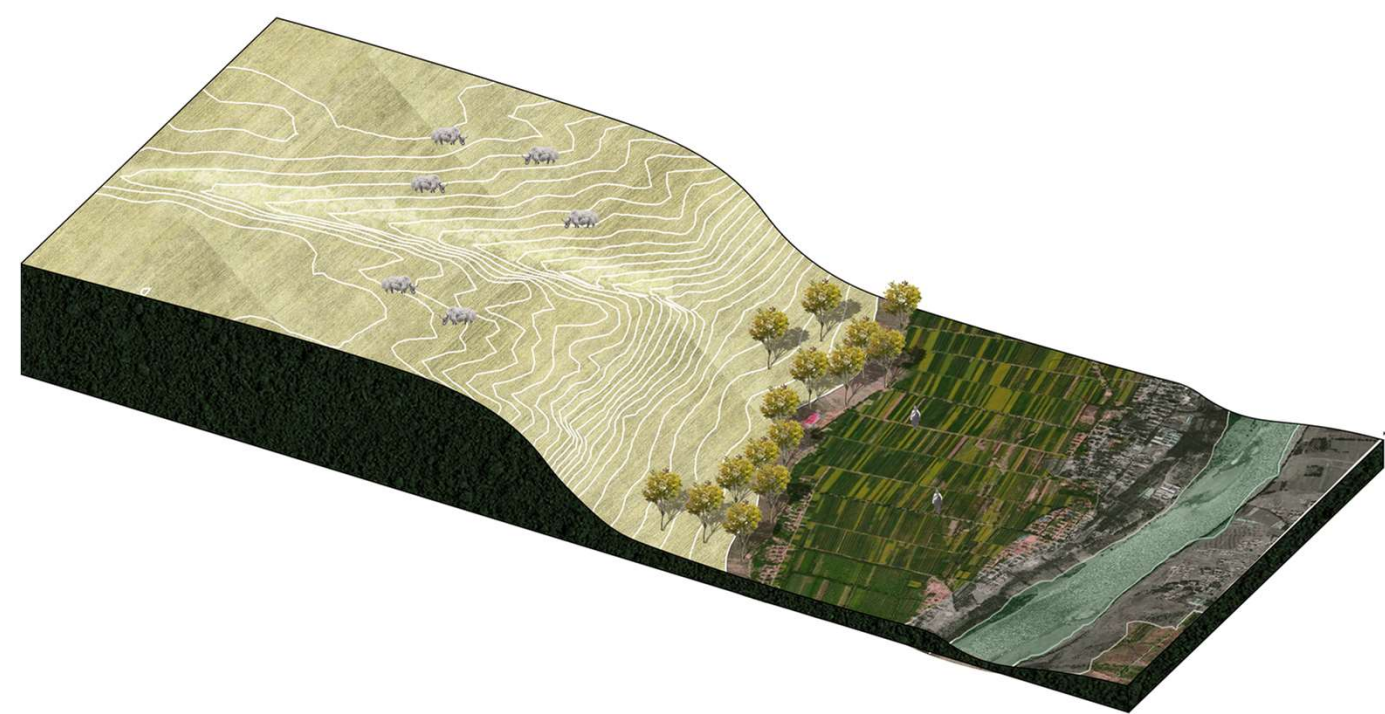


SUMMER

Livestock graze on the barley fields. Grazing helps to control the growth of the barley plants, preventing them from becoming too tall and weeding.

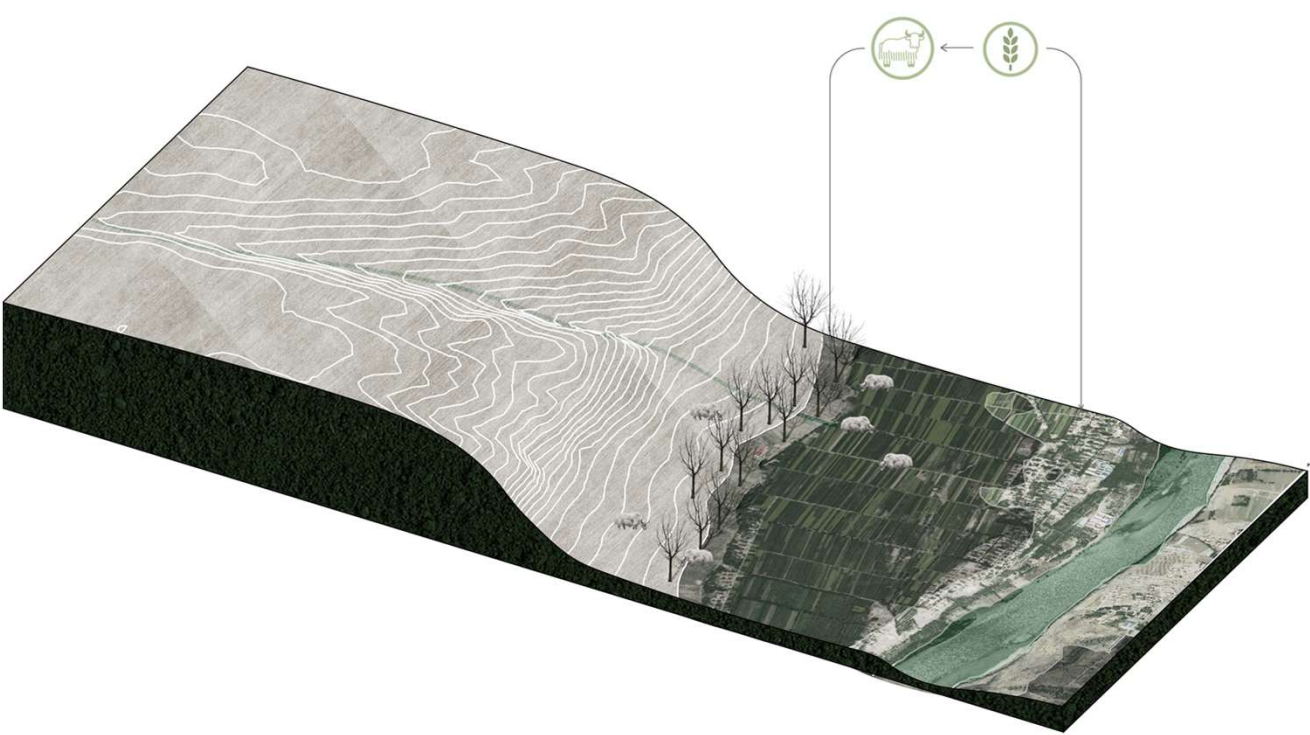
SITE II/ FARMLAND PRODUCTION ECOSYSTEM

SEASONAL CROP-LIVESTOCK PRODUCTION



AUTUMN

Barley crop is ready for harvest. Local community can also gain economic profits from barley.

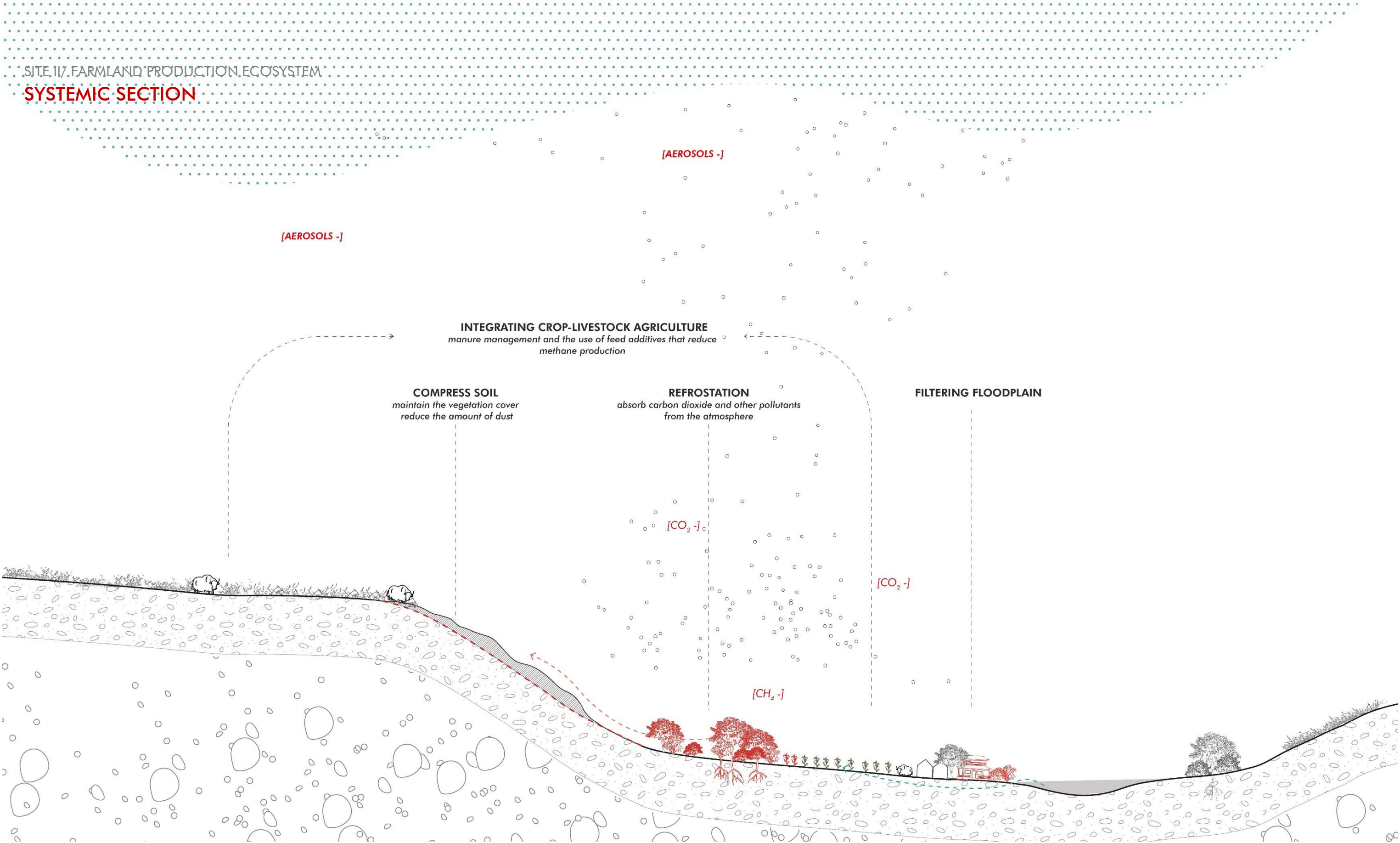


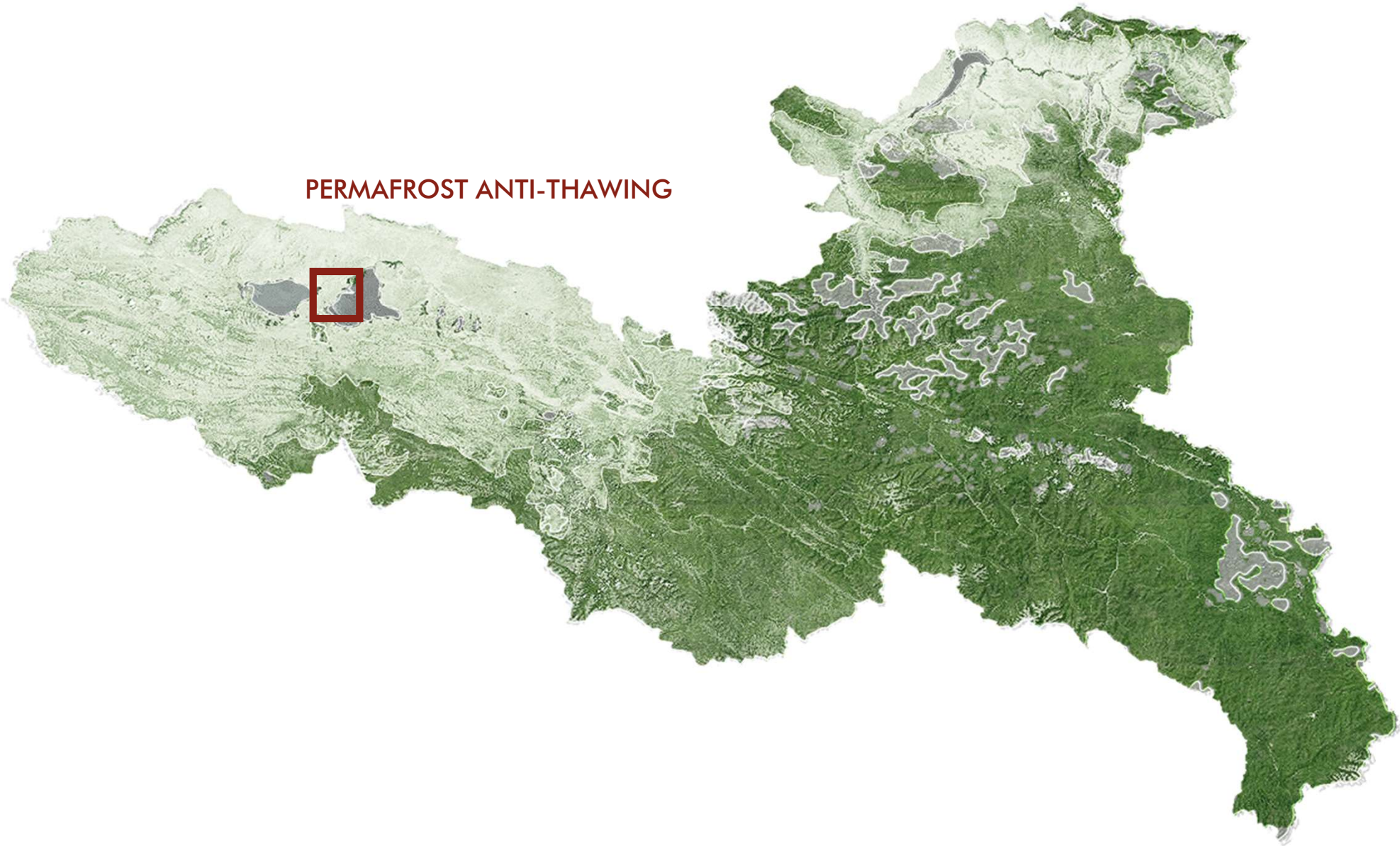
WINTER

The processed barley is then fed to livestock during the winter months (November-February), when forage is scarce and the animals need extra nutrition to survive the cold weather.

SITE 11/ FARMLAND PRODUCTION ECOSYSTEM

SYSTEMIC SECTION





SITE III/ PERMAFROST

Dokangema monastery at Yellow River



SITE III/ PERMAFROST
PERMAFROST ANTI-THAWING

FILTERING POND

BUDDHISM TEMPLE

WEATHER BALLOON

OBESERVATION STATION



SITE III/ PERMAFROST

PERMAFROST ANTI-THAWING SECTION

PLANT DECIDUOUS BROAD-LEAVES TREES

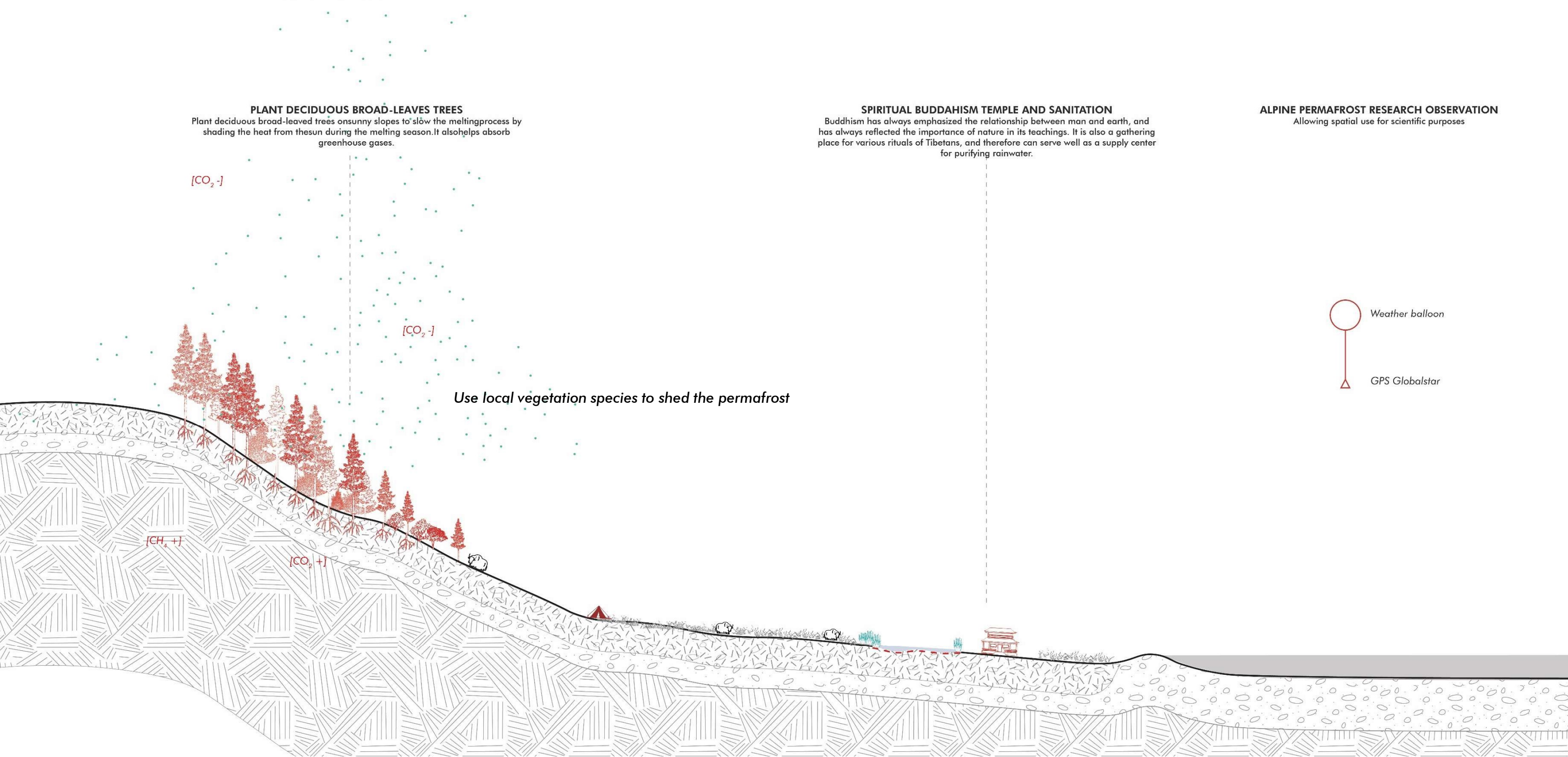
Plant deciduous broad-leaved trees on sunny slopes to slow the melting process by shading the heat from the sun during the melting season. It also helps absorb greenhouse gases.

SPIRITUAL BUDDAHISM TEMPLE AND SANITATION

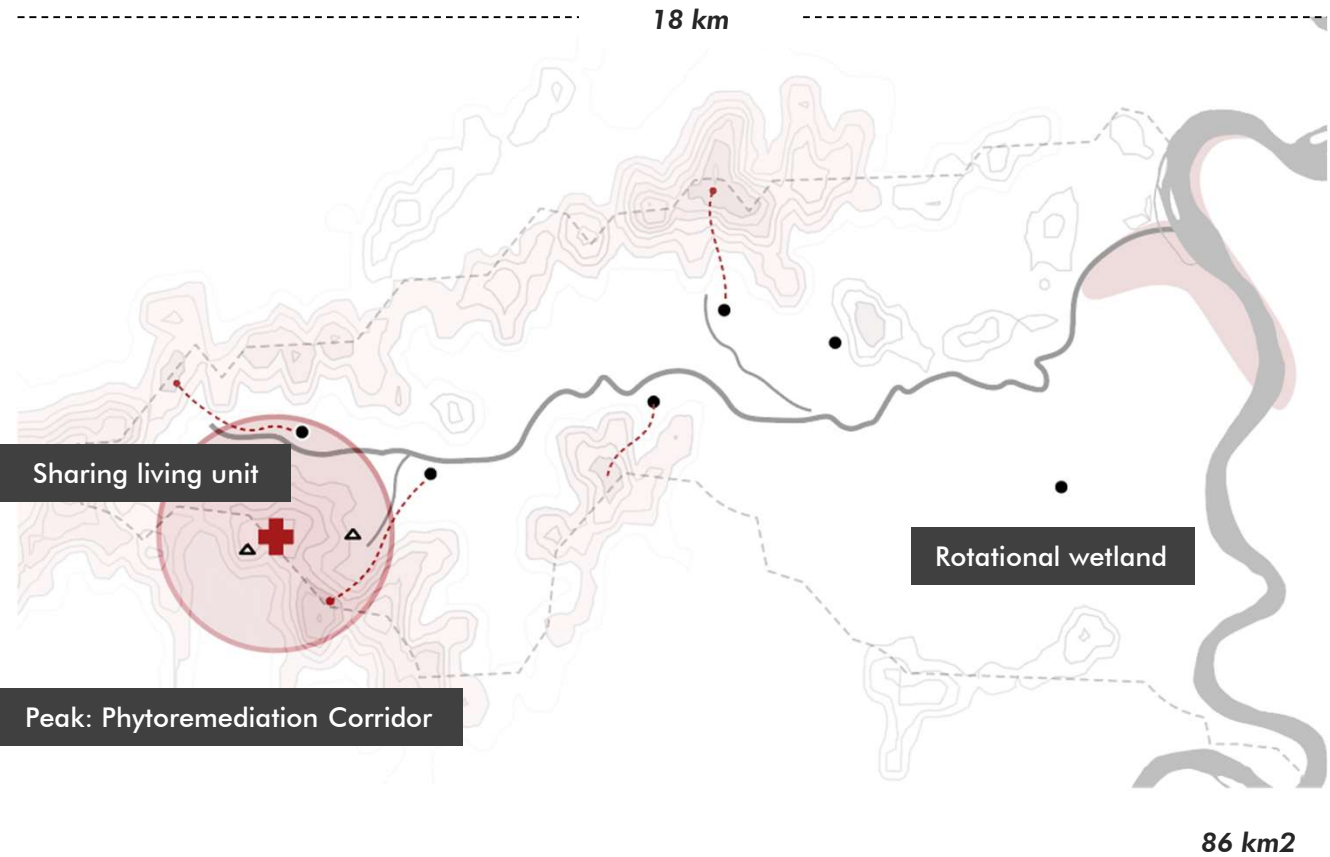
Buddhism has always emphasized the relationship between man and earth, and has always reflected the importance of nature in its teachings. It is also a gathering place for various rituals of Tibetans, and therefore can serve well as a supply center for purifying rainwater.

ALPINE PERMAFROST RESEARCH OBSERVATION

Allowing spatial use for scientific purposes



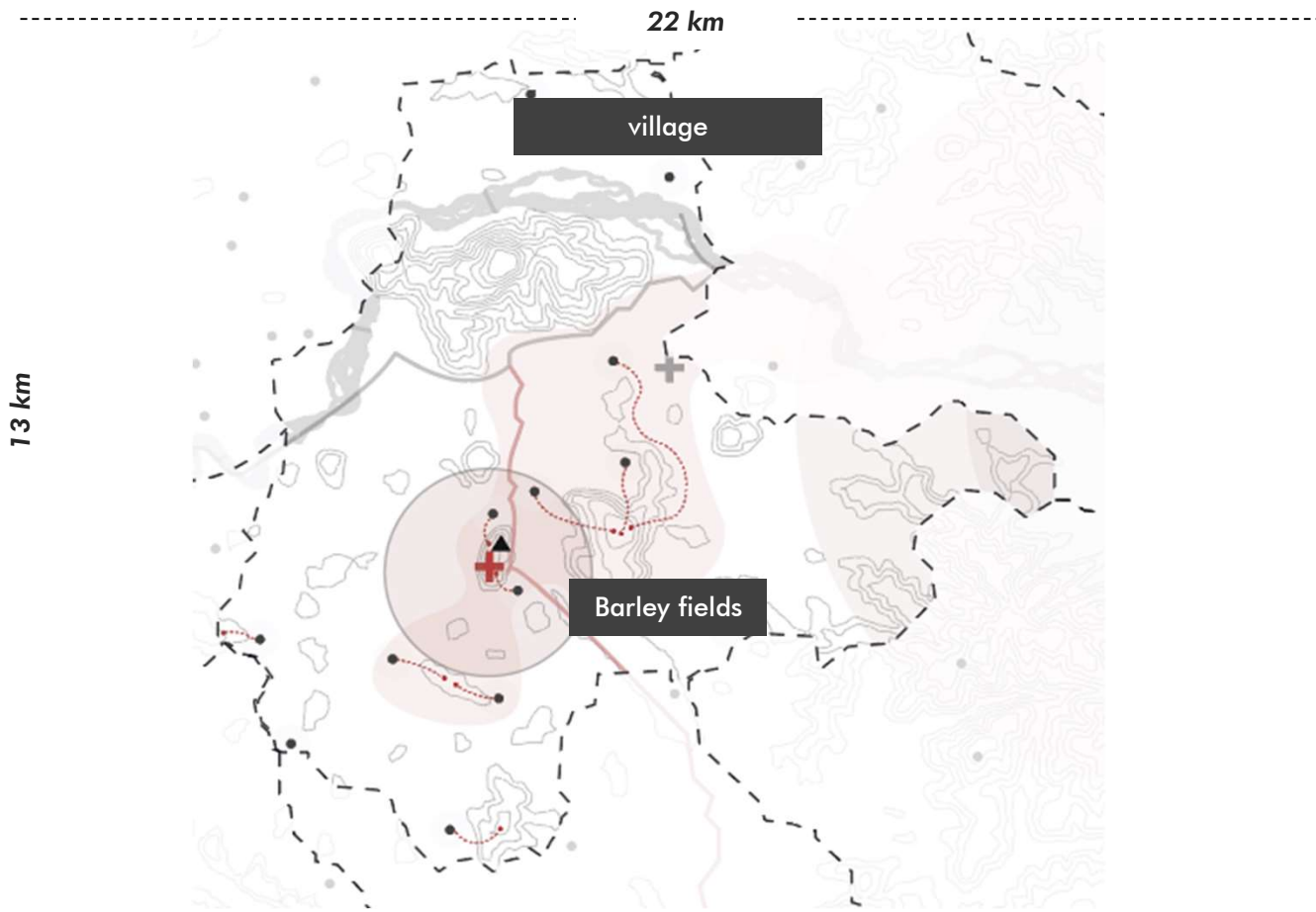
REGAIN OWNERSHIP/
Units



Wetland Unit
Living, religious temple , purification, working

Area	86 km2	
Family	376 mu	
Density	70 Families/ km2	
	10 Yaks and 10 sheep/ family	
Subsidy	6 yuan per mu	
Before	32,850 yuan (4,692 euro)	
After	63,056 yuan (8,407 euro)	✓

REGAIN OWNERSHIP/
Units



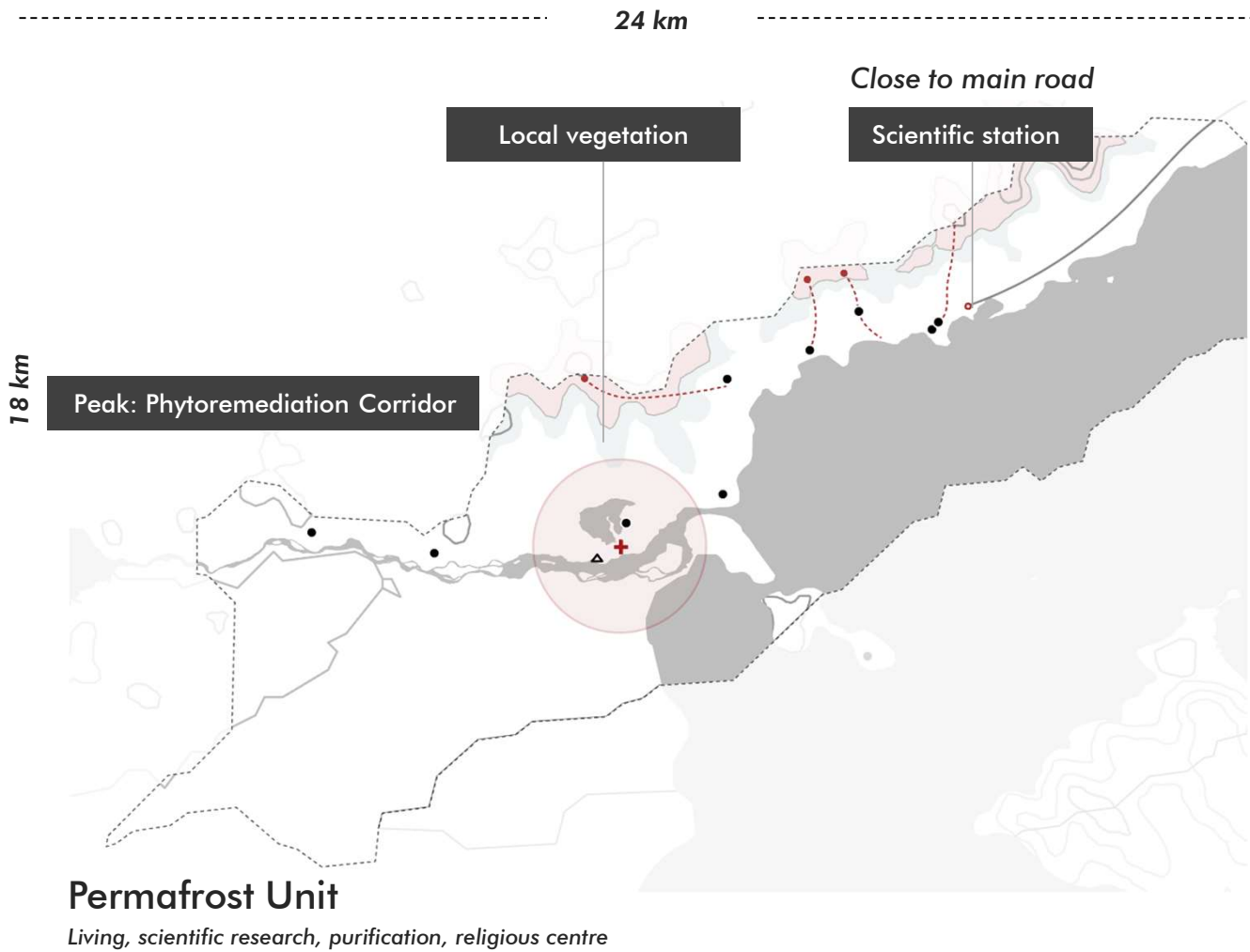
Farmland Unit
Living, economic plants, purification, village, religious centre

Area	148 km2	Barley area 5 km2
Family	506 mu	
Density	45 Families/ km2	
	8 Yaks and 1 sheep/ family	
Subsidy	6 yuan per mu	

Before	21,835 yuan (2,911 euro)
After	36,457 yuan (4,860 euro)

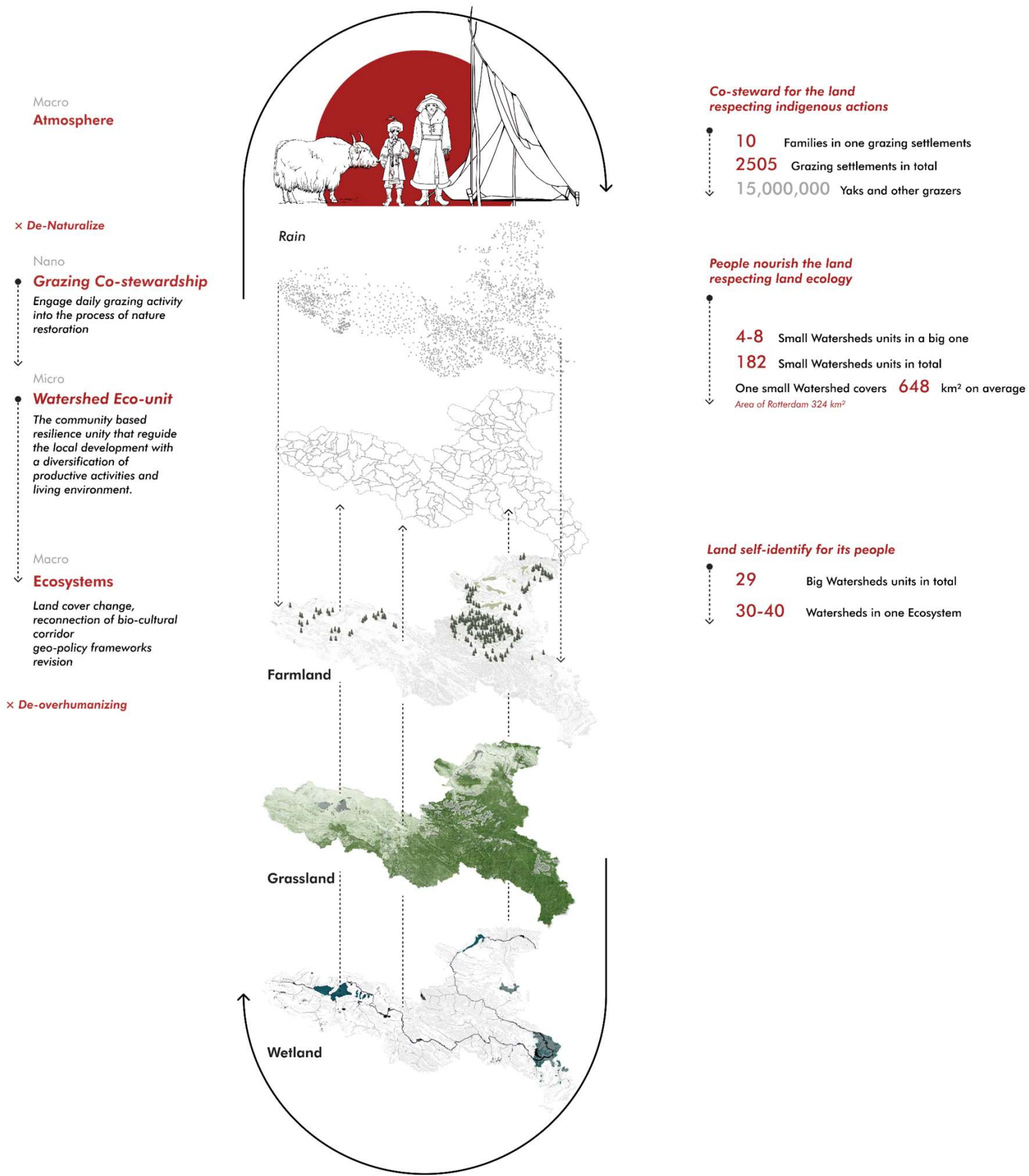
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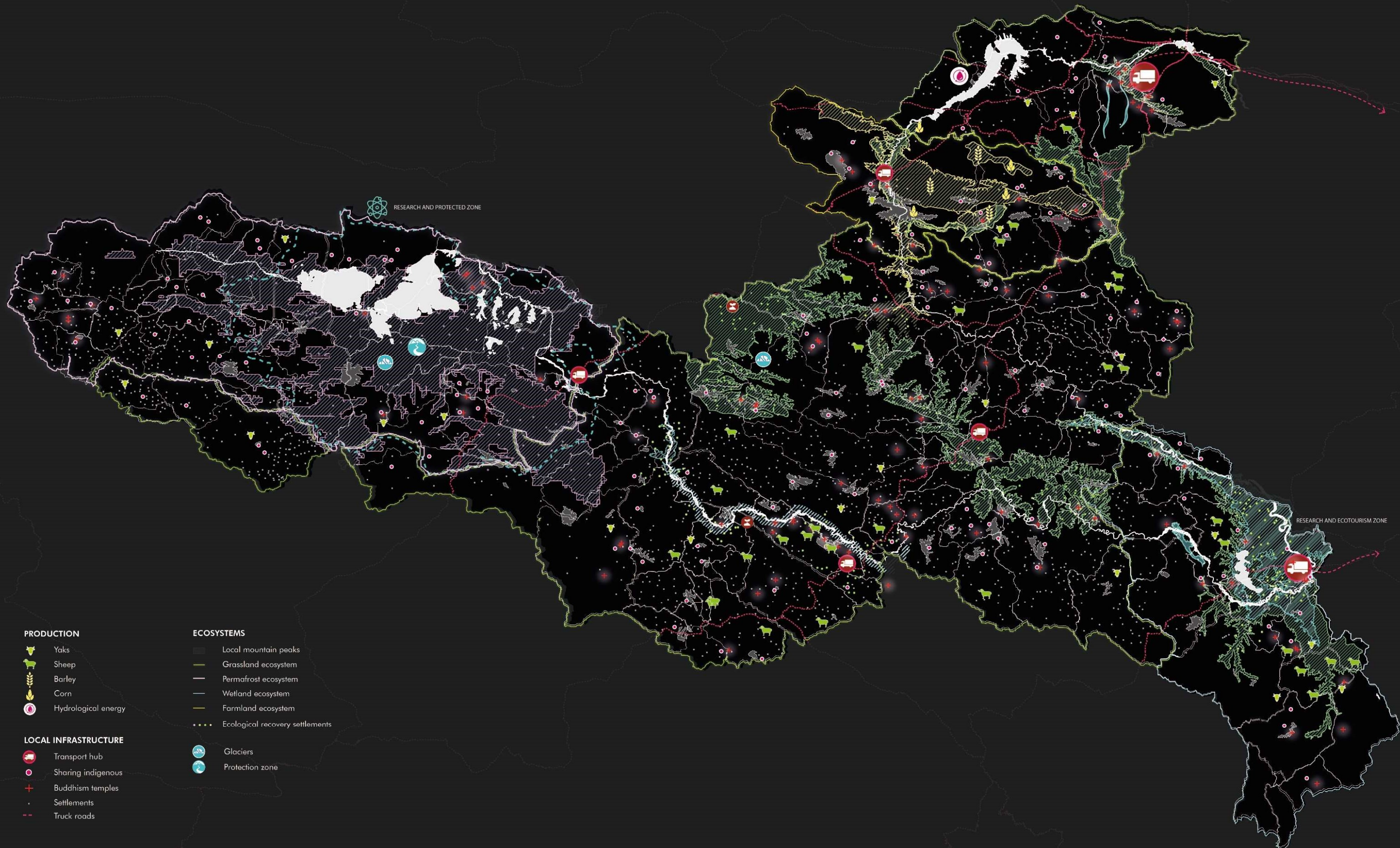
REGAIN OWNERSHIP/
Units

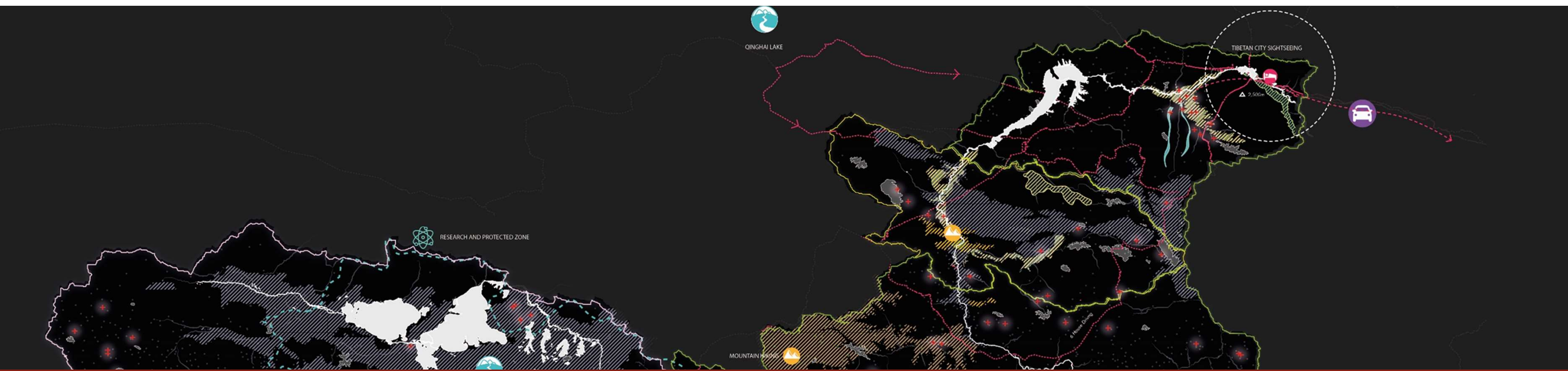


Area **172** km²
Density **7** Families/ km²
7302 families/

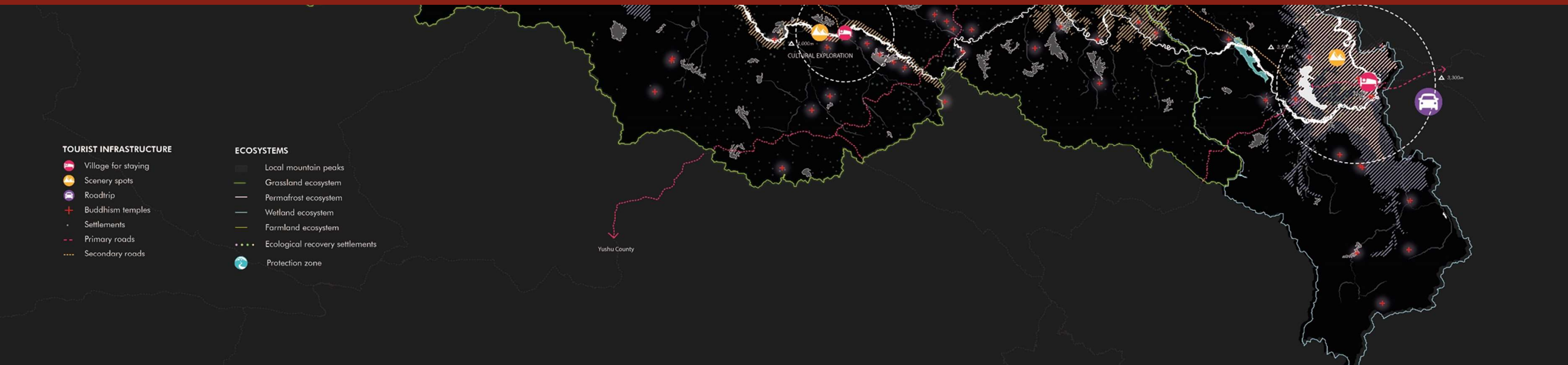
CARE FOR LAND/
Muti-scalar approach







My project explores and witnesses the intimate entanglements of indigenous communities with their ancestral lands, and grapples with the question of how they can harmoniously align with rhythms of national dreams.





Yellowstone, the world`s first national park



Numerous explorers came to climb to the peak. The word "conquer" has been used to celebrate human's power and strength

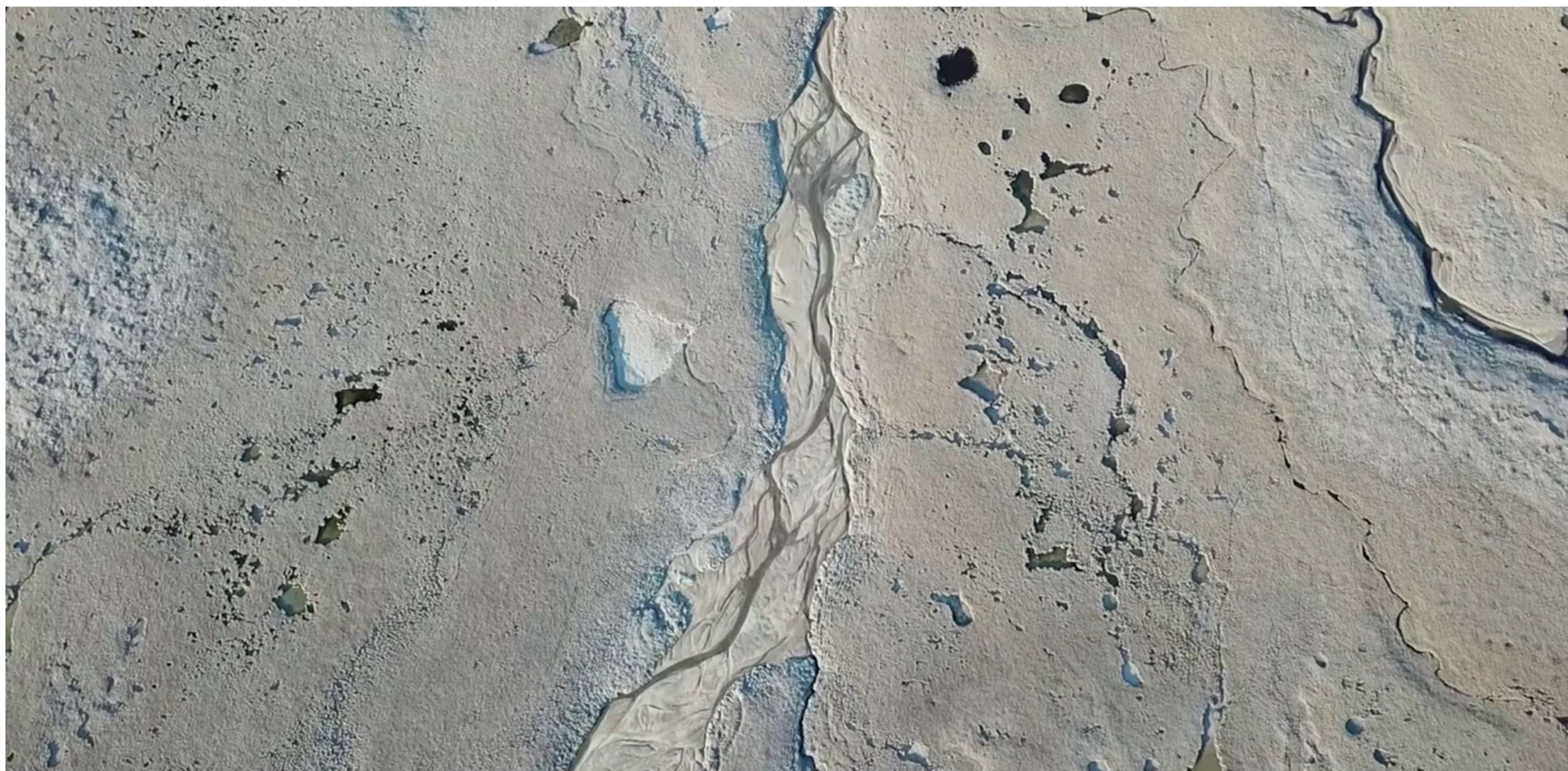


For Tibetans, these majestic mountains embody the gods themselves, adorned with over 6,000 Buddhist temples.



Many landscapes now designated as national parks, perceived as pristine and untouched, have actually been shaped by indigenous peoples over countless generations.

PHOTOGRAPH BY ROBERT GAUTHIER, LOS ANGELES TIMES / GETTY IMAGES



Thanks for listening.
Let`s envision a new park together.