



(in)-between Transience & Permanence

Synchronising infrastructures and material geographies within the vulnerable Himalayan landscape in Uttarakhand, India

transience

(noun)

the state of lasting only for a short time



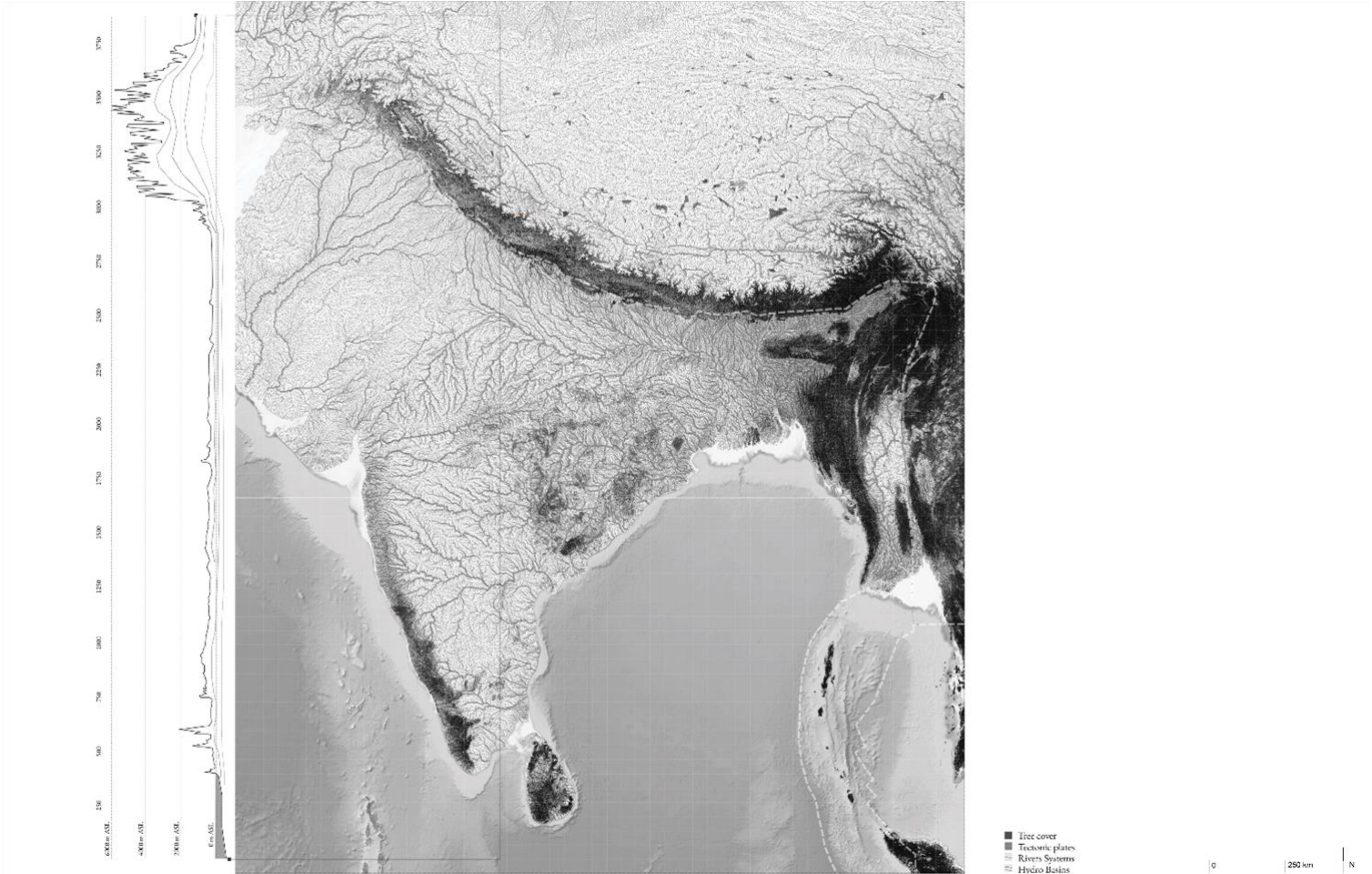
Quintessence (Source: AJ Silistrie)

1. *Introduction*
2. *Research Questions & Spatial*
Analysis
3. *Conceptualisation &*
Methodology
4. *Critique / Positioning*
5. *Regional Vision & Strategy*
6. *Operations*
7. *Design Experiments*
8. *Projections*

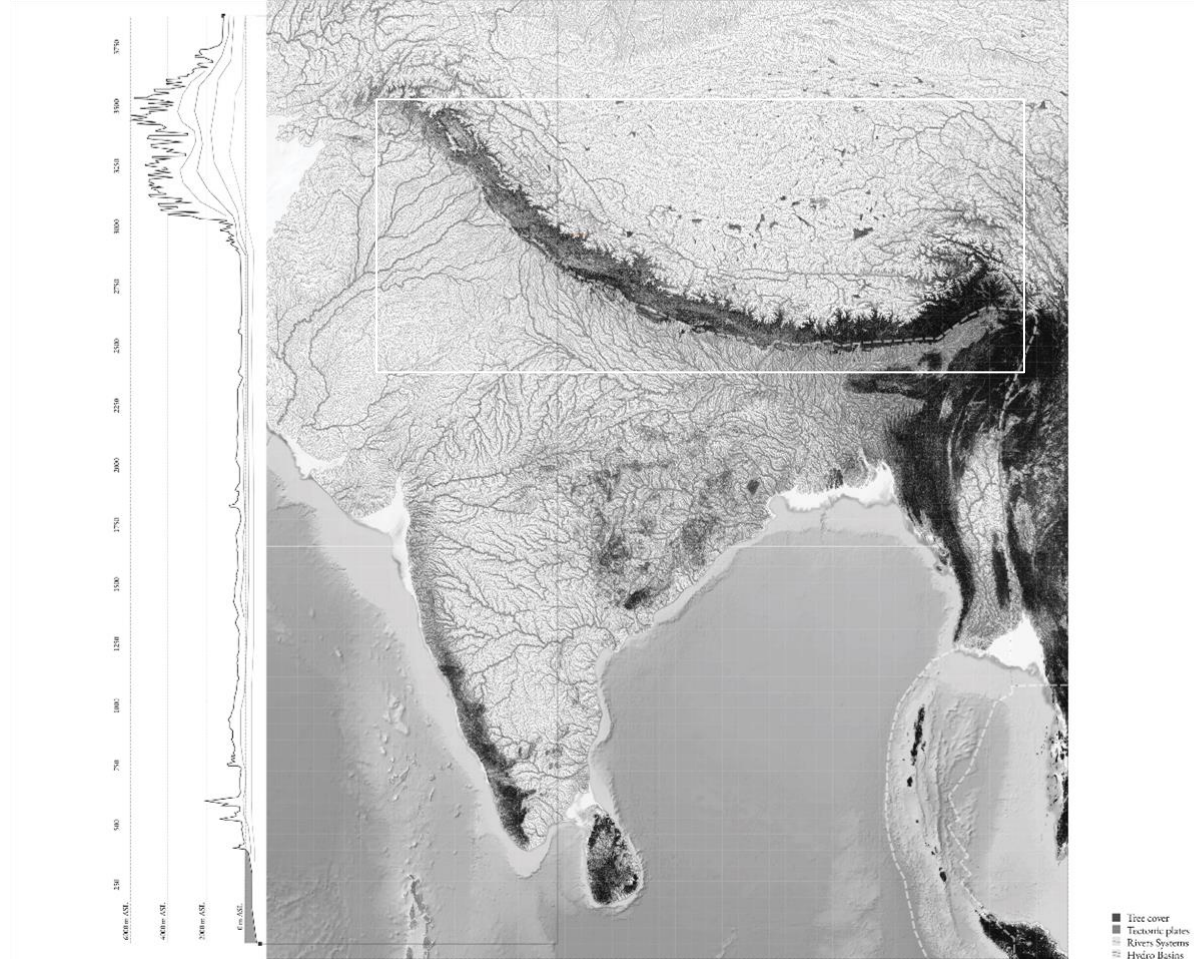
Urbanisation in the Himalayas



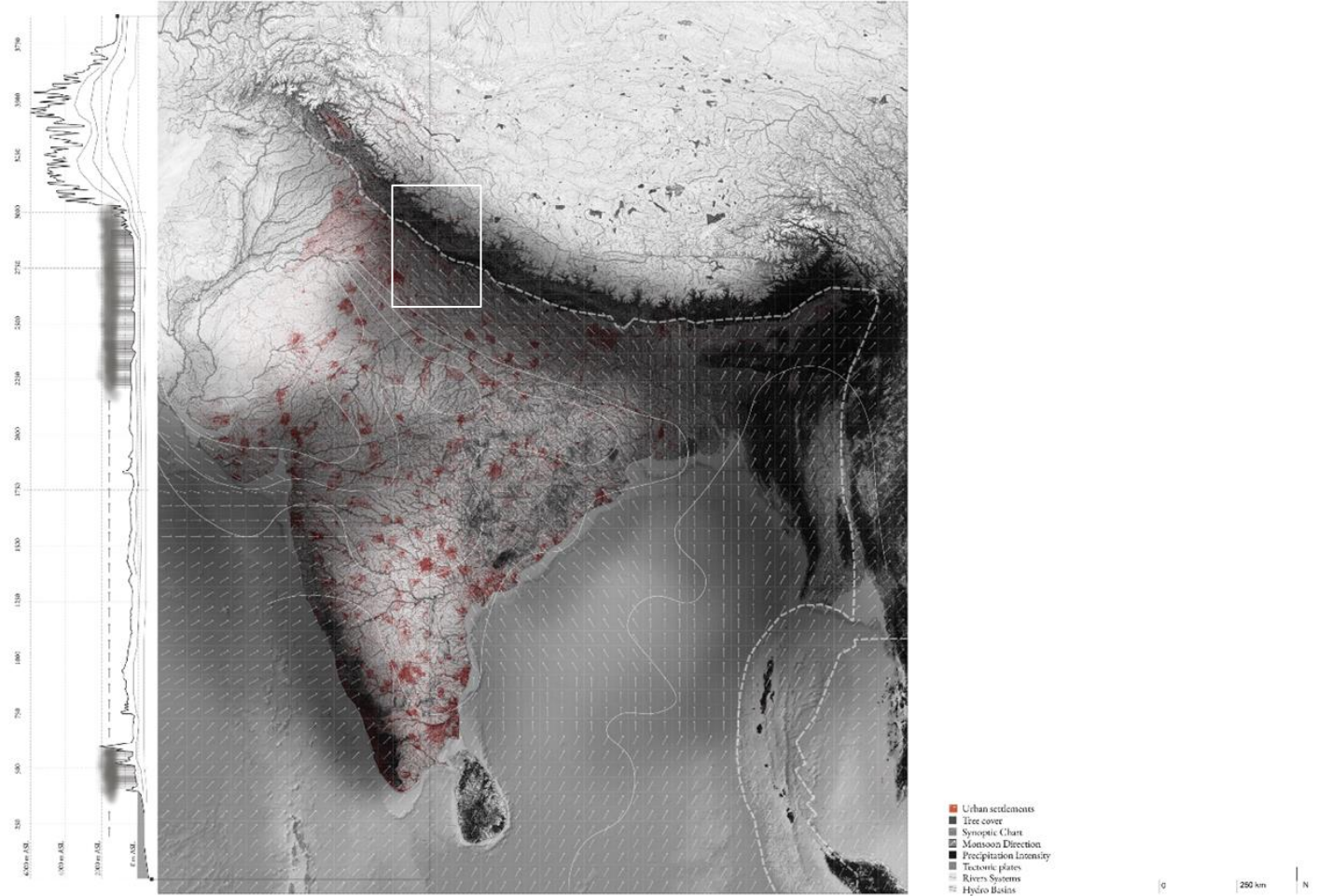
The Indian Subcontinent



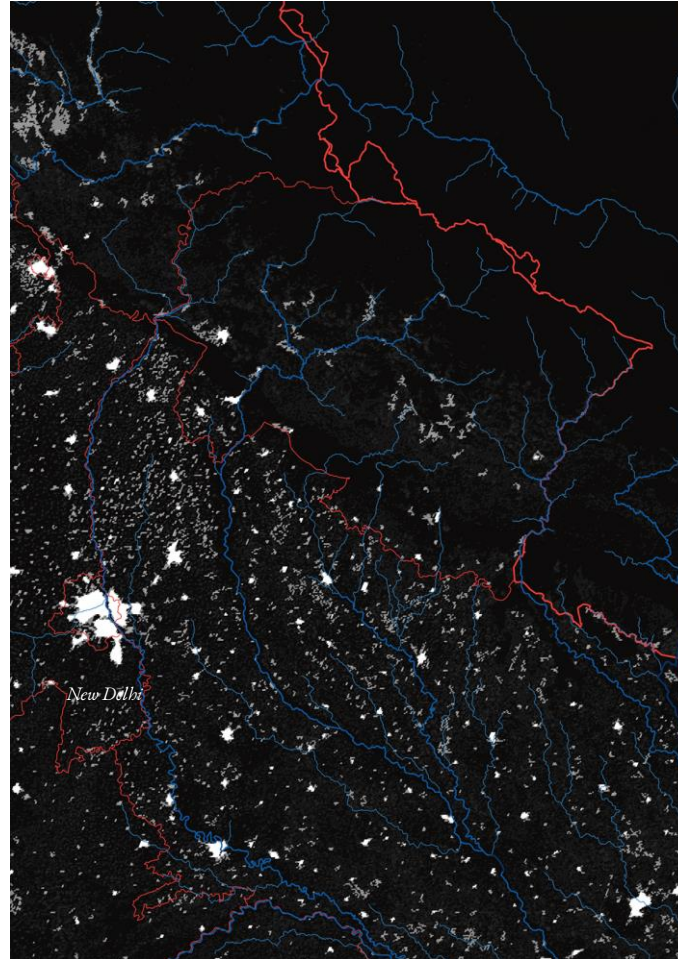
The Himalayas



Operationalisation of the Himalayas



Urbanisation in the Indo-gangetic Plains



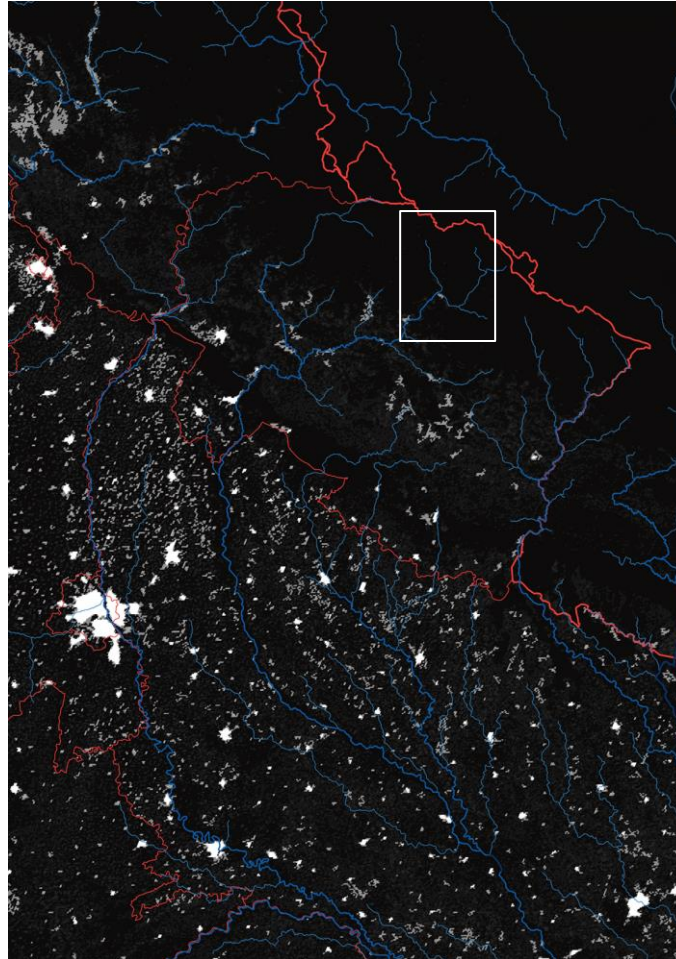
China

Upper Himalayas

Lower Himalayas

Plains

Urbanisation in the Indo-gangetic Plains



China

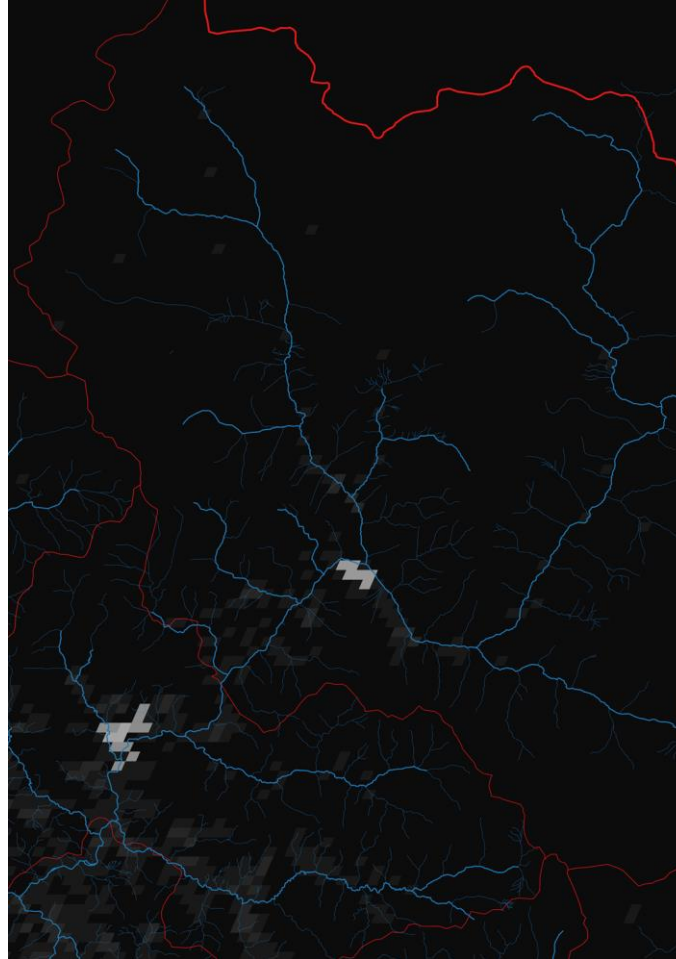
Upper Himalayas

Lower Himalayas

Plains

Operationalisation of the Himalayas

Urbanisation in the Himalayas



China

Glaciers / Alaknanda valley / Badrinath

Joshimath / Auli / Tapovan

Towns along the river valleys

Urbanisation in the Himalayas

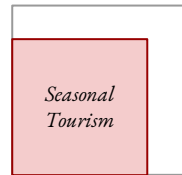
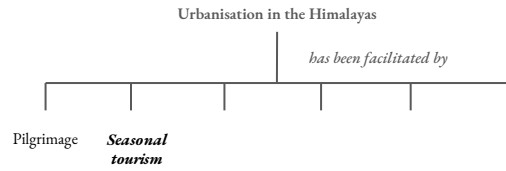
has been facilitated by

Pilgrimage

Pilgrimage



Drivers of Change



Drivers of Change

Urbanisation in the Himalayas

has been facilitated by

Pilgrimage

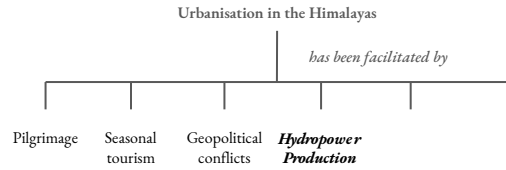
Seasonal
tourism

***Geopolitical
conflicts***

Militarisation



Drivers of Change



*Hydropower
Production*



Drivers of Change

Urbanisation in the Himalayas

has been facilitated by

Pilgrimage

Seasonal
tourism

Geopolitical
conflicts

Hydropowe
r
Production

***Regional
Economies***

Regional
Economies



Drivers of Change

Urbanisation in the Himalayas

has been facilitated by

Pilgrimage

Seasonal
tourism

Geopolitical
conflicts

Hydropower
Production

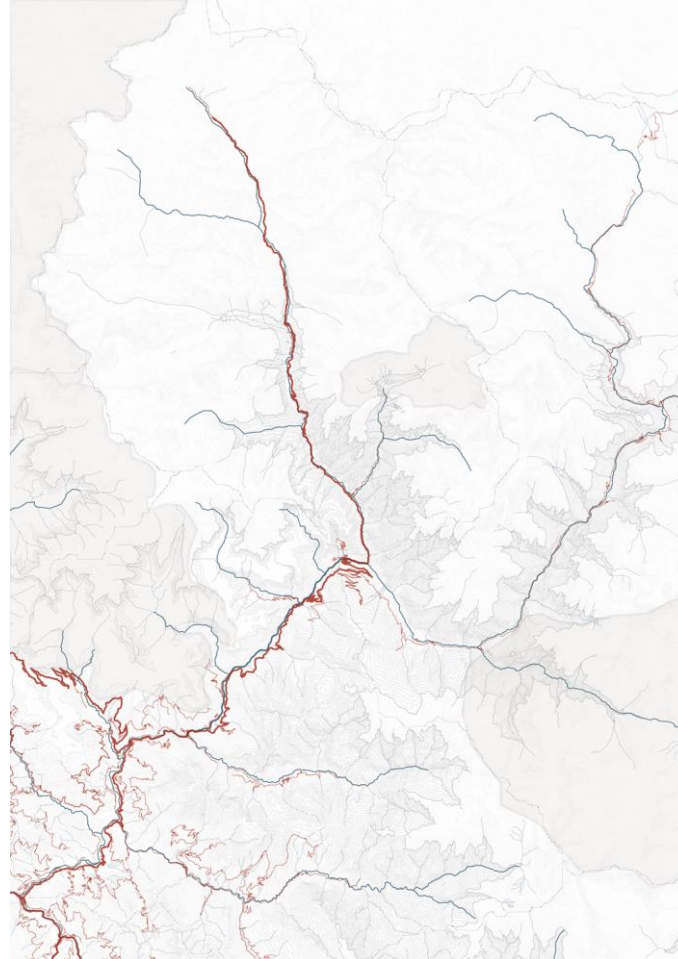
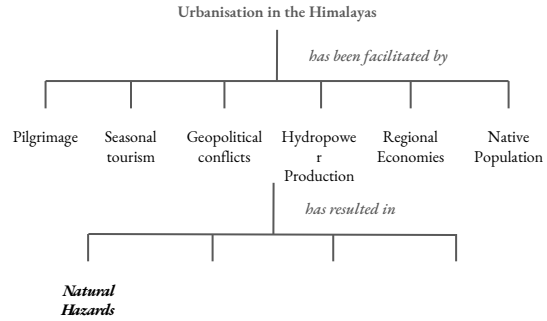
Regional
Economies

***Native
Population***

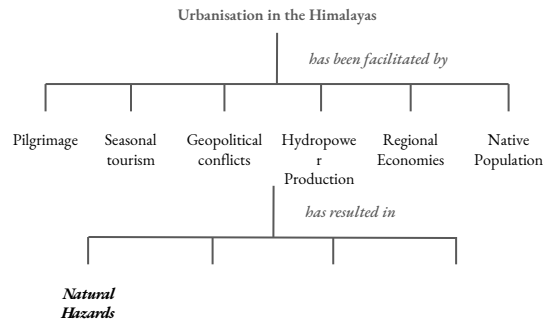
Native
Population



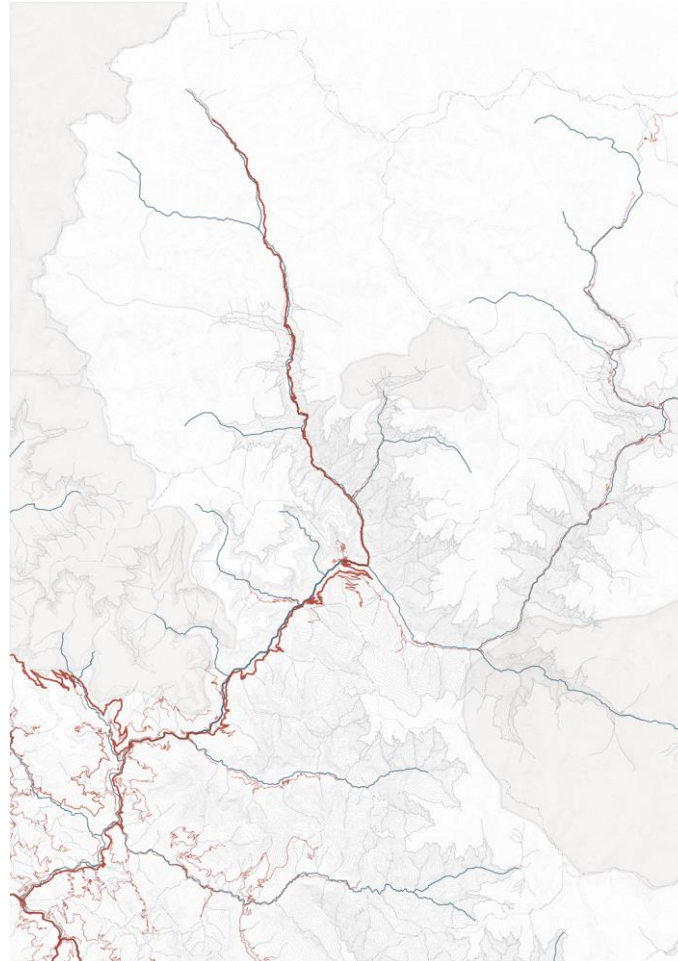
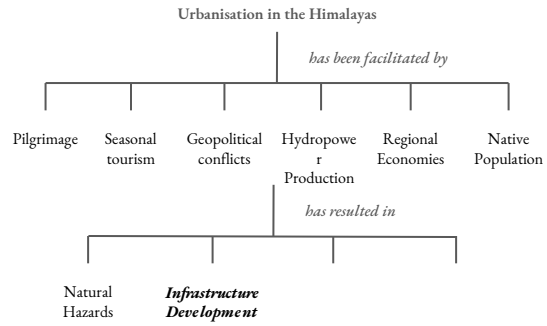
Critical Processes



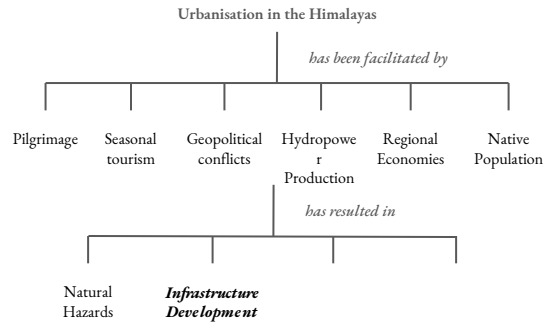
- Urban settlements
- Road network
- Dams
- Military
- Mineral Extraction
- National Parks
- Glaciers
- Forest Cover
- Hydrology



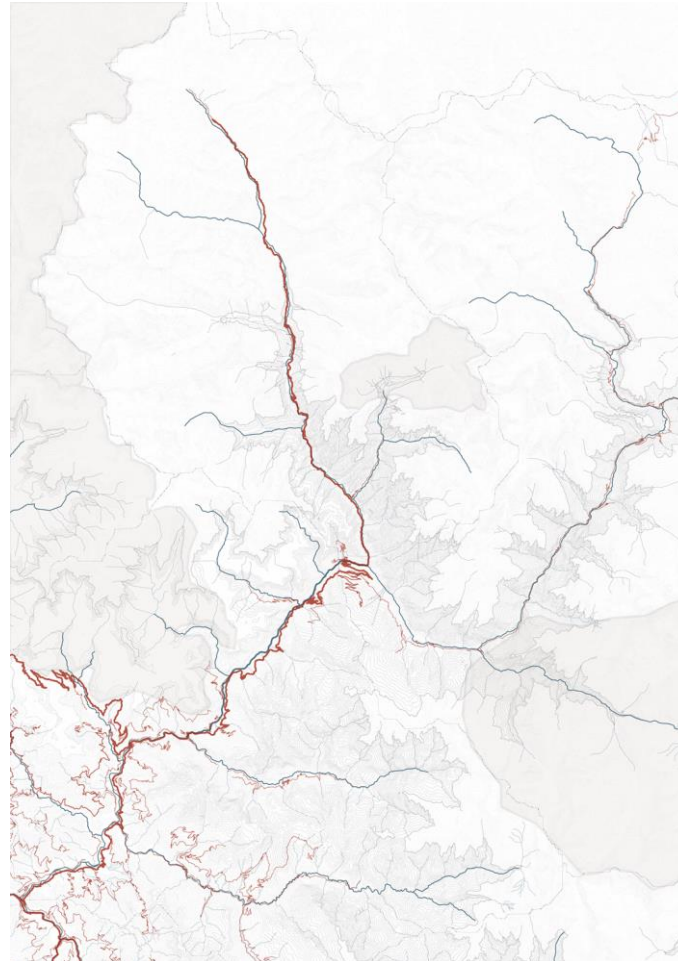
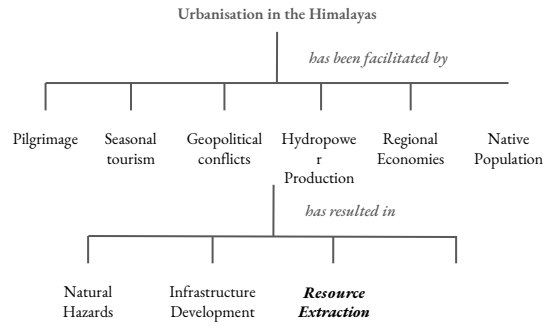
Critical Processes



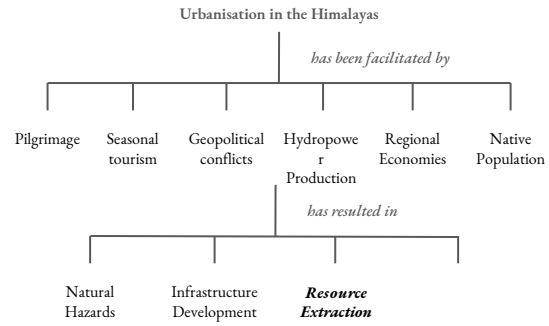
- Urban settlements
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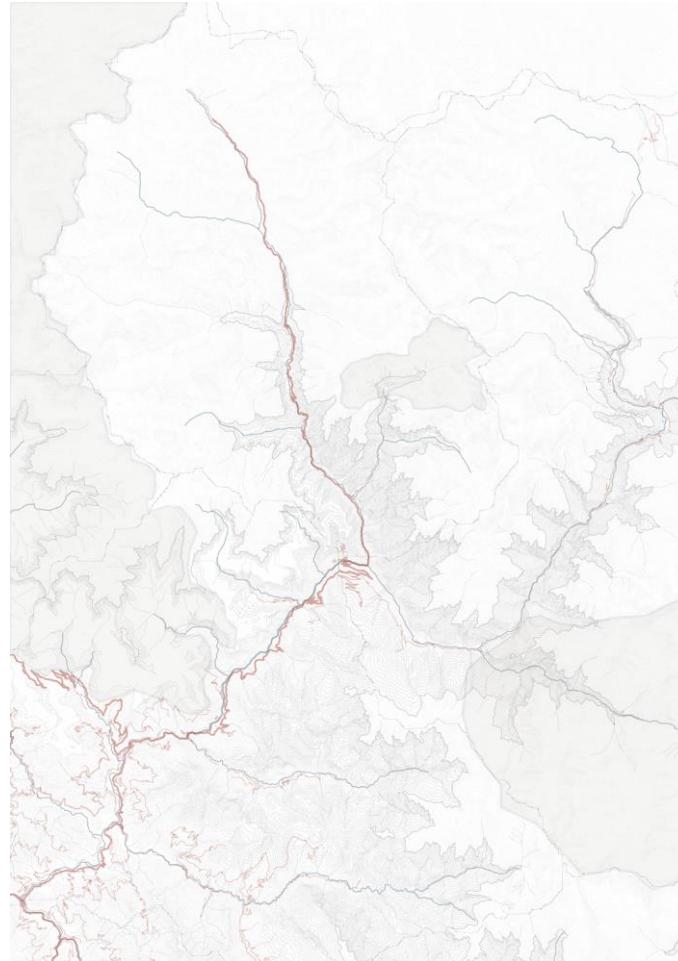
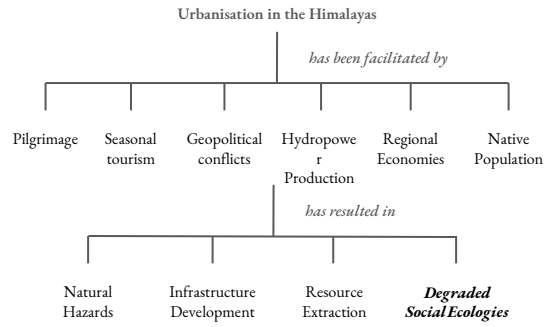
Critical Processes



- Urban settlements
- Road network
- Dams
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- Forest Cover
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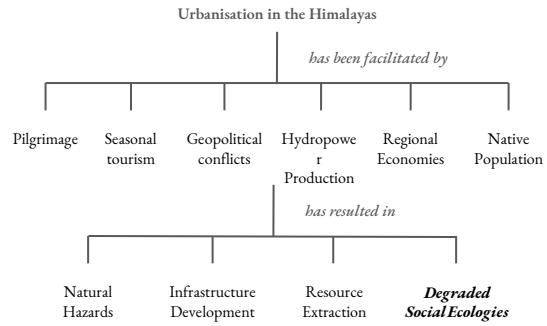


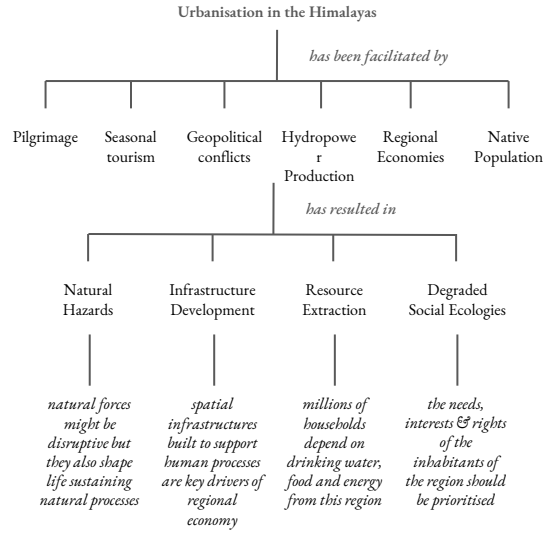
Critical Processes



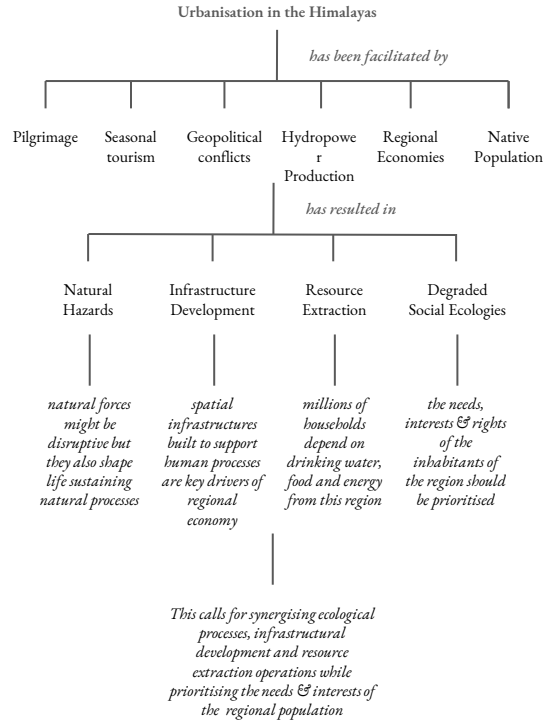
- Urban settlements
- Road network
- Dams
- Pilgrimage
- Mineral Extraction
- National Parks
- Glaciers
- Forest Cover
- Hydrology

Degrading Social Ecologies / Critical Processes





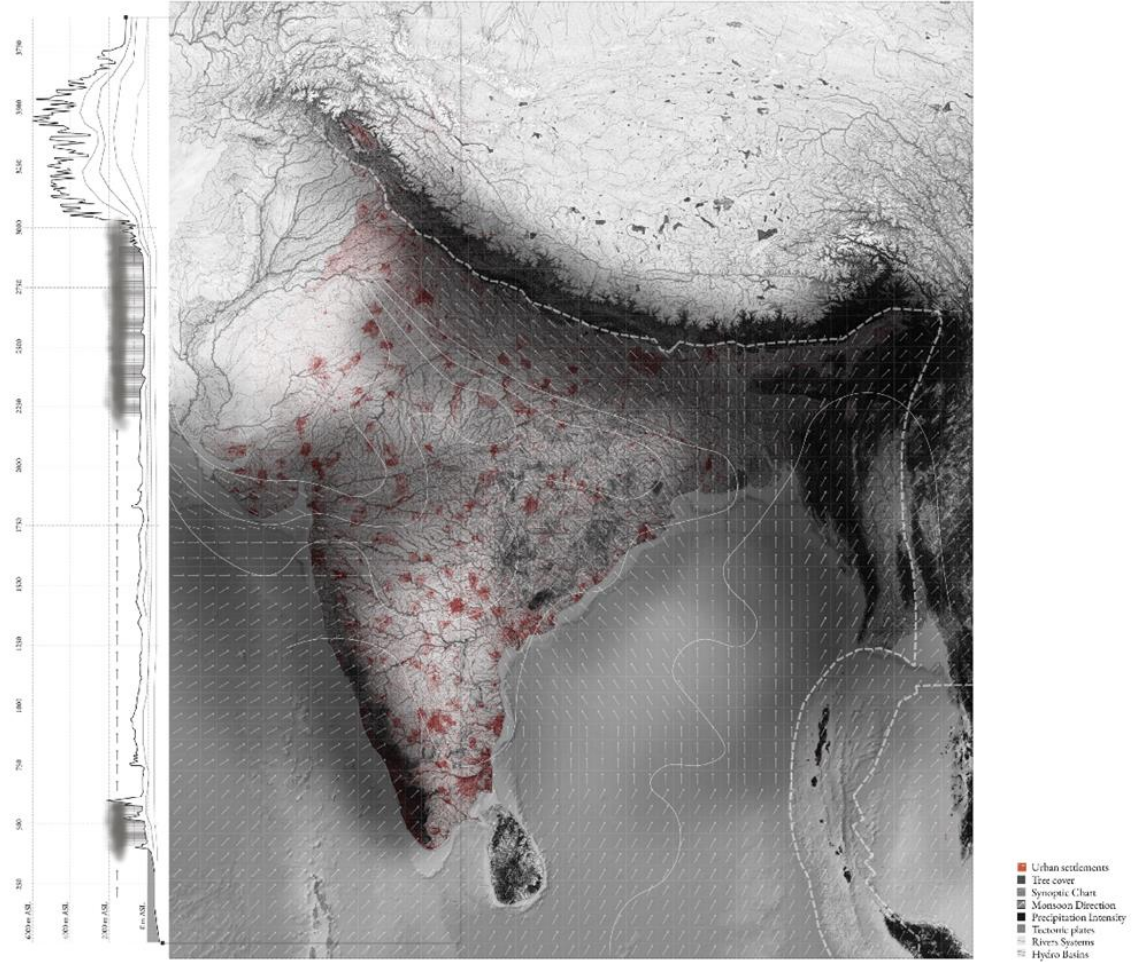
Problem Statement



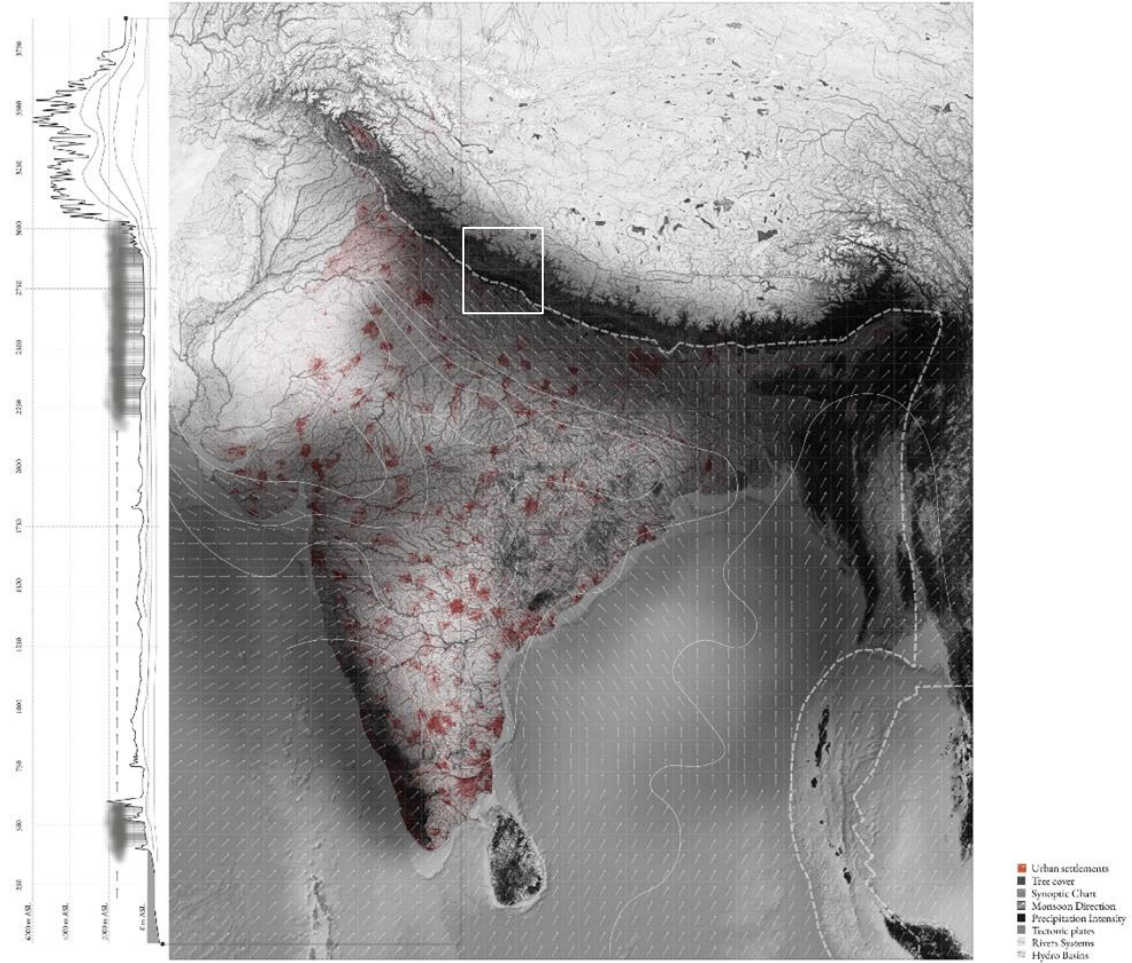
How can we synergise infrastructural development and extractive operations within the vulnerable social ecologies of Garhwal Himalayas in Uttarakhand, India through the spatial agency of design?

How have the Human and More-than-Human processes resulted in the operationalisation of the Himalayan landscape in Uttarakhand, India?

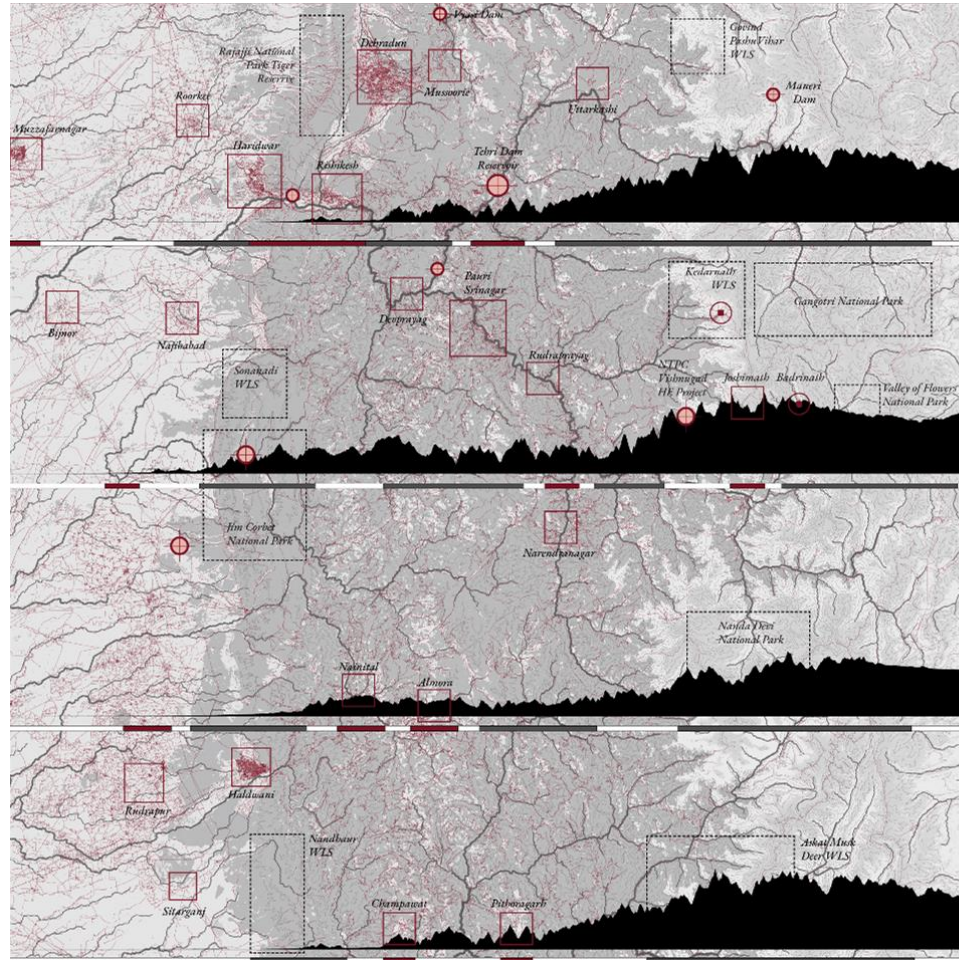
Formation of the Himalayan Geography



Formation of the Himalayan Geography



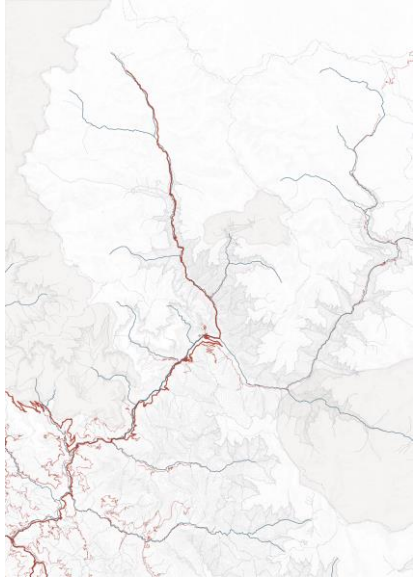
Human processes in the Himalayan Landscape



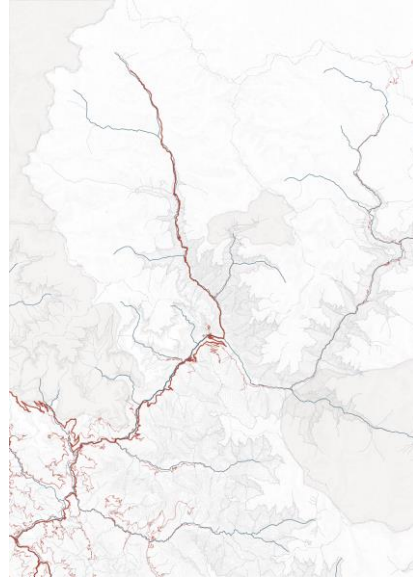
- Urban settlements
- Road network
- Forests
- Agriculture/Cropland
- Snow/Ice
- Protected Nature
- Transsects
- Dams
- Temples
- River Systems
- Glaciers

How have the processes of Urbanisation resulted in the creation of Critical Landscapes in Chamoli district in Uttarakhand, India?

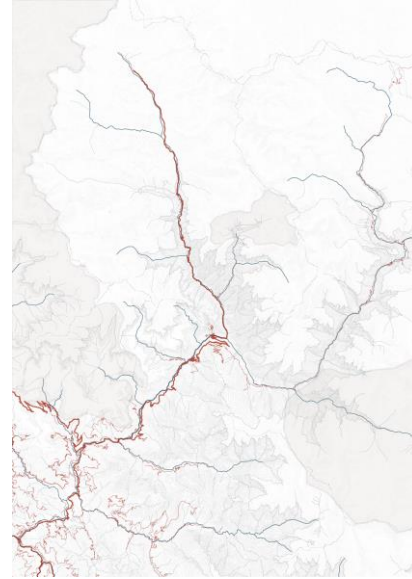
Critical Processes



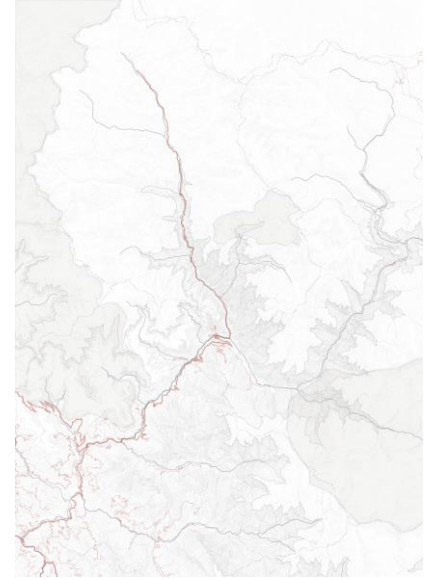
Natural Hazards



Infrastructural Development

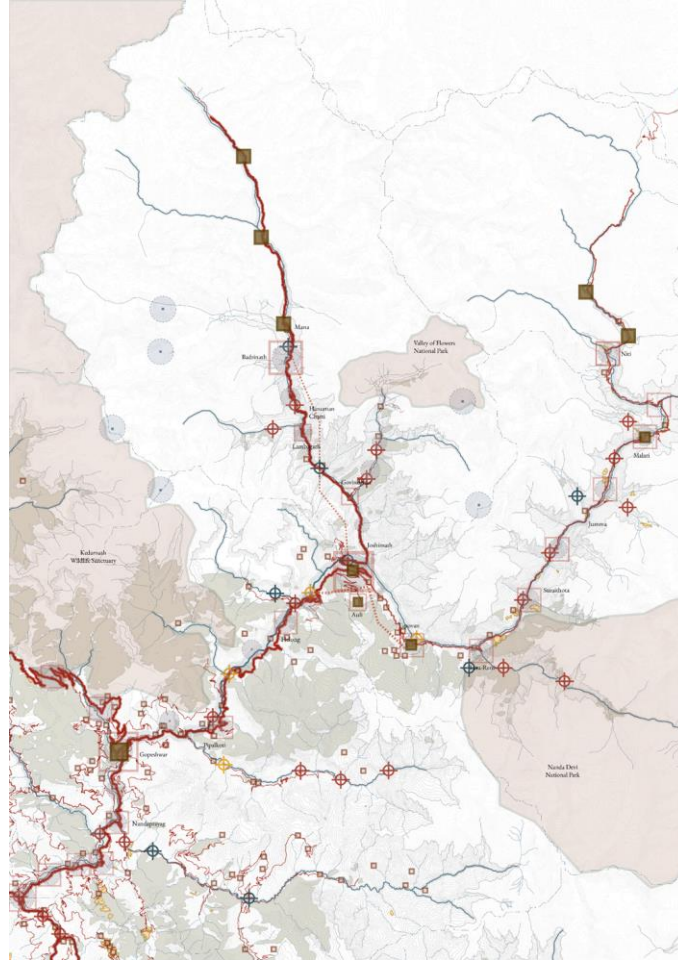


Extractive Operations



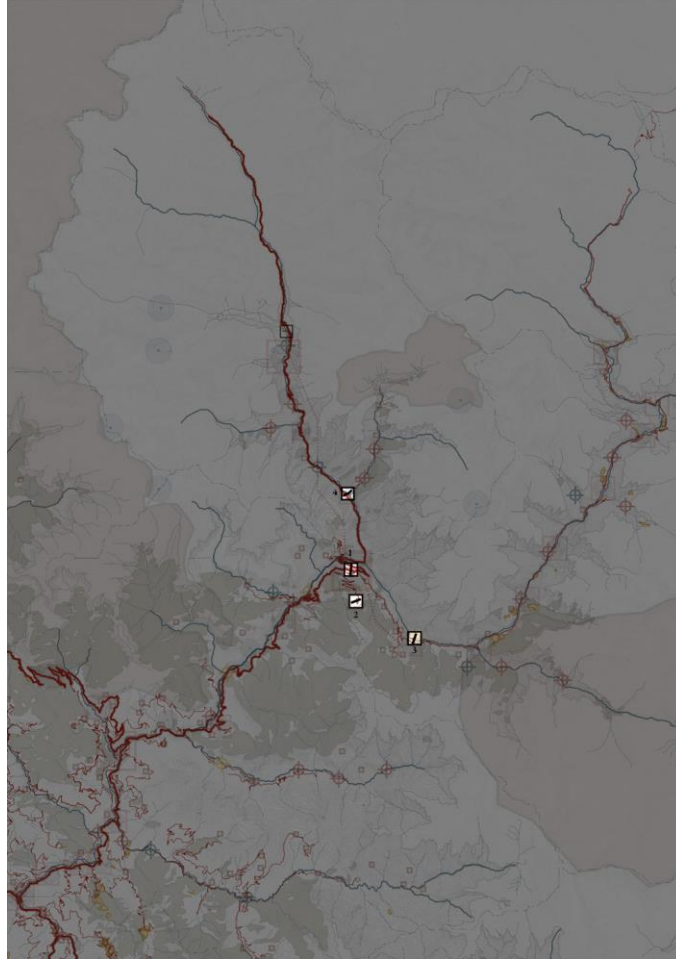
Degrading Social Ecologies

Critical Landscapes

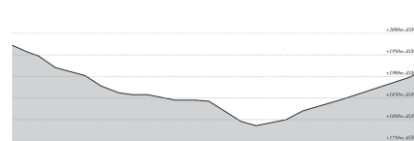
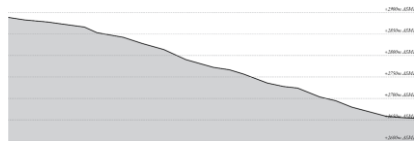
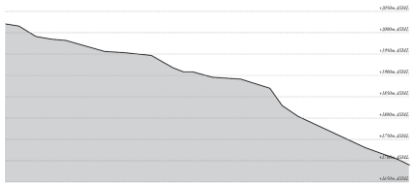
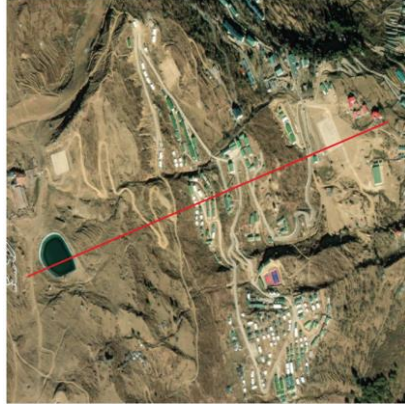


How have the processes of Urbanisation resulted in a state of Accumulation of large-scale permanent infrastructures and extractive operations within the vulnerable Himalayan Geographies in Uttarakhand, India?

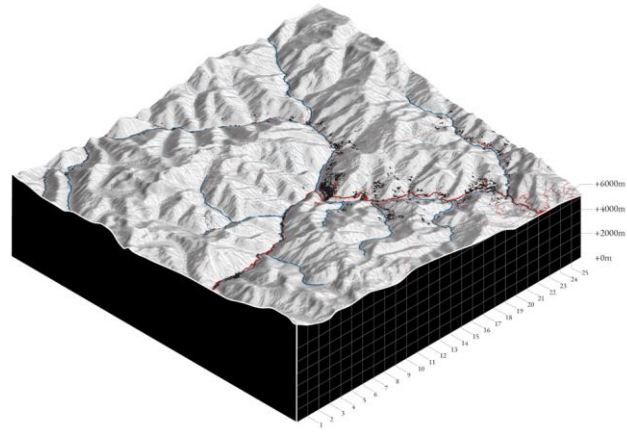
Transects



Analytical Sections

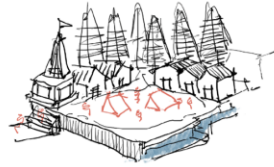


Accumulation

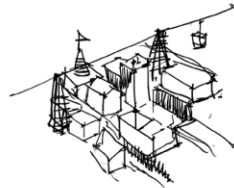


How have the various perennial and ephemeral landscapes evolved over time and how do they manifest periodically within this vulnerable Himalayan Geography?

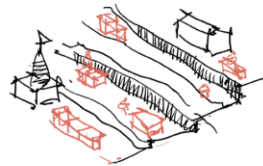
Ephemerality



1800 CE : ephemeral
500 inhabitants
100 floating population

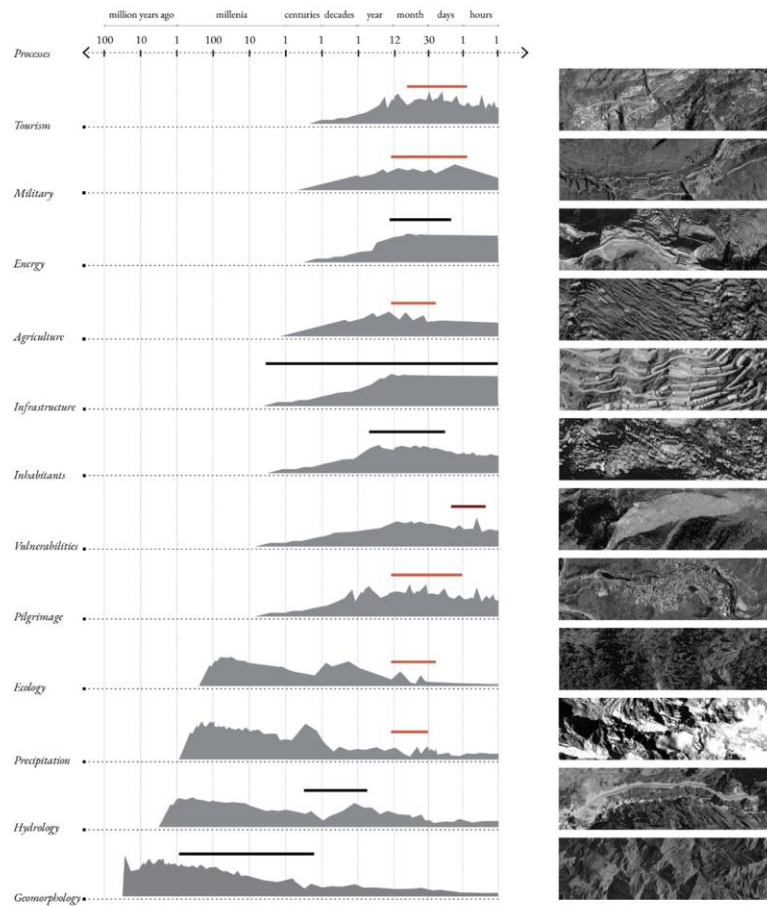


2023 CE : urban jungle
20,000 inhabitants
20,000 floating population



2050 CE :back to the ephemeral?

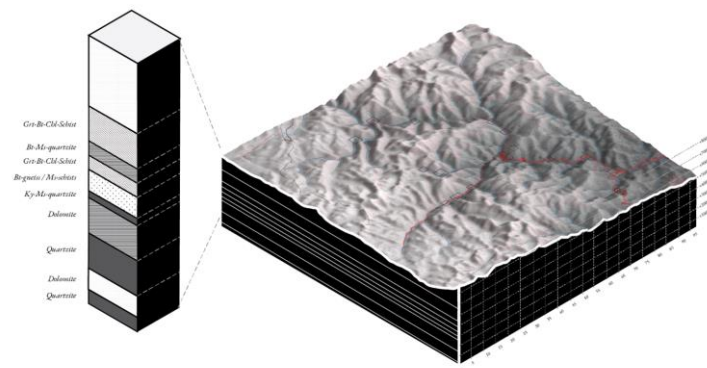
Spatio Temporality within the Himalayan Landscape



Spatio Temporality within the Himalayan Landscape



How to program the transition from the existing state of accumulation and extreme vulnerability in the region to a new spatial logic of urbanisation to support these spatio-temporal processes in the *longue duree*?



Material Geographies

Metal / Textile



Cement / Bricks



Concrete / Glass / Steel



Anthracite / Gravel



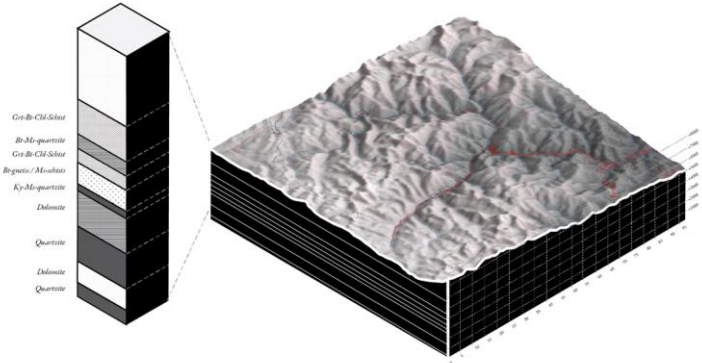
Timber / Vegetation



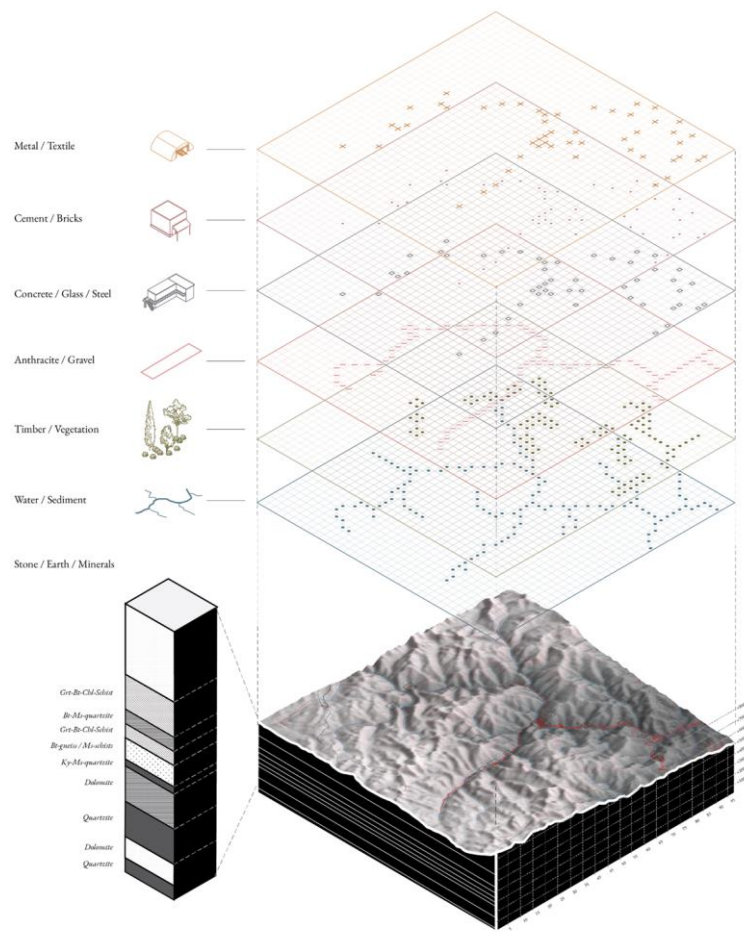
Water / Sediment



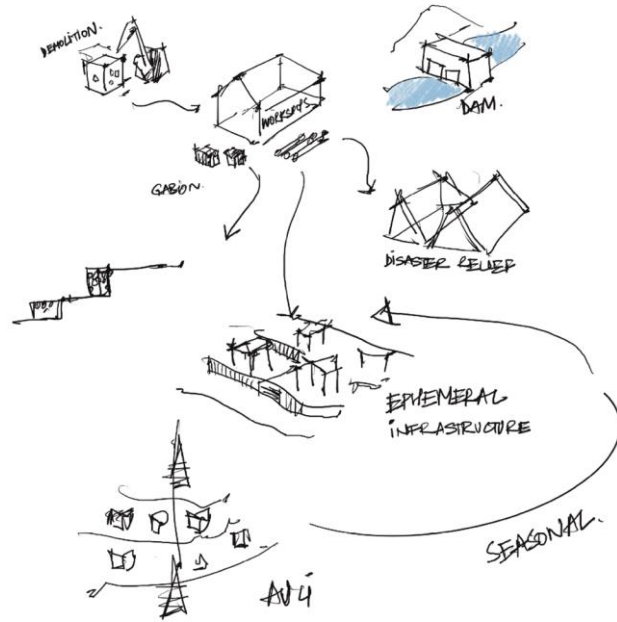
Stone / Earth / Minerals



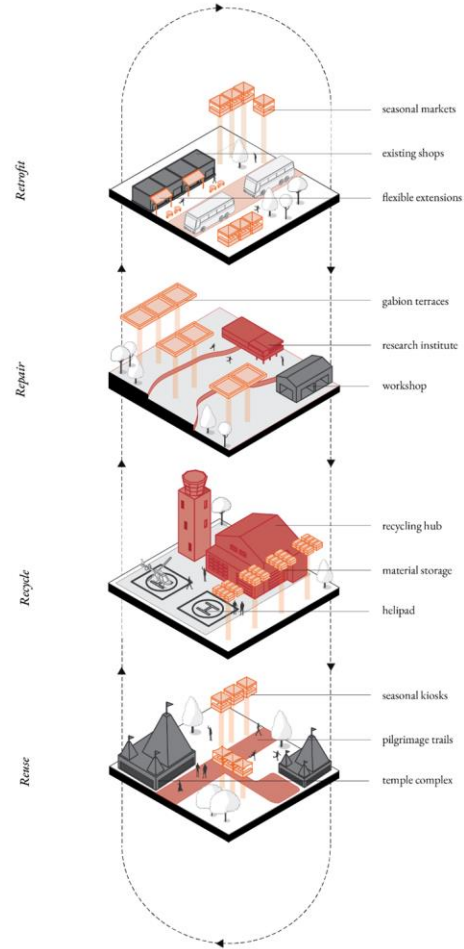
Material Geographies



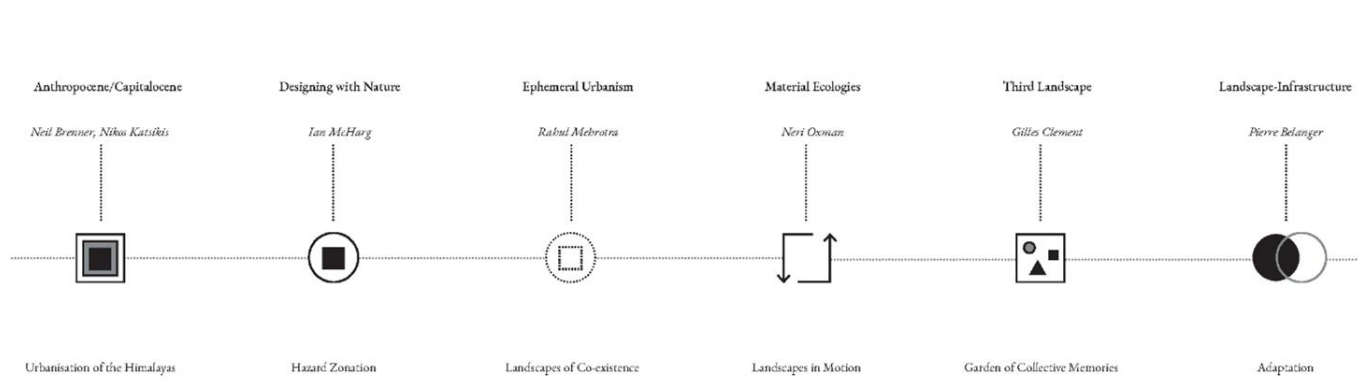
Material Flows



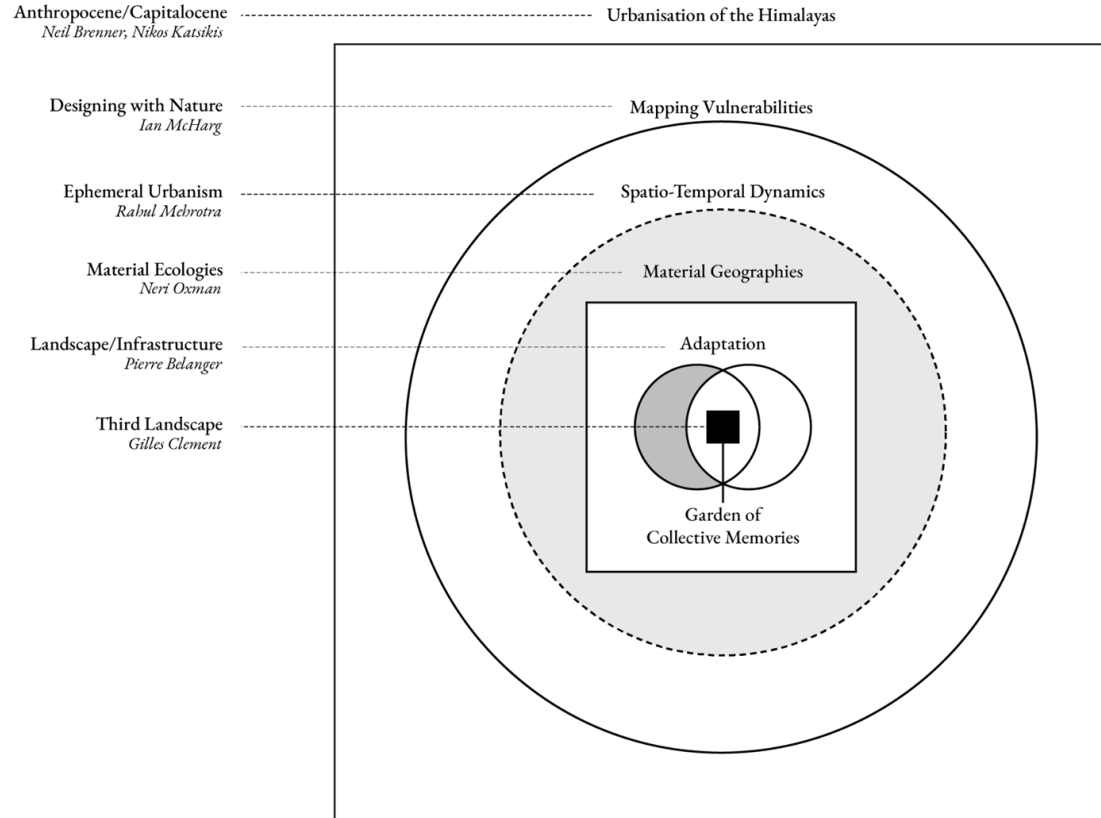
Material Flows



Theoretical Underpinning

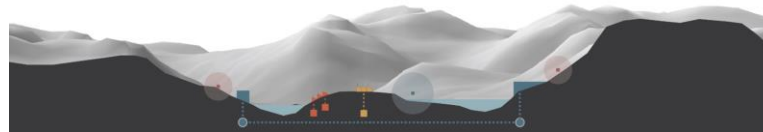
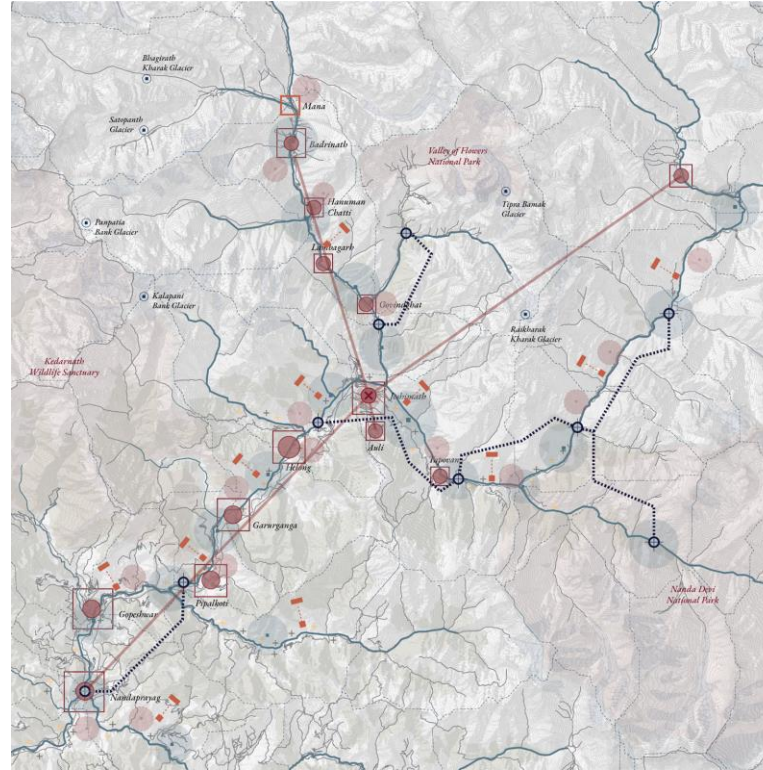


Theoretical Framework

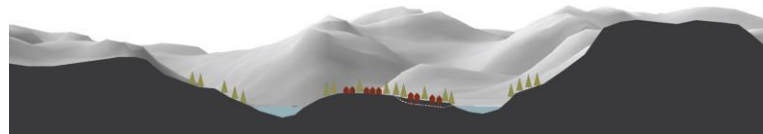
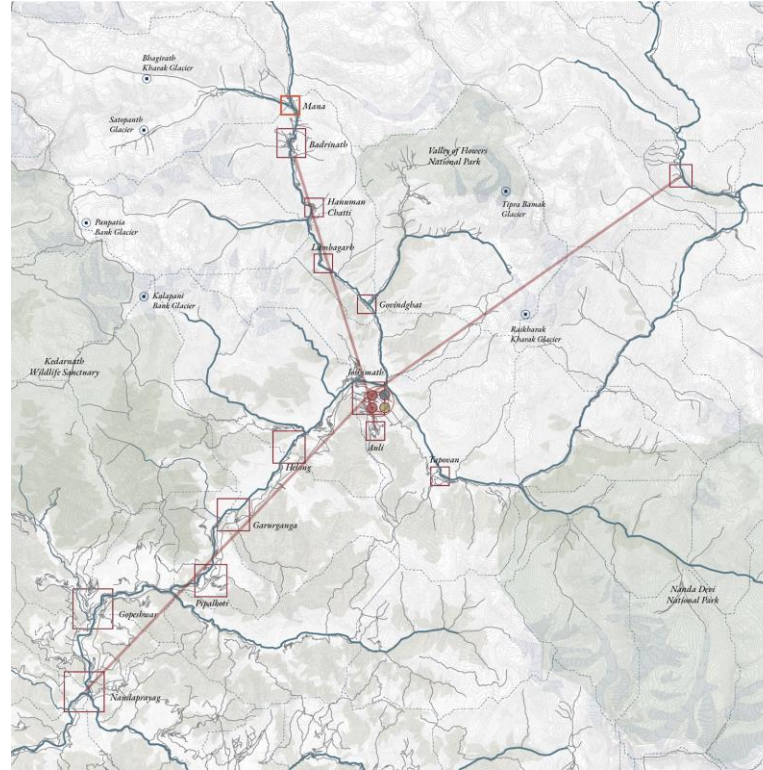


What are the future conditions of these processes of Urbanisation within which the project is envisioned and positioned?

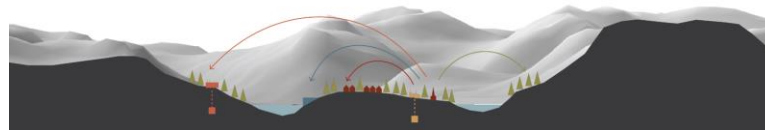
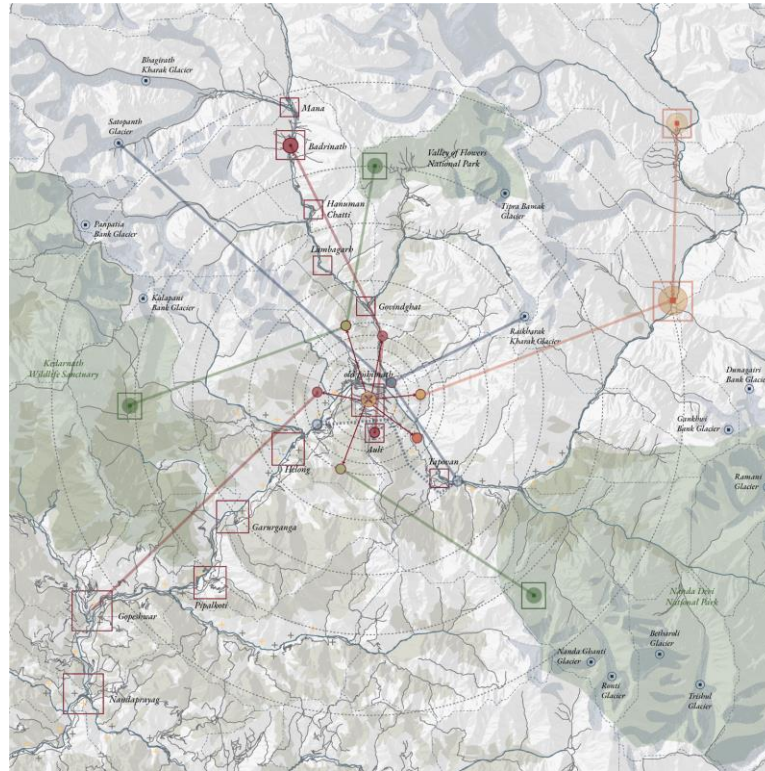
Scenario 1 / Continuity / Accumulation





Scenario 2 / Conservation



Scenario 3 / Synchronize



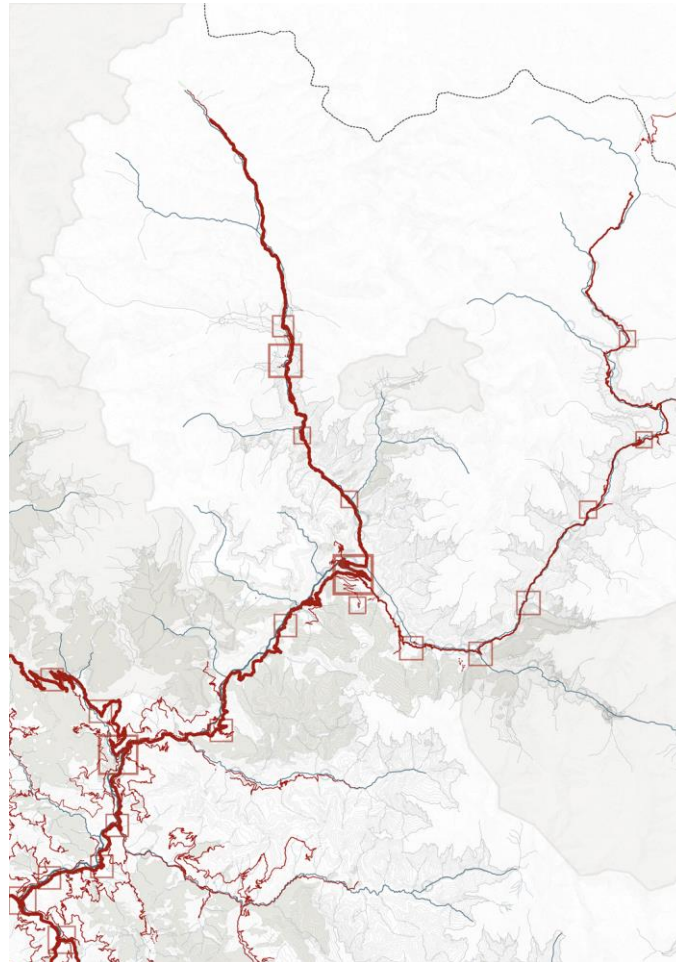
Manifesto

Drivers of Change	Status quo	Positioning	Regional Vision
 Pilgrimage	<ul style="list-style-type: none"> - Main economic driver - socio-cultural significance 	<ul style="list-style-type: none"> - continue - define limits 	<i>'Debbhumi'- Land of God</i>
 Tourism	<ul style="list-style-type: none"> - seasonal & underdeveloped - untapped socio-economic potential 	<ul style="list-style-type: none"> - upgrade , connect - define limits 	<i>Himalayan Resort towns</i> <i>Haven for Winter Sports</i> <i>Promoting Regional culture</i>
 Militarisation	<ul style="list-style-type: none"> - increased vehicular accessibility - army helps in disaster rescue operations 	<ul style="list-style-type: none"> - continue - define limits 	<i>Secured & Resilient Territory</i>
 Green Energy	<ul style="list-style-type: none"> - major socio-ecological implications - more projects are proposed / under construction 	<ul style="list-style-type: none"> - repurpose existing projects - switch to alternate methods of green energy production that are decentralised & fulfill regional demands 	<i>Green Energy Hub with reduced ecological degradation</i>
 Agriculture	<ul style="list-style-type: none"> - primary occupation / regional identity - steadily reducing due to erratic weather / migration 	<ul style="list-style-type: none"> - upgrade and increase yield - integrate with other practices such as energy production, forestry 	<i>Agriculture and Horticulture Hub</i>
 Forestry & Landscape Maintenance	<ul style="list-style-type: none"> - strong social communities & traditional practices - deforestation due to large infrastructural projects 	<ul style="list-style-type: none"> - upgrade and empower community - integrate with other practices such as energy production, agro-tourism 	<i>Ecological Regeneration</i>
 Technology & Research	<ul style="list-style-type: none"> - technological revolution is transforming India through digital accessibility & social media network. - pilot projects integrating technology & research to upscale regional practices are gaining momentum. 	<ul style="list-style-type: none"> - upscale & integrate with other practices such as energy production, agro-tourism. 	<i>Knowledge Economy</i>

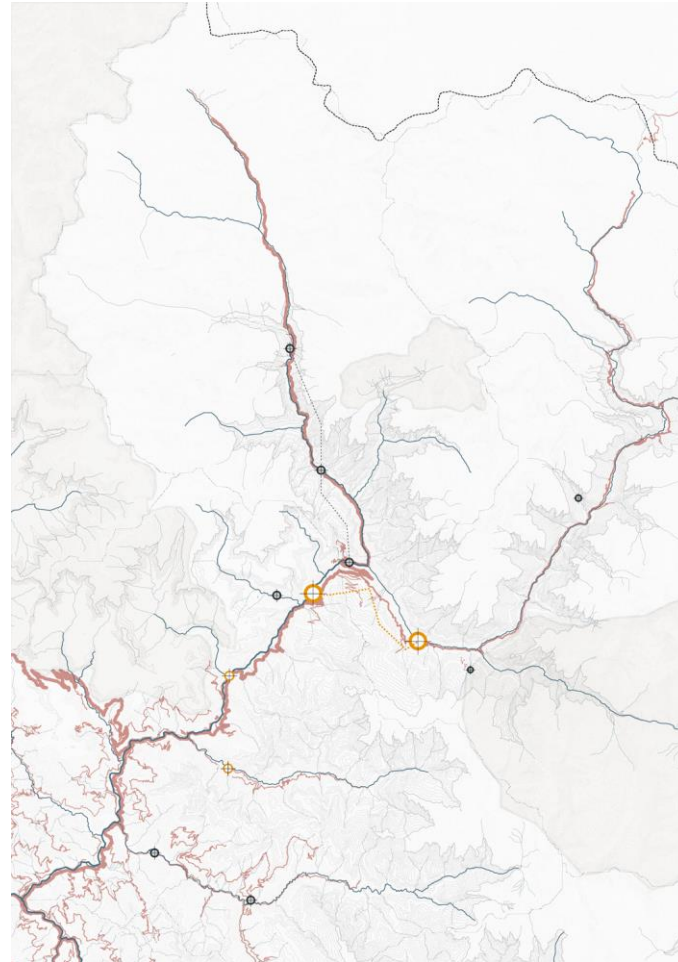


What are the strategies to synergise these critical human and ecological processes within the vulnerable, ephemeral landscapes and seasonal economies around the region?



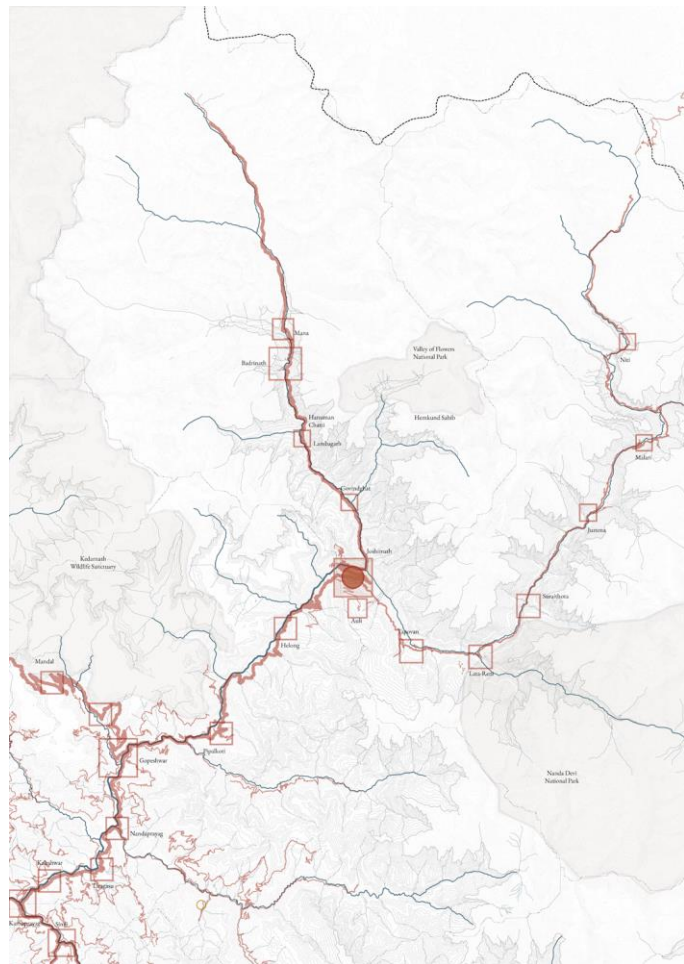


Green Energy Production

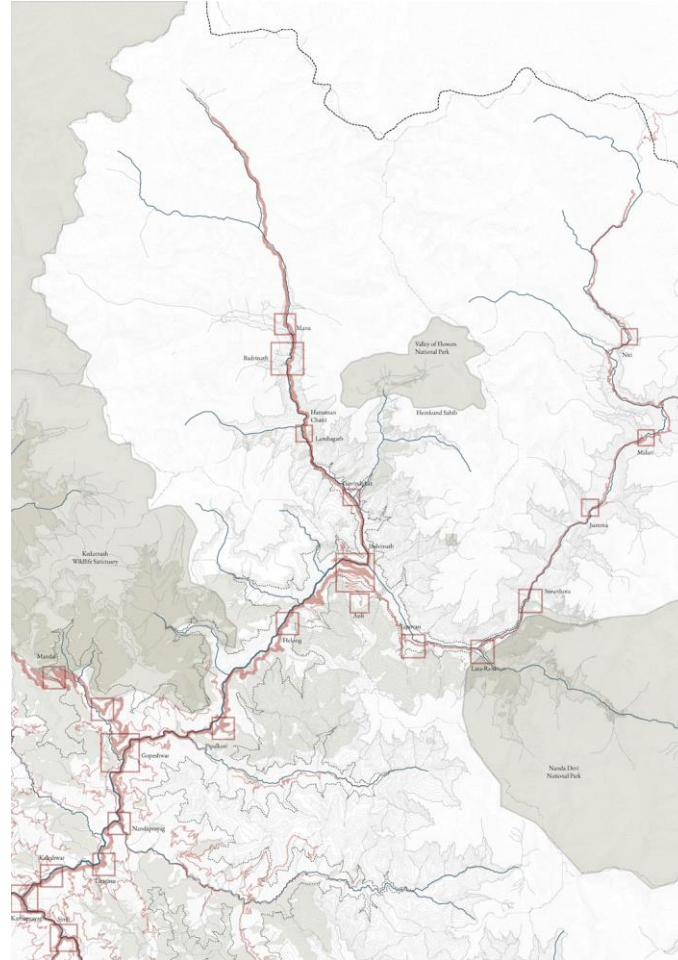


- Urban settlements
- National Parks
- Road network
- Glaciers
- Dams
- Forest Cover
- Hydrology
- Mineral Extraction

Regional Economies

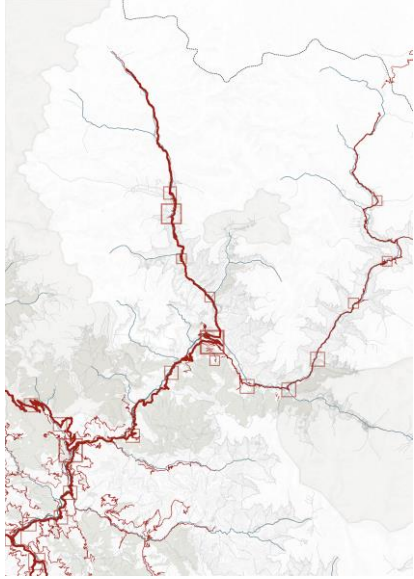


Landscape Resilience

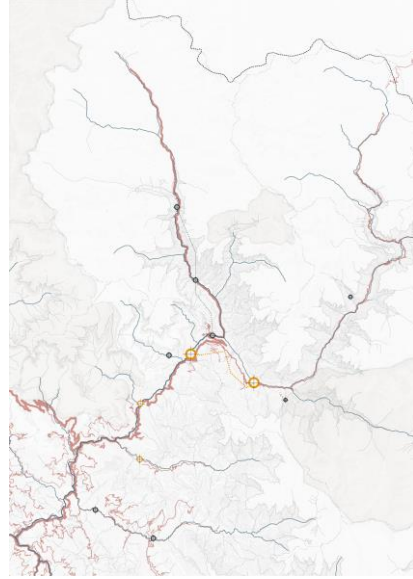


- Urban settlements
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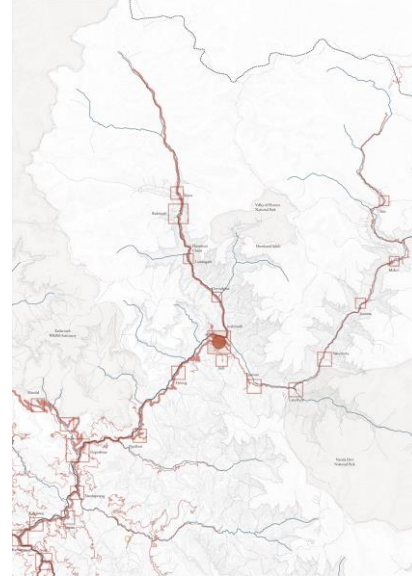
Regional Strategy



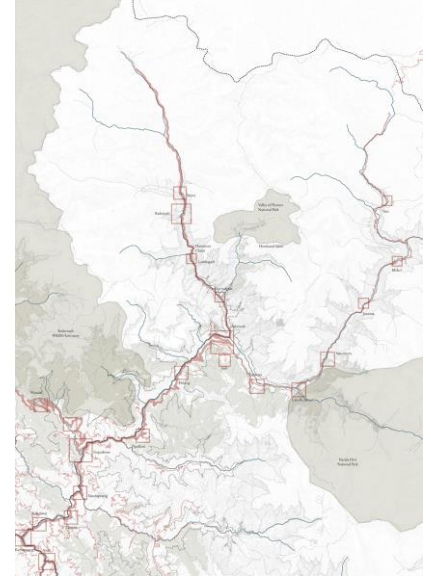
Pilgrimage-Tourism



Green Energy Production

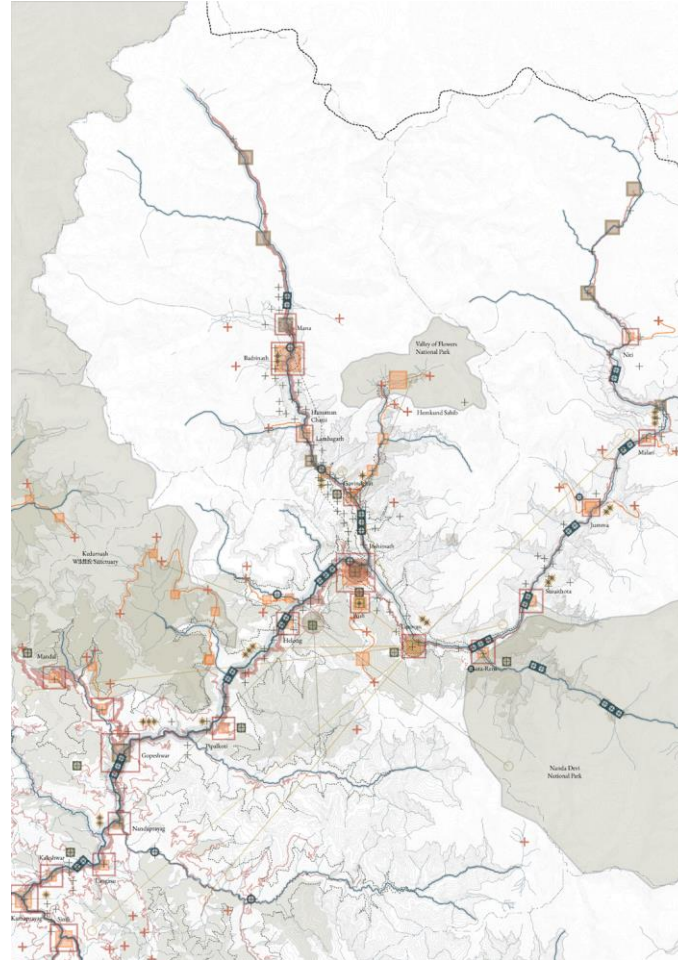


Regional Economies & Knowledge Hubs



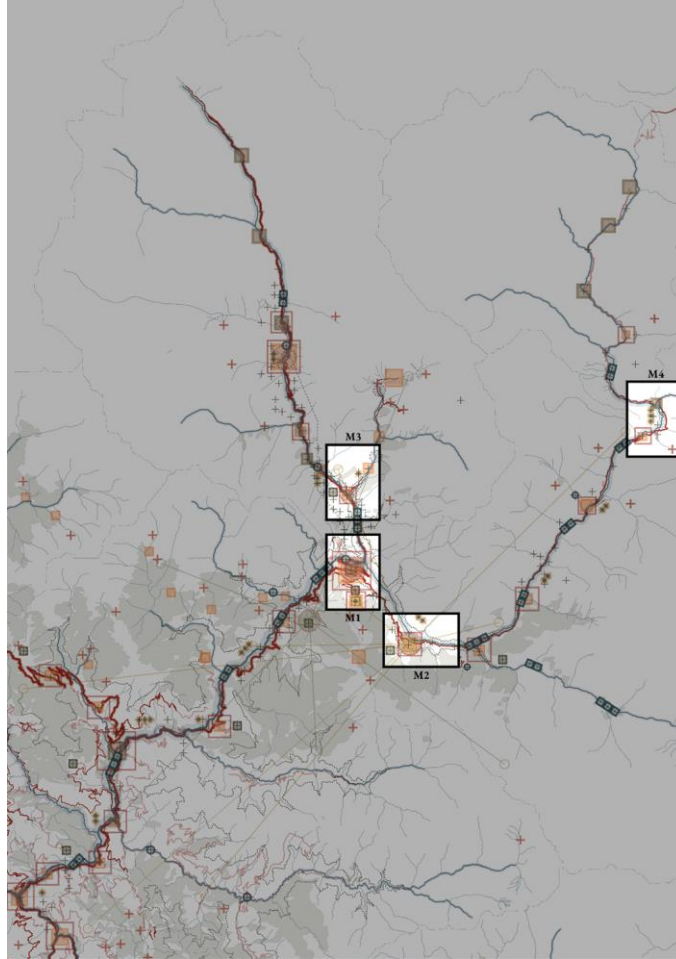
Landscape Resilience

Integrated Vision & Strategy











What spatial operations/interventions within the agency of spatial agency can synergise infrastructural development, extractive operations within the vulnerable social ecologies of Garhwal Himalayas in Uttarakhand, India?

Operations



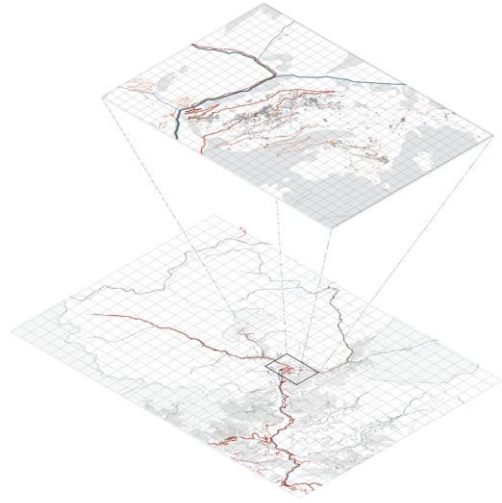
Catalogue of Operations

Spatial Operations /M	Processes / L	Spatial Logic	Key Locations
Infrastructure for Inhabitants		<ul style="list-style-type: none"> - geologically safe zones - along pilgrimage/tourism route - near agricultural production 	M1 M3
Pilgrimage/Tourism Infrastructure		<ul style="list-style-type: none"> - proximity to cultural heritage - along pilgrimage/tourism route - duration of the activity - stability of ground 	M1 M2
Conservation of Cultural Heritage		<ul style="list-style-type: none"> - location of cultural heritage - stability of ground - pilgrimage/tourism route 	M1 M2
Ecological Restoration		<ul style="list-style-type: none"> - stability of ground - topography / hydrology - vegetation / landcover 	M1 M2 M3
Mobility networks & Material Flows		<ul style="list-style-type: none"> - stability of ground - topography / hydrology - vegetation / landcover - seasonalities 	M1 M2 M3 M4
Military Infrastructure		<ul style="list-style-type: none"> - borders / strategic locations - accessibility / mobility 	M1 M4
Regional Economies & Knowledge Hubs		<ul style="list-style-type: none"> - mobility networks - seasonality - vegetation/landuse - proximity to settlements 	M1 M3 M4
Decentralised Green Energy Production:		<ul style="list-style-type: none"> - topography / hydrology - solar incidence - vegetation/landuse - proximity to settlements 	M1 M3 M4

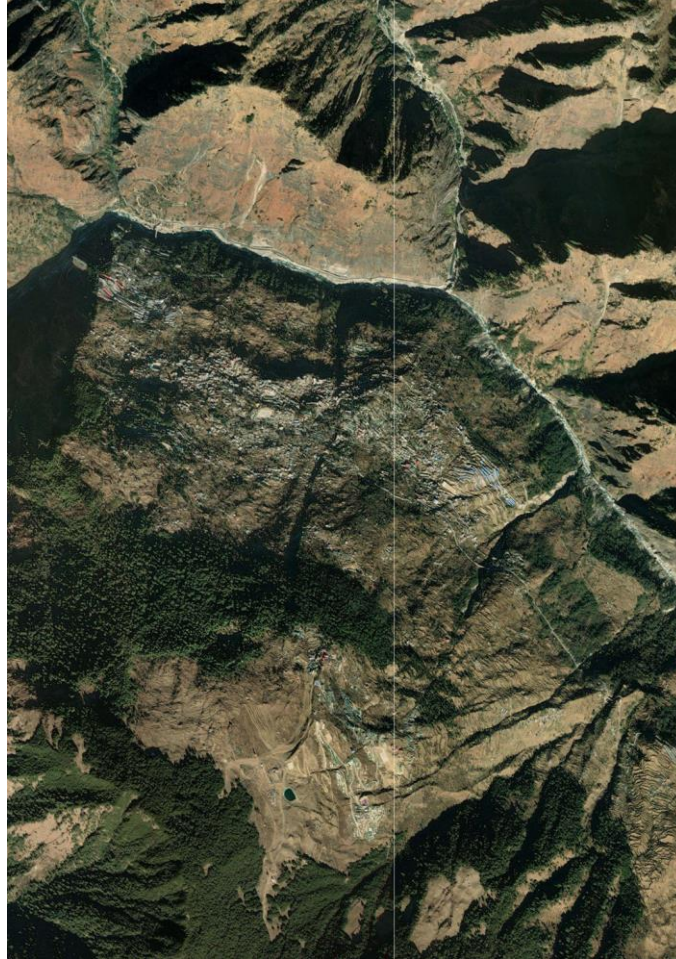
Scales of Interventions

Landscape / M

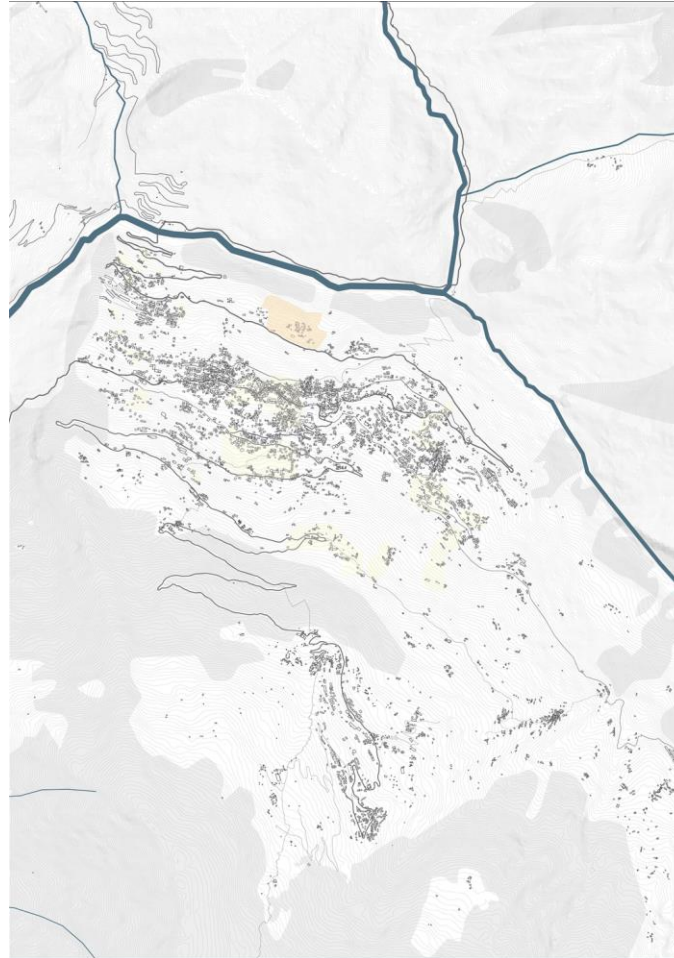
Territorial / L



M1/ Joshimath



Vulnerabilities/ M1/ Joshimath

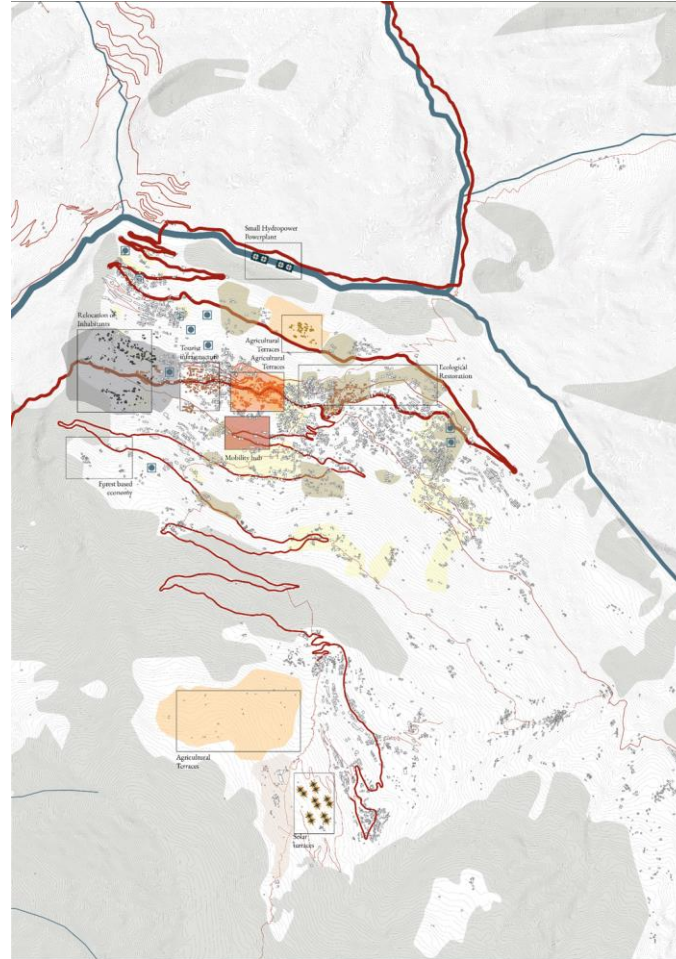


- Urban settlements
- Road network
- Dams
- Railway
- Mineral Extraction
- National Parks
- Glaciers
- Forest Cover
- Hydrology

10

100m

10



Spatio-Temporality / M1/ Joshimath

Spatial Operations /M

J F M A M J J A S O N D

Infrastructure for
Inhabitants



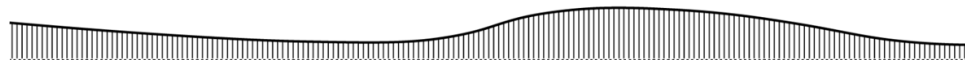
Pilgrimage/Tourism
Infrastructure



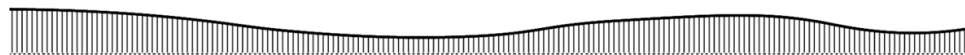
Conservation of
Cultural Heritage



Ecological
Restoration



Mobility networks &
Material Flows



Military
Infrastructure



Regional Economies &
Knowledge Hubs



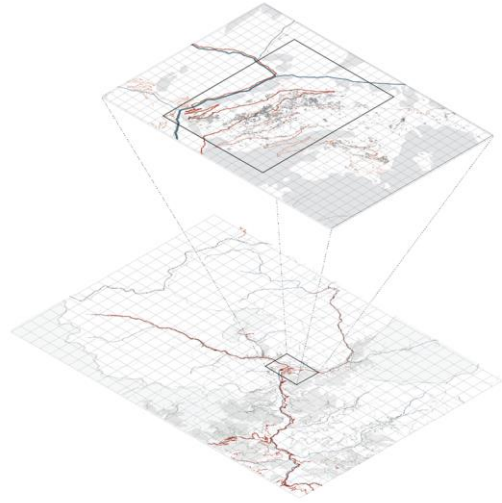
Decentralised Green
Energy Production:



Scales of Interventions

Landscape / M

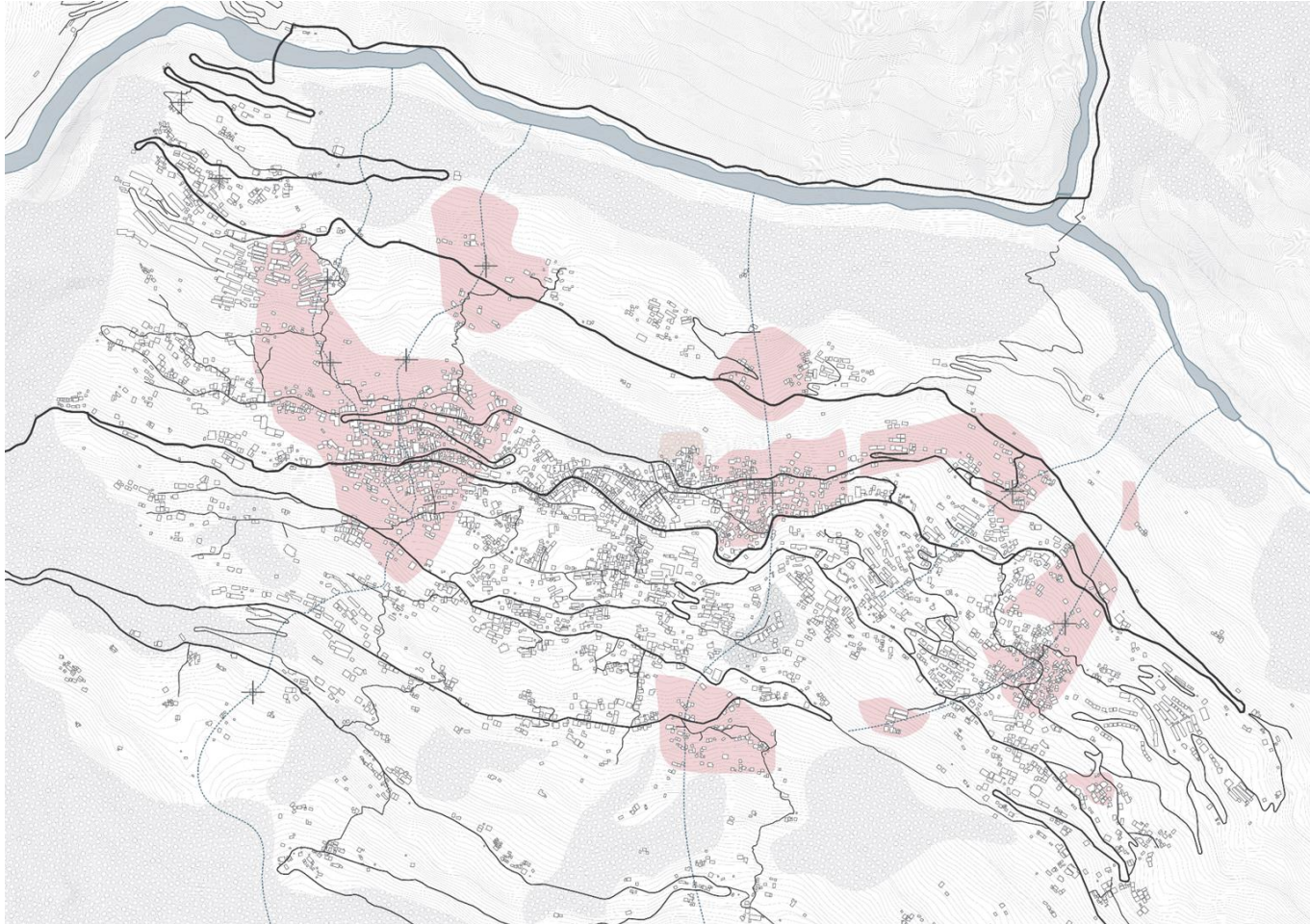
Territorial / L



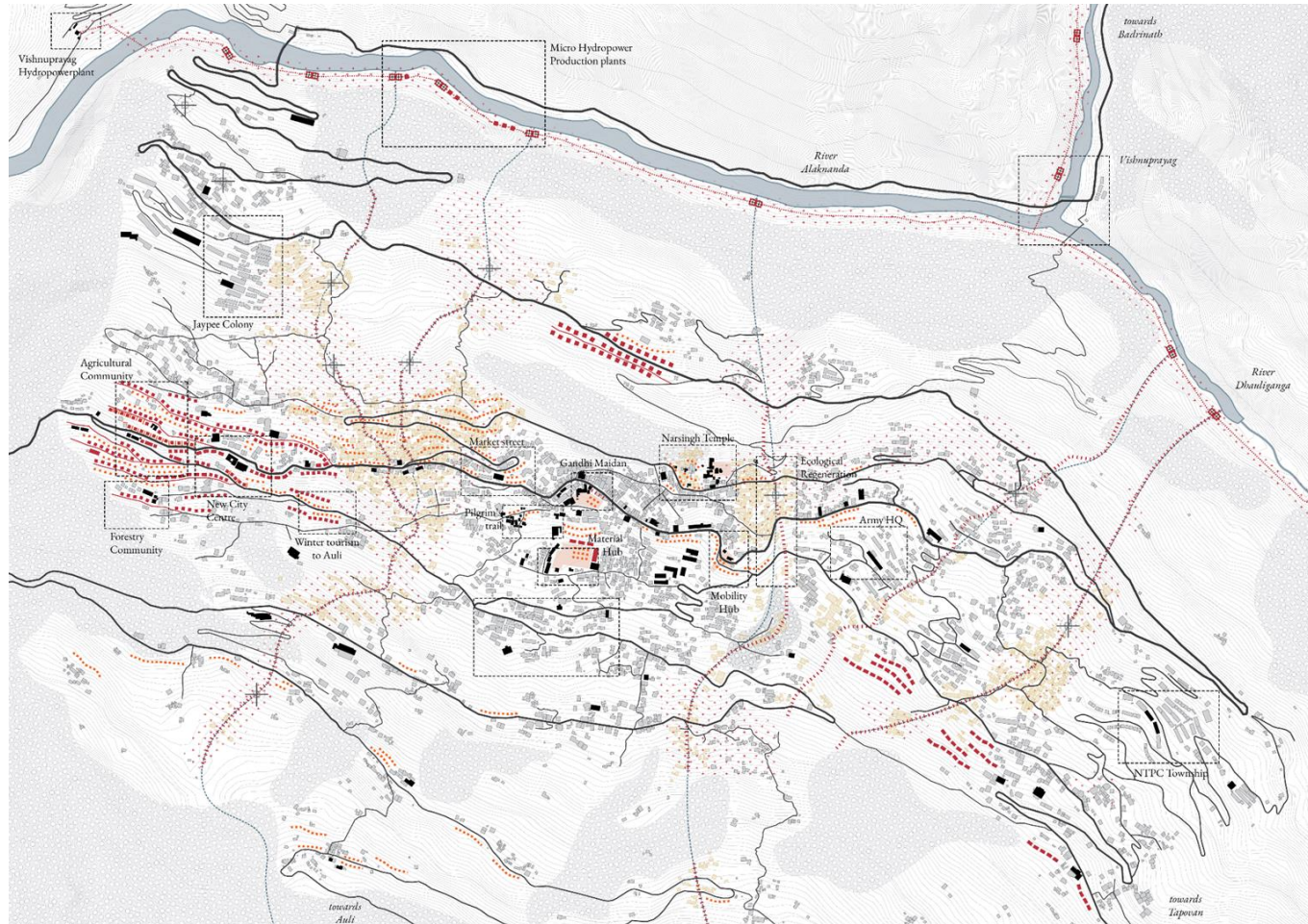
Aerial view / Joshimath



Mapping Risk / Joshimath



Palimpsest / Joshimath



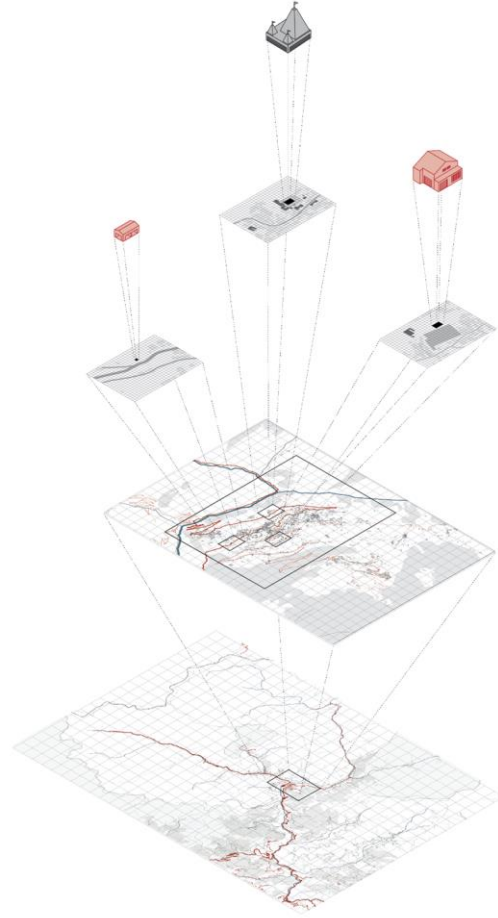
Project Frames

Object / XS

Ensemble / S

Landscape / M

Territorial / L





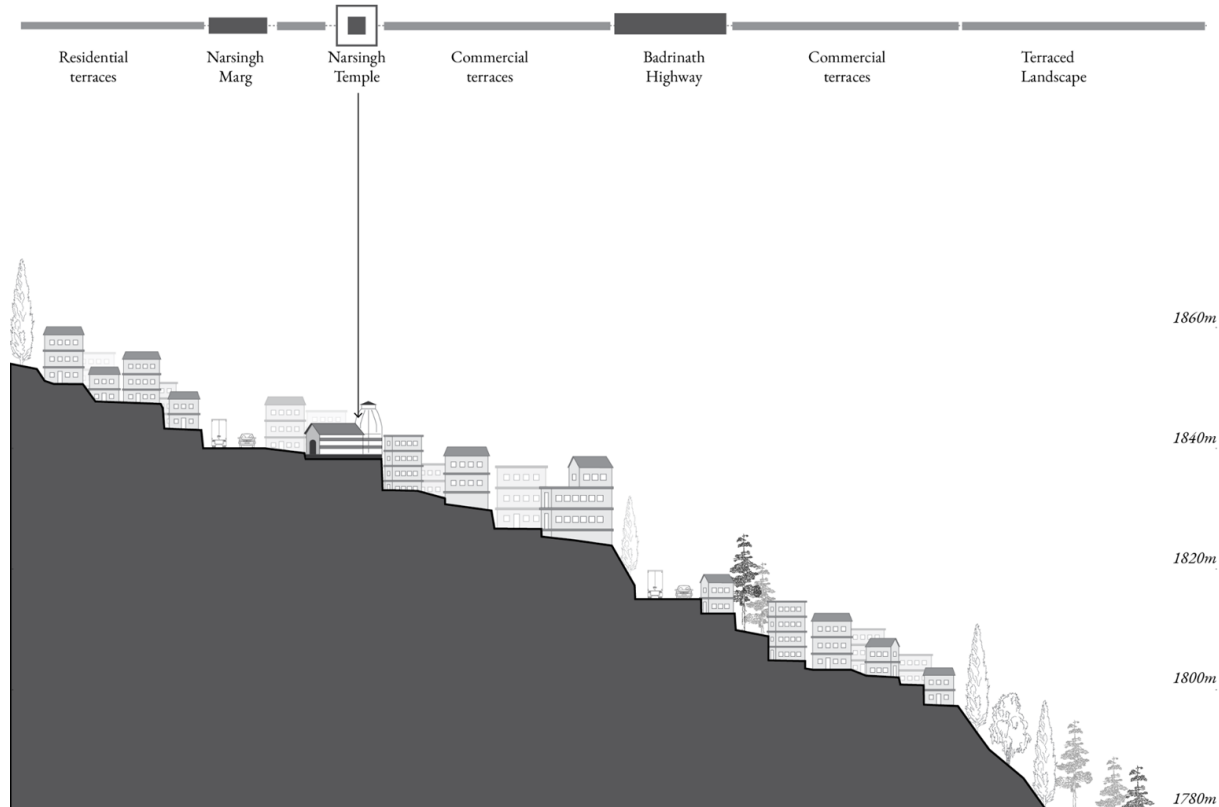
Urban sprawl around Narsingh Temple



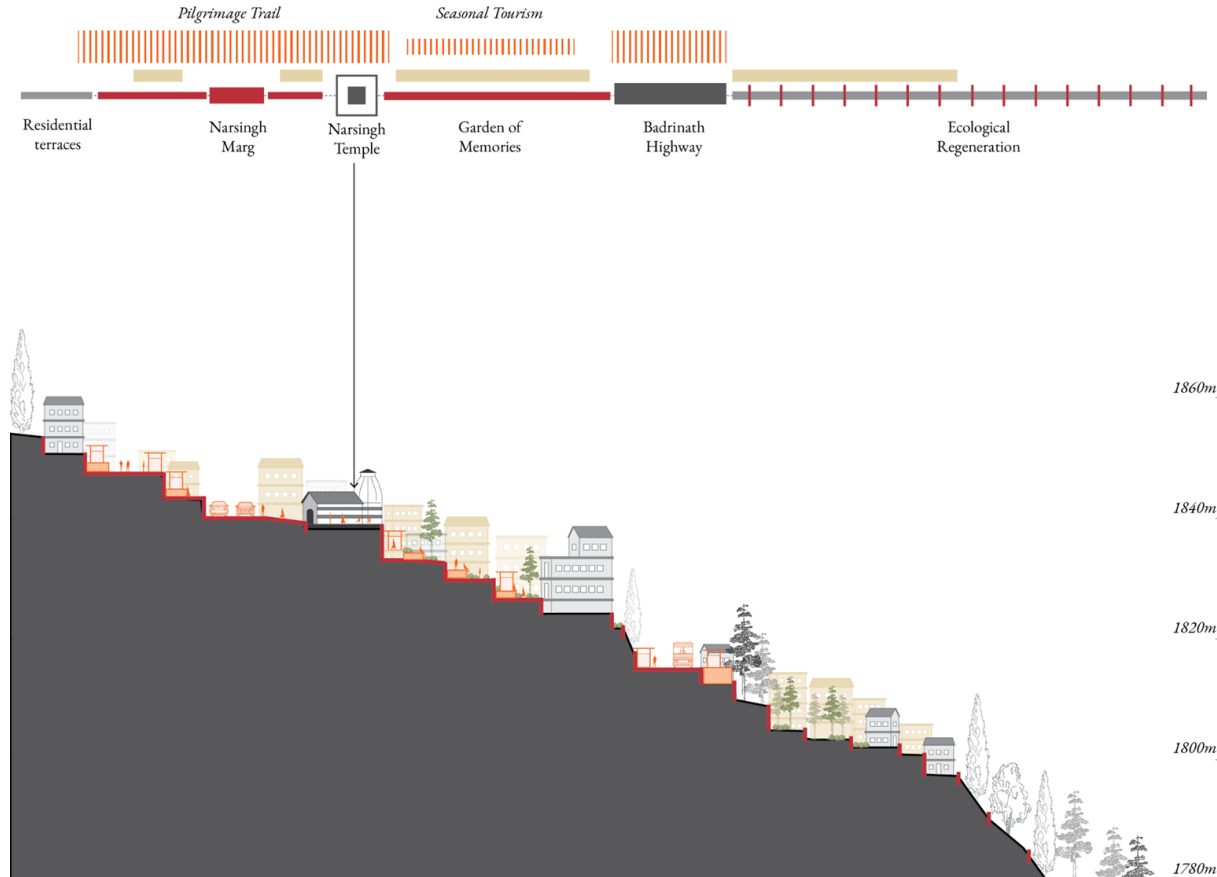
Existing Condition



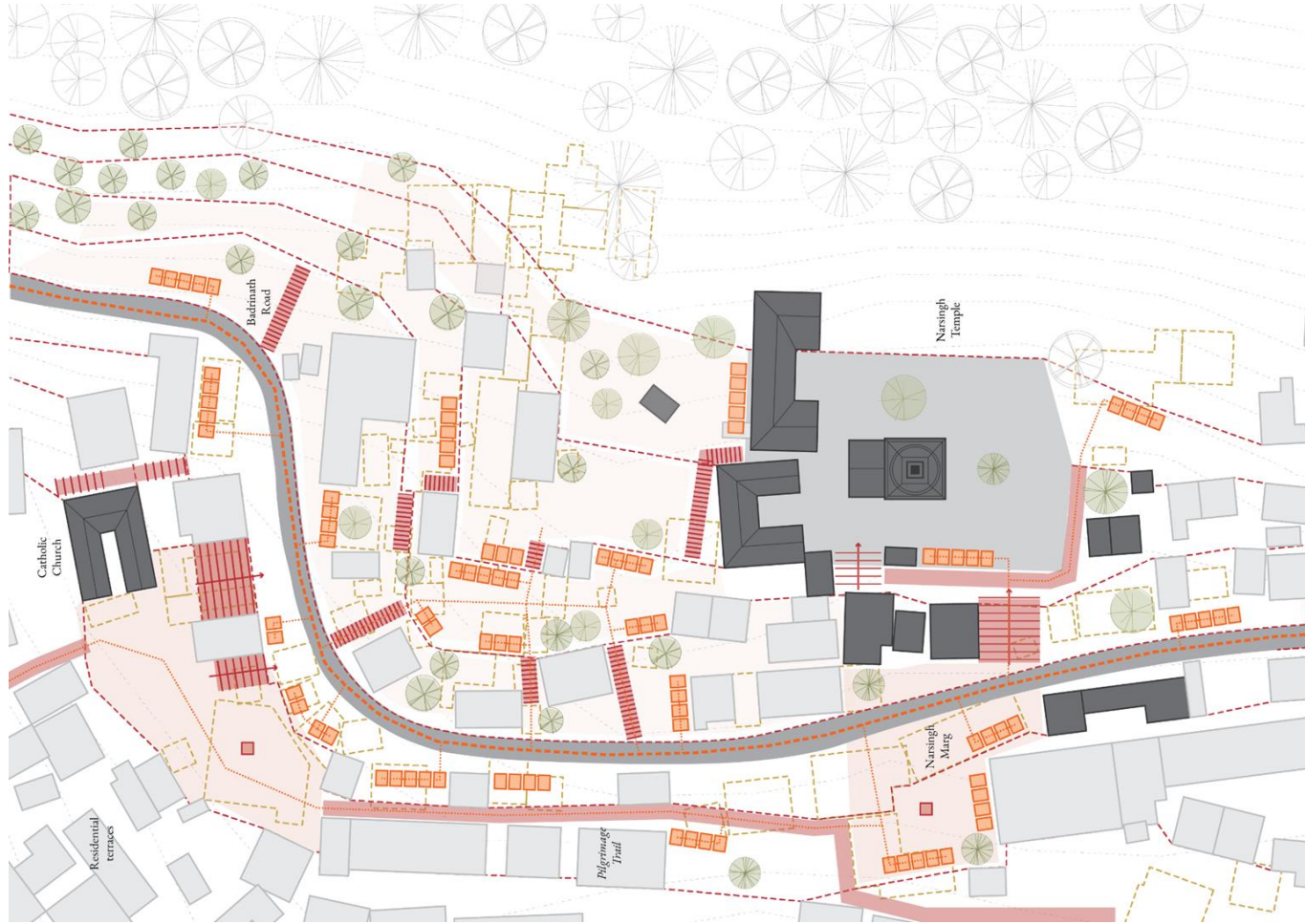
Existing Condition

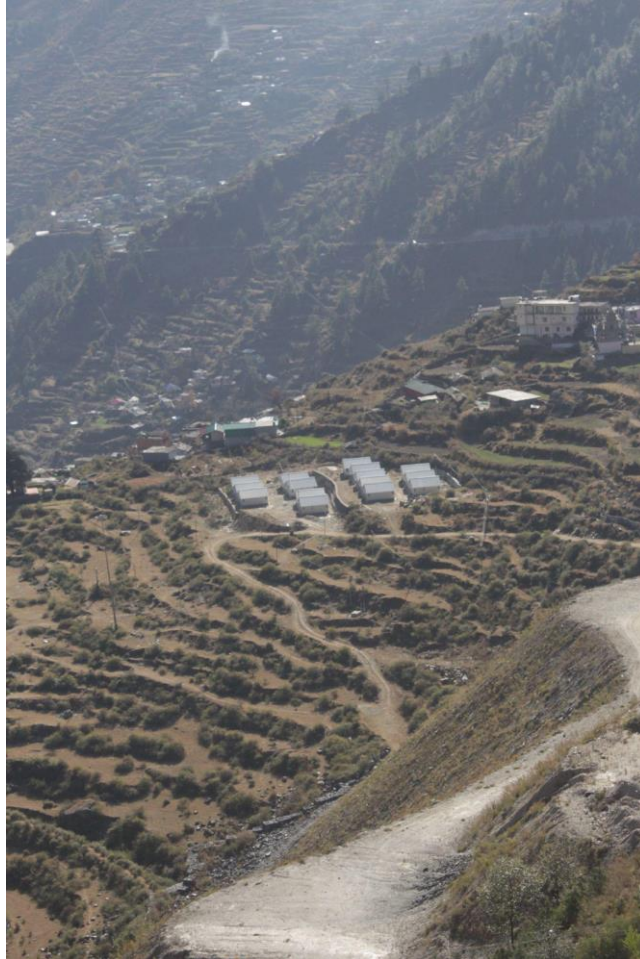


Transformations



Transformations



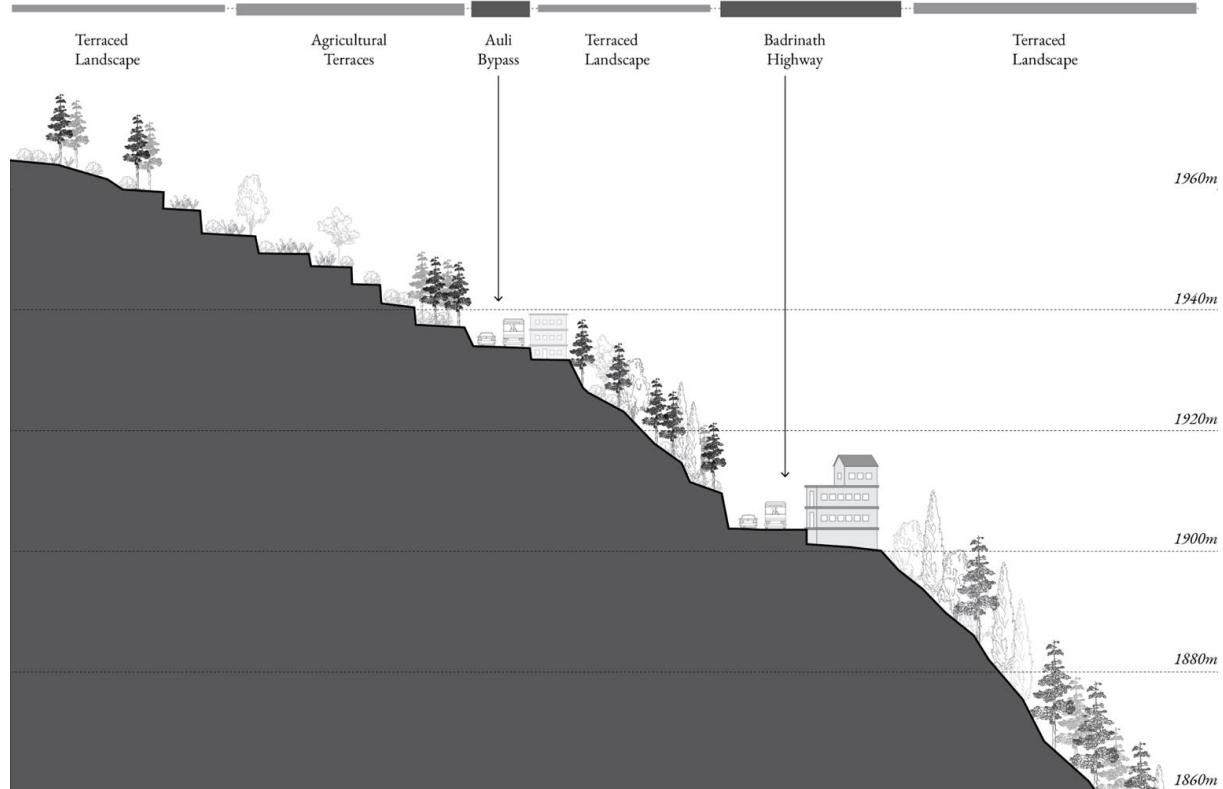




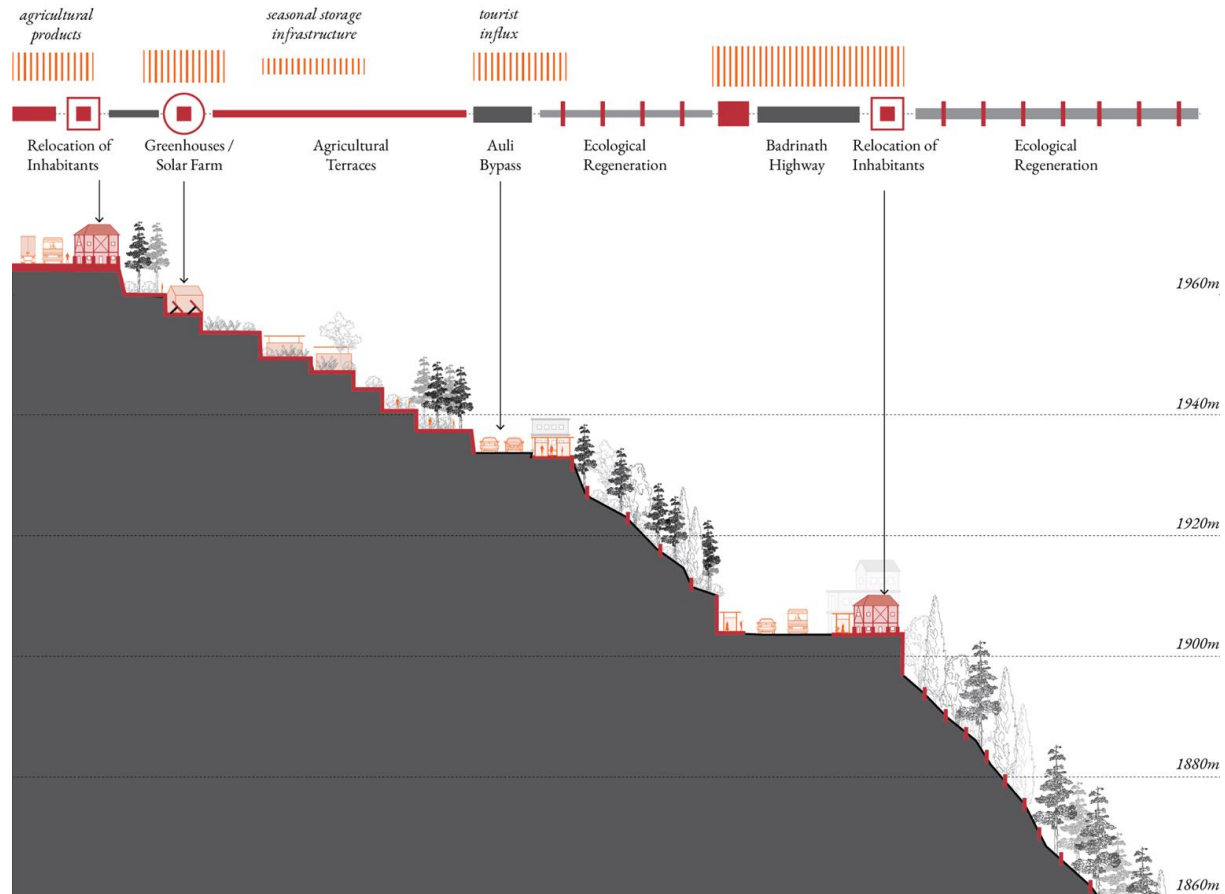
Existing Condition



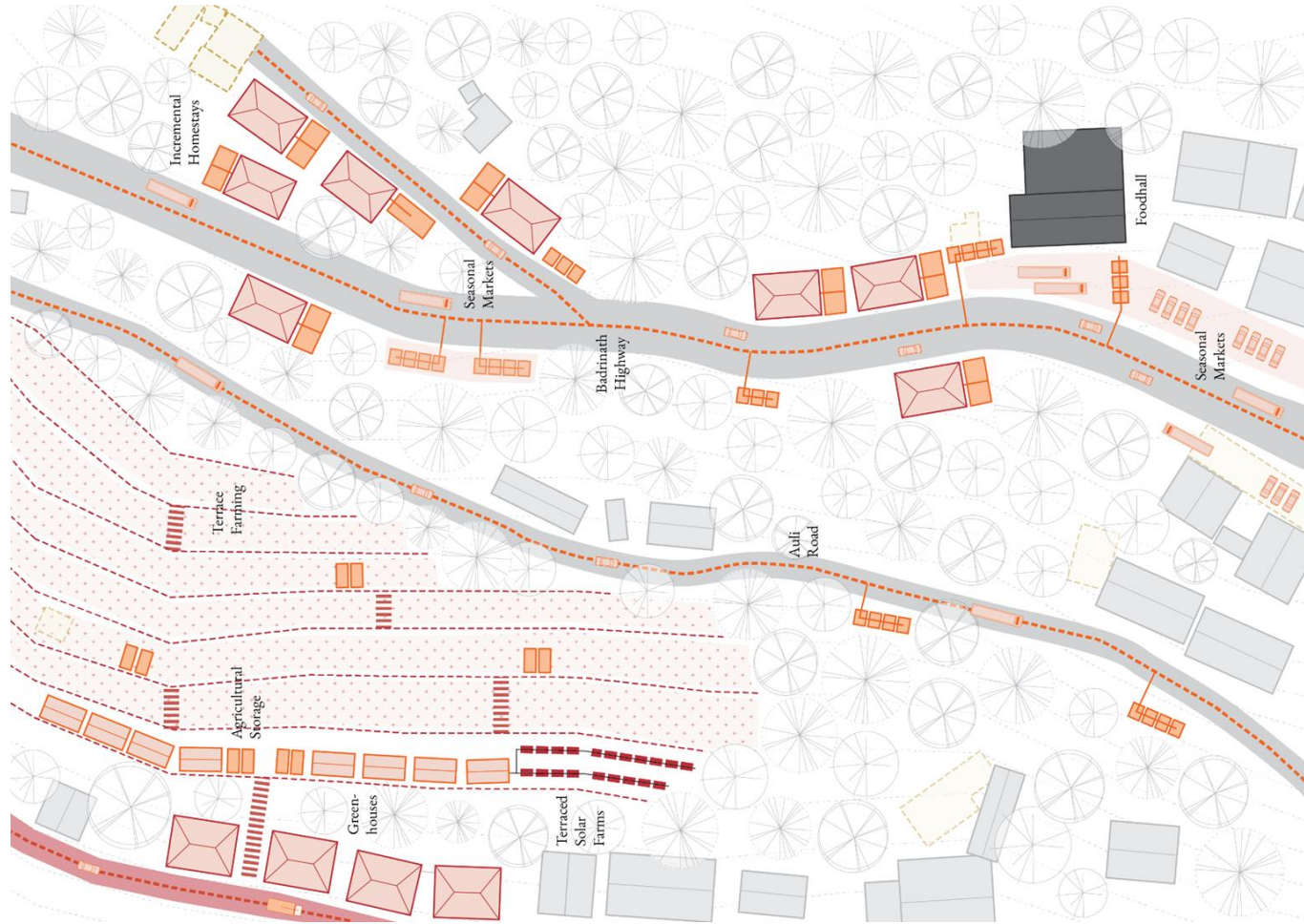
Existing Condition



Transformations



Transformations





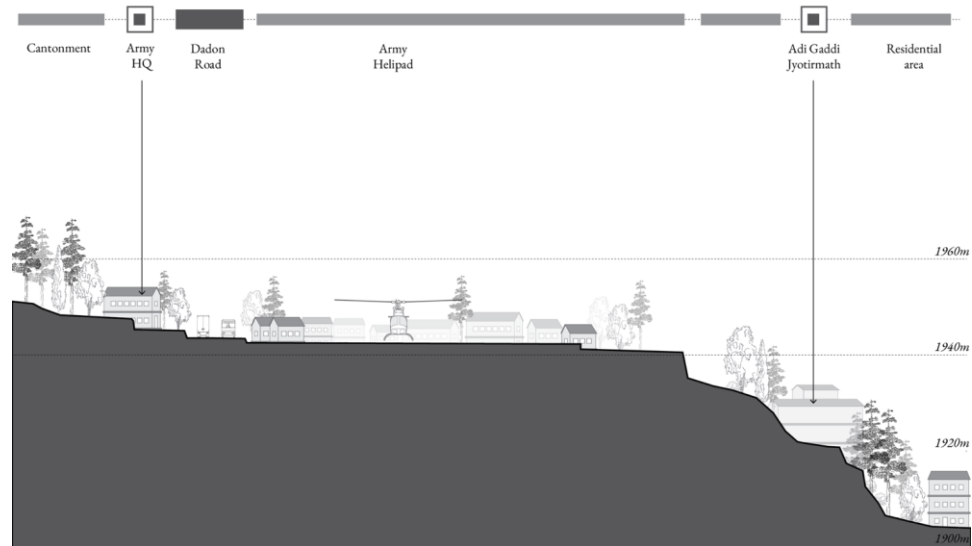
A cricket match being played at the Army Helipad in Joshimath



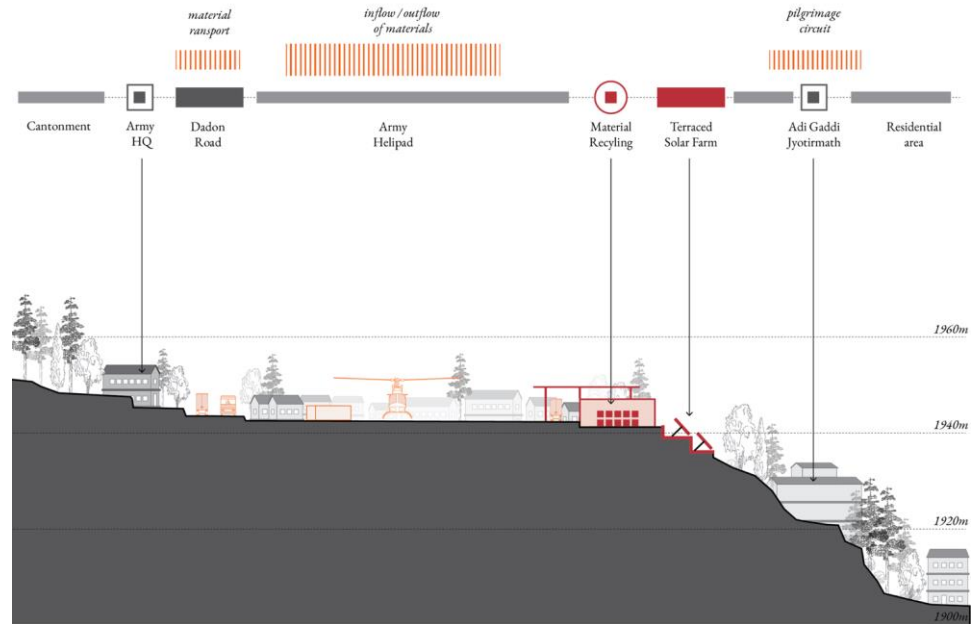
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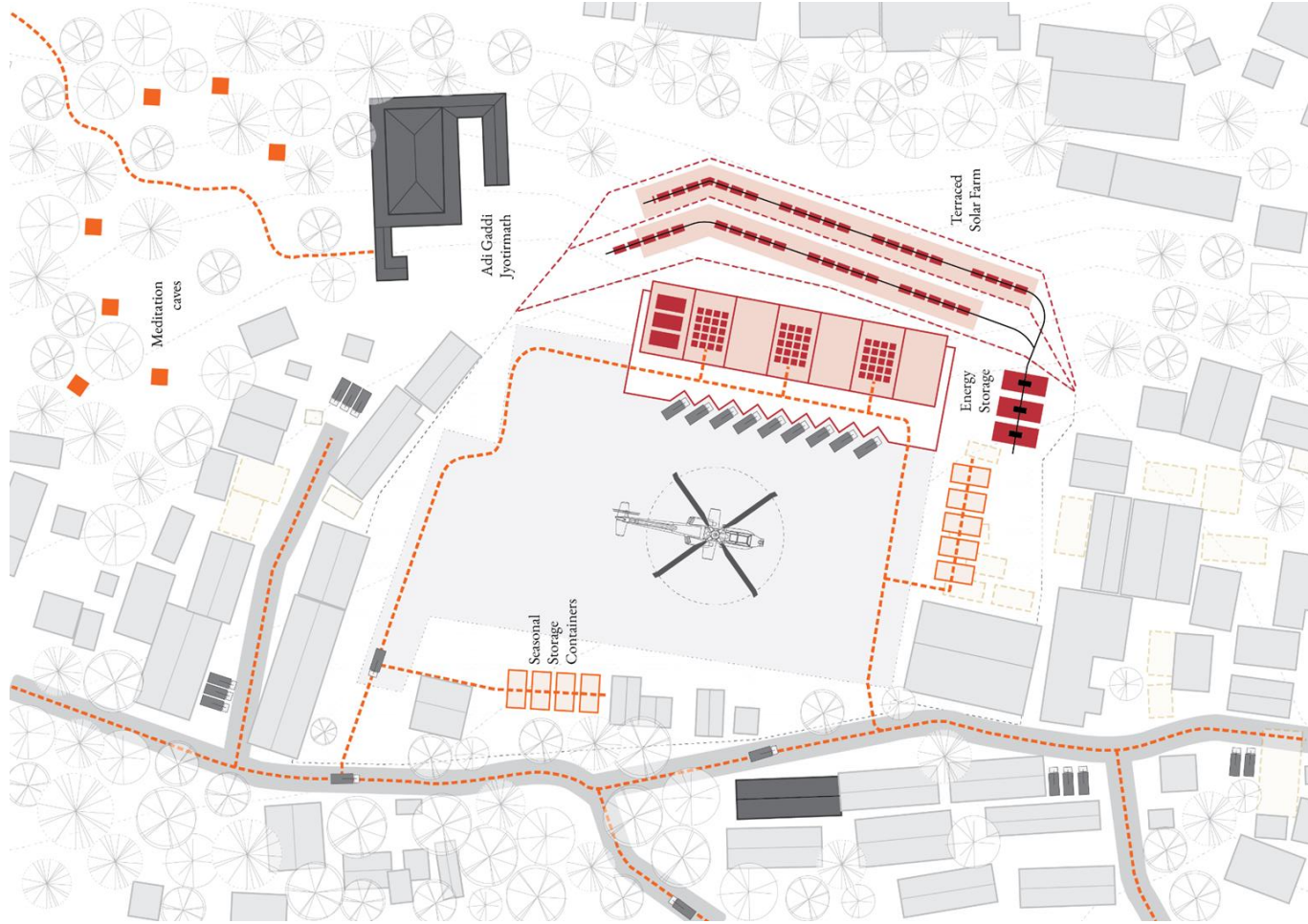
Existing Condition



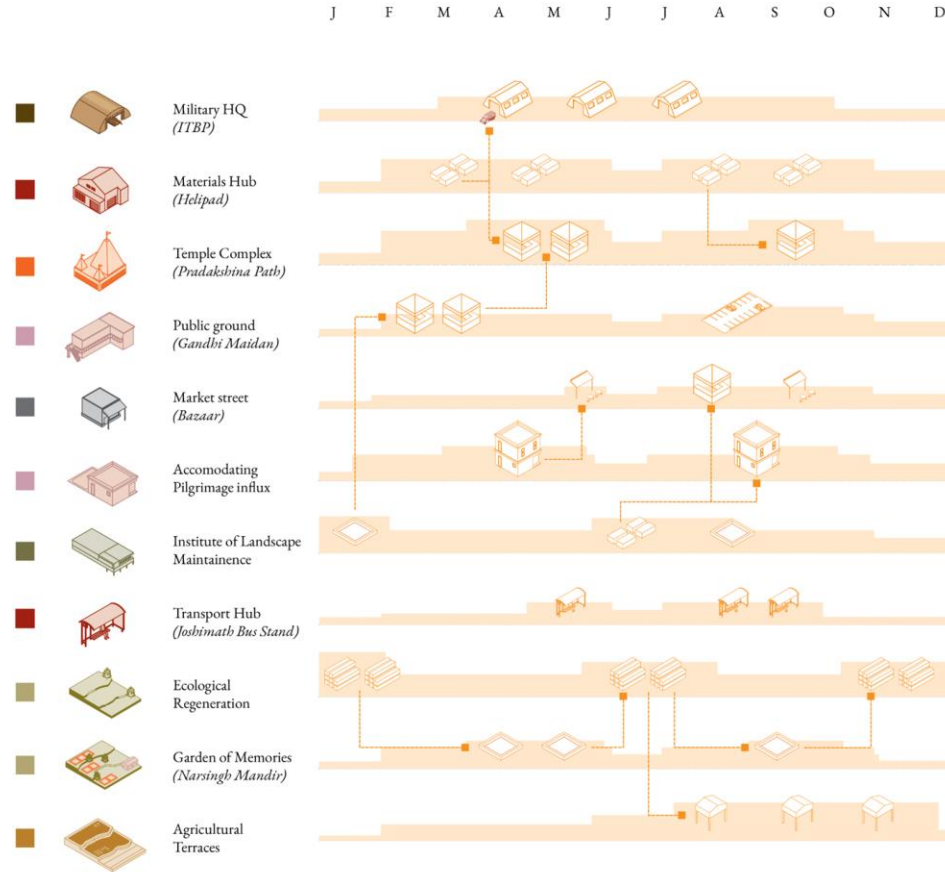
Transformations



Transformations

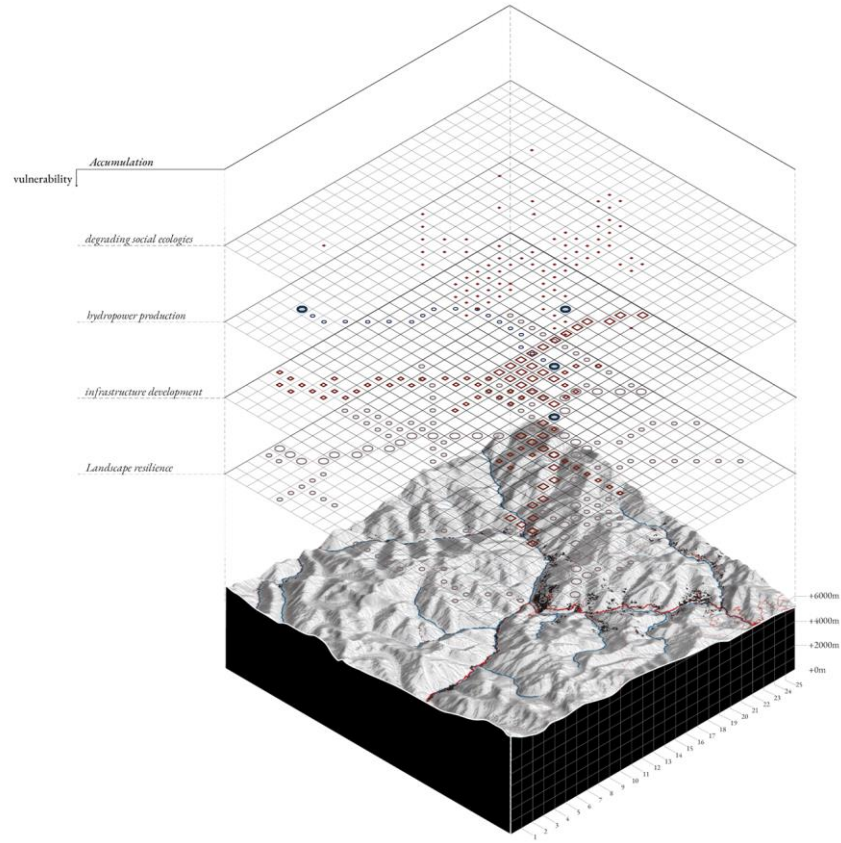


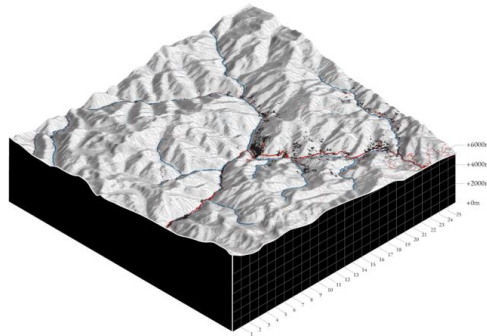
Seasonal Flows / Material Geographies



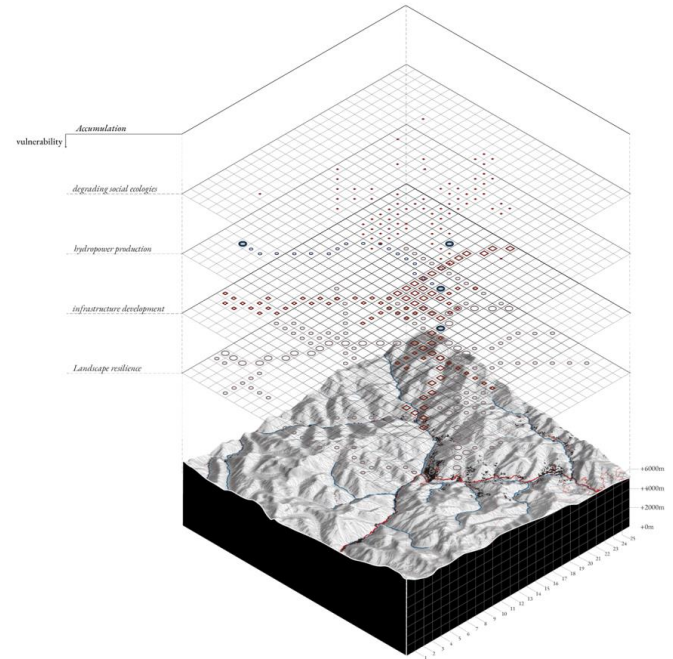
How can these strategies and interventions be projected on the territorial scale to synchronise and spatialise the spatio-temporal dynamics of these processes?

Spatio-Temporal Synchronicity



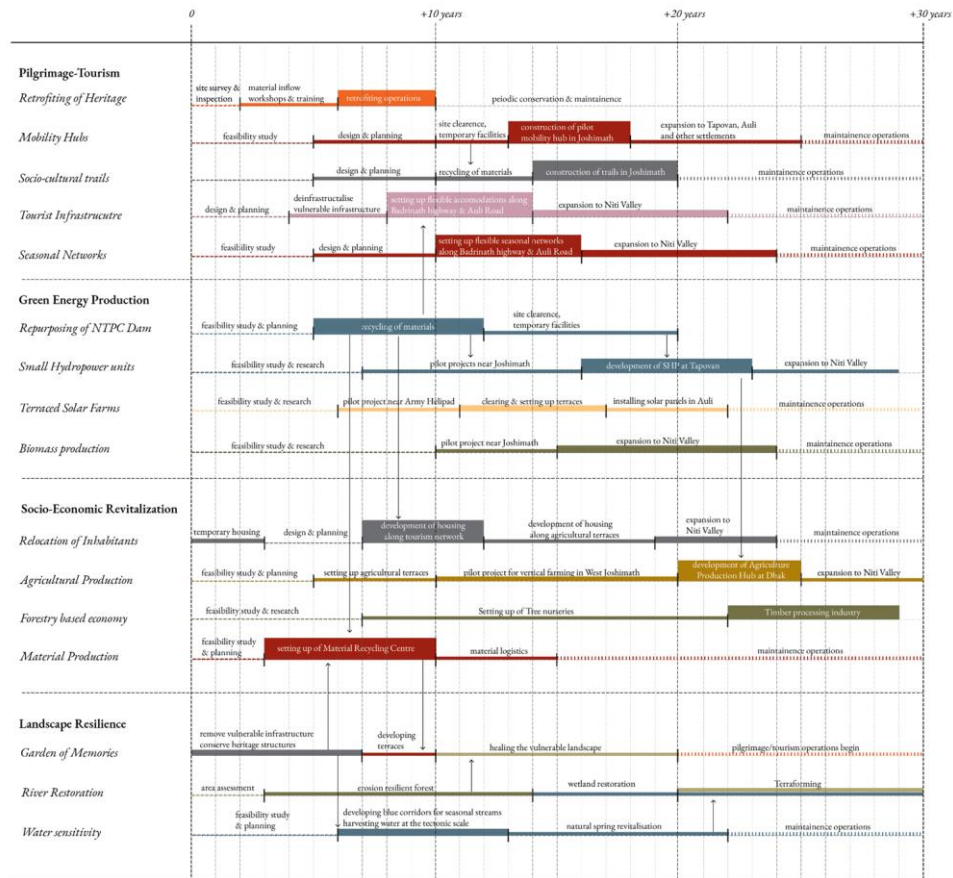


Accumulation

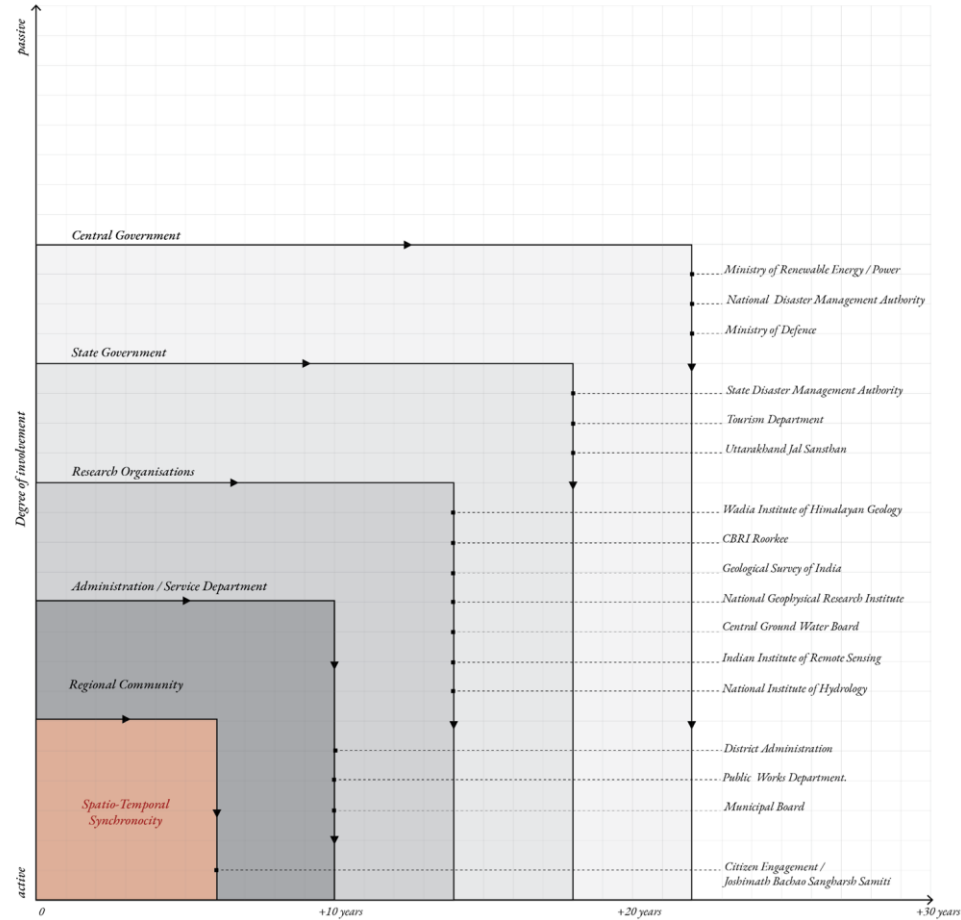


Spatio-Temporal Synchronicity

Phasing & Implementation



Governance



How can we evaluate the performance and assess the feasibility of the proposed design methodology and its spatial implications?

Assessment Parameters

Multifunctionality

☐☐☐☐☐

Responsiveness to Uncertainties

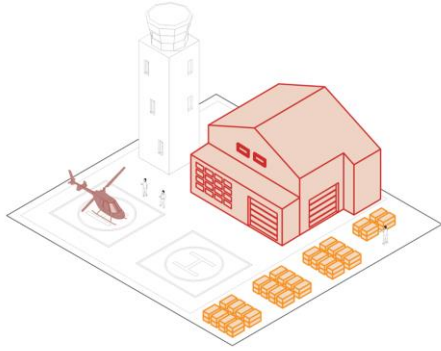
☐☐☐☐☐

Socio-Economic Implications

☐☐☐☐☐

Energy footprint

☐☐☐☐☐



Multifunctionality



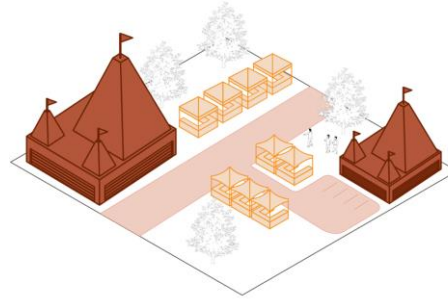
Responsiveness to Uncertainties



Socio-Economic Implications



Energy footprint



Multifunctionality



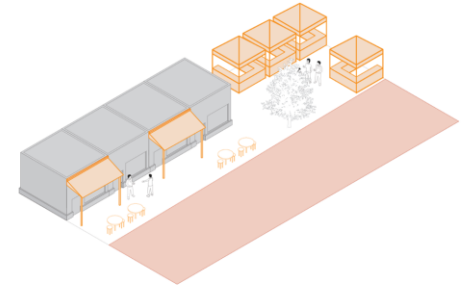
Responsiveness to Uncertainties



Socio-Economic Implications



Energy footprint



Multifunctionality



Responsiveness to Uncertainties



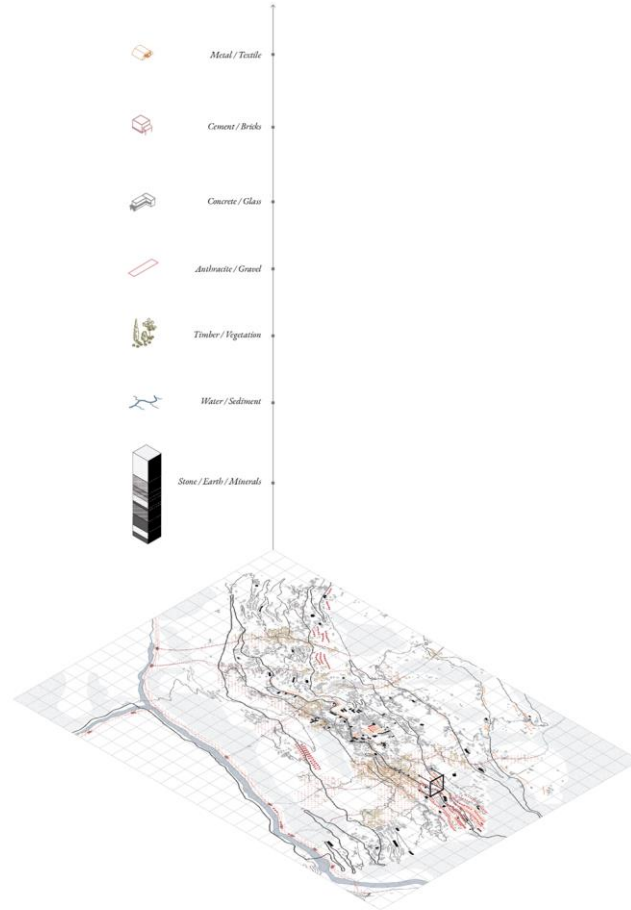
Socio-Economic Implications



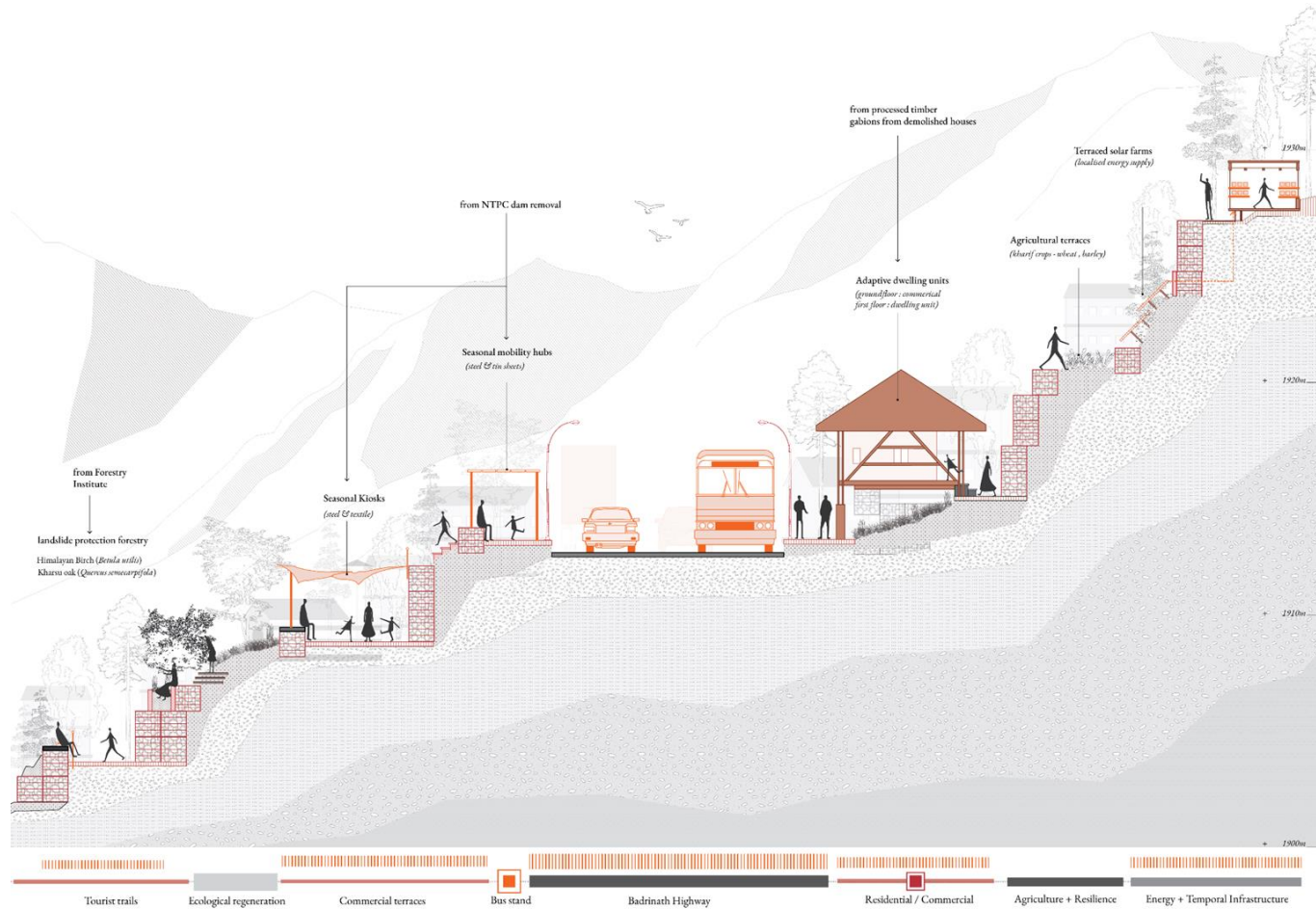
Energy footprint



New Material Reading



New Tectonics



Reflections



