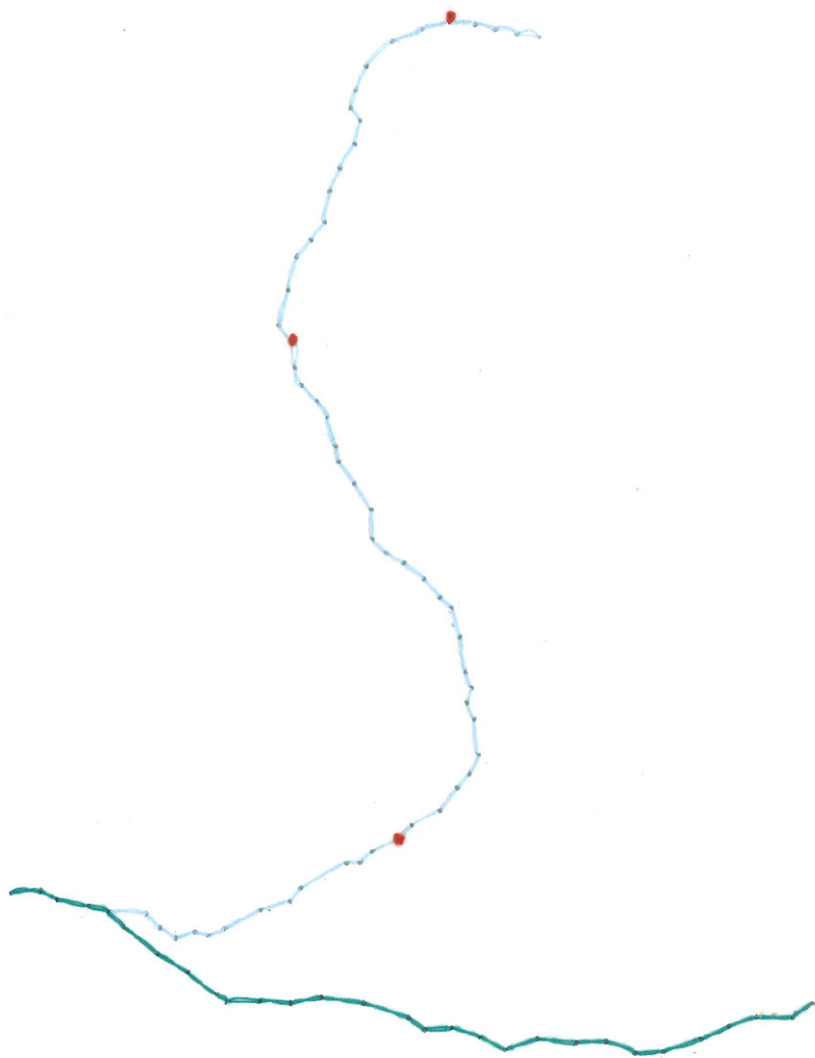




stitching streams

initiating encounters between humans and
non-humans in the rural landscape

Ijeoma Ruben

Stitching streams: How can interventions along the Veral River enhance the relationship between humans and its natural environment?

Rural Studio: Supporting mountain communities

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*“rurality is primarily concerned with all kinds of cycles:
seasonal: spring, summer, fall, winter, fields, sowing and harvesting
climatic: rain, snow, hail, temperature, humidity
fertility; fallow land management, crop rotation, breeding cycles
human cycles; generational renewal, education, heritage, acceptance of death”
- Versteegh, 2014, p. 52*

Ansó is a mountain village located in the north of Spain, in the Pyrenees near the French border. Nestled in a deep valley at an elevation of 866 meters above sea level, the Veral River flows through the village and acts as its main waterway. This research began with a field trip to Ansó, where the river initially sparked a personal curiosity. From that initial spark, the investigation evolved into a deeper exploration of the river’s role through reading, interviews and studying maps both in the daily life of the village and within the broader hydrological system of the Aragón region. The river became an interesting start for examining the theme of coexistence between humans and the natural environment. This thesis asks how humans and nature can co-exist more meaningfully, using the Veral River and the practice of transhumance as guiding elements.

How can interventions along the Veral River enhance the relationship between humans and their natural environment?

During fieldwork, an interview with one of the six remaining shepherds in Ansó opened up new perspectives on the significance of shepherding in the region. As the village’s second most important economic activity, with deep historical roots, transhumance continues to shape both land use and cultural identity. The shepherd described how the river plays a vital role in his seasonal movements. Following the Veral and beyond, he passes through four main villages throughout the year, covering a distance of at least 155 km.

This knowledge lead to a zoomed-out examination of the rural landscapes involved in these stops: their defining characteristics like topography, the timing of the shepherd’s presence in the year, and how these seasonal rhythms affect local biodiversity and human-nature interactions. Understanding these relationships informs how landscape and architectural interventions might mediate between the three primary actors in this project: the shepherd and his sheep, the river, and the biodiversity intricately tied to both , including predators, opportunistic species, and ecosystems that benefit from transhumant practices.

This research and design project aims to propose interventions that enhance the complex relationship between humans and the (semi-)natural landscape, making this connection visible and meaningful through spatial and ecological design.



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1 Exploring Ansó's valley in autumn

During our site visit to [Ansó](#) in November, we had the opportunity to explore the village individually. After walking through the village streets, I was drawn to the river. Despite its physical proximity, the river felt strangely distant from the village, almost hidden. Its presence was imposing in the landscape, yet somehow disconnected from daily village life. Curious about the river's role in Ansó, I continued exploring both the village and its surroundings.



Getting to know the river and its role better

To get to know the river better, I tried to follow its course on foot, sketching scenes as I went. However, I quickly discovered that reaching the river was more difficult than expected. It was largely inaccessible. The only way to approach it was through narrow, hidden paths and openings in dense vegetation. There was one public plot along the river with a isolated swimming spot, but even that space was hard to reach. I found five other potential access points, but all of them were just as difficult to navigate. This walk made me realize just how rare and untouched this river truly is. Located so close to its source, it flows rapidly and cleanly through Ansó and is one of the few rivers in the region that remains in such a pure condition. For this reason, the Veral River is just as vital to the village as it is to the aquatic ecosystems it supports. Its purity and limited accessibility give it a unique character.



reaching.....



the river





reaching.....



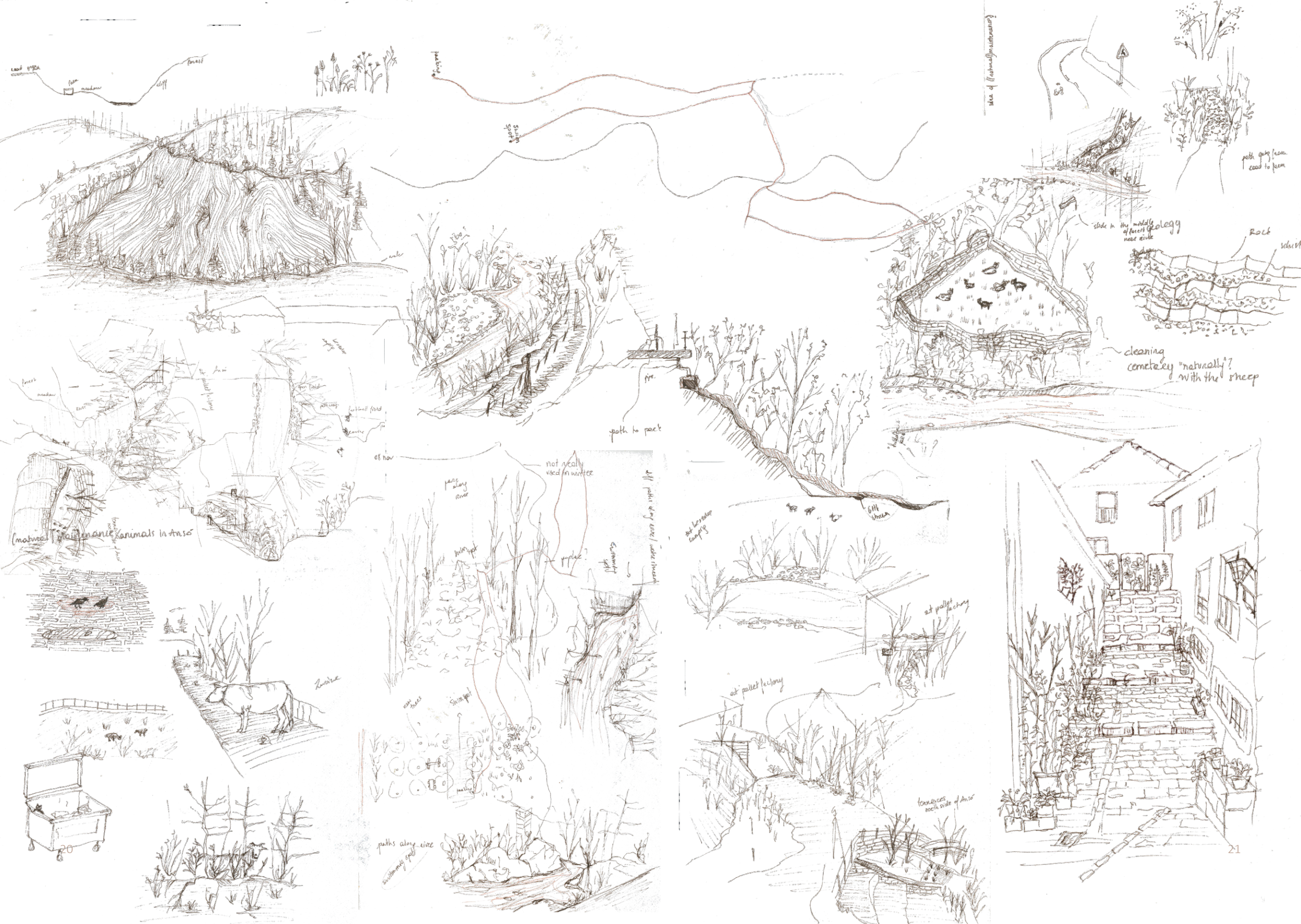
the river



reaching.....



the river



road 8/24

forest

path to park

not really used in winter

side of (natural) illustration?

path only from road to farm

slide in the middle of forest geology near river

Rock

cleaning cemetery "naturally" with the sheep

(native) animals in Amos

not really used in winter

diff path along river / water stream

at pellet factory

at pellet factory

at pellet factory

house on north side of Amos

Further curiosities during the field work

Beyond the initial interest in the Veral River, the fieldwork also revealed the richness of biodiversity in the valley and the complex interactions between humans, animals, and the landscape. Observing the shepherd and his flock offered insight into how semi-domesticated species, like sheep, exist within a broader ecological system. A system that includes both natural predators and scavengers. These interactions are deeply intertwined. Sheep and goats among others are targeted by predators such as bears and wild boars, which can make the relationship between humans and the natural world tense. In response, humans often seek to protect themselves and their livestock from these perceived threats. Yet, these same predators and scavengers also play a valuable role: by feeding on dead animals, they act as natural cleaners, supporting the health of the ecosystem.

This thesis explores such relationships and asks how they might be reinforced or better mediated through spatial interventions along the Veral River. The following pages illustrate some of the key animal species connected to the transhumance practice in and around Ansó, from the sheep and their predators, like the bear, to less obvious relationships such as the bear's potential impact on fish species like trout. Understanding these dynamics helps us grasp the broader patterns of coexistence and conflict between human activity and ecological systems.



brown bear



northern goshawk



bearded vulture



egyptian vulture



red kite

ANIMALS INTERACTING WITH TRANSHUMANCE & SHEPHERDING



white wagtail



pyrenean newt



brown trout



common chiffchaff



cuckoo



pyrenean frog

ANIMALS DIRECTLY DEPENDENT ON THE RIVER



sheep



goat



cow



shepherd dog

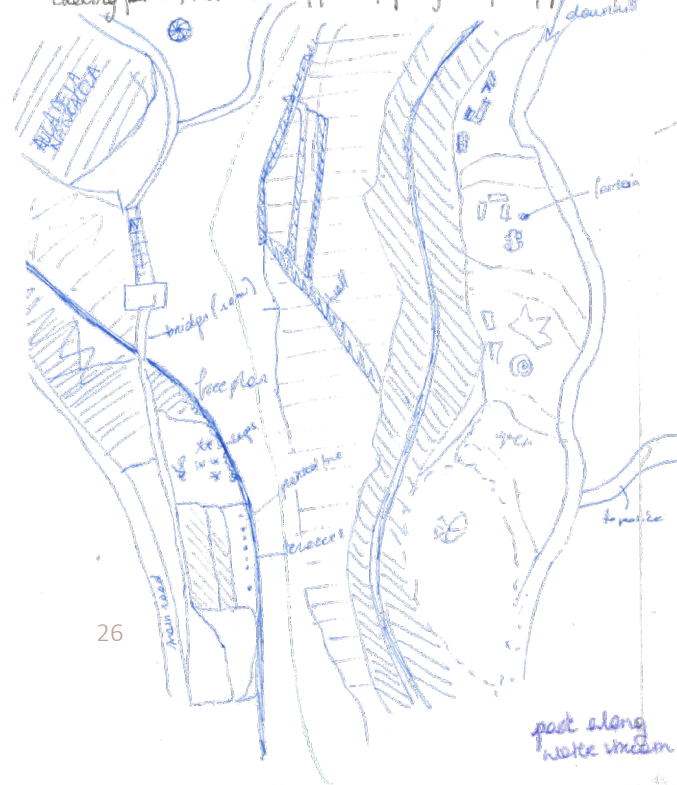


horse

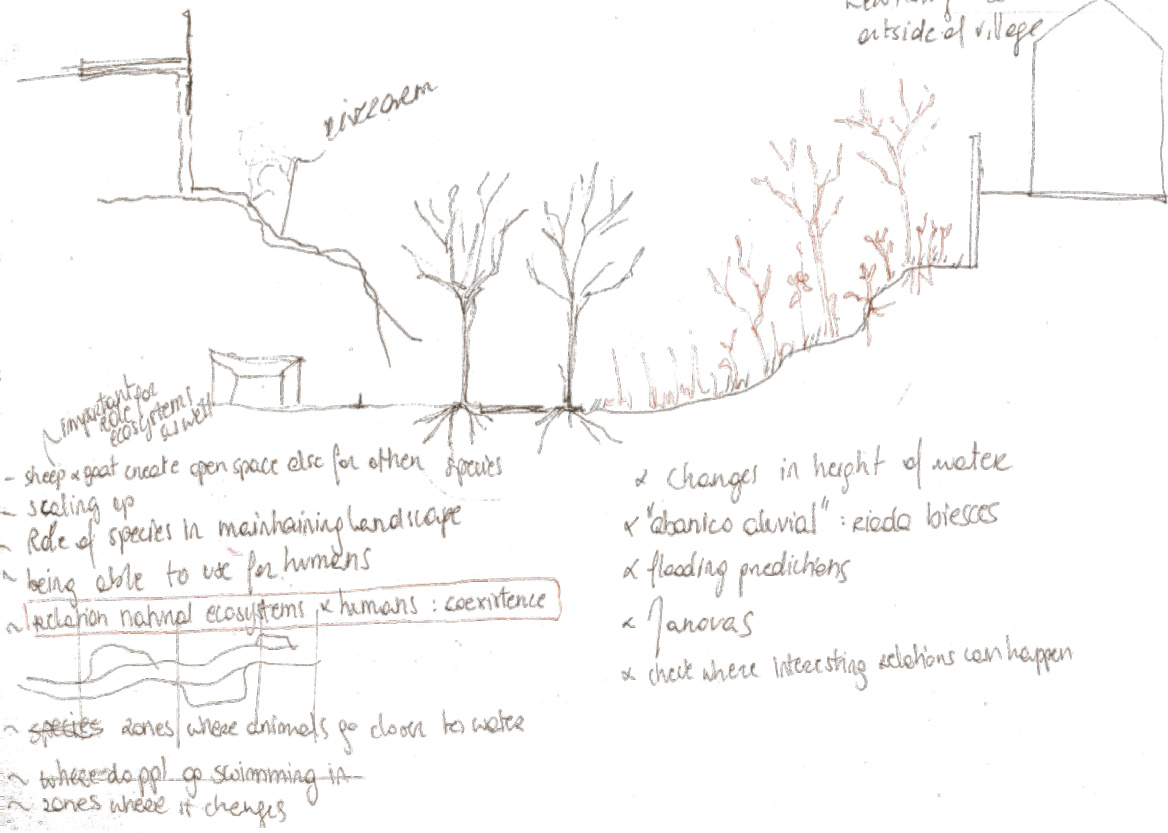
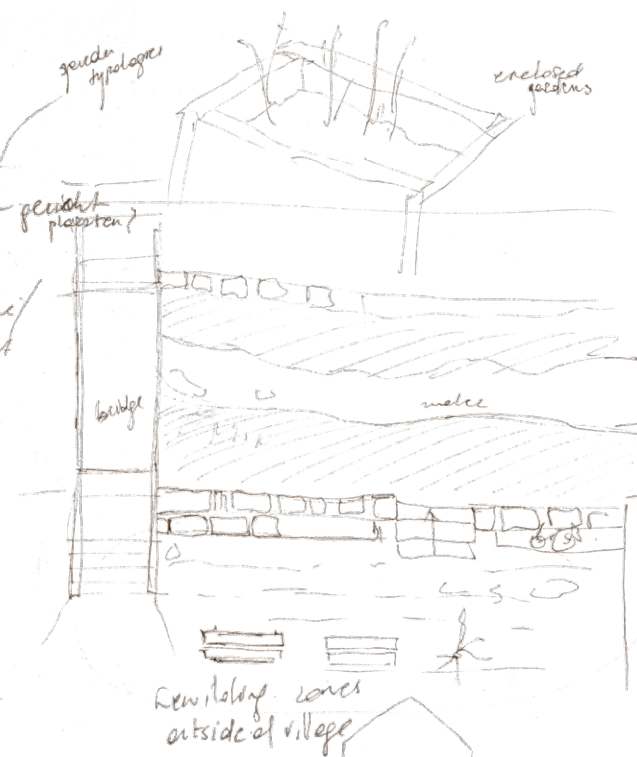
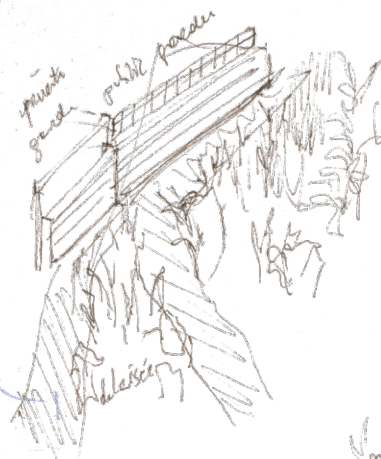
ANIMALS DIRECTLY INVOLVED IN TRANSHUMANCE & SHEPHERDING



- fields: public: belong to municipality
subsidies received by PV based on amount of ha
a bit of no → more money for village & farmers.
- medieval tower: to see enemy during medieval times
- 100 kg of wood per taking per day to take (bread)
on firewood.
- clearing paths; maintenance of forest; splitting wood; use of pastures



On-site sketches including drawings in neighbouring villages Fago and Hecho



Transhumance in the Aragon region

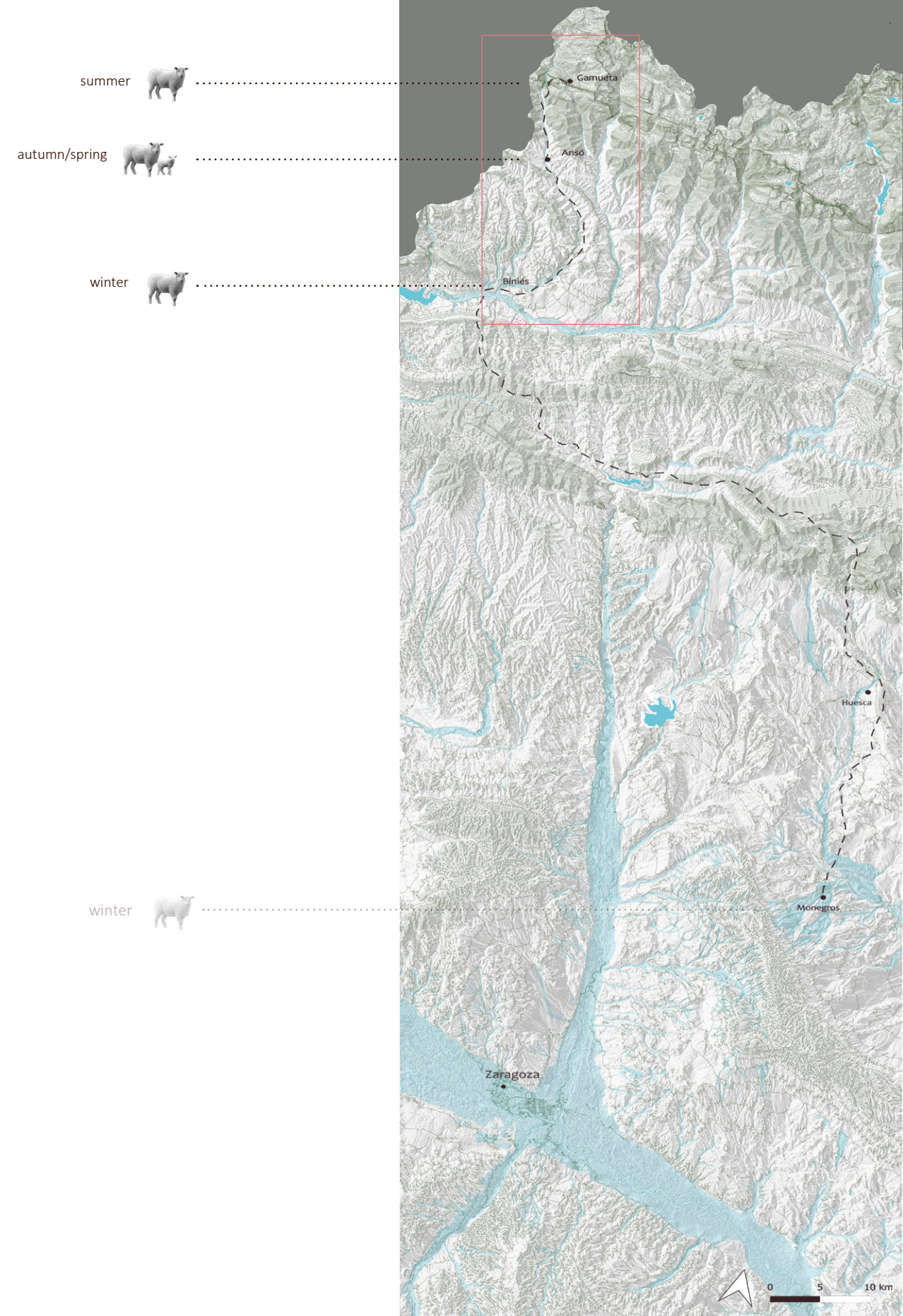
The river as guiding element

Transhumance is a centuries-old traditional practice in the Pyrenees, and its presence remains clearly visible in Ansó. After speaking with Diego Ipas, one of the village's sheep shepherds, the role of the river in this tradition became more apparent. Beyond being a source of water, the river is a vital element that guides how shepherds move through the region with their flocks. It acts as a natural route, shaping seasonal migration patterns throughout the year. The shepherd and the sheep follow its course through the Ansó valley, descending from the high summer pastures in Gamueta, passing through Ansó's mid-altitude grasslands, and eventually reaching the lowland fields of Biniés in winter. Part of the flock is also transported by truck to another farmer in Monegros, near Zaragoza. The river functions like a thread, connecting different topographies, climates, and ecosystems before joining the Aragón River.

From the beginning of this research, the river stood out not only as a physical presence but as a structuring force shaping both the landscape and the seasonal movement of people and animals. For this reason, water remains central to the project. It reflects seasonal rhythms and reveals much about landscape conditions. As shown on the flood map below, it also indicates the most fertile soils and areas vulnerable to change.

This brings forth a set of guiding questions:

- What is the relationship between humans and the (semi-)natural, and how does this influence transhumance?
- What roles do soil and vegetation play in shaping transhumant practices?
- How do seasonal changes affect the use and condition of the landscape?
- What are the long-term effects of transhumance and land use on soil and ecosystem health?

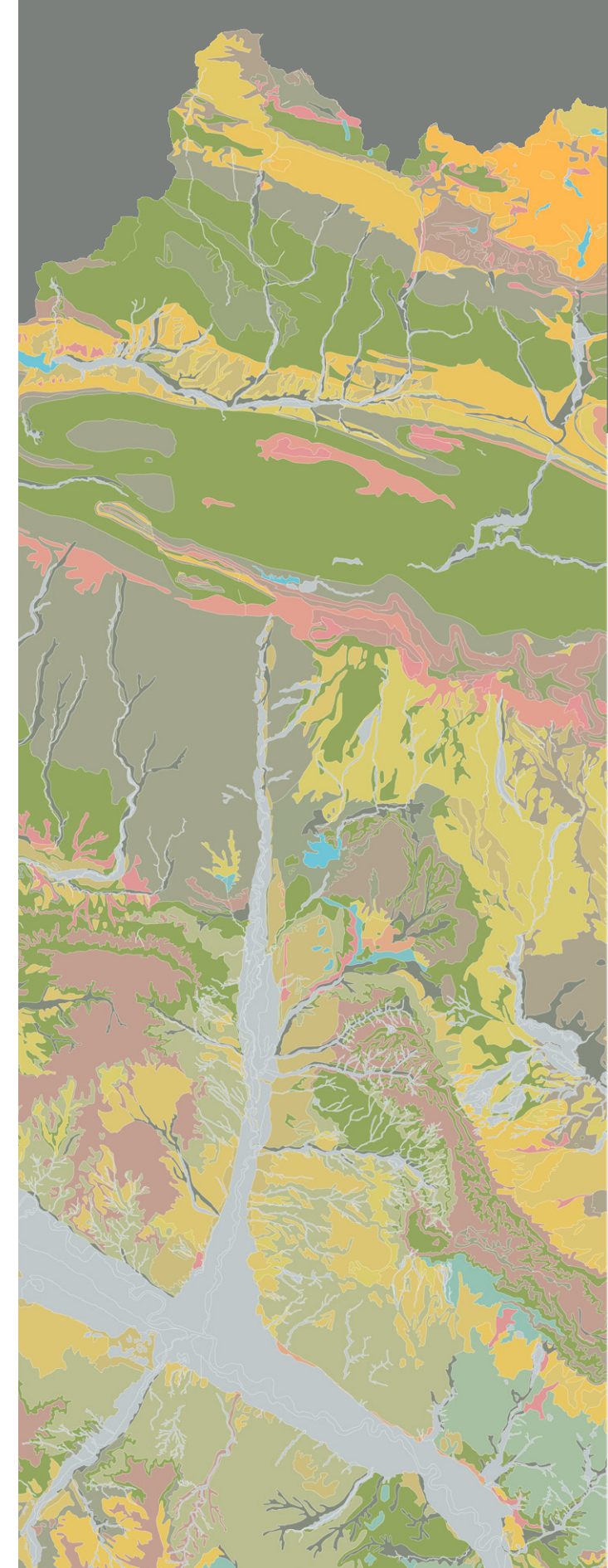
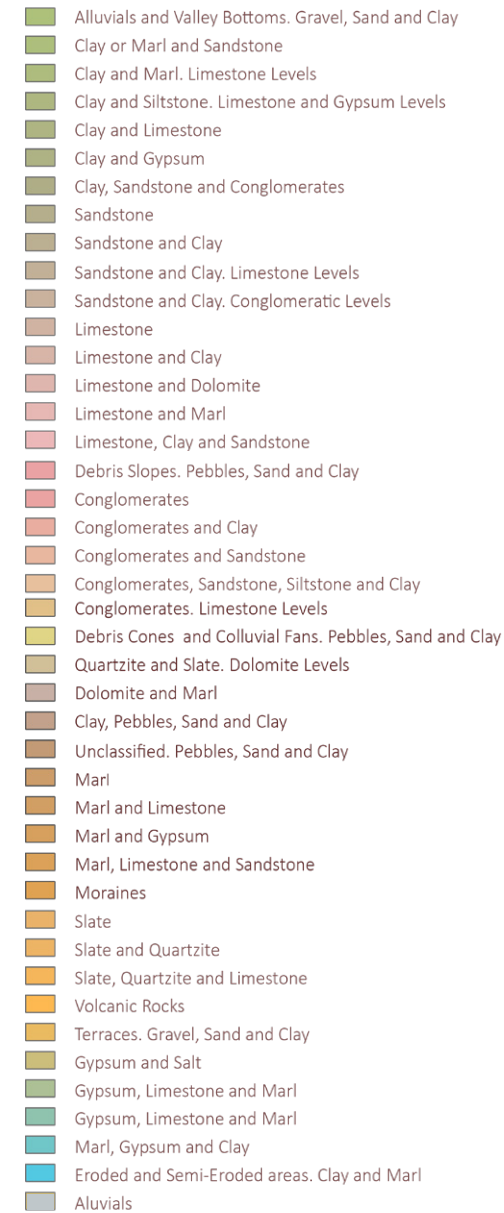


The importance of geology

The Pyrenees mountain range was formed millions of years ago through the collision of the Iberian and Eurasian tectonic plates. Over time, rivers, glaciers, and erosion sculpted the steep peaks and deep valleys we see today.

From north to south, the geology transitions from uniform formations in the high mountain zones to the diverse bedrock in the lowlands. The Pyrenees consist mainly of metamorphic, erosion-resistant rocks like slate and schist that contribute to the steep relief of the mountain range. As a result, this region has a low risk of flooding, since meltwater and precipitation are quickly channeled through narrow rivers and ravines. Further south, the Pre-Pyrenees are made up mostly of sedimentary rocks like sandstone and marl, which are softer and more erodible. These areas show gentler slopes and wider valleys. Here, water infiltration is slower, and the risk of seasonal flooding begins to increase.

In the Ebro Basin, the geology is dominated by limestone, clay, and marl that create fertile soils suitable for intensive agriculture. The topography flattens out, and the broader floodplains of the Ebro and its tributaries increase the risk of seasonal flooding. However, this also supports irrigation systems tied to agricultural and wetland ecosystems. This geological layering shapes not only the topography but also the land use, vegetation, and hydrological behavior of the entire region.



Biniés **Ansó** **Gamueta**

For this research I will be focusing on three settlements that are along the Veral river. These are the three main stops the shepherd and his sheep make throughout the year and this will be the guiding element for spatial interventions and analysis. The three sites each differ in natural characteristics such as topography, hydrology, soil, geology, climate and biodiversity. This in turn influences the presence or absence of the shepherd and his sheep in any of the settlements. Not only the shepherd and his sheep, also animals that are closely intertwined with the main actors of the transhumance practice.

In the following pages I will go more in depth in the specific characteristics of each of these sites to see which natural cycles are present and how it somehow influences the shepherd and the sheep but also humans and the natural environment (birds, insects, plants, water).



I. Biniés

Winter pastures
680 m above sea level



Biniés serves as the winter pasture for the sheep of Diego Ipas, marking both the endpoint and starting point of his transhumance route. From here, a portion of the flock is transported about 130 km south to Monegros by truck. The settlement lies along the Veral River, just a few hundred meters north of its confluence with the larger east-west Aragón River. In addition to sheep pastures, the area supports grazing for horses, cows, and goats.

Of the three settlements, Biniés has the most agriculturally cultivated landscape, thanks to its fertile soil. Alongside grazing lands, several plots are used for orchard cultivation, contributing to food production in Aragón and beyond. However, this intensive use has also led to growing concerns around soil degradation and water availability, issues that increasingly affect Biniés and other similarly situated settlements.





shepherd and flock arriving in lowland pastures
Borrue, A. (2021)



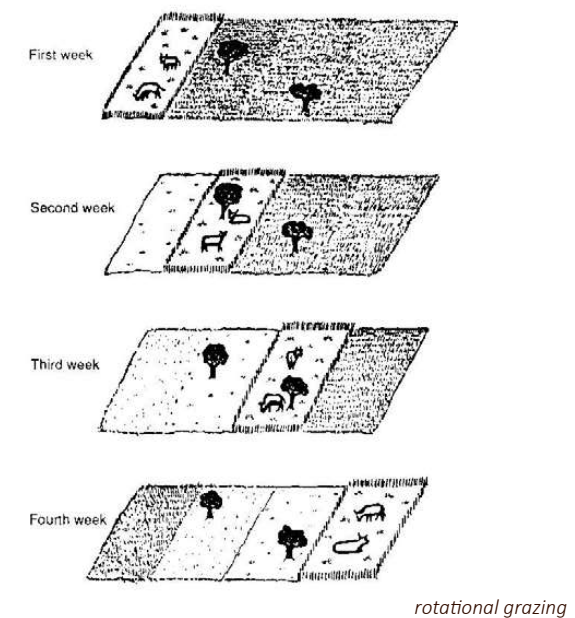
landscape in neighbouring region Navarre in lowlands
La Kukula. (nd)

Climate, soil and water

Situated at 680 meters above sea level, **Biniés** lies in a relatively dry zone, making its lowland pastures less suitable for summer grazing during transhumance. While some fields lie fallow part of the year, the remaining agricultural plots and water sources face intensive seasonal use, contributing to soil degradation, a pattern common across much of southern Europe.

As documented in EU reports on agricultural land deterioration, such overuse can reduce soil fertility, increase erosion, and, in some cases, lead to salinization, particularly where irrigation or poor water infiltration affects soil health. In Biniés, these pressures are worsened by irregular water availability and reduced vegetation cover, weakening the landscape's capacity for natural recovery.

Later sections of this project respond to these concerns by proposing interventions such as seasonal rotation of plots, water-holding ponds, and strategies to improve soil moisture retention and biodiversity





1960

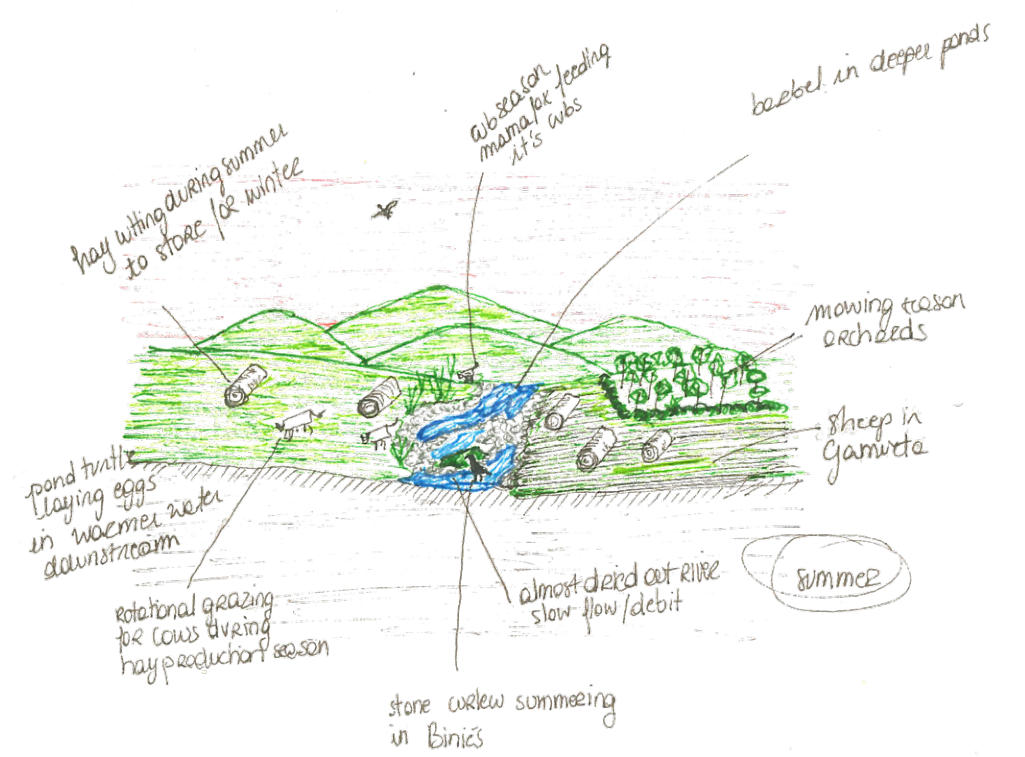
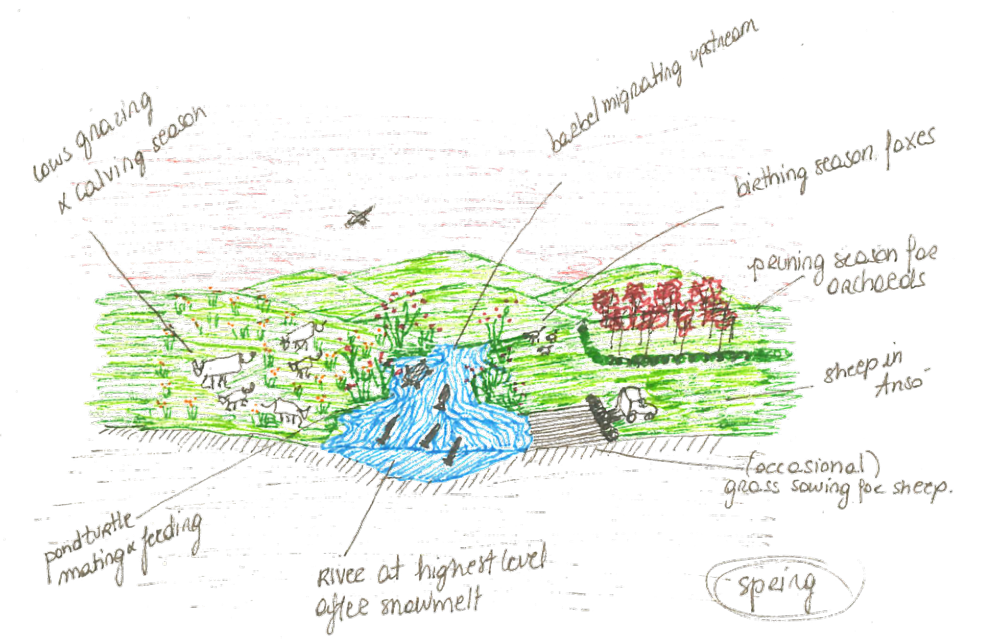
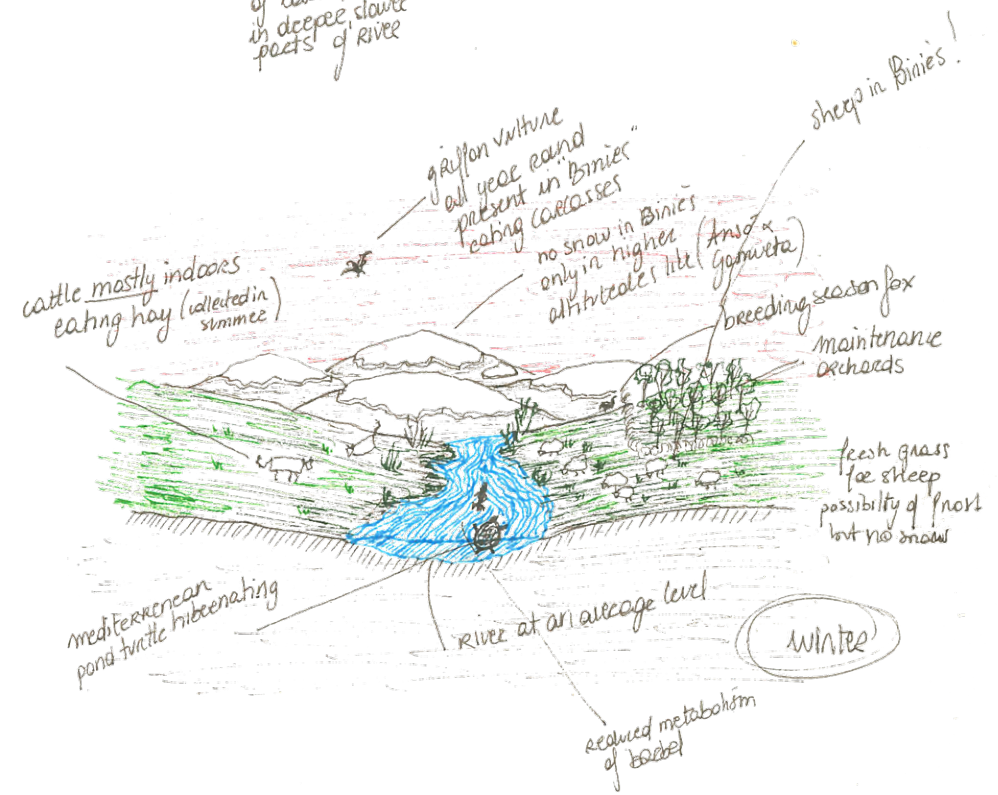
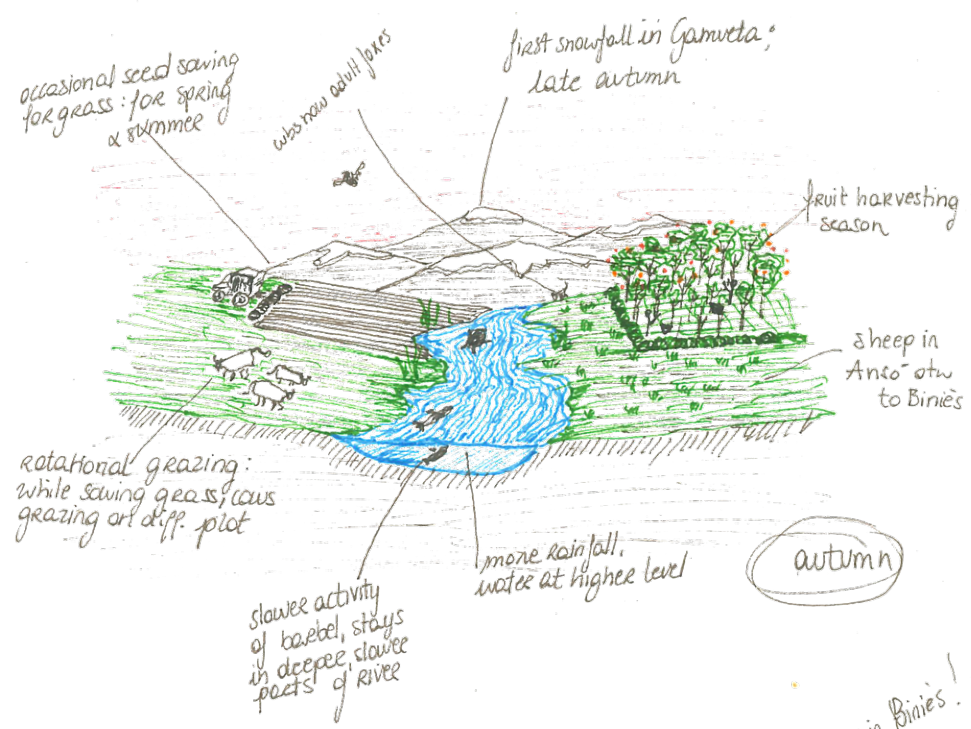
Binies' landscape over time - nature taking/taken over

Over the years, the river that once flowed largely over the plain now remains a thin waterway that nearly lies dry during warmer months. This decline, likely caused by climate variability, has made the river slowly lose its prominence in the landscape. In the place, this course has allowed riparian vegetation to take over the floodplains, now acting as a natural buffer that protects and stabilizes the soil.



2022

Over the years, the river that once flowed largely over the plain now remains a thin waterway that nearly lies dry during warmer months. This decline, likely caused by climate variability, has made the river slowly lose its prominence in the landscape. In the place, this course has allowed riparian vegetation to take over the floodplains, now acting as a natural buffer that protects and stabilizes the soil.



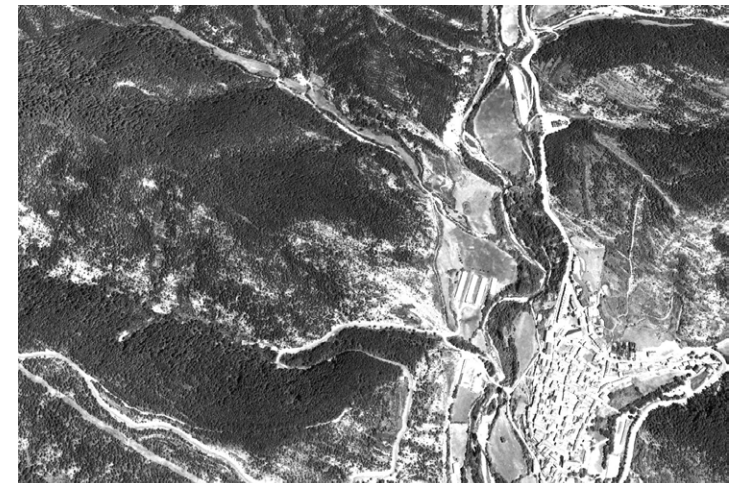
II. Ansó

Transition season pastures
860 m above sea level



Situated in a deep valley, **Ansó** serves as a mid-altitude pasture for transhumant shepherds, either moving up from Biniés in spring or descending from Gamueta in autumn. The village is currently home to around 450 inhabitants, with only six remaining shepherds, including Diego Ipas. Located roughly 200 meters higher than Biniés, Ansó experiences a distinct climate. Temperatures can drop below freezing in winter and rise to extreme heat in summer. These conditions make the transitional seasons, spring and autumn, more favorable for grazing, aligning with periods when the village is less crowded, as tourism peaks in summer. In addition to the climate, the ecological dynamics also changes. Surrounded by more rugged, natural terrain, the grazing flocks here are more exposed to wildlife threats, including scavengers and **bears** from the nearby mountains.

Later in the design section, these interactions between humans and their natural environment will form the foundation for spatial interventions. The aim is to use landscape and architecture as tools to mediate this coexistence.



Reforestation, land use, native species

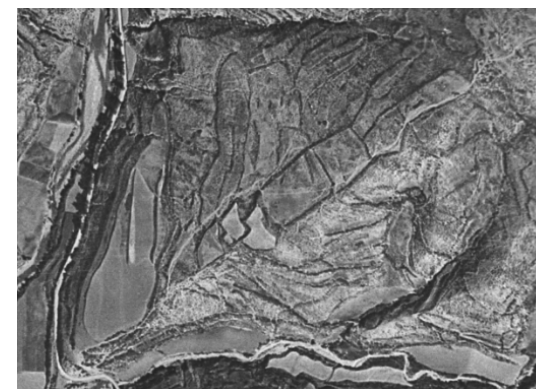
Until the middle of the 20th century, **Ansó** and some neighbouring village focused on intensive wood extraction as their primary economic activity. The wood extracted would be transported down the river using gravity. Over time this activity has lost its prominence. Due to the environmental damage, a large-scale state-led reforestation plan was launched under Spain's national forest restoration efforts, such as the ICONA plans in the 20th century. The aim was to stabilize slope and restore forest cover by planting fast-growing, non-native species like pine. The second phase of this intervention was meant to involve thinning and the gradual reintroduction of native species to rebuild a diverse and resilient forest ecosystem. Today, that intervention is still visible in the landscape with trees that have been planted along the contourlines. However, much of the forest is still dominated by pine and birch monocultures, which offer limited ecological value. These dense, monocultural plantations suppress undergrowth and biodiversity, making the forest less resilient. In many places, the thinning phase was never completed, leaving an artificial forest system in place.



Ricardo Compaire (1920-1936)

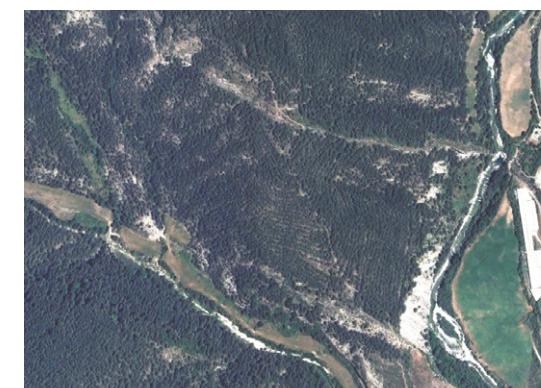


Ricardo Compaire (1920-1936)



Ansó's landscape over time ca. 1960 vs. 2022

The landscape of the Ansó valley has undergone significant change. Once shaped largely by wood extraction the village's main economic activity before the 20th century, this practice has gradually been phased out to allow nature to regenerate. Today, the local economy is primarily supported by tourism and transhumance. In this renewed context, the river and its ravines play a guiding role in the movement of flocks and continue to serve as a vital water source.



Sheep shearing tradition

Each year, the sheep are gathered for the annual shearing. This happens during spring in Ansó during their stay in the mountains. This seasonal event is rooted in local tradition and remains a key moment in the transhumance cycle. It not only prepares the sheep for the warmer months but also provides valuable wool that has long been an important material in the region.

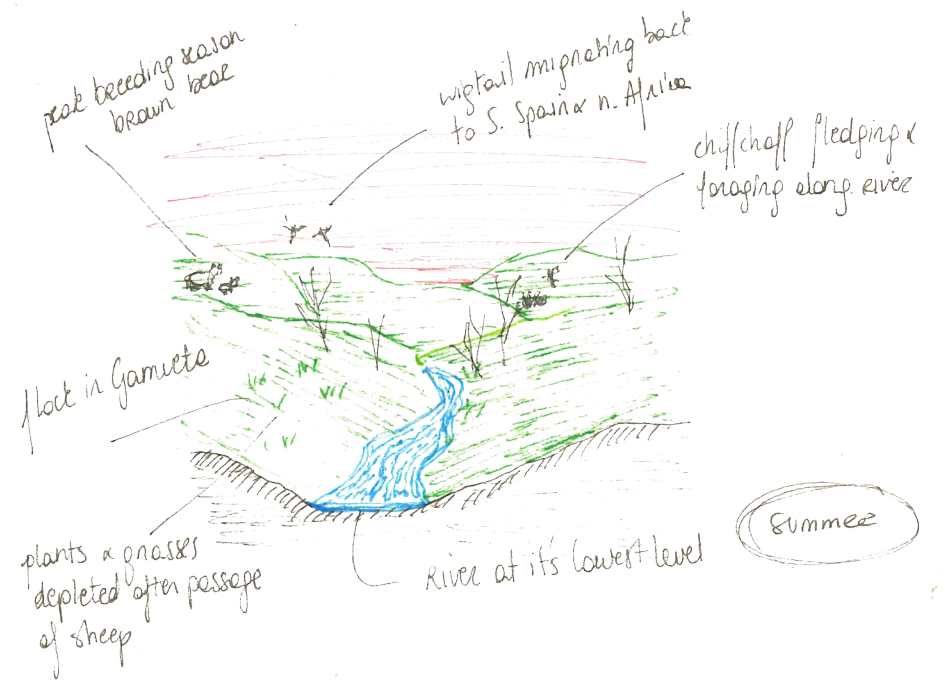
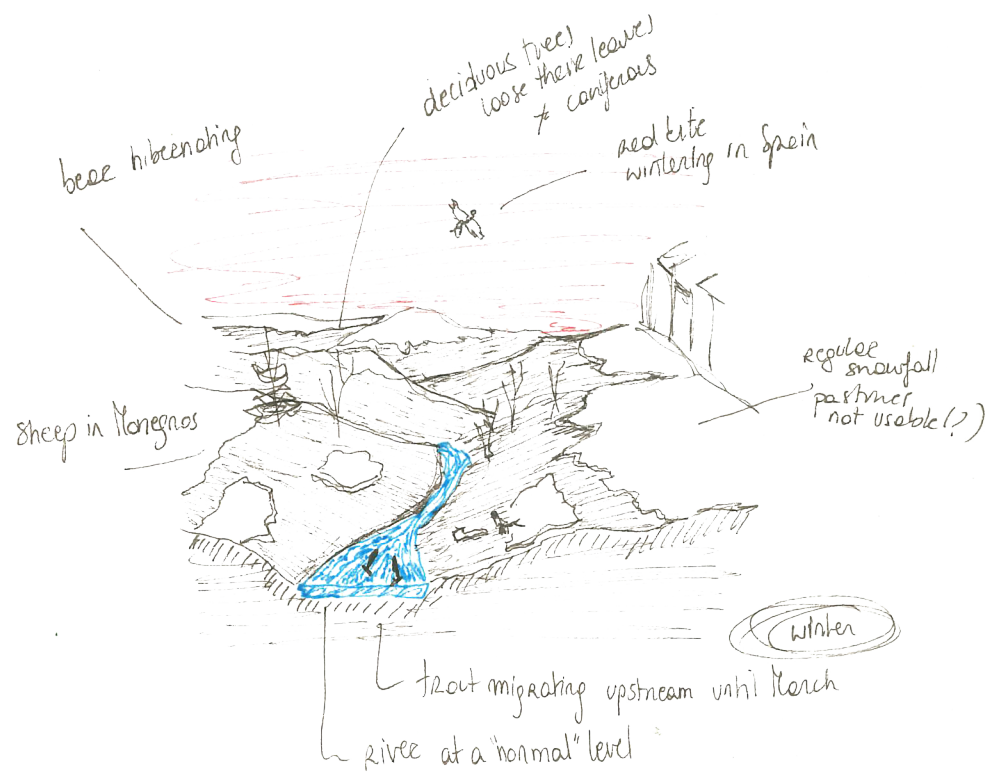
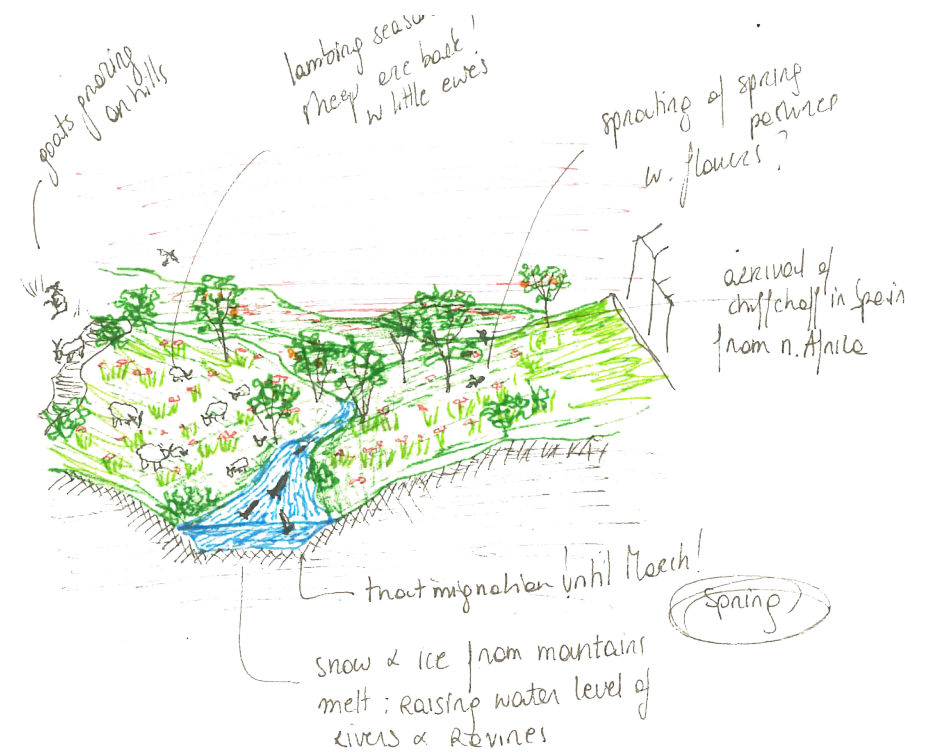
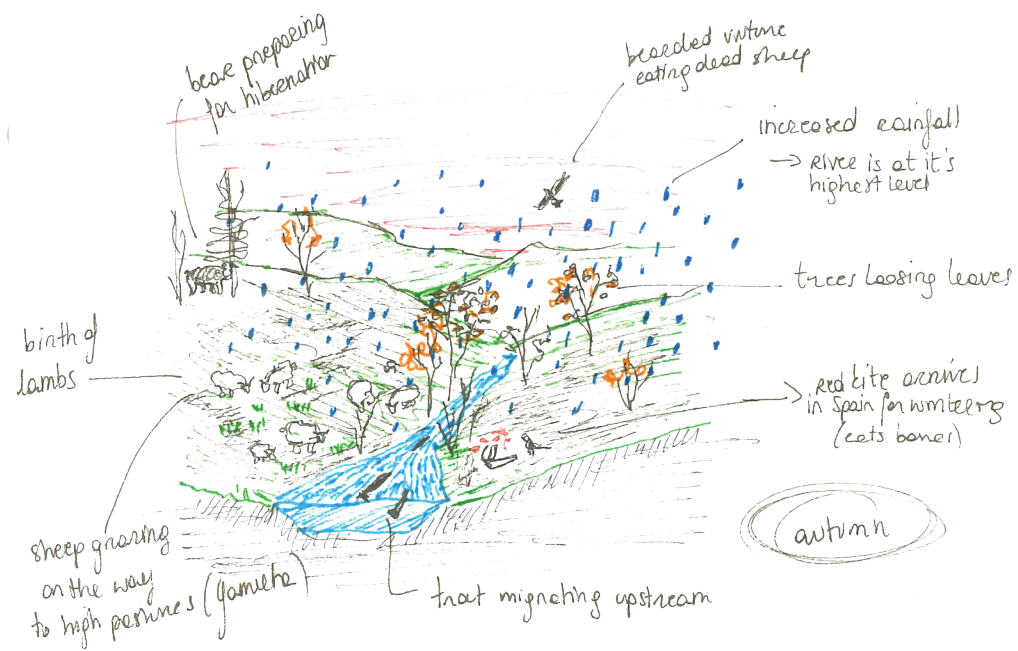
Once sheared, the wool is cleaned, and processed through traditional methods such as spinning or felting. Historically, this wool was used for everyday needs, from garments to blankets and household insulation. The craft of wool processing has been passed down across generations and today continues to reflect a strong connection between local resources, manual knowledge, and the rhythms of pastoral life.



still from Monesma, E. (2001) 'La LANA en el Pirineo' documentary



"wool day in Ansó"-flyer from @valledeanso
via Paramvir Singh



III. Gamueta

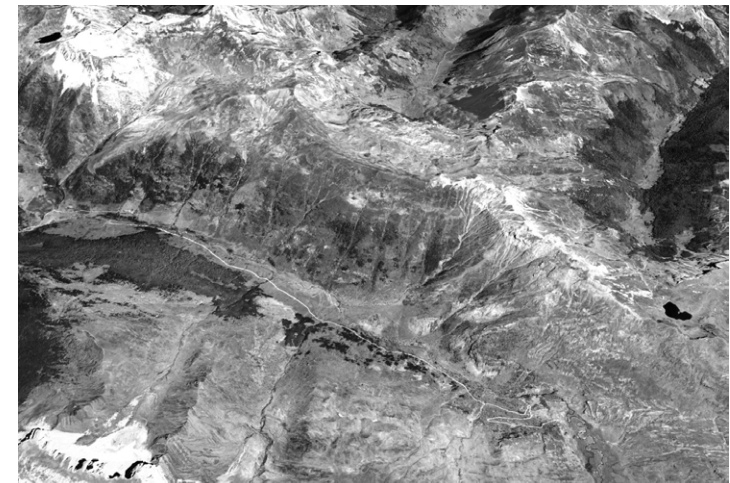
Summer pastures
1.940 m above sea level



Climbing into the relatively unchanging landscape of *Gamueta*, the altitude rises from around 1,700 to 2,500 meters above sea level. This marks either the endpoint of the shepherd's seasonal journey or the beginning of a new transhumance cycle. The high mountain pastures officially open for grazing on the 1st of July, and the sheep remain until the first snowfalls, typically in the cooler autumn months.

The climate here contrasts sharply with that of Ansó and Biniés. Winters are long and harsh, while summers stay mild. The Veral River originates just a few hundred meters away, fed by rainfall and snowmelt. As it descends through Ansó and past Biniés before joining the Aragón River about 50 km downstream, its course reflects the dramatic shifts in topography, climate, and vegetation.

Gamueta's steep, rugged terrain makes it relatively remote and minimally altered by humans. However, this isolation brings risks: sheep are more exposed to predators such as bears, especially in open alpine meadows. Since shepherds remain in the area for several months, a network of shelters (mallatas) is scattered across the landscape. Some have been adapted for hikers during summer, reflecting a seasonal overlap of human presence in this high-altitude zone.

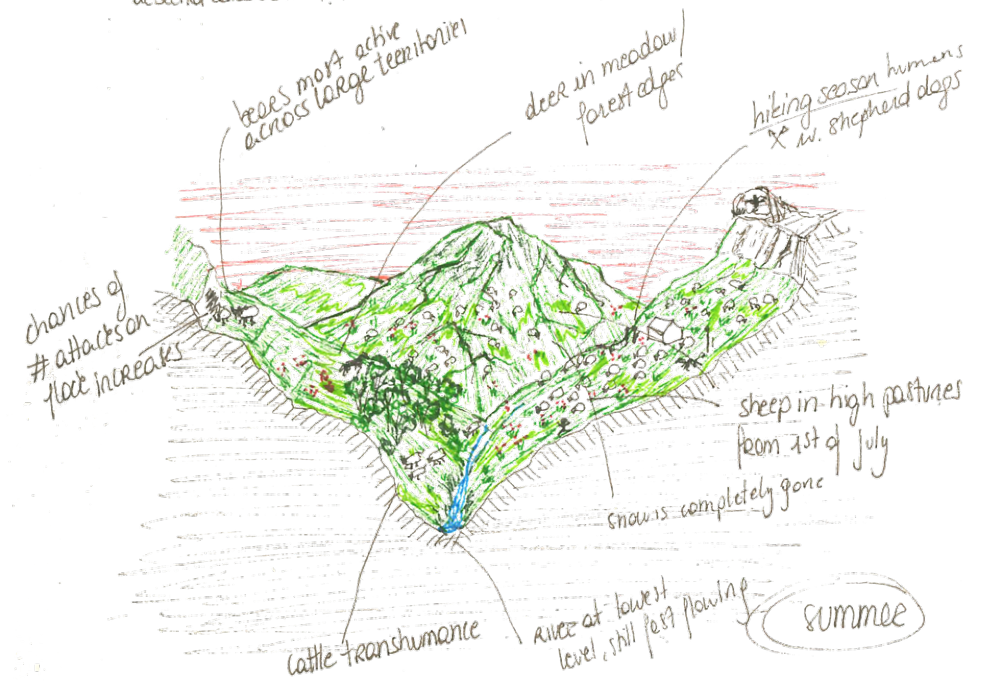
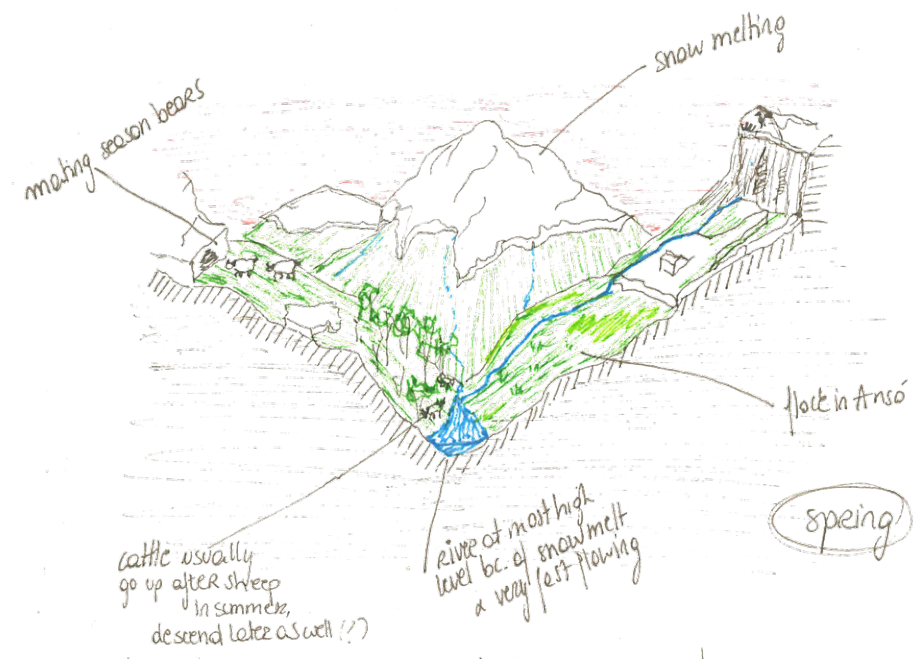
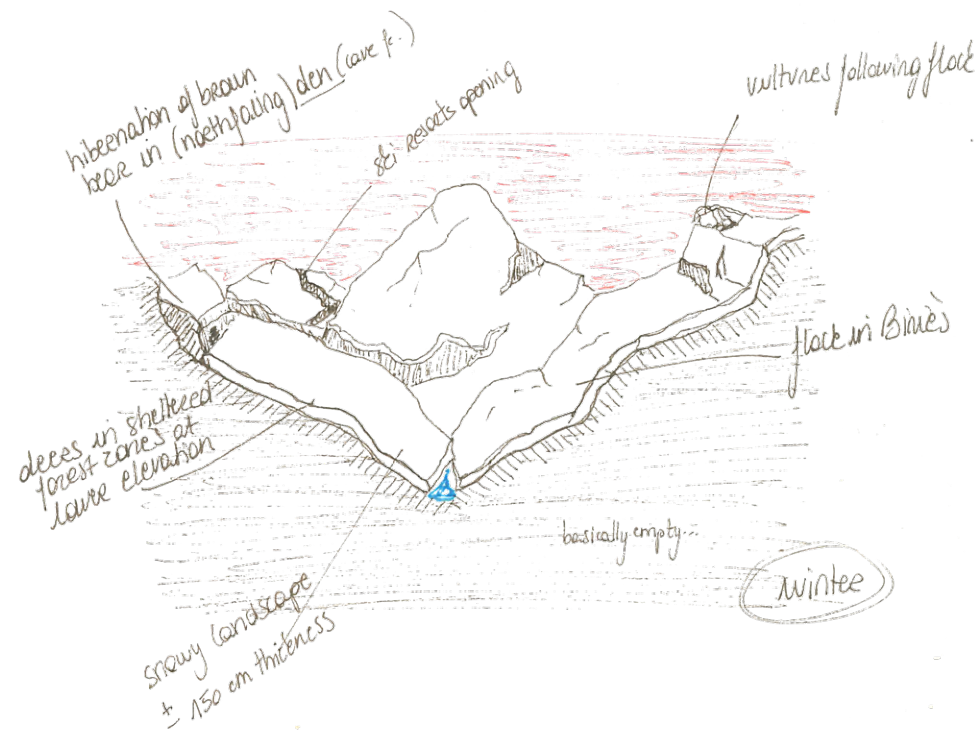
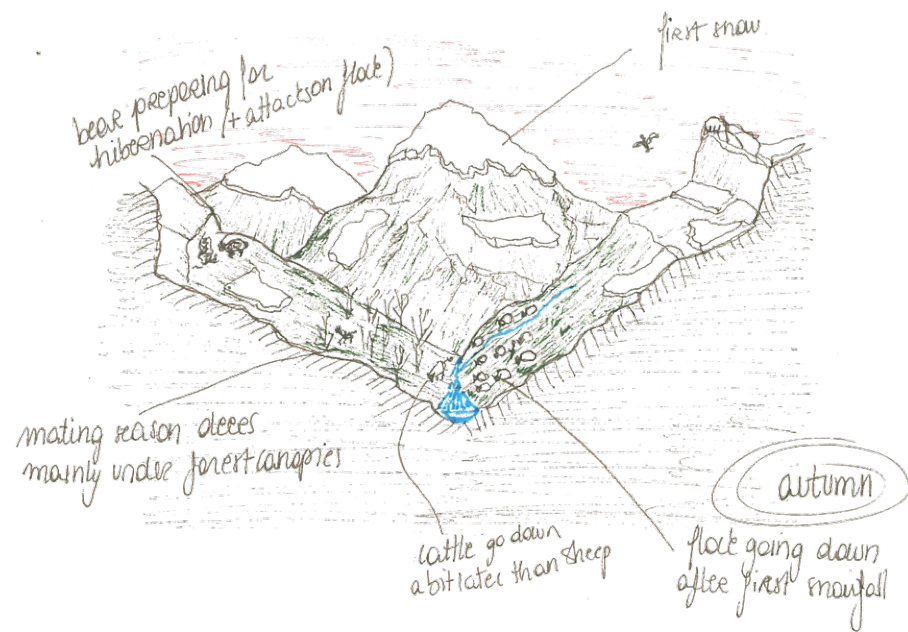


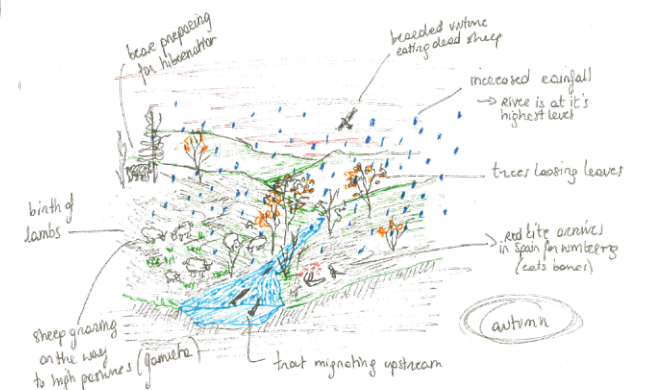
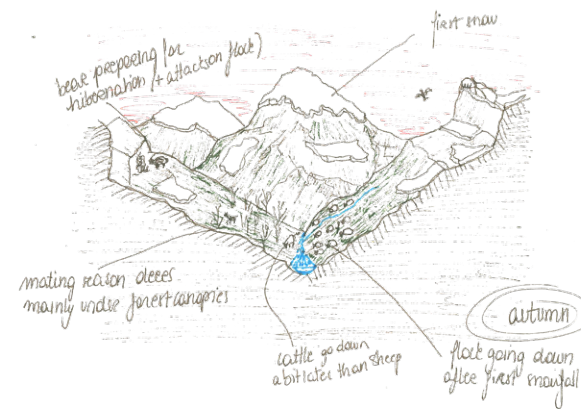
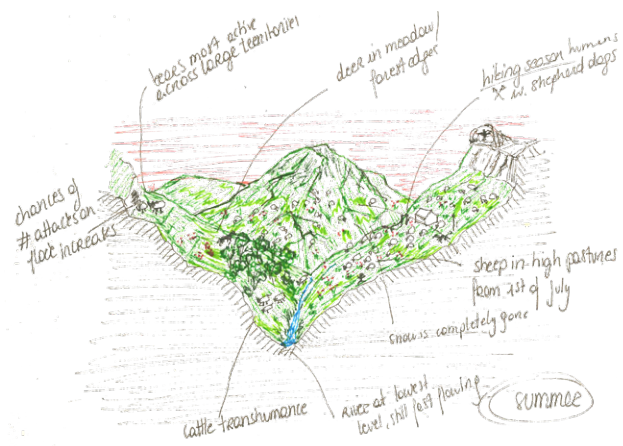
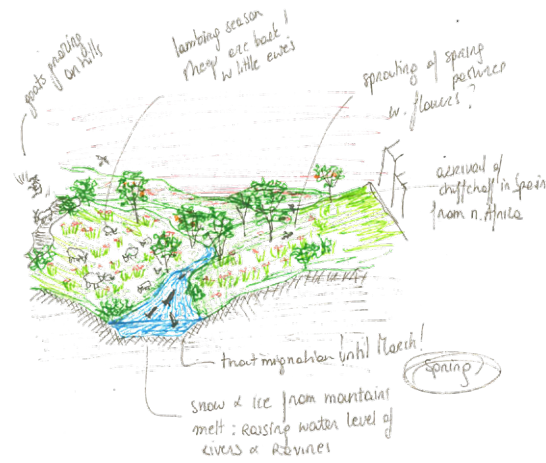
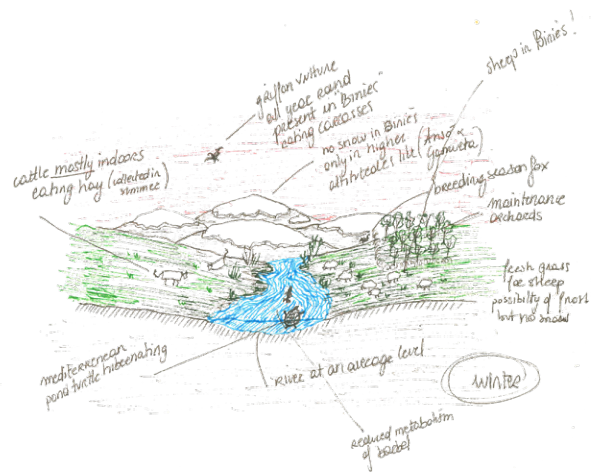


flock in summer. Casa Bareton. (2022)



Shepherd and sheep in the Pyrenees, autumn. Daumas, M. (1959)





Spatial interventions

Aim for each site based on analysis

Ansó

Creating more space for coexistence between humans and the natural and semi-natural.

Exploring how landscape can bring together different actors and mediate conflicts without forming rigid borders; showing that a border can mean much more than a physical limit.

Biniés

Focus on restoring nature and allowing it to rest. Place greater emphasis on water and soil as key components in the landscape.

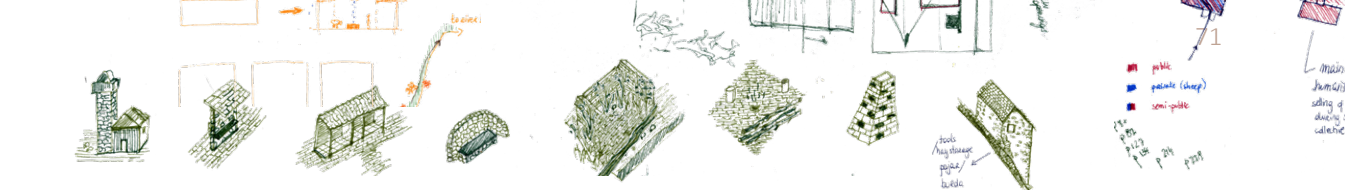
Gamueta

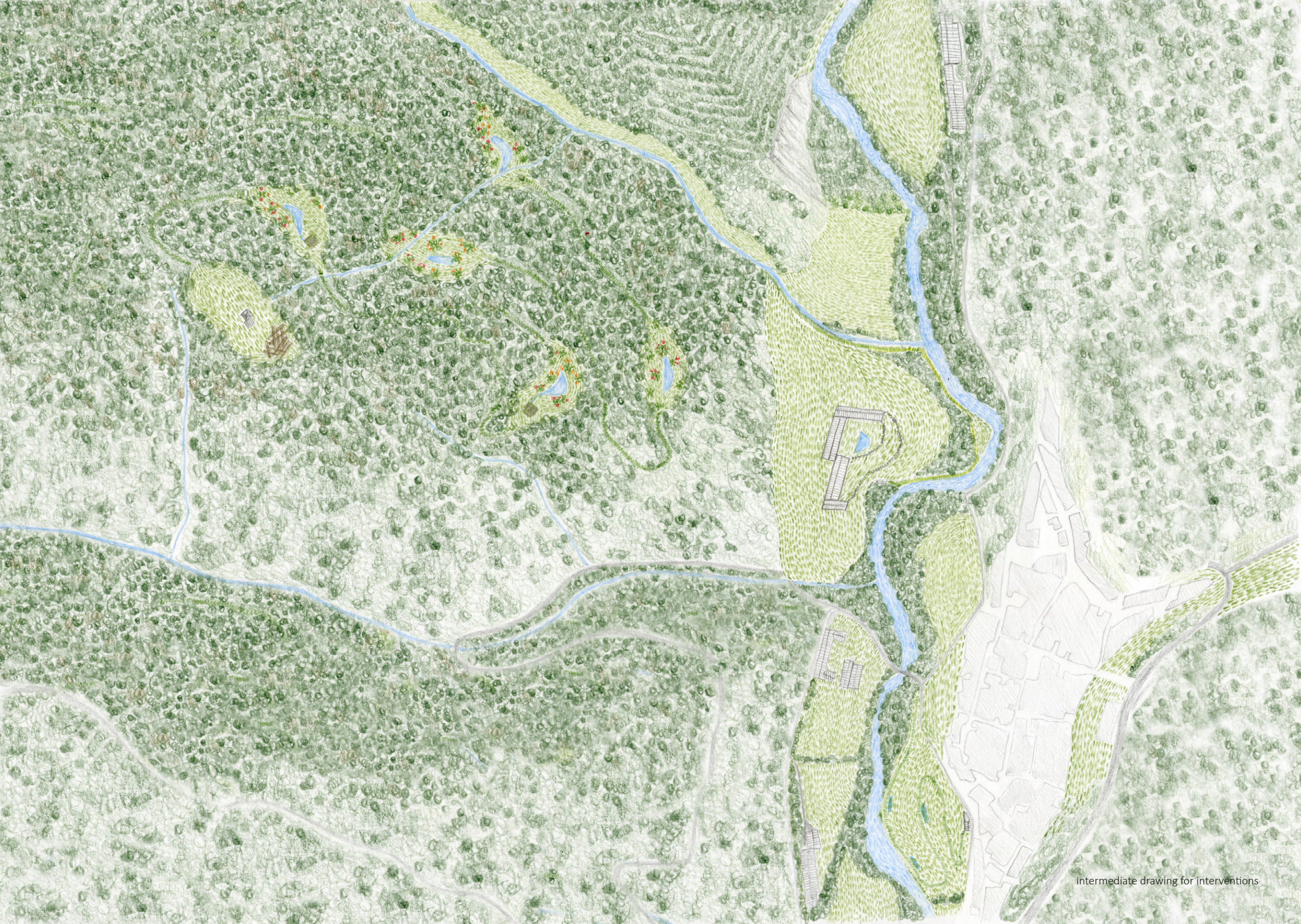
Allow the landscape and nature to exist undisturbed with minimal or no human intervention.

Starting with **Ansó's** spatial interventions

- Human–wildlife conflicts, particularly involving bears
- Monocultural pine forests from 20th-century reforestation (e.g. ICONA) that limit biodiversity
- The village's detachment from its traditional transhumance practice
- A disconnection between the village and its natural surroundings despite being located within it
- Lack of controlled and meaningful access to the river
- Risks of extreme heat with limited access to cool down closer to the village

- Design spatial conditions that reduce tensions between humans and large wildlife, such as bears through landscape interventions
- Correcting earlier reforestation efforts by introducing native species and thinning existing forest monocultures
- Retain water longer in the landscape to support forest soil health
- Provide spaces that reconnect people with Ansó's transhumance heritage
- Support outdoor education and observation through integrated landscape and architectural interventions
- Create shaded microclimates and cooling areas by the river and village

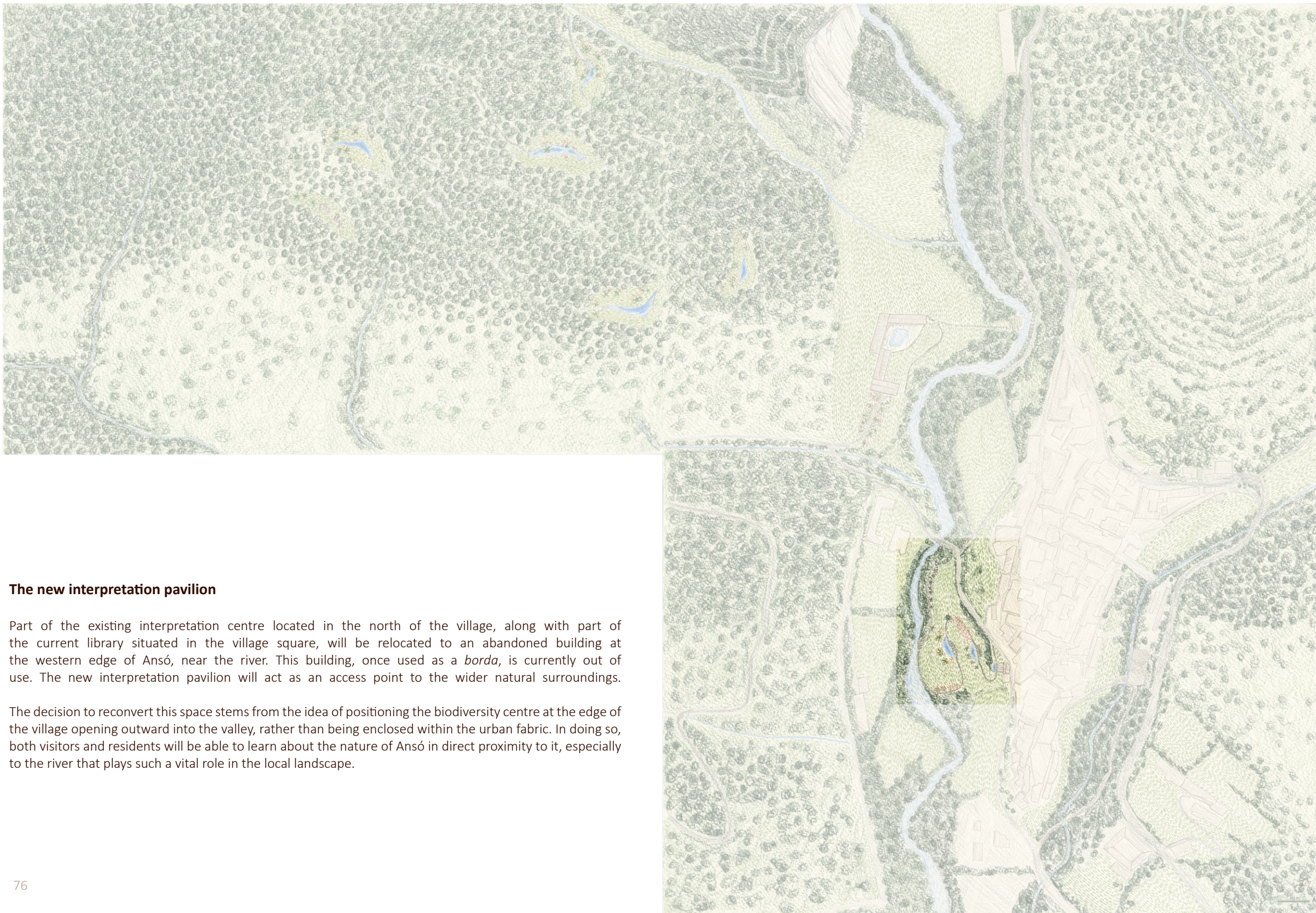






There are three main interventions for Ansó, arranged along a route that begins in the village centre: the entrance building at the edge of the village, the reconverted stables, and the water gardens on the nearby hill.

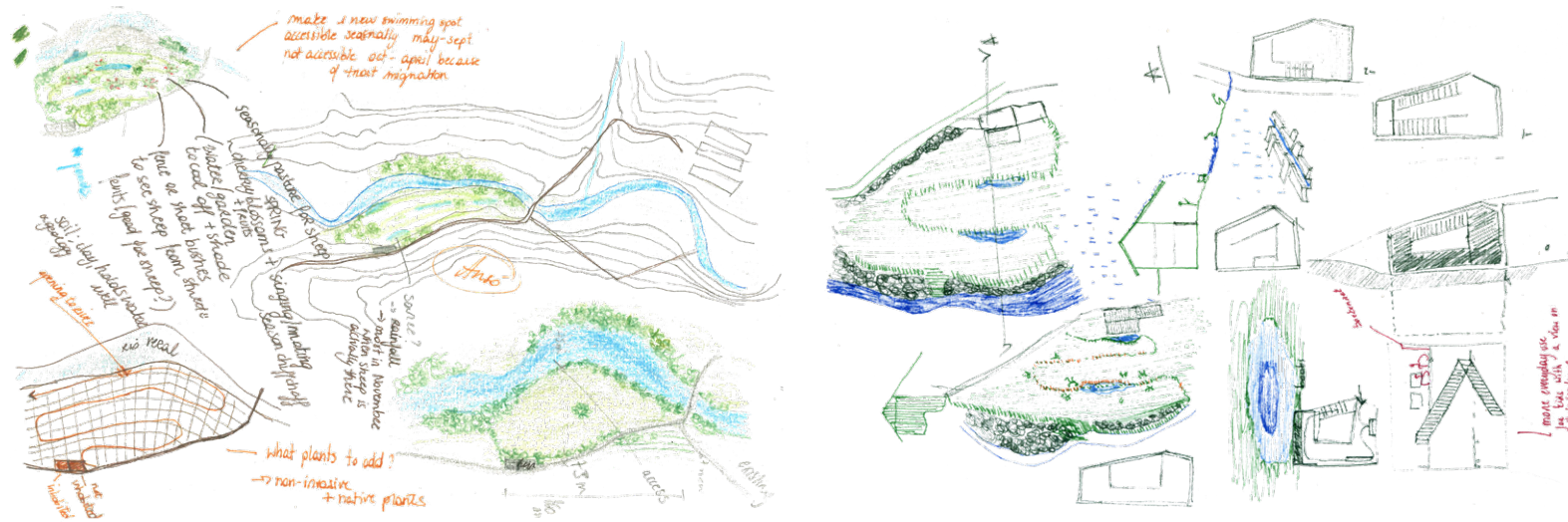
This route starts at the first intervention, a new interpretation centre near the village entrance. From there, it follows the river across a bridge to reach the second intervention; the reconverted stables. Continuing from the stables, the path leads to another point along the river and then climbs uphill, passing through a series of ponds and forest clearings before ending at a watchtower at the top of the hill.



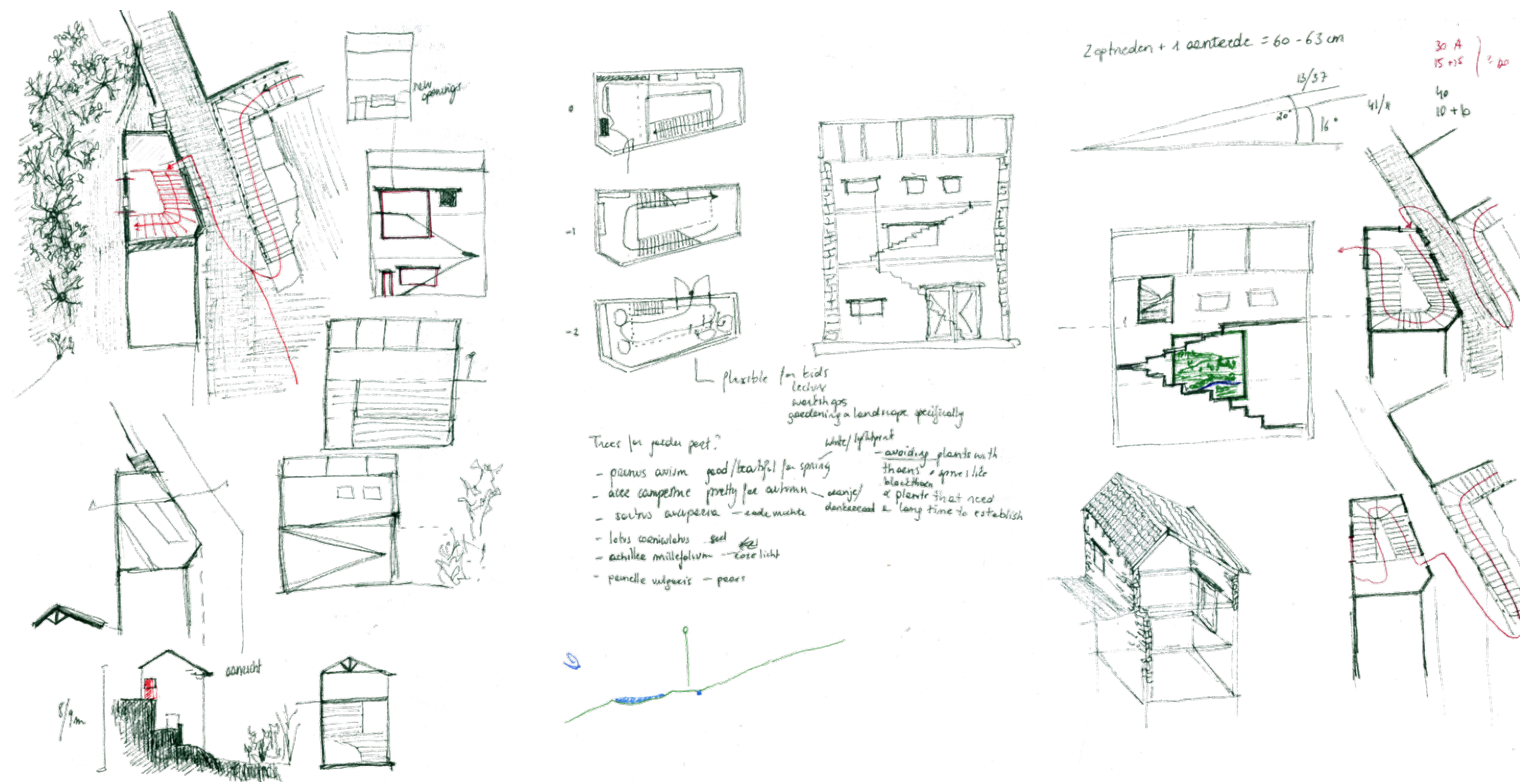
The new interpretation pavilion

Part of the existing interpretation centre located in the north of the village, along with part of the current library situated in the village square, will be relocated to an abandoned building at the western edge of Ansó, near the river. This building, once used as a *borda*, is currently out of use. The new interpretation pavilion will act as an access point to the wider natural surroundings.

The decision to reconvert this space stems from the idea of positioning the biodiversity centre at the edge of the village opening outward into the valley, rather than being enclosed within the urban fabric. In doing so, both visitors and residents will be able to learn about the nature of Ansó in direct proximity to it, especially to the river that plays such a vital role in the local landscape.



Keeping the facades, what should the interior of this old hay storage place look like to accomodate visitors?



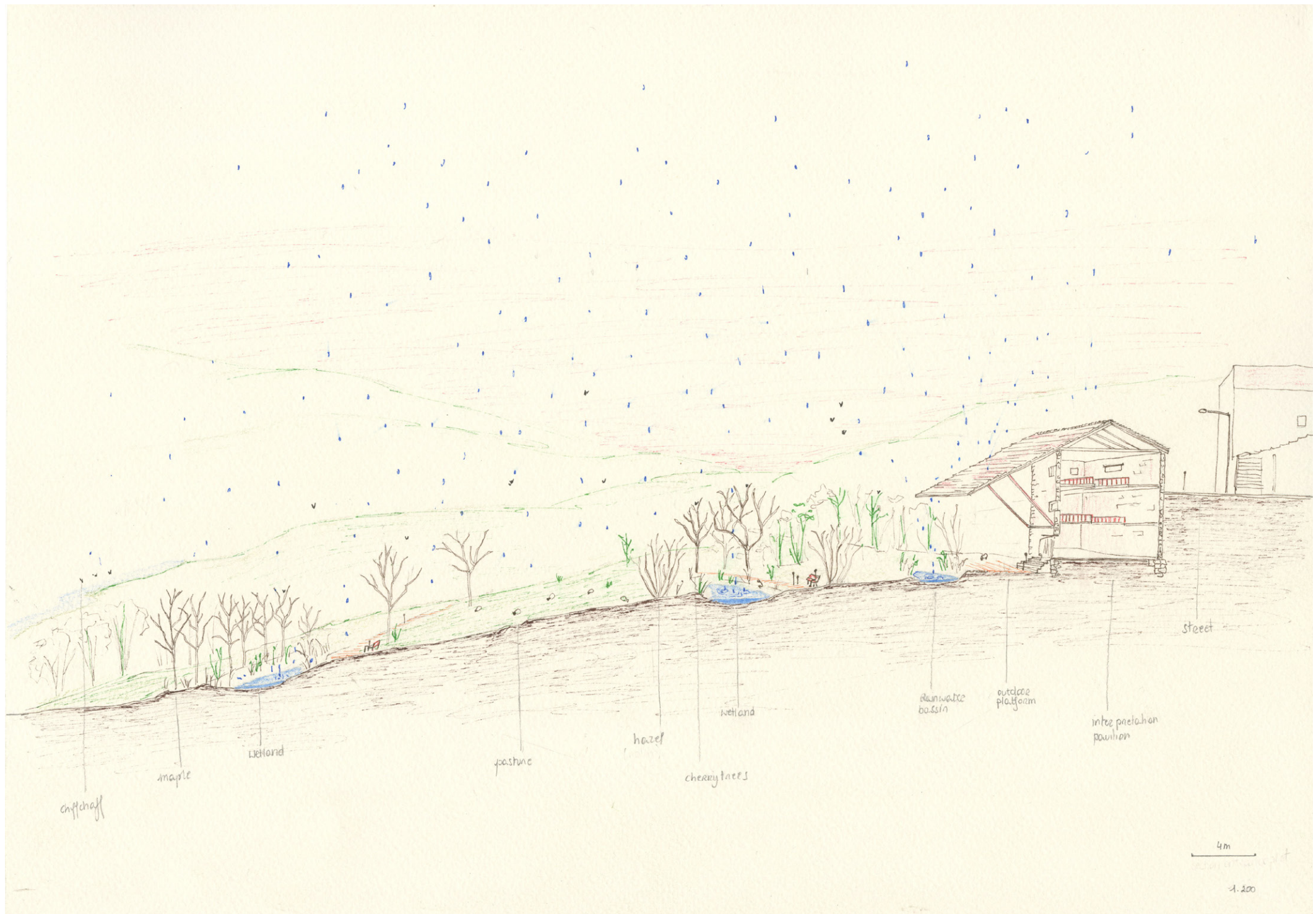
How to facilitate the connection and circulation between the centre of the village to the new interpretation centre?

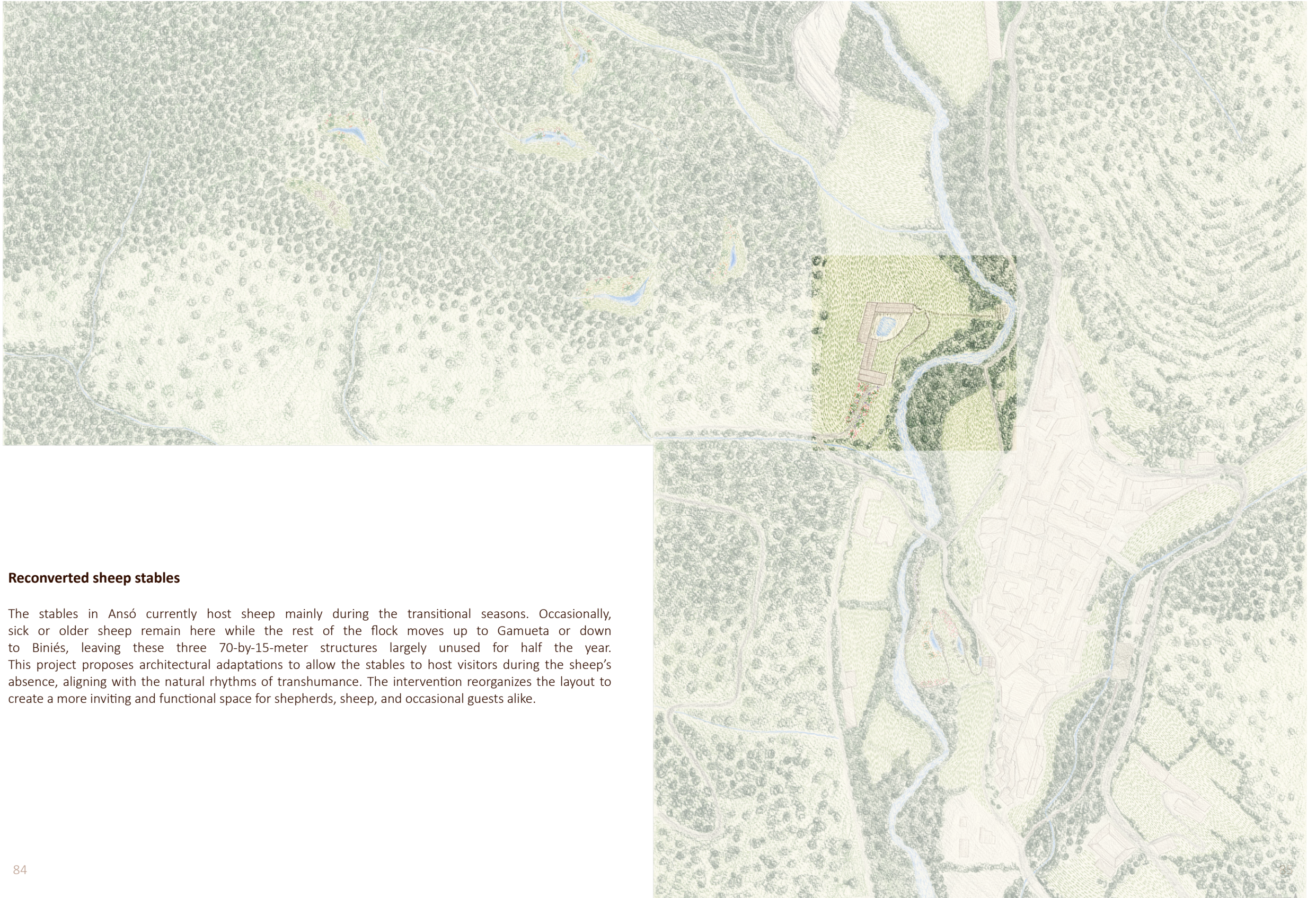
The building is accessed at street level through a new entrance door. From this level, visitors get a first view of the river and its surroundings, and can access a small library focused on biodiversity in Aragón and Spain. The library continues on the intermediate floor below.

The ground floor (-2) is dedicated to workshops, lectures, and daily activities for children and other residents of Ansó. It also opens onto a plot that currently serves only as pasture. This space is given an added function as a communal garden for the village, while still accommodating sheep grazing. The garden creates a small microclimate with ponds where villagers can cool off during hot summers and experience the seasonal changes more closely, from spring cherry blossoms to the bright red maple leaves in autumn. Native species like hawthorns and rowans are introduced to promote biodiversity and attract more birds.

Access to the river will be possible under supervision, allowing visitors to observe trout migration, hear chiffchaffs in season, and watch sheep grazing nearby. The parkour continues by following a row of rowans leading north to the reconverted stables.







Reconverted sheep stables

The stables in Ansó currently host sheep mainly during the transitional seasons. Occasionally, sick or older sheep remain here while the rest of the flock moves up to Gamueta or down to Biniés, leaving these three 70-by-15-meter structures largely unused for half the year. This project proposes architectural adaptations to allow the stables to host visitors during the sheep's absence, aligning with the natural rhythms of transhumance. The intervention reorganizes the layout to create a more inviting and functional space for shepherds, sheep, and occasional guests alike.



How to adapt the architecture to make the use for shepherding more user-friendly while safeguarding the sheep from predators?

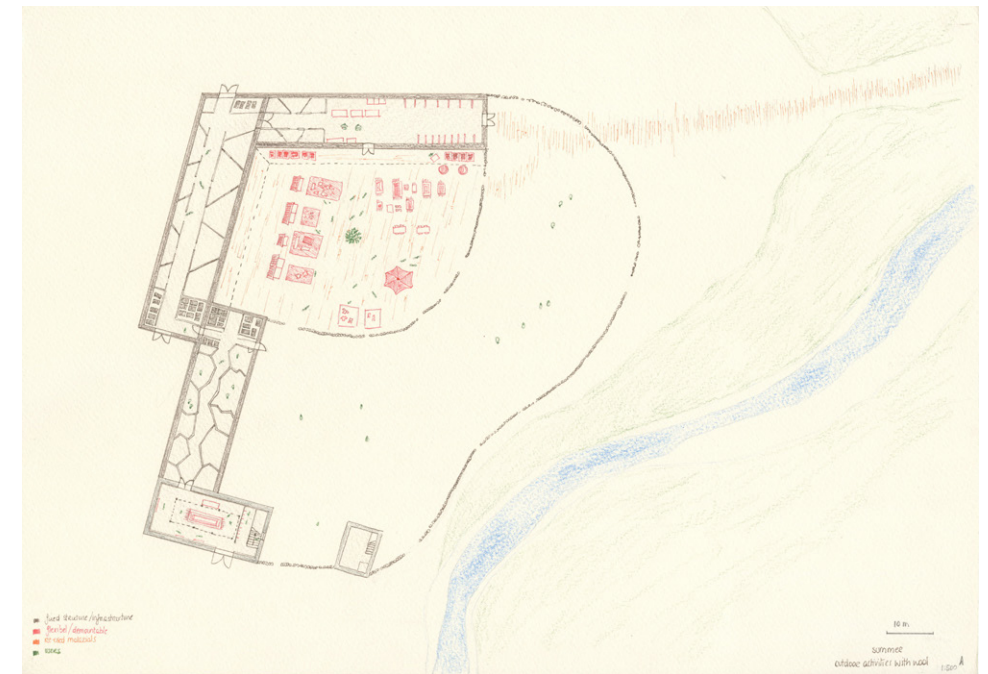


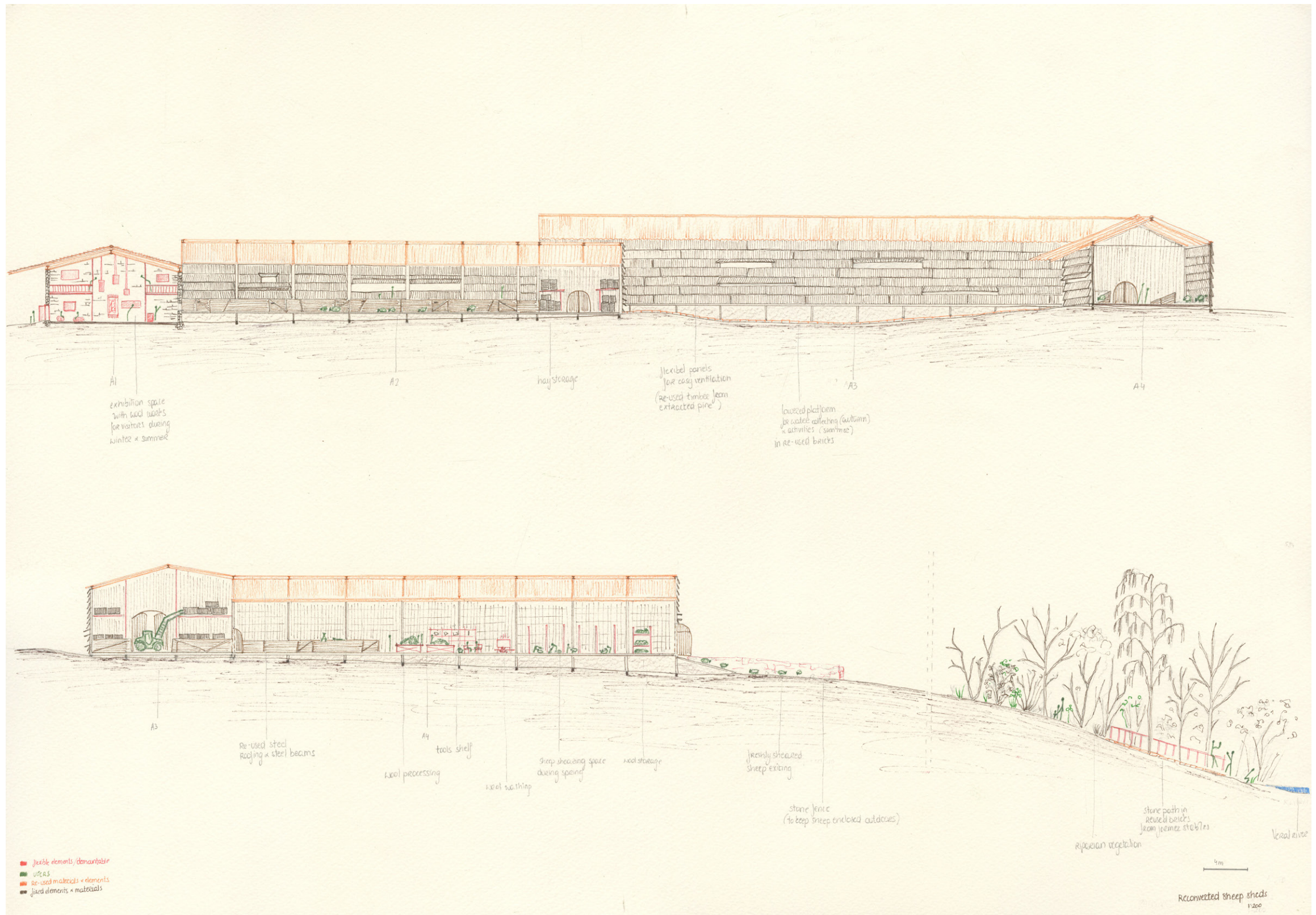
Seasonal use

In spring, the site fills with sheep. Due to the threat of bears, they must currently all be enclosed at night. The intervention allows part of the flock to remain safely outside, while sick and older sheep benefit from more indoor space. A designated area is created specifically for shearing before the flock heads to Gamueta, continuing the long-standing tradition of wool harvesting in the region.

In summer, with fewer sheep present, the buildings and outdoor spaces open up to locals and visitors. This period aligns with the traditional processing of wool through collectively washing, carding, spinning, and weaving the freshly sheared fleece. These time-intensive practices are part of Aragon's heritage and form a seasonal rhythm that the intervention seeks to support. Visitors can participate in the work, cool off at the newly accessible riverbank, or join outdoor events on the platform between the sheds.

That same platform becomes a wetland during the rainy autumn months, benefiting returning sheep with a water source closer by. In winter, the stables stand quiet again, offering space for the wool to be crafted into garments, carpets, and other products encouraging both craft and collective work through the seasons.





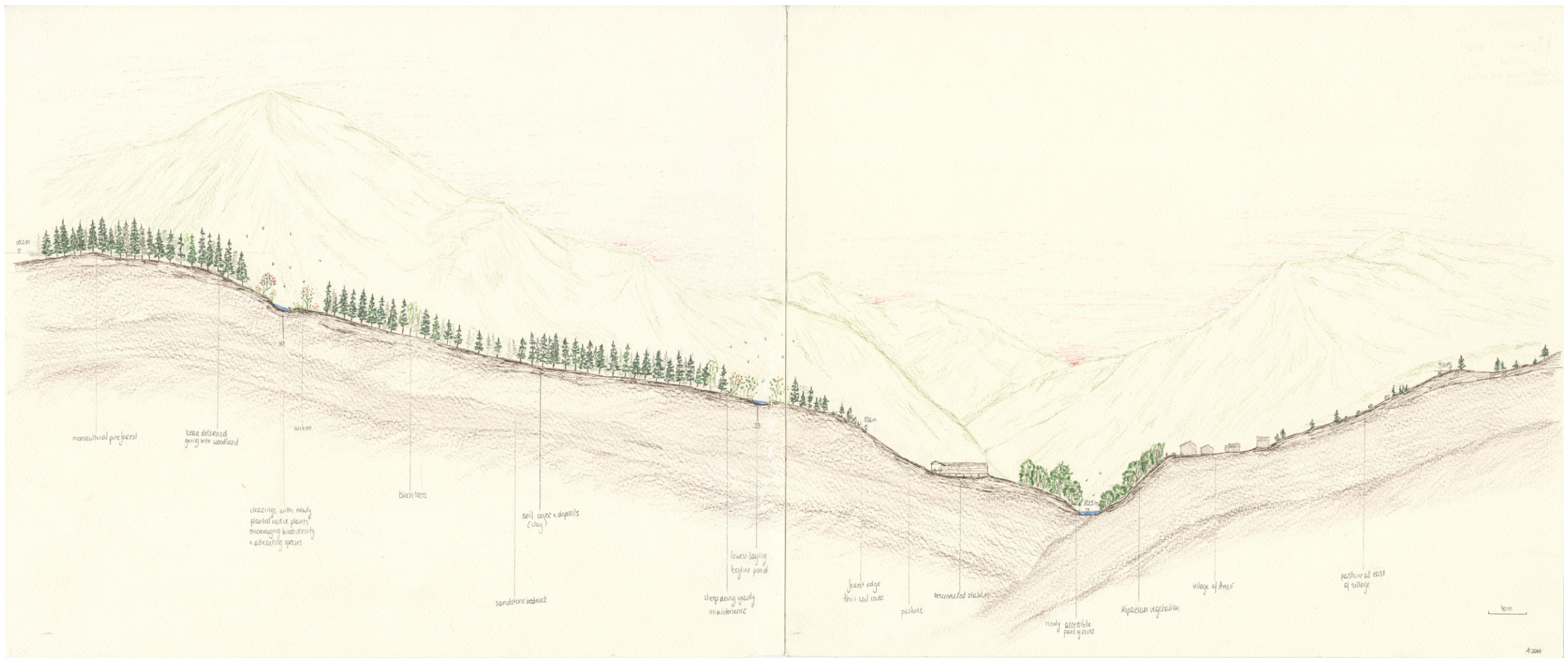


The forest clearings

The third part of the intervention takes place on the hill just beside of Ansó's largest pasture. It includes clearings in the pine-dominated forest. These clearings follow up, as mentioned previously, the second phase of the ICONA-plan; to diversify the monocultural forest using native plants. Six clearings are introduced into the forest. Five with keyline ponds and one serving a different role at the top of the hill.

These clearings have 2 main purposes which are to

- 1) To **deter bears from approaching the flock and the village** by increasing visibility and reducing forest density along key paths
- 2) To **enhance water retention and forest soil health** by creating ponds that slow surface runoff before it reaches the river.



The design begins by identifying key points in the terrain where water naturally collects. Once these are mapped, pine trees are selectively removed to create light-filled openings. Each pond is then dug to a specific size and depth depending on local slope and intended use. Some will be shallow for amphibians like the endangered Pyrenean frog, others deeper to retain water throughout summer.

The ponds are connected via drainage paths that guide excess water toward nearby the ravine, eventually joining the Veral River. This setup follows the keyline water management system, where water is distributed more slowly and evenly across the slope, promoting soil health.

Plantings around the ponds is carefully considered. On the north and west edges are the zones most likely used by bears to approach. Vegetation that is unappealing to bears, such as hawthorn or junipers, is introduced. In contrast, the southern and eastern edges feature native species that attract pollinators, birds, and amphibians like rowan, and ranunculus species to support broader biodiversity. Human activity is encouraged through walking trails, educational signage, birdwatching,.. ensuring that these spaces remain active, visible, and ecologically rich. To keep the clearings open, small flocks graze rotationally in the off-season, guided by the shepherd, blending pastoral use with ecological care.

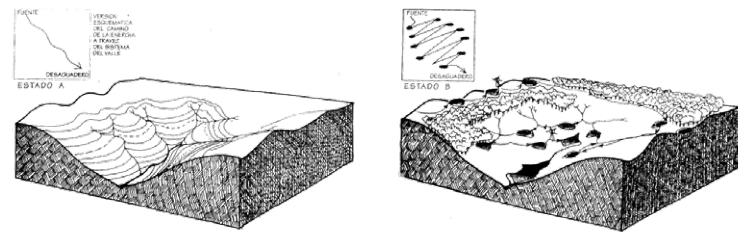
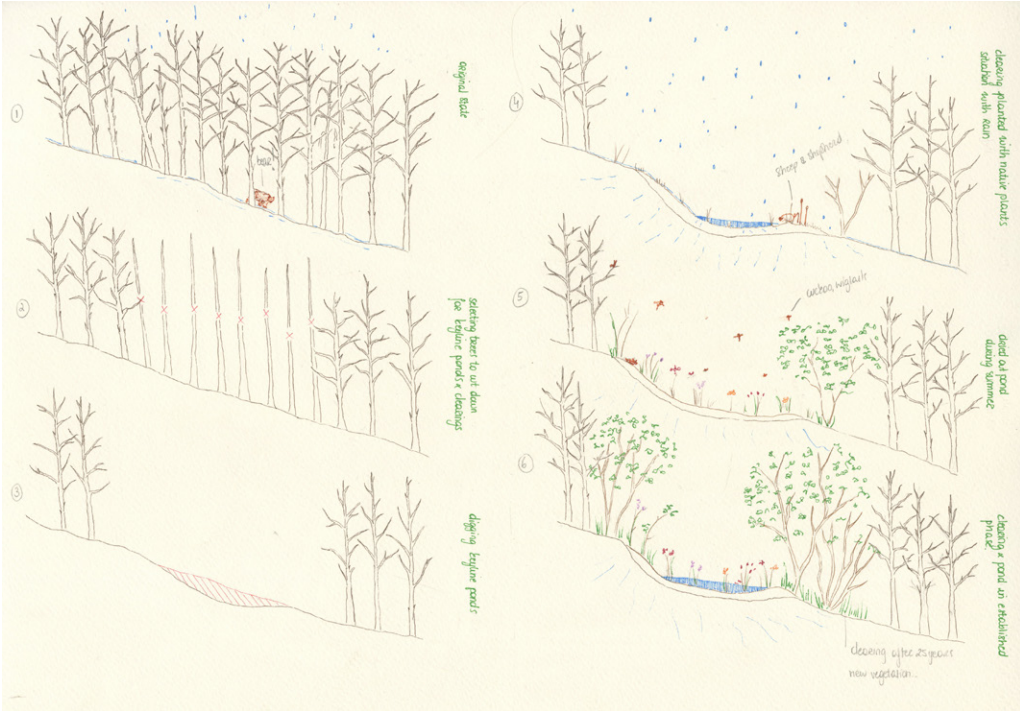
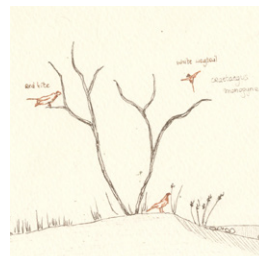
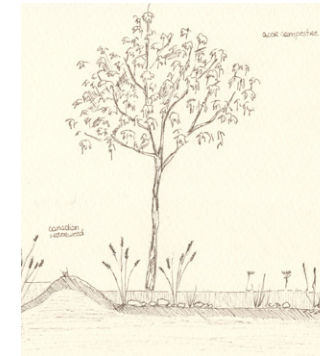
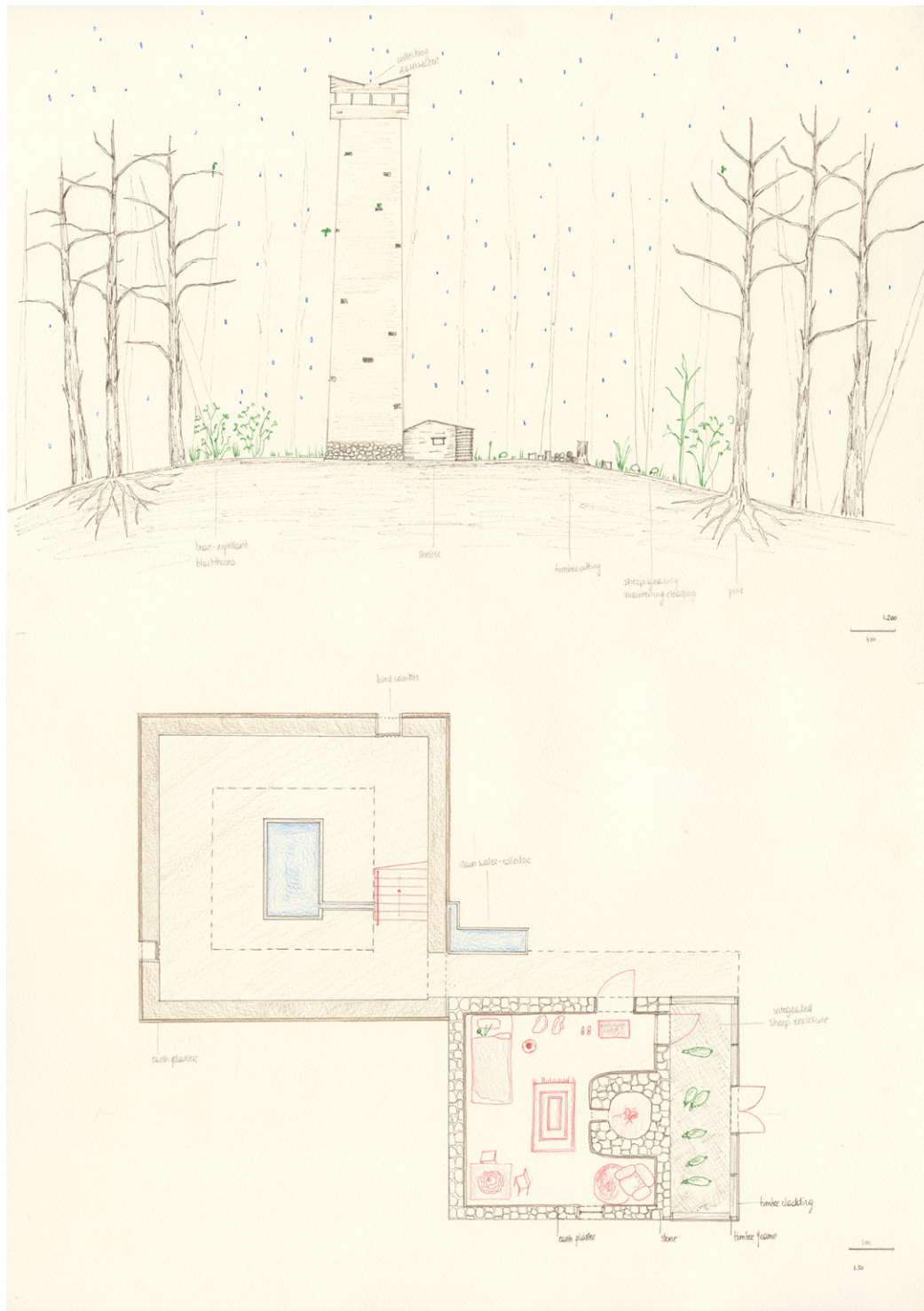


FIGURA 1.8: El proceso de desarrollo de un sistema de gestión de agua en un paisaje montañoso (y el diseño de un sistema de gestión de agua en un paisaje montañoso).



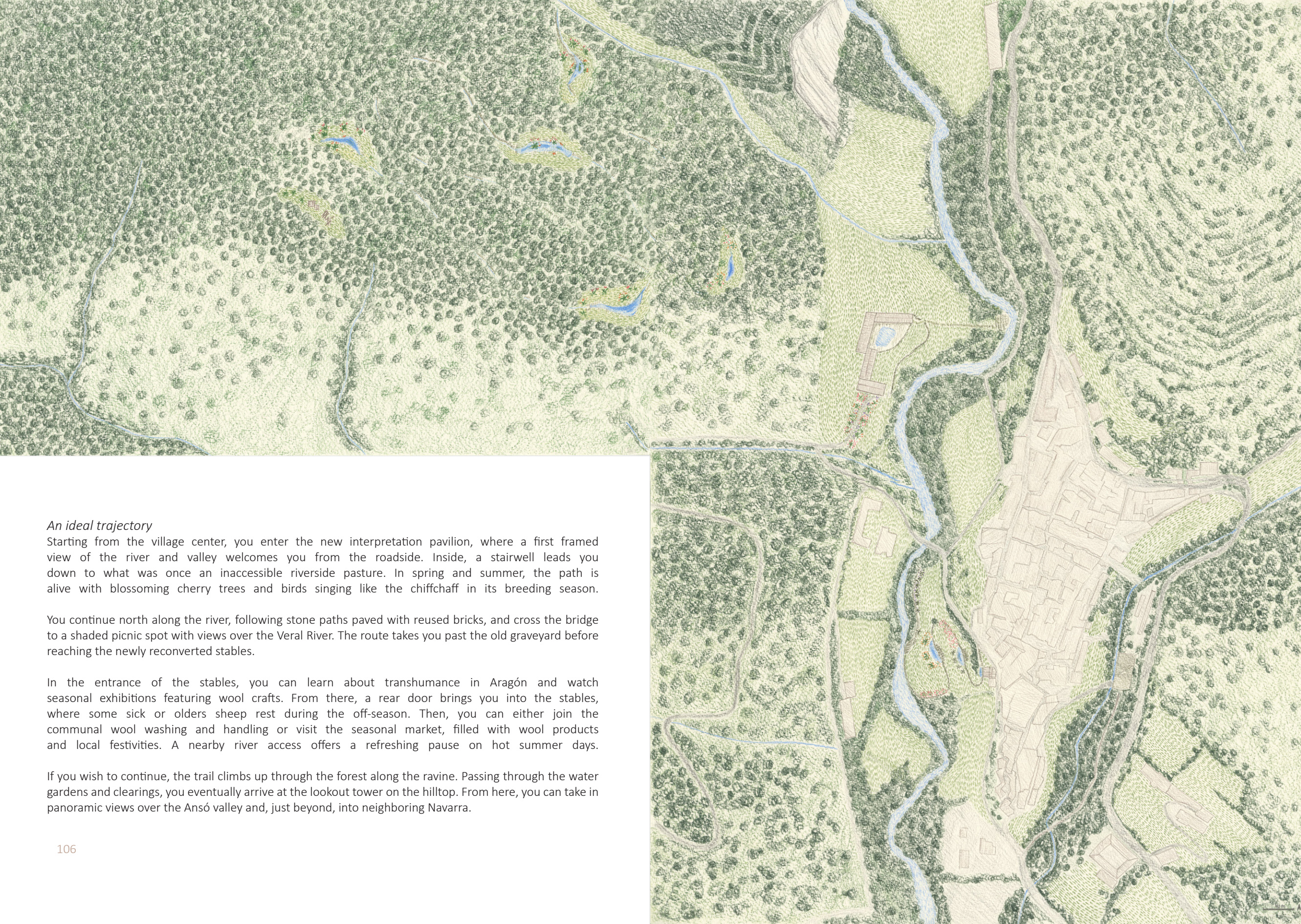




The sixth clearing, P0, sits atop the hill at 1,012 meters above sea level and serves as a lookout point for the shepherd, equipped with a small refuge that can be used by visitors during the shepherd's absence.

The structure of the tower is built using timber from the cleared pine trees, while its exterior is finished with an earth plaster made from the excavated soil of the nearby ponds. The refuge itself follows the form of a traditional stone shelter, but its interior is finished with a wool-and-earth plaster, offering minimal insulation and following local building traditions.

P0 marks the final (or first) stop along the new biodiversity-rich parkour. It offers both visitors and villagers a chance to experience the landscape more intimately.



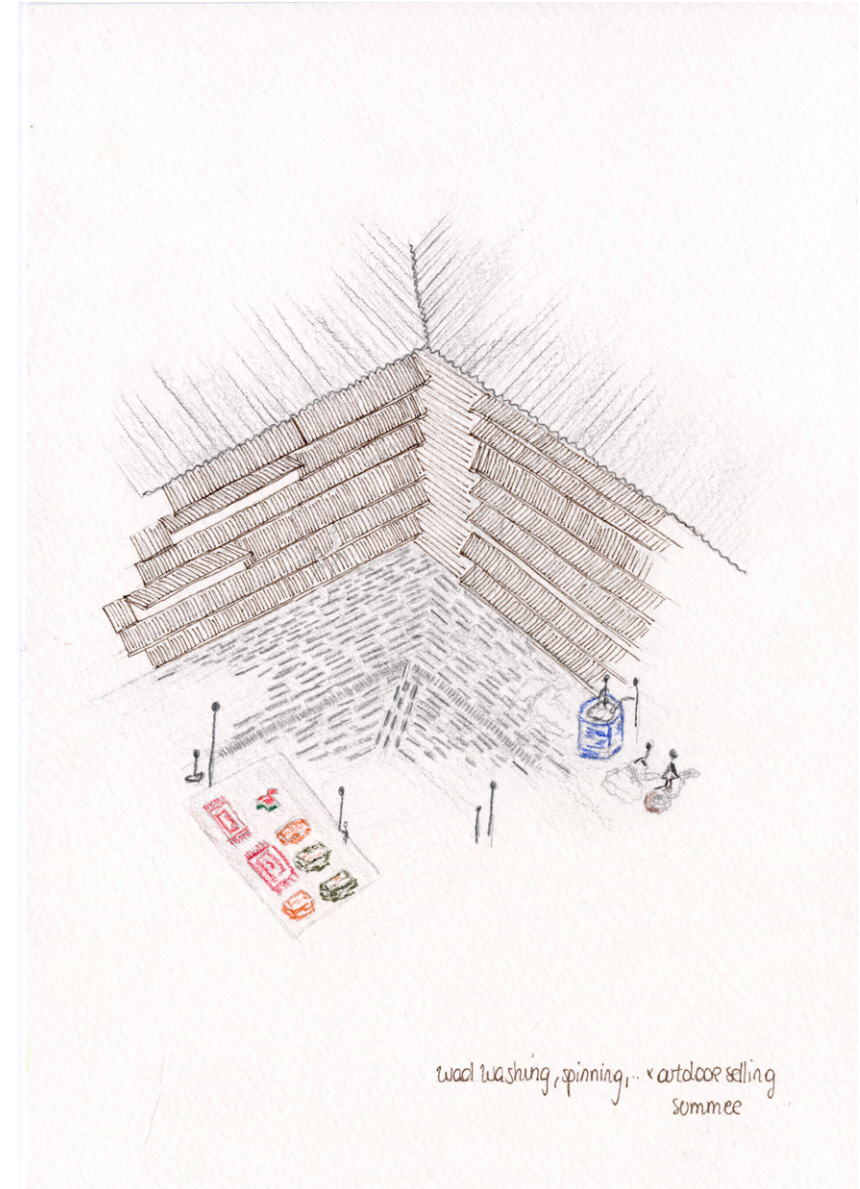
An ideal trajectory

Starting from the village center, you enter the new interpretation pavilion, where a first framed view of the river and valley welcomes you from the roadside. Inside, a stairwell leads you down to what was once an inaccessible riverside pasture. In spring and summer, the path is alive with blossoming cherry trees and birds singing like the chiffchaff in its breeding season.

You continue north along the river, following stone paths paved with reused bricks, and cross the bridge to a shaded picnic spot with views over the Veral River. The route takes you past the old graveyard before reaching the newly converted stables.

In the entrance of the stables, you can learn about transhumance in Aragón and watch seasonal exhibitions featuring wool crafts. From there, a rear door brings you into the stables, where some sick or olders sheep rest during the off-season. Then, you can either join the communal wool washing and handling or visit the seasonal market, filled with wool products and local festivities. A nearby river access offers a refreshing pause on hot summer days.

If you wish to continue, the trail climbs up through the forest along the ravine. Passing through the water gardens and clearings, you eventually arrive at the lookout tower on the hilltop. From here, you can take in panoramic views over the Ansó valley and, just beyond, into neighboring Navarra.







“Soil is one of the most important elements of the Earth’s ecosystems, because it exerts an influence over the growth of vegetation and, more generally, over the preservation of life –land life, at least – on our planet. It is classed as a non-renewable natural resource on which the economy depends at local and global level. Protection of the soil is therefore of primary concern for mankind, in the interests of the survival and development of modern societies.”

Arnáez, J., Kosmas, C., Kairis, O., & da Conceição, M. (n.d.)

Regenerating the Agricultural Landscape of Biniés

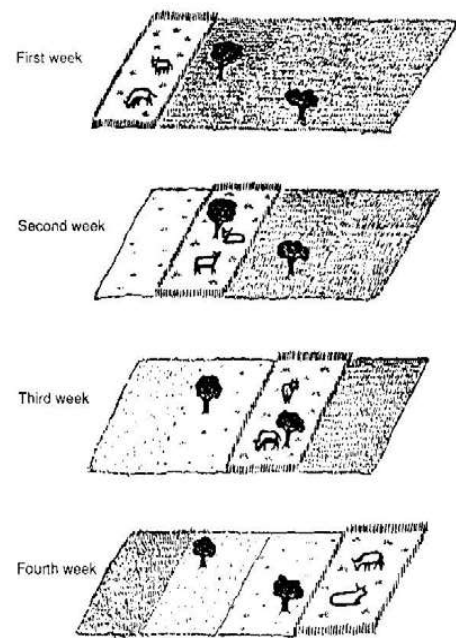
As previously mentioned, Biniés, like many nearby settlements reliant on agriculture and irrigation, face growing challenges related to soil degradation and water scarcity. By adapting the same water retention strategies used in Ansó, such as keyline-inspired ponds, the landscape can be reshaped to hold water longer, feeding the soil gradually before releasing excess into the river. This slow infiltration helps the land regenerate despite low annual rainfall.

Rotational grazing, already practiced in the area, supports this approach by resting certain plots seasonally or temporarily housing livestock indoors. What if this system were extended? Selected fields or sections of them, could be taken out of use for longer periods: one year, five years, or even a decade. These resting periods would allow the soil to rebuild fertility, strengthen plant roots, and support long-term resilience.

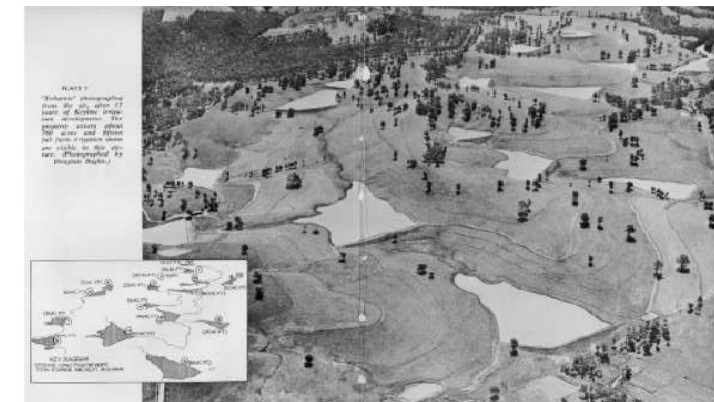
In addition, renaturalizing or partially rewilding certain plots would not only reduce the risk of salinization, already a concern in areas like Biniés, but would also improve biodiversity. Vegetation along rainwater ditches and fallow land could form new microhabitats, benefiting both soil health and the surrounding ecosystem.



Biniés as it is now



rotational grazing



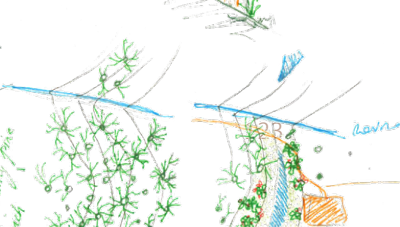
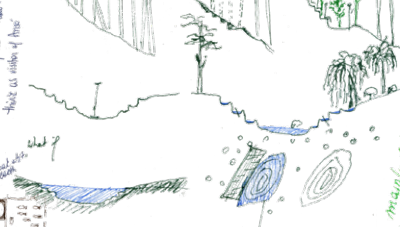
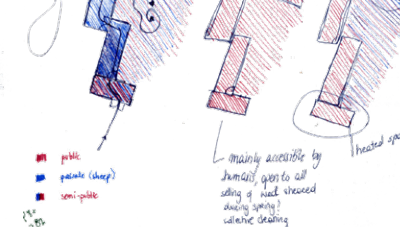
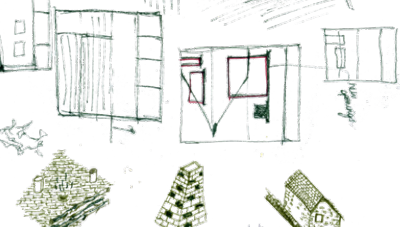
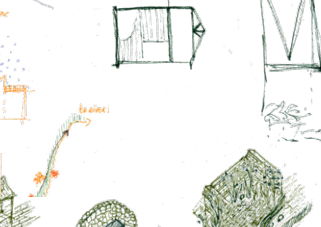
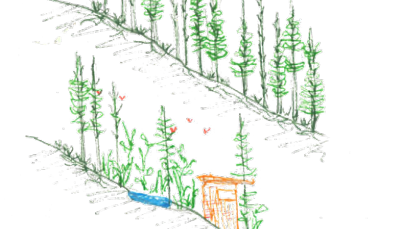
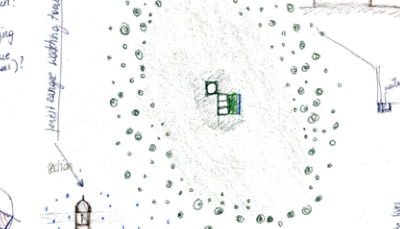
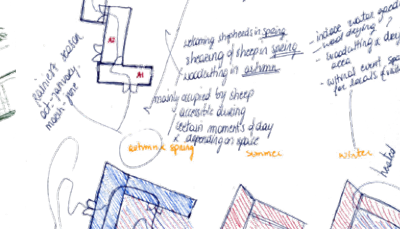
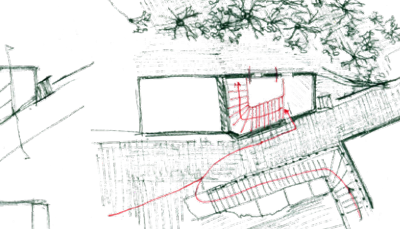
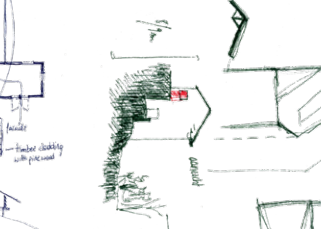
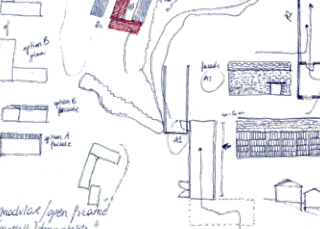
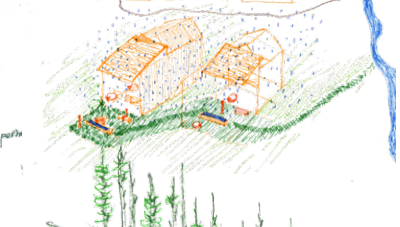
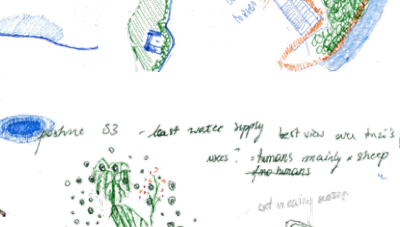
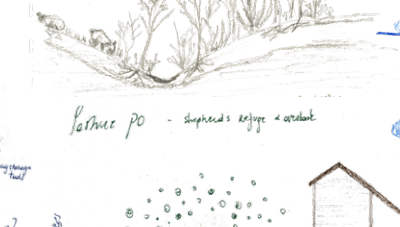
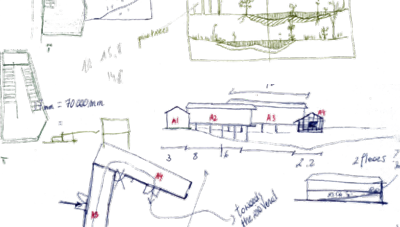
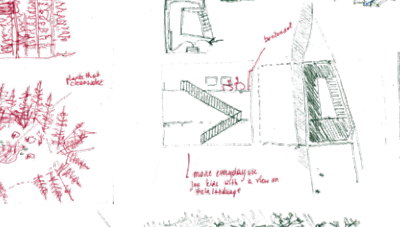
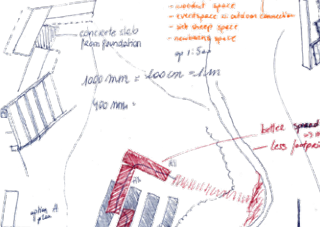
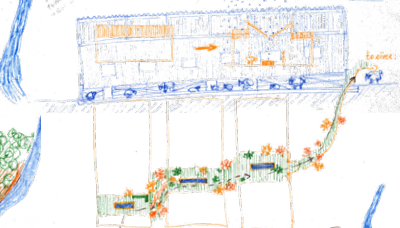
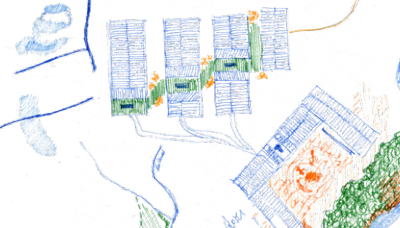
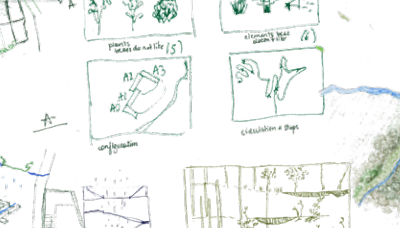
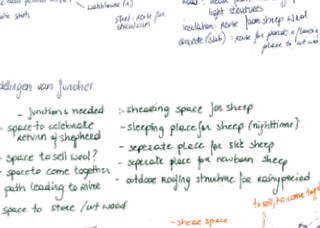
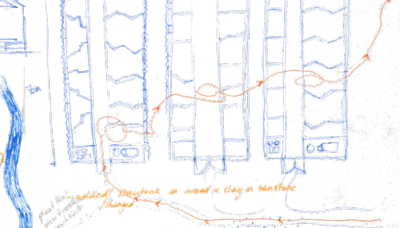
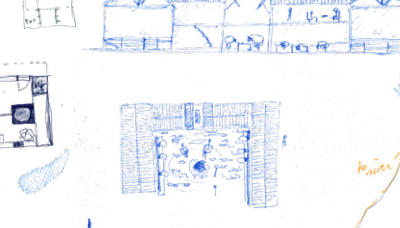
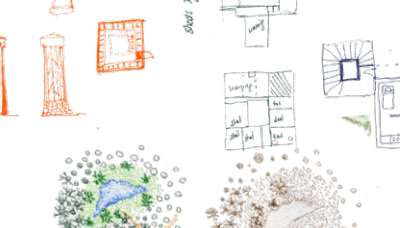
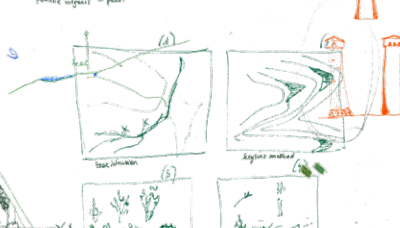
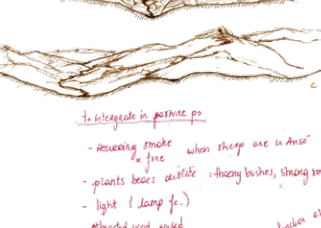
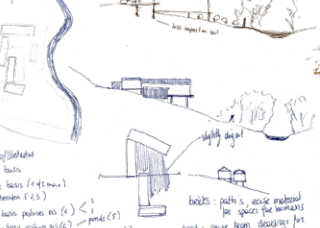
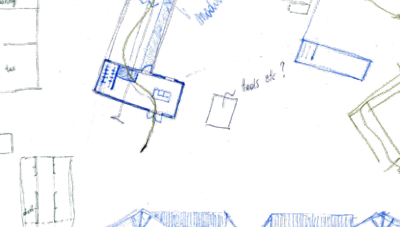
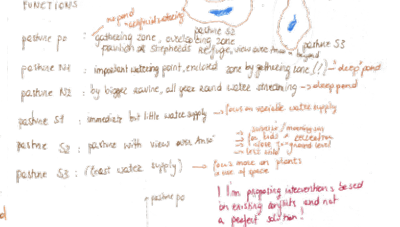
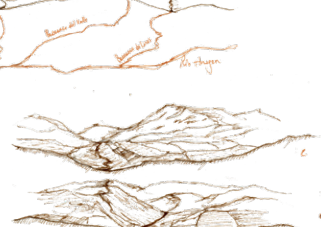
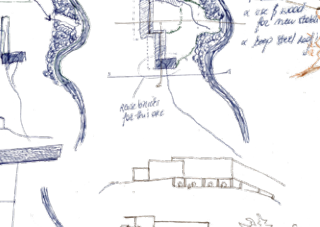
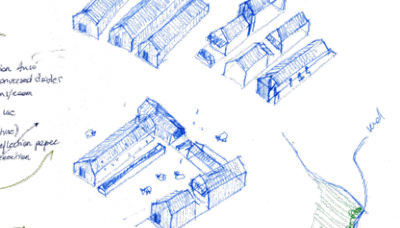
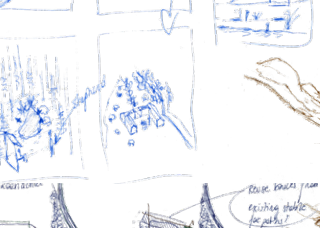
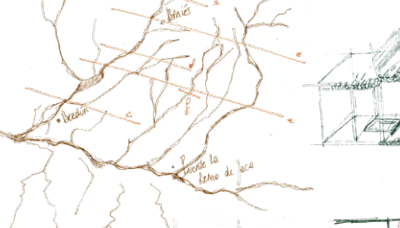
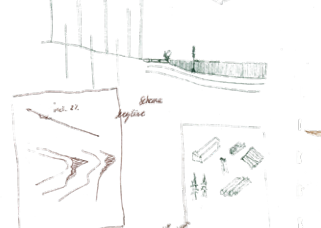
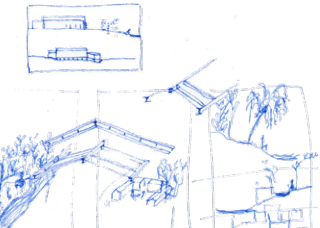
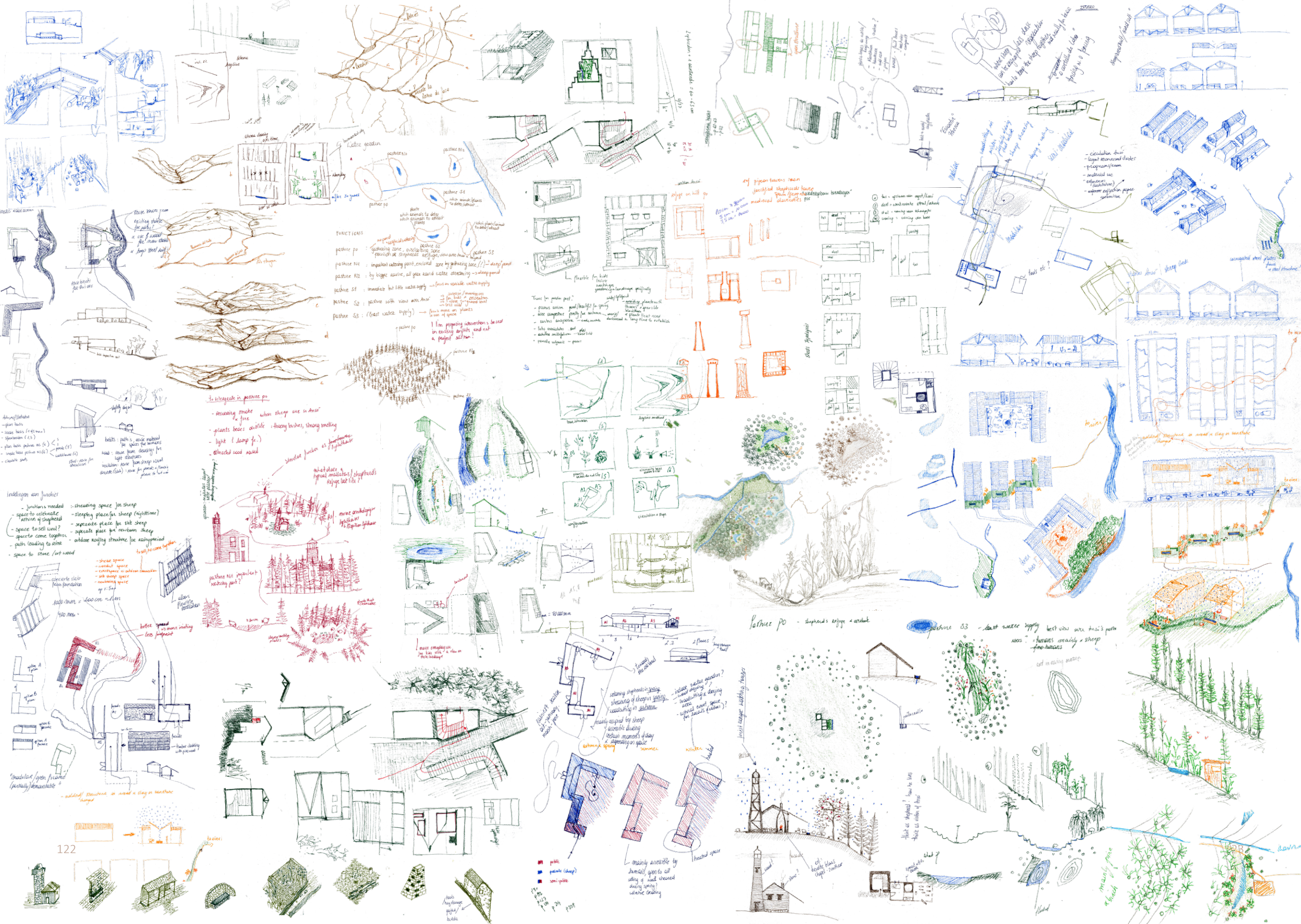
P.A. Yeoman's keyline systems (1954)



Shepherd and sheep in the Pyrenees. Daumas, M. (1959)

Letting Gamueta's landscape be

In contrast to the sites of Ansó and Binies, where water and soil require care and restoration, Gamueta offers a landscape that thrives precisely because of its remoteness and limited human interference. Rather than proposing an intervention that might disturb this delicate balance, the approach here is to observe, respect, and learn from the natural resilience of the high mountain ecosystem. Sheep graze freely in these summer pastures, while the shepherd takes refuge in a nearby shelter, keeping watch over the flock. These shared highlands, however, are not without their frictions. Occasional conflicts arise, such as those between hikers and guardian dogs, or between sheep and bears, highlighting the fine balance between traditional pastoralism, biodiversity, and recreational use.





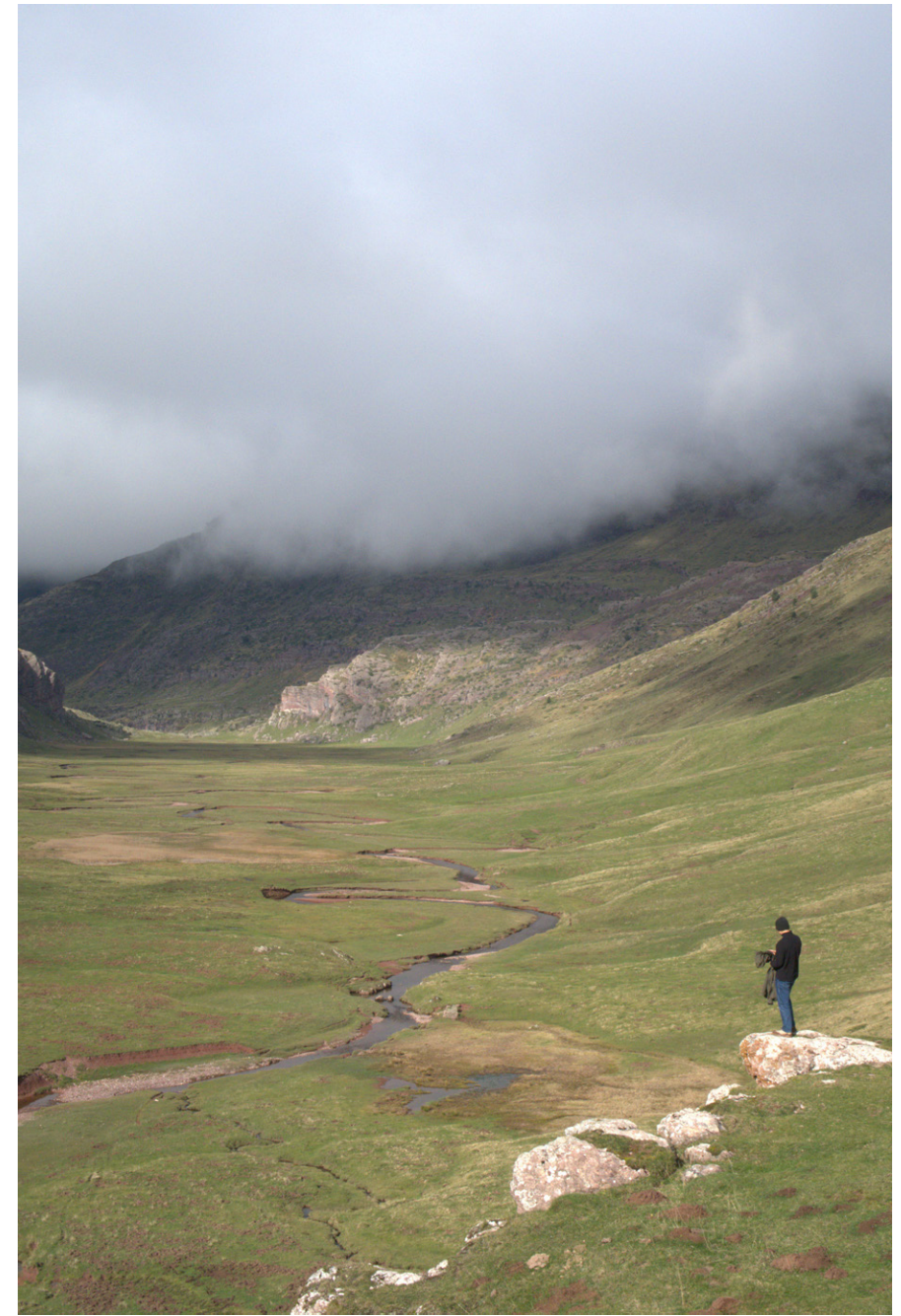
Conclusion

So far, the aim of this project has been to explore how humans and the natural environment can interact in more balanced ways, using landscape and architecture as tools for mediation. At its core is the belief that understanding natural cycles (in this case, especially those of water, soil, and seasonal movements) is crucial to knowing when, where, and how to intervene in the landscape. The Veral River became both a physical and conceptual guide throughout the research, linking ecological processes to the long-standing transhumance practice in the region.

In **Ansó**, where human presence is most concentrated, the design focuses on reconnecting people with the river, the forest, and the transhumance tradition. It addresses human-wildlife conflicts such as with the bear, as well as the management of water that influences conditions downstream. In lowland **Biníes**, the end and starting point of the seasonal migration, the emphasis shifts to soil regeneration and water retention, aiming to restore an endangered pasture landscape and support biodiversity. Finally, the high-lying **Gamueta** is a landscape that functions well without interference. Rather than proposing new structures, the design approach here is one of non-intervention, allowing the resilience of the ecosystem to speak for itself.

These interventions have been shaped by each settlement's unique cycles and ecological challenges, using water as a guiding element, stitching together the landscapes along the Veral River and its streams. Water shapes the soil, sustains ecosystems, and sets the rhythm for seasonal use. While small in scale, the interventions are examples of how careful, site-specific strategies can begin to repair or strengthen ecological function all while respecting local practices.

Together, these strategies may offer a framework for addressing soil degradation, water scarcity, and biodiversity decline in Aragón and beyond. This project ultimately asks: *How could such an approach be scaled up? And how might it help rural communities across Spain reconnect with their landscapes through cycles, care, and coexistence?*





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