

Supplementary file S1
Strategic operational maps

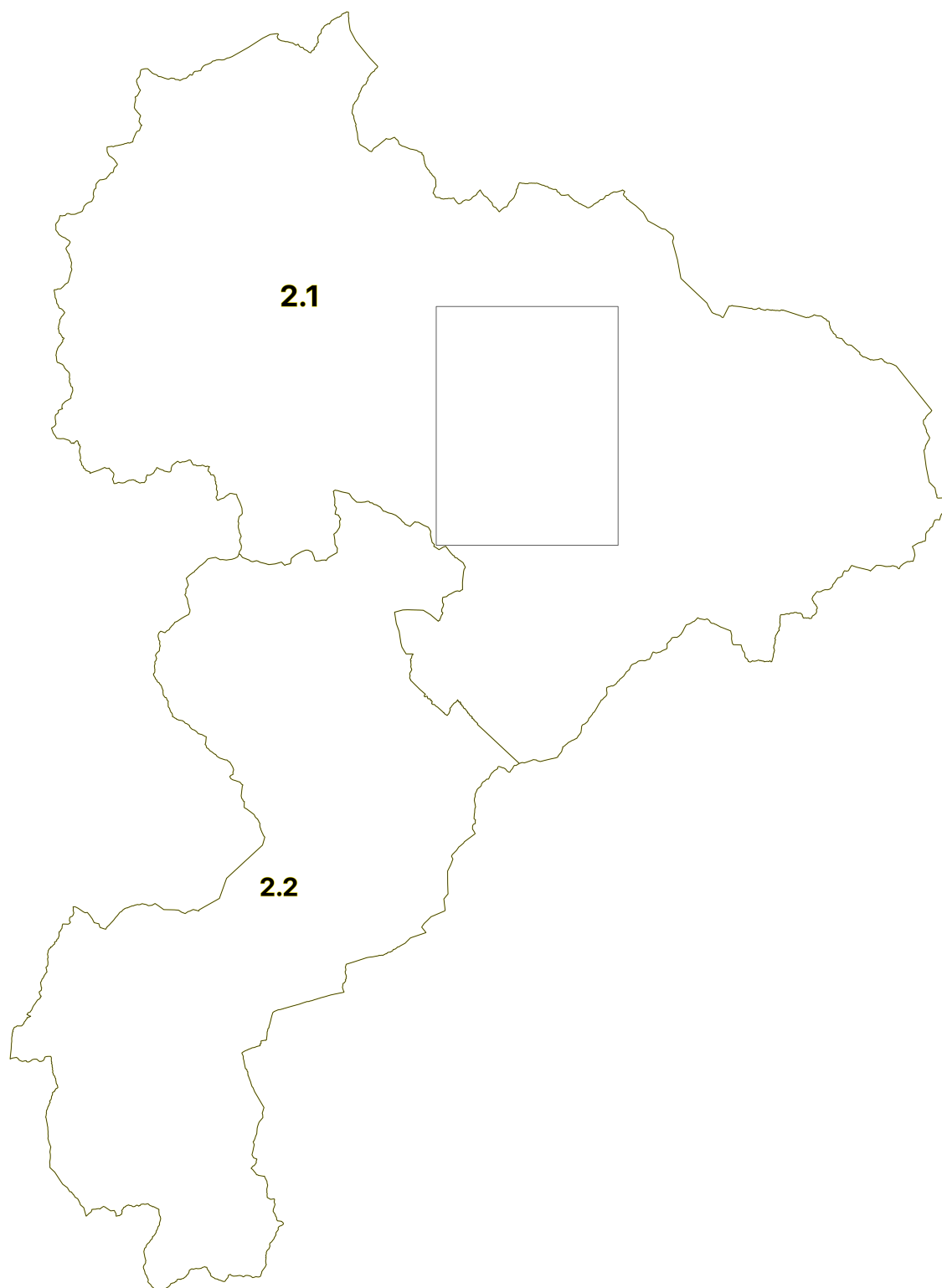


Figure S1. Key Plan of the strategic operational maps with location of the excerpts (source: authors' elaboration)

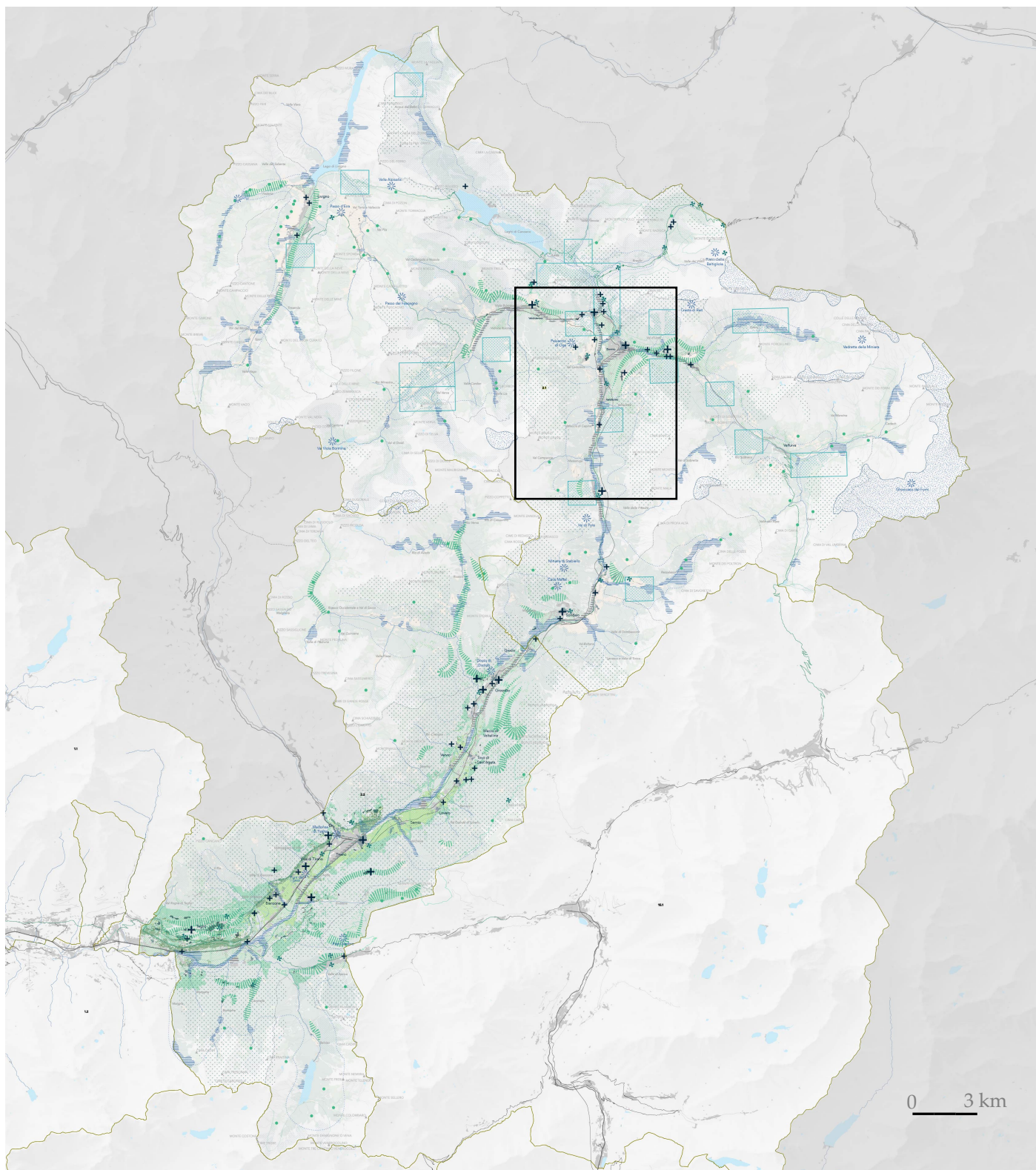


Figure S2a. Strategic operational map. Key topic 1: Identity. Study area (source: authors' elaboration)

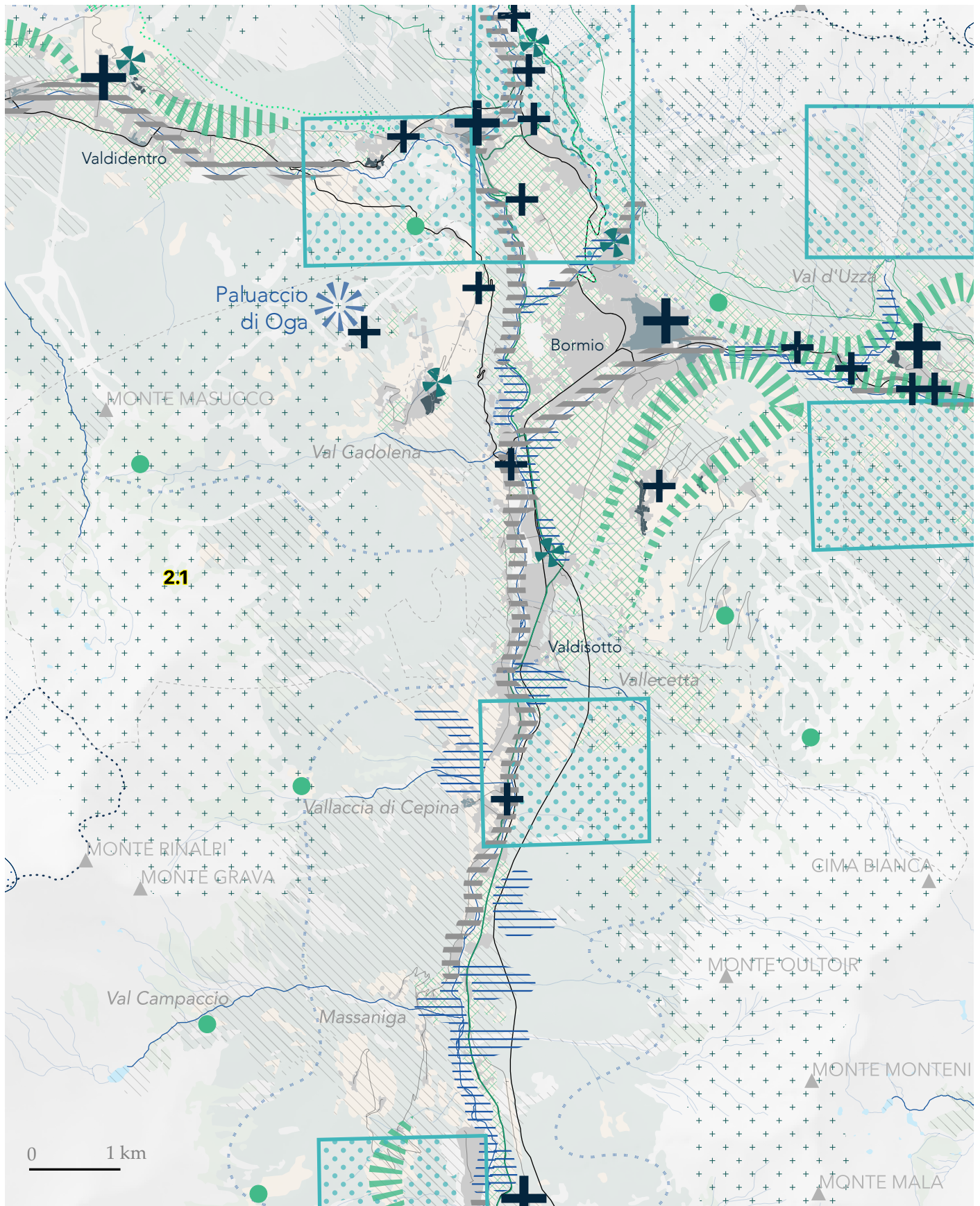









Figure S2b. Strategic operational map. Key topic 1: Identity. Excerpt (source: authors' elaboration)

Thematic objectives and strategic priority areas

KT1a Preserving unity and perceivability of hydro-geo-morphological elements

-  Glaciers to be supervised and protected in order to tackle climate change impacts





Priority areas to tackle structural modifications and prevent risks on hydrographic network:

-  areas of safeguard of the river morphology and increase of the naturalistic values;
-  areas of hydrological risk prevention and increase of naturalistic values in urbanized context;
-  priority areas to prevent hydrological risk on minor hydrographic network
-  Priority areas to prevent hydrogeological risk on mountain woodlands
-  Peculiar hydro-geo-morphological features to be preserved
-  High visibility mountain landscapes to be preserved







KT1b Preserving landscape values of natural elements

-  Priority areas to tackle vegetation diversity loss

KT1c Preserving constitutive features of rural landscape




-  Traditional and historical rural landscapes to be maintained, preserved and enhanced
-  Alpine rural buildings to be restored, enhanced or preserved
-  Priority areas where to tackle forest regrowth
-  Priority areas where to tackle abandon and degradation of croplands

KT1d Preserving the features representing the identity of the anthropic landscape




-  Valley floor historical urban settlements to be restored, enhanced or preserved
-  Slope historical urban settlements to be restored, enhanced or preserved
-  Historical and cultural heritage sites to be preserved
-  Historical and cultural heritage clusters to be preserved
-  Aggregations of buildings and areas with significant landscape quality (RLP Discipline, Art. 23)
-  UNESCO World Heritage Sites (RLP Discipline, Art. 37)

Structural landscape elements






Hydro-geo-morphological system

-  Lakes, artificial basins
-  River corridors
-  Minor waterways






Natural and environmental system

-  Grasslands
-  Woodlands
-  High natural and landscape quality valleys (Silence Valleys)




Rural and agricultural system

-  Chestnut groves
-  Fruit groves
-  Vineyards
-  Other crops
-  >>>> Terraced areas

Anthropic, cultural and historical system

-  Anthropic areas
-  Panoramic views (Visuali sensibili - RTAP Media Alta Valtellina)
-  Railways
-  Main roads
-  Secondary roads

Soft mobility connections

-  Landscape itineraries (Tracciati guida paesaggistici - RLP Discipline, Art. 35.1)
-  Panoramic roads (Strade panoramiche - RLP Discipline, Art. 35.1)
-  Adda River greenway (RTAP Media Alta Valtellina)

RLP strategies



-  Regional Green Infrastructure areas
-  Geographic Landscape Units (GLU)

Figure S2c. Strategic operational map. Key topic 1: Identity. Legend (source: authors' elaboration)

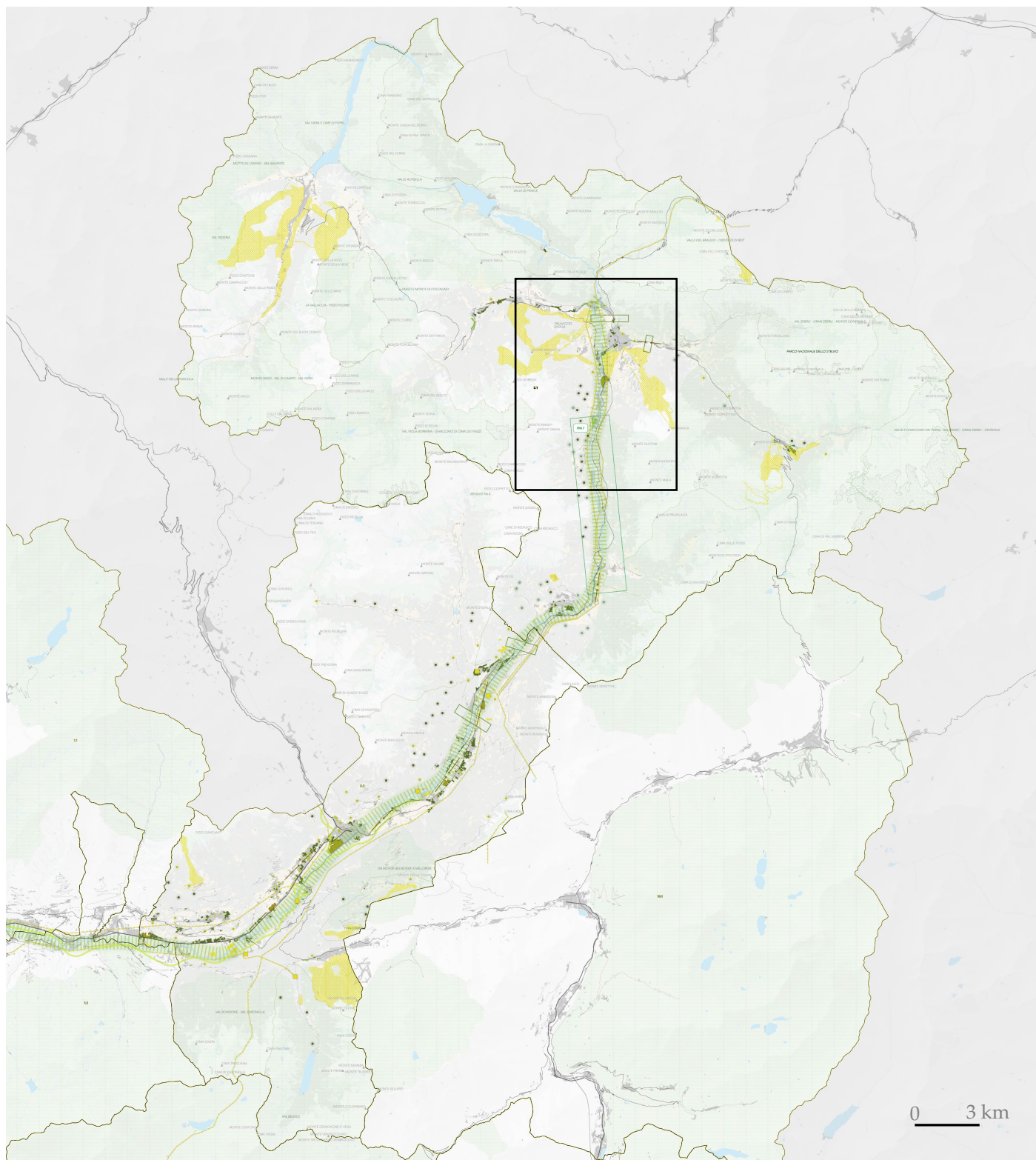


Figure S3a. Strategic operational map. Key topic 2: Natural capital. Study area (source: authors' elaboration)

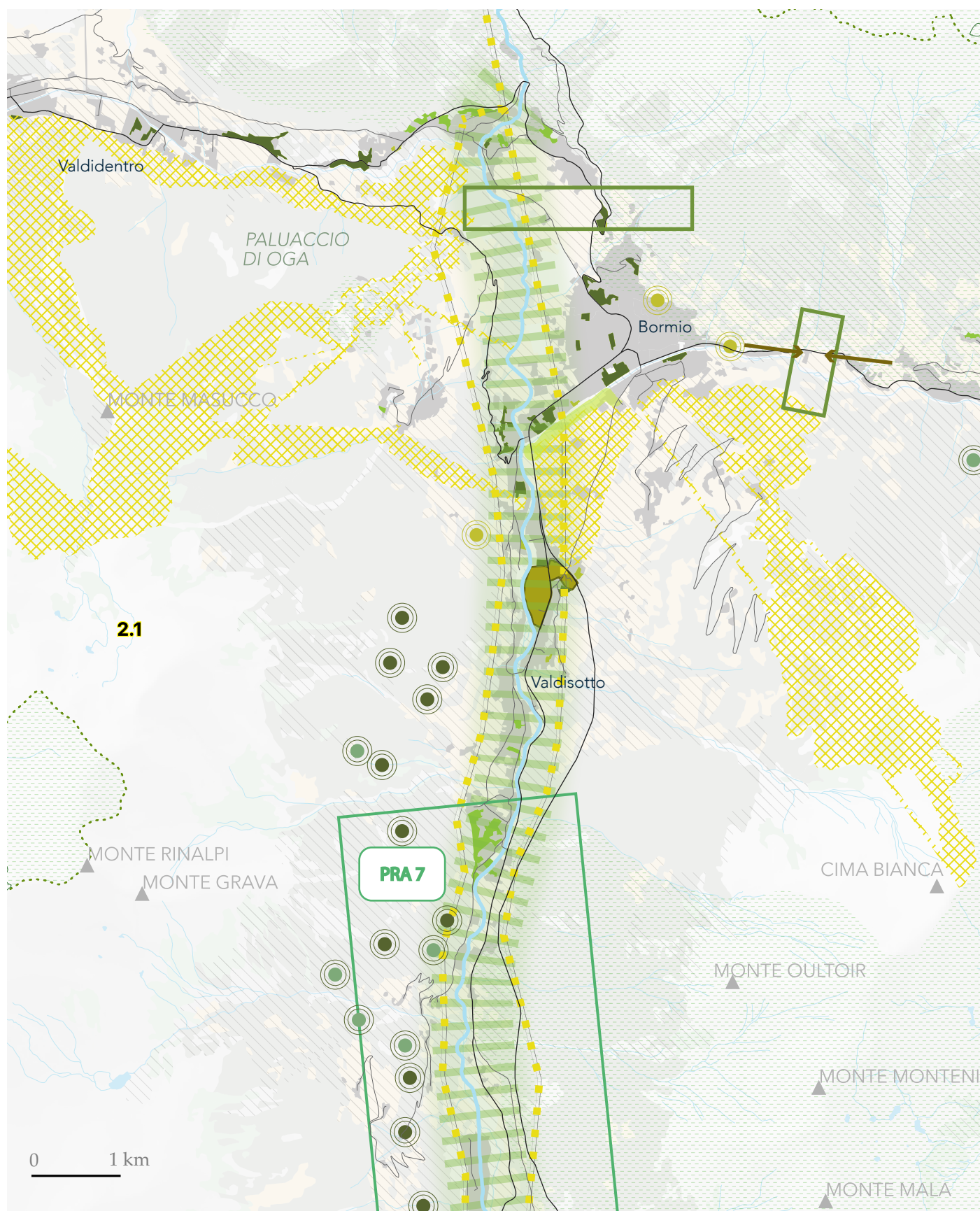



Figure S3b. Strategic operational map. Key topic 2: Natural capital. Excerpt (source: authors' elaboration)

Thematic objectives and strategic priority areas




KT2a Promoting maintenance, reinforcement or reinstatement of ecological connectivity and high habitat quality

 Regional Ecological Network (REN) primary corridors

 REN passages




 Landscape enhancement connections from RGI with mainly environmental purposes


Priority revitalization areas for damaged woodland ecosystems:

-  revitalization areas of woodland ecosystem damaged by windstorms;
-  revitalization areas of woodland ecosystem damaged by wildfires;
-  revitalization areas of woodland ecosystem damaged by beetle outbreaks


KT2b Promoting reorganization and defragmentation of peri-urban landscapes tackling loss of biodiversity


Peri-urban rural areas to be preserved:

-  areas with high environmental values;
-  areas with high historical and cultural values;
-  areas with high environmental, historical and cultural values


 Priority areas where to tackle linear conurbation trends


KT2c Limiting, containing and mitigating impacts of anthropic activities

 Areas involved in mining activities whose impacts should be limited and mitigated

 Hydroelectric power plants and electrical power lines whose impacts should be limited and mitigated


 Industrial or commercial settlements and accommodation facilities whose landscape and environmental suitability should be increased


 Ski resorts to be involved in integrated redevelopment strategies


 Landscape mitigation and integration buffers for new infrastructures from RGI

Structural landscape elements

Hydro-geo-morphological system

 Lakes, artificial basins


 River corridors


 Minor waterways

Natural and environmental system

 Grasslands

 Woodlands

 High natural and landscape quality valleys (Silence Valleys)

 Natural protected areas

Rural and agricultural system

 Crops

Anthropic, cultural and historical system

 Anthropic areas

 Railways

 Main roads

 Secondary roads

RLP strategies

 Regional Green Infrastructure areas

 Geographic Landscape Units (GLU)

Figure S3c. Strategic operational map. Key topic 2: Natural capital. Legend (source: authors' elaboration)

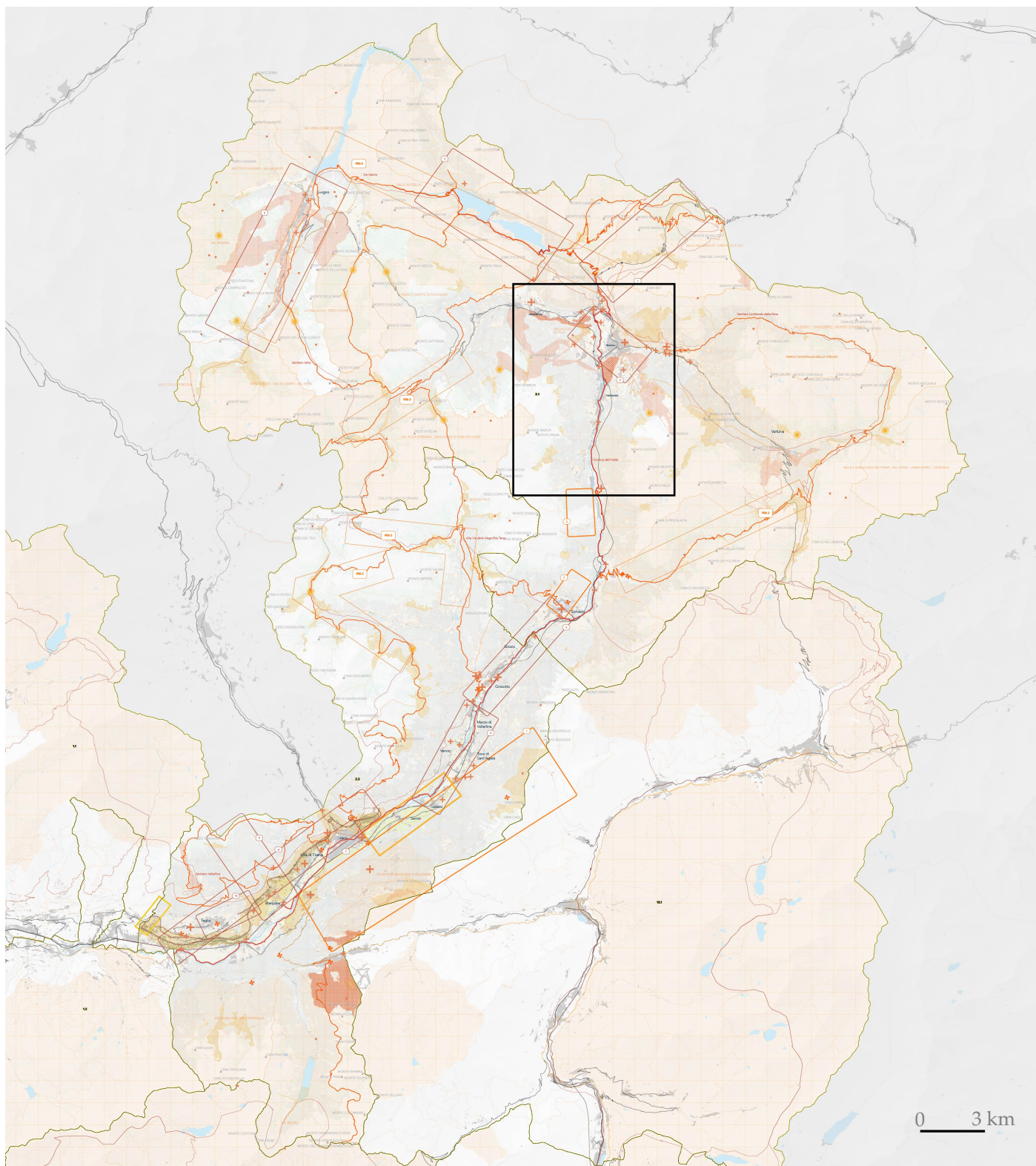


Figure S4a. Strategic operational map. Key topic 3: Sustainable recreation. Study area (source: authors' elaboration)

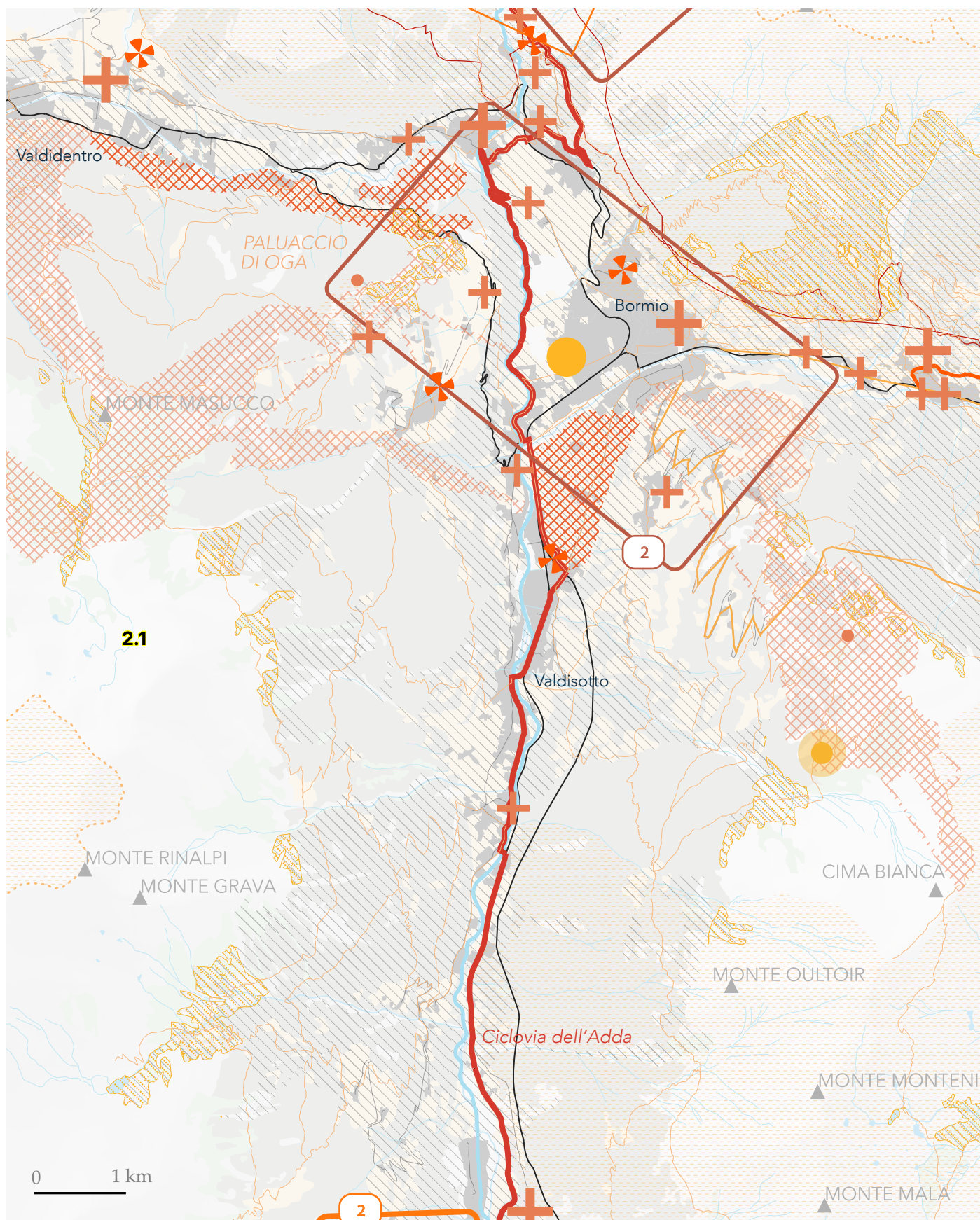











Figure S4b. Strategic operational map. Key topic 3: Sustainable recreation. Excerpt (source: authors' elaboration)

Thematic objectives and strategic priority areas



KT3a Promoting sustainable recreation in natural heritage, also through soft mobility networks and landscape connections

-  Local trail network sections to be improved and enhanced
-  Landscape enhancement connections from RGI with mainly recreational purposes
-  Sustainable recreational enhancement of "Landscapes of Silence"
-  Environmental systems to be enhanced, redeveloped and restored
 1. Trivigno - Mortirolo
 2. Val Pola
 3. Ospedale Morelli




KT3b Supporting traditional and quality supply chains in farming, forestry and dairy products as multifunctional activities

-  Priority multi-function enhancement areas: mountain pastures
-  Priority multi-function enhancement areas: wine production
-  Priority multi-function enhancement areas: typical dairy production
-  Priority multi-function enhancement areas: apple orchards
-  Priority multi-function enhancement areas: historical cereal

KT3c Promoting and enhancing recreation in historical and cultural heritage




-  Structural soft mobility elements whose connections with local cycle path network should be increased
-  Historical and cultural systems to be enhanced, redeveloped and restored
 1. Valle del Braulio
 2. Bormio centro e terme
 3. Infrastrutture storiche Faele e Cancano
 4. Baite Livigno
 5. Grosio-Grosotto-Sondalo
 6. Tovo-Mazzo
 7. Palazzi Tirano
 8. Ecomuseo Bianzone
 9. Sistema delle Vigne
 10. Sella Tegli

KT3d Exploring and promoting alternative tourism and recreation




-  Attention and mitigation areas linked to possible functionality loss of low altitude ski resorts
-  Attention and mitigation areas linked to overtourism impacts
-  Attention areas characterized by a relevant dependence on winter tourism

Structural landscape elements





Hydro-geo-morphological system

-  Lakes, artificial basins
-  River corridors
-  Minor waterways

Natural and environmental system

-  Grasslands
-  Woodlands
-  Natural protected areas




Rural and agricultural system

-  Fruit groves
-  Vineyards
-  Other crops
-  Terraced areas

Anthropic, cultural and historical system

-  Anthropic areas
-  Ski resorts
-  Panoramic views (Visuali sensibili - RTAP Media Alta Valtellina)
-  Alpine shelters
-  Historical and cultural heritage sites
-  Historical and cultural heritage clusters
-  UNESCO World Heritage Sites (RLP Discipline, Art. 37)
-  Railways
-  Main roads
-  Secondary roads

Soft mobility connections

-  Landscape itineraries (Tracciati guida paesaggistici - RLP Discipline, Art. 35.1)
-  Cycle paths
-  Trails, footpaths

RLP strategies



-  Regional Green Infrastructure areas
-  Geographic Landscape Units (GLU)

Figure S4c. Strategic operational map. Key topic 3: Sustainable recreation. Legend (source: authors' elaboration)