UNIVERSITY OF LJUBLJANA

SLOVENIA

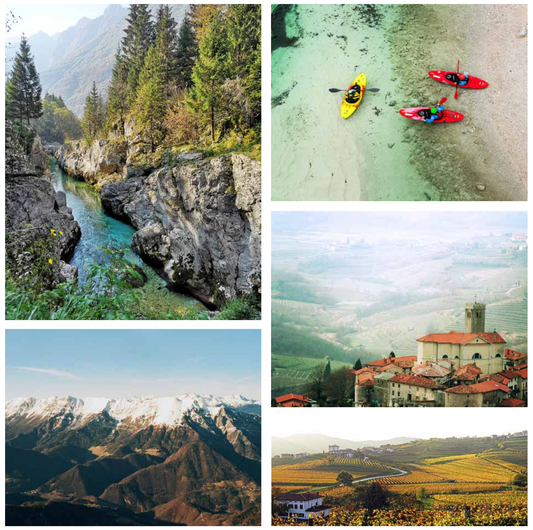
IGC

Alternative futures for Soča rivershed:

The case study area was chosen for its outstanding natural character as well as for its history. The area of 6.400 km^2 in western part of Slovenia is characterized by high Alpine mountains and Soča River in the north and west, and lowlands of Vipava Valley in the south. Geographically positioned on the border between Slovenia and Italy, the area had turbulent historical and political conditions, which reached its peak with the 12 battles of Isonzo/ Soška fronta during 1st World War.

Nowadays, the main global challenges relevant for the region are: (1) population ageing, depopulation of remote areas and (sub) urban sprawl in the lowlands, (2) management of the tourism within the carrying capacity, (3) transition to renewable energy, (4) maintenance of public services and jobs in remote areas, and (5) intensification and abandonment of agricultural production.

These challenges were addressed within two scenarios for 2035 and three for 2050 within eight selected systems. The size and complexity of the study area was a challenge for 18 students from four countries (Slovenia, Croatia, Hungary and Norway), different educational background (Landscape Architecture and Spatial Planning) and different familiarity with the study area.



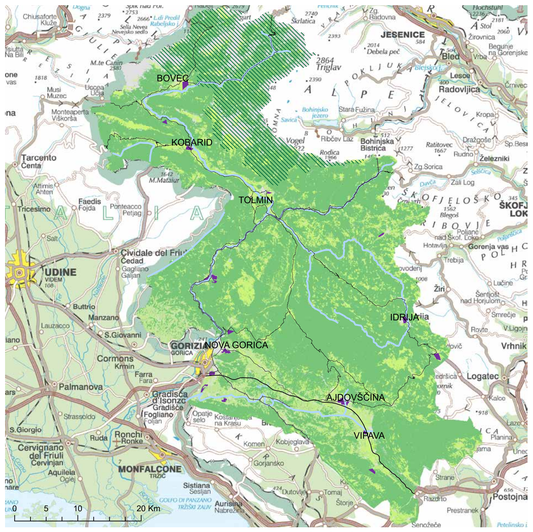
Five major requirements by 2050:

(1) Promote and preserve dispersed concentration settlement pattern through improved infrastructure and services,
(2) Energy and industry development based on available natural and cultural resources and emerging technology,
(3) Increased competitiveness of traditional agricultural practices (grazing, winery, fruit growing, forestry),
(4) Development of multifunctional green infrastructure to ensure connectivity between Alpine, Adriatic and Dinaric regions, and
(5) Posočje becomes a model for nature sensitive outdoor tourism.

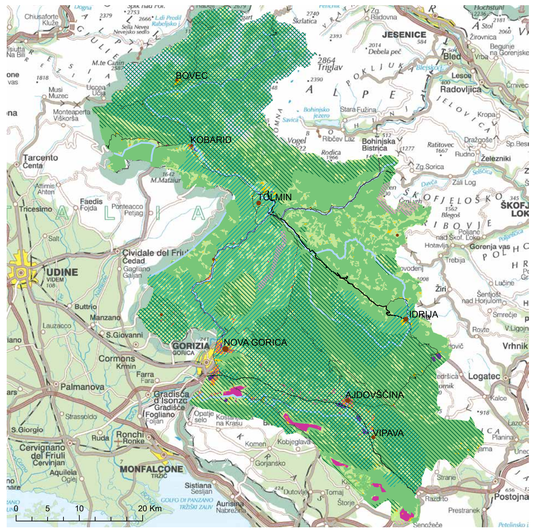
Major assumptions and innovations:

GLOBAL 2035/2050 2 Population will grow older
GLOBAL 2035/2050 8 Global average temperature will rise, and regions will face increased climate variability
GLOBAL 2035/2050 3 Populations will be concentrated in urban areas
GRN 2035/2050 1 Resilient landscape infrastructure
IND/COM 2035 1 Fourth industrial revolution
WAT 2035 4 Stormwater trading
RES 2035 1 Building integrated solar PV plus storage
AGR 2035/2050 3 Rewilding; letting nature take its course
MIX 2035 1 Mixed use development
ENE 2035/2050 1 Renewable energy sources

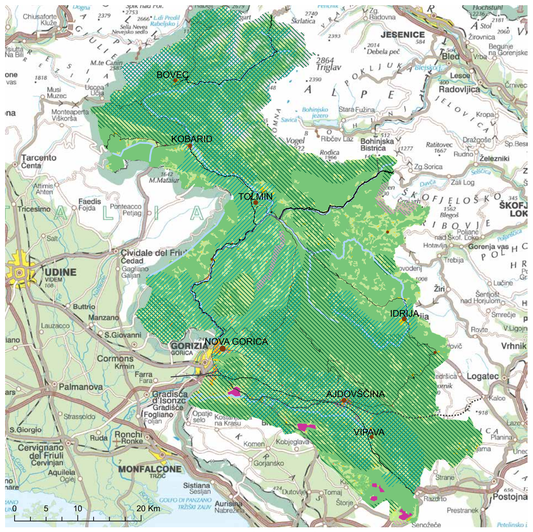
Project area: 80 x 80 km



Existing situation: 2020



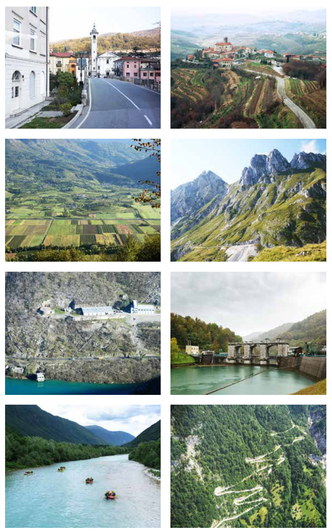
Early adopter: 2035



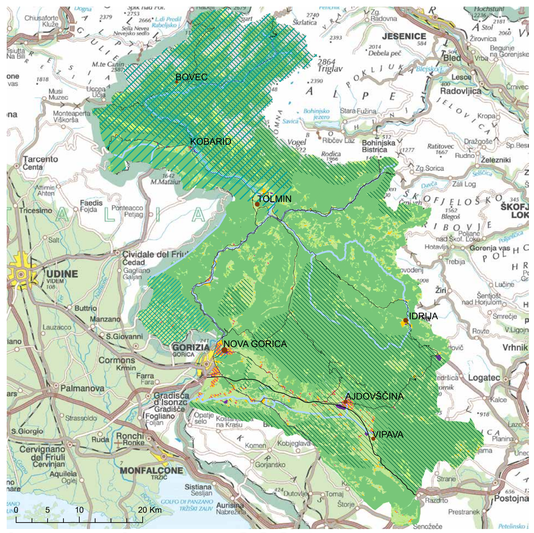
Early adopter: 2050

Early adopter scenario:

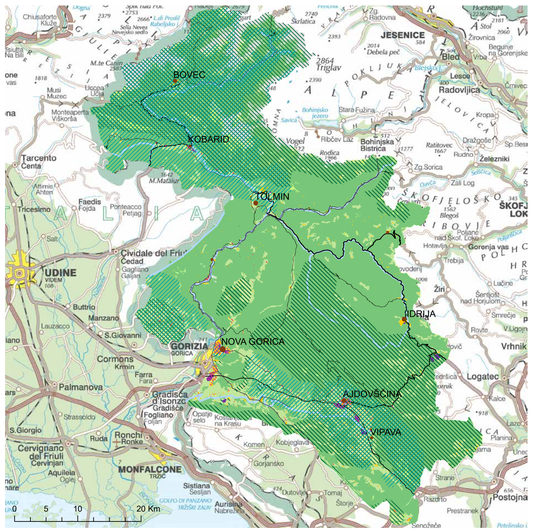
Adapter 2035 scenario will support tourism by providing public transport and roads renovation. Forestry and agricultural production will be maximized, whereas nature will be effectively protected. New infrastructure, cooperation between industries of the same branch, scholarships for local traditional industry branches and exploited potentials of solar and wind power will support industry and steady population growth. The region will be divided into three administration units with bigger central cities (Nova Gorica, Ajdovščina, Tolmin), which will help to preserve local identity by effective spatial planning policies. In early adapter 2050 scenario tourism will strive to extend season with more diversified offers. There will be stricter regulations enabling ecological, mainly migration function of green corridors. Infrastructure will be improved by the renovation of roads Tolmin – Škofja Loka and Bovec – Kranjska Gora with a new tunnel under Vršič pass and a new railway Ajdovščina – Logatec, shortening the corridor Budapest – Udine. Rural areas will become more attractive for living due to polycentric spatial development. Technological improvement in industry and the possibility to work from home will create new jobs. Energy production will focus on renewable sources, which will increase importance of solar power plants. Innovations in agriculture and forestry will contribute to more sustainable production.



Services hierarchy:
- Rank 5
- Rank 4
- Rank 3
- Rank 2
- Roads
- Reconstructed roads
- Highway
- Tunnel
- Railway
- Reconstructed railway
- Rivers
- Arable land and permanent crops
- Forest
- Grassland
- Open spaces with little or no vegetation
- Water
- Green infrastructure
- Solar power plants on the rooftops
- Wind power plants
- Solar power plants on the ground
- Parking lot
- Industry
- Residential
- Residential - abandoned
- Intensive water sport tourism (NA: 2050)
- Intensive water sport tourism (NA: 2035)
- Tourism
- Concentrated sport tourism (NA: 2050)
- Concentrated sport tourism (NA: 2035)



Late adopter: 2035



Late adopter: 2050

Late adopter scenario:

New issues will arise from failing to address the negative trends before 2050 and will result in more challenging spatial planning and management. Due to population loss, governmental programs will have to support employment in local industry and tourism. Changed climate and water level conditions caused by non-sustainable environment management will encourage the development of new touristic activities, managed considering environmental carrying capacity and green infrastructure. The latter will be developed by restoring the migration paths for animals, establishing more isolated habitats as well as providing opportunities for social functions. More sustainable lifestyle, joint services within smaller towns and new workplaces will enable people to remain or even resettle in remote villages, which will reduce urban sprawl in Vipava Valley. Old buildings, that weren't demolished, will be renovated and new ones built considering traditional architecture typology. Urban agriculture, green roofs and walls will improve urban environment. Renovation of road infrastructure and development of public transport will improve accessibility. Energy production will increase on rooftop solar power plants. Locally characteristic cultivation patterns will be reintroduced in overgrown agricultural land to reestablish landscape identity.

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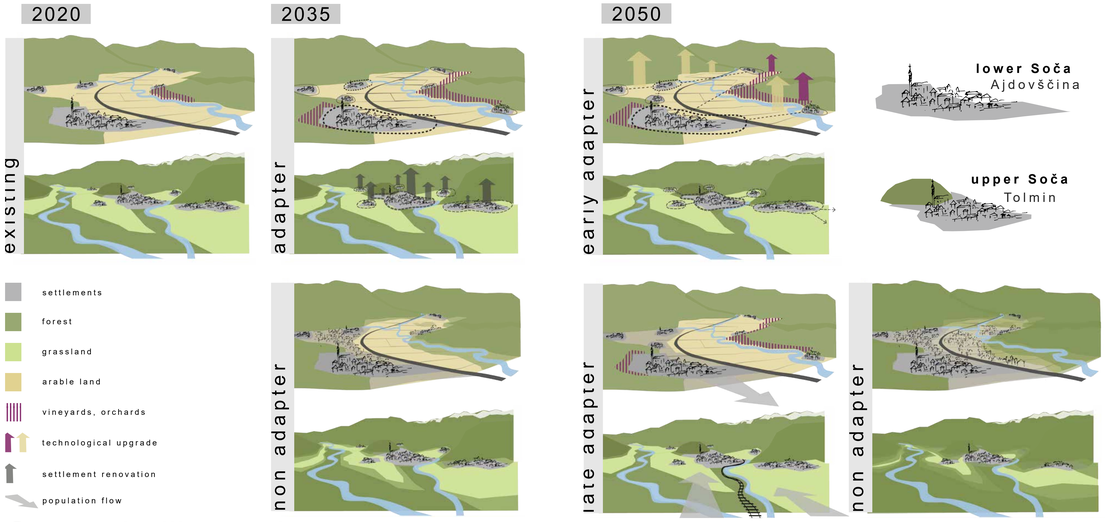
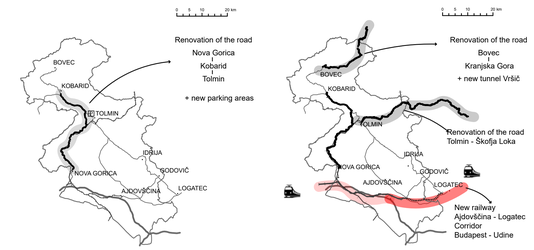
Scenario illustrations



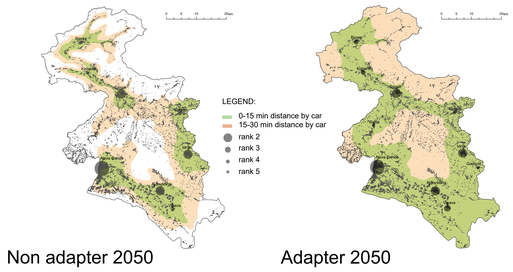
Non-adopter scenario:

The touristic popularity of Slovenia in absence of effective management will cause overcrowding of Upper Soča Valley. Until 2035 population will decrease, age and move from remote to urban and suburban areas of Vipava Valley, followed by movement of services and industry. New housing won't follow the characteristics of traditional architecture. Low food and timber prices will spur the abandonment of forestry and agriculture and cause the loss of landscape identity. There will be little investments in infrastructure, whereas energy production will be restricted on rooftop photovoltaics only. Multifunctionality and connectivity of green infrastructure will be disturbed. In 2050 mass and extremely seasonal tourism will exceed carrying capacity to the point of destroying itself. Depopulation will result in the extinction of some settlements, whereas the population will concentrate in Vipava Valley. Decrease of services and industry in remote areas will continue, a need for health services for elderly people will become urgent. Uncontrolled spatial development and homogeneous land use will cause loss of identity. Lack of public transport and reconstructed road Nova Gorica - Tolmin will support individual transport. There will be innovations in technology of solar power plants on rooftops. Bigger natural disasters will occur due to climate change and loss of biodiversity.



Non adapter 2050

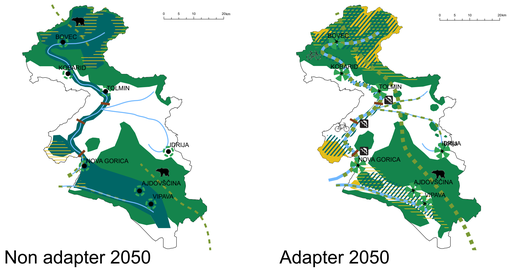
Adapter 2050



Non adapter 2050

Adapter 2050

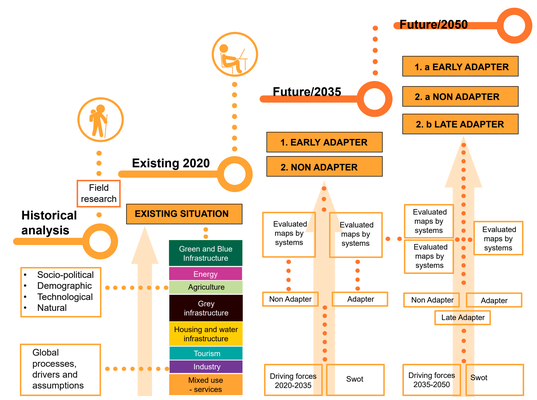
Non adopter: 2050



Non adapter 2050

Adapter 2050

Workflow:



Grey infrastructure

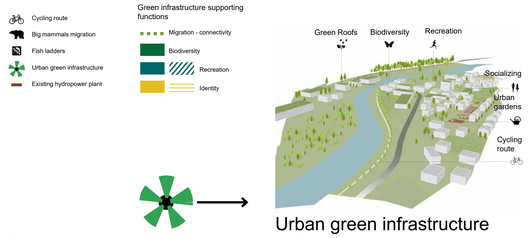
The historical research was made to better understand the area. Maps show movement of the people from the northern part, which is remote, to southern part, which is more developed and better connected with the rest of the country. Biggest changes happened in 20th century in time of WW1 and WW2 when massive political and economic migrations happened. 20th century was also an era of new connections (railways, roads, bridges) and industrial development. Depopulation of the northern part is still a problem nowadays.

Mixed use

Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
At least 90.000 inhabitants. International transport center. Extensive conurbation. University hospital, university, supremecourt, library, theater, museum, gallery, administrative unit.	At least 15.000 inhabitants. National transport center, city municipality, general hospital, faculty, academy, college, administrative unit, higher court, theater, museum, general library.	At least 5.000 inhabitants. Regional transport center, specialized hospital, health center, college, high school, district court, museum, gallery, general library.	At least 3.000 inhabitants. Specialized hospital, health center, high school, museum, gallery, general library.	At least 1.500 inhabitants. Smaller places are important for supplying the residents of surrouding villages with basic services. Primary school, medical station, affiliate library.
Koper*	Nova Gorica	Tolmin	Ajdovščina	Bovec
Ljubljana*		Idrija	Vipava	Kobarid
Maribor*				Kanal
				Cerkno
				Dobrovo

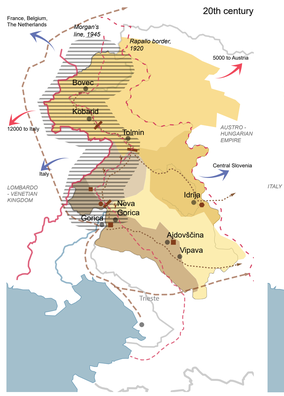
* cities that are not in our area

Green and blue infrastructure

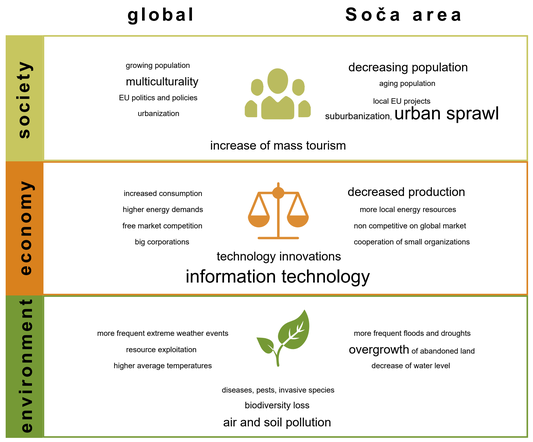


Urban green infrastructure

Historical analysis



Driving forces



Participant team credits:

Students:

Tov Andersson Røyneland
Mariell Arntzen
Ana Benedik
Doroteja Benko
Anna Katalin Énekes
Eva Fišer
Bård Bendik Grøtta Fanghol
Espen Helgeland
Hema Kunšič
Sara Louise Kvitberg
Doroteja Matić
Håvard Ronold
Lucija Salobir
Anja Setničar
Tamara Tratar
Filipa Valenčić
Dorotea Volk
Adam Wolf
Meta Zgonec

Advisors:

Mojca Golobič, Full Professor, PhD
Nadja Penko Seidl, Assistant Professor, PhD
Andrej Bašelj, Teaching Assistant
Tadej Bevk, Teaching Assistant

Course:

Studio 1 in Landscape Planning

First year of Master program in Landscape Architecture

University of Ljubljana

Slovenia